REVISED DRAFT REPORT

Three Star Anodizing Site Wappingers Falls, New York Remedial Investigation of Wappingers Creek NYSDEC Site 314058

New York State Department of
Environmental Conservation
Albany, New York

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10653/27258

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Vice President

February 2007

O'BRIEN & GERE
ENGINEERS, INC.

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1. Introduction

1.1. Site Background

On behalf of the New York State Department of Environmental Conservation (NYSDEC), O'Brien & Gere Engineers, Inc. performed a Remedial Investigation (RI) to evaluate potential environmental contamination associated with the Three Star Anodizing Site (Three Star Site). The Three Star Site is located in the Market Street Industrial Park on the south bank of Wappingers Creek in the village of Wappingers Falls, New York (Figure 1-1). The Three Star Site is a class 2 site (Site No. 314058) on the New York State Registry of Inactive Hazardous Waste Sites. A RI report completed for the Three Star Site (Site RI Report) is to be completed in 2007 (O'Brien & Gere 2007). This report presents the results of the RI completed for Wappingers Creek (Creek RI Report).

The Three Star Site consists an 8.5-acre industrial facility on the south bank of Wappingers Creek (Figure 1-2). Several buildings, and paved parking areas and access roadways are present on the site. The site is located within the 100-year flood plain along an oxbow of Wappingers Creek. The creek discharges to the Hudson River approximately 1.5 miles downstream and it is subjected to tidal influences of the river (NYSDEC 2000). Discharges from the site to the creek occur via surface runoff. In the past, the creek also received industrial waste discharges from the Three Star Site. A former raceway collects runoff from the south portion of the site and drains to a lagoon on the southeast portion of the Three Star Site (Three Star lagoon) and then to the creek (Figure 1-2). A storm water pipe originating in the Village of Wappingers Falls also discharges to the Three Star lagoon.

Historical information for the site was obtained from a number of sources:

- Aerial photographs of the site were obtained from the Dutchess County Soil and Water Conservation District (DCSWCD) for the years 1935, 1946, 1967, 1980, and 1995 (DCSWCD 2000).
- A historic account of activities at the site was provided in *The Birth & Growth of an Old Village, Wappinger Falls 1707-1977* (Popper 1991).
- Memoranda obtained from files of Dutchess County Department of Health provided maps that identified tenants of the site in 1967 and 1971. The memoranda also provided a brief account of activities at the site at that time.
- Sanborn Maps dated 1945 and 1960 also provided some information on past uses of the site.
- A previous Phase I investigation completed in the 1980s provided screening level data of the site (EA 1986).

The Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the site provided a review of these data sources (O'Brien & Gere 2001).

1.2. Three Star Site

The Three Star Site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant (MGP) operations, and metal plating (O'Brien & Gere 2001). A number of other smaller industrial activities also took place at the Three Star Site (Section 1.2.4). Dye operations, known as the Dutchess Bleachery, operated at the site between 1832 and 1955 (Section 1.2.1). The Dutchess Bleachery and Wappinger Water, Gas, and Electric Companies operated a coal fired MGP that included activities on the west portion of the subject site from the late 1800s to approximately 1913 (Section 1.2.2). Three Star and later Watson Metals Products Corporation operated a metal plating facility at the site from 1958 to approximately 1995 (Section 1.2.3). This report hereafter refers to Three Star as comprising both of these operations. Information pertaining to the other commercial operations on the Three Star Site, including those conducted since the Three Star operations closed, are presented separately (Section 1.2.4).

In addition, the operations of the buildings in the Market Street Industrial Park located on the north side of the creek included the Dutchess Bleachery among others, this area also represents a potential source of hazardous waste constituents (constituents) to the creek, as discussed in Section 1.3. Other potential source areas are discussed in Section 1.4. Most of the upland area along the creek downstream of the Market Street Industrial Park consists of residential properties and wooded land.

According to information obtained from Dutchess County Department of Health memoranda (DCDH 1967, 1971), several buildings at the Three Star Site had discharges that led to the creek in the past. The buildings on the Three Star Site had floor drains that discharged directly to the creek according to results of tests completed by the Dutchess County Department of Health. Most of the buildings had sanitary facilities that also discharged directly to the creek. In 1971, a survey conducted by Dutchess County Department of Health indicated that the Axton-Cross (bulk chemical sales) building at the Three Star Site had floor drains that discharged to the Three Star lagoon adjacent to the building (DCDH 1971).

Rinse water from plating tanks in the Three Star facility was reportedly discharged to the back of the plant and subsequently flowed to the Three Star lagoon. Paint stripping caustics were discharged to the floor drains of the plant and to the ground behind the facility. In that area, the ground slopes toward the southeast in the direction of the raceway and Three Star lagoon. Page Print Systems, which occupied one of the buildings at the east end of the site (EA 1986), also reportedly discharged rinse water from photographic development rinse sinks. According to a Dutchess County Department of Health memorandum, rinse water was discharged from a pipe to the ground adjacent to the building (DCDH 1971).

From this account of building design and industrial activities it is assumed that previous operations at the site also discharged industrial wastes to the ground, raceway/Three Star lagoon, and Wappingers Creek.

1.2.1. Dutchess Bleachery, 1832 to 1958

Dutchess Print Works, also known as the Dutchess Bleachery, operated under several ownerships. The Dutchess Bleachery was the first calico print works in America. The plant was originally located on the north bank of Wappingers Creek and later occupied land that was reportedly filled in on the south side of the creek. By the late 1800s, buildings on the north side of the creek were utilized for the manufacture of acids and chemicals associated with the dye operations and the remainder of the operations were performed in buildings located on the south bank (Popper 1991).

Operations consisted of dyeing and finishing of rough cotton cloth from mills in New England and the south. Aniline dye was also made at the facility during World War I (Popper 1991). Cloth was bleached and dyed at the Bleachery and wastewater was reportedly discharged into a raceway that emptied into Wappingers Creek (EA 1986). Mercuric chloride and arsenic pentoxide may have been used to dye cloth at the facility (NYSDEC 2000).

For powering the facility, the Bleachery used several operations. For a period of time, coal fired steam boilers were used for powering equipment to process cloth (Popper 1991). The MGP also burned coal to produce gas to operate boilers for the facility and the nearby community (Section 1.2.2). After operation of the MGP ceased, boilers were operated by coal until approximately the 1940s when a switch to fuel oil was made (Popper 1991). Several fuel oil tanks were located at the Bleachery (Popper 1991). From historic aerial photographs, it appears that three tanks were located on the north bank of the Bleachery and one tank may have been present as early as 1935 (O'Brien & Gere 2001), suggesting earlier use than the historical account by Popper (1991). Later, a hydroelectric facility was constructed and operated at the upstream portion of the site.

1.2.2. Manufactured Gas Plant Operations, circa 1875 to 1913

The main portion of the MGP reportedly operated on the south bank of Wappingers Creek at the subject site (Popper 1991). During operation of the MGP, coal was reportedly barged up the creek from the D&H Canal, and stored in large coal sheds located on the north and south banks of the creek as early as the 1870s (EA 1986, Popper 1991, DCHS 2000). NYSDEC files indicate that approximately 16 acres, beyond the Three Star Site boundary, were filled with coal cinders (NYSDEC 2000). Most of these areas are either paved or developed. In a historical account of the area, Popper (1991) indicated that coal cinders were used to fill behind the retaining wall built on the south bank of the creek at the Three Star Site and an area downstream in the vicinity of Creek Road. Historic maps indicate topographic changes have occurred in those areas as well as the southwest portion of the former Bleachery property on the north bank.

1.2.3. Three Star Metal Plating Operations, 1958 to 1995

The Three Star facility (including Watson Metals Products Corporation) anodized aluminum from 1958 to when the facility closed, around 1995. Beginning in 1972, the facility also reconditioned electronic equipment which involved a water rinse of gold components (NYSDEC 2000). Operations also included paint stripping using caustics (DCDH 1971). Three Star plating processes included the use of mild non-etching alkali cleaners, a proprietary mix of sodium dichromate or chromic acid, sulfuric acid with the addition of soda ash to adjust the pH to 5 or 6, and a dying process which required ferric ammonium oxide and synthetic dyes. The paint stripping operation reportedly used chlorinated solvent with fluoride, caustic soda, and kerosene.

The waste from Three Star was reportedly discharged to the Three Star lagoon (DCDH 1967). The sanitary facilities in the Three Star buildings failed a dye test performed in 1971. At that time, wastewater was found to discharge via floor drains to the Three Star lagoon and the creek. Rinse water from plating tanks reportedly discharged to the back of plant, which subsequently drained into the Three Star lagoon (DCDH 1971). The Phase I site investigation was completed in the mid-1980s to evaluate these issues (EA 1986). The Phase I investigation found that the waste stream from the Three Star operations at the site contained sulfuric and phosphoric acids, caustic dyes, soaps, and various trace metals including copper, nickel, chromium, aluminum, and zinc. Processes also included rinsing of gold components. From the mid-1950s to 1980, waste was reportedly discharged to Wappingers Creek at a rate of 20,000 to 60,000 gallons per day (EA 1986).

The Dutchess County Department of Health documented wastewater discharge from Three Star to a drainage raceway and subsequently to Wappingers Creek as early as 1967. The practice of discharging a diluted waste stream directly to the Creek reportedly continued for many years. In 1962, the Three Star lagoon was constructed in the lower portion of the raceway. In 1975, the facility was required to obtain a State Pollution Discharge Elimination System (SPDES) permit to continue discharging via the raceway. In following years (1977 - 1979), NYSDEC documented that Three Star occasionally exceeded SPDES effluent limitations for nickel and copper. Analyses of Three Star effluent, provided by the New York State Department of Health (NYSDOH) Division of Laboratories and Research, indicated that metal concentrations were occasionally high with respect the screening values of the United States Environmental Protection Agency (USEPA) for surface water.

Subsequently in 1979, NYSDEC issued a consent order charging Three Star with these SPDES violations. It is not known how wastewater was handled after that time. However, it appears that the materials were managed on site, since the facility is not connected to the village sewerage system (Kolb 2003). The Village of Wappingers Falls continues to discharge storm drainage via a pipe that drains to the south portion of the Three Star Site. Additional piping that is no longer connected once provided a pathway for the discharge of storm water to the lower portion of the raceway and the Three Star lagoon.

From November 1978 to the summer of 1983, trailers containing powdered raw product in 55-gal drums were stored on site. The powdered product contained in the 55-gal drums included aluminum, oxide, nickel, and cadmium. Reportedly, these materials were from Marathon Battery, formerly of Cold Spring, New York. The trailers were removed under supervision of NYSDEC and the Dutchess County Department of Health in 1983 (NYSDEC 2000).

An inspection of the facility by USEPA in 1993 indicated that it was not in compliance with applicable metal finishing pretreatment standards. The discharge of zinc from the facility was 4.1 mg/l compared to a discharge limit of 2.6 mg/l. A leaking PVC pipe that conveyed wastewater was also identified. The storage of metal waste sludge in concrete holding tanks at the facility was also noted in the report (USEPA 1993).

1.2.4. Other Commercial Uses of the Three Star Site

According to historic information, industrial activities at the Three Star Site also included plastic mold injection, felt hat manufacturing, and ammunition production.

Currently, the Three Star Site is one of the properties that compose the Market Street Industrial Park. The majority of the Three Star Site is reportedly owned by realty corporations which lease space to the various tenants. Several buildings are vacant or used as warehouse space.

Recent tenants of the Market Street Industrial Park consist of the following (O'Brien & Gere 2001):

- Riverview Transmission.
- Axton-Cross Company occupied the building located next to the Three Star lagoon in the 1960s. The company manufactured and distributed chemical products (Popper 1991).
- Fabricare Products occupied the building located next to the Three Star lagoon in the 1970s.
- Cresthill Industries, Inc.
- Lighting and Electronics, Inc.
- Sears mail order was located in one of the main buildings at the site.

- Page Print Systems occupied a building next to the creek, at the east end of the site.

The main current tenant of the Three Star Site consists of a floor tile distributor located in the former Axton-Cross Building. Other tenants include a wood shop in the small building next to the old bridge (east bridge) and tractor trailer parking; both located in the Building 12 Area. During RI field activities, an automobile was being restored near Building 17. In May 2004, fire destroyed several buildings (15,16,21,22) on the Three Star Site.

1.2.5. Findings from theThree Star Site RI

The findings of the Three Star Site RI are summarized below.

- There is a widespread presence of fill material throughout the site containing inorganic constituents and PAHs. This fill extends to at least 10 ft below grade.

- The two primary sources of contaminated soil that were identified do not appear to be extensive. The two sources consist of the former raceway that exhibits inorganic constituents and naphthalene, and the former drum storage area in the vicinity of the Axton-Cross Building which exhibits chlorinated VOCs.

- In addition to the two primary sources identified above, shallow ground water exhibited chlorinated VOCs, PAHs, and inorganic constituents. Although the chemical signatures suggest different sources, no significant concentrations were identified to suggest that a concentrated source area is present.

- Deep ground water also contains inorganic constituents at elevated levels. Although the source of these constituents may be the concentrated material detected in the former raceway, the mechanism for vertical migration of inorganic constituents to deep ground water is not known. Furthermore, transport of inorganic constituents to deep ground water may not be currently active.

- The presence of elevated concentrations of inorganic constituents in deep ground water adjacent to the creek suggests that the creek channel may provide a migration pathway with the potential for ground water to emerge into Wappingers Creek or the Hudson River downgradient of the Site. The volume of ground water seepage to the creek or river may be small in comparison to creek and river flows reducing the ability to observe these interactions.

- On the MGP portion of the Three Star site, three distinct PAH mixtures were observed in soils:

   A. A PAH composition containing approximately 40% low molecular weight (2-ring) PAHs was observed at MW-4 (14 to 16 ft).

   B. A PAH composition comprising primarily mid-range molecular weight (3 and 4 ring) PAHs was also observed at MW-4 (12 to 14 ft), MW-5, and one of the former gas holders (SB-4-01).

   C. A PAH composition dominated by higher molecular weight (4+ ring) PAHs was observed at two locations: MW-4 (18 to 20 ft), cinders at TP-4.

PAH compositions of mixtures B and C may be “weathered” forms of the PAH composition of mixture A. Over time, the lower molecular weight PAHs may be more readily removed resulting in a shift in composition to the higher molecular weight PAHs that may be more resistant to degradation. The proximal relationship between these three PAH compositions in subsurface soils of MW-4 indicates that the three different PAH compositions can associated with a single area of the Three Star Site.

1.3. Market Street Industrial Park – North Parcel

The portion of the Market Street Industrial Park located on the north bank of the creek opposite the Three Star Site is comprises approximately 5 acres and features old factory buildings, a large storage tank, an abandoned smoke stack, a personal storage building, and paved parking areas (NYSDEC 2000). Similar to the Three Star facility, this facility has been the site of industrial activities for over 150 years. Previous operations on the north bank included Dutchess Bleachery, Hanover Print Works, Olah Associates, Kemp & Beatley, and IBM. What is known about those operations is summarized below.

- During operation of the Dutchess Bleachery, a 1945 Sanborn map identifies one of the buildings on the north side of the creek as the "Chem. Drug Bldg" leading to the inference that textile colors for the Bleachery operations may have been mixed at that location. Another building on the north side of the creek was labeled "Bleach Ho." presumably indicating the location of the bleach house where bleaching operations occurred. As previously cited, the disposal practices of the Dutchess Bleachery were not documented (Section 1.2.1).

- Olah Associates occupied a building on the north side of the creek and reportedly performed plating and stripping operations and discharged rinse water from plating tanks directly to Wappingers Creek.

- Hanover Print Works was located on the north bank of the creek in a building of the west portion of that parcel, according to Dutchess County Department of Heath records. In 1967, Hanover Print Works reportedly discharged approximately 3 quarts of paint per day to a lagoon (north lagoon) located next to the building (DCDH 1967).

The north lagoon covers approximately 0.2 acres on the north parcel of the Market Street Industrial Park. The construction of the north lagoon is not known. In the late 1960s, during operation of Hanover Print Works, the north lagoon reportedly received paint discharges (as discussed above). It is not known when the north lagoon was constructed. It was not visible on historic photographs until 1995 after what appears to have been vegetation removal from around the area. During field activities of the Creek RI, water was observed flowing from a stream into the north lagoon, and from the north lagoon to the tidal creek.

This parcel may have also received fill material containing cinders, as cited previously (Section 1.2.2). Three above ground fuel storage tanks were also present on this parcel during the 1960s. It is not known exactly when the tanks were installed or removed. They are visible on a 1967 aerial photograph, but were not visible on 1946 and 1980 aerial photographs. However, the quality of those photographs prevents conclusive confirmation of the presence or absence of these features.

A realty corporation reportedly now owns the property. According to NYSDEC spill files, a complaint was logged in 1999 by a citizen who reported that a 5,000-gal oil tank may be buried on the site. The citizen complained of oil observed in the creek (O'Brien & Gere 2001).

1.4. Other Potential Sources of Constituents to the Tidal Creek

Three additional potential sources of constituents to the tidal creek were identified:

- The village of Wappingers Falls is located upstream (east) of the Market Street Industrial Park including a residential area adjacent to the Three Star Site to the south. The village of Wappingers

Falls includes a small business district adjacent to the creek. Wappingers Lake also borders the village. Most of the upland area of the creek located downstream of the Three Star Site consists of residential properties and wooded land.

- A public works garage for the village is located on the east bank of Wappingers Creek, approximately 1,000 ft downstream of the Three Star Site (Figure 1-2).

- The railroad located near the confluence of Wappingers Creek with the Hudson River may contribute constituents associated with the operation of trains or maintenance of the railroad.

- From review of spill files by O'Brien & Gere in 2001, an active leaking underground storage tank (UST) for gasoline was located within one mile of the subject property. It is unknown if this spill has affected Wappingers Creek (O'Brien & Gere 2001).

1.6. Physical Features of the Three Star Site

The Three Star Site is located along an oxbow of Wappingers Creek below Wappingers Falls (Figure 1-2). The creek borders the Three Star Site to the north and flows toward the west. A former raceway and residences border the Three Star Site to the south. A steep embankment is located next to the raceway (Figure 1-2).

Stone retaining walls located along the creek bordering the north and south portions of the Market Street Industrial Park are approximately 10 feet (ft) high (Popper 1991). Based on historic information, the site contains fill material from MGP activities that was placed behind the retaining walls (Section 1.2.2). During site excavation in the 1960s for construction of the building formerly occupied by Axton-Cross, coal wastes up to 9 ft deep were reported (EA 1986). The brick remains of two former gas holders are visible on the west portion of the Three Star Site (Figure 1-2). The approximate locations of coal sheds and a boiler house were identified on a sketch of the site dated approximately 1867 (DCHS 2000). According to the historic sketch, the coal shed was located in the vicinity of Building 16 and the boiler house was located in the vicinity of former Building 11 (Figure 1-3).
The raceway located on the Three Star Site was reportedly constructed in the early 1900s by Dutchess Bleachery to allow barge access and hydropower operations (EA 1986). The Dutchess Bleachery and later Three Star also reportedly discharged waste water to the raceway during their operations at the site (EA 1986). As discussed in Section 1.2.3, according to village records, the facility is not connected to the village sewage system (Kolb 2003). In a 1967 aerial photograph (DCSWCD 2000), what appears to be drainage ditches from buildings were observed due north of the Three Star lagoon and raceway. In the past, the village of Wappingers Falls discharged storm water drainage through the raceway and Three Star lagoon (Section 1.2.3). In the 1986 Phase I Investigation, it was reported that a pipe discharged to a puddle near the south corner of the plating facility, behind Building 17. The standing water in the puddle was sampled and found to contain metals and solvents (EA 1986).

1.6.1. Geology and Hydrogeology

Regional reports indicated that, except for a small area, the Three Star Site is directly underlain by glacial outwash/alluvial sand and gravel deposits which are present along both sides of Wappingers Creek. These deposits average about 2,000 ft in width adjacent to, and south of the Three Star Site, and increase to more than 6,000 ft in width northeast of the Three Star Site. The area of exception is located generally beneath Wappingers Creek in the west portion of the Three Star Site, and is reportedly comprises exposed bedrock and/or less than 3 ft of glacial till overlying bedrock.

Approximately 3,000 ft north-northeast of the Three Star Site, a similar sand and gravel deposit is reportedly 108 ft thick at the Village of Wappingers Falls well field (Well DU-760) located in the vicinity of Route 9D. This sand and gravel deposit is bounded to the east by deposits consisting of at least 3 ft of glacial till overlying bedrock, and to the west across Wappingers Creek by deposits consisting of less than 3 ft of glacial till and/or exposed bedrock (NYSDEC 2000).

The unconsolidated sand and gravel sediment is underlain by a thrust sheet of bedrock that predominately comprises autochthonous graywacke and shale of the Ordovician Age Austin Glen Formation. Just west of the site, bedrock consists of limestone and dolostone of the Cambro-Ordovician Age Wappinger Group (NYSDEC 2000).

Based upon the available information, the shallow unconsolidated aquifer of glacial/alluvial origin on either side of Wappingers Creek is designated as the aquifer of concern with regard to the Three Star Site. In general, under natural conditions, the ground water in the aquifer beneath the site will discharge to Wappingers Creek which flows southwest to the Hudson River. The ground water table is approximately equal to the level of the creek. Deep ground water may be expected to migrate along the bedrock located beneath the creek channel before emerging downgradient.

The only wells reportedly completed in the glacial/alluvial aquifer of concern are those of the Wappingers Falls well field located approximately 3,000 ft upgradient and north-northeast of the Three Star Site. There are no known current uses of ground water downgradient of the Three Star Site for private and public water supply (DCDH 2003). The aquifer in the area is bounded to the east and south by a thrust fault, and to the west where the bedrock type changes from graywacke/shale to limestone/dolomite west of Wappingers Creek. According to the EA report, wells used for private and public water supply from this aquifer were used in the past (EA 1986). Information from wells in the area indicate that the bedrock below the aquifer ranges from 14 ft below grade at Well DU-369 to 40 ft below grade at Well DU-343 (EA 1986).

1.6.2. Three Star Lagoon

The Three Star lagoon is reportedly unlined and covers approximately 0.5 acres of the Three Star Site. The Three Star lagoon separates the Main site and MGP site. Village storm water formerly drained to the Three Star lagoon via a pipe located along the former raceway bordering the Three Star Site to the south (Section 1.2.3). The Three Star lagoon reportedly received industrial wastes during operation of Three Star (Section 1.2.3). Prior to that, when the raceway was operational, it may also have received waste from operation of the Dutchess Bleachery and other industrial activities that took place on the Three Star Site (Sections 1.2.1 and 1.2.4). Other industrial wastes may have also drained in the direction of the raceway and Three Star lagoon.

The Three Star lagoon does not discharge to the creek during periods of low flows. However, the bank separating the lagoon from the creek rises only minimally above the creek water level at high tide. It is likely that storm discharges, high tide, or high creek flows cause the lagoon to occasionally fill with creek water and/or drain to the creek.

1.7. Physical Description and Hydrodynamics of Wappingers Creek

Wappingers Creek can be divided into the following three distinct areas (Figure 1-2):

- The *upper creek* consists of the portion of Wappingers Creek that is upstream of Wappingers Falls and Wappingers Lake. Discussion of the hydrology of the upper creek is provided in Section 1.7 below.

- *Wappingers Lake* is a water body that receives water from the upper creek and discharges it to the tidal creek via a pipe to a hydrofacility located downstream or over the dam of the lake and Wappingers Falls. Further discussion of Wappingers Lake is provided in Section 1.7.2 below.

- The *tidal creek* is the portion of the creek that extends from downstream of Wappingers Falls to the confluence of Wappingers Creek with the Hudson River. This portion of the stream is so named for the tidal influences it experiences from the lower Hudson River. The tidal creek begins at the hydroelectric facility discharge and the upstream portion of the Market Street Industrial Park. The tidal creek is approximately 2 miles in length and discharges into the Lower Hudson River. Water levels fluctuate approximately 4 ft in the tidal creek during the tidal cycle of the Hudson River. The tidal creek area comprises the section of the creek in the vicinity of the Three Star Site (site area), a shoal area, an embayment and the Downstream section as discussed in Sections 1.7.3 through 1.7.6, respectively below.

The Market Street Industrial Park, including the Three Star Site, is located in the upper portion of the tidal creek below Wappingers Lake and Wappingers Falls (Figure 1-2).

1.7.1. Upper Creek

The daily mean flow of the upper creek, which is measured upstream of Wappingers Lake by the United States Geological Survey (USGS), is approximately 84 cfs and ranges from 6.1 to 1,060 cfs based on 71 years of record (USGS 2000). Flood stage occurs at a stage height of approximately 8.0 ft (USGS 2000) which represents a flow of approximately 3,200 cfs. Recorded peak flows for that period are summarized below:

Peak flows recorded for Wappingers Creek

Date	*Flow (cfs)*	*Stage height (ft)*
1955, August 19	18,600	19.6
1938, September 22	15,900	18.02
1973, June 30	10,400	14.12
1949, January 1	7,730	12.52
1955, October 16	8,170	12.47

Note: Discrepancy between flow and stage height readings for the last two entries indicates gauging problems or data adjustments.

Reference: USGS 2000.

Source: O'Brien & Gere Engineers, Inc.

The highest recorded mean daily flow during the past decade occurred on January 20, 1996. On that day, mean daily flow recorded by the USGS was 5,600 cfs (USGS 2000). Flow data for the upper creek is available from the USGS web site (USGS 2002).

1.7.2. Wappingers Lake

Lake levels are controlled at the dam. The lake bed contains extensive silt deposits. At the outlet of Wappingers Lake is Wappingers Falls which forms a narrow segment of Wappingers Creek. In that section of the creek, some of the water from the lake is diverted through a pipe to an active hydroelectric facility located on the north bank opposite the upstream portion of the Three Star Site (Figure 1-2). Generally, upper creek flow is similar to the flow downstream of the dam and in the tidal creek. The lake level is maintained to fluctuate between the lake crest and approximately 1½ ft below the dam most of the time. The hydroelectric facility turbines operate between approximately 8 and 320 cfs, maximum.

During storm events, creek flow above approximately 320 cfs builds up water behind the dam and may overflow it (Turbish 2002).

1.7.3. Site Area

The *site area* consists an approximately 2,700 lineal ft section of the tidal creek directly adjacent to the Market Street Industrial Park, generally beginning at the foot of Wappingers Falls and ending at the shoal area (Figure 1-2).

In the vicinity of the Market Street Industrial Park, the creek is narrow, approximately 90 ft wide, relative to downstream sections and is bounded on each shore by retaining walls bordering both sides of the creek. Two bridges (referred to as the east and west bridges) span the tidal creek connecting the Three Star Site to the north parcel of the Market Street Industrial Park. The retaining walls end at the west bridge. The location of pipes observed along the retaining walls that border the Market Street Industrial Park were recorded in field logs (Appendix A). Downstream of the retaining walls along this section of the creek, the land on the north side of the tidal creek is undeveloped, containing a steep bank with exposed bedrock.

Generally the creek profile is shallowest on the south side of the creek nearest the Three Star Site with water depths less than approximately 5.5 ft. As the creek cross-section progresses to the opposing shore, water depth increases to approximately 12 ft indicating that the majority of creek flow passes along the north portion of the creek. Additionally, the relative narrowness may cause water velocities through this section to be greater than those observed in wider sections in the tidal creek located downstream. The creek bed is composed primarily of rocks and cobble in this portion of the creek; little sediment accumulation was observed.

Following industrial development of the Market Street Industrial Park, the area has been inundated by flood water at least twice. From a historical account and a photograph of the Market Street Industrial Park, approximately 5 ft of water covered the area during the flood of 1902 (Popper 1991). The area was also flooded in 1938 (Popper 1991). From these historic accounts, it is anticipated that flooding of the area would occur when stage heights exceed approximately 13 ft. Therefore, based on information in the preceding table (Section 1.7.1), it is speculated that some flooding of the Market Street Industrial Park may have also occurred in 1955 and 1973.

1.7.4. Shoal Area

As the tidal creek passes the MGP Site that is associated with the Three Star Site, it bends toward the south. At approximately 1,000 ft downstream of the west bridge, the creek widens to approximately 250 ft and meanders. Along the inside bend, is a shoal that is comprised primarily of rocks and cobbles overlain by silt and sand (Figure 1-2). Downstream of the Three Star Site, the southeast shore contained a sediment deposit in the vicinity of WP16 and downstream. During an ebb tide, seeps were observed along the bottom of the creek bank between WP16 and WP25.

Compared to the tidal creek in the vicinity of the Market Street Industrial Park, water flow velocity decreases as the tidal creek widens and the cross sectional area increases, facilitating sediment accumulation in low flow velocity areas. The sediment shoal (WP29/WP29A/WP-DOT) continues along the eastern bank past the public works garage (located in the vicinity of WP-DOT) and an unnamed tributary that drains into the creek (WP-CKOUT) located approximately 1500 ft downstream of the site. The shoal area becomes increasingly comprised of silt and sand, with fewer observations of pebble and gravel. In this section of the creek, the main flow is located along the opposite shore.

1.7.5. Embayment

A shallow embayment (WP-PL) is located along the northern shore of the tidal creek approximately 0.75 mi. downstream of the site following a bend directing the tidal creek generally southwesterly. This surface water feature measures approximately 240,000 square ft (approximately 800 ft by 300 ft). The bottom of the embayment contains a bed comprising silt and organic matter and the area supports aquatic plant growth throughout. The main flow of the tidal creek bypasses the embayment as the mouth of this water feature runs generally with the west shore of the tidal creek. The embayment experiences minimal water flow velocity and can generally be described as quiescent.

1.7.6. Downstream Section

Downstream of the embayment, the tidal creek widens generally to approximately 600 ft, however widths of up to approximately 800 ft also occur. The bottom materials in this section of the creek primarily comprise silt and sand, with rock and cobble content increasing with sediment depth. Generally, the main flow in this section of the tidal creek occurs along the approximate centerline and water depths are up to approximately 15 ft. Shallow areas occur along both the northern and the southern shores throughout this section; approximately half of the area in this section of the tidal creek occurs at depths of less than 5 ft. An exception to this occurs along the southern shore approximately 1,000 ft upstream and downstream of the County Route 28 bridge where the profile of the creek quickly deepens. An island is located in the vicinity of the transect WP-T2 in the western half of the creek. A depositional area is located west of the island (WP-OD2).

Upstream of the confluence of the tidal creek with the Lower Hudson River, two bridges create narrows. A bridge carrying County Route 28 (CR 28) and a railroad bridge constrict the lower section of the creek to approximately 140 ft wide and approximately 250 ft wide, respectively. The railroad bridge constriction occurs approximately at the confluence of the tidal creek and the river, and the CR 28 Bridge constriction occurs approximately 1,200 ft upstream of the river. The tidal creek reaches its greatest depth of approximately 25 ft beneath the CR 28 bridge. The tidal creek widens to approximately 800 ft between bridges and silt and sand overlaying rock and cobble continue in this area.

1.8. Development of Conceptual Site Model of Wappingers Creek

The conceptual site model of the Wappingers Creek provided below identifies potential sources of constituents and migration pathways that were evaluated during the Site RI (O'Brien & Gere 2005) and Creek RI.

1.8.1. Potential Sources

Several potential sources of constituents to the creek have been identified:

- Background concentrations of inorganic constituents and PAHs can be present from both natural and anthropogenic sources in the watershed. Background concentrations of VOCs, pesticides, PCBs, and inorganic constituents may also occur due to anthropogenic sources. Levels of constituents in Wappingers Lake were used as representative of background levels. In addition, runoff from the village is discharged to the Three Star lagoon and then to Wappingers Creek.

- The Market Street Industrial Park included several operations in the past that could have contributed to the levels of constituents detected in the creek surface water and sediment (Table 1-1). On the south portion of the Market Street Industrial Park, the Three Star Site was found to contain VOCs, SVOCs (primarily PAHs), and inorganic constituents associated with past activities (O'Brien & Gere 2005). Operations similar to those of the Three Star Site also took place on the north parcel of the Market Street Industrial Park (Section 1.3).

- The public works garage may have been the location of storage and operation vehicles. Activities associated with these uses may have included the storage of fuels or wastes associated with the maintenance of vehicles. These activities may have VOCs and PAHs associated with them.

- The tributary located along the south shore of the tidal creek in the vicinity of the shoal area could also transport constituents present from the watershed to the tidal creek.

- Fill material containing cinders is present on the Three Star Site, and potentially present on the north parcel of the Market Street Industrial Park and under Creek Road in the vicinity of the shoal area. Cinders would be expected to contain PAHs and inorganic constituents

- The railroad located at the downstream terminus of the tidal creek may have PAHs associated with the operation of trains or the railroad ties preserved with creosote.

The properties of the chemicals discharged from the potential sources to the creek and physical attributes of the creek contribute to the fate and transport of the chemicals once exposed to the environment (Table 1-1).

From review of site topography, industrial wastes discharged from Three Star Site buildings to surface soils would primarily drain to the south and west toward the raceway and Three Star lagoon and then to the creek (Figure 1-2). Contamination of surface and subsurface soils, ground water and surface water and sediment of the Three Star lagoon were investigated and reported separately (O'Brien & Gere 2003). In addition to suspected discharges to the creek, historic records indicate that the site was flooded at least three times since 1900. Flooding can mobilize contaminants from the site to the creek.

The Creek RI evaluated the environmental media in the creek for constituents potentially related to past site activities. Sampling and analysis was completed in the Creek RI to screen for such constituents.

1.8.2. Factors Affecting Bioavailability of Constituents in Sediment

Bioavailability controls the potential exposures of chemical constituents in soil and sediment to humans and wildlife (NRC 2003, USPEA 2002). Consistent with recent guidance for management of sediment sites (NRC 2001, USEPA 2002, 2005, USN 2002), several mitigating factors ultimately control potential exposures rather than total concentrations of the constituents. A conceptual model of processes within an aquatic system that affect constituent availability is provided in Figure 1-4.

Physiochemical interactions between constituents and sediment particles can reduce the availability of some constituents to cause harm to humans and ecological populations. Aging of the contaminated soil and sediment can accentuate this process (NRC 2003). Several factors participate in this phenomenon:

- Constituents reside as bound form (particulate matter including soil, sediment, and organic matter), released form (dissolved in a liquid or gas phase), or associated with a living organism (NRC 2003). Constituents in released form are generally orders of magnitude lower in concentration than in sediment (Schwarzenbach et al. 1993).

- Transport of constituents in an aquatic system can result from hydrodynamic processes. Physiochemical transformations such as speciation shifts due to oxidation-reduction reactions, hydrolysis, acid-base reactions, and photolysis can also transport constituents (NRC 2003).

- Binding of constituents to solid matrices (*e.g.* sediment) can occur by adsorption onto the solids or natural organic matter, or by change in form as by bonding shifts or precipitation (NRC 2003). Absorption within the solid matrix can also occur. Sediment types also affect the extent of constituent associations with sediment.

- Compartmentalization can isolate constituents in sediment from receptor populations reducing the potential for exposures. In addition to binding of constituents discussed above, burial can also remove constituents from potential contact with receptor populations. For burial to be effective, the sediment needs to be stable.

The outcome may be sequestration of a constituent over time by the incorporation of the constituent into more stable solid phase materials (NRC 2003). However, the nonsequestered fraction may remain available for uptake by organisms. Actual uptake is driven by duration and rate of exposure.

1.9. Wappingers Creek RI objectives

The objectives of the Creek RI are presented below:

- Observe current conditions of the Wappingers Creek and evaluate potential migration pathways of constituents.

- Perform screening level assessment of potential site impacts to fish and wildlife in a FWIA through Step IIC.

- Complete a pathway analysis for qualitative evaluation of potential human exposures.

- Evaluate surface water in Wappingers Creek for potential impacts to water quality due to migration of contaminants via surface runoff or ground water seepage from the Three Star Site.

- Evaluate sediment of Wappingers Creek for potential impacts from Three Star Site activities and other potential sources.

- Identify spatial patterns of constituents in sediment.

- Evaluate composition of PAHs in sediment compared to Three Star Site sources.

- Following a thorough delineation of the Creek, a feasibility study (FS) will be completed, if necessary and appropriate.

The investigation of Wappingers Creek was completed according to State Superfund guidance and the RI/FS Work Plan and Addendum (O'Brien & Gere 2001, 2002).

1.10. Approach

Surface water and sediment samples collected for the RI were analyzed for SVOCs including tentatively identifiable compounds (TICs) of the Target Compound List (TCL) and inorganic constituents of the Target Analyte List (TAL). Additional analyses consisted of the following:

- A portion of the samples were analyzed for TCL VOCs, pesticides and polychlorinated biphenyls (PCBs).

- Sediment samples included analysis of hexavalent chromium and total organic carbon (TOC). Amenable cyanide (considered to be the biological available fraction of cyanide) was also analyzed in sediment samples where total cyanide was detected. Three sediment samples were also analyzed for grain size distribution.

- Surface water field analyses included pH, conductivity, temperature, turbidity and salinity. Surface water laboratory analyses also included total suspended solids (TSS), dissolved organic carbon (DOC), hardness, and alkalinity.

O'Brien & Gere Laboratories in Syracuse, New York analyzed the samples, except for samples collected for analysis TOC, sediment and physical parameters, and hexavalent chromium analyses completed in 2001. Columbia Analytical Services (Columbia) in Rochester, New York analyzed sediment samples collected in 2001 for hexavalent chromium. TOC samples were analyzed by Columbia, or Ecology & Environment, Inc. in Lancaster, New York. Physical parameters in sediment were analyzed by PW Labs in Syracuse, New York.

2. Methods

The field activities for the Creek RI were conducted from April to July 2001, May 2002, and May 2003 according to the Work Plan and Work Plan addendum (O'Brien & Gere 2001 and 2002, respectively). Field activities consisting of a creek reconnaissance and investigating surface water and sediment are presented separately (Sections 2.1 through 2.3, respectively). A summary of sample quantities collected in Wappingers Creek is presented in Table 2-1. A discussion of data interpretation methods is also presented (Section 2.4) followed by a summary of health and safety procedures that were maintained during field activities (Section 2.5).

2.1. Creek Reconnaissance

Creek reconnaissance activities were completed to identify overall creek bed characteristics. Specifically, of interest were the distribution of sediment depositional areas, identification of pipes and tributaries, and observations of bed materials (*e.g.* silt, sand, gravel, rocks, cobbles). A bathymetric map obtained from NYSDEC was referenced during site reconnaissance activities (Exhibit A). Bathymetry data of the tidal creek bed at the Market Street Industrial Park bridges collected for the Creek RI are presented in Appendix A.

The first reconnaissance of the tidal creek was completed from the site to the downstream embayment on May 8 and 9, 2001. The lower portion of the tidal creek was observed during a second reconnaissance, completed in May 2002, extending from the embayment to the confluence of the tidal creek with the Hudson River, approximately two miles downstream of the Three Star Site.

An initial reconnaissance was conducted during installation of marker stakes along the shore. Then, sediment depths were investigated by probing with a steel rod to observe and evaluate differences in sediment type. In areas where rock and cobble were present as the primary creek bed material, probing was not completed at set intervals. Rather, overall observations were used to judge probing needed to evaluate sediment type. Sediment probing was also observed by the NYSDEC. Logs documenting sediment reconnaissance activities are provided in Appendix B.

2.2. Surface Water Investigation

Two surface water sampling events were completed for the Creek RI consisting of low flow surface water and storm event sampling. Low flow conditions increase the contact time for surface water and sediment interactions to occur. In particular, in other creek or river systems low flow conditions during summer months have been associated with concentration increases of constituents that correspond to temperature increases within the system. In contrast to low flow events, storm events increase the volume of surface water and the potential for resuspension of sediment with subsequent downstream transport. Sampling of each of these types of events is intended to screen surface water concentrations during these two critical time periods.

The low flow event sampling was completed on July 12, 2001 from 06:10 to 11:40. The tidal portion of the creek was sampled from 08:30 to 11:40. Flows measured at the USGS gaging station located upstream of Wappingers Lake were approximately 50 cfs during the low flow event. Sampling was completed during an ebb tide. Peak tide at Poughkeepsie, located approximately 6 miles upstream on the confluence of Wappingers Creek with the Hudson River, occurred at approximately 05:55 and low tide occurred at approximately 12:26 on that day.

The storm event sampling was completed on May 14 and 15, 2002. On May 14, 2002, samples were collected from 15:30 to 16:45, with sampling of the tidal portion of the creek from 15:30 to 16:45. Sampling on that day was completed during an approximate high slack tide period. Peak tide at Poughkeepsie on May 14, 2002 occurred at approximately 15:03 and low tide occurred at approximately 21:17. On May 15, 2002, samples were collected from 07:45 to 10:30 with sampling of the tidal portion of the creek from 07:45 to 08:30. Sampling was completed during a flow tide. On May 15, 2002, low tide at Poughkeepsie occurred at approximately 02:46 and high tide occurred at approximately 10:07. Flows measured at the USGS gaging station located upstream of Wappingers Lake ranged from approximately 500 to 900 cfs during the storm event. Water was observed flowing over the Wappingers Lake dam during the storm event sampling.

2.2.1. Sample Locations

Locations sampled for low flow and storm events are identified in the table below.

Surface water sampling locations

Sample ID	*Sampling event*	*Description*	*Purpose*
Wappingers Creek			
Rt9D	B	Wappingers Lake	Background
WP5-SW	B	East bridge	upstream boundary of site
WP10-SW	B	West bridge	adjacent to the site
WP13-SW	L	Center of creek	Downstream of Three Star lagoon
WP18-SW	L	Center of creek	Downstream of MGP site
WP35-SW	L	Center of creek	Downstream of the site
Rt. 28 Bridge	S	Center of creek	Approximately 1,000 ft upstream of the confluence of the creek with the Hudson River
Three Star Lagoon			
LG-SW	S	upstream	Evaluate constituents draining into Three Star lagoon.

Notes:
L = Low flow sample locations;
S = storm event sample locations;
B = samples collected for both sampling events

The background station identified in the Work Plan (O'Brien & Gere 2001) as the Route 9D Bridge was moved to Wappingers Lake. The Route 9D bridge was abandoned for sampling because the height from bridge to creek and shallow water with swift current at the location complicated collection of representative samples from this location.

Coordinates of sediment sampling locations that were surveyed or recorded using a global positioning system (GPS) are summarized in Appendix C.

2.2.2. Sample Collection Procedures

Surface water samples were collected as depth-integrated composites of aliqouts collected from the surface, middle, and lower portions of the water column (O'Brien & Gere 2001). The samples were collected using a Kemmerer sampler. Field logs documenting surface water sampling activities are presented in Appendix B.

2.2.3. Field Analyses

Water column samples were analyzed in the field for pH, conductivity, dissolved oxygen, salinity, and temperature. Field instrumentation operating procedures were provided in the operations manual for the equipment. Water column field analytical data, consisting of instrument calibration and environmental data, were recorded in field logs (Appendix B).

2.2.4. Laboratory Analyses

Water column samples were analyzed by O'Brien & Gere Laboratories in Syracuse, New York for TCL VOCs, SVOCs, pesticides, PCBs, TAL inorganic constituents, TSS DOC, hardness, and alkalinity. TCL VOC and SVOC analyses included identification of TICs.

2.3. Sediment Investigation

The sediment investigation was performed to identify spatial patterns of constituents in the tidal creek that may be associated with the Three Star Site and other potential sources (Section 1.5). Surface sediment samples from 0 to 6 inch interval were collected to represent the zone of highest ecological significance. Sediment samples below 6 inches deep (underlying sediment) were also collected from areas where unconsolidated material was present that allowed collection by manual methods. The underlying sediment samples were collected to represent past deposition that may become accessible to aquatic organisms, if it were disturbed. Background samples from upstream of the Three Star Site were also collected for comparison to support the evaluation of potential site impacts.

The investigation of sediment in Wappingers Lake and Wappingers Creek was completed from May 8 through 10, 2001 and May 12 through 14, 2003. Field logs documenting sediment sampling activities are presented in Appendix B.

2.3.1. Sample Locations

Locations where sediment samples were collected are identified on Figure 1-2. Sediment collected from Wappingers Lake provided samples for evaluating background concentrations. Five locations were sampled along the southern portion of the lake. In addition, three sediment cores were collected as cluster core samples from the south portion of the lake near the village park. The cluster core samples were collected from an area approximately 5 ft in diameter.
Sediment from Wappingers Creek was sampled from areas in the vicinity of the site and downstream. Generally, the creek bed in the vicinity of the site, locations WP-01 through WP-18, contained large amounts of rock and cobble along with sediment. Generally, sampling at these locations was completed for surface sediment collected from the 0 to 6 inch interval. Refusal of the sediment sampling device against rocks and cobbles prevented further depth penetration and sediment recovery. Sediment deposits with deeper sediment were located downstream of the site at a shoal located at WP-29 and an embayment located at WP-PL (Figure 1-2). Subsurface sediment samples were collected from those locations.

2.3.2. Sample Collection and Processing

Sediment samples were collected and processed according to the work plan (O'Brien & Gere 2000). Samples were collected using a manual push core using polycarbonate tubing, or a soil auger modified with a polycarbonate shield. Sediment cores were processed using a core extrusion device to push the sediment out of the core tube. Surface 0 to 6 inch samples were obtained from each location. At locations where additional sediment was present, additional 6 inch sample intervals were collected. Background samples consisted of 0 to 6 inch surface samples and deeper sediment.

2.3.3. Laboratory Analyses

Sediment analyses consisted of TCL VOCs and SVOCs (including TICs), TCL pesticides and PCBs, and TAL inorganic constituents (Table 2-1b). Total cyanide was analyzed with a one-week turn around time. If total cyanide was above the screening value of 0.1 mg/Kg (Eisler 1991), amenable cyanide was also analyzed.

Sediment samples were analyzed by O'Brien & Gere Laboratories in Syracuse, New York, except for samples collected for analysis of hexavalent chromium of samples collected in 2001, and TOC. For samples collected in 2001, hexavalent chromium samples were analyzed by Columbia Analytical Services in Rochester, New York. TOC samples were analyzed by Columbia (2001) and Ecology & Environment (2001 and 2003).

2.4. Data Interpretation

Data interpretation completed for the RI consisted of a data quality review which was completed according to the QAPP (Section 2.4.1), interpretation of constituent classes (Section 2.4.2), and comparison of data to screening values for surface water and sediment (Sections 2.4.3 and 2.4.4, respectively). Then, spatial trends observed in the creek were evaluated and a human health pathway analysis was completed (Sections 2.4.5 and 2.4.6, respectively). Analytical data are provided in laboratory reports (O'Brien & Gere Laboratories 2001, 2003; Columbia 2001; Ecology & Environment 2001, 2003).

2.4.1. Data Quality Review

Review of the data quality indicated that the RI data is acceptable for the intended uses. Laboratory data quality was evaluated according to New York State requirements for data usability summary reports (DUSR). The data quality review resulted in some of the data being qualified as estimates (J). Consistent with data validation guidance, the qualification of data as estimated does not affect the end uses of the data. Results of the DUSR were incorporated into data summary tables. Copies of the DUSRs completed for the Phase I RI and Phase II RI were presented separately (Potak 2001, 2003).

From review of the DUSRs completed for this RI, the data quality is acceptable for intended uses. Minor laboratory problems resulted in some data being qualified. Data qualified as estimates (J) are acceptable for intended uses. The data quality issues identified are summarized below:

- Acetone and methylene chloride were laboratory contaminants detected in some of the VOC blank samples. Acetone was detected in samples collected in 2001 and 2003 (Potak 2001, 2003). Methylene chloride was detected in samples collected in 2003 (Potak 2003). The presence of laboratory contaminants complicates the interpretation of these compounds.

- Evaluation of hexavalent chromium concentrations is complicated by matrix interferences. For several samples, the recoveries of matrix spike/matrix spike duplicates for hexavalent chromium were lower than expected. However, results of laboratory control spikes indicated that the laboratory analytical performance was within acceptable ranges providing evidence that the soil matrices were responsible for these anomalies. The laboratory noted that low matrix spike/matrix spike duplicate recoveries may be due to reduction of hexavalent chromium in the soil matrix. These interferences result in a high level of uncertainty associated with undetected hexavalent chromium results. Total chromium data provide additional data to evaluate the potential levels of hexavalent chromium in the soil. It is not unusual for evaluation of soil and sediment matrices to be complicated by such factors. Both labs used for analysis of hexavalent chromium samples encountered these problems.

A complete review of data quality is provided in the DUSR (Potak 2001, 2003).

2.4.2. Interpretation of Analytical Constituent Classes

Site data was compared to screening values according to provisions of the work plan and addendum (O'Brien & Gere 2001, 2002). Interpretation of data trends was aided by generalization of analytical testing results:

- Interpretation of VOC data included calculation of total VOC and total benzene, toluene, ethylbenzene, and xylene (BTEX) concentrations and the identification of principle components. The presence of BTEX compounds can be associated with hydrocarbon sources. Chlorinated VOCs are another class of VOCs that may be indicative of industrial solvents.

- Interpretation of SVOC data included calculation of total SVOC concentration. SVOCs that are commonly associated with combustion occur as mixtures of PAHs consisting of 16 analytical compounds (Table 2-2). Total and carcinogenic PAH concentrations, and benzo(a)pyrene equivalents (BaP equivalents) were also calculated to evaluate the concentrations of PAHs in site media. The BaP equivalents were calculated according to NYSDOH methods for seven carcinogenic PAHs (Table 2-2).

- Evaluation of inorganic data focused on inorganic constituents that are not common geologic elements. Common geologic elements (consisting of beryllium, calcium, magnesium, potassium, and sodium) occur naturally in wide concentration ranges and other inorganic constituents are more suitable for evaluation of potential site impacts. As such, the common geological elements were generally not evaluated beyond tabulation of results.

Concentrations of SVOCs, in particular PAHs, and inorganic constituents are ubiquitous in the environment and comparison of site data with background data (off site) was used to evaluate potential incremental concentrations due to past site activities.

PCBs and pesticides were analyzed in samples collected during the first phase of the RI and were screened out from further evaluation. PCBs were not detected in sediment and pesticides concentrations were generally consistent observations of background levels.

2.4.3. Screening of Surface Water Data

The RI data were compared to screening values according to media-specific data quality objectives outlined in the QAPP (O'Brien & Gere 2001).

Surface water data were evaluated using screening values provided in the *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series 1.1.1* (NYSDEC 1998). Concentrations were compared to screening values for Class C waters consistent with the water quality designation of the creek.

2.4.4. Screening of Sediment Data

Sediment data were compared to screening guidance provided in the *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999). For organic compounds in sediment, analytical concentrations were normalized to sample TOC concentrations to adjust each constituent concentration in an adaptation of the sediment guidance, as discussed below. This approach assumes that equilibrium partitioning occurs in soil media. More recent USEPA guidance suggests that a weight of evidence approach may be more indicative of sediment quality (USEPA *et al.* 2002). Concentrations of inorganic constituents in sediment were compared to reference values for typical background concentrations, as provided in the screening guidance.

Some of the sediment samples collected in 2003 were not analyzed for TOC. To estimate a TOC concentration for those samples, samples collected from other depth intervals at the same sample location were compared to the average TOC of 5 mg/Kg. If the TOC in the comparison sample was 5 mg/Kg or greater, a TOC concentration of 5 mg/Kg was utilized. If the TOC was less than 5 mg/Kg in the comparison sample, a TOC of 1 mg/Kg was utilized.

Evaluation of sediment data was completed as listed below:

- A statistical evaluation of background data completed according to DER-10 guidance (NYSDEC 2003) is presented in Appendix D. Outliners identified by statistical evaluation were not included as maximum value for screening. In such instances the calculated upper confidence level (UCL) was applied.

- The creek is primarily fresh water; however, occasional tidal transport of brackish water from the Hudson River has occurred during low flow periods. Sediment data collected for the Creek RI were evaluated using fresh water screening values.

- For each environmental sample of sediment analyzed for organic compounds, a screening concentration (SC) was calculated as analytical concentrations (C) normalized to organic carbon content (OC) to allow comparison of location specific results with the NYSDEC screening values. The NYSDEC screening values for organic compounds are presented as screening values normalized for a sediment containing 1% TOC. The equation used for the calculation of SC was adapted from the NYSDEC 1999 guidance, as follows:

SC = C/%TOC

where:
SC = screening concentration (ug/gOC)
C = analytical concentration reported by laboratory (mg/kg)
%TOC = percent total organic carbon (gOC/kg)

For example:

To calculate the benzo(a)pyrene SC for WP-LK1 (Table 4-2), where the C is 0.2 mg/Kg and the %TOC is 0.102 gOC/kg, the C was divided by the %TOC:

SC = 0.2 mg/Kg/0.102 gOC/g * 1000 ug/mg * 1kg/1000g
= 2 ug/gOC

This result is reported as the SC in Table 4-2. The result is greater than the NYSDEC screening value of 1.3 ug/gOC for the protection of human health. Consistent with NYSDEC guidance (1999), the SC for organic compounds were calculated for sediments with TOC concentrations in the range of 0.2% to 12%.

- Inorganic data were screened with lowest effect level (LEL) and severe effect level (SEL) screening values as defined by NYSDEC (1999). The order of magnitude above SEL screening values was also calculated to evaluate the contributions of the specific constituents to overall sediment quality.

- In the absence of New York State screening values, alternative ecologic screening values were applied as discussed in the Fish and Wildlife Impact Analysis (FWIA).

Results of these interpretive efforts are reported in subsequent sections of this report.

2.4.5. Trend Analysis of Sediment Data

Spatial trends were evaluated using box plots constructed using Analyse-it® software. The occurrences of constituents were evaluated using parametric and nonparametric tests for the background and five sections of the tidal creek. Further analysis of spatial trends of inorganic constituent and PAH composition data of sediment were completed as discussed below. For both of these evaluations, surface and subsurface sediment were considered separately.

Inorganic constituents

To evaluate the levels that inorganic constituents exceed NYS screening values, concentration data for each inorganic constituent was divided by the associated screening value to obtain screening value normalized data. This approach allows comparison of the results of each inorganic constituent to identify the particular constituent that exceeds its screening value by the highest amount at a particular location.

PAH composition analysis

The PAH composition of sediment in the creek was evaluated by converting concentration data for individual compounds to weight percent concentration data. This approach allows comparison of the PAH signatures of samples with different total PAH concentrations.

2.4.6. Qualitative Risk Assessment

Interpretation of screening evaluations needs to include recognition that total chemical concentrations do not necessarily represent potential exposures. As discussed in Section 1.4.2, the biovailability of a constituent is controlled by a number of physiochemical factors.

To further evaluate potential wildlife exposures, a FWIA was completed that included identification of constituents of potential ecological concern (COPEC) for representative species consisting of a mink and great blue heron.

To evaluate potential human exposures to constituents in the creek, a qualitative exposure pathway analysis was completed for the Three Star Site which included Wappingers Creek. The exposure pathway analysis was completed according to NYSDOH guidance (NYSDEC 2002).

2.5. Health and Safety

The RI field activities were conducted according to health and safety procedures provided in the site-specific health and safety plan (O'Brien & Gere 2001).

3. Surface water data

Constituents were generally below screening values for low flow and storm event sampling events. However, during the storm event, some inorganic constituents were detected in the water column. In general, the occurrence of these constituents in the water column upstream of the site at levels consistent with those of downstream suggests that their presence is not related to the Three Star Site. The source of the cyanide detected in the water column in the vicinity of the site is not clear. A discussion of the results of the investigation of surface water in Wappingers Creek provided in this section presents flow and total suspended solids data (Section 3.1), field parameters (Section 3.2) and laboratory results (Section 3.3).

3.1. Flow and Total Suspended Solids Data

During the low flow event a flow of approximately 50 cfs was measured by USGS in the upper Wappingers Creek representing the non-tidal portion of the creek (Exhibit B). The sampling of the creek for the RI was completed during an ebb tide, so flow in the tidal portion of the creek may have been slightly higher than that observed by USGS in the upper creek. During the low flow event, TSS was less than 5 mg/L at five of the six locations sampled. At the west bridge located on the Three Star Site (Site Bridge 2) the TSS was 5 mg/L and less than 5 mg/L in duplicate samples collected from that location. The detection of these levels of TSS is interpreted as similar to results obtained at other locations.

During the storm event, flows ranging from 500 to 900 cfs were measured by USGS in the upper creek and water was observed to be flowing over the dam during the storm event sampling. During the first round of sampling for the storm event, samples were collected during the approximate slack period of the high tide. TSS was 18 mg/L in both samples collected from the tidal creek representing concentrations over the length of the tidal creek from the vicinity of the Three Star Site (Site Bridge-1) to the approximate confluence with the Hudson River downstream at the Route 28 Bridge (Route 28 Bridge-1). At that time the TSS in Wappingers Lake was 13 mg/L and 8 mg/L in duplicate samples collected from that location.

During the second round of sampling for the storm event, samples were collected during a flow tide which tends to decrease or cancel the non-tidal flows from the upper portion of the creek. TSS in the creek was 12 mg/L at the west bridge (Site Bridge–2) and 20 mg/L in the vicinity of the approximate confluence of the creek with the Hudson River (Rt. 28 Bridge-2). At that time, TSS in Wappingers Lake was 6 mg/L. TSS was not detected in the surface water sample collected from the Three Star lagoon outlet with the concentration reported as less than 5 mg/L.

3.2. Field Parameters

Field parameters were within typical ranges with variations associated with tidal and seasonal influences (Table 3-1a and 3-1b). For the low flow sampling event completed in July 2001, average readings for conductivity, temperature, dissolved oxygen, and salinity were 0.46 usem/cm, 23 C^o, 6.8 mg/L, 0.0 %, respectively and the median pH was 6.9. For the storm event sampling completed in May 2002, average readings were 0.26 usem/cm, 12 C^o, 10.4 mg/L, 0.0%, respectively, and the median pH was 7.8.

3.3. Laboratory Results

For both sampling events, surface water concentrations of analytes tested were generally below screening levels with three exceptions:

- During the low flow event, the sample collected from the west bridge of the Three Star Site (WP5-SW) contained trace levels of acetone, at 3 ug/L, below the screening value (Table 3-2A). The origin of the acetone in that sample is unclear and it may be due to sample contamination (Section 2.5.1), although anthropogenic sources can not be ruled out. Nonetheless, the detection of acetone at the background station suggests that its presence is not related to the Three Star Site. VOCs were not detected during the storm event sampling (Table 3-2B).

- During the storm event sampling, aluminum, iron, and silver concentrations were detected above the screening values both in Wappingers Lake (upstream of the Three Star Site) and in the tidal creek (Table 3-3B).

- Cyanide was detected at the west Bridge and Rt. 28 sampling locations during the second round of storm event sampling (Table 3-3B). At the west bridge, cyanide was detected at 20 ug/L. which is approximately four times the screening value for free cyanide of 5 ug/L that is intended to protect fish propagation. In the vicinity of the Route 28 Bridge, cyanide was detected in the water column of the creek at approximately 10 ug/L. Cyanide was not detected during the low flow sampling event or the first storm event round of sampling (Table 3-3A).

Analytical results are presented in Appendix E. VOC and SVOC TICs identified during sample analyses are presented in Appendix F.

4. Sediment Data

Sediment at the background locations and in the tidal creek contained inorganic constituents above screening levels. In the tidal creek, the concentrations were much higher relative to background levels detected, with the highest concentrations detected in the deeper sediment of the shoal and embayment. In the sediment samples collected from the shoal of the tidal creek, PAHs and dibenzofuran were detected above screening levels. The results of the sediment investigation are presented for background data (Section 4.1) and the tidal creek (Section 4.2), separately.

Detected concentrations in sediment compared to screening values are presented in Tables 4-1 through 4-3. The constituents detected consisted primarily of inorganic constituents (Table 4-3) and PAHs (Table 4-2), although there were also occasional detections of other SVOCs (Table 4-2), and trace levels of VOCs in the vicinity of the Three Star Site (Table 4-1). Sporadic detection of pesticides were consistent with background levels (Appendix E and Table 4-4) and no further evaluation was completed. PCBs were not detected in sediment and were screened out from further evaluation (Appendix E). Tables provided in Appendix E present the complete set of sediment data collected for the RI. The discussion of sediment data below focuses on sediment samples collected from the surface, 0- to 6-inch, interval as the zone of highest ecological significance. TICs of VOCs and SVOCs that were detected are presented in Appendix F.

4.1. Background - Sediment Data

In sediment samples collected from Wappingers Lake, VOCs, pesticides, and PCBs were generally not detected at concentrations above screening values whereas PAHs and inorganic constituents were frequently present above screening values.

- VOCs were generally not detected in sediment samples, except for trace levels that were below screening values and the occasional detection of acetone and methylene chloride above screening levels (Table 4-1). The detection of acetone and methylene chloride may be attributed to the presence of laboratory contaminants (Section 2.4.1).

- Pesticides and PCBs were not detected in surface sediment (Appendix E) and deeper sediment contained sporadic detections with several pesticides above screening values (Table 4-4).

- SVOCs were present as PAHs in sediment (Table 4-2). Two of the six samples contained total PAHs slightly above the Long & Morgan screening value of 4 mg/Kg cited by NYSDEC guidance (NYSDEC 1999). In each of the background samples, individual PAH concentrations were above New York State screening values for the protection of human health (NYSDEC 1999). Benzo(a)pyrene up to 0.5 mg/Kg also slightly exceeded the ecological screening value of 0.44 mg/Kg used for screening in the FWIA (Section 5.1.1).

- Inorganic constituents consisting of zinc and lead were detected in sediment at concentrations that ranged from levels similar to LEL screening values to infrequent detections that were above SEL screening values (Tables 4-3 and 4-5). In addition, in each of the sediment samples analyzed, copper, mercury, and nickel were detected at concentrations above LEL screening values. Arsenic, cadmium, and chromium were detected at concentrations ranging from below their respective LEL screening values to slightly above them. Total cyanide was detected in one of the eight samples collected. However, the biologically available form of cyanide (amenable cyanide) was not detected. Iron and manganese are common minerals and the detection of concentrations above the LEL screening values may be associated with local minerals (Table 4-5).

- The pH of sediment samples ranged from 7.3 to 8.1.

- TOC in background sediment samples ranged from 3.4 to 10%.

4.2. Wappingers Creek – Sediment Data

The presentation of sediment results provided in this section is focused on the evaluation of potential sources as inferred from concentrations of constituents in sediment that exceeded background levels. The results include comparisons to LEL and SEL screening values and background data used to support the evaluation of potential sources. Further discussion of the screening of data for evaluation of potential ecological considerations is provided in Section 5.1.

Sediment data for Wappingers Creek are compared to LEL and SEL screening values in Tables 4-1 through 4-3. In sediments of the tidal creek, PAHs, dibenzofuran, and inorganic constituents were detected above screening values (Table 4-6). Mercury was detected in sediment at the highest levels above screening values. Both surface and deeper sediment of the creek are affected by the presence of these constituents. Generally, the highest concentrations of these constituents were located in the shoal (WP-29, WP-29A, and WP-DOT) and the embayment (WP-PL) in sediment greater than 6 inches deep.

Discussions of sediment data below compare the creek data with screening values for sediment of freshwater systems. Physical description of sediment and results of grain size analyses are presented in Section 4.2.1. Analytical results for VOCs, SVOCs, pesticides, and inorganic constituents are presented in Sections 4.2.2 through 4.2.5, respectively. PCBs were not detected in sediment and results are presented in Appendix E.

4.2.1. Physical Parameters, including Grain Size, Total Organic Carbon, and pH Data

Physical descriptions of sediment observed during the creek bed reconnaissance and sediment sampling are presented in Table 4-7. Grain size results for four samples collected from Wappingers Creek are presented in Appendix G. Grain size measured the sediment sample collected from the embayment (SEDCORE-2) and the two samples collected from the downstream section of the tidal creek (SEDCORE-1, WP-T3A) consisted of primarily sand with approximately 30 to 45% consisting of silt and clay. At the northern portion of the shoal area (SEDCORE-4), the sediment comprised primarily gravel and sand with silt and clay composing less than 20% of the sediment.

TOC data for locations in the tidal creek are presented below:

- In the vicinity of the Site, TOC ranged from 1.2 to 7.7%.
- In the shoal area, TOC ranged from 0.7 to 11%.
- In the embayment, TOC ranged from 5.2 to 12%.
- In the downstream section of the creek, TOC ranged from 1.1 to 8.5%.

The pH of sediment samples collected from the tidal creek ranged from 7.2 to 8.4. In the vicinity of the site, the pH ranged from 8.1 to 8.4. In the shoal area the pH ranged from 7.5 to 8.4 and in the embayment the pH ranged from 7.2 to 7.7.

4.2.2. Volatile Organic Compounds

Levels of VOCs detected in the sediment of the tidal creek were consistent with background levels (Table 4-1). However, it is noteworthy that trace levels of additional VOCs, including tetrachloroethene and trichloroethene were detected in the vicinity of the Three Star lagoon outlet (LG-OUT, LG-OUT2) and not elsewhere.

4.2.3. Semivolatile Organic Compounds

SVOCs detected in sediments above screening values primarily consisted of PAHs (Table 4-2). Surface sediment and deeper sediment represent the zones of highest ecological significance and potential zone of storage from legacy inputs, respectively. These depth intervals are discussed separately below. As a screening of total PAH concentrations in sediment, the data collected from the creek were compared to the maximum background level of 5.5 mg/Kg detected in the Wappingers Lake. The PAH composition of sediment was also compared to that of sources detected on the Three Star Site.

PAHs in surface sediment

In surface sediment, total PAH concentrations ranged from 0.2 to 214 mg/Kg (Table 4-2 and Figure 4-1). The maximum concentration of total PAHs in surface sediment was detected in the vicinity of the shoal (WP-29). Twenty-three of 30 samples of surface sediment that were collected contained total PAHs above the maximum background level of 5.5 mg/Kg. Individual PAHs were detected above NYS screening values in each of the samples of surface sediment collected.

PAHs in deeper sediment

In deeper sediment, total PAH concentrations ranged from 0.9 to 1,092 mg/Kg (Table 4-2 and Figure 4-1). Similar to surface sediment, the maximum concentration of total PAHs in deeper sediment was also detected in the vicinity of the shoal (WP-DOT, 12 to 18 in.) (Figure 4-1). Eighteen of 21 locations from which deeper sediment samples were collected contained total PAH concentrations above the maximum background level of 5.5 mg/Kg. A frequency distribution of PAH detections above the maximum background level is presented below.

Frequency distribution of deeper sediment samples with total PAH concentrations above the maximum background level.

	Concentrations (mg/kg)		
Section of creek	***5.5 to 10***	***10 to 35***	***35+***
Site area (1)			
Shoal area (6)		1	5
Embayment (4)		3	
Downstream area (10)	3	5	1

Note: The number of samples collected from a given area are shown in parentheses, ( ).
Source: O'Brien & Gere Engineers, Inc.

The detections of total PAHs in deeper sediment above background levels occurred downstream of the Three Star Site.

In deeper sediment, NYS screening values were exceeded by approximately three orders of magnitude by benzo(b)fluorathene, benzo(a)pyrene, and chrysene which were detected in the shoal area (WP-M2 [6 to 12 in], WP-DOT [6 to 18 in], WP-29 [6 to 12 in]). Additional individual PAH compounds in the deeper sediment were elevated compared to background levels. The PAH concentrations in sediment from other areas of the creek were lower compared to the shoal area. However, individual PAH concentrations were above NYS screening values and background levels.

PAH composition

PAH composition data from the creek sediment were compared to PAH materials from the Three Star Site. Figures presented in Appendix H present PAH data normalized in weight percent composition.

The range of PAH mixtures detected in the sediment of the tidal creek was similar to that of PAHs detected on the Three Star Site which were discussed in Section 1.2.5. Deeper sediment collected from the shoal area (WP-29, 12 to 18 in) contained the highest total PAH concentration detected in the creek at 1,092 mg/Kg (Figure 4-1). The PAH composition of that sample was dominated by 3- and 4- ring PAHs and was similar to material from the Three Star Site described as mixture B in Section 1.2.5 (Appendix H). Surface sediments were generally dominated by PAHs with 4+ rings and more closely resembled PAH patterns of the Three Star Site described as mixture A in Section 1.2.5. Further discussion of PAH composition of sediment and potential sources, is presented in Section 6.2.1.

Other SVOCs

In addition to PAHs, 1,2-dichlorobenzene, 1,4-dichlorobenzene, phenol, and dibenzofuran were present in sediment above screening values:

- 1,2-Dichlrobenzene and 1,4-dichlorobenzene were detected in surface sediment of two locations in the shoal area (WP-MW4, WP-29A) at concentrations up to approximately twice their screening values.

- Phenol was detected above its screening value in the deeper sediment of the shoal area (WP-M3, WP-OD3) and downstream section of the tidal creek (WP-T1A, WP-T1C), and surface sediment of one sample collected form the downstream section (WP-T1C). The maximum level was detected at MW-M3 (12 to 17 in), at a level of approximately 20 times the screening value.

- Dibenzofuran was detected in deep sediment of the shoal with a maximum of 30 mg/Kg (WP-29, 12 to 18 in), which is approximately six times the ecological screening value of 5.1 mg/Kg used for the FWIA (Table 4-2). There is no New York State screening value for Dibenzofuran.

Relative to PAHs, the presence of these compounds in the sediment was minor. The levels that these compounds exceeded their respective screening values and the frequency that they were detected were much lower than those of PAHs.

4.2.4. Pesticides

Spurious occurrences of pesticides above screening levels were detected similar in magnitude of those detected in background sediment (Table 4-4). Pesticides were not detected on the Three Star Site at levels detected in sediment of the creek (O'Brien & Gere 2005).

4.2.5. Inorganic Constituents

To highlight the potential contribution of inorganic constituents originating from the Three Star Site and other potential sources downstream of Wappingers Lake (the background location) to the tidal creek, sediment data with concentrations above SEL screening values are presented in Figure 4-1. The results presented below focus on the constituents that were detected above the SEL screening values since background levels frequently exceeded LEL screening values. Surface and subsurface results are presented separately. For both of these sediment depth intervals the inorganic constituents are presented in decreasing order of magnitude above SEL screening values. Several inorganic constituents were associated with both surface and deeper sediment. A summary of the inorganic results is also presented.

Surface sediment

Surface sediment data represent the most ecologically significant fraction of the sediment in the creek. As discussed in Section 4.1 above, background concentrations of 8 of the 12 inorganic constituents tested have concentrations above LEL screening values (Table 4-5). Inorganic constituents detected in sediment samples collected from the tidal creek are presented in Table 4-8 relative to screening values. In decreasing order of magnitude above SEL screening values, the primary inorganic constituents detected in surface sediment consisted of mercury, lead, zinc, and chromium. The maximum level of mercury detected in the shoal area (WP-29) was approximately 25 times above its SEL screening value.

Subsurface sediment

Several inorganic constituents were found at higher concentrations in subsurface sediment when compared to surface sediment (Table 4-6, Figure 4-1). Most notably, mercury concentrations in subsurface sediment of the shoal area (WP-DOT) and embayment (WP-PL) far exceeded surface sediment concentrations. The maximum concentrations of mercury at both of these two areas were detected in similar depth intervals of approximately 6- to 12-inches, and at similar concentrations of approximately 180 mg/Kg, which is approximately 140 times the SEL of 1.3 mg/Kg. In addition, 24 of the remaining 32 subsurface sediment samples also contained mercury at levels above the SEL screening value.

Several other inorganic constituents were detected in subsurface sediment at concentrations above SEL screening values. The shoal and embayment areas also contained the highest levels of zinc, total chromium, and total cyanide compared to other sections of the creek.

Summary

Constituents detected in surface or deeper sediment of the tidal creek above SEL are summarized in the matrix below in decreasing order of magnitude above SEL screening values:

Levels of constituents compared to SEL screening values for three sections of the creek (surface and deeper sediment intervals).

	Order of magnitude above SEL screening values			
Section	**50+**	**20+ to 50**	**10+ to 20**	**1 to 10**
Shoal	mercury	zinc total chromium	total cyanide*	lead cadmium arsenic copper antimony iron
Embayment	mercury	total chromium	total cyanide*	zinc lead arsenic copper cadmium
Downstream		mercury		total chromium zinc lead antimony cadmium total cyanide* arsenic/copper iron/nickel

Notes: For each range, constituents presented in order or magnitude of concentration above SEL screening values. * indicates that total cyanide concentrations were compared to background levels and may not be directly comparable to other constituents that were compared to SEL screening values.

Source: O'Brien & Gere Engineers, Inc.

Further evaluation of inorganic constituents relative to LEL screening values is presented in the discussion of ecological risk (Section 5.1.1).

5. Risk Assessment

5.1. Ecological Risk Assessment

Comparisons of sediment data to screening values as it relates to the identification of potential sources of Site constituents to the creek was discussed in Section 4.2. Section 5.1.1 presents further discussion of the detection of PAHs and inorganic constituents in the tidal creek relative to LEL screening values. Section 5.1.2 presents the results of the fish and wildlife impact analysis completed for the tidal creek.

5.1.1. Comparison of Sediment Data to Screening Values

The occurrence of PAHs and inorganic constituents are presented separately, below.

Polycyclic aromatic hydrocarbons

The comparison of sediment data to the total PAH screening value of 4 mg/kg, presented in Table 4-6, is summarized below:

- Five of eight locations sampled from the 0- to 6-inch depth interval adjacent to the Three Star Site were above the total PAH screening value of 4 mg/kg. The maximum total PAH concentration detected in this section of the tidal creek was 64 mg/kg.

- Each of the other 22 locations sampled in the tidal creek downstream of the Site Area had total PAH concentrations above 4 mg/kg. As presented in Section 4.2, the highest concentrations of total PAHs detected in the sediment, up to 1092 mg/kg at WP-29 (12- to 18-inches deep) in the Shoal Area.

Inorganic constituents

The frequency of detection above LEL screening values, presented in Table 4-6, is summarized below:

- Arsenic, copper, iron, lead, mercury, and nickel were the inorganic constituents most frequently detected above LEL screening values with 29 of 30 locations sampled exceeding the LEL screening value.
- Cadmium and zinc exceeded their LEL screening values in 27 and 28 of 30 locations sampled, respectively.
- Chromium exceeded the LEL screening value in 22 of 30 locations sampled.
- Arsenic and manganese exceeded their respective LEL screening values in 14 and 16 of 30 locations, respectively.
- Selenium, silver, thallium, and vanadium were infrequently detected above LEL screening values.
- Total cyanide was detected in 23 of 30 locations sampled above the screening value of 0.1 mg/kg.

5.1.2. Fish and Wildlife Impact Assessment

Results of the FWIA through Step IIC, *toxic effects analysis*, are presented in Appendix I. The creek provides aquatic/wetland habitat which was evaluated for the FWIA. The toxic effects analysis presumes that fish and wildlife resources have been identified and that the contamination of resources and complete exposure pathways exist. Performance of the toxic effects analysis requires specific toxicological and ecological information that are outlined in the work plan addendum (O'Brien & Gere 2002) and NYSDEC guidance (NYSDEC 1994). An analysis of toxic effects may look at individual organisms, populations, communities, or ecosystems. The FWIA for Wappingers Creek consisted of evaluation of potential exposure of mink and great blue heron to maximum concentrations of constituents in surface water and surface sediment (0 to 6 inch interval) of the creek.

Consistent with the results of screening of sediment using New York State guidance values (NYSDEC 1999), results of the FWIA identified PAHs and mercury as the primary COPEC. The FWIA evaluated representative wildlife species consisting of a mink and a great blue heron based on maximum concentrations detected in the creek and the resulting hazard quotients (HQs). In addition to constituents identified by the NYS screening values, the FWIA also identified dibenzofuran, phenol, aluminum, selenium, and thallium as COPEC in sediment. Results for each of these additional constituents are summarized below.

Dibenzofuran was frequently detected in sediment of the tidal creek at concentrations that were generally below the ecological screening value. Dibenzofuran was present from the vicinity of the Three Star Site to the downstream section. However, in the shoal area, deeper sediment contained dibenzofuran at concentrations up to 30 mg/Kg, approximately six times the ecological screening value. Dibenzofuran was not detected in background samples

Phenol was detected in one surface sediment sample collected from the downstream section of the creek (WP-T1C) at 0.05 mg/Kg. It was also detected in deeper sediment of three locations at levels up to 0.1 mg/Kg.

Aluminum was not detected above background levels in the tidal creek, nor was it detected above the ecological screening value. However, the food chain model completed for the FWIA identified it as a COPEC. In general, the levels of aluminum detected in the sediment of the tidal creek do not appear to be associated with the Three Star Site.

Selenium was detected at one location at a concentration slightly above the maximum background level of 2.5 mg/Kg.

Thallium was detected in the shoal area, embayment, and downstream sections of the tidal creek with levels up to 3.3 mg/Kg detected. The detection of thallium was accompanied by blank contamination.

The addition of these constituents as COPEC does not change the overall evaluation of the constituents in the tidal creek. These constituents were detected at relatively low concentrations in comparison to other constituents.

The overall hazard quotients presented in the FWIA were generally associated with the concentrations of constituents in the sediment. However, during storm event sampling of the surface water, aluminum, iron, and silver were also identified as COPEC. These constituents were detected in background samples at similar levels to those detected in the tidal creek.

5.2. Qualitative Human Health Risk Assessment

An exposure pathway analysis was completed according to state guidance (NYSDEC 2002). The exposure pathway analysis identified potential receptor populations for the tidal creek consisting of recreational users, swimmers, or fish consumers (Appendix J).

6. Discussion

The sediment of the tidal creek contains PAHs and inorganic constituents at levels above those that can be attributed to ubiquitous sources. Mercury and chromium were the most prevalent inorganic constituents found at elevated levels relative to background concentrations. The spatial collocation of several additional inorganic constituents both vertically and horizontally in the sediment bed of the tidal creek suggests that their occurrence is linked. Therefore, the discussion below is focused on the occurrence of PAHs, mercury, and chromium. Additional constituents are also discussed for their spatial relationships with these constituents.

The spatial trends of surface and deeper zones within sediment are considered separately to highlight the potential differences in source dynamics and relative importance with regard to potential exposures (Section 6.1). Surface sediment represents the zone of highest importance with respect to ecological contact, as most aquatic organisms reside in the upper 6 inches of sediment. Surface sediment also is more closely associated with deposition of particulate matter from current sources to the water column. In contrast, deeper sediment tends to be more isolated from ecological contact. The deeper sediment may be more indicative of surface sediment that was buried over time with sediment chemistries representing historic sources to the tidal creek.

Deeper sediment that contains elevated levels of constituents from historic discharges may reflect trends in the overall ecological condition of the tidal creek. Reductions in surface concentrations of constituents appear to have occurred by burial of surface sediment over time. Aged constituents in sediment tend to be less bioavailable both by the isolation of this layer from surface contact and also by processes of sequestration of constituents within the sediment matrix that may occur over time. However, the potential for scouring of deeper sediment during storm events and reintroduction of it to the ecological zone needs to be considered in the assessment of fate and transport. In the tidal creek, deeper sediment contained the highest concentrations of several constituents.

Evaluation of spatial trends in surface and deeper sediment considered both the frequency and magnitude of occurrences above screening values:

- The frequencies of detection in surface sediment above the LEL and SEL screening values are presented in Figures 6-1 and 6-2, respectively. Background levels of several inorganic constituents were frequently above LEL screening values. Therefore, the discussion of frequencies of detection in surface sediment provided below is focused on the comparison to SEL screening values (Figure 6-2). For deeper sediment, the data for the tidal creek were compared to background levels. The sediment depth interval of 6 to 12 inches and sediment depths greater than 12 inches are presented separately, in Figures 6-3 and 6-4, respectively.

- The magnitude of PAH and inorganic constituents in sediment were evaluated separately (Figures 6-5 through 6-7). The associated figures present the median and maximum values for each depth interval considered. The PAH concentrations for the tidal sections of the creek are presented for three sediment depth intervals (Figure 6-5). Inorganic constituents normalized to SEL screening values were used to evaluate the magnitude of their concentrations in sediment (Figures 6-6 and 6-7). The magnitude of surface sediment concentrations of inorganic constituents compared to SEL screening values is presented in Figure 6-6. The same comparison for deeper sediment is presented in Figure 6-7.

Details of these evaluations are presented in the discussion of sediment concentrations in the tidal creek (Section 6.1).

The Creek RI evaluated the Three Star Site and other potential sources of these constituents by identifying activities that could explain their presence are discussed in Section 6.2. In the qualitative assessment of the potential link between the Three Star Site and the sediment of the tidal creek, the constituents found in media of the Three Star Site were compared with the constituents detected in sediment of the tidal creek. The Three Star Site was implicated as a possible source if constituents were present both on the Three Star Site and in the sediment of the tidal creek and a complete pathway existed. Maximum levels of constituents on the Three Star Site that exceeded those found in the sediment of the tidal creek, provided strong evidence of this potential relationship. However, the data for the Creek RI were not intended to represent statistical sampling and the potential relationship with the other constituents found in both places was also considered.

Erosion of surface soils from the Three Star Site (or elsewhere) with elevated levels of constituents is one possible pathway for contamination of the sediment of the tidal creek. Subsurface materials are less available for transport, but may be indicative of materials that formerly existed on the Three Star Site as surface materials displaced during past site activities. In addition, constituents detected in subsurface materials that are located adjacent to the tidal creek may be indicative of constituents present in bank materials. Scouring of such bank materials could provide a pathway for subsurface materials to enter the Creek. Tidal action could also transport subsurface materials to the tidal creek. Bank materials were not sampled as part of the Creek RI.

Other potential sources consisting of the north parcel of the Market Street Industrial Park, coal materials used for fill, the public works garage, and the railroad are also discussed. Much less is known about these potential sources compared to the Three Star Site. However, the historic uses of the north parcel were similar to those of the Three Star Site. It is anticipated that wastes similar to those of the Three Star Site were generated by activities that took place there.

The quality of the surface water of the tidal creek is discussed as a potential medium for the transport of constituents in Section 6.3. Low flow and storm conditions provide two distinctly different periods to evaluate sources. Low flow periods minimize potential dilution of sources thereby maximizing the potential for observing source inputs. Storm events represent potential periods of scour when materials could be eroded or resuspended in the water column and transported downstream.

6.1. Sediment

In general, deeper sediment contained the highest levels of constituents detected. Most of these constituents were associated with two distinct areas of the tidal creek, consisting of the shoal area and embayment. Inorganic constituents were associated with both of these areas while PAHs were primarily associated with the shoal area.

The shoal area and embayment represent the first areas of the tidal portion of the creek where the creek widens downstream of the Market Street Industrial Park. The volume of affected material is primarily associated with the shoal and embayment. Relative widening of the creek increases the volume of the creek basin which decreases water velocities, facilitating deposition of particulate matter. Much of the higher levels of constituents were detected in deeper sediment suggesting that burial of surface sediment from historic inputs has occurred.

6.1.1. Site Area

The constituents detected in sediment of the site area were generally within screening values, with a few exceptions. Trace levels of the VOCs tetrachloroethene and trichloroethene detected in the vicinity of the lagoon outlet are noteworthy, as they were not detected elsewhere in the tidal creek (Table 4-1). Lead levels were generally similar to background levels (Appendix K), except in the vicinity of the MGP Site (WP-MW4, Table 4-6) where the highest concentration of lead was detected (Figure 6-6). The frequency of inorganic constituents detected above SEL screening values increased in the site area compared to background (Figure 6-2)

The presence of VOCs in the sediment is indicative of a current source to the tidal creek, as VOCs generally do not remain in sediment over long periods. Seepage of VOCs from subsurface media of the Axton Cross area of the Three Star Site may occur. The lack of VOCs detected in the water column and sediment of other sections of the tidal creek indicates that this is a relatively minor source.

In this section of the tidal creek, the channel is narrow compared to other sections. This results in higher relative flow velocities, which facilitate particle transport in surface water. The creek bed comprises primarily rocks and cobbles with limited areas of sediment accumulation. Deeper sediment samples were not collected from the creek bed in this section of the creek due to these limitations.

6.1.2. Shoal Area

Based on comparison of the magnitude of the concentrations with SEL screening values and the frequency of detections above those values, the primary constituents detected in the surface sediment of the shoal area consist of mercury, zinc, and PAHs (Figures 6-1 through 6-7 and Appendix K). Other inorganic constituents where detected concentrations relative to upstream levels increased consisted of antimony, cadmium, chromium, lead, and cyanide. Six of the constituents - consisting of mercury, zinc, PAHs, antimony, cadmium, and cyanide - were detected in the shoal area at the highest concentrations detected in surface sediment of the tidal creek (Figures 6-5 and 6-6). In addition, deeper sediment contained much higher levels of mercury, chromium, zinc, and PAHs compared to the surface sediment (Figures 6-5 and 6-7, and Appendix K). Based on the magnitude of concentrations above the SEL screening values and the frequency of these occurrences, mercury was the primary constituent in that sediment layer (Figures 6-3, 6-4, and 6-7). Other constituents in deeper sediment included zinc, chromium, lead, and additional inorganic constituents that were present at lower levels (Figure 6-7).

The presence of these levels of PAHs in this area of the creek, but not in other areas of the tidal creek, may reflect differences in the source of these two types of constituents. The PAH signature was similar to that of materials detected on the Three Star Site. However, the PAH signature also might resemble that of other sources. Therefore, the source of the PAHs can not be conclusively identified.

The shoal area is the first area downstream of the Market Street Industrial Park where the creek widens and flow velocities would tend to decrease. The shoal area is located on the southeast side of the tidal creek, away from main flow. It appears to be a depositional area. The presence of the highest concentrations in the deeper sediment suggests that the constituents from historic releases are being buried. The burial and aging of these materials further suggests that bioavailability may be reduced relative to historic levels. There are no known current or past sources of inorganic constituents in the vicinity of the shoal area that would explain the elevated concentrations detected there. It is anticipated that the source of the inorganic constituents detected in the sediment of the shoal area is related to the downstream transport or migration of contaminants from past activities of the Market Street Industrial Park.

6.1.3. Embayment

The primary constituent detected in surface sediment of the embayment was mercury (Figure 6-1 through 6-7). Deeper sediment contained higher levels of mercury, as compared to surface sediment (Figures 6-6 and 6-7). In addition, chromium, zinc, lead, and copper were also constituents in surface and deeper sediment above SEL screening values (Figures 6-6 and 6-7). Deeper sediment also contained cyanide as a constituent (Figure 6-7). Additional inorganic constituents were present at lower levels.

The embayment is located along the north shore of the tidal creek, outside of the main flow. Sediment accumulated in this area is expected to be stable. Extreme flooding could potentially scour the south portion of the embayment that is next to the main flow of the creek. Sediments containing the maximum concentrations of chromium detected there may be vulnerable to scouring during such storm events. Similar to elevated levels of inorganic constituents detected in the shoal area, in the vicinity of the embayment, there is no known past or current source of the elevated levels of constituents detected. It is possible that the source of the inorganic constituents detected in the sediment of the embayment is related to transport or migration of contaminants from past activities of the Market Street Industrial Park.

6.1.4. Downstream Section

In general the concentrations of constituents in sediment of the downstream section of the tidal creek were similar to background levels, but with spurious detections in a wider range (Figures 6-1 through 6-7, and Appendix K). Mercury was the primary constituent detected in surface and deeper sediment (Figure 6-6 and 6-7, and Appendix K). Compared to the levels detected in the shoal area and embayment, constituent concentrations in the downstream section of the tidal creek were much lower (Figures 6-6 and 6-7, and Appendix K). Zinc, lead, antimony, and chromium were also constituents and additional inorganic constituents were also present at lower levels (Figures 6-6 and 6-7).

There were no particular patterns to the spatial distribution of elevated levels of constituents in the downstream section of the tidal creek. Elevated levels of antimony and zinc were detected along the south shore downstream of the embayment (WP-TC1, Table 4-6, Figure 1-2). Elevated levels of PAHs and chromium were detected along the south shore approximately midway between the embayment and the Route 28 Bridge (WP-T2C, Table 4-6, Figure 1-2). Elevated levels of mercury, zinc, and chromium were associated with sediment collected from upstream of the Route 28 Bridge (WP-OD1, Table 4-6, Figure 1-2). The presence of elevated levels of constituents in the sediment was associated with areas containing silt and organic matter (Table 4-7). In this section of the tidal creek, no consistent trends were observed in the occurrence of constituents in vertical profiles of the sediment.

6.2. Potential Sources

The discussion of potential sources of constituents focuses on those that were identified as primary constituents. Separate sections present discussions of PAHs (Section 6.2.1), mercury (Section 6.2.2), chromium (Section 6.2.3), zinc (Section 6.2.4), and lead (Section 6.2.5). Other constituents are discussed as a group (Section 6.2.6). In general, it appears that cinders may represent the primary potential source for PAHs. The Three Star lagoon appears to be the primary source of inorganic constituents from the Three Star Site. Additional potential sources of PAHs are discussed below (Section 6.2.1). Past activities in the north parcel of the Market Street Industrial Park may also have contributed inorganic constituents and/or PAHs.

6.2.1. PAHs

PAHs are ubiquitous in the environment, arising from natural and anthropogenic sources (Appendix H). However, PAH concentrations above background levels were present in the sediment of the tidal creek. Potential sources of PAHs consist of past operation of the MGP facility, contaminants remaining on the

MGP Site, as well as cinders located on site and off site. Mixtures containing PAHs can occur as a tar or soot. Tars typically contain high concentrations of lighter PAH compounds compared to soots. Lighter PAH compounds in tar such as naphthalene may dissolve and associate with water. However, higher molecular weight PAHs predominately associate with particulate matter. Both types of PAH materials are associated with the Three Star Site (Appendix K).

The maximum level of PAHs detected in the sediment of the tidal creek, 1,092 mg/Kg in the shoal area (WP-29, 12 to 18 in), was lower than the maximum levels detected on the MGP Site. Approximately 4,100 mg/Kg of total PAHs were detected in subsurface soil adjacent to the tidal creek (MW-4, 14 to 16 ft, duplicate). The PAH signatures in the surface sediment of the tidal creek contained predominately 4+ ring PAHs comparable to materials of the MGP Site (MW-4 18 to 20 ft; MW-5, 14 to 16 ft) (Appendix K). The deeper sediment of the tidal creek (WP-29, 12 to 18 in) contained predominately 3- and 4-ring PAHs resembling other materials of the MGP Site (MW-4, 12 to 14 ft; MW-5, 12 to 14 ft), including those detected in the former gas holder (SB-4-01). The maximum level of PAHs detected in the sediment of the Three Star lagoon, 88 mg/Kg, was lower than the maximum level detected in the sediment of the tidal creek. It appears that MPG Site materials may explain the levels detected in the creek. Aged materials, contain PAHs that may be lower risk to aquatic organisms compared to newer sources (Section 1.8.2).

In addition to PAH sources found on the Three Star Site, storage tanks formerly located on the north property opposite the Three Star Site may have contained materials with PAHs in them. Cinders from MGP operations were reportedly used to fill off-site areas, including the roadway along the creek in the vicinity of the shoal area. The public works garage located adjacent to the creek is a potential source of PAHs from the potential operation, maintenance, and storage of vehicles at the facility. It is not clear which of these potential sources (or which combination of sources) contributed to the elevated PAHs detected in the sediment of the tidal creek.

The railroad bridge near the confluence of Wappingers Creek with the Hudson River also represents a potential source of PAHs. However, elevated levels of PAHs were not detected in the vicinity of the railroad bridge, so potential contributions from this source area were not evident.

6.2.2. Mercury

Mercury levels in sediment were of particular interest since they were the highest relative to NYS screening values and frequently occurring throughout the tidal creek. Mercury may have been associated with dyes produced by the Dutchess Bleachery or in the paints used in the manufacturing of felt hats. The maximum of level of mercury, 186 mg/Kg, detected in sediment of the tidal creek (WP-DOT, 6 to 12 in) was higher than levels detected in surface soil of the Three Star Site or the sediment of the Three Star lagoon which represent the readily available sources there. Mercury was detected up to 54 mg/Kg in the Three Star lagoon sediment. The maximum levels in surface soil of the Three Star were detected in the former drum storage area at 31 mg/Kg. The maximum level of mercury detected in subsurface soil of the former raceway, was 41 mg/Kg. The lagoon and surface soil of the former drum storage area represent potential sources for the transport or migration of mercury to the tidal creek. Subsurface soil of the former raceway is less readily available.

Mercury above those levels detected in the sediment in the tidal creek were associated with subsurface soil of the MGP Site adjacent to the tidal creek, 249 mg/Kg (MW-4 14 to 16 ft). If concentrations of mercury on the exposed bank of the MGP site are similar to subsurface soils of the MW-4 area, erosion of bank materials could also represent a potential source. The Three Star Site appears to be a source of mercury to the tidal creek.

6.2.3. Chromium

Chromium compounds were associated with metal plating operations of the Three Star Site and may have been associated with those to the north parcel, too. It is noteworthy that the most toxic form of chromium, hexavalent chromium, was analyzed but not detected on the Three Star Site or in sediment of the tidal creek.

Chromium levels in the former raceway and Three Star lagoon were above the maximum level of 4,120 mg/Kg detected in the sediment of the tidal creek. On the Three Star Site, the highest levels of chromium were detected in surface sediment of the Three Star lagoon where up to 26,300 mg/Kg was detected. Surface soil of the lower portion of the former raceway contained chromium up to 6,260 mg/Kg and ground water under the former raceway contained 1,730 ug/L. The raceway bed may act as a preferential pathway for the migration of chromium in surface soils and ground water to the lagoon. Therefore, based on the concentrations detected, and the presence of this complete pathway, the Three Star Site is a plausible source of chromium detected in the sediment of the tidal creek.

6.2.4. Zinc

Zinc compounds were associated with metal plating operations of the Three Star Site and may have been associated with those to the north parcel, too. Zinc levels up to 6,500 mg/Kg and 1,820 mg/Kg were present in the sediment of the shoal and embayment, respectively. On the Three Star Site, zinc up to 3,710 mg/Kg was present in the Three Star lagoon sediment. In the former raceway, zinc up to 558 mg/Kg represented the highest concentrations detected in surface soil on the Three Star Site. Subsurface soil of the former raceway contained levels similar to those detected in surface soil. Surface soil of the MGP site also contained up to 2,570 mg/Kg on the west portion of the site (SS-MGP-1). Surface soil along the border of the MGP site and the creek contained zinc up to 752 mg/Kg. The Three Star lagoon may be a source of zinc to the tidal creek. However, maximum levels detected in the sediment of the tidal creek were not detected on the Three Star Site.

6.2.5. Lead

Local, ubiquitous, background levels of lead were detected at up to 187 mg/Kg above the SEL screening value of 110 mg/Kg. However, lead levels in the tidal creek were occasionally higher. Up to 1,450 mg/Kg was detected in surface sediment of the tidal creek adjacent to the MGP site (WP-MW-4). On the Three Star Site, lead was detected in surface sediment of the Three Star lagoon up to 9,650 mg/Kg. Up to 1,160 mg/Kg was detected in surface soil on the west portion of the MGP site (SS-MGP-1). In the former raceway, lead up to 1,100 mg/Kg (MW-11) was detected in surface soil. Subsurface soil next to the Axton-Cross building and the Three Star lagoon contained lead up to 2,860 mg/Kg (SS-03-02, 10 to 12 ft). The most likely source of lead on the Three Star Site is the sediment of the lagoon which could become resuspended in the water column during storm events and discharge to the tidal creek. It appears that the Three Star Site is one of several sources of lead detected in the sediment of the tidal creek. Lead could also be associated with past activities of the north parcel of the Market Street Industrial Park.

6.2.6. Other Constituents

The maximum levels of other constituents detected in the tidal creek compared to maximum levels detected on the Three Star Site are presented in the table below:

Tidal creek compared with maximum levels on the Three Star Site.

Parameter	Tidal creek	Former raceway	Three Star lagoon	Other	
Shoal area					
Antimony	159	1.6/377	362		
Arsenic	162	<22/55	141	MGP site: ss	41
Cadmium	79	16/2.3	122	MGP site: ss	55
Copper	504	2140	10600	Axton Cross: sbs	653
				MGP site: ss	441
Dibenzofuran	30	--	0.8		
1,2-Dichlorobenzene	1.4	--	2.3	Axton Cross: sbs	2
1,4-Dichlorobezene	1.2	--	51		
Embayment					
Cyanide	42	94	69	MGP site: ss	39
Downstream section					
Phenol	0.1	<0.3	2		

Notes: ss = surface soil; sbs = subsurface soil; <x = below screening level x; -- = below maximum detected in creek; x/y = ss/sbs.

The Three Star lagoon appears to be a potential source for these constituents detected in the tidal creek, except dibenzofuran. The subsurface soil of the MGP site adjacent to the tidal creek (BMW-1) contained levels above the maximum levels of dibenzofuran detected in the tidal creek. Tidal action may also facilitate erosion of subsurface materials to the tidal creek from areas adjacent to it.

6.3. Surface Water

Surface water data did not provide evidence that there is a continuous source to the creek, as low flow sampling indicated that the water column was generally within screening values. However, storm event sampling identified elevated levels of inorganic constituents, apparently related to background sources. A comparison is provided below of surface water concentrations detected in tidal creek compared with those of the lagoon and background:

Comparison of surface water concentrations (ug/L).

Parameter	Lagoon	Bkgrnd	Site Br	Lagoon Outlet	Rt 28 Br
New York State screening					
Aluminum	[190]	[451]	[593]	[143]	[696]
Iron	[320]	[610]	[708]	281	[895]
Silver	[1.6]	[2.2]	[2.1]	[2]	[1.7]
Cyanide	10U	10U	[20]	10U	[10]
Human health screening					
Manganese	59	99	109	95	107
Vanadium	1.8	2.2	2.0	2.0	2.3

Notes:

Lagoon sampled on 11/18/02 compared to creek storm event data collected on May 14 and 15, 2002.

Bkgrnd = background; Site Br = Site Bridge; Rt 28 Br = Route 28 Bridge.

U = undetected; data with brackets [ ] indicates levels that exceeded screening values, generally for fish propagation.

During the storm event sampling, transport of constituents (aluminum, silver, manganese and vanadium) in surface water apparently from a source(s) upstream of the tidal portion of Wappingers Creek was detected. While most of the constituents appear related to background sources, cyanide and iron were detected in the surface water of the tidal creek, at levels above those of background which may be associated with the ground water levels detected at the Three Star Site.

Higher levels of iron were detected in the water column of the tidal creek adjacent to and downstream of the Three Star Site. Maximum levels of iron detected in lagoon sediment, 4.6%, were similar to maximum levels detected in the creek, 4.3%. Subsurface soil on the Three Star Site contained iron up to 10.4% next to the lagoon (SB-03-02). Ground water of the former raceway (MW-11) and deep ground adjacent to the tidal creek (BMW-3) contained 370 and 680 mg/L of iron, respectively; levels that are approximately 1,000 times those detected in Wappingers Creek. Increases in the levels of iron detected in the water column of the tidal creek may be related to ground water interaction with surface water.

The maximum cyanide levels detected in soil, 94 mg/Kg, detected in the former raceway of the Three Star Site do not appear sufficient to explain increases in surface water detected in the creek. However, the ground water below the former raceway (MW-11) contained 1,280 ug/L suggesting that higher levels of cyanide may be present in the soil there. Surface water levels of cyanide may be influenced by interaction with ground water in the vicinity of the Three Star Site.

Additional mobilization of contaminated soil and/or sediment, or ground water constituents into the water column of the tidal creek may occur during an extreme storm event.

7. Summary

A Remedial Investigation (RI) of Wappingers Creek (Creek RI) was completed by O'Brien & Gere Engineers, Inc. (O'Brien & Gere) on behalf of the New York State Department of Environmental Conservation (NYSDEC). The Creek RI was completed as a part of the Remedial Investigation/Feasibility Study (RI/FS) for the Three Star Anodizing Site (Three Star Site, Site #314058). The RI/FS of the Three Star Site (Site RI/FS) is reported in other documents (O'Brien & Gere 2007a,b) and identified elevated levels of volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and inorganic constituents in media of the site. The Site RI identified that further investigation was required to evaluate the potential presence of hazardous waste constituents (constituents) in Wappingers Creek. This report presents the results of that investigation.

The Site RI identified historic operations on the Three Star Site which is located on the south portion of the Market Street Industrial Park on McKinley Street in the village of Wappingers Falls. The area occupied by the Market Street Industrial Park has been the site of industrial/ commercial operations since the 1830s when it was originally developed as a cloth dye manufacturing facility called the Dutchess Bleachery. During the operation of the Dutchess Bleachery, the facility also manufactured ammunition, felt hats, and leather products. A portion of the Three Star Site was used for the operation of a manufactured gas plant (MGP) over the period of the 1830s to approximately 1913. The Three Star Anodizing Company also operated a metal plating facility at the Three Star Site from the late 1950s to 1995.

The Site RI identified three specific areas of the Three Star Site (the former raceway, the Three Star lagoon, and the former drum storage area) with concentrations of constituents in environmental media in excess of screening levels and those found in other areas of the Three Star Site. These areas of the Three Star Site are associated with past activities that may represent sources of constituents at off-site locations. The former raceway and Three Star lagoon contained elevated levels of inorganic constituents in surface and subsurface soil, and sediment. The Three Star lagoon also contained PAHs in sediment. The former drum storage area contained VOCs and inorganic constituents. The MGP that was located on the west portion of the Three Star Site contained PAHs. PAHs were also associated with cinder fill material on the Three Star Site. These areas on the Three Star Site were concluded to represent sources for potential transport or migration of constituents to the tidal creek, which was the focus of the Creek RI.

In addition to the Three Star Site, potential sources of constituents to Wappingers Creek consist of past activities within the north parcel of the Market Street Industrial Park, the public works garage located along Creek Road, and the railroad located near the confluence of the tidal creek with the Hudson River. None of these areas were characterized or otherwise included in the Site RI/FS or Creek RI.

Sediment sampling over the length of the tidal creek completed during the Creek RI identified two hotspot areas consisting of a "shoal area" and "embayment." In both of these areas, the highest levels of constituents were detected in the deeper sediment (greater than six inches deep) suggesting that the elevated levels occurred from historic sources to Wappingers Creek. Both areas appear to be depositional areas for sediment accumulation.

The shoal area is located along the southeast shore of the tidal creek, approximately 1,000 ft downstream of the Market Street Industrial Park. It comprises an area of approximately 117,000 ft^2, with a sediment volume of approximately 9,000 CY. PAHs up to 214 mg/Kg were detected in surface sediment (0 to 6 in) and up to 1,092 mg/Kg were detected in deeper sediment (> 6 in). Mercury was detected up to 32 mg/Kg in surface sediment and up to 186 mg/Kg in deeper sediment. Chromium was detected up to 267 mg/Kg in surface sediment and up to 4,120 mg/Kg in deeper sediment. Zinc was detected up to 1,980 mg/Kg in surface sediment and up to 6,500 mg/Kg in deeper sediment. Other inorganic constituents were also present at elevated levels in the shoal area.

The embayment is located along the north shore of the tidal creek, approximately 2,000 ft downstream of the Market Street Industrial Park. It comprises an area of approximately 180,000 ft^2, with a sediment volume of approximately 13,200 CY. Analyses of the sediment of the embayment detected mercury up to 17 mg/Kg in surface sediment and up to 182 mg/Kg in deeper sediment. Chromium was also detected up to 544 mg/Kg in surface sediment and up to 3,760 mg/Kg in deeper sediment. The embayment also contained elevated levels of other inorganic constituents in the sediment.

The elevated levels of inorganic constituents in the tidal creek appear to have originated from past activities within the Market Street Industrial Park. In particular, the former raceway on the Three Star Site and the Three Star lagoon contained inorganic constituents from past industrial waste discharges that reportedly occurred there. Therefore, these areas are implicated as potential sources of inorganic constituents to the tidal creek. In addition, the north lagoon on the Market Street Industrial Park reportedly received wastes from past industrial activities, and represents another potential source area. The north parcel of the Market Street Industrial Park contained industrial operations similar to those of the Three Star Site. However, a RI/FS of the north parcel has not been completed to more specifically evaluate potential source areas that may be present there. Surface water sampling completed for the Creek RI did not provide evidence that the Market Street Industrial Park is a current source of constituents to Wappingers Creek, although sediment sampling had identified a minor source of VOCs in the vicinity of the Three Star Site.

There are several potential sources of elevated levels of PAHs detected in the sediment of the shoal area. The PAH signatures comprise compounds which were consistent with some of the materials detected on the MGP site. However, these PAH signatures may also be associated with other potential sources such as storage tanks formerly located on the north parcel or fill material (on the Three Star Site or elsewhere) containing PAHs. Activities at the public works garage may also have PAHs associated with them and represent a potential source to the creek.

Screening level risk assessments were completed to evaluate potential ecological and human health risks associated with constituents detected in Wappingers Creek. The ecological risk assessment identified PAHs, mercury, chromium and other inorganic constituents as constituents of potential concern (COPC). The ecological screening considered the great blue heron and mink as potential upper trophic level ecological receptors. The human health risk assessment identified recreational users and swimmers of the creek, and consumers of fish from the creek as potential human populations that may be exposed to constituents in the tidal creek. These findings will be carried into a FS for the creek.

The following is a summary of activities, observations, and conclusions of the Creek RI:

- Current conditions of the creek indicate that surface water quality is generally within water quality screening values and sediment contains elevated levels of contaminants consisting primarily of PAHs and inorganic constituents. During storm events, contaminants may enter the water column reducing water quality. However, the Creek RI did not identify contaminants in the creek during storm events that were specifically associated with the Three Star Site.

- Potential migration pathways were identified consisting of industrial facilities and site media. The Three Star lagoon, and the Three Star Site in the vicinity of it, appear to be a current, albeit relatively weak, source of constituents to the creek. The presence of trace levels of chlorinated VOCs and elevated levels of lead found in surface sediment at the outlet of the Three Star lagoon provide evidence that this is a source area. Based on past uses, the north lagoon is also a potential source of constituents to the tidal creek, but analytical data has not been collected to evaluate this.

- Throughout the tidal creek and at background locations, PAHs and inorganic constituents were detected in sediment samplse at concentrations above ecological screening values intended to measure lowest effect levels (LELs).

- A screening level assessment of potential impacts to fish and wildlife of the creek was completed through Step II C (NYSDEC 1994) indicating the potential for impacts to ecological receptors represented by a mink and great blue heron.

- A pathway analysis for qualitative evaluation of human exposures was completed that identified potential human populations that may utilize the creek consisting of recreational users, swimmers, and fish consumers.

- Surface water in Wappingers Creek was evaluated and potential impacts to water quality due to migration of contaminants via surface water or ground water seepage from the site were identified.

- Sediment of Wappingers Creek provided evidence of impacts from nearby activities. The constituents associated with past activities at the Three Star Site are consistent with the highest levels of constituents found in the creek. However, historical activities that took place on the north parcel of the Market Street Industrial Park were similar to those that took place at the Three Star Site and potential impacts resulting from that parcel are not known. Among uncertainties associated with potential current sources to the creek from the north parcel is the condition of the north lagoon. It reportedly received paint wastes during the 1970s. The Public Works garage and the railroad located along the creek are additional potential sources that were identified, but potential contributions from these sources could not be distinguished from other sources.

- Spatial patterns indicate that most of the highest concentrations of constituents are buried in deeper sediment suggesting that they originated from past releases. The shoal and embayment contain accumulations of constituents likely associated with past industrial releases from the Market Street Industrial Park.

- The composition of PAHs in sediment was comparable to materials found on the Three Star Site. The PAH composition of other potential sources such as fill material along Creek Road or contaminants associated with the Public Works garage has not been characterized.

- The impacts of the Three Star Site to the tidal creek have been delineated to allow a FS of the Creek to be completed. However, before a Creek FS is completed uncertainties associated with other potential sources to the creek (*e.g.* the north parcel of the Market Street Industrial Park) should be addressed. Control of potential upland sources is the first step toward improving conditions in the creek.

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Table 1-1. Potential constituent sources and characteristics

Constituent type	Potential source types	Characteristics	Potential local sources
Volatile organic compounds (VOCs)	Solvents, hydrocarbon fuels	VOCs generally dissipate to the air when exposed to the surface environment. However, VOCs discharged as liquids may migrate into ground water where they can be retained over a long period of time and act as a source of VOCs to other media. If sufficient quantities are present, free phase VOCs may be trapped in soil.	Ubiquitous sources such as storm runoff containing contaminants from motor vehicles such as BTEX compounds. Three Star Site: VOCs were used in solvents and petroleum products. Chlorinated VOCs and BTEX compounds have been identified in Site media. Market Street Industrial Park, north site: Chlorinated VOCs and/or BTEX compounds were likely used in solvents and petroleum products associated with past dye manufacturing operations and metal plating operations. Pipes located along creek provide potential pathway to creek. Former discharge of paint to lagoon was reported. Former storage of fuels may have leaked or spilled BTEX compounds. Department of Public Works garage where storage and maintenance of vehicles may have occurred along with leaks or spills.
Semivolatile organic compounds (SVOCs)	MGP site uses as PAHs, ubiquitous sources of combustion, hydrocarbon fuels	SVOCs tend to accumulate in sediment and soils when exposed to the environment. SVOCs are often present as groups of aromatic compounds called polycyclic aromatic hydrocarbons (PAHs). Exposure of PAHs to the environment may alter the composition of the PAHs in solid matrices, soil and sediment, over time. Losses of lighter compounds to water and air commonly occurs resulting in a PAH composition enriched in higher weighted compounds.	Ubiquitous sources such as vehicles and fires. Three Star Site, PAHs are present from tar residues of former MGP operations, and coal wastes from coal burning including cinders. The residuals remainging from the May 2004 fire at the site would be expected to contain PAHs. Market Street Industrial Park, north site may contain fill material from former MGP Site. Former fuel storage tanks may have leaked or spilled. Cinders from former MGP Site may have been used as fill material at off-site locations including along Creek Road in the vicinity of the shoal area. Railroad near confluence of tidal creek and Hudson River

Table 1-1. Potential constituent sources and characteristics

Constituent type	Potential source types	Characteristics	Potential local sources
Elemental inorganic constituents	Metal plating operations, vehicle brakes, local geology, mining, foundries and smelters, combustion byproducts, coal.	Metals can be present in the environment as either ionic (dissolved) compounds or solids. In the dissolved form, metals are readily transported in surface water or ground water. As a solid, metals tend to be retained in sediment or soils.	Ubiquitous sources of inorganic constituents observed in background samples. Three Star Site includes former metal plating operations. Metals (*e.g.* chromium and zinc) were reportedly discharged in process water from plating operations mixed with acid to dissolve the metals. However, on contact with environmental media, the acid solution would tend to neutralize and precipitate metals. Therefore, metals may be retained in soils or sediment. Metals may also be present due to past use of pigments in industrial processes at the site. Former photographic processes may be associated with silver. Past activities of the Three Star site and the north parcel included photographic printing. Dye manufacturing of the Dutchess Bleachery and former felt manufacturing on the Three Star site may be associated with mercury used in paint pigments. Market Street Industrial Park, north site. Former dye manufacturing, printing, and metal plating operations were similar to those of the Three Star Anodizing Site. Paints reportedly discharged to the north lagoon likely contained inorganic constituents as pigments.

Table 1-1. Potential constituent sources and characteristics

Constituent type	Potential source types	Characteristics	Potential local sources
Cyanide	Metal finishing and chemical industries, plastic and dye manufacturing, MGP, road salt, pesticides and herbicides	Cyanide is found in a number of sources. Cyanide can be in a form that does not pose a risk to living organisms or in its bioavailable form, measured as amenable cyanide, it can be toxic to organisms. Insoluble cyanide compounds are the most likely forms to be found in the environment. Insoluble cyanide compounds may adsorb to soil and sediment and generally have the potential to bioconcentrate. Insoluble forms do not biodegrade.	Ubiquitous levels were observed in background samples from sources such as road salt, pesticides and herbicides. Three Star site former metal finishing, plastic and dye manufacturing operations. Three Star Site former MGP operations. Market Street Industrial Park, north site. Fill materials containing MGP wastes may contain cyanide.

Table 2-1A. Wappinger Creek - surface water sample quantities analyzed for the Creek RI/FS

Description	Analysis	NYSDEC Analytical Method	Environ. *Locations*	*Samples*
Surface Water	Event 1-summer low flow			
	Volatile organic compounds	95-1+10	6	6
	Semivolatile organic compounds	95-2+20	6	6
	Pesticides	95-3	6	6
	PCBs	95-3	6	6
	Metals	200.7 CLP-M	6	6
	Mercury	245 CLP-M	6	6
	Cyanide	335.2 CLP-M	6	6
	Total suspended solids	160.2	6	6
	Hardness	130.2	6	6
	Alkalinity	310.1	6	6
	Dissolved organic carbon	415.1	6	6
Surface water	Event 2-storm flow event			
	Volatile organic compounds	95-1+10	3/1	7
	Semivolatile organic compounds	95-2+20	3/1	7
	TAL metals	200.7 CLP-M	3/1	7
	Mercury	245 CLP-M	3/1	7
	Cyanide	335.2 CLP-M	3/1	7
	Total suspended solids	160.2	3/1	7
	Hardness	130.2	3/1	7
	Alkalinity	310.1	3/1	7
	Dissolved organic carbon	415.1	3/1	7

Notes:
3/1 = Three locations in the tidal creek (two rounds); one location at the Three Star lagoon outlet (one round).

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Table 2-1B. Wappinger Creek - sediment sample quantities analyzed for the Creek RI/FS

Description	Analysis	Analytical Method		Environ. Locations	Environ. Samples
Sediment Background (Wappingers Lake)	Volatile organic compounds	NYSDEC	95-1+10	3	9
	Semivolatile organic compounds	NYSDEC	95-2+20	8	14
	Pesticides	NYSDEC	95-3	3	9
	PCBs	NYSDEC	95-3	3	9
	TAL Metals	NYSDEC	200.7 CLP-M	8	14
	Hexavalent chromium S	NYSDEC	7196A	8	14
	Mercury	NYSDEC	245 CLP-M	8	14
	Cyanide	NYSDEC	335.2 CLP-M	8	14
	Amenable cyanide *	NYSDEC	9010B/9014	1	1
	Percent solids	ASTM	D2540-6	8	14
	Total organic carbon S	USEPA	Lloyd Kahn	8	14
Sediment - cores tidal creek	Volatile organic compounds	NYSDEC	95-1+10	11	15
	Semivolatile organic compounds	NYSDEC	95-2+20	30	62
	Pesticides	NYSDEC	95-3	9	12
	PCBs	NYSDEC	95-3	9	12
	TAL Metals	NYSDEC	200.7 CLP-M	30	62
	Hexavalent chromium S	NYSDEC	7196A	30	62
	Mercury	NYSDEC	245 CLP-M	30	62
	Cyanide	NYSDEC	335.2 CLP-M	30	62
	Amenable cyanide *	NYSDEC	9010B/9014	12	19
	Percent solids	ASTM	D2540-6	30	62
	Total organic carbon S	USEPA	Lloyd Kahn	24	49
	Particle size analysis	ASTM	ASTM-D422/ ASTM-D1140	3	3
SUMMARY	Volatile organic compounds	NYSDEC	95-1+10	14	24
	Semi-volatile organic compounds	NYSDEC	95-2+20	38	76
	Pesticides	NYSDEC	95-3	12	21
	PCBs	NYSDEC	95-3	12	21
	TAL Metals	NYSDEC	200.7 CLP-M	38	76
	Hexavalent chromium S	NYSDEC	7196A	38	76
	Mercury	NYSDEC	245 CLP-M	38	76
	Cyanide	NYSDEC	335.2 CLP-M	38	76
	Amenable cyanide *	NYSDEC	9010B/9014	13	20
	Percent solids	ASTM	D2540-6	38	76
	Total organic carbon S	USEPA	Lloyd Kahn	32	63
	Particle size analysis	ASTM	ASTM-D422/ ASTM-D1140	3	3

Notes:

Samples analyzed by O'Brien & Gere Laboratories, Inc., except as noted by "S" indicating subcontracted analysis.

* Amendable cyanide analyses performed based on results of total cyanide analyses.

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DRAFT Table 2-2
Three Star Anodizing Site
Wappingers Falls, New York
Component evaluation of PAH data

	Compound	Carcinogenic	BaP Equivalent
1	Acenaphythene	---	---
2	Acenaphythylene	---	---
3	Anthracene	---	---
4	Benzo(a)anthracene	X	0.1
5	Benzo(a)pyrene	X	1
6	Benzo(b)fluoroanthene	X	0.1
7	Benzo(ghi)perlyene	---	---
8	Benzo(k)fluoranthene	X	0.01
9	Chrysene	X	0.01
10	Dibenzo(a,h)anthracene	X	1
11	Fluoranthene	---	---
12	Fluroene	---	---
13	Indeno(1,2,3-cd)pyrene	X	0.1
14	Naphthalene	---	---
15	Phenanthrene	---	---
16	Pyrene	---	---

Notes:
BaP equivalents provided by NYSDOH.

New York State Department of Environmental Conservation
Three Star Anodizing Site - Creek RI
Wappingers Falls, New York

Table 3-1a. Low flow surface water sampling - results of July 12, 2001 field analyses.

Sample location				pH	Cond. (usem/cm)	Water Temp. (C deg.)		DO (mg/l)	Salinity (%)
Wappingers Lake		---	---	6.1	0.47	23	---	7.0	0.0
Upstream Site Br.	WP5-SW	---	---	7.1	0.45	23	---	7.4	0.0
Site Bridge	WP10-SW	---	---	7.1	0.45	23	---	6.8	0.0
Dwnstrm lagoon	WP13-SW	---	---	7.1	0.46	24	---	7.0	0.0
Dwnstrm MGP Site	WP18-SW	---	---	6.7	0.47	23	---	6.4	0.0
Dwnstrm pool	WP35-SW	---	---	6.0	0.46	23	---	6.4	0.0
Average		---	---	---	0.46	23	---	6.8	0.0
Median		---	---	6.9	0.46	23	---	6.9	0.0

Table 3-1b. Storm event surface water sampling - results of May 14 and 15, 2002 field analyses.

Sample location		Time	Water depth	pH	Cond. (usem/cm)	Water Temp. (C deg.)	Turbidity (NTU)	DO (mg/l)	Salinity (%)
Round 1- May 14, 2002									
Wappingers Lake	---	1800	10.5 ft	7.7	0.24	12	21	11.3	0.0
Site Bridge	---	1530	10.5 ft	7.8	0.25	13	24	11.1	0.0
Route 28 Bridge	---	1645	20 ft	7.8	0.27	12	26	8.5	0.0
Round 2 - May 15, 2002									
Wappingers Lake	---	1030	9 ft	7.8	0.25	12	122	10.7	0.0
Site Bridge	---	745	8.5 ft	7.6	0.24	12	44	10.8	0.0
Route 28 Bridge	---	830	17.5 ft	7.8	0.25	12	37	10.1	0.0
Lagoon outlet	---	930	3 in	7.6	0.31	13	6	10.5	0.0
Average		---	---	---	0.26	12	40	10.4	0.0
Median		---	---	7.8	0.25	12	37	10.8	0.0

Note:
Data presented for the lake and creek are the averages of three readings obtained from the upper, middle and lower depth intervals.
Data presented for the lagoon are single readings.

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2/4/2005

DRAFT Table 3-2A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow July 2001
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

Compound	Sample ID Location Cross Reference Sample Date Sample Depth Units	Surface Water Screening Values	Wappingers Lake Route 9D 07/12/2001	Site Bridge 1 WP5-SW 07/12/2001	Site Bridge 2 WP10-SW 07/12/2001	Site Bridge 2 DUP WP10-SW 07/12/2001	WP13-SW 07/12/2001	WP18-SW 07/12/2001
Volatile Organic Compounds								
Acetone	(ug/L)	50 G H(WS)	---	3 J	---	---	---	---
Semi-Volatile Organic Compounds (None Detected)								
Total suspended solids (mg/L)	(mg/L)	NS	7	5 U	5	5 U	5 U	5 U

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

DRAFT Table 3-2A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow July 2001
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

	Sample ID Location Cross Reference Sample Date Sample Depth Units	Surface Water Screening Values	WP35-SW 07/12/2001
Compound			
Volatile Organic Compounds			
Acetone	(ug/L)	50 G H(WS)	---
Semi-Volatile Organic Compounds (None Detected)			
Total suspended solids (mg/L)	(mg/L)	NS	5 U

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

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DRAFT - Table 3-2B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

Compound	Sample ID Location Cross Reference Sample Date Sample Depth Units	Surface Water Screening Values	Wappingers Lake WPLKSW-1 05/14/2002	Wappingers Lake DUP WPLKSW-1 DUP 05/14/2002	Wappingers Lake WPLKSW-2 05/15/2002	Site Bridge-1 05/14/2002	Site Bridge-2 05/15/2002	Lagoon (outlet) 05/15/2002
Volatile Organic Compounds (None Detected)								
Semi-Volatile Organic Compounds (None Detected)								
Total suspended solids (mg/L)	(mg/L)	NS	13	8	6	18	12	5 U

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.

DRAFT - Table 3-2B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

Compound	Sample ID / Location Cross Reference / Sample Date / Sample Depth / Units	Surface Water Screening Values	Rt. 28 Bridge -1	Rt. 28 Bridge -2
	Sample Date		05/14/2002	05/15/2002
Volatile Organic Compounds (None Detected)				
Semi-Volatile Organic Compounds (None Detected)				
Total suspended solids (mg/L)	(mg/L)	NS	18	20

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow, July 2001
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date / Units	Surface Water Screening Values	Wappingers Lake Route 9D 07/12/2001		Site Bridge 1 WP5-SW 07/12/2001		Site Bridge 2 WP10-SW 07/12/2001		WP13-SW 07/12/2001		WP18-SW 07/12/2001		WP35-SW 07/12/2001	
Compound	ug/L	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)
Aluminum	100 i-A(C)	82 J		34 J		74 J		28 J		38 J		18 J	
Antimony	3 H(WS)	1.4 U		1.4 U		1.4 U		1.4 U		1.4 U		1.4 U	
Arsenic	50/150 H(WS)/d-A(C)	1.6 U		1.6 U		1.6 U		1.6 U		1.6 U		1.6 U	
Barium	1000 H(WS)	16 J		15 J		16 J		15 J		17 J		16 J	
Beryllium	3 gd-H(WS)/A(C)	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100
Cadmium	5/h H(WS)/A(C)	0.2 U	3.0	0.2 U	3.3	0.2 U	3.2	0.2 U	3.2	0.2 U	3.0	0.2 U	3.2
Calcium	NS	44800		44500		45100		47500		49600		46500	
Chromium	11 dhx-A(C)	1.8 J	109	1.0 J	120	1.7 J	114	1.3 J	114	1.9 J	109	1.7 J	114
Cobalt	5 A(C)	0.9 U		0.9 U		0.9 U		0.9 U		0.9 U		0.9 U	
Copper	200/h H(WS)/A(C)	1.9 J	13	1.4 J	15	1.4 J	14	1.0 J	14	1.4 J	13	1.3 J	14
Iron	300 A(C)	278		207		284		173		198		152	
Lead	50/h H(WS)/A(C)	0.7 U	6.3	0.7 U	7.1	0.7 U	6.7	0.7 U	6.7	0.7 U	6.3	0.7 U	6.7
Magnesium	35000 H(WS)	12500		12300		12400		13000		13600		12700	
Manganese	300 E	102		106		134		97		100		95	
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	
Nickel	100h H(WS)/A(C)	0.8 J	77	0.7 U	86	0.7 U	81	0.7 U	81	0.7 U	77	1.0 J	81
Potassium	NS	1010 J		1010 J		1030 J		1090 J		1150 J		1070 J	
Selenium	4.6 d-A(C)	1.8 U		1.8 U		1.8 U		1.8 U		1.8 U		1.8 U	
Silver	0.1 i-A(C)	0.7 U		0.7 U		0.7 U		0.7 U		0.7 U		0.7 U	
Sodium	NS	28800		28400		28800		30000		31200		29600	
Thallium	0.5/8 gd-H(WS)/A(C)	3.6 U		3.6 U		3.6 U		3.6 U		3.6 U		3.6 U	
Vanadium	14 A(C)	0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U	
Zinc	66 d-A(C)	1.3 J	123	2.1 J	136	4.8 J	130	4.7 J	130	5.0 J	123	1.1 J	130
Cyanide, total	5.2 f-A(C)	10.0 U		10.0 U		10.0 U		10.0 U		10.0 U		10.0 U	
Total suspended solids (mg/L)	NS	7		5 U		5		5 U		5 U		5 U	
Hardness (mg/L)	NS	160		180		170		170		160		170	

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

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O'BRIEN & GERE ENGINEERS, INC.

DRAFT - Table 3-3B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date / Units	Surface Water Screening Values	Wappingers Lake WPLKSW-1 05/14/2002		Wappingers Lake WPLKSW-2 05/15/2002		Site Bridge-1 05/14/2002		Site Bridge-2 05/15/2002		Lagoon (outlet) 05/15/2002		Rt. 28 Bridge -1 05/14/2002	
Compound	ug/L	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)
Aluminum	100 i-A(C)	[451]		[256]		[593]		[412]		[143 J]		[696]	
Antimony	3 H(WS)	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
Arsenic	50/150 H(WS)/d-A(C)	3.3 U		3.3 U		3.3 U		3.3 U		3.3 U		3.3 U	
Barium	1000 H(WS)	17 J		13 J		19 J		15 J		18 J		19 J	
Beryllium	3 gd-H(WS)/A(C)	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 J	1100
Cadmium	5/h H(WS)/A(C)	0.4 U	2.3	0.4 U	2.3	0.4 U	2.1	0.4 U	2.1	0.4 U	2.3	0.4 U	2.3
Calcium	NS	30100		30600		30700		30300		35300		30800	
Chromium	11 dhx-A(C)	1.2 U	80	1.2 U	80	1.2 U	74	1.2 U	74	1.2 U	80	1.2 U	80
Cobalt	5 A(C)	1.3 U		1.3 U		1.3 U		1.3 U		1.3 U		1.3 U	
Copper	200/h H(WS)/A(C)	2.3 J	10	3.4 J	10	1.8 U	9.0	2.1 J	9.0	2.4 J	10	2.1 J	10
Iron	300 A(C)	[610]		[386]		[708]		[581]		281		[834]	
Lead	50/h H(WS)/A(C)	0.8 J	4.2	0.8 U	4.2	0.9 J	3.8	1.1 J	3.8	1.7 J	4.2	0.9 J	4.2
Magnesium	35000 H(WS)	7120		7130		7250		7130		8540		7570	
Manganese	300 E	99		69		109		88		95		107	
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Nickel	100h H(WS)/A(C)	1.8 U	56	1.8 U	56	1.8 U	52	1.8 U	52	1.8 U	56	1.8 U	56
Potassium	NS	1350 J		1320 J		1390 J		1260 J		1410 J		1360 J	
Selenium	4.6 d-A(C)	2.9 U		2.9 U		2.9 U		2.9 U		2.9 U		2.9 U	
Silver	0.1 i-A(C)	[2.2 J]		[1.8 J]		[1.7 J]		[2.1 J]		[2.0 J]		1.5 U	
Sodium	NS	21200 J		20800 J		22400 J		20700 J		25700 J		24600 J	
Thallium	0.5/8 gd-H(WS)/A(C)	3.7 U		3.7 U		3.7 U		3.7 U		3.7 U		3.7 U	
Vanadium	14 A(C)	2.2 J		1.6 J		2.0 J		2.0 J		2.0 J		1.8 J	
Zinc	66 d-A(C)	4.8 J	90	6.8 J	90	7.4 J	83	6.4 J	83	6.5 J	90	7.0 J	90
Cyanide, total	5.2 f-A(C)	10.0 U		10.0 U		10.0 U		[20]		10.0 U		10.0 U	
Total suspended solids (mg/L)	NS	13		6		18		12		5 U		18	
Hardness (mg/L)	NS	110		110		100		100		110		110	

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

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DRAFT - Table 3-3B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date / Units	Surface Water Screening Values	Rt. 28 Bridge -2											
Sample Date		05/15/2002											
Units	ug/L	ug/L											
Compound			Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)
Aluminum	100 i-A(C)	[676]											
Antimony	3 H(WS)	2.0 U											
Arsenic	50/150 H(WS)/d-A(C)	3.3 U											
Barium	1000 H(WS)	17 J											
Beryllium	3 gd-H(WS)/A(C)	0.1 J	1100										
Cadmium	5/h H(WS)/A(C)	0.4 U	2.4										
Calcium	NS	31100											
Chromium	11 dhx-A(C)	1.2 U	86										
Cobalt	5 A(C)	1.3 U											
Copper	200/h H(WS)/A(C)	2.8 J	10										
Iron	300 A(C)	[895]											
Lead	50/h H(WS)/A(C)	2.0 J	4.6										
Magnesium	35000 H(WS)	7290											
Manganese	300 E	107											
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.1 U											
Nickel	100h H(WS)/A(C)	1.8 U	61										
Potassium	NS	1370 J											
Selenium	4.6 d-A(C)	2.9 U											
Silver	0.1 i-A(C)	[1.7 J]											
Sodium	NS	21700 J											
Thallium	0.5/8 gd-H(WS)/A(C)	3.7 U											
Vanadium	14 A(C)	2.3 J											
Zinc	66 d-A(C)	8.6 J	96										
Cyanide, total	5.2 f-A(C)	[10.0]											
Total suspended solids (mg/L)	NS	20											
Hardness (mg/L)	NS	120											

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

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DRAFT Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-LK01-A		WP-LK01-A		WP-LK01-A		WP-LK01-B		WP-LK01-B	
Sample Date		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.		05/10/2001 19 - 25 in.		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.02 J	0.2	0.02 J	0.3	0.03 J	0.8	0.01 J	0.2	0.03 J	0.5
Acetone	0.03 (W)	---	---	---	---	0.07 J	[2]	---	---	---	---
Carbon disulfide	NS	0.005 J	0.05	---	---	---	---	---	---	0.009 J	0.1
Chloromethane	NS	---	---	---	---	---	---	---	---	0.01 J	0.2
Methylene chloride	0.09 (W)	---	---	---	---	0.01 J	[0.3]	---	---	---	---
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	---	---	---	---	---	---
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---	---	---
Xylene (total)	92	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---	---	---
Total BTEX	NS	---	---	---	---	---	---	---	---	---	---
Total Chlorinated VOCs	NS	---	---	---	---	0.01	0.3	---	---	---	---
Total VOCs	NS	0.02	0.2	0.02	0.4	0.1	3	0.01	0.1	0.05	0.8
Total organic carbon (mg/Kg)	NA	99100	---	47000	---	33800	---	66800	---	62000	---
% TOC	NA	10	---	4.7	---	3.4	---	6.7	---	6.2	---
Percent solids (%)	NA	22	---	35	---	46	---	25	---	32	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-LK01-B DUP		WP-LK01-B		WP-LK01-C		WP-LK01-C		WP-LK01-C	
Sample Date		05/10/2001 6 - 12 in.		05/10/2001 25 - 31 in.		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.		05/10/2001 26 - 32 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.04 J	0.7	0.02 J	0.3	0.02 J	0.3	0.04 J	0.6	0.03 J	0.6
Acetone	0.03 (W)	---	---	---	---	---	---	0.1 J	[2]	0.1 J	[2]
Carbon disulfide	NS	0.006 J	0.1	0.004 J	0.07	---	---	---	---	---	---
Chloromethane	NS	---	---	0.002 J	0.04	0.004 J	0.07	---	---	---	---
Methylene chloride	0.09 (W)	0.006 J	[0.1]	---	---	---	---	0.003 J	0.05	---	---
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	0.004 J	0.07	---	---	---	---
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---	---	---
Xylene (total)	92	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---	---	---
Total BTEX	NS	---	---	---	---	0.004	0.07	---	---	---	---
Total Chlorinated VOCs	NS	0.006	0.1	---	---	---	---	0.003	0.05	---	---
Total VOCs	NS	0.05	0.9	0.02	0.4	0.02	0.3	0.1	2	0.1	3
Total organic carbon (mg/Kg)	NA	55200	---	54700	---	58700	---	55500	---	38800	---
% TOC	NA	5.5	---	5.5	---	5.9	---	5.6	---	3.9	---
Percent solids (%)	NA	34	---	48	---	29	---	36	---	50	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	LG-OUT		WP-LGOUT2		WP-16		WP-18		WP-18	
Sample Date		05/09/2001 0 - 6 in.		05/13/2003 0 - 6 in.		05/09/2001 0 - 6 in.		05/09/2001 0 - 6 in.		05/09/2001 6 - 12 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	---	---	---	---	---	---	0.008 J	0.3	0.007 J	0.3
Acetone	0.03 (W)	---	---	---	---	---	---	---	---	---	---
Carbon disulfide	NS	---	---	---	---	---	---	0.005 J	0.2	0.002 J	0.08
Chloromethane	NS	---	---	---	---	---	---	---	---	---	---
Methylene chloride	0.09 (W)	---	---	---	---	0.002 J	[0.2]	0.004 J	[0.2]	---	---
Tetrachloroethene	0.8 (H)	0.02	0.4	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	---	---	---	---	---	---
Trichloroethene	2.0 (H)	0.02	0.4	0.001 J	0.08	---	---	---	---	---	---
Xylene (total)	92	0.002 J	0.04	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	0.003 J	0.05	0.002 J	0.2	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	0.002 J	0.04	0.001 J	0.08	---	---	---	---	---	---
Total BTEX	NS	0.002	0.04	---	---	---	---	---	---	---	---
Total Chlorinated VOCs	NS	0.05	0.9	0.004	0.3	0.002	0.2	0.004	0.2	---	---
Total VOCs	NS	0.05	0.9	0.004	0.3	0.002	0.2	0.02	0.9	0.009	0.4
Total organic carbon (mg/Kg)	NA	56000	---	12400 J	---	8770	---	23400	---	24400	---
% TOC	NA	5.6	---	1.2 J	---	0.9	---	2.3	---	2.4	---
Percent solids (%)	NA	77	---	75	---	79	---	68	---	64	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 4-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-29		WP-29		WP-29		WP-PL			
Sample Date		05/09/2001 0 - 6 in.		05/09/2001 6 - 12 in.		05/09/2001 12 - 18 in.		05/08/2001 6 - 11 in.			
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.008 J	0.4	0.03 J	5	0.08 J	0.7	0.03 J	0.3		
Acetone	0.03 (W)	---	---	0.09 J	[12]	---	---	0.06 J	[0.7]		
Carbon disulfide	NS	---	---	0.003 J	0.4	0.01 J	0.1	---	---		
Chloromethane	NS	---	---	---	---	---	---	---	---		
Methylene chloride	0.09 (W)	---	---	0.02	[2]	---	---	---	---		
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---		
Toluene	49	---	---	---	---	---	---	---	---		
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---		
Xylene (total)	92	---	---	---	---	---	---	---	---		
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---		
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---		
Total BTEX	NS	---	---	---	---	---	---	---	---		
Total Chlorinated VOCs	NS	---	---	0.02	3	---	---	---	---		
Total VOCs	NS	0.008	0.4	0.1	14	0.09	0.9	0.09	1		
Total organic carbon (mg/Kg)	NA	21700	---	7330	---	105000	---	---	---		
% TOC	NA	2.2	---	0.7	---	11	---	---	---		
Percent solids (%)	NA	56	---	62	---	58	---	---	---		

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LK1 05/12/2003 0 - 6 in.		WP-LK2 05/12/2003 0 - 6 in.		WP-LK3 05/12/2003 0 - 6 in.		WP-LK4 05/12/2003 0 - 6 in.		WP-LK5 05/12/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	---	---	---	---	0.3 J	4	0.2 J	5	0.3 J	7
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.2 J	[2]	---	---	0.3 J	[4]	0.2 J	[5]	0.4 J	[8]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.4 J	[4]	0.4 J	[4]	0.5 J	[9]	0.4 J	[9]	0.6 J	[13]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	---	---	0.2 J	4	0.2 J	5
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	---	---	---	---	---	---	0.2 J	[5]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.3 J	[3]	0.3 J	[3]	0.4 J	[6]	0.3 J	[7]	0.4 J	[10]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	0.4 J	4	0.5 J	5	0.6 J	9	0.5 J	11	0.7 J	14
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	---	---	0.2 J	[4]	0.2 J	[5]
Naphthalene	30	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	120	---	---	---	---	---	---	---	0.2 J	4	0.2 J	5
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.4 J	4	0.5 J	5	0.6 J	10	0.5 J	11	0.8 J	17
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	102000 J	---	91600 J	---	63300 J	---	42100 J	---	46100 J	---
% TOC	NA	---	10 J	---	9.2 J	---	6.3 J	---	4.2 J	---	4.6 J	---
Percent solids (%)	NA	---	18	---	12	---	14	---	25	---	36	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	1.7	---	1.7	---	2.6	---	2.5	---	[4.1]	---
Total Carcinogenic PAHs	NS	NS	0.9	---	0.7	---	1.5	---	1.2	---	2.2	---
Total SVOCs	NS	---	1.7	---	1.7	---	2.6	---	2.5	---	4.1	---
BaP Equivalents	1.3 (H)	NS	0.3	[3]	0.04	0.4	0.4	[6]	0.3	[7]	0.5	[11]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LK01-A 05/10/2001 0 - 6 in.		WP-LK01-A 05/10/2001 6 - 12 in.		WP-LK01-A 05/10/2001 19 - 25 in.		WP-LK01-B 05/10/2001 0 - 6 in.		WP-LK01-B 05/10/2001 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	0.4 J	4	0.2 J	4	0.1 J	4	0.4 J	6	0.3 J	4
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 J}	[5]	0.2 J	[4]	0.1 J	[3]	{0.5 J}	[7]	0.3 J	[4]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	1.0 J	[10]	0.4 J	[9]	0.2 J	[6]	0.8 J	[12]	0.5 J	[9]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	---	---	0.2 J	2	---	---
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[3]	---	---	0.08 J	[2]	0.3 J	[5]	0.2 J	[3]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.6 J	[6]	0.3 J	[6]	0.2 J	[5]	0.6 J	[9]	0.3 J	[5]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	1.0 J	10	0.4 J	9	0.2 J	7	0.9 J	13	0.5 J	9
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	30	---	---	---	---	---	---	---	0.3 J	[4]	---	---
Phenanthrene	120	---	0.4 J	4	0.2 J	5	0.1 J	4	0.5 J	7	0.3 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.3 J	13	0.6 J	13	0.3 J	10	1.2 J	18	0.8 J	13
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	1.1 J	11	0.5 J	11	0.3 J	9	0.6 J	8	0.4 J	6
Total organic carbon (mg/Kg)	NA	---	99100	---	47000	---	33800	---	66800	---	62000	---
% TOC	NA	---	10	---	4.7	---	3.4	---	6.7	---	6.2	---
Percent solids (%)	NA	---	22	---	35	---	46	---	25	---	32	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[5.4]	---	2.4	---	1.4	---	[5.5]	---	3.2	---
Total Carcinogenic PAHs	NS	NS	2.7	---	1.1	---	0.7	---	2.8	---	1.6	---
Total SVOCs	NS	---	6.5	---	2.9	---	1.7	---	6.1	---	3.6	---
BaP Equivalents	1.3 (H)	NS	0.6	[6]	0.3	[6]	0.1	[3]	0.6	[9]	0.4	[6]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LK01-B DUP 05/10/2001 6 - 12 in.		WP-LK01-B 05/10/2001 25 - 31 in.		WP-LK01-C 05/10/2001 0 - 6 in.		WP-LK01-C 05/10/2001 6 - 12 in.		WP-LK01-C 05/10/2001 26 - 32 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	0.3 J	5	0.09 J	2	0.4 J	7	0.2 J	4	0.1 J	3
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.3 J	[5]	0.09 J	[2]	0.4 J	[7]	0.2 J	[4]	0.2 J	[5]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.5 J	[9]	0.2 J	[3]	0.8 J	[14]	0.4 J	[7]	0.2 J	[6]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	0.2 J	3	0.1 J	2	0.4 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.2 J	[3]	---	---	0.3 J	[5]	0.1 J	[2]	---	---
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.4 J	[7]	0.1 J	[3]	0.6 J	[11]	0.3 J	[5]	0.2 J	[5]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	0.6 J	10	0.2 J	3	0.9 J	16	0.4 J	8	0.3 J	7
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	0.3 J	[5]	0.1 J	[2]	0.1 J	[3]
Naphthalene	30	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	120	---	0.3 J	5	0.1 J	2	0.4 J	7	0.2 J	4	0.2 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.7 J	13	0.3 J	5	1.0 J	17	0.5 J	9	0.4 J	10
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.5 J	8	0.2 J	3	0.5 J	8	0.3 J	6	0.2 J	4
Total organic carbon (mg/Kg)	NA	---	55200	---	54700	---	58700	---	55500	---	38800	---
% TOC	NA	---	5.5	---	5.5	---	5.9	---	5.6	---	3.9	---
Percent solids (%)	NA	---	34	---	48	---	29	---	36	---	50	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	3.1	---	1.0	---	[5.4]	---	2.6	---	2.0	---
Total Carcinogenic PAHs	NS	NS	1.5	---	0.5	---	2.8	---	1.3	---	0.9	---
Total SVOCs	NS	---	3.5	---	1.2	---	5.9	---	2.9	---	2.2	---
BaP Equivalents	1.3 (H)	NS	0.3	[5]	0.1	[2]	0.6	[10]	0.3	[5]	0.2	[5]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-01-A 05/09/2001 0 - 6 in.		WP-04.45-9 05/09/2001 0 - 6 in.		WP-09A 05/09/2001 0 - 6 in.		WP-11A 05/09/2001 0 - 6 in.		LG-OUT 05/09/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	0.1 J	3
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.4 J	19	---	---	---	---	0.1 J	2
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	1.9 J	86	0.1 J	2	---	---	0.4 J	7
Benzo(a)anthracene	12	---	---	---	6.1	[276]	0.3 J	4	0.3 J	4	2.6	[46]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	---	---	{5.9 }	[267]	0.3 J	[4]	0.4 J	[5]	{3.6 }	[64]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.05 J	[3]	{8.8 }	[398]	0.5	[7]	0.5	[6]	{4.6 }	[82]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	1.4 J	63	0.1 J	2	0.2 J	3	1.7	30
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	2.2	[100]	0.2 J	[2]	0.2 J	[2]	1.4	[25]
Carbazole	NS	NS	---	---	1.2 J	54	0.05 J	0.8	---	---	0.2 J	4
Chrysene	1.3 (H)	---	---	---	5.8	[262]	0.4 J	[6]	0.3 J	[4]	2.5	[45]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.7 J	[30]	---	---	---	---	0.9	[16]
Dibenzofuran	NS	5.1 (2)	---	---	0.5 J	21	---	---	---	---	---	---
Fluoranthene	1020	---	0.05 J	3	11	498	0.6	10	0.5	6	2.8	50
Fluorene	8	---	---	---	0.4 J	[19]	0.05 J	0.8	---	---	0.1 J	2
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	2.2 J	[100]	0.2 J	[3]	0.3 J	[3]	2.6	[46]
Naphthalene	30	---	---	---	0.4 J	17	---	---	---	---	0.1 J	2
Phenanthrene	120	---	---	---	7.5	[339]	0.6	9	0.2 J	2	1.5	27
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.05 J	3	9.2	416	0.8	11	0.5	7	3.3	59
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.1 J	5	---	---	0.5	7	0.1 J	2	0.6 J	10
Total organic carbon (mg/Kg)	NA	---	18600	---	22100	---	65500	---	76500	---	56000	---
% TOC	NA	---	1.9	---	2.2	---	6.6	---	7.7	---	5.6	---
Percent solids (%)	NA	---	81	---	73	---	66	---	65	---	77	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.2	---	[64]	---	4.0	---	3.4	---	[28]	---
Total Carcinogenic PAHs	NS	NS	0.05	---	32	---	1.8	---	2.0	---	18	---
Total SVOCs	NS	---	0.2	---	66	---	4.6	---	3.6	---	29	---
BaP Equivalents	1.3 (H)	NS	0.005	0.3	8.4	[380]	0.4	[6]	0.5	[7]	5.5	[98]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
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Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-LGOUT2		WP-MW4		WP-MW4 DUP		WP-16		WP-18	
Sample Date			05/13/2003 0 - 6 in.		05/13/2003 0 - 6 in.		05/13/2003 0 - 6 in.		05/09/2001 0 - 6 in.		05/09/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	0.07 J	5	---	---	0.2 J	[16]	0.05 J	5	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	0.09 J	8	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.05 J	2	0.1 J	12	---	---	---	---
4-Chloroaniline	NS	---	---	---	0.05 J	2	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.04 J	2	0.2 J	15	0.09 J	10	0.1 J	6
Acenaphthylene	NS	---	---	---	0.5	19	0.4 J	31	---	---	---	---
Anthracene	107	---	0.2 J	12	0.8	31	1.2	99	0.3 J	31	0.3 J	14
Benzo(a)anthracene	12	---	0.7	[52]	3.8 D	[150]	4.7 D	[388]	0.8	[94]	1.0	[41]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.7 }	[52]	{3.7 D}	[146]	{4.5 D}	[372]	{0.7 }	[76]	{0.7 }	[32]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.8	[65]	{4.5 D}	[177]	{6.2 D}	[512]	0.9	[105]	1.0	[43]
Benzo(ghi)perylene	NS	3.8 (1)	0.3 J	26	1.2	47	1.5	124	0.3 J	33	0.2 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[23]	1.4	[55]	2.0	[165]	0.3 J	[35]	0.4 J	[15]
Carbazole	NS	NS	0.09 J	7	0.1 J	6	0.4 J	35	0.1 J	14	---	---
Chrysene	1.3 (H)	---	0.6	[48]	2.9	[114]	4.2 D	[347]	0.8	[91]	0.8	[36]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.1 J	10	0.6	[23]	0.7	[57]	0.2 J	[18]	0.1 J	5
Dibenzofuran	NS	5.1 (2)	---	---	0.1 J	5	0.3 J	21	0.06 J	7	---	---
Fluoranthene	1020	---	1.0	78	6.4 D	252	9.0 D	744	1.5	171	1.7	73
Fluorene	8	---	---	---	0.2 J	8	0.3 J	[25]	0.1 J	[14]	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.4 J	[29]	1.6	[63]	1.9	[157]	0.5	[54]	0.3 J	[13]
Naphthalene	30	---	0.05 J	4	0.2 J	6	0.4	[36]	---	---	---	---
Phenanthrene	120	---	0.6	52	2.4	94	4.4 D	[364]	1.3	[148]	0.6	24
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.1	89	5.4 D	213	7.2 D	595	1.5	171	1.6	68
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	0.3 J	29	0.2 J	7
Total organic carbon (mg/Kg)	NA	---	12400 J	---	25400	---	12100	---	8770	---	23400	---
% TOC	NA	---	1.2 J	---	2.5	---	1.2	---	0.9	---	2.3	---
Percent solids (%)	NA	---	75	---	81	---	79	---	79	---	68	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[6.7]	---	[12]	---	[8.7]	---	[9.2]	---	[8.9]	---
Total Carcinogenic PAHs	NS	NS	3.5	---	6.5	---	4.6	---	4.2	---	4.3	---
Total SVOCs	NS	---	6.9	---	12	---	9.7	---	9.7	---	9.0	---
BaP Equivalents	1.3 (H)	NS	1.0	[81]	0.8	[31]	0.9	[74]	1.1	[125]	1.1	[47]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-18 05/09/2001 6 - 12 in.		WP-M2 05/14/2003 0 - 6 in.		WP-M2 05/14/2003 6 - 12 in.		WP-M2 05/14/2003 12 - 17 in.		WP-M3 05/14/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	0.04 J	4	---	---
Acenaphthene	NS	---	---	---	---	---	1.4 J	124	1.0	88	0.1 J	1
Acenaphthylene	NS	---	---	---	---	---	1.7 J	150	0.2 J	19	0.1 J	2
Anthracene	107	---	---	---	0.3 J	30	5.8	[513]	1.0	88	0.3 J	5
Benzo(a)anthracene	12	---	0.08 J	3	1.4 J	[124]	17	[1504]	4.2 D	[372]	1.3	[20]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.07 J	[3]	{1.1 J}	[97]	{14 }	[1239]	{3.6 D}	[319]	{1.2 }	[19]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.1 J	[6]	2.0 J	[177]	{17 }	[1504]	{4.4 D}	[389]	1.8	[28]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	0.7 J	58	{4.3 J}	381	1.2 JD	106	0.6 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.6 J	[52]	{6.8 }	[602]	1.7 JD	[150]	0.7 J	[11]
Carbazole	NS	NS	---	---	---	---	---	---	0.2 J	14	---	---
Chrysene	1.3 (H)	---	0.09 J	[4]	1.2 J	[106]	14	[1239]	3.7 D	[327]	1.5	[24]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.2 J	[20]	1.9 J	[168]	0.5 JD	[47]	0.2 J	4
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.7 J	62	0.3 J	28	---	---
Fluoranthene	1020	---	0.2 J	8	2.4	212	33	[2920]	8.4 D	743	2.4	38
Fluorene	8	---	---	---	---	---	1.6 J	[142]	0.5	[45]	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	0.7 J	[58]	5.1 J	[451]	1.4 JD	[124]	0.6 J	[10]
Naphthalene	30	---	---	---	---	---	1.2 J	[106]	0.3 J	30	---	---
Phenanthrene	120	---	0.06 J	2	0.8 J	74	11	[973]	1.6	[142]	1.0	16
Phenol	0.5 (t)	---	---	---	---	---	---	---	0.1 J	[10]	---	---
Pyrene	961	---	0.3 J	12	2.7 J	239	29	[2566]	7.7 D	681	2.9	45
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.1 J	6	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	24400	---	11300 e BJ	---	11300 e BJ	---	11300 BJ	---	63800 BJ	---
% TOC	NA	---	2.4	---	1.1 e BJ	---	1.1 e BJ	---	1.1 BJ	---	6.4 BJ	---
Percent solids (%)	NA	---	64	---	28	---	66	---	79	---	39	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.9	---	3.6	---	[165]	---	[4.7]	---	[9.6]	---
Total Carcinogenic PAHs	NS	NS	0.4	---	7.2	---	76	---	20	---	2.8	---
Total SVOCs	NS	---	1.1	---	3.6	---	166	---	5.3	---	9.6	---
BaP Equivalents	1.3 (H)	NS	0.09	[4]	1.8	[159]	20	[1770]	5.2	[460]	0.1	[2]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-M3		WP-DOT		WP-DOT		WP-DOT		WP-29A	
Sample Date			05/14/2003 6 - 12 in.		05/14/2003 0 - 6 in.		05/14/2003 6 - 12 in.		05/14/2003 12 - 18 in.		05/14/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	1.4	[28]
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	0.2 J	4
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	1.3	[26]
2-Methylnaphthalene	34	---	1.0 J	19	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	2.7 J	54	---	---	4.9 J	366	6.6 J	493	0.3 J	5
Acenaphthylene	NS	---	---	---	1.2 J	90	---	---	---	---	0.3 J	6
Anthracene	107	---	5.1	102	4.5 J	[336]	17	[1269]	31	[2313]	1.1 J	22
Benzo(a)anthracene	12	---	8.7	[174]	13	[970]	27	[2015]	27	[2015]	3.8	[76]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{8.1 }	[162]	{10 }	[746]	{20 }	[1493]	{21 }	[1567]	{3.6 DJ}	[72]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{9.5 }	[190]	{12 }	[896]	{25 }	[1866]	{24 }	[1791]	{4.7 DJ}	[94]
Benzo(ghi)perylene	NS	3.8 (1)	2.5 J	50	2.8 J	209	{8.6 J}	642	{7.0 J}	522	1.1 DJ	22
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	4.0 J	[80]	4.0 J	[299]	{7.7 J}	[575]	{8.3 J}	[619]	1.8 DJ	[36]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	8.6	[172]	10	[746]	22	[1642]	24	[1791]	3.4	[68]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	1.2 J	[24]	1.2 J	[90]	3.6 J	[269]	2.8 J	[209]	0.5 DJ	9
Dibenzofuran	NS	5.1 (2)	1.4 J	28	---	---	2.5 J	187	3.1 J	231	0.1 J	3
Fluoranthene	1020	---	18	360	24	[1791]	61	[4552]	65	[4851]	6.0	120
Fluorene	8	---	1.9 J	[38]	0.6 J	[44]	6.6 J	[493]	9.2 J	[687]	0.3 J	6
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	3.2 J	[64]	3.6 J	[269]	9.3 J	[694]	7.6 J	[567]	1.2 DJ	[24]
Naphthalene	30	---	2.6 J	[52]	0.5 J	[40]	3.1 J	[231]	2.6 J	[194]	0.3 J	7
Phenanthrene	120	---	14	[280]	6.9	[515]	45	[3358]	80	[5970]	2.4	48
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	15	300	20	[1493]	47	[3507]	54	[4030]	6.0	120
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	63800 e BJ	---	13400 BJ	---	13400 e BJ	---	13400 e BJ	---	62900 e BJ	---
% TOC	NA	---	6.4 e BJ	---	1.3 BJ	---	1.3 e BJ	---	1.3 e BJ	---	6.3 e BJ	---
Percent solids (%)	NA	---	65	---	64	---	61	---	73	---	59	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[106]	---	[114]	---	[308]	---	[370]	---	[24]	---
Total Carcinogenic PAHs	NS	NS	43	---	54	---	115	---	115	---	7.2	---
Total SVOCs	NS	---	107	---	114	---	310	---	373	---	27	---
BaP Equivalents	1.3 (H)	NS	12	[240]	14	[1045]	30	[2239]	30	[2239]	0.4	[8]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-29A 05/14/2003 6 - 12 in.		WP-29A DUP 05/14/2003 6 - 12 in.		WP-29A 05/14/2003 12 - 17 in.		WP-29 05/09/2001 0 - 6 in.		WP-29 05/09/2001 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	1.9 J	30	2.7 J	[39]	---	---	---	---	1.1 J	[150]
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	6.6	105	12 J	171	9.6 J	192	11 J	507	9.1	1241
Acenaphthylene	NS	---	0.8 J	13	---	---	---	---	---	---	---	---
Anthracene	107	---	14	[223]	32	[456]	29	[580]	6.0 J	[276]	15	[2046]
Benzo(a)anthracene	12	---	19	[302]	33	[471]	30	[600]	20 J	[922]	13	[1774]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{16}	[254]	{27}	[385]	{23}	[460]	{17 J}	[783]	{9.3}	[1269]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{20}	[318]	{29}	[414]	{28}	[560]	{19 J}	[876]	{11}	[1501]
Benzo(ghi)perylene	NS	3.8 (1)	{4.2 J}	67	{9.5 J}	136	{7.2 J}	144	{6.2 J}	286	2.6 J	355
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	{8.1}	[129]	{13 J}	[185]	{8.0 J}	[160]	{6.5 J}	[300]	3.7 J	[505]
Carbazole	NS	NS	---	---	---	---	---	---	5.2 J	240	---	---
Chrysene	1.3 (H)	---	18	[286]	31	[442]	25	[500]	18 J	[829]	11	[1501]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	1.9 J	[30]	3.8 J	[54]	3.1 J	[62]	2.3 J	[106]	1.7 J	[232]
Dibenzofuran	NS	5.1 (2)	2.9 J	46	{6.0 J}	86	3.7 J	74	2.3 J	106	{5.4 J}	737
Fluoranthene	1020	---	45	715	71	1013	72	[1440]	43 J	[1982]	34	[4638]
Fluorene	8	---	6.2 J	[99]	14 J	[200]	11 J	[220]	6.2 J	[286]	8.9 J	[1214]
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	5.3 J	[84]	10 J	[143]	9.0 J	[180]	6.9 J	[318]	4.7 J	[641]
Naphthalene	30	---	5.5 J	[87]	6.8 J	[97]	2.6 J	[52]	3.1 J	[143]	2.1 J	[286]
Phenanthrene	120	---	44	[700]	86	[1227]	87	[1740]	14 J	[645]	42	[5730]
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	36	572	64	913	59	[1180]	35 J	[1613]	28	[3820]
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	62900 BJ	---	70100 BJ	---	62900 e BJ	---	21700	---	7330	---
% TOC	NA	---	6.3 BJ	---	7.0 BJ	---	6.3 e BJ	---	2.2	---	0.7	---
Percent solids (%)	NA	---	53	---	55	---	60	---	56	---	62	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[253]	---	[445]	---	[404]	---	[214]	---	[197]	---
Total Carcinogenic PAHs	NS	NS	88	---	147	---	126	---	89	---	54	---
Total SVOCs	NS	---	255	---	451	---	407	---	221	---	203	---
BaP Equivalents	1.3 (H)	NS	23	[366]	38	[542]	33	[660]	24	[1106]	14	[1910]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999); t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-29		WP-CKOUT		WP-OD3		WP-OD3		WP-PL	
Sample Date			05/09/2001 12 - 18 in.		05/14/2003 0 - 6 in.		05/14/2003 0 - 6 in.		05/14/2003 6 - 12 in.		05/08/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	0.1 J	4	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	0.2 J	7	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	0.07 J	2	---	---
Acenaphthene	NS	---	46 J	438	---	---	0.1 J	4	0.3 J	10	0.2 J	1
Acenaphthylene	NS	---	---	---	0.06 J	2	0.3 J	10	0.8	26	0.3 J	2
Anthracene	107	---	86	[819]	0.2 J	4	1.3	43	3.6	[118]	1.2 J	10
Benzo(a)anthracene	12	---	84	[800]	0.9	[26]	4.6 DJ	[151]	11 D	[361]	4.6 J	[40]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{64 }	[610]	{0.9 }	[26]	{4.0 DJ}	[131]	{9.1 DJ}	[298]	{4.5 J}	[39]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{74 }	[705]	1.4	[39]	{5.3 DJ}	[174]	{11 DJ}	[361]	{5.9 J}	[51]
Benzo(ghi)perylene	NS	3.8 (1)	{15 J}	143	0.3 J	7	0.9 J	31	1.9 J	62	1.5 J	13
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	{32 J}	[305]	0.6	[17]	2.2 J	[72]	3.5 J	[115]	2.3 J	[20]
Carbazole	NS	NS	---	---	---	---	---	---	0.1 J	5	---	---
Chrysene	1.3 (H)	---	77	[733]	0.8	[21]	2.8	[92]	10 D	[328]	4.5 J	[39]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	9.8 J	[93]	0.1 J	3	0.3 J	11	0.8 J	[27]	0.8 J	7
Dibenzofuran	NS	5.1 (2)	{30 J}	286	---	---	0.07 J	2	0.2 J	8	0.1 J	1
Fluoranthene	1020	---	180	[1714]	2.0	56	7.3 D	239	17 D	557	5.7 J	50
Fluorene	8	---	46 J	[438]	---	---	0.2 J	6	0.5 J	[15]	0.2 J	2
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	28 J	[267]	0.3 J	[9]	1.1 J	[36]	2.2 J	[72]	2.7 J	[23]
Naphthalene	30	---	---	---	0.07 J	2	0.1 J	5	0.8	25	0.3 J	2
Phenanthrene	120	---	210	[2000]	0.4 J	10	3.3	108	7.1 DJ	[233]	2.2 J	19
Phenol	0.5 (t)	---	---	---	---	---	---	---	0.08 J	[3]	---	---
Pyrene	961	---	140	[1333]	1.6	45	8.2 D	269	20 D	656	8.4 J	73
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	0.7 J	6
Total organic carbon (mg/Kg)	NA	---	105000	---	35900	---	30500 e	---	30500	---	115000	---
% TOC	NA	---	11	---	3.6	---	3.1 e	---	3.1	---	12	---
Percent solids (%)	NA	---	58	---	70	---	72	---	68	---	26	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[1092]	---	[9.5]	---	[13]	---	[14]	---	[45]	---
Total Carcinogenic PAHs	NS	NS	369	---	5.0	---	6.4	---	6.5	---	25	---
Total SVOCs	NS	---	1122	---	9.5	---	13	---	15	---	46	---
BaP Equivalents	1.3 (H)	NS	93	[886]	1.3	[36]	0.5	[16]	1.1	[36]	6.7	[58]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-PL DUP 05/08/2001 0 - 6 in.		WP-PL 05/08/2001 6 - 11 in.		WP-PL1 05/13/2003 0 - 6 in.		WP-PL1 05/13/2003 6 - 12 in.		WP-PL1 05/13/2003 12 - 18 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.1 J	1	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.1 J	1	---	---	---	---	---	---
Acenaphthylene	NS	---	0.2 J	1	0.1 J	1	0.1 J	1	---	---	---	---
Anthracene	107	---	0.6 J	5	0.8 J	9	0.5 J	5	---	---	---	---
Benzo(a)anthracene	12	---	3.2 J	[28]	2.6 J	[32]	2.2 J	[20]	0.3 J	3	---	---
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{3.2 J}	[28]	{2.5 J}	[30]	{1.1 J}	[10]	0.3 J	[3]	---	---
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{4.6 J}	[40]	4.0 J	[49]	2.4 J	[22]	0.4 J	[5]	---	---
Benzo(ghi)perylene	NS	3.8 (1)	1.1 J	10	1.2 J	15	0.5 J	5	0.08 J	1	---	---
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	1.5 J	[13]	1.0 J	[12]	1.2 J	[11]	0.2 J	[2]	---	---
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	2.9 J	[25]	2.7 J	[33]	2.1 J	[19]	0.3 J	[4]	---	---
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.7 J	6	0.6 J	7	0.3 J	2	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	0.3 J	3	---	---	---	---	---	---
Fluoranthene	1020	---	3.6 J	31	4.2 J	51	4.0 J	37	0.6 J	7	---	---
Fluorene	8	---	0.2 J	1	0.3 J	3	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	2.0 J	[17]	1.8 J	[22]	0.7 J	[6]	0.1 J	1	---	---
Naphthalene	30	---	0.2 J	2	0.3 J	4	---	---	---	---	---	---
Phenanthrene	120	---	1.2 J	10	1.1 J	13	1.2 J	11	0.1 J	1	---	---
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	5.9 J	51	5.6 J	68	3.5 J	32	0.6 J	7	---	---
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.8 J	7	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	115000	---	82300	---	108000 J	---	80500 J	---	51700	---
% TOC	NA	---	12	---	8.2	---	11 J	---	8.1 J	---	5.2	---
Percent solids (%)	NA	---	25	---	40	---	29	---	43	---	56	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[31]	---	[29]	---	[20]	---	2.8	---	---	---
Total Carcinogenic PAHs	NS	NS	18	---	15	---	9.9	---	1.5	---	---	---
Total SVOCs	NS	---	32	---	29	---	20	---	2.8	---	---	---
BaP Equivalents	1.3 (H)	NS	5.0	[43]	4.0	[49]	1.9	[18]	0.3	[4]	---	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-PL2		WP-PL2		WP-PL2		WP-PL3		WP-PL3	
Sample Date			05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.		05/13/2003 12 - 24 in.		05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	0.2 J	3	0.1 J	2	---	---	---	---	0.1 J	1
Anthracene	107	---	0.7 J	12	0.3 J	5	0.2 J	2	0.2 J	2	0.2 J	2
Benzo(a)anthracene	12	---	2.6 J	[44]	1.5 J	[23]	0.9 J	12	0.8 J	8	1.1 J	9
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{1.2 J}	[20]	{0.8 J}	[13]	{0.8 J}	[11]	{0.5 J}	[6]	{1.0 J}	[8]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	3.6 J	[61]	2.2 J	[34]	1.1 J	[14]	0.9 J	[9]	1.8 J	[15]
Benzo(ghi)perylene	NS	3.8 (1)	0.7 J	12	0.5 J	8	0.3 J	4	0.2 J	2	0.5 J	4
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	1.1 J	[19]	0.8 J	[12]	0.5 J	[7]	0.4 J	[5]	0.6 J	[5]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	0.1 J	0.9
Chrysene	1.3 (H)	---	2.1 J	[36]	1.4 J	[22]	0.9 J	[11]	0.8 J	[8]	1.3 J	[11]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	0.2 J	2	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.3 J	5	0.2 J	3	0.1 J	2	---	---	0.2 J	1
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	0.1 J	0.9
Fluoranthene	1020	---	4.5 J	77	2.2 J	34	1.5 J	19	1.4 J	15	2.5 J	21
Fluorene	8	---	0.2 J	3	---	---	---	---	---	---	0.1 J	1
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.9 J	[14]	0.6 J	[9]	0.4 J	[5]	0.2 J	[2]	0.5 J	[4]
Naphthalene	30	---	---	---	---	---	0.1 J	1	---	---	0.2 J	2
Phenanthrene	120	---	1.5 J	26	0.8 J	12	0.4 J	5	0.5 J	6	1.2 J	10
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	4.3 J	73	2.4 J	37	1.6 J	21	1.2 J	13	2.3 J	19
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	58700 BJ	---	64200 BJ	---	77000 BJ	---	93900 BJ	---	118000 BJ	---
% TOC	NA	---	5.9 BJ	---	6.4 BJ	---	7.7 BJ	---	9.4 BJ	---	12 BJ	---
Percent solids (%)	NA	---	26	---	34	---	43	---	24	---	35	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[24]	---	[14]	---	[8.8]	---	[7.1]	---	[14]	---
Total Carcinogenic PAHs	NS	NS	12	---	7.5	---	4.7	---	3.6	---	6.4	---
Total SVOCs	NS	---	24	---	14	---	8.8	---	7.3	---	14	---
BaP Equivalents	1.3 (H)	NS	2.2	[37]	1.5	[23]	1.2	[16]	0.7	[7]	1.5	[13]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T1A 05/14/2003 0 - 6 in.		WP-T1A 05/14/2003 6 - 12 in.		WP-T1A 05/14/2003 12 - 24 in.		WP-T1C 05/14/2003 0 - 6 in.		WP-T1C 05/14/2003 6 - 10 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.09 J	2	0.1 J	1	0.09 J	3	0.3 J	9
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	0.09 J	2	0.07 J	0.8	0.06 J	2	0.1 J	4
Acenaphthene	NS	---	---	---	0.7 J	14	0.8	9	0.1 J	4	0.3 J	11
Acenaphthylene	NS	---	---	---	0.6 J	12	0.3 J	4	0.09 J	3	0.2 J	5
Anthracene	107	---	0.2 J	4	3.3 J	66	3.2 DJ	37	0.9	29	2.4	77
Benzo(a)anthracene	12	---	0.7 J	[14]	8.6 DJ	[172]	6.8 DJ	[80]	2.2	[71]	4.6 D	[148]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.3 J	[6]	{8.8 DJ}	[176]	{5.8 DJ}	[68]	{2.1 DJ}	[68]	{3.9 DJ}	[125]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.4 J	[8]	{11 DJ}	[220]	{7.0 DJ}	[82]	3.1 DJ	[100]	{5.3 DJ}	[170]
Benzo(ghi)perylene	NS	3.8 (1)	0.1 J	3	2.1 J	42	1.9 DJ	22	0.7 DJ	23	1.2 DJ	39
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.2 J	[5]	{4.7 J}	[94]	3.4 DJ	[40]	0.9 DJ	[28]	1.9 DJ	[61]
Carbazole	NS	NS	---	---	0.1 J	2	0.08 J	1	---	---	0.09 J	3
Chrysene	1.3 (H)	---	1.0 J	[19]	4.6 J	[92]	6.6 DJ	[77]	1.6	[51]	2.9	[93]
Di-n-butyl phthalate	NS	---	---	---	0.1 J	3	0.1 J	1	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.8 J	[16]	0.9 DJ	11	0.3 DJ	11	0.6 DJ	[20]
Dibenzofuran	NS	5.1 (2)	---	---	0.2 J	4	0.3 J	3	0.1 J	5	0.4 J	12
Fluoranthene	1020	---	1.2 J	24	15 DJ	300	12 DJ	141	3.9 D	125	8.2 D	264
Fluorene	8	---	---	---	0.5 J	[11]	0.6	7	0.2 J	6	0.5 J	[17]
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.1 J	[3]	2.3 J	[46]	2.2 DJ	[26]	0.8 DJ	[26]	1.4 DJ	[45]
Naphthalene	30	---	---	---	0.4 J	8	0.5 J	6	0.8	25	0.9	30
Phenanthrene	120	---	0.4 J	7	6.1 DJ	[122]	5.6 DJ	66	2.2	71	4.8 D	[154]
Phenol	0.5 (t)	---	---	---	0.09 J	[2]	0.09 J	[1]	0.05 J	[2]	0.08 J	[2]
Pyrene	961	---	1.3 J	26	15 DJ	300	13 DJ	152	4.1 D	132	8.8 D	283
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	85400 e J	---	85400 e J	---	85400 J	---	31100 e	---	31100	---
% TOC	NA	---	8.5 e J	---	8.5 e J	---	8.5 J	---	3.1 e	---	3.1	---
Percent solids (%)	NA	---	34	---	43	---	59	---	70	---	63	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[5.9]	---	[20]	---	2.2	---	[8.2]	---	[7.5]	---
Total Carcinogenic PAHs	NS	NS	2.7	---	12	---	33	---	3.8	---	2.9	---
Total SVOCs	NS	---	5.9	---	21	---	2.8	---	8.4	---	8.1	---
BaP Equivalents	1.3 (H)	NS	0.5	[10]	1.1	[22]	8.4	[98]	0.2	[6]	0.03	1

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
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Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-OD2 05/14/2003 0 - 6 in.		WP-OD2 05/14/2003 6 - 12 in.		WP-OD2 05/14/2003 12 - 22 in.		WP-T2A 05/13/2003 0 - 6 in.		WP-T2A 05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.2 J	4	0.7	17	---	---	0.2 J	5
Acenaphthylene	NS	---	---	---	0.1 J	3	0.2 J	5	---	---	0.2 J	5
Anthracene	107	---	0.2 J	5	0.3 J	8	1.6	39	0.4 J	7	0.7	23
Benzo(a)anthracene	12	---	0.9 J	[22]	1.6 J	[39]	3.4	[83]	1.9 J	[38]	3.4	[108]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 J}	[12]	{1.2 J}	[29]	{3.0 DJ}	[73]	{0.9 J}	[18]	{2.8 }	[89]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.8 J	[20]	1.8 J	[44]	3.8 DJ	[92]	2.6 J	[52]	3.7 D	[118]
Benzo(ghi)perylene	NS	3.8 (1)	0.2 J	4	0.4 J	9	1.0 DJ	24	0.6 J	12	0.9	30
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.5 J	[11]	0.9 J	[23]	1.6 DJ	[39]	0.6 J	[11]	1.0	[31]
Carbazole	NS	NS	---	---	---	---	0.06 J	1	---	---	---	---
Chrysene	1.3 (H)	---	1.2 J	[29]	1.0 J	[23]	2.3	[56]	1.4 J	[28]	2.5	[80]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	0.3 J	7	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	0.4 DJ	11	0.2 J	4	0.4 J	11
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.1 J	2	---	---	0.07 J	2
Fluoranthene	1020	---	1.9 J	46	3.0 J	73	6.7 D	163	2.6 J	52	4.8 D	153
Fluorene	8	---	---	---	---	---	0.3 J	7	---	---	0.2 J	5
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.2 J	[5]	0.4 J	[9]	1.2 DJ	[29]	0.6 J	[13]	1.1	[35]
Naphthalene	30	---	---	---	0.09 J	2	0.1 J	2	---	---	0.2 J	5
Phenanthrene	120	---	0.5 J	12	0.6 J	15	3.5	85	0.8 J	15	1.3	41
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.5 J	36	2.2 J	54	7.5 D	182	3.0 J	60	5.3 D	169
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	41100 e J	---	41100 e J	---	41100 J	---	49600 BJ	---	31400 B	---
% TOC	NA	---	4.1 e J	---	4.1 e J	---	4.1 J	---	5.0 BJ	---	3.1 B	---
Percent solids (%)	NA	---	30	---	49	---	63	---	27	---	63	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[8.3]	---	[14]	---	[12]	---	[16]	---	[15]	---
Total Carcinogenic PAHs	NS	NS	4.1	---	6.9	---	5.7	---	8.2	---	11	---
Total SVOCs	NS	---	8.3	---	14	---	12	---	16	---	15	---
BaP Equivalents	1.3 (H)	NS	0.7	[17]	1.6	[39]	0.4	[10]	1.7	[34]	3.6	[115]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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FXP File: Q:\10653_NYSDEC\27258_ThreeStar\CreekEvalTabs.prg

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DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
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Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-T2B		WP-T2B		WP-T2B		WP-T2C		WP-T2C	
Sample Date			05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.		05/13/2003 12 - 24 in.		05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	0.1 J	3	0.06 J	2	---	---	---	---	---	---
Acenaphthylene	NS	---	0.1 J	2	0.1 J	4	---	---	---	---	0.8 J	13
Anthracene	107	---	0.6 J	12	0.4 J	14	---	---	6.0 J	[133]	6.5 J	[110]
Benzo(a)anthracene	12	---	1.8 J	[37]	1.2	[45]	0.1 J	5	18 J	[400]	13	[220]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{1.6 J}	[33]	{0.9 J}	[34]	0.09 J	[4]	{15 J}	[333]	{11 }	[186]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	2.2 J	[45]	1.4 J	[53]	0.1 J	[5]	{20 J}	[444]	{13 }	[220]
Benzo(ghi)perylene	NS	3.8 (1)	0.5 J	9	0.3 J	11	---	---	{5.8 J}	129	{4.4 J}	75
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.8 J	[16]	0.4 J	[14]	---	---	{6.0 J}	[133]	{4.3 J}	[73]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	1.6 J	[33]	0.9	[34]	0.09 J	[5]	15 J	[333]	12	[203]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.2 J	4	0.1 J	5	---	---	2.3 J	[51]	1.8 J	[31]
Dibenzofuran	NS	5.1 (2)	---	---	0.05 J	2	---	---	---	---	---	---
Fluoranthene	1020	---	2.4 J	49	2.0	76	0.2 J	8	30 J	667	25	424
Fluorene	8	---	0.1 J	3	0.07 J	3	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.5 J	[11]	0.4 J	[14]	---	---	6.9 J	[153]	4.9 J	[83]
Naphthalene	30	---	---	---	0.1 J	4	---	---	---	---	---	---
Phenanthrene	120	---	1.0 J	20	0.7	27	0.09 J	5	12 J	[267]	8.4	[142]
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	3.1 J	63	2.3	87	0.2 J	10	29 J	644	20	339
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	49000 J	---	26400 J	---	19100	---	45000 BJ	---	59000 B	---
% TOC	NA	---	4.9 J	---	2.6 J	---	1.9	---	4.5 BJ	---	5.9 B	---
Percent solids (%)	NA	---	33	---	75	---	68	---	33	---	51	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[11]	---	[7.8]	---	0.6	---	[166]	---	[125]	---
Total Carcinogenic PAHs	NS	NS	3.4	---	2.1	---	0.2	---	83	---	60	---
Total SVOCs	NS	---	11	---	7.9	---	0.6	---	166	---	125	---
BaP Equivalents	1.3 (H)	NS	0.2	[4]	0.1	[4]	0.01	0.5	22	[489]	16	[271]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-T2C		WP-OD1		WP-OD1		WP-OD1		WP-T3A	
Sample Date			05/13/2003 12 - 24 in.		05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.		05/13/2003 12 - 19 in.		05/13/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.2 J	4	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	0.5 J	9	---	---	---	---	---	---
Anthracene	107	---	---	---	3.0 J	53	0.3 J	5	---	---	0.1 J	2
Benzo(a)anthracene	12	---	---	---	10 DJ	[177]	1.3	[21]	---	---	0.5 J	9
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 }	[45]	{9.1 J}	[161]	{1.1 J}	[18]	---	---	{0.6 J}	[11]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	---	---	{11 DJ}	[195]	1.5 J	[25]	---	---	0.9 J	[16]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	3.3 J	58	0.5 J	9	---	---	0.3 J	5
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	3.1 J	[55]	0.4 J	[7]	---	---	0.3 J	[6]
Carbazole	NS	NS	---	---	0.1 J	2	---	---	---	---	---	---
Chrysene	1.3 (H)	---	---	---	6.8 J	[120]	1.1	[18]	---	---	0.5 J	[9]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	0.1 J	2
Dibenzo(a,h)anthracene	15	---	---	---	1.1 J	[19]	0.2 J	3	---	---	0.1 J	2
Dibenzofuran	NS	5.1 (2)	---	---	0.2 J	3	---	---	---	---	---	---
Fluoranthene	1020	---	---	---	16 DJ	283	2.0	33	---	---	0.8 J	14
Fluorene	8	---	---	---	0.4 J	7	0.07 J	1	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	3.8 J	[67]	0.5 J	[9]	---	---	0.3 J	[5]
Naphthalene	30	---	---	---	0.3 J	5	---	---	---	---	---	---
Phenanthrene	120	---	---	---	5.5 J	97	0.4 J	7	---	---	0.3 J	5
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	---	---	15 DJ	265	2.2	36	---	---	0.8 J	14
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	11000 B	---	56500 BJ	---	60700 B	---	37600 B	---	56400 J	---
% TOC	NA	---	1.1 B	---	5.7 BJ	---	6.1 B	---	3.8 B	---	5.6 J	---
Percent solids (%)	NA	---	70	---	27	---	51	---	53	---	30	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.5	---	[37]	---	[12]	---	---	---	[5.5]	---
Total Carcinogenic PAHs	NS	NS	0.5	---	24	---	6.1	---	---	---	3.3	---
Total SVOCs	NS	---	0.5	---	37	---	12	---	---	---	5.7	---
BaP Equivalents	1.3 (H)	NS	0.5	[45]	11	[195]	1.6	[26]	---	---	0.9	[16]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T3A DUP 05/13/2003 0 - 6 in.		WP-T3A 05/13/2003 6 - 12 in.		WP-T3A 05/13/2003 12 - 24 in.		WP-T3B 05/13/2003 0 - 6 in.		WP-T3B 05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	0.07 J	1	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	0.1 J	2	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	0.2 J	3	---	---	---	---
Anthracene	107	---	0.2 J	2	0.2 J	3	1.6	36	---	---	---	---
Benzo(a)anthracene	12	---	0.6 J	9	0.9 J	[15]	2.3	[52]	0.4 J	11	0.09 J	2
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.4 J	[6]	{0.8 J}	[15]	{2.1 }	[48]	0.3 J	[9]	0.5 J	[13]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	1.0 J	[14]	1.1 J	[19]	2.9	[66]	0.8 J	[19]	{0.5 J}	[13]
Benzo(ghi)perylene	NS	3.8 (1)	0.3 J	4	0.3 J	6	0.5 J	11	0.3 J	7	0.7 J	[18]
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[4]	0.4 J	[7]	1.0	[21]	0.2 J	[5]	0.2 J	5
Carbazole	NS	NS	---	---	---	---	---	---	---	---	0.2 J	[6]
Chrysene	1.3 (H)	---	0.5 J	[8]	0.8 J	[13]	2.4	[54]	0.5 J	[14]	0.5 J	[13]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	0.2 J	2	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.2 J	3	0.2 J	5	---	---	0.1 J	3
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.09 J	2	---	---	---	---
Fluoranthene	1020	---	0.9 J	13	1.1 J	19	4.9	111	0.8 J	19	0.8 J	20
Fluorene	8	---	---	---	---	---	0.2 J	4	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.3 J	[4]	0.4 J	[7]	0.6	[14]	0.3 J	[7]	0.2 J	[6]
Naphthalene	30	---	---	---	---	---	0.2 J	5	---	---	---	---
Phenanthrene	120	---	0.4 J	5	0.5 J	8	2.0	45	0.3 J	8	0.2 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.0 J	14	1.4 J	24	4.0	90	0.8 J	21	0.8 J	22
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	69300 BJ	---	57700 J	---	44200 J	---	39600 BJ	---	38000 BJ	---
% TOC	NA	---	6.9 BJ	---	5.8 J	---	4.4 J	---	4.0 BJ	---	3.8 BJ	---
Percent solids (%)	NA	---	29	---	36	---	54	---	29	---	46	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	3.5	---	[8.0]	---	[25]	---	[4.7]	---	[4.7]	---
Total Carcinogenic PAHs	NS	NS	1.1	---	4.5	---	12	---	2.5	---	2.7	---
Total SVOCs	NS	---	3.5	---	8.0	---	25	---	4.7	---	4.7	---
BaP Equivalents	1.3 (H)	NS	0.07	1	1.2	[21]	2.9	[66]	0.5	[13]	0.7	[18]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%; when AS<5%, c=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 4-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T3B 05/13/2003 12 - 24 in.		WP-T3C 05/13/2003 0 - 6 in.		WP-T3C 05/13/2003 6 - 11 in.					
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---				
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---				
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---				
2-Methylnaphthalene	34	---	---	---	---	---	---	---				
4-Chloroaniline	NS	---	---	---	---	---	---	---				
4-Methylphenol	NS	---	---	---	---	---	---	---				
Acenaphthene	NS	---	---	---	---	---	---	---				
Acenaphthylene	NS	---	---	---	---	---	0.09 J	1				
Anthracene	107	---	---	---	---	---	0.2 J	2				
Benzo(a)anthracene	12	---	---	---	0.3 J	4	0.7 J	10				
Benzo[a]pyrene	1.3 (H)	0.44 (1)	---	---	{0.5 J}	[6]	{0.7 J}	[10]				
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.5 J	[7]	1.0 J	[15]				
Benzo(ghi)perylene	NS	3.8 (1)	---	---	0.1 J	2	0.2 J	4				
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.2 J	[3]	0.3 J	[5]				
Carbazole	NS	NS	---	---	---	---	---	---				
Chrysene	1.3 (H)	---	---	---	0.4 J	[5]	0.6 J	[10]				
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---				
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---				
Dibenzo(a,h)anthracene	15	---	---	---	---	---	0.1 J	1				
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---				
Fluoranthene	1020	---	---	---	0.5 J	7	1.0 J	15				
Fluorene	8	---	---	---	---	---	---	---				
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	0.1 J	[2]	0.3 J	[4]				
Naphthalene	30	---	---	---	---	---	0.1 J	2				
Phenanthrene	120	---	---	---	0.2 J	2	0.4 J	6				
Phenol	0.5 (t)	---	---	---	---	---	---	---				
Pyrene	961	---	---	---	0.6 J	8	1.2 J	19				
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---				
Total organic carbon (mg/Kg)	NA	---	19700 B	---	72000 J	---	63800 J	---				
% TOC	NA	---	2.0 B	---	7.2 J	---	6.4 J	---				
Percent solids (%)	NA	---	54	---	31	---	45	---				
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	---	---	3.2	---	[6.7]	---				
Total Carcinogenic PAHs	NS	NS	---	---	1.9	---	3.6	---				
Total SVOCs	NS	---	---	---	3.2	---	6.7	---				
BaP Equivalents	1.3 (H)	NS	---	---	0.5	[7]	1.0	[16]				

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999).
Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-LK1 05/12/2003 0 - 6 in. mg/Kg	WP-LK2 05/12/2003 0 - 6 in. mg/Kg	WP-LK3 05/12/2003 0 - 6 in. mg/Kg	WP-LK4 05/12/2003 0 - 6 in. mg/Kg	WP-LK5 05/12/2003 0 - 6 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	19200 J	14500 J	14300 J	16000 J	17600 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.9 BJ	4 BJ	(6.3 BJ)	4.7 BJ	4.7 BJ
Barium	NS	NS	120 BJ	88 BJ	92 BJ	98 BJ	100 BJ
Beryllium	NS	NS	0.86 BJ	0.67 BJ	0.64 BJ	0.7 BJ	0.81 BJ
Cadmium	9.0 (P)	0.6 (P)	(1.3 BJ)	(1.4 BJ)	(0.8 BJ)	(0.93 BJ)	(1.2 BJ)
Calcium	NS	NS	10200 J	11900 J	18800 J	11600 J	11100 J
Chromium**	110.0 (P)	26.0 (P)	(27 J)	26 J	21 J	22 J	24 J
Cobalt	NS	NS	14 BJ	11 BJ	8.8 BJ	11 BJ	13 BJ
Copper	110.0 (P)	16.0 (P)	(51 J)	(90 J)	(90 J)	(83 J)	(64 J)
Iron	4% (P)	2% (P)	(3.3 J)	(3.2 J)	(2.7 J)	(3.0 J)	(3.3 J)
Lead	110.0 (L)	31.0 (P)	(66 J)	(187 J*)	(79 J)	(99 J)	(126 J*)
Magnesium	NS	NS	8570 J	6950 BJ	8150 J	7310 J	8700 J
Manganese	1100 (L)	460 (P)	(707 J)	(579 J)	(551 J)	(1000 J)	(637 J)
Mercury	1.3 (L)	0.15 (L)	(0.31 J)	(0.57 J)	(0.29 J)	(0.33 J)	(0.3 J)
Nickel	50 (L)	16 (P)	(33 BJ)	(29 BJ)	(26 BJ)	(26 BJ)	(30 J)
Potassium	NS	NS	1740 BJ	1510 BJ	1420 BJ	1350 BJ	1360 BJ
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	330 BJ	386 BJ	357 BJ	212 BJ	328 BJ
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	29 BJ	38 BJ	29 BJ	22 BJ	26 BJ
Zinc	270 (L)	120 (P/L)	(221 J)	(359 J*)	(224 J)	(228 J)	(230 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	18	12	14	25	36
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	10 J	9.2 J	6.3 J	4.2 J	4.6 J
Total organic carbon (mg/Kg)	NS	NS	102000 J	91600 J	63300 J	42100 J	46100 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%. When AS<5%, c=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-LK01-A 05/10/2001 0 - 6 in. mg/Kg	WP-LK01-A 05/10/2001 6 - 12 in. mg/Kg	WP-LK01-A 05/10/2001 19 - 25 in. mg/Kg	WP-LK01-B 05/10/2001 0 - 6 in. mg/Kg	WP-LK01-B 05/10/2001 6 - 12 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	14500 J	11400 J	13700 J	14200 J	11700 J
Antimony	25.0 (L)	2.0 (L)	---	(3.2 JN)	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.6 J	(6.6 J)	5 J	5 J	5.2 J
Barium	NS	NS	94 J	74 J	82 J	90 J	73 J
Beryllium	NS	NS	0.57 J	0.53 J	0.62 J	0.53 J	0.42 J
Cadmium	9.0 (P)	0.6 (P)	---	0.16 J	0.34 J	---	---
Calcium	NS	NS	7600 J	6330 J	9540 J	7030 J	5980 J
Chromium**	110.0 (P)	26.0 (P)	18 J	15 J	17 J	18 J	15 J
Cobalt	NS	NS	8.6 J	9.3 J	9.2 J	7.9 J	6.5 J
Copper	110.0 (P)	16.0 (P)	(37 J)	(31 J)	(38 J)	(34 J)	(30 J)
Iron	4% (P)	2% (P)	(3.0 J)	(2.4 J)	(2.9 J)	(2.7 J)	(2.4 J)
Lead	110.0 (L)	31.0 (P)	(49 J)	(42 J)	(62 J)	(46 J)	(41 J)
Magnesium	NS	NS	7130 J	5540 J	6390 J	6850 J	5720 J
Manganese	1100 (L)	460 (P)	(594 J)	(566 J)	(636 J)	460 J	(541 J)
Mercury	1.3 (L)	0.15 (L)	---	---	(0.2 J)	---	---
Nickel	50 (L)	16 (P)	(25 J)	(22 J)	(23 J)	(24 J)	(22 J)
Potassium	NS	NS	1090 J	852 J	932 J	1110 J	888 J
Selenium	NS	NS	2.5 J	1.2 J	1.4 J	---	1.7 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	124 J	82 J	67 J	145 J	112 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	20 J	19 J	18 J	19 J	20 J
Zinc	270 (L)	120 (P/L)	(204 J)	(136 J)	(145 J)	(168 J)	(141 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	22	35	46	25	32
pH	NA	NA	7.3	7.5	7.9	7.6	7.7
% TOC	NS	NS	10	4.7	3.4	6.7	6.2
Total organic carbon (mg/Kg)	NS	NS	99100	47000	33800	66800	62000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-LK01-B DUP	WP-LK01-B	WP-LK01-C	WP-LK01-C	WP-LK01-C
Sample Date			05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth			6 - 12 in.	25 - 31 in.	0 - 6 in.	6 - 12 in.	26 - 32 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13300 J	13100 J	14600 J	13200 J	12900 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.3 J	4.9 J	4.1 J	4.8 J	4.3 J
Barium	NS	NS	83 J	80 J	90 J	81 J	78 J
Beryllium	NS	NS	0.53 J	0.55 J	0.57 J	0.55 J	0.53 J
Cadmium	9.0 (P)	0.6 (P)	---	0.36 J	---	0.2 J	0.31 J
Calcium	NS	NS	6640 J	5350 J	7240 J	6750 J	9730 J
Chromium**	110.0 (P)	26.0 (P)	17 J	17 J	18 J	17 J	16 J
Cobalt	NS	NS	7.6 J	8.9 J	8.3 J	8.5 J	8.5 J
Copper	110.0 (P)	16.0 (P)	(34 J)	(37 J)	(37 J)	(34 J)	(36 J)
Iron	4% (P)	2% (P)	(2.7 J)	(2.8 J)	(2.9 J)	(2.7 J)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(46 J)	(59 J)	(47 J)	(44 J)	(59 J)
Magnesium	NS	NS	6440 J	5800 J	6990 J	6410 J	6190 J
Manganese	1100 (L)	460 (P)	(640 J)	(616 J)	(569 J)	(613 J)	(666 J)
Mercury	1.3 (L)	0.15 (L)	---	(0.21 J)	---	---	---
Nickel	50 (L)	16 (P)	(24 J)	(22 J)	(24 J)	(24 J)	(22 J)
Potassium	NS	NS	956 J	888 J	1140 J	996 J	890 J
Selenium	NS	NS	2.1 J	1.6 J	---	2 J	1.5 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	108 J	62 J	148 J	97 J	68 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	22 J	18 J	19 J	22 J	18 J
Zinc	270 (L)	120 (P/L)	(162 J)	(136 J)	(162 J)	(135 J)	(132 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(3.2 J)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	34	48	29	36	50
pH	NA	NA	7.7	8.1	7.5	7.8	7.6
% TOC	NS	NS	5.5	5.5	5.9	5.6	3.9
Total organic carbon (mg/Kg)	NS	NS	55200	54700	58700	55500	38800

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-01-A 05/09/2001 0 - 6 in. mg/Kg	WP-04.45-9 05/09/2001 0 - 6 in. mg/Kg	WP-09A 05/09/2001 0 - 6 in. mg/Kg	WP-11A 05/09/2001 0 - 6 in. mg/Kg	LG-OUT 05/09/2001 0 - 6 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	10000	10700	7850	4650	7350
Antimony	25.0 (L)	2.0 (L)	0.52 JN	1.2 JN	0.51 JN	0.63 JN	(2.3 JN)
Arsenic	33.0 (P)	6.0 (P)	(6.5)	(8.9)	(19)	(10)	(9.9)
Barium	NS	NS	54	79	61	28 J	80
Beryllium	NS	NS	0.45 J	0.43 J	0.45 J	0.27 J	0.36 J
Cadmium	9.0 (P)	0.6 (P)	(1 J)	(1.3 J)	0.34 J	0.54 J	(2.4)
Calcium	NS	NS	24900	4140	6120	1460	10800
Chromium**	110.0 (P)	26.0 (P)	19	26	25 J	26 J	(29)
Cobalt	NS	NS	7.6 J	7.9 J	7.9 J	5.3 J	6.5 J
Copper	110.0 (P)	16.0 (P)	(48)	(91)	(41)	(172 *)	(88)
Iron	4% (P)	2% (P)	(3.4)	(4.3 *)	(2.8)	1.4	(3.1)
Lead	110.0 (L)	31.0 (P)	(94)	(152 *)	(73)	(225 *)	(235 *)
Magnesium	NS	NS	18900	7180	4480	1960	6490
Manganese	1100 (L)	460 (P)	(912 J)	(1790 J*)	(902 JN)	440 JN	(566 J)
Mercury	1.3 (L)	0.15 (L)	(0.51)	0.15 J	(0.17 J)	(0.44)	(1.1)
Nickel	50 (L)	16 (P)	(22)	(26)	(17)	13	(34)
Potassium	NS	NS	636 J	709 J	759 J	297 J	617 J
Selenium	NS	NS	0.94 J	1.9	1.5	1.2 J	1.1 J
Silver	2.2 (L)	1.0 (L)	---	0.27 J	---	---	---
Sodium	NS	NS	69 J	81 J	99 J	84 J	90 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	14	18	24	10 J	17
Zinc	270 (L)	120 (P/L)	(163)	(210)	78	(196)	(285 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	(1.1)	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	81	73	66	65	77
pH	NA	NA	8.2	8.1	8.1	8.4	8.3
% TOC	NS	NS	1.9	2.2	6.6	7.7	5.6
Total organic carbon (mg/Kg)	NS	NS	18600	22100	65500	76500	56000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999),
except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-LGOUT2 05/13/2003 0 - 6 in. mg/Kg	WP-MW4 05/13/2003 0 - 6 in. mg/Kg	WP-MW4 DUP 05/13/2003 0 - 6 in. mg/Kg	WP-16 05/09/2001 0 - 6 in. mg/Kg	WP-18 05/09/2001 0 - 6 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	10100	12000	12600	10800	9880
Antimony	25.0 (L)	2.0 (L)	0.9 BNJ	0.87 BNJ	(25 NJ)	0.87 JN	---
Arsenic	33.0 (P)	6.0 (P)	(6.6)	(6.3)	(8.4)	(7)	5
Barium	NS	NS	118	62	74	57	31 J
Beryllium	NS	NS	0.45 B	0.48 B	0.52 B	0.43 J	0.48 J
Cadmium	9.0 (P)	0.6 (P)	(1.7)	(1.2 B)	(1.2 B)	(1.9)	0.2 J
Calcium	NS	NS	13000	5390	9830	2130	2500
Chromium**	110.0 (P)	26.0 (P)	23	18	17	17	17
Cobalt	NS	NS	7.9 B	8.4 B	9.5 B	7.3 J	9 J
Copper	110.0 (P)	16.0 (P)	(63)	(53)	(62)	(61)	16
Iron	4% (P)	2% (P)	(3.4)	(3.6)	(4.1 *)	(3.3)	(2.7)
Lead	110.0 (L)	31.0 (P)	(141 *)	(130 *)	(1450 *)	(67)	24
Magnesium	NS	NS	7210	7290	7330	6880	4830
Manganese	1100 (L)	460 (P)	345	(541)	(579)	(489 J)	293 J
Mercury	1.3 (L)	0.15 (L)	(0.34)	(0.16)	0.14	(0.17 J)	0.15 J
Nickel	50 (L)	16 (P)	(56 *)	(25)	(26)	(23)	(21)
Potassium	NS	NS	861 B	817 B	710 B	748 J	1180 J
Selenium	NS	NS	---	---	---	1 J	1 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	99 B	83 B	74 B	51 J	88 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	20	17	18	16	16
Zinc	270 (L)	120 (P/L)	(262)	(231)	(246)	(309 *)	74
Cyanide, total	NS	0.1 (Eisler 1991)	(0.33 BJN)	(0.34 BJN)	(0.35 BJN)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	75	81	79	79	68
pH	NA	NA	---	---	---	8.2	7.5
% TOC	NS	NS	1.2 J	2.5	1.2	0.9	2.3
Total organic carbon (mg/Kg)	NS	NS	12400 J	25400	12100	8770	23400

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID Sample Date Sample Depth Units Compound	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-18 05/09/2001 6 - 12 in. mg/Kg	WP-M2 05/14/2003 0 - 6 in. mg/Kg	WP-M2 05/14/2003 6 - 12 in. mg/Kg	WP-M2 05/14/2003 12 - 17 in. mg/Kg	WP-M3 05/14/2003 0 - 6 in. mg/Kg
Aluminum	NS	73200 (1)	10100	15400 J	10600	10900	9500 J
Antimony	25.0 (L)	2.0 (L)	---	1.7 BNJ	---	---	---
Arsenic	33.0 (P)	6.0 (P)	5.6	(6.6 BJ*)	(15 J)	(14 J)	5.5 J*
Barium	NS	NS	34 J	93 BJ	46 B	37 B	53 BJ
Beryllium	NS	NS	0.47 J	0.77 BJ	0.45 B	0.45 B	0.5 BJ
Cadmium	9.0 (P)	0.6 (P)	0.098 J	(1.8 BJ)	(2.6)	(1.2 B)	(1.4 BJ)
Calcium	NS	NS	2900	9540 J	2350	1170 B	17000 J
Chromium**	110.0 (P)	26.0 (P)	16	(34 J)	(482 *)	(465 *)	(27 J)
Cobalt	NS	NS	9 J	14 BJ	10 B	9.4 B	10 BJ
Copper	110.0 (P)	16.0 (P)	16	(58 J)	(71)	(51)	(77 J)
Iron	4% (P)	2% (P)	(2.7)	(3.6 J)	(2.6)	(2.8)	(2.3 J)
Lead	110.0 (L)	31.0 (P)	20	(129 J*)	(210 *)	(174 *)	(182 J*)
Magnesium	NS	NS	4960	8490 J	5830	5670	11400 J
Manganese	1100 (L)	460 (P)	244 J	(874 J)	324	285	(527 J)
Mercury	1.3 (L)	0.15 (L)	(0.44 J)	(0.83 J)	(34 *)	(68 *)	(0.73 J)
Nickel	50 (L)	16 (P)	(20)	(32 J)	(24)	(22)	(24 J)
Potassium	NS	NS	1140 J	1150 BJ	766 B	647 B	821 BJ
Selenium	NS	NS	0.94 J	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	79 J	159 BJ	---	---	138 BJ
Thallium	NS	NS	---	---	1.1 B	0.85 B	---
Vanadium	NS	NS	16	24 BJ	18	13	22 BJ
Zinc	270 (L)	120 (P/L)	69	(325 J*)	(396 *)	(195)	(294 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(1.3 BJN)	(5.1 JN)	(1.7 JN)	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	64	28	66	79	39
pH	NA	NA	7.4	---	---	---	---
% TOC	NS	NS	2.4	1.1 e BJ	1.1 e BJ	1.1 BJ	6.4 BJ
Total organic carbon (mg/Kg)	NS	NS	24400	11300 e BJ	11300 e BJ	11300 BJ	63800 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units / Compound	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-M3 05/14/2003 6 - 12 in. mg/Kg	WP-DOT 05/14/2003 0 - 6 in. mg/Kg	WP-DOT 05/14/2003 6 - 12 in. mg/Kg	WP-DOT 05/14/2003 12 - 18 in. mg/Kg	WP-29A 05/14/2003 0 - 6 in. mg/Kg
Aluminum	NS	73200 (1)	10900	14400	12400	11700	9600
Antimony	25.0 (L)	2.0 (L)	(92 NJ*)	(5.4 BNJ)	(27 NJ*)	---	(13 BNJ)
Arsenic	33.0 (P)	6.0 (P)	(33 J)	(9.5 J)	(103 J*)	(35 J*)	5.7 J
Barium	NS	NS	63	33 B	68	54 B	80
Beryllium	NS	NS	0.6 B	0.53 B	0.61 B	0.5 B	0.43 B
Cadmium	9.0 (P)	0.6 (P)	(23 *)	(4.2)	(53 *)	(7.4)	(3.6)
Calcium	NS	NS	13100	3820	4810	2290	4220
Chromium**	110.0 (P)	26.0 (P)	(280 *)	(50)	(2270 *)	(2130 *)	(55)
Cobalt	NS	NS	11 B	13 B	9.7 B	9.9 B	12 B
Copper	110.0 (P)	16.0 (P)	(187 *)	(44)	(426 *)	(214 *)	(56)
Iron	4% (P)	2% (P)	(2.5)	(3.6)	(2.7)	(2.7)	(2.2)
Lead	110.0 (L)	31.0 (P)	(399 *)	(113 *)	(803 *)	(452 *)	(106)
Magnesium	NS	NS	9670	8960	7060	5950	5970
Manganese	1100 (L)	460 (P)	418	339	320	229	272
Mercury	1.3 (L)	0.15 (L)	(27 *)	(0.86)	(186 *)	(88 *)	(4.6 *)
Nickel	50 (L)	16 (P)	(23)	(33)	(22)	(22)	(27)
Potassium	NS	NS	1000 B	724 B	937 B	844 B	705 B
Selenium	NS	NS	1.2 B	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	---	---	---	---	---
Thallium	NS	NS	---	1 B	1.2 B	---	1.2 B
Vanadium	NS	NS	16	18	16 B	15	15 B
Zinc	270 (L)	120 (P/L)	(1780 *)	(732 *)	(4650 *)	(1210 *)	(466 *)
Cyanide, total	NS	0.1 (Eisler 1991)	(16 JN)	(0.52 BJN)	(26 JN)	(2.7 JN)	(0.32 BJN)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	65	64	61	73	59
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	6.4 e BJ	1.3 BJ	1.3 e BJ	1.3 e BJ	6.3 e BJ
Total organic carbon (mg/Kg)	NS	NS	63800 e BJ	13400 BJ	13400 e BJ	13400 e BJ	62900 e BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-29A	WP-29A DUP	WP-29A	WP-29	WP-29
Sample Date			05/14/2003	05/14/2003	05/14/2003	05/09/2001	05/09/2001
Sample Depth			6 - 12 in.	6 - 12 in.	12 - 17 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13000	11600	18700	11800	10500
Antimony	25.0 (L)	2.0 (L)	(91 NJ*)	(105 NJ*)	---	(159 JN*)	(3 JN)
Arsenic	33.0 (P)	6.0 (P)	(162 J*)	(114 *)	(31 J)	(20)	(27)
Barium	NS	NS	82	70 B	44 B	69 J	31 J
Beryllium	NS	NS	0.69 B	0.6 B	0.73 B	0.53 J	0.44 J
Cadmium	9.0 (P)	0.6 (P)	(79 *)	(68 *)	(7)	(27 *)	(32 *)
Calcium	NS	NS	6140	5380	2280	5840	2360
Chromium**	110.0 (P)	26.0 (P)	(2000 *)	(1490 *)	(1040 *)	(267 J*)	(620 J*)
Cobalt	NS	NS	10 B	8.9 B	13 B	11 J	6.6 J
Copper	110.0 (P)	16.0 (P)	(504 *)	(391 *)	(173 *)	(154 *)	(115 *)
Iron	4% (P)	2% (P)	(2.7)	(2.4)	(4.2 *)	(2.7)	(2.6)
Lead	110.0 (L)	31.0 (P)	(1050 *)	(859 *)	(348 *)	(376 *)	(321 *)
Magnesium	NS	NS	6910	6410	10600	7320	5570
Manganese	1100 (L)	460 (P)	369	316	254	366 JN	208 JN
Mercury	1.3 (L)	0.15 (L)	(144 *)	(130 J*)	(95 *)	(32 *)	(87 *)
Nickel	50 (L)	16 (P)	(23)	(20)	(37)	(25)	(18)
Potassium	NS	NS	1080 B	901 B	883 B	1000 J	679 J
Selenium	NS	NS	---	1.3 B	---	1.4 J	0.49 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	---	---	---	112 J	48 J
Thallium	NS	NS	1.4 B	---	---	---	---
Vanadium	NS	NS	17 B	15 B	24	16 J	12 J
Zinc	270 (L)	120 (P/L)	(6500 *)	(5410 *)	(926 *)	(1980 *)	(2610 *)
Cyanide, total	NS	0.1 (Eisler 1991)	(34 JN)	(34 JN)	(6.2 JN)	(28)	(6)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	53	55	60	56	62
pH	NA	NA	---	---	---	8.4	7.8
% TOC	NS	NS	6.3 BJ	7 BJ	6.3 e BJ	2.2	0.7
Total organic carbon (mg/Kg)	NS	NS	62900 BJ	70100 BJ	62900 e BJ	21700	7330

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-29	WP-CKOUT	WP-OD3	WP-OD3	WP-PL
Sample Date			05/09/2001	05/14/2003	05/14/2003	05/14/2003	05/08/2001
Sample Depth			12 - 18 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	12800	11400	9310	11300	12500 J
Antimony	25.0 (L)	2.0 (L)	---	1.7 BNJ	1.7 BNJ	(2.9 BNJ)	(6.3 JN)
Arsenic	33.0 (P)	6.0 (P)	(44 *)	(18)	(6.4)	(7)	(16 J)
Barium	NS	NS	81	130	58	58 B	74 J
Beryllium	NS	NS	0.6 J	0.59 B	0.41 B	0.54 B	0.63 J
Cadmium	9.0 (P)	0.6 (P)	(9.9 *)	(1.8)	(1.7)	(2.3)	(8.5 J)
Calcium	NS	NS	3900	3200	1780	1880	6040 J
Chromium**	110.0 (P)	26.0 (P)	(4120 J*)	(64)	(48)	(89)	(544 J*)
Cobalt	NS	NS	9.4 J	12 B	8.2 B	9.7 B	13 J
Copper	110.0 (P)	16.0 (P)	(462 *)	(154 *)	(68)	(104)	(183 J*)
Iron	4% (P)	2% (P)	(3.0)	(3.0)	(2.5)	(2.3)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(637 *)	(182 *)	(130 *)	(243 *)	(279 J*)
Magnesium	NS	NS	6190	4860	5110	5250	5700 J
Manganese	1100 (L)	460 (P)	322 JN	(2390 *)	(690)	171	386 JN
Mercury	1.3 (L)	0.15 (L)	(118 *)	(9.6 J*)	(1.2 J)	(2.4 J*)	(17 J*)
Nickel	50 (L)	16 (P)	(21)	(25)	(19)	(22)	(41 J)
Potassium	NS	NS	1180 J	888 B	599 B	887 B	1330 J
Selenium	NS	NS	2.1	1.8	---	---	3.3 J
Silver	2.2 (L)	1.0 (L)	0.25 J	---	---	---	(1.2 J)
Sodium	NS	NS	98 J	---	---	---	189 J
Thallium	NS	NS	---	2.2 B	1.4 B	1.5 B	---
Vanadium	NS	NS	16 J	19	13 B	15	21 J
Zinc	270 (L)	120 (P/L)	(1330 *)	(836 *)	(244)	(307 *)	(825 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	(6.1)	(0.27 BJN)	---	(0.28 BJN)	(7.3 J)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	2.2
Percent solids (%)	NA	NA	58	70	72	68	26
pH	NA	NA	7.6	---	---	---	7.2
% TOC	NS	NS	11	3.6	3.1 e	3.1	12
Total organic carbon (mg/Kg)	NS	NS	105000	35900	30500 e	30500	115000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-PL DUP	WP-PL	WP-PL1	WP-PL1	WP-PL1
Sample Date			05/08/2001	05/08/2001	05/13/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 11 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	11900 J	14000 J	16000 J	16700 J	16600
Antimony	25.0 (L)	2.0 (L)	(4.5 JN)	(3.4 JN)	(7.1 BNJ)	(4.7 BNJ)	---
Arsenic	33.0 (P)	6.0 (P)	(9.6 J)	(105 *)	(13 J)	(28 J)	4.5
Barium	NS	NS	70 J	87 J	90 BJ	106 J	105
Beryllium	NS	NS	0.59 J	0.67 J	0.79 BJ	0.83 BJ	0.8 B
Cadmium	9.0 (P)	0.6 (P)	(6.4 J)	(19 *)	(4.6 J)	(2.3 BJ)	0.4 B
Calcium	NS	NS	5930 J	4230	7220 J	5050 J	4340
Chromium**	110.0 (P)	26.0 (P)	(412 J*)	(3760 J*)	(335 J*)	(474 J*)	24
Cobalt	NS	NS	12 J	9.6 J	14 BJ	12 BJ	12 B
Copper	110.0 (P)	16.0 (P)	(158 J*)	(345 *)	(109 J)	(104 J)	(24)
Iron	4% (P)	2% (P)	(2.6 J)	(2.8)	(3.0 J)	(2.6 J)	(2.4)
Lead	110.0 (L)	31.0 (P)	(281 J*)	(629 *)	(181 J*)	(213 J*)	19
Magnesium	NS	NS	5350 J	4990	6570 J	5670 J	5800
Manganese	1100 (L)	460 (P)	408 JN	354 JN	456 J	276 J	299
Mercury	1.3 (L)	0.15 (L)	(9 J*)	(182 *)	(8.5 J*)	(14 J*)	(0.3)
Nickel	50 (L)	16 (P)	(37 J)	(23)	(37 J)	(25 J)	(24)
Potassium	NS	NS	1230 J	1140 J	1470 BJ	1170 BJ	1040 B
Selenium	NS	NS	1.7 J	3.5	---	1.4 BJ	1.1 B
Silver	2.2 (L)	1.0 (L)	(1.1 J)	0.55 J	---	---	---
Sodium	NS	NS	176 J	147 J	185 BJ	133 BJ	100 B
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	21 J	17 J	25 BJ	20 BJ	18
Zinc	270 (L)	120 (P/L)	(654 J*)	(1820 *)	(501 J*)	(275 J*)	79
Cyanide, total	NS	0.1 (Eisler 1991)	---	(42)	(0.87 BJ)	(0.52 BJ)	(0.65 B)
Cyanide, amenable to chlorination	NS	NS	---	13	---	---	---
Percent solids (%)	NA	NA	25	40	29	43	56
pH	NA	NA	7.7	7.4	---	---	---
% TOC	NS	NS	12	8.2	11 J	8.1 J	5.2
Total organic carbon (mg/Kg)	NS	NS	115000	82300	108000 J	80500 J	51700

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID Sample Date Sample Depth Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-PL2 05/13/2003 0 - 6 in. mg/Kg	WP-PL2 05/13/2003 6 - 12 in. mg/Kg	WP-PL2 05/13/2003 12 - 24 in. mg/Kg	WP-PL3 05/13/2003 0 - 6 in. mg/Kg	WP-PL3 05/13/2003 6 - 12 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	15000 J	15700 J	13200 J	15900 J	17100 J
Antimony	25.0 (L)	2.0 (L)	---	---	(7.8 BNJ)	---	(21 BNJ)
Arsenic	33.0 (P)	6.0 (P)	3.4 BJ	5.6 BJ	(20 J)	4.3 BJ	(34 J*)
Barium	NS	NS	79 BJ	86 BJ	77 BJ	87 BJ	103 BJ
Beryllium	NS	NS	0.74 BJ	0.78 BJ	0.63 BJ	0.79 BJ	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	(4.7 J)	(5 J)	(4.7 J)	(4.9 J)	(8.9 J)
Calcium	NS	NS	6420 J	5450 J	3670 J	7350 J	5310 J
Chromium**	110.0 (P)	26.0 (P)	(204 J*)	(211 J*)	(574 J*)	(244 J*)	(1170 J*)
Cobalt	NS	NS	13 BJ	13 BJ	9.7 BJ	14 BJ	13 BJ
Copper	110.0 (P)	16.0 (P)	(162 J*)	(195 J*)	(112 J*)	(146 J*)	(225 J*)
Iron	4% (P)	2% (P)	(2.6 J)	(2.7 J)	(2.3 J)	(2.8 J)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(297 J*)	(405 J*)	(193 J*)	(258 J*)	(435 J*)
Magnesium	NS	NS	6200 J	6190 J	4750 J	6590 J	5940 J
Manganese	1100 (L)	460 (P)	335 J	301 J	256 J	349 J	335 J
Mercury	1.3 (L)	0.15 (L)	(8.1 J*)	(8.5 J*)	(20 J*)	(9.5 J*)	(27 J*)
Nickel	50 (L)	16 (P)	(41 J)	(36 J)	(21 J)	(43 J)	(29 J)
Potassium	NS	NS	1490 BJ	1350 BJ	954 BJ	1540 BJ	1360 BJ
Selenium	NS	NS	---	2 BJ	---	---	1.9 BJ
Silver	2.2 (L)	1.0 (L)	---	0.97 BJ	---	---	---
Sodium	NS	NS	221 BJ	189 BJ	134 BJ	249 BJ	199 BJ
Thallium	NS	NS	---	---	---	3 BJ	---
Vanadium	NS	NS	22 BJ	25 BJ	16 BJ	25 BJ	24 BJ
Zinc	270 (L)	120 (P/L)	(488 J*)	(515 J*)	(431 J*)	(492 J*)	(887 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(0.49 BJ)	(8 J)	(0.68 BJ)	(11 J)
Cyanide, amenable to chlorination	NS	NS	---	---	1.7	---	---
Percent solids (%)	NA	NA	26	34	43	24	35
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	5.9 BJ	6.4 BJ	7.7 BJ	9.4 BJ	12 BJ
Total organic carbon (mg/Kg)	NS	NS	58700 BJ	64200 BJ	77000 BJ	93900 BJ	118000 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect	Sediment Lowest Effect	WP-T1A	WP-T1A	WP-T1A	WP-T1C	WP-T1C
Sample Date	Level (SEL)	Level (LEL)	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 10 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13700 J	12900 J	13500	9690	11500
Antimony	25.0 (L)	2.0 (L)	---	(3.7 BNJ)	---	(40 NJ*)	(52 NJ*)
Arsenic	33.0 (P)	6.0 (P)	(6.8 J)	(8 J)	(13)	(6.2)	(22)
Barium	NS	NS	68 BJ	69 BJ	57 B	42 B	60 B
Beryllium	NS	NS	0.67 BJ	0.66 BJ	0.62 B	0.46 B	0.58 B
Cadmium	9.0 (P)	0.6 (P)	(1.9 BJ)	(4.5 J)	(1.6 B)	(3.3)	(13 *)
Calcium	NS	NS	5910 J	4730 J	2700	4590	4060
Chromium**	110.0 (P)	26.0 (P)	(53 J)	(148 J*)	(242 *)	(74)	(274 *)
Cobalt	NS	NS	17 BJ	14 BJ	11 B	10 B	10 B
Copper	110.0 (P)	16.0 (P)	(70 J)	(117 J*)	(48)	(61)	(132 *)
Iron	4% (P)	2% (P)	(2.9 J)	(2.6 J)	(2.6)	(2.2)	(2.5)
Lead	110.0 (L)	31.0 (P)	(87 J)	(210 J*)	(101)	(92)	(230 *)
Magnesium	NS	NS	6250 J	5960 J	5920	5590	5550
Manganese	1100 (L)	460 (P)	(527 J)	351 J	284	363	306
Mercury	1.3 (L)	0.15 (L)	(1.7 J*)	(4.6 J*)	(3.1 J*)	(4.8 J*)	(20 J*)
Nickel	50 (L)	16 (P)	(35 J)	(35 J)	(23)	(22)	(22)
Potassium	NS	NS	1190 BJ	1090 BJ	1020 B	756 B	916 B
Selenium	NS	NS	---	1.5 BJ	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	137 BJ	102 BJ	---	---	---
Thallium	NS	NS	3.3 BJ	3 BJ	1.1 B	1 B	1.5 B
Vanadium	NS	NS	24 BJ	25 J	16 B	14 B	15 B
Zinc	270 (L)	120 (P/L)	(240 J)	(452 J*)	(192)	(323 *)	(1050 *)
Cyanide, total	NS	0.1 (Eisler 1991)	(0.65 BJ)	(0.84 BJN)	(0.33 BN)	(3.9 N)	(4.3 N)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	34	43	59	70	63
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	8.5 e J	8.5 e J	8.5 J	3.1 e	3.1
Total organic carbon (mg/Kg)	NS	NS	85400 e J	85400 e J	85400 J	31100 e	31100

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect	Sediment Lowest Effect	WP-OD2	WP-OD2	WP-OD2	WP-T2A	WP-T2A
Sample Date	Level (SEL)	Level (LEL)	05/14/2003	05/14/2003	05/14/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 22 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	12600 J	11700 J	12700	13100 J	10300
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	(8.9 BNJ)
Arsenic	33.0 (P)	6.0 (P)	5.3 BJ	5.1 J	(16)	5.3 BJ	(7.5)
Barium	NS	NS	66 BJ	60 BJ	48 B	70 BJ	45 B
Beryllium	NS	NS	0.61 BJ	0.54 BJ	0.56 B	0.7 BJ	0.44 B
Cadmium	9.0 (P)	0.6 (P)	(2.3 BJ)	(2.2 J)	(4)	(1.9 BJ)	(2.8)
Calcium	NS	NS	5310 J	3120 J	1950	6070 J	2290
Chromium**	110.0 (P)	26.0 (P)	(68 J)	(78 J)	(351 *)	(58 J)	(119 *)
Cobalt	NS	NS	14 BJ	12 BJ	12 B	14 BJ	11 B
Copper	110.0 (P)	16.0 (P)	(69 J)	(63 J)	(55)	(69 J)	(46)
Iron	4% (P)	2% (P)	(2.5 J)	(2.5 J)	(2.8)	(2.8 J)	(2.2)
Lead	110.0 (L)	31.0 (P)	(96 J)	(111 J*)	(102)	(86 J)	(91)
Magnesium	NS	NS	6150 J	5370 J	5780	6270 J	4830
Manganese	1100 (L)	460 (P)	433 J	305 J	284	(633 J)	228
Mercury	1.3 (L)	0.15 (L)	(1.9 J*)	(2.5 J*)	(19 J*)	(1.4 J*)	(3.9 *)
Nickel	50 (L)	16 (P)	(36 J)	(31 J)	(24)	(32 J)	(21)
Potassium	NS	NS	1260 BJ	951 BJ	1080 B	1400 BJ	896 B
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	156 BJ	90 BJ	---	184 BJ	76 B
Thallium	NS	NS	2.4 BJ	---	1.6 B	---	---
Vanadium	NS	NS	24 BJ	21 J	16 B	22 BJ	13 B
Zinc	270 (L)	120 (P/L)	(266 J)	(250 J)	(442 *)	(265 J)	(311 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	(0.44 B)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	30	49	63	27	63
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	4.1 e J	4.1 e J	4.1 J	5 BJ	3.1 B
Total organic carbon (mg/Kg)	NS	NS	41100 e J	41100 e J	41100 J	49600 BJ	31400 B

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID Sample Date Sample Depth Units Compound	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-T2B 05/13/2003 0 - 6 in. mg/Kg	WP-T2B 05/13/2003 6 - 12 in. mg/Kg	WP-T2B 05/13/2003 12 - 24 in. mg/Kg	WP-T2C 05/13/2003 0 - 6 in. mg/Kg	WP-T2C 05/13/2003 6 - 12 in. mg/Kg
Aluminum	NS	73200 (1)	14700 J	11800	11400	11900 J	14000
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	(6.5 J)	3.8	2.2 B	(7.7 J)	(40 *)
Barium	NS	NS	78 BJ	28 B	41 B	65 BJ	60 B
Beryllium	NS	NS	0.69 BJ	0.38 B	0.44 B	0.61 BJ	0.64 B
Cadmium	9.0 (P)	0.6 (P)	(1.5 BJ)	(1.1 B)	0.56 B	(4.6 J)	(5.6)
Calcium	NS	NS	7300 J	1630	1740	6760 J	3170
Chromium**	110.0 (P)	26.0 (P)	(34 J)	(27)	17	(64 J)	(826 *)
Cobalt	NS	NS	18 BJ	14	10 B	18 BJ	14 B
Copper	110.0 (P)	16.0 (P)	(50 J)	(22)	14	(90 J)	(129 *)
Iron	4% (P)	2% (P)	(3.0 J)	(2.7)	(2.3)	(2.6 J)	(2.8)
Lead	110.0 (L)	31.0 (P)	(106 J)	(40)	26	(125 J*)	(287 *)
Magnesium	NS	NS	7780 J	7170	5240	6670 J	6280
Manganese	1100 (L)	460 (P)	(506 J)	248	247	421 J	290
Mercury	1.3 (L)	0.15 (L)	(0.46 J)	(0.17)	(0.18)	(1.7 J*)	(33 *)
Nickel	50 (L)	16 (P)	(35 J)	(26)	(20)	(37 J)	(29)
Potassium	NS	NS	1540 BJ	740 B	960 B	1310 BJ	1270 B
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	195 BJ	56 B	88 B	163 BJ	124 B
Thallium	NS	NS	---	0.86 BJ	1.5 BJ	---	---
Vanadium	NS	NS	23 BJ	13 B	13 B	22 BJ	18 B
Zinc	270 (L)	120 (P/L)	(238 J)	(155)	82	(470 J*)	(588 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(0.33 B)	---	---	(1.5)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	33	75	68	33	51
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	4.9 J	2.6 J	1.9	4.5 BJ	5.9 B
Total organic carbon (mg/Kg)	NS	NS	49000 J	26400 J	19100	45000 BJ	59000 B

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect	Sediment Lowest Effect	WP-T2C	WP-OD1	WP-OD1	WP-OD1	WP-T3A
Sample Date	Level (SEL)	Level (LEL)	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth			12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 19 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13400	12200 J	17000	15800	15800 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	3.8	(16 J)	(21)	5	(6.1 BJ)
Barium	NS	NS	45 B	67 BJ	87	81	92 BJ
Beryllium	NS	NS	0.5 B	0.69 BJ	0.83 B	0.79 B	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	0.42 B	(5.8 J)	(1.8 B)	0.58 B	(2.8 BJ)
Calcium	NS	NS	1710	6940 J	3700	3130	8830 J
Chromium**	110.0 (P)	26.0 (P)	(31)	(247 J*)	(566 *)	23	(66 J)
Cobalt	NS	NS	10 B	20 BJ	14 B	12 B	17 BJ
Copper	110.0 (P)	16.0 (P)	(18)	(89 J)	(89)	(23)	(84 J)
Iron	4% (P)	2% (P)	(2.6)	(2.8 J)	(2.9)	(2.7)	(3.1 J)
Lead	110.0 (L)	31.0 (P)	(37)	(138 J*)	(218 *)	(66)	(106 J)
Magnesium	NS	NS	6130	6070 J	6320	5930	8070 J
Manganese	1100 (L)	460 (P)	242	450 J	366	374	(469 J)
Mercury	1.3 (L)	0.15 (L)	0.095	(8.3 J*)	(20 *)	0.11	(1.1 J)
Nickel	50 (L)	16 (P)	(23)	(47 J)	(29)	(26)	(42 J)
Potassium	NS	NS	990 B	1490 BJ	1560 B	1470 B	1900 BJ
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	99 B	222 BJ	185 B	165 B	223 BJ
Thallium	NS	NS	---	3.1 BJ	1.7 BJ	2.2 BJ	---
Vanadium	NS	NS	15	28 BJ	23	22	38 J
Zinc	270 (L)	120 (P/L)	73	(611 J*)	(251)	84	(316 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	(0.27 B)	---	(0.6 B)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	70	27	51	53	30
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	1.1 B	5.7 BJ	6.1 B	3.8 B	5.6 J
Total organic carbon (mg/Kg)	NS	NS	11000 B	56500 BJ	60700 B	37600 B	56400 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-T3A DUP	WP-T3A	WP-T3A	WP-T3B	WP-T3B
Sample Date			05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	14600 J	19000 J	15900	14500 J	16500 J
Antimony	25.0 (L)	2.0 (L)	---	---	(2.4 BNJ)	---	---
Arsenic	33.0 (P)	6.0 (P)	(6.1 BJ)	(10 J)	(30)	5 BJ	(8.4 J)
Barium	NS	NS	84 BJ	95 BJ	86	94 BJ	91 J
Beryllium	NS	NS	0.73 BJ	0.94 BJ	0.76 B	0.79 BJ	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	(2.4 BJ)	(3.7 J)	(5.3)	(1.7 BJ)	(1.5 BJ)
Calcium	NS	NS	8110 J	10200 J	4460	11500 J	4860 J
Chromium**	110.0 (P)	26.0 (P)	(60 J)	(110 J)	(322 *)	(44 J)	(159 J*)
Cobalt	NS	NS	15 BJ	19 BJ	13 B	14 BJ	15 BJ
Copper	110.0 (P)	16.0 (P)	(73 J)	(99 J)	(81)	(56 J)	(53 J)
Iron	4% (P)	2% (P)	(2.8 J)	(3.8 J)	(2.8)	(3.0 J)	(3.0 J)
Lead	110.0 (L)	31.0 (P)	(94 J)	(136 J*)	(160 *)	(67 J)	(94 J)
Magnesium	NS	NS	7860 J	12900 J	6970	7180 J	7110 J
Manganese	1100 (L)	460 (P)	445 J	(492 J)	400	(702 J)	(495 J)
Mercury	1.3 (L)	0.15 (L)	(1.3 J)	(2.7 J*)	(13 *)	(0.77 J)	(0.44 J)
Nickel	50 (L)	16 (P)	(38 J)	(48 J)	(27)	(31 J)	(34 J)
Potassium	NS	NS	1720 BJ	1840 BJ	1610 B	1750 BJ	1650 BJ
Selenium	NS	NS	---	---	1.1 B	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	207 BJ	180 BJ	129 B	195 BJ	144 BJ
Thallium	NS	NS	---	---	---	2.3 BJ	2.5 BJ
Vanadium	NS	NS	31 BJ	51 J	21	25 BJ	28 J
Zinc	270 (L)	120 (P/L)	(281 J*)	(364 J*)	(508 *)	(222 J)	(179 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(2.7)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	29	36	54	29	46
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	6.9 BJ	5.8 J	4.4 J	4 BJ	3.8 BJ
Total organic carbon (mg/Kg)	NS	NS	69300 BJ	57700 J	44200 J	39600 BJ	38000 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 4-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-T3B	WP-T3C	WP-T3C
Sample Date			05/13/2003	05/13/2003	05/13/2003
Sample Depth			12 - 24 in.	0 - 6 in.	6 - 11 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound					
Aluminum	NS	73200 (1)	16600	15700 J	15400 J
Antimony	25.0 (L)	2.0 (L)	---	---	1.3 BNJ
Arsenic	33.0 (P)	6.0 (P)	(6.4)	5.8 BJ	(9.3 J)
Barium	NS	NS	81	92 BJ	91 J
Beryllium	NS	NS	0.8 B	0.89 BJ	0.81 BJ
Cadmium	9.0 (P)	0.6 (P)	(0.61 B)	(2.6 BJ)	(3.4 J)
Calcium	NS	NS	3150	8620 J	5800 J
Chromium**	110.0 (P)	26.0 (P)	(53)	(60 J)	(115 J*)
Cobalt	NS	NS	14 B	15 BJ	14 BJ
Copper	110.0 (P)	16.0 (P)	(29)	(79 J)	(78 J)
Iron	4% (P)	2% (P)	(3.0)	(3.2 J)	(3.1 J)
Lead	110.0 (L)	31.0 (P)	(188 *)	(94 J)	(125 J*)
Magnesium	NS	NS	6520	7830 J	6830 J
Manganese	1100 (L)	460 (P)	430	(508 J)	(466 J)
Mercury	1.3 (L)	0.15 (L)	0.13	(0.84 J)	(4.9 J*)
Nickel	50 (L)	16 (P)	(29)	(41 J)	(33 J)
Potassium	NS	NS	1640 B	2010 BJ	1590 BJ
Selenium	NS	NS	---	---	1.5 BJ
Silver	2.2 (L)	1.0 (L)	---	---	---
Sodium	NS	NS	132 B	249 BJ	179 BJ
Thallium	NS	NS	2 BJ	---	---
Vanadium	NS	NS	23	42 J	28 J
Zinc	270 (L)	120 (P/L)	92	(269 J)	(353 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(0.36 BJ)
Cyanide, amenable to chlorination	NS	NS	---	---	---
Percent solids (%)	NA	NA	54	31	45
pH	NA	NA	---	---	---
% TOC	NS	NS	2 B	7.2 J	6.4 J
Total organic carbon (mg/Kg)	NS	NS	19700 B	72000 J	63800 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

Table 4-4 Pesticides detected in sediment compared to screening values including %TOC data.

Parameter	Screening value ug/gOC	Background deep sediment			WP-04.45-9		WP09		WP18		WP-PL		WP-29		LG-OUT	
					0-6"		0-6"		6-12"		0-6"		6-12"		0-6"	
		C	TOC	SC	C	SC	C	SC	C	SC	C	SC	C	SC	C	SC
Pesticide																
4,4-DDD	0.01	12	5.5	0.2 J	---	---	---	---	2.5	**0.104** JP	12	**0.10** jp	---	---	2.9	**0.05** jp
4,4-DDE	0.01	13	5.5	0.2 JP	---	---	---	---	---	---	---	---	---	---	---	---
4,4-DDT	0.01	---	---	---	6.6	**0.3** BPJ	---	---	---	---	---	---	---	---	5.4	**0.10** bpjn
Endosulfan sulfate	0.03	9.8	4.7	0.2 JNP	---	---	---	---	---	---	---	---	---	---	---	---
Endrin	0.8	5.7	4.7	0.1 JP	---	---	---	---	---	---	---	---	---	---	---	---
a-chlorodane	0.001	3.6	6.2	0.06 JP	---	---	---	---	---	---	---	---	---	---	---	---
g-chlorodane	0.001	2	5.5	0.04 J	---	---	---	---	---	---	---	---	---	---	---	---
Dieldrin	0.1	---	---	---	---	---	6.8	0.1 PNJ	---	---	---	---	---	---	---	---
Heptachlor epoxide	0.0008	---	---	---	---	---	---	---	1	**0.042** jp	---	---	---	---	---	---
Endrin ketone		---	---	---	---	---	---	---	---	---	7	0.06 jp	13	1.9 pj	---	---
a-BHC		---	---	---	---	---	---	---	---	---	---	---	2.8	0.4 jp	---	---
%TOC		---	---	---	2.2	---	6.6	---	2.4	---	12	---	0.7	---	5.6	---

Notes:
Screening values presented from *Technical Guidance for Screening Cotaminated Sediments*. NYSDEC 1999.
C = analytical concentration reported by laboratory in ug/Kg; SC = screening concentration in ug/gOC for comparison to NYSDEC screening values reported in those units.
--- = constituent not detected
Data qualifiers: J = estimated concentration; B= blank contamination

Table 4-5. Wappingers Lake sediment results - background

Concentration range	Parameter	Surface sediment (6 samples total) Description
Constituents above the SEL screening values	Lead	Lead ranged from 47 to 187 mg/Kg, with each location exceeding the LEL of 31 mg/Kg and two of the six locations exceeding the SEL of 110 mg/Kg. The maximum background level of lead was approximately 1.7 times the SEL.
	Zinc	Zinc ranged from 178 to 359 mg/Kg, with each location exceeding the LEL of 120 mg/Kg and one of the six locations exceeding the SEL of 270 mg/Kg. The maximum background level was approximately 1.3 times the SEL.
Constituents frequently above LEL screening values	Cadmium	Cadmium was above LEL in five of six samples with maximum level of 1.4 mg/kg compared to a LEL of 0.6 mg/Kg.
	Copper	Copper ranged from 35 to 90 mg/Kg with each of the six samples exceeding the LEL of 16 mg/Kg.
	Iron	Iron ranged from 2.7% to 3.3% with each of the six samples exceeding the LEL of 2%.
	Manganese	Manganese ranged from 541 to 1000 mg/Kg with each of the six samples exceeding the LEL of 460 mg/Kg.
	Mercury	Mercury ranged from 0.29 to 0.57 mg/Kg with each of the six samples exceeding the LEL of 0.15 mg/Kg.
	Nickel	Nickel ranged from 24 to 33 mg/Kg with each of the six samples exceeding the LEL of 16 mg/Kg.

Table 4-5. Wappingers Lake sediment results - background

		Surface sediment (6 samples total)
Concentration range	Parameter	Description
Constituents slightly above the LEL screening value	Arsenic	Arsenic was slightly above LEL in one of six samples with a maximum concentration of 6.3 mg/Kg compared to a LEL of 6.0 mg/Kg.
	Chromium	Chromium was above the LEL in one of the six background samples, with a maximum of 27 mg/Kg detected compared to a LEL of 26 mg/Kg. Hexavalent chromium was not detected; however, the detection limit for hexavalent chromium was higher than the LEL in four of the six samples (Section 2.5.1).
	Cyanide	Cyanide was detected in one of the six samples at 3.2 mg/Kg which was above the 0.1 mg/Kg screening value of Eisler (1991). A New York State screening value is not provided in the state's sediment guidance (NYSDEC 1999) Cyanide was not detected in the other five background samples; however, the detection limits for those samples were above the screening value, ranging from 1.4 to 4.3 mg/Kg. Amenable cyanide was not detected above the detection limits of mg/Kg.
Constituents not detected above the LEL screening value, but trace level presence can not be ruled out	Silver	Silver was not detected; however, the detection limits for some of the samples were above the LEL screening value.

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

Area/Location	Depth	tPAH	BaP	BaP OC	DBF	Phen	Sb	As	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Vn	Zn	CN
NYS Guidance - LEL		4	---	1.3	---	---	2	6	0.6	26	16	2%	31	460	0.15	16	---	1	---	---	120	0.1
NYS Guidance - SEL		---	---	---	---	---	25	33	9	110	110	4%	110	1100	1.3	50	---	2.2	---	---	270	---
Alternative ecological value		85	0.44	---	5.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Background Maximum		5.5	0.6	0.01	---	---	3.2	6.3	1.4BJ	27	90	3.3%	187	1000	0.57	33	2.5	---	---	38B	359	3.2
Site area																						
WP-01-A	0-6 in	---	---	---	---	---	---	6.5	1	---	48	3.4	94	912	0.51	22	---	---	---	---	163	---
WP-4.45-9	0-6 in	64	8.4	---	---	---	---	8.9	1.3	---	91	4.3	152	1790	---	26	---	---	---	---	210	---
WP-09A	0-6 in	---	---	---	---	---	---	19	---	---	41	2.8	73	902	0.17	17	---	---	---	---	---	---
WP-11A	0-6 in	---	0.5	---	---	---	---	10	---	---	172	---	225	---	0.44	---	---	---	---	---	196	1.1
LG-OUT	0-6 in	28	5.5	---	---	---	2.3	9.9	2.4	29	88	3.1	235	566	1.1	34	---	---	---	---	285	---
LG-OUT2	0-6 in	6.7	1.0	---	---	---	---	6.6	1.7	---	63	3.4	141	---	0.34	56	---	---	---	---	262	0.33
MP-MW4	0-6 in	12	0.8	---	---	---	---	6.3	1.2	---	53	3.6	130	541	0.16	25	---	---	---	---	231	0.34
MP-MW4 (DUP)	0-6 in	8.7	0.9	---	---	---	---	8.4	1.2	---	62	4.1	1450	579	---	26	---	---	---	---	246	0.35
WP-16	0-6 in	9.2	1.1	---	---	---	---	7	1.9	---	61	3.3	67	489	0.17	23	---	---	---	---	309	---
Shoal area																						
WP-18	0-6 in	8.9	1.1	---	---	---	---	---	---	---	---	2.7	---	---	---	21	---	---	---	---	---	---
	6-12 in	---	---	---	---	---	---	---	---	---	---	2.7	---	---	0.44	20	---	---	---	---	---	---
WP-M2	0-6 in	---	1.8	---	---	---	---	6.6	1.8	34	58	3.6	129	874	0.83	32	---	---	---	---	325	1.3
	6-12 in	165	20	2	---	---	---	15	2.6	482	71	2.6	210	---	34	24	---	---	1.1B	---	396	5.1
	12-17in	41	5.3	---	---	0.1	---	14	1.2	465	51	2.8	174	---	68	22	---	---	0.85B	---	195	1.7
WP-M3	0-6 in	9.6	---	---	---	---	---	---	1.4	27	77	2.3	182	527	0.73	24	---	---	---	---	294	---
	6-12 in	106	12	---	---	---	92	33	23	280	187	2.5	399	---	27	23	---	---	---	---	1780	16
WP-OD3	0-6 in	13	0.5	---	---	---	---	6.4	1.7	48	68	2.5	130	690	1.2	19	---	---	1.4B	---	244	---
	6-12 in	14	1.1	---	---	0.08	2.9	7	2.3	89	104	2.3	243	---	2.4	22	---	---	1.5B	---	307	0.28
WP-DOT	0-6 in	114	14	---	---	---	5.4	9.5	4.2	50	44	3.6	113	---	0.86	33	---	---	1B	---	732	0.52
	6-12 in	308	30	2	---	---	27	103	53	2270	426	2.7	803	---	186	22	---	---	1.2B	---	4650	26
	12-18 in	370	30	2	---	---	---	35	7.4	2130	214	2.7	452	---	88	22	---	---	---	---	1210	2.7

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

Area/Location	Depth	tPAH	BaP	BaP OC	DBF	Phen	Sb	As	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Vn	Zn	CN
NYS Guidance - LEL		4	---	1.3	---	---	2	6	0.6	26	16	2%	31	460	0.15	16	---	1	---	---	120	0.1
NYS Guidance - SEL		---	---	---	---	---	25	33	9	110	110	4%	110	1100	1.3	50	---	2.2	---	---	270	---
Alternative ecological value		85	0.44	---	5.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Background Maximum		5.5	0.6	0.01	---	---	3.2	6.3	1.4BJ	27	90	3.3%	187	1000	0.57	33	2.5	---	---	38B	359	3.2
Shoal area (continued)																						
WP-29A	0-6 in	24	---	---	---	---	13	---	3.6	55	56	2.2	106	---	4.6	27	---	---	1.2B	---	466	0.32
	6-12 in	253	23	---	---	---	91	162	79	2000	504	2.7	1050	---	144	23	---	---	1.4B	---	6500	34
(DUP)	6-12 in	445	33	---	6.0	---	105	114	68	1490	391	2.4	859	---	130	20	---	---	---	---	5410	34
	12-17in	404	38	---	---	---	---	31	7	1040	173	4.2	348	---	95	37	---	---	---	---	926	6.2
WP-29	0-6 in	214	24	---	---	---	159	20	27	267	154	2.7	376	---	32	25	---	---	---	---	1980	28
	6-12 in	197	14	2	5.4	---	3	27	32	620	115	2.6	321	---	87	18	---	---	---	---	2610	6
	12-18 in	1092	93	---	30	---	---	44	9.9	4120	462	3	637	---	118	21	---	---	---	---	1330	6.1
WP-CKOUT	0-6 in	9.6	1.3	---	---	---	---	18	1.8	64	154	3	182	2390	9.6	25	---	---	2.2B	---	836	0.27
Embayment																						
WP-PL	0-6 in	45	6.7	---	---	---	6.3	16	8.5	544	183	2.8	279	---	17	41	3.3	1.2	---	---	825	7.3
(DUP)	0-6 in	31	5	---	---	---	4.5	9.6	6.4	412	158	2.6	281	---	9	37	---	1.1	---	---	654	---
	6-11 in	29	4	---	---	---	3.4	105	19	3760	345	2.8	629	---	182	23	3.5	---	---	---	1820	42
WP-PL1	0-6 in	20	1.9	---	---	---	7.1	13	4.6	335	109	3	181	---	8.5	37	---	---	---	---	501	0.87
	6-12 in	---	---	---	---	---	4.7	28	2.3	474	104	2.6	213	---	14	25	---	---	---	---	275	0.52
	12-18 in	---	---	---	---	---	---	---	---	---	24	2.4	---	---	0.3	24	---	---	---	---	---	0.65
WP-PL2	0-6 in	24	2.2	---	---	---	---	---	4.7	204	162	2.6	297	---	8.1	41	---	---	---	---	488	---
	6-12 in	14	15	---	---	---	---	---	5	211	195	2.7	405	---	8.5	36	---	---	---	---	515	---
	12-24 in	8.8	1.2	---	---	---	7.8	20	4.7	574	112	2.3	193	---	20	21	---	---	---	---	431	8
WP-PL3	0-6 in	7.1	0.7	---	---	---	---	---	4.9	244	146	2.8	258	---	9.5	43	---	---	3B	---	492	0.68
	6-12 in	14	0.5	---	---	---	21	34	8.9	1170	225	2.8	435	---	27	29	---	---	---	---	887	11
Downstream section																						
WP-T1A	0-6 in	5.9	0.5	---	---	---	---	6.8	1.9	53	70	2.9	87	527	1.7	35	---	---	3.3B	---	240	0.65
	6-12 in	20	1.1	---	---	0.09	3.7	8	4.5	148	117	2.6	210	---	4.6	35	---	---	3B	---	452	0.84
	12-24 in	71	8.4	---	---	0.09	---	13	1.6	242	48	2.6	101	---	3.1	23	---	---	1.1B	---	192	0.33
WP-T1C	0-6 in	8.2	---	---	---	0.05	40	6.2	3.3	74	61	2.2	92	---	4.8	22	---	---	1B	---	323	3.9
	6-10 in	7.5	---	---	---	0.08	52	22	13	274	132	2.5	230	---	20	22	---	---	1.5B	---	1050	4.3

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

Area/Location	Depth	tPAH	BaP	BaP OC	DBF	Phen	Sb	As	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Vn	Zn	CN
NYS Guidance - LEL		4	---	1.3	---	---	2	6	0.6	26	16	2%	31	460	0.15	16	---	1	---	---	120	0.1
NYS Guidance - SEL		---	---	---	---	---	25	33	9	110	110	4%	110	1100	1.3	50	---	2.2	---	---	270	---
Alternative ecological value		85	0.44	---	5.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Background Maximum		5.5	0.6	0.01	---	---	3.2	6.3	1.4BJ	27	90	3.3%	187	1000	0.57	33	2.5	---	---	38B	359	3.2
Downstream section (continued)																						
WP-OD2	0-6 in	8.3	0.7	---	---	---	---	---	2.3	68	69	2.5	96	---	1.9	36	---	---	2.4B	---	266	---
	6-12 in	14	1.6	---	---	---	---	---	2.2	78	63	2.5	111	---	2.5	31	---	---	---	---	250	---
	12-22 in	12	---	---	---	---	---	16	4	351	55	2.8	102	---	19	24	---	---	1.6B	---	442	---
WP-T2A	0-6 in	16	1.7	---	---	---	---	---	1.9	58	69	2.8	86	633	1.4	32	---	---	---	---	265	---
	6-12 in	15	3.6	---	---	---	8.9	7.5	2.8	119	46	2.2	91	---	3.9	21	---	---	---	---	311	0.44
WP-T2B	0-6 in	11	---	---	---	---	---	6.5	1.5	34	50	3	106	506	0.46	35	---	---	---	---	238	---
	6-12 in	7.8	---	---	---	---	---	---	1.1	27	22	2.7	40	---	0.17	26	---	---	0.86B	---	155	0.33
	12-24 in	---	---	---	---	---	---	---	---	---	---	2.3	---	---	0.18	20	---	---	1.5B	---	---	---
WP-T2C	0-6 in	166	22	---	---	---	---	7.7	4.6	64	90	2.6	125	---	1.7	37	---	---	---	---	470	---
	6-12 in	125	16	---	---	---	---	40	5.6	826	129	2.8	287	---	33	29	---	---	---	---	588	1.5
	12-24 in	---	---	---	---	---	---	---	---	31	18	2.6	37	---	---	23	---	---	---	---	---	0.27
WP-OD1	0-6 in	37	11	---	---	---	---	16	5.8	247	89	2.8	138	---	8.3	47	---	---	3.1B	---	611	---
	6-12 in	12	1.6	---	---	---	---	21	1.8	566	89	2.9	218	---	20	29	---	---	1.7B	---	251	0.6
	12-19 in		---	---	---	---	---	---	---	---	23	2.7	66	---	---	26	---	---	2.2B	---	---	---
WP-T3A	0-6 in	5.5	0.9	---	---	---	---	6.1	2.8	66	84	3.1	106	469	1.1	42	---	---	---	---	316	---
(DUP)	0-6 in	---	---	---	---	---	---	6.1	2.4	60	73	2.8	94	---	1.3	38	---	---	---	---	281	---
	6-12 in	8	1.2	---	---	---	---	10	3.7	110	99	3.8	136	492	2.7	48	---	---	---	51	364	---
	12-24 in	25	2.9	---	---	---	2.4	30	5.3	322	81	2.8	160	---	13	27	---	---	---	---	508	2.7
WP-T3B	0-6 in	4.7	0.5	---	---	---	---	---	1.7	44	56	3	67	702	0.77	31	---	---	2.3B	---	222	---
	6-12 in	4.7	0.7	---	---	---	---	8.4	1.5	159	53	3	94	495	0.44	34	---	---	2.5B	---	179	---
	12-24 in	---	---	---	---	---	---	6.4	0.61	33	29	3	188	---	---	29	---	---	2B	---	---	---
WP-T3C	0-6 in	---	0.5	---	---	---	---	---	2.6	60	79	3.2	94	508	0.84	41	---	---	---	42	269	---
	6-11 in	6.7	1	---	---	---	---	9.3	3.4	115	78	3.1	125	466	4.9	33	---	---	---	---	353	0.36
	max	1092	93	2	30	0.1	159	162	79	4120	504	4.3	1450	2390	186	56	3.5	1.2	3.3B	51	6500	42

Table 4-6. Wappingers Creek sediment constituents (mg/Kg) above screening values

Area/Location	Depth	tPAH	BaP	BaP OC	DBF	Phen	Sb	As	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Vn	Zn	CN
NYS Guidance - LEL		4	---	1.3	---	---	2	6	0.6	26	16	2%	31	460	0.15	16	---	1	---	---	120	0.1
NYS Guidance - SEL		---	---	---	---	---	25	33	9	110	110	4%	110	1100	1.3	50	---	2.2	---	---	270	---
Alternative ecological value		85	0.44	---	5.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Background Maximum		5.5	0.6	0.01	---	---	3.2	6.3	1.4BJ	27	90	3.3%	187	1000	0.57	33	2.5	---	---	38B	359	3.2

Notes:

Estimated concentration qualifiers (J) not presented; samples with blank contamination associated are qualified (B); --- = not detected above screening value or not detected.

NYS Guidance = Technical Guidance for Screening Contaminated Sediments. New York State Department of Environmental Conservation. 1999.

LEL= lowest effect screening level; SEL = severe effect screening level as defined by the NYS Guidance.

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaP OC = BaP conc. normalized by organic carbon conc.; DBF = dibenzofuran; Phen = phenol.

Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Se = selenium; Ag = silver; Tl = thallium; Vn = vanadium; Zn = zinc; CN = cyanide.

Table 4-7. Descriptions of tidal creek bed.

Location ID	Approx. Dist to Hudson R. (ft)	Approx. width (ft)	Description	Creek bed description
Site area				
WP01	10200	160	Hydro-facility dock on north side of Creek.	Rock and cobble pockets of sand.
WP03	10000		Upstream of East bridge.	Rock and cobble pockets of sand.
WP04.45	9860	100	Sample collected downstream of East bridge.	Pocket of sand.
WP03-WP8	10000-9500		Adjacent to the Three Star site.	Rock and cobble.
WP09	9400		Several pipes located along north bank, one observed on south bank.	
WP10	9300		Downstream of West bridge on north side of Creek.	Sand and gravel.
WP-LGOUT2	9200	125	Sample collected from north lagoon outlet area.	Coarse sand and gravel.
WP11	9200		Sample collected from in the vicinity of former storage tanks formerly located on north parcel.	Sand and gravel.
WP12	9100		Upstream of outlet of Three Star lagoon on south side of Creek.	
WP-MW4	9050	125	Downstream outlet of Three Star lagoon on south side of Creek.	Coarse sand and gravel.
WP16	8700	100	South side of Creek prior to Shoal Area.	
Shoal area	10200			
WP18	8400			Silt and sand.
WP-M2	8300	250	South side of Creek at beginning of Shoal area.	Silt and sand with some gravel.
WP21	8200		location of low tide seep.	
WP22	8100		location of low tide seep.	
WP-M3	7850	300	South side of Creek upper mid-Shoal area.	Silt and sand with some gravel.
WP25	7800		Public works garage area.	

Table 4-7. Descriptions of tidal creek bed.

Location ID	Approx. Dist to Hudson R. (ft)	Approx. width (ft)	Description	Creek bed description
Shoal area (continued)				
WP-DOT	7700	375	South side of Creek in the vicinity of the Public works garage.	Silt and coarse sand with some pebbles.
WP-29A	7550		Site side of Creek mid-Shoal area.	Silt and sand turning to course sand and some gravel below.
WP29	7400		Sample collected from shoal near center of Creek and boat launch.	Silt and sand.
WP-CKOUT	7100	330	South side of Creek at an outlet of a tributary.	Sand and silt with some pebbles.
Embayment				
WP-PL2	7050		North portion of embayment.	Silt and organic matter.
WP-PL3	6900		Northwest portion of the embayment.	Silt and organic matter.
WP-PL1	6500		Southwest portion of the embayment.	Silt and organic matter with some clay.
WP-PL	6500		Approximate center of embayment.	Silt and organic matter with some clay.
Downstream section				
WP-OD3	6950	200	West shore of creek near opening of the embayment.	Silt and organic matter mixing with sand and gravel below.
WP37	6600			Firm Silt.
WP-T1A	5350	580	North shore of downstream section.	Silt and organic matter to sand and gravel below.
WP-T1C	5200	580	South shore of downstream section.	Silt and organic matter with traces of gravel.
WP-T2B	3750	800	South side of Creek midway to shore.	Silt and organic matter shallow to sand and gravel below.
WP-OD2	3700		North side of Creek near island.	Silt and organic matter turning to silt and sand with traces of gravel.
WP-T2C	3650		Near south shore.	Silt to silt and gravel below.
WP-OD1	1500	500	North side of Creek midway to shore; north of Rt. 28 bridge.	Silt with some organics.
WP-T3A	1000		North shore of Creek in the vicinity of the Rt. 28 bridge.	Silt with some organic matter to silt and sand below.
WP-T3B	800	580	Appproximate center of Creek downstream of Rt. 28 bridge.	Silt with some organic matter to silt with traces of sand below.
WP-T3C	0		South shore of Creek at confluence with Hudson River.	Silt with some organic matter with traces of sand and gravel below.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents over 50 times SEL screening values			Mercury	Mercury in subsurface sediment of the shoal area (WP-DOT) and embayment (WP-PL) far exceeded surface sediment concentrations. The maximum concentrations of mercury at both of these two areas were detected in similar depth intervals of approximately 6- to 12-inches, and at similar concentrations of approximately 180 mg/kg, which is approximately 140 times the SEL of 1.3 mg/Kg. In total, 17 of the 21 locations where subsurface sediment samples were collected from also contained mercury at levels above the SEL screening value.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents 20 to 50 times SEL Screening value	Mercury	The maximum levels of mercury in surface sediment were detected in two areas consisting of the shoal area (WP-29) and embayment (WP-PL) (Figure 2-1). At those two locations, the mercury in surface sediment was 32 and 17 mg/Kg, respectively which is approximately 25 and 13 times the SEL, respectively. In addition, 11 other samples of surface sediment contained mercury above the SEL of 1.3 mg/Kg from locations in the vicinity of the embayment (WP-PL1, WP-PL2, WP-PL3), the shoal (WP-29A, WP-CK OUT), and downstream locations along both shores (WP-T1A, WP-T1C, WP-OD2, WP-T2A, WP-T2C, and WP-OD1).	Chromium	The maximum total chromium in subsurface sediment of 4,120 mg/Kg was observed in the shoal area (WP-29), a level that is approximately 38 times the SEL screening value of 110 mg/Kg. Similar levels of total chromium were also observed in subsurface sediment collected from the embayment (WP-PL). Eighteen of the 21 locations where subsurface sediment was sampled in the creek contained total chromium above the SEL screening value. The maximum concentration of total chromium in subsurface sediment exceeded that of surface sediment. Hexavalent chromium, the more toxic form of chromium on which the SEL screening value is based, was not detected.
			Zinc	The maximum level of zinc in subsurface sediment of 6,500 mg/Kg was observed in the shoal area (WP-29A), a level that is approximately 24 times the SEL screening value of 270 mg/Kg. The maximum background concentration of 359 mg/Kg was also above the SEL screening value. Seventeen of the 21 locations where subsurface sediment was sampled in the creek contained zinc above the maximum background level and the SEL screening value. The maximum subsurface sediment concentration of zinc exceeded that of surface sediment.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents 10 to 20 times SEL screening value or cyanide levels 10 to 20 times maximum background	Lead	The maximum level of lead in surface sediment was detected in the vicinity of the lagoon outlet (WP-MW4), at 1,450 mg/Kg, which is approximately 13 times the SEL. Six other samples of surface sediment collected from locations in the vicinity of the lagoon outlet (LG-OUT, WP-11A), the shoal (WP-29), and the embayment (WP-PL, WP-PL2, WP-PL3) also contained lead above the background maximum of 187 mg/Kg and the SEL of 110 mg/Kg. Ten additional locations contained sediment with lead that exceeded the SEL, but within the maximum concentration of background samples (Section 4.1).	Cyanide	The maximum concentration of total cyanide in subsurface sediment of 42 mg/Kg was observed in the embayment (WP-PL), a level that is approximately 13 times the maximum background level of 3.2 mg/Kg that was observed. Similar levels of total cyanide were also observed in subsurface sediment collected from the shoal area (WP-29A). Four of the 21 locations where subsurface sediment samples were collected contained total cyanide above the maximum background levels observed. The maximum subsurface sediment concentration of total cyanide exceeded that of surface sediment. Amenable cyanide, the biologically available fraction of cyanide, was not detected. No SEL screening value is included in New York State guidance for screening sediment. It is recognized that concentrations compared to background levels are not directly comparable to other constituents for which SEL screening values apply.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents frequently above 1 to 10 times SEL Screening value	Zinc	Zinc was observed above the SEL of 270 mg/Kg in 11 samples collected from the lagoon outlet (LG-OUT), the shoal (WP-M2, WP-M3, WP-29, WP-29A, WP-DOT and WP-CKOUT), and downstream area (WP-T1C, WP-T2C, WP-OD2, and WP-T3A). The maximum was observed in sediment collected from the shoal (WP-29) at 1,980 mg/Kg, which is approximately 7 times the SEL. In addition, three samples (WPT-2A, WP-OD2, and WP-T3C) contained zinc above background levels and the LEL.	Lead	Lead was observed above the SEL of 110 mg/Kg and maximum background level of 187 mg/Kg in 15 of the 21 subsurface sediment samples collected for the RI. The maximum of 1,050 mg/Kg observed in subsurface sediment was collected from the shoal area (WP-29A). The maximum observed in the subsurface sediment is approximately 6 times the maximum background level. The concentration of lead in surface sediment collected from in the vicinity of the lagoon outlet (WP-MW4) exceeded the maximum concentration observed in subsurface sediment.
	Chromium	Chromium was observed above the SEL of 110 mg/Kg in five samples collected from in the vicinity of the shoal (WP-29), the embayment (WP-PL, WP-WP1, WP-PL2, and WP-WP3), and the downstream area (WP-OD1). The maximum concentration of chromium in surface sediment was observed in the embayment (WP-PL) at 544 mg/Kg, which is approximately 5 times the SEL. In addition, eleven samples collected from the shoal area (WP-29A, WP-DOT, and WP-M2) and downstream area (WP-T1A, WP-T1C, WP-OD2, WP-T2A, WP-T2C, WP-T3A, WP-T3B, WP-T3C) contained chromium above background levels and the LEL screening value.	Copper	Copper was observed above the SEL of 110 mg/Kg in 10 of 21 subsurface locations where sediment samples were collected for the RI. The maximum of 504 mg/Kg observed in the shoal area (WP-29A), was approximately five times the SEL screening value. The maximum subsurface sediment concentration of copper exceeded that of surface sediment.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents frequently above 1 to 10 times SEL Screening value	Copper	Copper was observed above the SEL of 110 mg/Kg in six samples collected from in the vicinity of the lagoon (WP-11A), the shoal (WP-29, WP-CK0UT), and the embayment (WP-PL, WP-PL2, and WP-PL3). The maximum of 183 mg/Kg, which is approximately 1.7 times the SEL, was observed in surface sediment collected from the embayment (WP-PL). Other locations were within background levels.		

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Other constituents detected less frequently in the range of 1 to 10 times SEL values	Antimony	Antimony was observed above the SEL of 25 mg/Kg in two samples consisting of one location in the vicinity of the shoal (WP-29) and the downstream area along the east shore (WP-T1C). The maximum concentration of antimony observed was 159 mg/Kg in the vicinity of the shoal (WP-29), which is approximately 6 times the SEL. In addition, two other samples from the shoal area (WP 29A and WP-DOT) contained antimony above the LEL. Antimony was not present in background samples (Section 4.1).	Cadmium	Cadmium was observed above the SEL of 9 mg/Kg in six of the 21 subsurface locations were sediment samples were collected for the RI. The maximum of 79 mg/Kg observed in the shoal area (WP-29A), was approximately nine times the SEL screening value. The maximum subsurface sediment concentration of cadmium exceeded that of surface sediment.
	Cadmium	Cadmium was observed above the SEL of 9 mg/Kg in one sample collected from the vicinity of the shoal (WP-29) at a level of 27 mg/Kg which is approximately 3 times the SEL. In addition, two other samples collected from the shoal area (WP-29A and WP-DOT) and one sample collected from the downstream area (WP-T1C) contained cadmium above background levels and the LEL screening value.	Arsenic	Arsenic was observed above the SEL of 33 mg/Kg in six of the 21 subsurface locations where sediment samples were collected for the RI. The maximum of 162 mg/Kg observed in subsurface sediment collected from the shoal area (WP-29A), was approximately five times the SEL screening value. The maximum subsurface sediment concentration of arsenic exceeded that of surface sediment.

Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Other constituents detected less frequently in the range of 1 to 10 times SEL values	Manganese	Manganese was observed in two samples above the SEL of 1100 mg/Kg consisting of one location in the vicinity of the Site (WP-4.45-9) and the other in the vicinity of the shoal (WP-CKOUT). The maximum concentration of 2390 mg/Kg was observed in vicinity of the shoal (WP-WP-CKOUT), a level that is approximately 2 times the SEL. Manganese levels in other samples were comparable to background levels.	Antimony	Antimony was observed above the SEL of 25 mg/Kg in four of 21 subsurface locations where sediment samples were collected for the RI. The maximum concentration of antimony detected in subsurface sediment, 162 mg/Kg, was observed in the shoal area (WP-29A). The maximum was approximately four times the SEL screening value. The maximum subsurface sediment concentration of antimony was approximately equivalent to the maximum concentration observed in surface sediment from the same area (WP-29).
Constituents at levels similar to SEL screening values.	Iron	Iron was observed at 4.3% in the vicinity of the Site, a level that is comparable to the SEL of 4.0%. Other locations were similar to background levels which included a maximum of 3.3%.	Iron	Iron was observed up to 4.2% in the shoal area (WP-29A), a level that is comparable to the SEL of 4.0% and levels observed in surface sediment in the vicinity of the site. Other locations were similar to background levels which included a maximum of
	Nickel	Nickel was observed at 56 mg/Kg in the vicinity of the lagoon outlet (WP-LGOUT2), a level that is comparable to the SEL of 50 mg/Kg. Twelve other locations contained nickel above the maximum background level of 33 mg/Kg.		

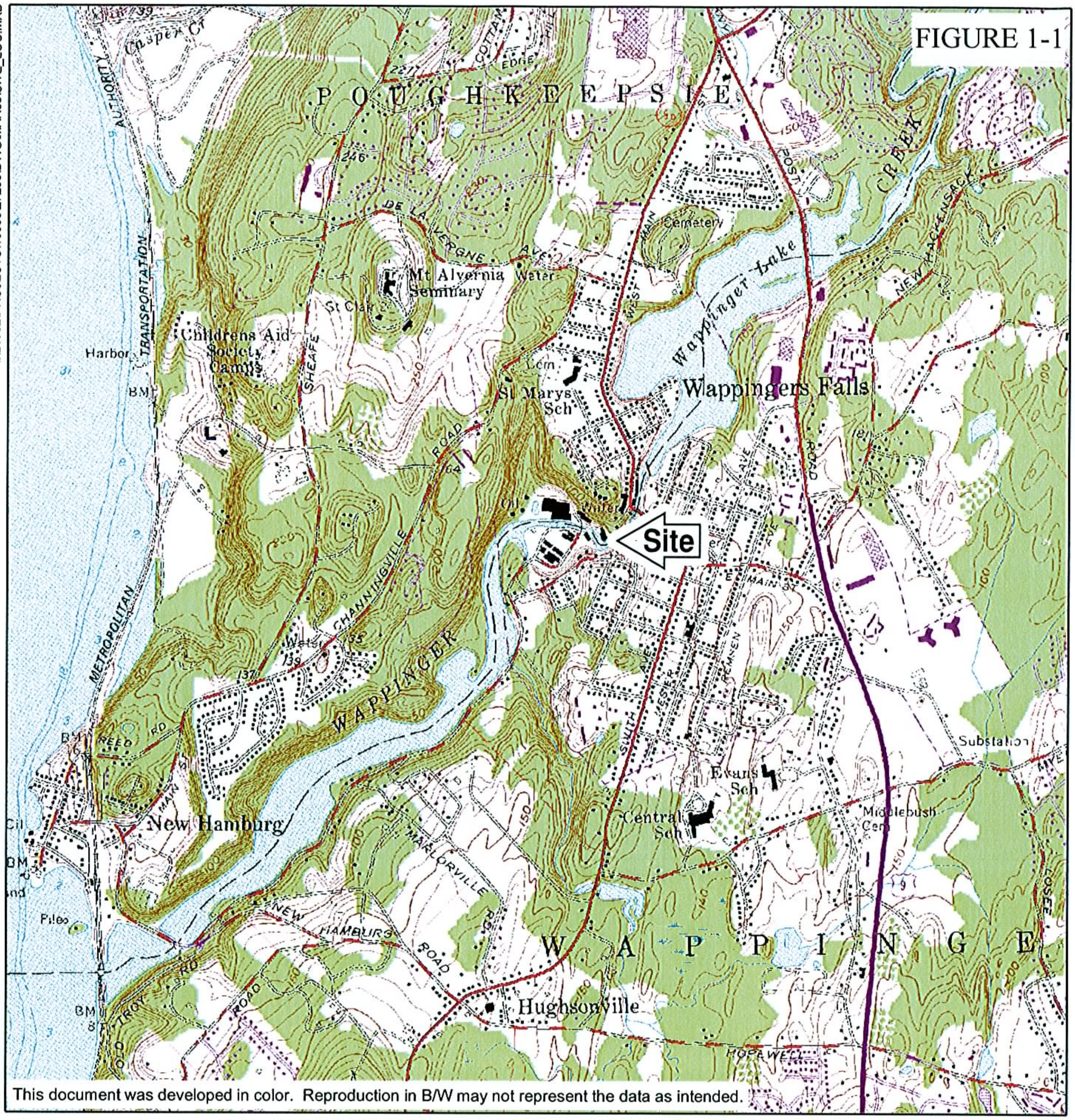
Table 4-8. Wappingers Creek sediment results

	Surface sediment (30 samples total)		Deeper sediment (21 locations total)	
Concentration range	Parameter	Description	Parameter	Description
Constituents above LEL screening values and background levels.	Arsenic	Arsenic was observed above LEL screening value of 6 mg/Kg in 16 samples of surface sediment. The highest levels detected in surface sediment were approximately 20 mg/Kg in the vicinity of the site (WP-09) and at the shoal (WP-29).		
	Cyanide	Cyanide was detected above the maximum background level of 3.2 mg/Kg in three samples consisting of one each collected from the shoal (WP 29), the embayment (WP-PL), and downstream area (WP-T1C). The shoal area (WP-29) contained the highest level of cyanide observed at 28 mg/Kg. The biologically available fraction of cyanide, measured as amenable cyanide, was not detected. A cyanide screening value of 0.1 mg/Kg obtained from Eisler (1991) was below the maximum background levels observed, as discussed previously (Section 4.1).		

I:\DIV82\PROJECTS\10653\27258\DWG\MAR05\SITE_LOC.MXD

PLOT DATE: 02/09/05 DIV. 84 JPS

FIGURE 1-1



ADAPTED FROM: WAPPINGER FALLS,NY USGS QUADRANGLE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

QUADRANGLE LOCATION

SITE LOCATION

DRAFT

0 1,000 2,000 4,000 6,000 8,000

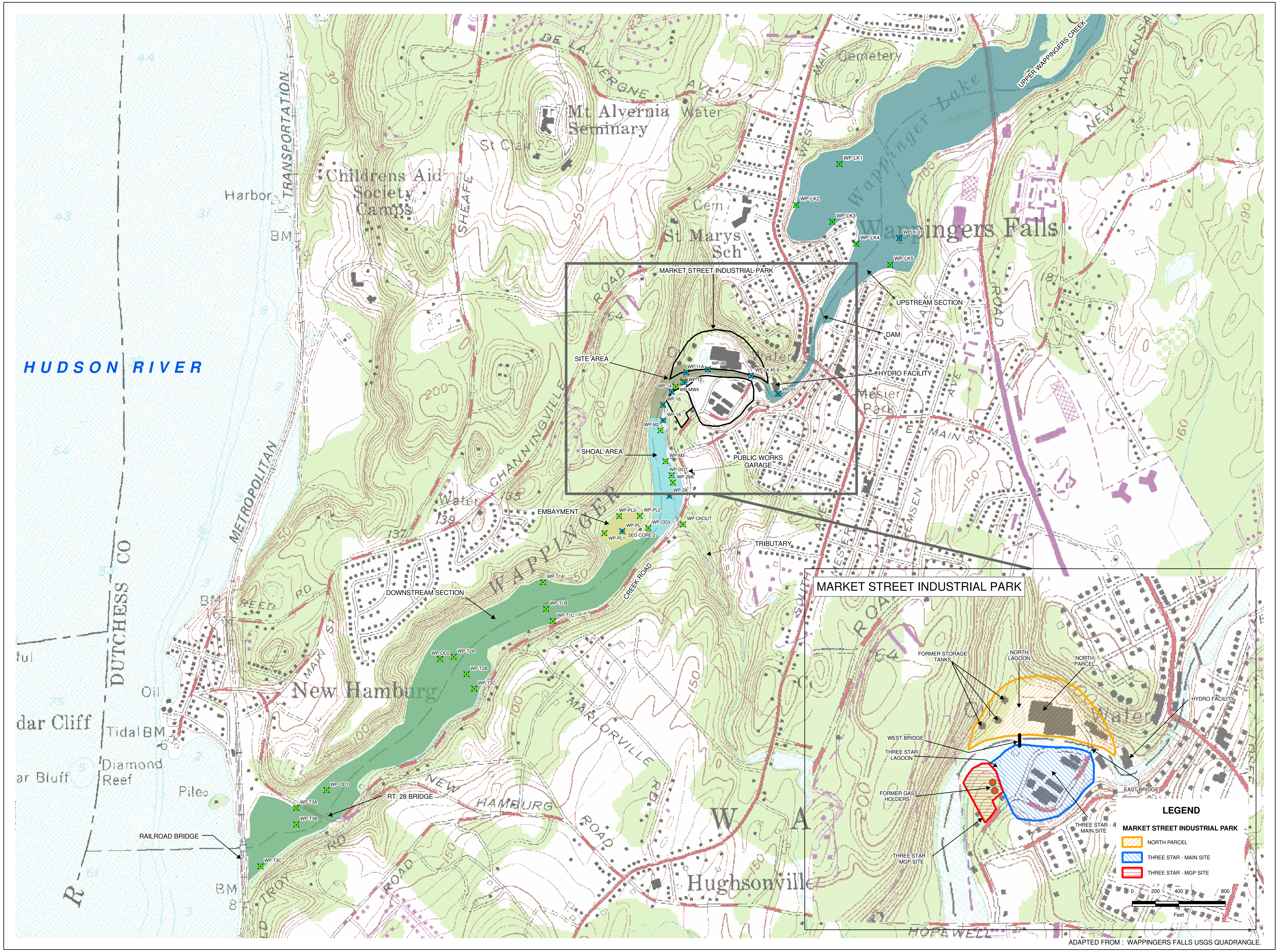
Feet

10653.27258
MARCH 2005

1:24,000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 1-2



Legend

SAMPLE LOCATIONS

- 2001 SEDIMENT SAMPLE
- 2003 SEDIMENT SAMPLE

STREAM SECTIONS

- UPSTREAM SECTION
- SITE AREA
- SHOAL AREA
- EMBAYMENT
- DOWNSTREAM SECTION

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

SITE PLAN AND SEDIMENT SAMPLE LOCATIONS

0 300 600 1,200 1,800
Feet

FEBRUARY 2007
27258.008.009

O'BRIEN & GERE ENGINEERS, INC.

I:\PROJECTS\DIV 82\10653\27258\DWG\SITE_PLAN.MXD

PLOT DATE: 02/03/05 DIV. 84 JPS

I:\DIV82\PROJECTS\10653\27258\DWG\MAR05\27258002A.DWG ocb

Key to building uses at the site.

Building No.	Company	Description of activities
P	Page Print	printing, including photographic
11	Dutchess Bleachery J. L. Rie Co.	boiler house, auto parking injection molding – plastics
12	Dutchess Bleachery J.L. Rie Co.	case storage injection molding – plastics
15	Dutchess Bleachery Three Star Anodizing	lapping, packaging sewing, sheet tearing, case storage paper storage
16	Dutchess Bleachery Three Star Anodizing	store house metal anodizing
17	Dutchess Bleachery Three Star Anodizing	store house metal anodizing
21	Dutchess Bleachery Three Star Anodizing Sears Mail Order	salvage department, paper storage miscellaneous storage mail order store
22	Dutchess Bleachery Three Star Anodizing	miscellaneous storage auto parking miscellaneous storage
A-C	Axton-Cross Fabricare	chemical storage and repackaging unknown

Some other industrial uses at site:
coal storage, and felt hat, ammunition, and leather manufacturing.

References: Sanborn maps 1945 and 1960; EA 1986; Popper 1991.

03/11/05 DIV. 84 JPS

FIGURE 1-3

DRAFT

LEGEND

21 BUILDING IDENTIFICATION

(11) FORMER BUILDING LOCATION

SUSPECTED FILL AREAS

FORMER GAS HOLDER

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

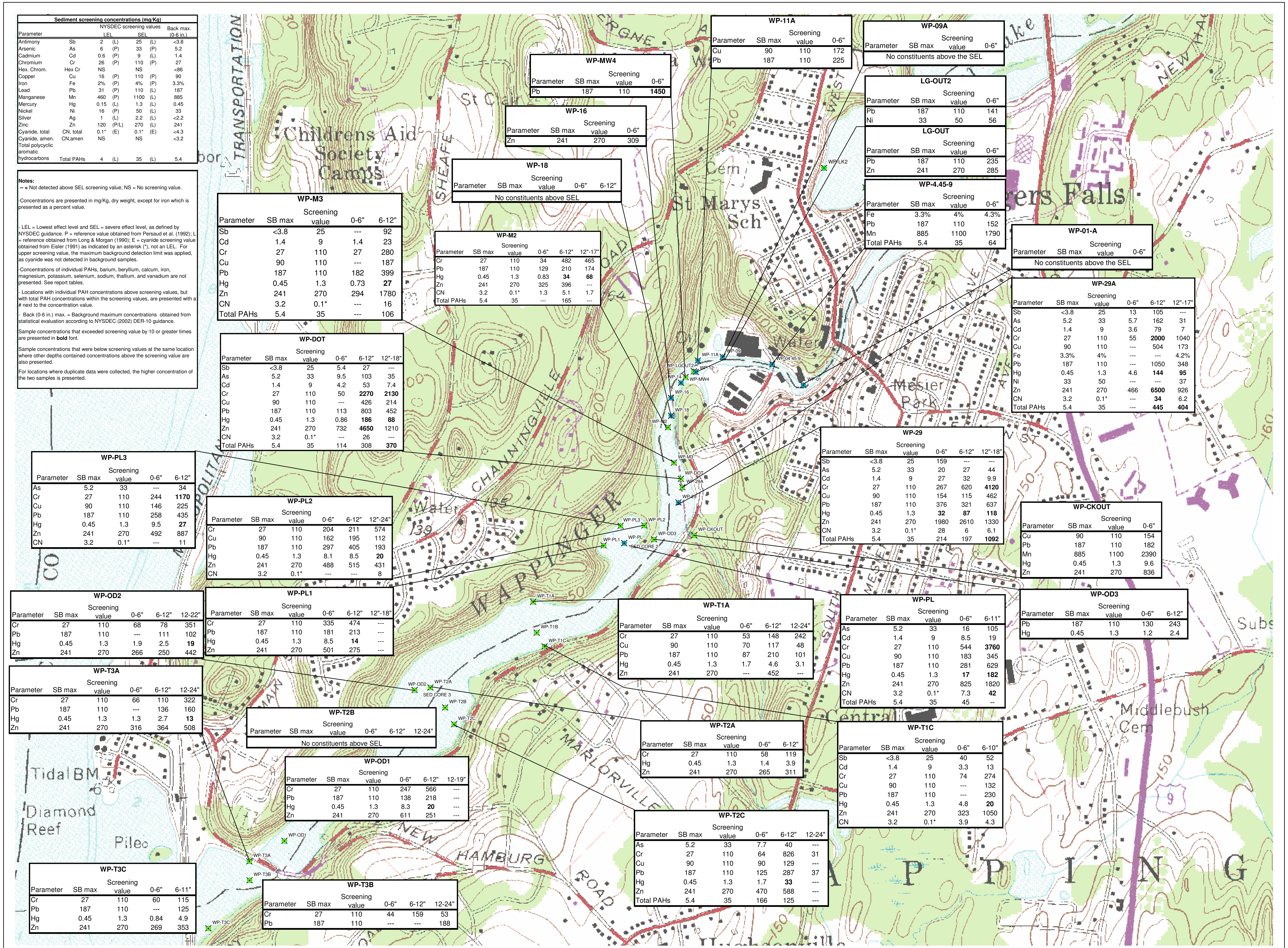
THREE STAR
SITE (2001)

100 0 100
1"=100'

FILE NO. 10653/27258.008
MARCH 2005

O'BRIEN & GERE
ENGINEERS INC.

FIGURE 4-1



Sediment screening concentrations (mg/Kg)

Parameter		NYSDEC screening values LEL		SEL		Back max. (0-6 in.)
Antimony	Sb	2	(L)	25	(L)	<3.8
Arsenic	As	6	(P)	33	(P)	5.2
Cadmium	Cd	0.6	(P)	9	(L)	1.4
Chromium	Cr	26	(P)	110	(P)	27
Hex. Chrom.	Hex Cr	NS		NS		<86
Copper	Cu	16	(P)	110	(P)	90
Iron	Fe	2%	(P)	4%	(P)	3.3%
Lead	Pb	31	(P)	110	(L)	187
Manganese	Mn	460	(P)	1100	(L)	885
Mercury	Hg	0.15	(L)	1.3	(L)	0.45
Nickel	Ni	16	(P)	50	(L)	33
Silver	Ag	1	(L)	2.2	(L)	<2.2
Zinc	Zn	120	(P/L)	270	(L)	241
Cyanide, total	CN, total	0.1*	(E)	0.1*	(E)	<4.3
Cyanide, amen.	CN,amen	NS		NS		<3.2
Total polycyclic aromatic hydrocarbons	Total PAHs	4	(L)	35	(L)	5.4

Notes:

-- = Not detected above SEL screening value; NS = No screening value.

-Concentrations are presented in mg/Kg, dry weight, except for iron which is presented as a percent value.

- LEL = Lowest effect level and SEL = severe effect level, as defined by NYSDEC guidance. P = reference value obtained from Persaud et al. (1992); L = reference obtained from Long & Morgan (1990); E = cyanide screening value obtained from Eisler (1991) as indicated by an asterisk (*), not an LEL. For upper screening value, the maximum background detection limit was applied, as cyanide was not detected in background samples.

-Concentrations of individual PAHs, barium, beryllium, calcum, iron, magnesium, potassium, selenium, sodium, thallium, and vanadium are not presented. See report tables.

- Locations with individual PAH concentrations above screening values, but with total PAH concentrations within the screening values, are presented with a # next to the concentration value.

- Back (0-6 in.) max. = Background maximum concentrations obtained from statistical evaluation according to NYSDEC (2002) DER-10 guidance.

Sample concentrations that exceeded screening value by 10 or greater times are presented in **bold** font.

Sample concentrations that were below screening values at the same location where other depths contained concentrations above the screening value are also presented.

For locations where duplicate data were collected, the higher concentration of the two samples is presented.

WP-MW4

Parameter	SB max	Screening value	0-6"
Pb	187	110	**1450**

WP-11A

Parameter	SB max	Screening value	0-6"
Cu	90	110	172
Pb	187	110	225

WP-09A

Parameter	SB max	Screening value	0-6"
No constituents above the SEL			

WP-16

Parameter	SB max	Screening value	0-6"
Zn	241	270	309

LG-OUT2

Parameter	SB max	Screening value	0-6"
Pb	187	110	141
Ni	33	50	56

LG-OUT

Parameter	SB max	Screening value	0-6"
Pb	187	110	235
Zn	241	270	285

WP-18

Parameter	SB max	Screening value	0-6"	6-12"
No constituents above SEL				

WP-4.45-9

Parameter	SB max	Screening value	0-6"
Fe	3.3%	4%	4.3%
Pb	187	110	152
Mn	885	1100	1790
Total PAHs	5.4	35	64

WP-M3

Parameter	SB max	Screening value	0-6"	6-12"
Sb	<3.8	25	---	92
Cd	1.4	9	1.4	23
Cr	27	110	27	280
Cu	90	110	---	187
Pb	187	110	182	399
Hg	0.45	1.3	0.73	**27**
Zn	241	270	294	1780
CN	3.2	0.1*	---	16
Total PAHs	5.4	35	---	106

WP-M2

Parameter	SB max	Screening value	0-6"	6-12"	12"-17"
Cr	27	110	34	482	465
Pb	187	110	129	210	174
Hg	0.45	1.3	0.83	**34**	**68**
Zn	241	270	325	396	---
CN	3.2	0.1*	1.3	5.1	1.7
Total PAHs	5.4	35	---	165	---

WP-01-A

Parameter	SB max	Screening value	0-6"
No constituents above the SEL			

WP-29A

Parameter	SB max	Screening value	0-6"	6-12"	12"-17"
Sb	<3.8	25	13	105	---
As	5.2	33	5.7	162	31
Cd	1.4	9	3.6	79	7
Cr	27	110	55	**2000**	1040
Cu	90	110	---	504	173
Fe	3.3%	4%	---	---	4.2%
Pb	187	110	---	1050	348
Hg	0.45	1.3	4.6	**144**	**95**
Ni	33	50	---	---	37
Zn	241	270	466	**6500**	926
CN	3.2	0.1*	---	**34**	6.2
Total PAHs	5.4	35	---	**445**	**404**

WP-DOT

Parameter	SB max	Screening value	0-6"	6-12"	12"-18"
Sb	<3.8	25	5.4	27	---
As	5.2	33	9.5	103	35
Cd	1.4	9	4.2	53	7.4
Cr	27	110	50	**2270**	**2130**
Cu	90	110	---	426	214
Pb	187	110	113	803	452
Hg	0.45	1.3	0.86	**186**	**88**
Zn	241	270	732	**4650**	1210
CN	3.2	0.1*	---	26	---
Total PAHs	5.4	35	114	308	**370**

WP-29

Parameter	SB max	Screening value	0-6"	6-12"	12"-18"
Sb	<3.8	25	159	---	---
As	5.2	33	20	27	44
Cd	1.4	9	27	32	9.9
Cr	27	110	267	620	**4120**
Cu	90	110	154	115	462
Pb	187	110	376	321	637
Hg	0.45	1.3	**32**	**87**	**118**
Zn	241	270	1980	2610	1330
CN	3.2	0.1*	28	6	6.1
Total PAHs	5.4	35	214	197	**1092**

WP-PL3

Parameter	SB max	Screening value	0-6"	6-12"
As	5.2	33	---	34
Cr	27	110	244	**1170**
Cu	90	110	146	225
Pb	187	110	258	435
Hg	0.45	1.3	9.5	**27**
Zn	241	270	492	887
CN	3.2	0.1*	---	11

WP-PL2

Parameter	SB max	Screening value	0-6"	6-12"	12"-24"
Cr	27	110	204	211	574
Cu	90	110	162	195	112
Pb	187	110	297	405	193
Hg	0.45	1.3	8.1	8.5	**20**
Zn	241	270	488	515	431
CN	3.2	0.1*	---	---	8

WP-CKOUT

Parameter	SB max	Screening value	0-6"
Cu	90	110	154
Pb	187	110	182
Mn	885	1100	2390
Hg	0.45	1.3	9.6
Zn	241	270	836

WP-OD2

Parameter	SB max	Screening value	0-6"	6-12"	12-22"
Cr	27	110	68	78	351
Pb	187	110	---	111	102
Hg	0.45	1.3	1.9	2.5	**19**
Zn	241	270	266	250	442

WP-PL1

Parameter	SB max	Screening value	0-6"	6-12"	12"-18"
Cr	27	110	335	474	---
Pb	187	110	181	213	---
Hg	0.45	1.3	8.5	**14**	---
Zn	241	270	501	275	---

WP-T1A

Parameter	SB max	Screening value	0-6"	6-12"	12-24"
Cr	27	110	53	148	242
Cu	90	110	70	117	48
Pb	187	110	87	210	101
Hg	0.45	1.3	1.7	4.6	3.1
Zn	241	270	---	452	---

WP-PL

Parameter	SB max	Screening value	0-6"	6-11"
As	5.2	33	16	105
Cd	1.4	9	8.5	19
Cr	27	110	544	**3760**
Cu	90	110	183	345
Pb	187	110	281	629
Hg	0.45	1.3	**17**	**182**
Zn	241	270	825	1820
CN	3.2	0.1*	7.3	**42**
Total PAHs	5.4	35	45	--

WP-OD3

Parameter	SB max	Screening value	0-6"	6-12"
Pb	187	110	130	243
Hg	0.45	1.3	1.2	2.4

WP-T3A

Parameter	SB max	Screening value	0-6"	6-12"	12-24"
Cr	27	110	66	110	322
Pb	187	110	---	136	160
Hg	0.45	1.3	1.3	2.7	**13**
Zn	241	270	316	364	508

WP-T2B

Parameter	SB max	Screening value	0-6"	6-12"	12-24"
No constituents above SEL					

WP-T2A

Parameter	SB max	Screening value	0-6"	6-12"
Cr	27	110	58	119
Hg	0.45	1.3	1.4	3.9
Zn	241	270	265	311

WP-T1C

Parameter	SB max	Screening value	0-6"	6-10"
Sb	<3.8	25	40	52
Cd	1.4	9	3.3	13
Cr	27	110	74	274
Cu	90	110	---	132
Pb	187	110	---	230
Hg	0.45	1.3	4.8	**20**
Zn	241	270	323	1050
CN	3.2	0.1*	3.9	4.3

WP-OD1

Parameter	SB max	Screening value	0-6"	6-12"	12-19"
Cr	27	110	247	566	---
Pb	187	110	138	218	---
Hg	0.45	1.3	8.3	**20**	---
Zn	241	270	611	251	---

WP-T2C

Parameter	SB max	Screening value	0-6"	6-12"	12-24"
As	5.2	33	7.7	40	---
Cr	27	110	64	826	31
Cu	90	110	90	129	---
Pb	187	110	125	287	37
Hg	0.45	1.3	1.7	**33**	---
Zn	241	270	470	588	---
Total PAHs	5.4	35	166	125	---

WP-T3C

Parameter	SB max	Screening value	0-6"	6-11"
Cr	27	110	60	115
Pb	187	110	---	125
Hg	0.45	1.3	0.84	4.9
Zn	241	270	269	353

WP-T3B

Parameter	SB max	Screening value	0-6"	6-12"	12-24"
Cr	27	110	44	159	53
Pb	187	110	---	---	188

Legend

SAMPLE LOCATIONS

2001 SEDIMENT SAMPLE

2003 SEDIMENT SAMPLE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

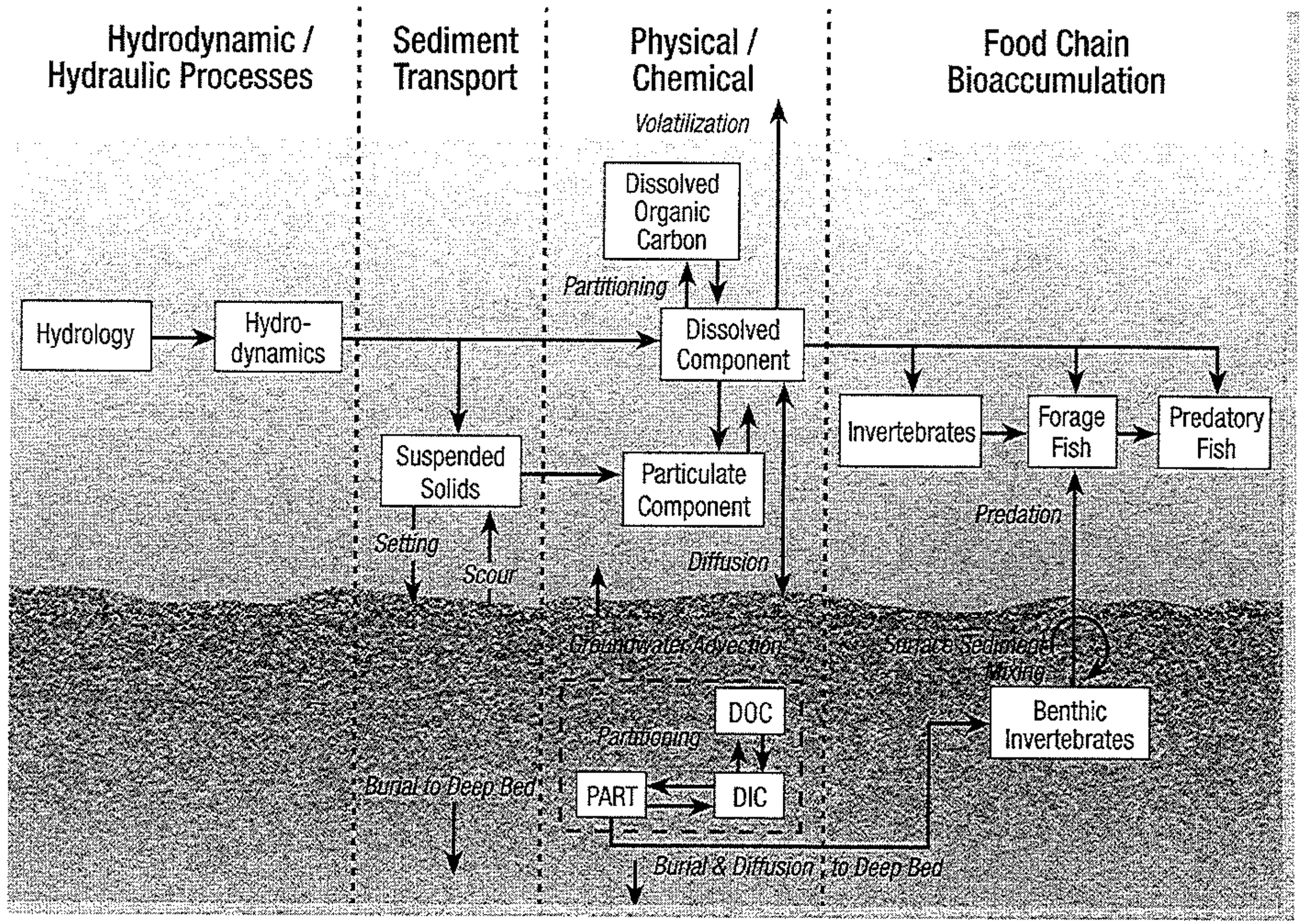
SEDIMENT DATA ABOVE SEL SCREENING VALUES

0 250 500 1,000 1,500
Feet

FEBRUARY 2007
27258.008.009

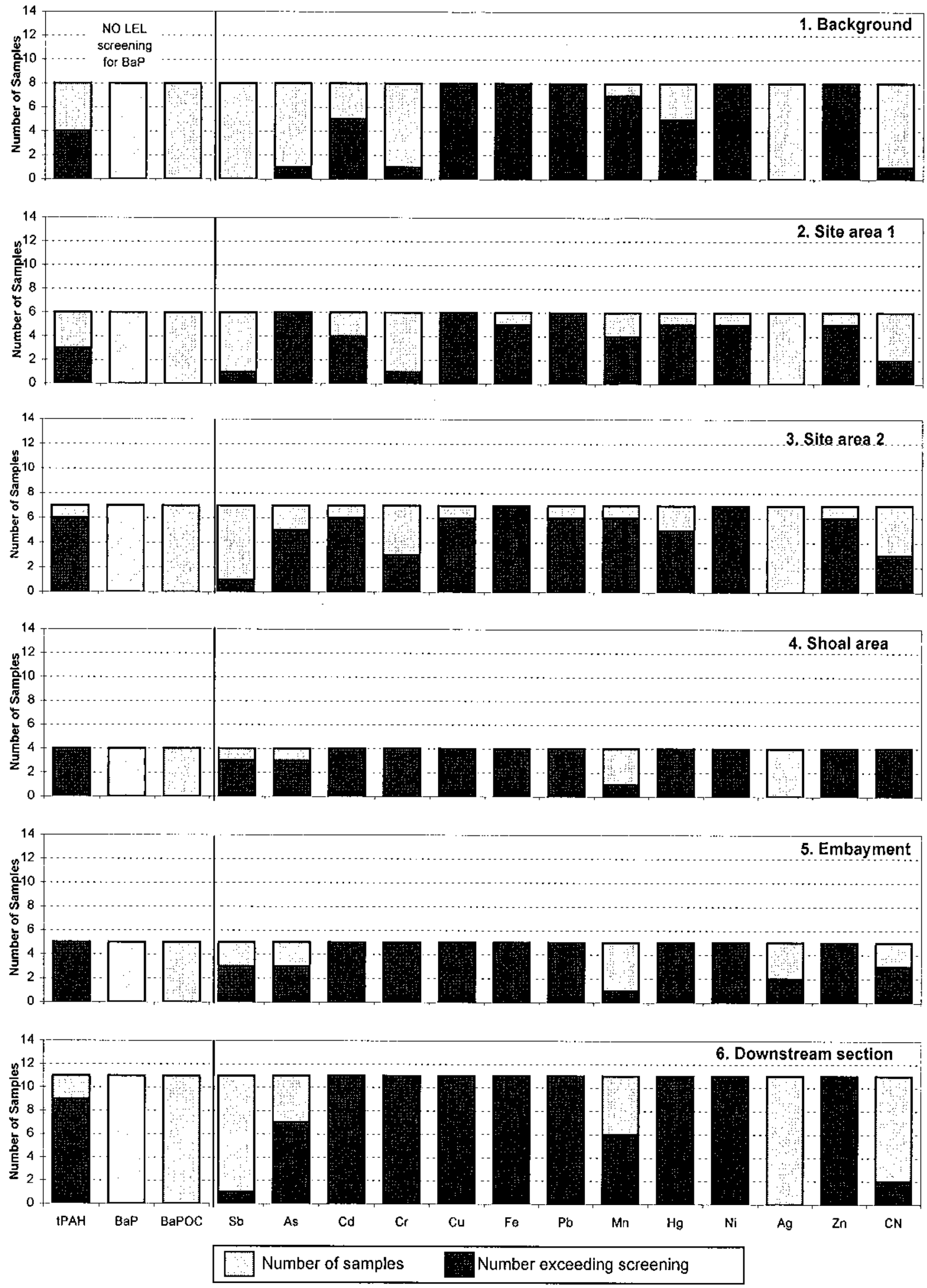
O'BRIEN & GERE ENGINEERS, INC.

Figure 1-4. Conceptualization of fate and transport of constituents in an aquatic system



Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

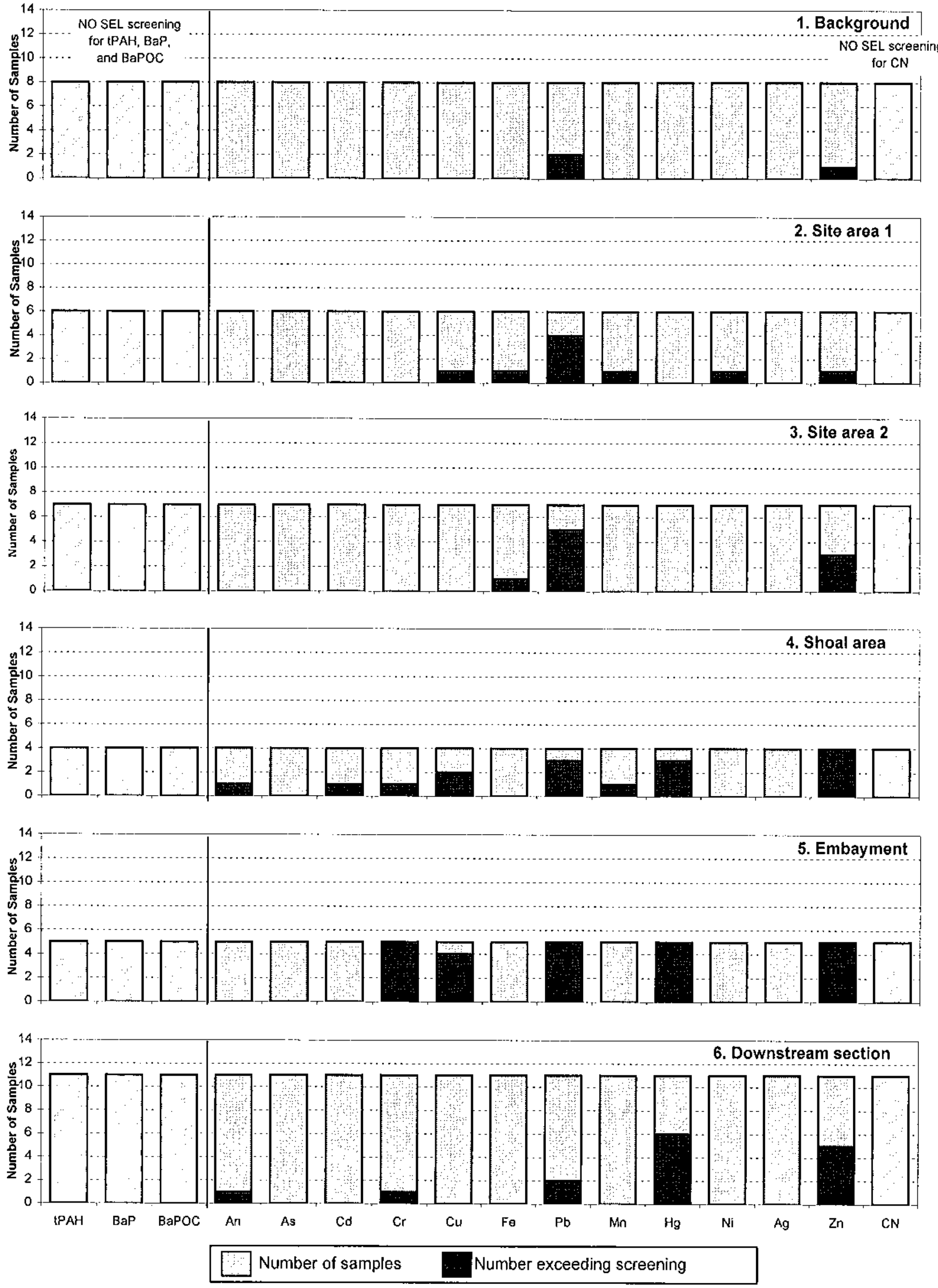
Figure 6-1. Frequency of detections above LEL screening values, 0-6 Inches depth



Notes:
tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

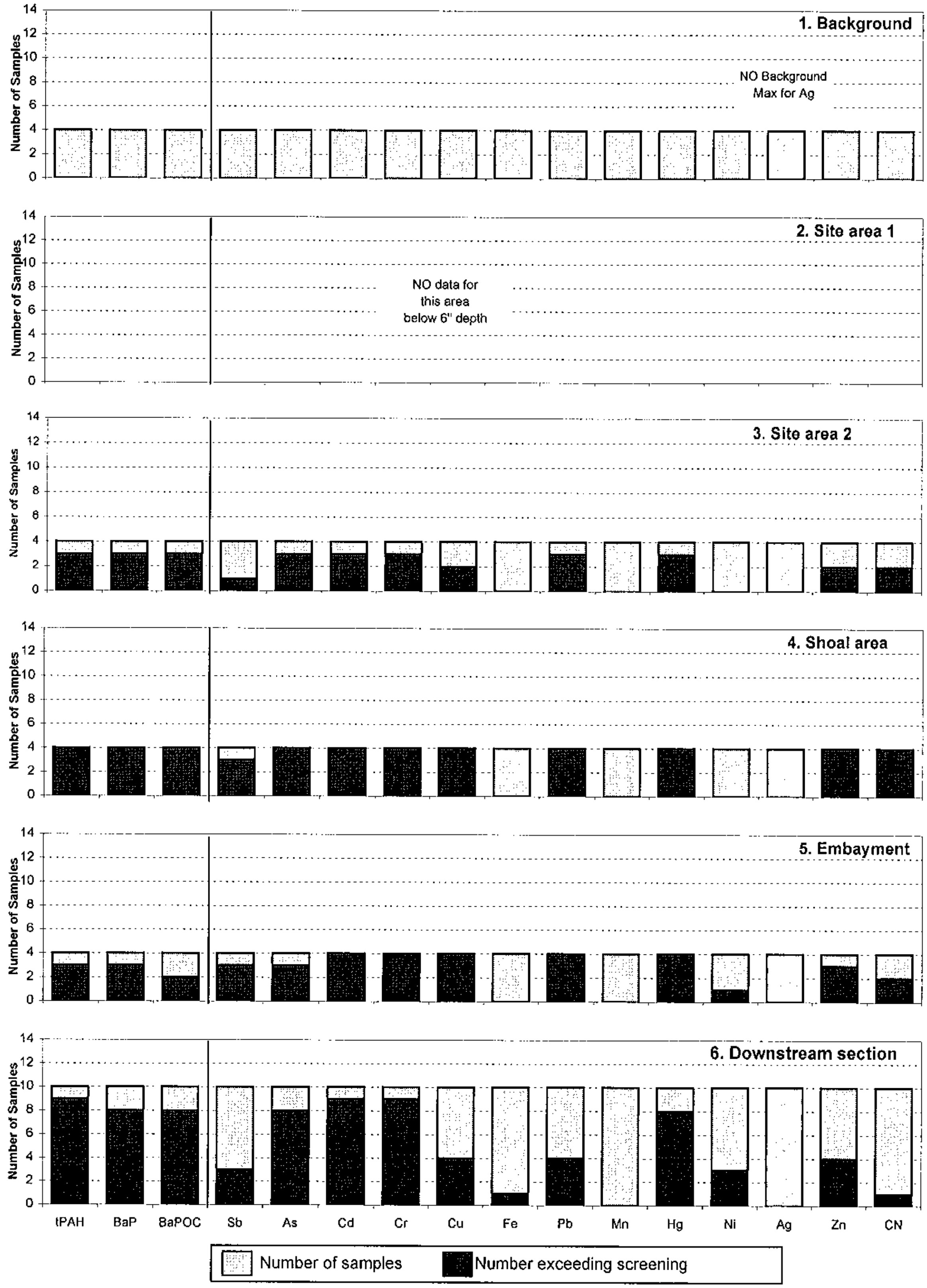
Figure 6-2. Frequency of detections above SEL screening values, 0-6 Inches depth



Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Figure 6-3. Frequency of detections above background maximum, 6-12 inches depth

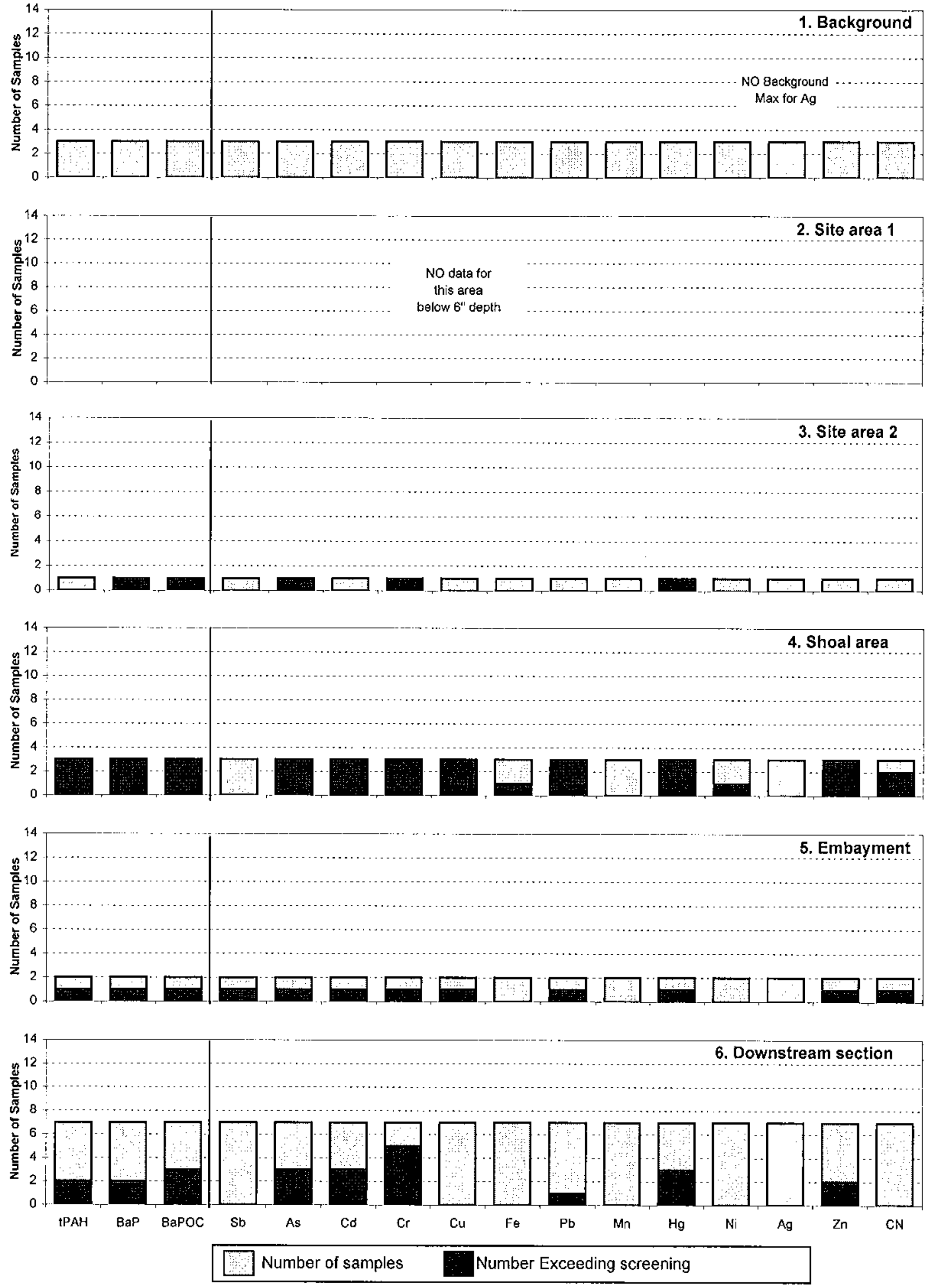


Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

Three Star Anodizing Site - Creek RI
Wappingers Falls, New York
Wappinger Creek Sediment Data

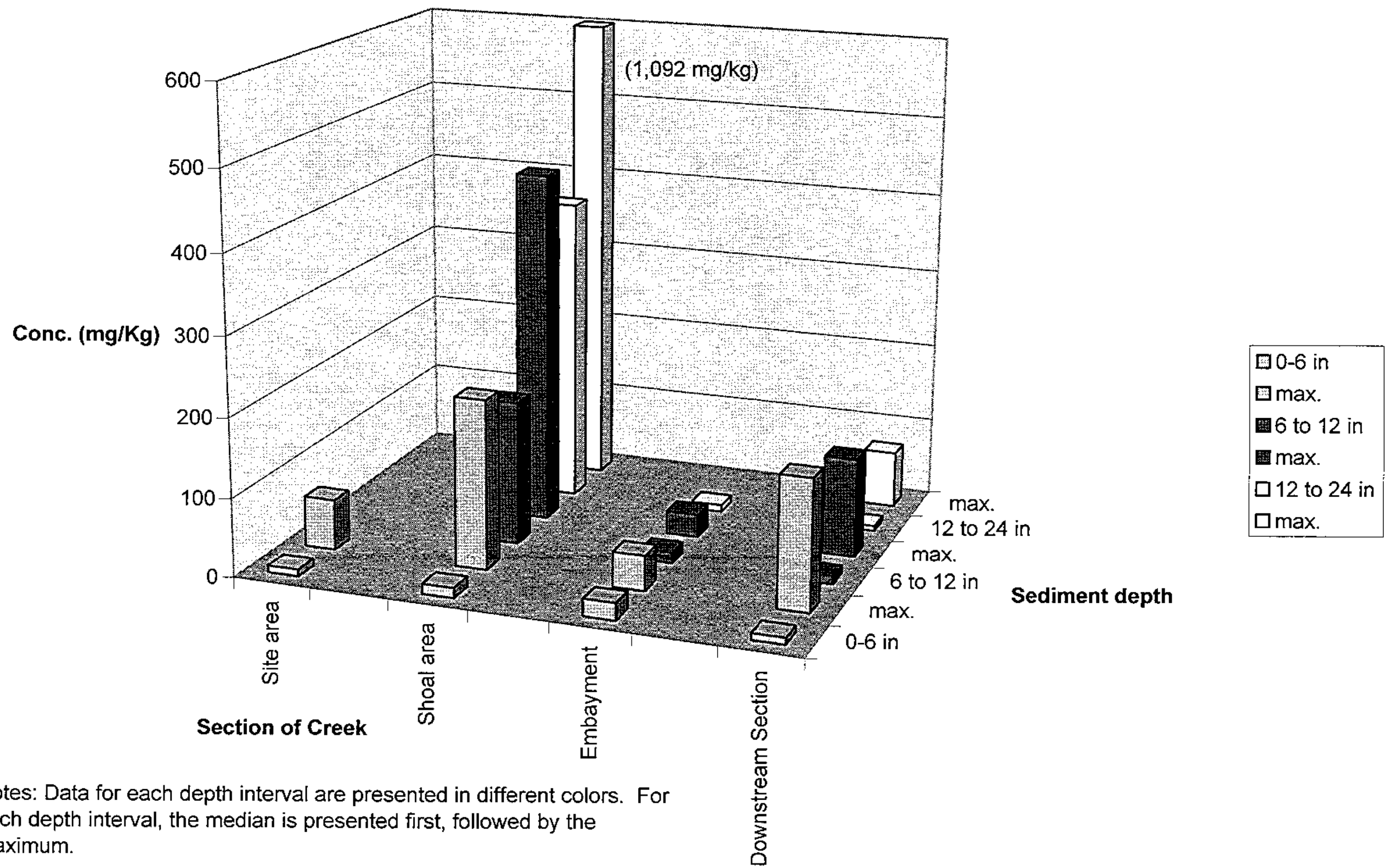
Figure 6-4. Frequency of detections above background, >12 inches depth



Notes:

tPAH = total PAH; BaP = benzo(a)pyrene equivalent concentration; BaPOC = benzo(a)pyrene equivalent concentration adjusted for total organic carbon concentration; Sb = antimony; As = arsenic; Cd = cadmium; Cr = chromium; Cu = copper; Fe = iron; Pb = lead; Mn = manganese; Hg = mercury; Ni = nickel; Ag = silver; Zn = zinc; CN = cyanide.

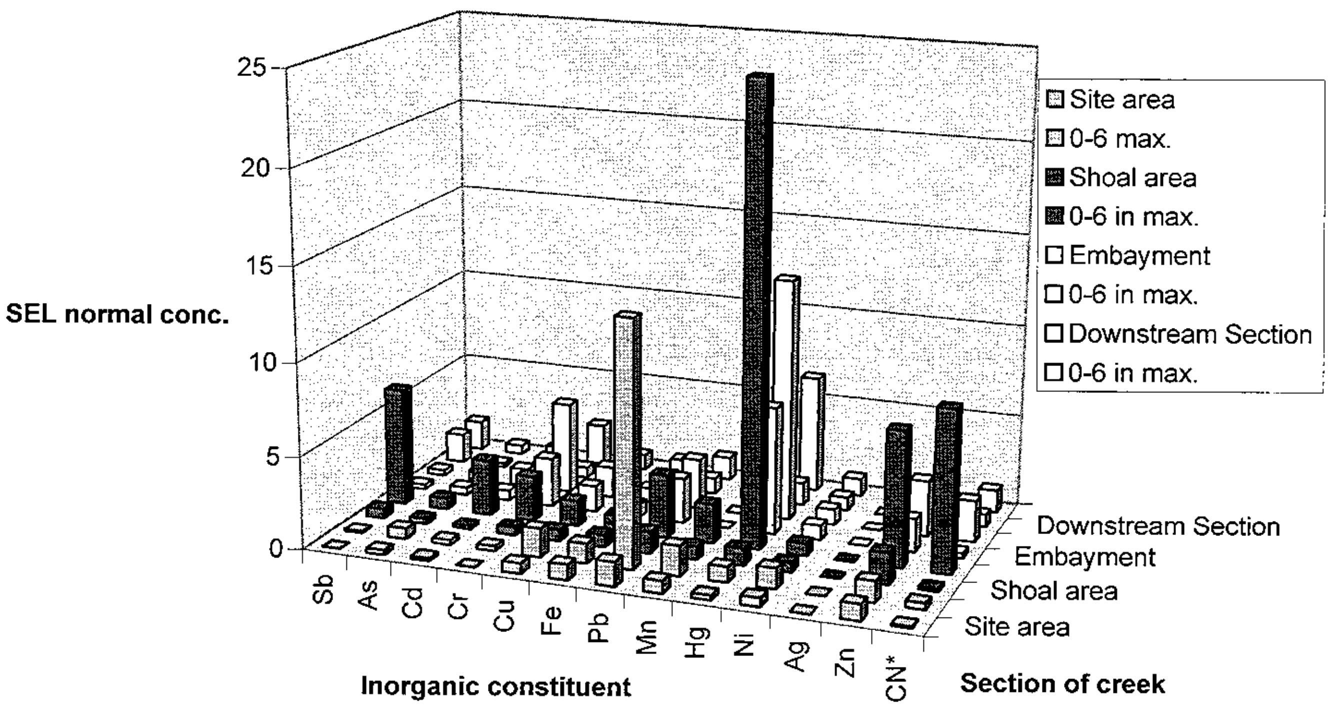
Figure 6-5. Spatial trends of total PAHs in sediment



Notes: Data for each depth interval are presented in different colors. For each depth interval, the median is presented first, followed by the maximum.

DRAFT

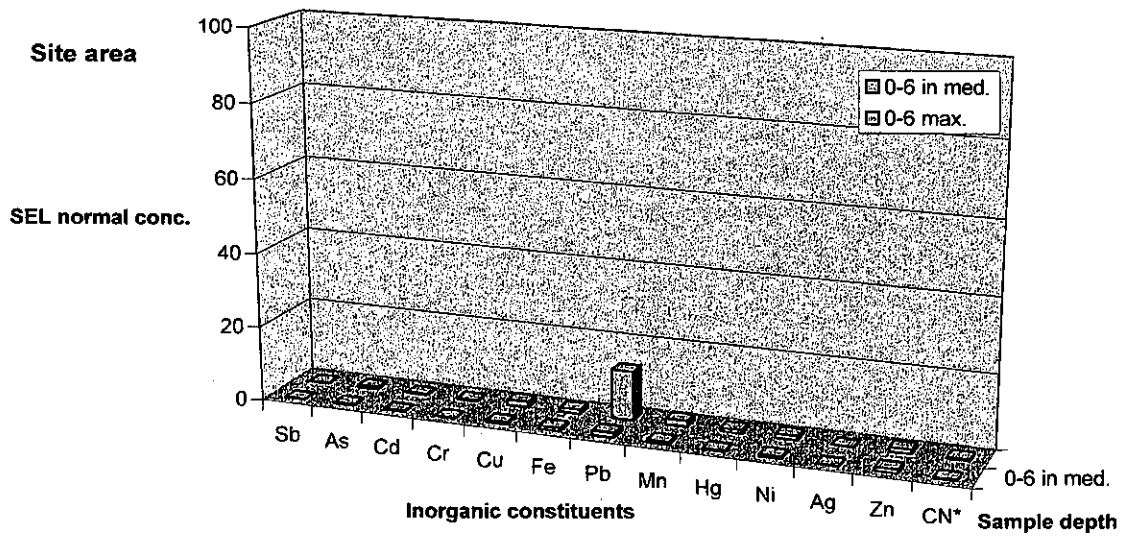
Figure 6-6. Spatial trends of inorganic constituents in surface sediment (0 to 6 inch depth interval)

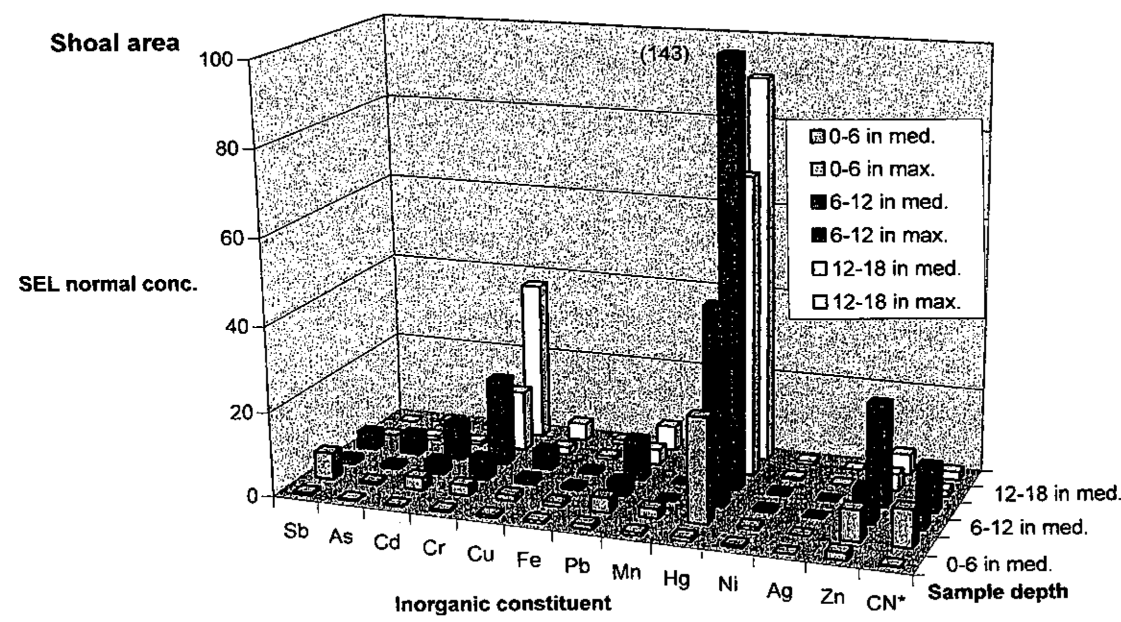


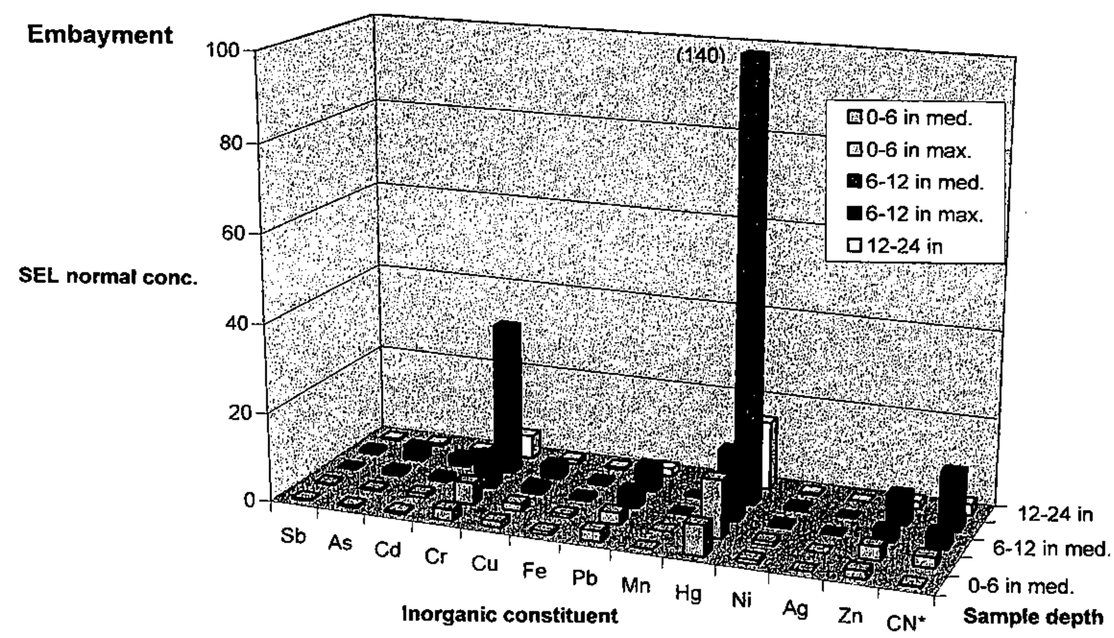
Notes: Data for each section of the creek are presented in different colors. For each section of the creek, the median is presented first, followed by the maximum. * indicates that cyanide data are normalized to background data.

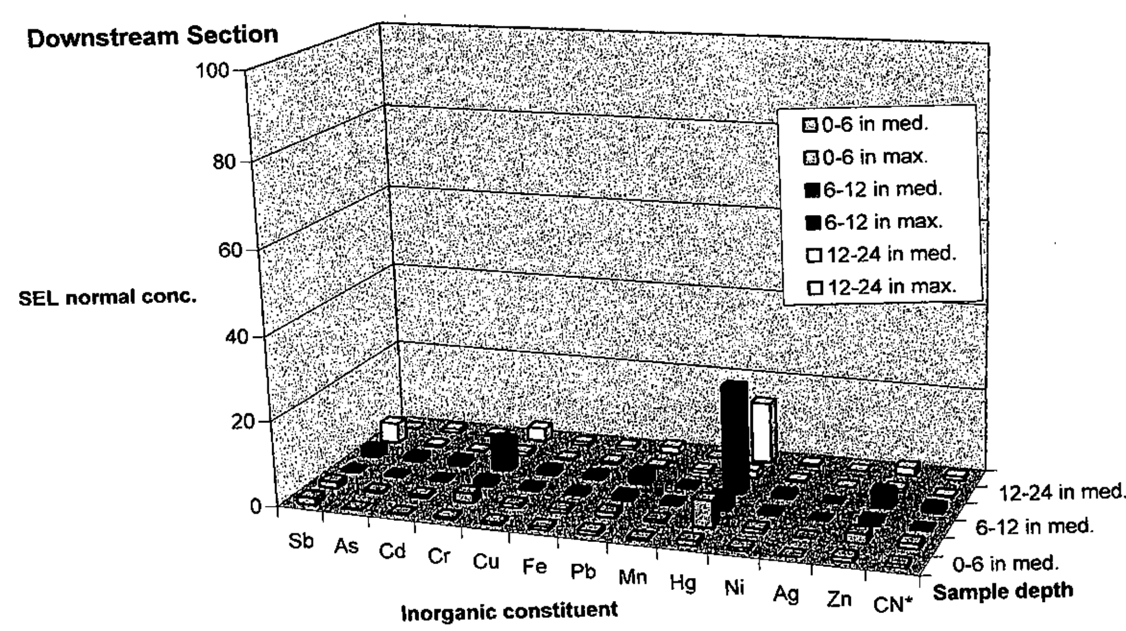
DRAFT

Figure 6-7. Spatial Trends of inorganic constituents in sediment depth intervals of the tidal creek.









Notes: Data for each depth interval are presented in different colors. For each depth interval, the median is presented first, followed by the maximum. Data outside the range of the figures are presented in parentheses ( ). * indicates that cyanide data are normalized to background data.

DRAFT 3/7/2005

APPENDIX A

Field logs

APPENDIX A

Field logs

Field logs:
Surface water

10653/27258/#4

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Water column sampling field log

Sampling Date: 5/14/02

Sample Station		Time	Water depth Total	Water depth Sample	pH	Cond.	Water Temp.	Turb.	D.O.	Salinity	QA/QC Sample	Inspect Sample	Comments
Site Bridge (downstream)		~~3:30PM~~	10.5'								—	—	
	upper	15:30		Top	7.82	.254	14.52	13.9	14.04	0.			2' (1) VOA
	mid			MID	7.85	.254	12.49	25.8	9.25	0			5' COLLECTED AT EACH
	lower			BOT	7.84	.25	12.46	26.8	10.07	0			8' INTERVAL
Rt 28 Bridge		~~4:45PM~~	~~20~~								—	—	20' water column
	upper	16:45		TOP	7.26	.273	12.59	23.8	11.06	0			4' (1) VOA
	mid			MID	7.83	.272	12.46	23.8	8.82	0			10' COLLECTED AT EACH INTERVAL
	lower			BOT	7.84	.270	12.36	29.3	5.90	0			16'
WAPPINGER LAKE (BACKGROUND)		18:00	10.5'								MS/MSD	—	(1) VOA
	upper			TOP	7.71	.244	12.66	19.7	11.14	0	BLIND DUP		2' COLLECTED AT
	mid			MID	7.67	.247	11.93	22.9	11.26	0			5' EACH INTERVAL
	lower			BOT	7.68	.239	11.98	19.9	11.56	0			8'

Additional Notes: Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

Weather Data:
Description: VARIABLE
Air temperature: 50°
Wind: 5-10 mph
Precipiatation: VARIABLE

Sampling personnel: Jason Sperry / Craig Gabriel

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Sampling Date: 5/15/02

Water column sampling field log

Sample Station		Time	Water depth Total	Water depth Sample	pH	Cond.	Water Temp.	Turb.	D.O.	Salinity	QA/QC Sample	Inspect Sample	Comments
SITE BRIDGE (DOWNSTREAM)		07:45	8.5'			S/cm					—	—	(1) VOA COLLECTED AT EACH INTERVAL
	upper			1.5'	7.48	0.245	11.93	38.0	7.88	0			
	mid			4'	7.63	0.247	12.39	76.0	12.93	0			
	lower			6.5'	7.72	0.242	~~12.70~~	17.6	11.70	0			
RT. 28 BRIDGE		08:30	17.5'				12.02				—	—	(1) VOA COLLECTED AT EACH INTERVAL
	upper			3'	7.76	0.247	12.08	54.5	12.30	0			
	mid			9'	7.96	0.246	11.37	32.1	10.26	0			
	lower			15'	7.75	0.247	11.05	25.7	7.69	0			
Lagoon outfall		09:30	3"										3 VOA Collected
	upper				7.86	.305	13.03	5.9	10.54	0			
	mid												
	lower												

Additional Notes: Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

Weather Data:
Description: Party Cloudy - Sunny
Air temperature: 50°
Wind: —
Precipiatation: —

Sampling personnel: Jason Sperry / Craig Gabriel

New York State Department of Environmental Conservation
Three Star Anodizing Site
Wappingers Falls, New York

Water column sampling field log

Sampling Date: 5/15/02

Sample Station		Time	Water depth Total	Water depth Sample	pH	Cond.	Water Temp.	Turb.	D.O.	Salinity	QA/QC Sample	Inspect Sample	Comments
WAPPINGER LAKE (BACKGROUND)		10:30	9'								—	—	(1) VOA COLLECTED AT EACH INTERVAL 8' - TURBIDITY SUBJECT TO QUESTION. MOST LIKELY COLLECTED TO CLOSE TO LAKE BOTTOM.
	upper			1'	7.81	0.253	12.52	52.4	12.16	0			
	mid			4.5'	7.94	0.249	11.71	15.0	9.13	0			
	lower			8'	7.66	0.250	11.88	300.	10.95	0			
EQ BLANK		11:30	—								—	—	(3) VOA COLLECTED
	upper												
	mid												
	lower												
	upper												
	mid												
	lower												

Additional Notes: Where water depths permit, samples collected as depth integrated composite samples consisting of aliquots from upper, mid, and lower depths.

Weather Data:
Description: PARTLY CLOUDY - SUNNY
Air temperature: 55°
Wind: 10-15 MPH GUSTS
Precipiatation: NONE

Sampling personnel: JASON SPERRY / CRAIG GABRIEL

Field logs:
Sediment

CONTENTS

PAGE	REFERENCE	DATE

"Rite in the Rain"®
ALL-WEATHER WRITING PAPER

Name

Address

Phone

Project THREE STAR SITE
CREEK INVESTIGATION 2003

"Rite in the Rain" - A unique All-Weather Writing paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather.

Available in a variety of standard and custom printed case-bound field books, loose leaf sheets, spiral and stapled notebooks, multi-copy sets and copier paper.

For best results, use a pencil or an all-weather pen.

5/12/03
WAPPINGERS CREEK INVESTIGATION
BILL AYLING
CHARLES SHARPE
KEVIN HARTMAN

11:30 - UNLOAD BOAT
12:00 - LUNCH
13:00 - ON SITE

GPS BENCHMARKS

#1 BASE OF LIGHT POLE FACING WATER
N: 594977.74 ft
E: 1229454.90 ft
SAT: 5 PDOP: 3.6

#2 BASE OF DOCK FACING WATER
N: 595013.33
E: 1229422.79
SAT: 5 PDOP: 3.6

WEATHER: MOSTLY CLOUDY
55-60°F

EQBL-SED1 5/12/03 13:55
EQUIPMENT BLANK OF 2 MIXING BOWLS
& Three Spoons WAA

Discussion w/ Reps of LAKE ASSOC.
Sampling has been Completed by others to evaluate Sediment: LAKE ASSOC., CORNELL, & ACOE

Health & Safety Mtgs. 5/12/03
Parking lot meeting conducted at OBG before traveling to site. Safety issues associated w/ towing boat.
Water hazard meeting at dock. 1405
WAA

WP-LK1 5/12/03 1440 (0-6")
Wet brown silt w/ some organic matter
KRH/CNS Waterdepth 3ft 9in.

GPS Reading
N = 596333.5 Sat = 8
E = 12286442 PDOP = 2.1

Push Core

WP LK2 (0-6") 5/12/03 1525

N 595797.7 SAT: 7
E 1228096.2 PDOP: 2.2

WATER DEPTH: 3ft 5in.

WET BROWN SILT W/ SOME ORGANIC MATTER

PUSH CORE

ABANDON SAMPLE LOCATION
~~WP-LK3 (0-6")~~ 5/12/03

Water Depth = 3ft

N = 595394.8 SAT = 8
E = 1228152.4 PDOP = 2.1

WP-LK3 (0-6") 5/12/03 16:00

N = 595587.8 SAT = 9
E = 1228565.2 PDOP = 1.8

Water Depth 3ft 8"

Wet brown silt w/ some organic matter

INCLUDES MS/MSD Composite of Two Sample Cores Collected.

PUSH CORE

WP LK4 (0-6") 5/12/03 16:55

N= 595310.6 SAT: 8
E: 1228880.7 PDOP= 2.5

WATER Depth: 3ft 11"

Wet brown silt w/ some organic matter

push CORE

WP LK5 (0-6") 5/12/03 17:15 ~~16~~

N= 595048.7 SAT= 8
E= 1229323.1 PDOP= 3.7

WATER DEPTH= 5ft 4IN.

brown silt w/ some organic MATTER

push CORE

~~17:30~~ 8:30 GPS BENCHMARKS

#1 LIGHT POLE BASE FACING WATER

N: 594976.3

E: 1229455.6

SAT: 8 PDOP: 4.7

#2 BASE OF DOCK FACING WATER

N: 595011.8

E: 1229423.8

SAT: 8 PDOP: 4.7

18:00

PUT BOAT IN CREEK

19:00 LEAVE SITE

5/13/03

7:35 ON SITE - BILL AMLING, CHARLES SHARPE

KEVIN HARTMAN

GPS BENCHMARKS

#1 TELEPHONE POLE 77315

N: 593505.7 ft

E: 1227000.0 ft

SAT: 6 PDOP: 2.7

#2 WATER MANHOLE

N: 593465.6 ft

E: 1226984.6 ft

SAT: 6 PDOP: 2.7

WEATHER

CLOUDY

50-55 F

LAT/LONG COOR:

BENCH MARK #2

LAT: 41°35'54.13

LONG: 73°55'30.26

SAT 5 PDOP: 3.0

#1

LAT: 41°35'54.72

LONG: 73°55'29.95

SAT: 5 PDOP: 3.0

WP- PZ~~3~~2 WAT 5/13/03 0850 Sampled

LAT 41' 35 37.28 N 08:35 (water depth)
LONG 73' 55 42.26 W
SAT 5.
PDOP 3.3

WATER DEPTH: 2ft 9in.

Penetration - 5ft 6in (est)
Recovery = 25"

0-6" Wet brown silt w/ some organic matter including root material 0850

6-12" brown silt w/ some black silt & root matter 0900

12-24" firm brown silt w/ some organic matter

PUSH CORE
OVERCAST, LIGHT BREEZE

WP- PZ3 5/13/03

LAT: 41' 35 37.61 N 0925
LONG: 73' 55 46.48 W
SAT.= 5
PDOP= 3

WATER DEPTH: ~3ft

PENETRATION: 5 ft 6 in
RECOVERY: 1ft 3.in

Some Sheen produced during coring.
CORE Collected at 0940

0-6" brown silt w/ Some organic matter including root material 1000

6-12" brown silt w/ Some organic matter 10:10

PUSH CORE
OVERCAST, LIGHT BREEZE

WP. PL1 5/13/03 0945

LAT 41' 35 35.13' N
LONG 73' 55 48.29 W
SAT 4
PDOP 4.3

WATER DEPTH: 3 ft 8"

PENETRATION: 5 ft 6"
RECOVERY: 1 ft 6"

Sample collect at 9:50

0-6" brown silt w/ some organic matter & gray clay 10:20

6-12" ~~6-8" gray clay out~~ WAT ~~Some~~ brown silt and organic matter w/ some gray clay 6-8" 1030

12-18" brown silt w/ some gravel and organic matter and med to course sand 1040

PUSH CORE
OVERCAST, W/ LIGHT BREEZE & LIGHT RAIN

Pick up Mike Mac Case

WP. T3C 5/13/03 11:15

LAT: 41' 34 52.27 N
LONG: 73' 56 47.79 W
SAT: 5
PDOP: 3.1

WATER DEPTH: 3 ft 5 in.

PENETRATION: 4f 4in
RECOVERY: 11in

0-6" 0-2" Wet brown silt w/ organic matter 11:25
2-6" brown silt w/ organic matter

~~6-12~~ WAT
6-11" brown silt w/ some organic matter and trace sand & gravel 11:35

PUSH CORE
OVERCAST W/ LIGHT BREEZE & LIGHT RAIN

LUNCH ~~[illegible]~~
WP-T3A 5/13/03 1141

Lat = 41° 35' 00.84" N
Long = 73° 56' 41.88" W
Sat = 7
DOOP - 2.4
DEPTH = 3' 5"

Penetration 6ft 2inc
Recovery 2ft

0-6 wet brown silt 0-2" 11:55
gray silt w/ some organic 2-6"
matter

6-12" brown/gray silt w/ 1205
some silty sand

12-24" brown/gray silt w/ 1215
some silty sand

BLIND DUP 1 = WP-T3A (0-6")
Penetration 5ft 10" 1220
Recovery 22"
push core
OVERCAST w/ LIGHT RAIN

WP-T3B 5/13/03

Lat = 41° 34' 58.39 N
Long = 73° 56' 42.24 W
Sat = 7
POOP = 21

WATER DEPTH 5ft

Penetration = 7ft ~~[illegible]~~ 4in
Recovery = 28 inch.

0-6 Brown silt w/ two 1300
seed pods. Gray silt 4-6 in.
Some organic matter 0-6in

6-12" Brown silt w/ 1310
some organic matter
9-11" brown silt w/
trace ~~some~~ SAND
11-12 gray silt

12-24" Brown silt w/ trace 1315
sand 12-17 in.
and trace organic matter
push core 17-21 ~~brown~~ gray silty sand
LIGHT RAIN 21-24 brown silt w/ trace
sand

WP-OD1 ~~6-6~~ 1352

LAT: 41°35'02.74 N
LONG 73° 56' 37.04W
SAT = 5
PDOP = 4.7

WATER DEPTH = 2ft
penetration = 3ft 9in
recovery = 1 ft 7in

0-6" Wet brown silt w, Some organic matter 1400

6-12" brown silt w/ organic matter & trace gravel 1410

12-19" brown silt w, some gravel and cobble 1420
12 to 14". Brown
silt w, some organics inc. wood chip
14-19",

PUSH CORE
LIGHT MIST

WP-T2A 1440

LAT 41°35'19.49 N
LONG 73° 56' 15.23 W
SAT = 8
PDOP = 2.3

WATER DEPTH 1ft 4in
penetration = ~3ft
Recovery = 1ft 3in

0-6" Wet brown silt w/ some organic matter & trace gray silt, 1500

6-12" brown silt w/ some organic matter. 6-9" 1510
9-12" dark brown sandy silt w/trace organic matter

PUSH CORE
OVERCAST

WP-T2C 1450

LAT = 41° 35' 15.40 N
LONG = 73° 56' 11.80 W
SAT = 8
PDOP = 2.3

WATER DEPTH = 1ft 6in
PENETRATION = 3ft 9in
RECOVERY = 2ft

0-6" Wet brown silt 0-3" 1520
Wet brown silt w/ trace SAND] 3-6"

6-12" 6-8 brown silty 1530
SAND some cobble & gravel
8-12 brown silt and
Some SAND trace organic matter

12-24" Brown silt w/ some 1535
organic matter 12-15"
15-21" brown sand w/ trace
gravel. 21-24" brown
silt w/ some SAND.

push core
OVERCAST

WP-T2B

LAT = 41° 35' 17.28 N
LONG = 73° 56' 13.08 W
SAT = 8
PDOP = 2.1

WATER DEPTH = 2ft 5in
PENETRATION = 4ft 7in.
RECOVERY = 24in

0-6" Wet brown silt w/ trace organic matter] 0-2" 1550
2-6" gray silt w/
Some organic matter & trace gravel

6-12" gray SAND & gravel 1555
(coarse SAND) w/
Some organic matter

12-24" 12-15" gray coarse 1605
sand & gravel.
15-~~18~~ brown clay &
trace organic matter
18-24" ~~gray~~ gray medium
coarse sand & gravel

PUSH CORE
OVERCAST

WP-T1B 1630

LAT = 41° 35' 25.45N
LONG = 73° 55' 59.45W
SAT = 7
PDOP = 5.2
WATER DEPTH = 1ft 4in

PENETRATION
RECOVERY

~~0-6"~~
Six Attempts to Collect Sample,
Insufficient recovery.

Sample location Abandoned.

PUSH CORE
OVERCAST

WP-LGOUT2 (0-6")

LAT = 41° 35' 54.26"N
LONG = 73° 55' 34.10"W
SAT = 8
PDOP = 2.2

VOCs 1735

SVOCs/TAL 1740

0-6" COARSE SAND & GRAVEL

AUGER
OVERCAST

WP-MW4

VOCs 1815
SVOC/TAL

0-6" COARSE SAND & GRAVEL

AUGER
OVERCAST

BLIND DUP Z = WP-MW4

LAT = 41°35' 53.66 N
LONG = 73° 55' 35.34 W
SAT = 7
PDOP = 2.2

WATER DEPTH = 2 ft 10 in

LEAVE SITE 19:20

PARTLY SUNNY
65-70°F

5/14/03
ARRIVE ON SITE 7:10
(DEC)
KEVIN HARTMAN, CHUCK SHARPE, MIKE MCCABE

GPS BENCHMARKS
#1 TELEPHONE POLE 77315
LAT: 41°35' 54.72" N
LONG: 73°55' 29.94" W
SAT: 5 PDOP: 4.1

#2 MANHOLE COVER WATER
LAT: 41°35' 54.13" N
LONG: 73° 55' 30.26" W
SAT: 6 PDOP: 3.4

8:00 WP-T1A
WATER DEPTH = 1'9"
LAT: 41°35' 29.59" N SAT: 5
LONG: 73° 56' 00.16" W PDOP: 3.0

PENETRATION = 4' 8"
RECOVERY = 2' 1"

0-2" BROWN SILT HIGHLY SATURATED
2"-6" BROWN SILT, SOME GRAY SILT, ORGANIC MATTER

6"-12" - BROWN SILT, ORGANIC
DECREASING SATURATION WITH DEPTH
10"-12" - TRACE SANDS

12"-18" - BROWN SILT
SOME ORGANICS
18"-21" SILTY SAND GRAY
WITH GRAVEL
21"-24" BROWN SILT, ORGANICS
TRACE SAND AND GRAVEL

MS/MSD COLLECTED
3 CORES COLLECTED FOR ALL SAMPLES

PUSH CORE
PARTLY SUNNY

WP ITC - 9:05
LAT: 41° 35' 23.89" N SAT: 6
LONG: 73° 55' 58.32" W PDOP: 2.1
WATER DEPTH = 6'9"
PENETRATION = 7'8"
RECOVERY = 10"

SAMPLE COLLECTED @ 9:10

0-6" 0-1" BROWN SILT 9:20
HIGH ORGANIC CONT.
GRAVEL
1-5" DK BROWN/GRAY SILTY SAND
GRAVEL
5-6" BROWN SILT
ORGANIC SATURATED
TRACE GRAVEL
6-10" DK. BROWN SILT 9:30
TRACE GRAVEL
TRACE SAND

PUSH CORE
PARTLY SUNNY

9:45 - WP-OD2

LAT: 41° 35' 19.26" N SAT: 4

LONG: 73° 56' 17.55" W PDOP: 5.3

WATER DEPTH = 3 Ft

PENETRATION = 5 Ft 10 in

RECOVERY = 22 in

SHEEN PRESENT DURING PENETRATION (AS A RESULT [illegible])

SAMPLE COLLECTED @ 9:50

0-6" 0-1" DK BROWN SILT 9:55
HIGHLY SATURATED
SOME ORGANICS
1-6" DK BROWN SILT
TRACE SAND
SOME ORGANIC

6-12" 6-12" DK BROWN SILT 10:05
SOME ORGANIC
TRACE SAND and GRAVEL

12-22" 12-16" DK BROWN SILT 10:15
SOME ORGANIC
TRACE SAND + GRAVEL
16-18" BROWN/GRAY SILTY SAND
TRACE GRAVEL

PUSH CORE
PARTLY SUNNY

18-21" BROWN SILT
TRACE SAND (MED/COARSE) + GRAVEL
TRACE ORGANIC

21-22" BROWN SAND/SILT
(MED/COARSE)

10:30 WP-003

LAT = 41°35'35.72"N SAT = 6

LONG = 73°55'40.85"W PDOP: 2.8

WATER DEPTH - 3 ft 2 in

PENETRATION - 4 ft 5 in

RECOVERY - 13 in

SAMPLE COLLECTION @ 10:35

SHEEN PRESENT DURING PENETRATION

(AS A RESULT OF)

0-6" 0-1" BROWN SILT 10:45

SOME ORGANIC

HIGHLY SATURATED

1-6" COARSE SAND GREY

GRAVEL

TRACE ORGANICS

6-12" 6-10" SILTY SAND GRAY 10:55

SOME GRAVEL AND ORGANIC

10-12" GRAY COARSE SAND

SOME GRAVEL

PUSH CORE

OVERCAST

11:05 WP-CKOUT

(LWS 5/14/03)

Water Depth = ~~2~~ 3 ft, ~~4~~ 5 in.

Lat = 41° 35' 36.12"N Sat = 8

Long = 73° 55' 34.93" W PDOP: 2.0

Recovery / Penetration = 6 in.

Sample collection @ 1125

by hand auger

Weather: Overcast

0-6" BROWN SAND/SILT

SOME PEBBLES and GRAVEL

11:45

GEORGE KOLB - VILLAGE OF WAPPINGERS FALLS

SPOKE WITH MIKE MACCABE

AUGER

OVERCAST

12:10 WP29A

LAT = 41°35'41.45"N SAT = 6

LONG = 73°55'36.02"W PDOP = 3.0

WATER DEPTH = 3 ft 8 in

PENETRATION = 5 ft 5 in

RECOVERY = 17 in

SAMPLE COLLECTED @ 12:15

PUSH CORE / PARTLY SUNNY

0-6" 0-1" BROWN SILT 12:20

SUPER SATURATED

TRACE ORGANICS

1-2" BROWN/GRAY SAND/SILT

TRACE GRAVEL AND ORGANICS

2-6" MED/COARSE SAND - GRAY

SOME GRAVEL/PEBBLES AND

ORGANIC

6-12" 6-12" BROWN SILT

TRACE ORGANIC AND GRAVEL

12-17" 12-15" BROWN SILT

TRACE ORGANIC AND GRAVEL

15"-17" MED/COARSE, SAND - GRAY

SILTY

TRACE GRAVEL

BLIND DUP COLLECTED @ 12:40

6-12" INTERVAL

12:50 WP-DOT

LAT = 41°35'42.39"N SAT = ~~7~~ ~~6~~ 8 RRH

LONG = 73°55'36.21"W PDOP = 2.1

WATER DEPTH = 3 ft 5 in

PENETRATION = 4 ft 6 in

RECOVERY = 18 in

SAMPLE COLLECTED @ 12:55

13:05

0-6" 0-2" BROWN SILT HIGHLY SATURATED

SOME ORGANIC

2-6" GRAY COARSE SAND

SOME GRAVEL/PEBBLES

6-12" 6-10" BROWN SILT 13:15

SATURATED

SOME ORGANIC

TRACE PEBBLE

10-11" GRAY COARSE SAND

SOME PEBBLE

11-12" BROWN SILT

12-18" 12-15" BROWN SILT 13:25

TRACE PEBBLE

15-18" GRAY SAND

TRACE PEBBLE

PUSH CORE 13:15 MS/MSD COLLECTED FROM

PARTLY SUNNY 6-12" INTERVAL

SED CORE # 2 13:40 MIDDLE OF BAYMENT AREA
LAT = 41°35' 35.09" N SAT = 4
LONG = 73° 55' 44.43" W PDOP = 5.3
WATER DEPTH = 2 ft 6 in
PENETRATION = 3 ft 7"
RECOVERY = 1 ft 4 in

14:00 SED CORE # 3 NEAR ISLAND
LAT 41°35'19.07" N SAT: 6
LONG 73° 56' 16.41" W PDOP = 3
WATER DEPTH = 2 ft
PENETRATION = 5 ft 3 in
RECOVERY = 23 in

14:30 LUNCH
14:40 WP-M3 . KRH
~~LAT = 41°35' 44.35" N SAT = 7~~ KRH
~~LONG = 73° 55' 36.95" W PDOP = 2.3~~
WATER DEPTH = ~~1 ft 9 in~~ KH 2 ft (New location)
PENETRATION = 3 ft 1 in
RECOVERY = 13 in

SAMPLE COLLECTED @ 14:45
LAT = 41°35'44.19" N SAT = 7
LONG = 73° 55' 37.21" W PDOP = 2.4

0-6" 0-2" BROWN SILT 15:00
SOME ORGANIC (ODOR)
HIGHLY SATURATED
2-6" GRAY / DK BROWN SILT
ORGANIC (LEAVES, TWIGS)
6-12" 6-8" GRAY SILTY SAND 15:05
SOME PEBBLE / GRAVEL
8-12" DK BROWN SILT
TRACE GRAVEL AND ORGANIC

OVERCAST
PUSH CORE

15:10 WP-M2

LAT = 41°35'48.12" N SAT = 6

LONG = 73°55'38.02" W PDOP = 3.8

WATER DEPTH = 23 in

PENETRATION = 3ft 2in

RECOVERY = 1ft 5in

SAMPLE COLLECTED @ 15:20

0-6" 0-3" BROWN SILT 15:25

HIGHLY SATURATED

3-6" GRAY SILT

SOME ORGANIC

SATURATED

6-12" 6-8" GRAY/BROWN SANDY SILT 15:30

TRACE ORGANIC

8-12" GRAY MED/COARSE SAND

SOME GRAVEL AND PEBBLES

12-17" 12-13.5" REDDISH BROWN SILT 15:35

SOME ORGANIC

13.5-17" GRAY COARSE SAND

SOME PEBBLES

PUSH CORE

OVERCAST

SED CORE #4 15:35

LAT = 41°35'48.13" N SAT. 7

LONG = 73°55'38.16" W PDOP = 3.3

WATER DEPTH = 2ft 4in.

PENETRATION = 3ft 11in

RECOVERY = 19in ON 4th ATTEMPT

NEAR WP-M2

EQUIPMENT BLANK 16:30

AUGER

BOWLS

SPOONS

STOPPERS

6" LEXAN

SPATULA

EQBL-SED2

5/28/03 WAM

0910 processed SED CORE 3
(0-6") and (6-12") intervals
for physical parameter
Analysis.

0930 SED CORE ~~1~~ 4 WAM processed
(0-6") and (6-12") intervals

0940 SED CORE 2 processed
(0-6") & (6-12") intervals

0950 WP-T3A processed
(0-6") & (6-12") intervals

APPENDIX B

Bathymetry data collected for the Creek RI

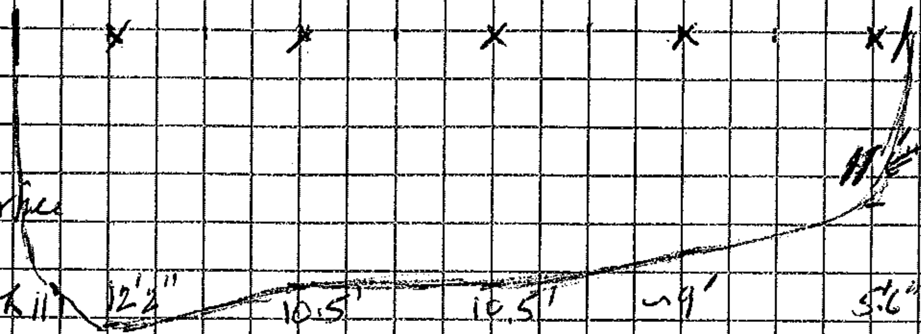
O'BRIEN & GERE COMPANIES

SUBJECT	SHEET	BY	DATE	JOB NO.
THREE STAR SITE · Wappinger Creek Bathymetry		WAA	4/4/2001	10653/27258.

Facing east at upstream side

+/- 0.5'

Width 94 ft



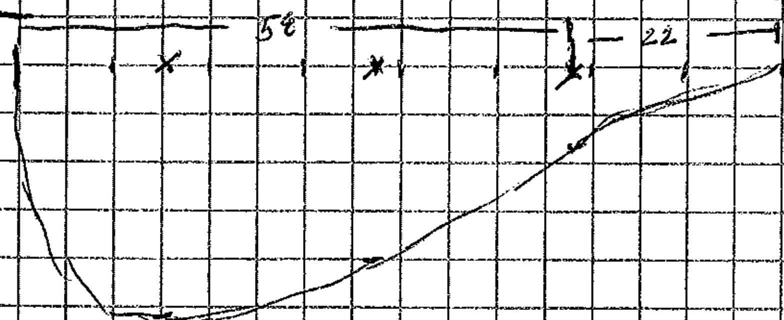
top of railing
to water surface

Water depth 11' 12'2" 10.5' 10.5' ~9' 5'6"

distance
Water surface to bottom of bridge ~6'

DOWNSTREAM BRIDGE

58 — 22



Top of railing
to water surf. 16'6"

Water depth 10'2" 8.0' 3.5'
Dist. to wtr suf. from bottom of bridge 7'9"

UPSTREAM BRIDGE

END @ 1020 AM

NOTE:
Electrical wires (above ground) cross creek downstream of downstream bridge.
Upstream of downstream bridge are guide wires from electrical posts to bank on north side of creek.

Table 1- Approximate water depths at site bridges relative to water surface and bridge distances

Table 1a - Upstream bridge

Distance from Water surface to bottom of bridge (ft.)	Water depth (ft.)
1	16
2	15
3	14
4	13
5	12
6	11
7	10
8	9
9	8
10	7
11	6
12	5

Water samples should be collected approximately 20 ft. from north end of bridge.

Table 1b - Downstream bridge

Distance from Water surface to bottom of bridge (ft.)	Water depth (ft.)
1	15.5
2	14.5
3	13.5
4	12.5
5	11.5
6	10.5
7	9.5
8	8.5
9	7.5
10	6.5
11	5.5
12	4.5

Water samples should be collected at the approximate center of the bridge.

Notes:

Sample collection positions based on review of creek bathymetry data collected 4/4/01.

Depths presented in black were measured, depths presented in blue are estimated from measured data.

APPENDIX C

Sample location coordinates

Table 1 *Wappingers Creek Investigation - 2003*

Location	*Lattitude*	*Longitude*
Wappingers Lake		
WP-LK1	N: 596333.5	E: 1228644.2
WP-LK2	N: 595797.7	E: 1228096.2
WP-LK3	N: 595587.8	E: 1228565.2
WP-LK4	N: 595310.6	E: 1228880.7
WP-LK5	N: 595048.7	E: 1229323.1
Wappingers Creek		
WP-PL2	41 35 37.28 N	73 55 42.26 W
WP-PL3	41 35 37.61 N	73 55 46.48 W
WP-PL1	41 35 35.13 N	73 55 48.29 W
WP-T3C	41 34 52.27 N	73 56 47.79 W
WP-T3A	41 35 00.84 N	73 56 41.88 W
WP-T3B	41 34 58.39 N	73 56 42.24 W
WP-OD1	41 35 02.74 N	73 56 37.04 W
WP-T2A	41 35 19.49N	73 56 15.23 W
WP-T2C	41 35 15.40N	73 56 11.80 W
WP-T2B	41 35 17.28N	73 56 13.08 W
WP-T1B	41 35 25.43N	73 55 59.45 W
WP-LGOUT2	41 35 54.26N	73 55 34.10 W
WP-MW4	41 35 53.66N	73 55 35.34 W
WP-T1A	41 35 29.59N	73 56 00.16 W
WP-T1C	41 35 23.89 N	73 55 58.32 W
WP-OD2	41 35 19.26N	73 56 17.55 W
WP-OD3	41 35 35.72N	73 56 40.85 W
WP-CKOUT	41 35 36.12N	73 55 34.93 W
WP-29A	41 35 41.45N	73 55 36.02 W
WP-DOT	41 35 42.39N	73 55 36.21 W
SED CORE 2	41 35 35.09N	73 55 44.43 W
WP-M3	41 35 44.19N	73 55 37.21 W
WP-M2	41 35 48.12N	73 55 38.02 W
SED CORE 4	41 35 48.13 N	73 55 38.16 W

Source: O'Brien & Gere Engineers, Inc.

APPENDIX D

DER-10 Background evaluation

Sediments 0-6 inches depth

Sample ID (Units in mg/Kg)	Total PAHs	Total Carcinogenic PAHs	BaP Equivalents
WP-LK01-A	5.4 J	2.7 J	0.60 J
WP-LK01-B	5.5 J	2.8 J	0.60 J
WP-LK01-C	5.4 J	2.8 J	0.60 J
Average LK01A,B,C	5.4	2.8	0.60
WP-LK1	1.7 J	0.9 J	0.30 J
WP-LK2	1.7 J	0.7 J	0.04 J
WP-LK3	2.6 J	1.5 J	0.40 J
WP-LK4	2.5 J	1.2 J	0.30 J
WP-LK5	4.1 J	2.2 J	0.50 J
Based on Natural Logs:			
25th percentile	1.9	1.0	0.30
75th percentile	3.7	2.0	0.47
Percentile range	1.8	1.0	0.17
X = Range times 1.5	2.7	1.5	0.26
Y = 75th percentile+X	6.3	3.5	0.73
Maximum	5.4	2.8	0.60
Maximum Exceeds Y?	--	--	--

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Sediments 0-6 inches depth

Sample ID / Units in mg/Kg	Aluminum	Amenable Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel
WP-LK01-A	14500 J		1.1 UJN	4.6 J	94.1 J	0.57 J	0.19 UJ	7600 J	18.4 J	17.9 UJ	8.6 J	36.7 J	29800 J	49.4 J	7130 J	594 J	0.35 UJ	25.2 J
WP-LK01-B	14200 J		1.2 UJN	5 J	89.5 J	0.53 J	0.21 UJ	7030 J	17.7 J	16 UJ	7.9 J	34.2 J	27000 J	45.9 J	6850 J	460 J	0.4 UJ	23.5 J
WP-LK01-C	14600 J	3.2 UJ	1.1 UJN	4.1 J	90.3 J	0.57 J	0.2 UJ	7240 J	18.3 J	13.9 UJ	8.3 J	36.7 J	28600 J	46.5 J	6990 J	569 J	0.37 UJ	24.3 J
Average LK01A,B,C	14433	3.2	1.1	4.6	91.3	0.56	0.2	7290	18.1	15.93	8.3	35.9	28467	47.3	6990	541	0.37	24.3
WP-LK1	19200 J		2.4 UJN	4.9 BJ	120 BJ	0.86 BJ	1.3 BJ	10200 J	27 J	54 UJ	14 BJ	51 J	32800 J	66 J	8570 J	707 J	0.31 J	33 BJ
WP-LK2	14500 J		3.8 UJN	4 BJ	88 BJ	0.67 BJ	1.4 BJ	11900 J	26 J	86 UJ	11 BJ	90 J	31800 J	187 J	6950 BJ	579 J	0.57 J	29 BJ
WP-LK3	14300 J		3.1 UJN	6.3 BJ	92 BJ	0.64 BJ	0.8 BJ	18800 J	21 J	14 UJ	8.8 BJ	90 J	26900 J	79 J	8150 J	551 J	0.29 J	26 BJ
WP-LK4	16000 J		1.8 UJN	4.7 BJ	98 BJ	0.7 BJ	0.93 BJ	11600 J	22 J	41 UJ	11 BJ	83 J	29600 J	99 J	7310 J	1000 J	0.33 J	26 BJ
WP-LK5	17600 J		1.2 UJN	4.7 BJ	100 BJ	0.81 BJ	1.2 BJ	11100 J	24 J	28 UJ	13 BJ	64 J	32700 J	126 J	8700 J	637 J	0.3 J	30 J
Based on Natural Logs:																		
25th percentile	14,449	3.2	1.3	4.6	91	0.65	0.83	10,418	21	18	9.3	54	28,728	69	7068	558	0.30	26
75th percentile	17,186	3.2	2.9	4.8	99	0.78	1.3	11,824	25	50	12	88	32,473	119	8463	689	0.36	30
Percentile range	2,736	0	1.58	0.26	8.0	0.13	0.44	1,406	4.2	32	3.2	34	3,744	50	1395	131	0.06	3.7
X = Range times 1.5	4,105	0	2.37	0.39	12.1	0.20	0.67	2,110	6.4	48	4.7	51	5,617	74	2093	196	0.09	5.6
Y = 75th percentile+X	21,290	3.2	5.3	5.2	112	0.98	1.9	13,934	32	99	17	140	38,089	193	10,556	885	0.45	35
Maximum	19,200 J	3.2 UJ	3.8 UJN	6.3 BJ	120 BJ	0.86 BJ	1.4 BJ	18,800 J	27 J	86 UJ	14 BJ	90 J	32,800 J	187 J	8700 J	1000 J	0.57 J	33 BJ
Maximum Exceeds Y?	–	–	–	Yes	Yes	–	–	Yes	–	–	–	–	–	–	–	Yes	Yes	–

Chem Name	Aluminum	Amenable Cyanide	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Chromium, Hexavalent	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel
CAS Number	7429905	GIS250011	7440360	7440382	7440393	7440417	7440439	7440702	7440473	18540299	7440484	7440508	7439896	7439921	7439954	7439965	7439976	7440020
Values to Use	19200 J	3.2 UJ	3.8 UJN	5.2	112	0.86 BJ	1.4 BJ	13934	27 J	86 UJ	14 BJ	90 J	32800 J	187 J	8700 J	885.2	0.45	33 BJ

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Sediments 0-6 inches depth

Sample ID / Units in mg/Kg	Potassium	Selenium	Silver	Sodium	Thallium	Total cyanide	Vanadium	Zinc
WP-LK01-A	1090 J	2.5 J	0.57 UJ	124 J	2.8 UJN	1.9 UJ	19.8 J	204 J
WP-LK01-B	1110 J	1.6 UJ	0.64 UJ	145 J	3.2 UJN	2.2 UJ	18.9 J	168 J
WP-LK01-C	1140 J	1.5 UJ	0.59 UJ	148 J	2.9 UJN	3.2 J	18.7 J	162 J
Average LK01A,B,C	1113	1.9	0.6	139	3	2.433	19.1	178
WP-LK1	1740 BJ	3 UJ	1.4 UJ	330 BJ	3.5 UJ	2.7 UJ	29 BJ	221 J
WP-LK2	1510 BJ	4.8 UJ	2.2 UJ	386 BJ	5.5 UJ	4.3 UJ	38 BJ	359 J
WP-LK3	1420 BJ	3.9 UJ	1.8 UJ	357 BJ	4.4 UJ	3.5 UJ	29 BJ	224 J
WP-LK4	1350 BJ	2.3 UJ	1.1 UJ	212 BJ	2.6 UJ	2 UJ	22 BJ	228 J
WP-LK5	1360 BJ	1.6 UJ	0.72 UJ	328 BJ	1.8 UJ	1.4 UJ	26 BJ	230 J
Based on Natural Logs:								
25th percentile	1352	1.9	0.8	236	2.7	2.1	23	222
75th percentile	1487	3.7	1.7	350	4.2	3.3	29	229
Percentile range	134	1.7	0.9	114	1.5	1.2	6.1	7.8
X = Range times 1.5	202	2.6	1.3	170	2.2	1.8	9.1	11.6
Y = 75th percentile+X	1689	6.2	3.0	520	6.4	5.1	38	241
Maximum	1740 BJ	4.8 UJ	2.2 UJ	386 BJ	5.5 UJ	4.3 UJ	38 BJ	359 J
Maximum Exceeds Y?	Yes	--	--	--	--	--	--	Yes

Chem Name	Potassium	Selenium	Silver	Sodium	Thallium	Total cyanide	Vanadium	Zinc
CAS Number	7440097	7782492	7440224	7440235	7440280	57125	7440622	7440666
Values to Use	1689	4.8 UJ	2.2 UJ	386 BJ	5.5 UJ	4.3 UJ	38 BJ	241

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APPENDIX E

Analytical data tables

DRAFT - Table A-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Volatile Organic Compound Concentrations

Sample ID	WP-LK01-A	WP-LK01-A	WP-LK01-A	WP-LK01-B	WP-LK01-B	WP-LK01-B DUP	WP-LK01-B
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth	0 - 6 in.	6 - 12 in.	19 - 25 in.	0 - 6 in.	6 - 12 in.	6 - 12 in.	25 - 31 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,1,1-Trichloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,1,2,2-Tetrachloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,1,2-Trichloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,1-Dichloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,1-Dichloroethene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,2-Dichloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
1,2-Dichloropropane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
2-Butanone (MEK)	0.015 J	0.015 J	0.028 J	0.014 J	0.028 J	0.036 J	0.015 J
2-Hexanone	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
4-Methyl-2-pentanone (MIBK)	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Acetone	0.040 UJ	0.039 UJ	0.070 J	0.043 U	0.067 UJ	0.090 UJ	0.036 UJ
Benzene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Bromodichloromethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Bromoform	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Bromomethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Carbon disulfide	0.0050 J	0.029 UJ	0.021 UJ	0.043 UJ	0.0090 J	0.0060 J	0.0040 J
Carbon tetrachloride	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Chlorobenzene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Chloroethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Chloroform	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Chloromethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.010 J	0.037 UJ	0.0020 J
Dibromochloromethane	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Ethylbenzene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Methylene chloride	0.038 UJ	0.029 UJ	0.011 J	0.043 UJ	0.033 UJ	0.0060 J	0.021 UJ
Styrene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Tetrachloroethene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Toluene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Trichloroethene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Vinyl chloride	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Xylene (total)	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
cis-1,2-Dichloroethene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
cis-1,3-Dichloropropylene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
trans-1,2-Dichloroethene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
trans-1,3-Dichloropropene	0.038 UJ	0.029 UJ	0.021 UJ	0.043 UJ	0.033 UJ	0.037 UJ	0.021 UJ
Total organic carbon (mg/Kg)	99100	47000	33800	66800	62000	55200	54700
Percent solids (%)	22.4	34.9	45.8	25	32.4	33.5	47.9

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Volatile Organic Compound Concentrations

Sample ID	WP-LK01-C	WP-LK01-C	WP-LK01-C	WP-01-A	WP-04.45-9	WP-09A	WP-11A
Location Cross Reference	Background	Background	Background	Section 1	Section 1	Section 1	Section I
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001
Sample Depth	0 - 6 in.	6 - 12 in.	26 - 32 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,1,1-Trichloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,1,2,2-Tetrachloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,1,2-Trichloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,1-Dichloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,1-Dichloroethene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,2-Dichloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
1,2-Dichloropropane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
2-Butanone (MEK)	0.015 J	0.036 J	0.025 J	0.012 U	0.013 U	0.013 UJ	0.014 U
2-Hexanone	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
4-Methyl-2-pentanone (MIBK)	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Acetone	0.040 UJ	0.11 J	0.096 J	0.012 U	0.013 U	0.013 UJ	0.014 U
Benzene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Bromodichloromethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Bromoform	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Bromomethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Carbon disulfide	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Carbon tetrachloride	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Chlorobenzene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Chloroethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Chloroform	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Chloromethane	0.0040 J	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Dibromochloromethane	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Ethylbenzene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Methylene chloride	0.040 UJ	0.0030 J	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Styrene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Tetrachloroethene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Toluene	0.0040 J	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Trichloroethene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Vinyl chloride	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Xylene (total)	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
cis-1,2-Dichloroethene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
cis-1,3-Dichloropropylene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
trans-1,2-Dichloroethene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
trans-1,3-Dichloropropene	0.040 UJ	0.026 UJ	0.021 UJ	0.012 U	0.013 U	0.013 UJ	0.014 U
Total organic carbon (mg/Kg)	58700	55500	38800	18600	22100	65500	76500
Percent solids (%)	28.8	35.7	49.8	81	73.2	65.6	65.2

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Volatile Organic Compound Concentrations

Sample ID	LG-OUT	WP-LGOUT2	WP-MW4	WP-MW4 DUP	WP-16	WP-18	WP-18
Location Cross Reference	Section 1	Section 1	Section 1	Section 1	Section 1	Section 2	Section 2
Sample Date	05/09/2001	05/13/2003	05/13/2003	05/13/2003	05/09/2001	05/09/2001	05/09/2001
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,1,1-Trichloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,1,2,2-Tetrachloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,1,2-Trichloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,1-Dichloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,1-Dichloroethene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,2-Dichloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
1,2-Dichloropropane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
2-Butanone (MEK)	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.0080 J	0.0070 J
2-Hexanone	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
4-Methyl-2-pentanone (MIBK)	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Acetone	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.025 U	0.017 U
Benzene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Bromodichloromethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Bromoform	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Bromomethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Carbon disulfide	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.0050 J	0.0020 J
Carbon tetrachloride	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Chlorobenzene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Chloroethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Chloroform	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Chloromethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Dibromochloromethane	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Ethylbenzene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Methylene chloride	0.013 U	0.013 U	0.012 U	0.012 U	0.0020 J	0.0040 J	0.015 U
Styrene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Tetrachloroethene	0.024	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Toluene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Trichloroethene	0.023	0.0010 J	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Vinyl chloride	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Xylene (total)	0.0020 J	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
cis-1,2-Dichloroethene	0.0030 J	0.0020 J	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
cis-1,3-Dichloropropylene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
trans-1,2-Dichloroethene	0.0020 J	0.0010 J	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
trans-1,3-Dichloropropene	0.013 U	0.013 U	0.012 U	0.012 U	0.012 U	0.015 U	0.015 U
Total organic carbon (mg/Kg)	56000	12400 J	25400	12100	8770	23400	24400
Percent solids (%)	77.2	75	81	79	78.6	68.4	63.9

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Volatile Organic Compound Concentrations

Sample ID	WP-29	WP-29	WP-29	WP-PL	WP-PL DUP	WP-PL
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/09/2001	05/09/2001	05/09/2001	05/08/2001	05/08/2001	05/08/2001
Sample Depth	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.	0 - 6 in.	6 - 11 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound						
1,1,1-Trichloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,1,2,2-Tetrachloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,1,2-Trichloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,1-Dichloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,1-Dichloroethene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,2-Dichloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
1,2-Dichloropropane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
2-Butanone (MEK)	0.0080 J	0.033 J	0.077 J	0.037 UJ	0.034 UJ	0.028 J
2-Hexanone	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
4-Methyl-2-pentanone (MIBK)	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Acetone	0.022 UJ	0.085 J	0.17 U	0.037 UJ	0.034 UJ	0.061 J
Benzene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Bromodichloromethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Bromoform	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Bromomethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Carbon disulfide	0.020 UJ	0.0030 J	0.011 J	0.037 UJ	0.034 UJ	0.035 UJ
Carbon tetrachloride	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Chlorobenzene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Chloroethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Chloroform	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Chloromethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Dibromochloromethane	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Ethylbenzene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Methylene chloride	0.020 UJ	0.017	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Styrene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Tetrachloroethene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Toluene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Trichloroethene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Vinyl chloride	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Xylene (total)	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
cis-1,2-Dichloroethene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
cis-1,3-Dichloropropylene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
trans-1,2-Dichloroethene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
trans-1,3-Dichloropropene	0.020 UJ	0.014 U	0.077 U	0.037 UJ	0.034 UJ	0.025 UJ
Total organic carbon (mg/Kg)	21700	7330	105000	115000	115000	82300
Percent solids (%)	56.2	62.2	58.2	25.6	24.7	39.5

NOTES: U - not detected, J - estimated value, B - blank contamination
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK1	WP-LK2	WP-LK3	WP-LK4	WP-LK5	WP-LK01-A	WP-LK01-A
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/10/2001	05/10/2001
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
1,2-Dichlorobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
1,3-Dichlorobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
1,4-Dichlorobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Bis(2-chloroisopropyl) ether	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2,4,5-Trichlorophenol	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
2,4,6-Trichlorophenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2,4-Dichlorophenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2,4-Dimethylphenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2,4-Dinitrophenol	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
2,4-Dinitrotoluene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2,6-Dinitrotoluene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2-Chloronaphthalene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2-Chlorophenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2-Methylnaphthalene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2-Methylphenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
2-Nitroaniline	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
2-Nitrophenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
3,3-Dichlorobenzidine	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
3-Nitroaniline	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
4,6-Dinitro-2-methylphenol	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
4-Bromophenyl phenyl ether	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
4-Chloro-3-methylphenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
4-Chloroaniline	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
4-Chlorophenyl phenyl ether	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
4-Methylphenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
4-Nitroaniline	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
4-Nitrophenol	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
Acenaphthene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Acenaphthylene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Anthracene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Benzo(a)anthracene	1.9 UJ	2.8 UJ	0.27 J	0.20 J	0.30 J	0.38 J	0.21 J
Benzo[a]pyrene	0.22 J	2.8 UJ	0.27 J	0.22 J	0.37 J	0.46 J	0.21 J
Benzo(b)fluoranthene	0.36 J	0.41 J	0.54 J	0.38 J	0.60 J	1.0 J	0.40 J
Benzo(ghi)perylene	1.9 UJ	2.8 UJ	2.4 UJ	0.16 J	0.23 J	1.3 UJ	1.9 UJ
Benzo(k)fluoranthene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.21 J	0.29 J	1.9 UJ
Butyl benzyl phthalate	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Carbazole	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Chrysene	0.27 J	0.30 J	0.37 J	0.28 J	0.44 J	0.59 J	0.28 J
Di-n-butyl phthalate	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK1	WP-LK2	WP-LK3	WP-LK4	WP-LK5	WP-LK01-A	WP-LK01-A
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/10/2001	05/10/2001
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Dibenzo(a,h)anthracene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Dibenzofuran	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Diethyl phthalate	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Dimethyl phthalate	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Fluoranthene	0.42 J	0.47 J	0.55 J	0.45 J	0.66 J	0.98 J	0.44 J
Fluorene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Hexachlorobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Hexachlorobutadiene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Hexachlorocyclopentadiene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Hexachloroethane	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Indeno(1,2,3-cd)pyrene	1.9 UJ	2.8 UJ	2.4 UJ	0.15 J	0.24 J	1.3 UJ	1.9 UJ
Isophorone	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
N-Nitrosodipropylamine	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
N-Nitrosodiphenylamine	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Naphthalene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Nitrobenzene	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Pentachlorophenol	4.6 UJ	6.9 UJ	6.0 UJ	3.5 UJ	2.3 UJ	3.1 UJ	4.6 UJ
Phenanthrene	1.9 UJ	2.8 UJ	2.4 UJ	0.17 J	0.23 J	0.41 J	0.23 J
Phenol	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Pyrene	0.42 J	0.48 J	0.61 J	0.46 J	0.77 J	1.3 J	0.60 J
Bis(2-chloroethoxy)methane	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Bis(2-chloroethyl)ether	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.3 UJ	1.9 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	1.9 UJ	2.8 UJ	2.4 UJ	1.4 UJ	0.93 UJ	1.1 J	0.52 J
Total organic carbon (mg/Kg)	102000 J	91600 J	63300 J	42100 J	46100 J	99100	47000
Percent solids (%)	18	12	14	25	36	22.4	34.9

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK01-A	WP-LK01-B	WP-LK01-B	WP-LK01-B DUP	WP-LK01-B	WP-LK01-C	WP-LK01-C
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth	19 - 25 in.	0 - 6 in.	6 - 12 in.	6 - 12 in.	25 - 31 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
1,2-Dichlorobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
1,3-Dichlorobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
1,4-Dichlorobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Bis(2-chloroisopropyl) ether	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2,4,5-Trichlorophenol	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
2,4,6-Trichlorophenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2,4-Dichlorophenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2,4-Dimethylphenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2,4-Dinitrophenol	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
2,4-Dinitrotoluene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2,6-Dinitrotoluene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2-Chloronaphthalene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2-Chlorophenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2-Methylnaphthalene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2-Methylphenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
2-Nitroaniline	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
2-Nitrophenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
3,3-Dichlorobenzidine	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
3-Nitroaniline	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
4,6-Dinitro-2-methylphenol	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
4-Bromophenyl phenyl ether	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
4-Chloro-3-methylphenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
4-Chloroaniline	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
4-Chlorophenyl phenyl ether	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
4-Methylphenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
4-Nitroaniline	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
4-Nitrophenol	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
Acenaphthene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Acenaphthylene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Anthracene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Benzo(a)anthracene	0.13 J	0.40 J	0.27 J	0.25 J	0.091 J	0.39 J	0.20 J
Benzo[a]pyrene	0.11 J	0.46 J	0.27 J	0.25 J	0.094 J	0.42 J	0.22 J
Benzo(b)fluoranthene	0.21 J	0.79 J	0.54 J	0.48 J	0.16 J	0.80 J	0.37 J
Benzo(ghi)perylene	0.69 UJ	0.16 J	R	1.2 UJ	0.69 UJ	0.19 J	0.095 J
Benzo(k)fluoranthene	0.075 J	0.32 J	0.20 J	0.16 J	0.69 UJ	0.28 J	0.12 J
Butyl benzyl phthalate	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Carbazole	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Chrysene	0.18 J	0.59 J	0.34 J	0.38 J	0.14 J	0.64 J	0.26 J
Di-n-butyl phthalate	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK01-A	WP-LK01-B	WP-LK01-B	WP-LK01-B DUP	WP-LK01-B	WP-LK01-C	WP-LK01-C
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth	19 - 25 in.	0 - 6 in.	6 - 12 in.	6 - 12 in.	25 - 31 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.69 UJ	1.4 UJ	R	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Dibenzo(a,h)anthracene	0.69 UJ	1.4 UJ	R	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Dibenzofuran	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Diethyl phthalate	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Dimethyl phthalate	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Fluoranthene	0.24 J	0.89 J	0.54 J	0.55 J	0.19 J	0.93 J	0.44 J
Fluorene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Hexachlorobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Hexachlorobutadiene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Hexachlorocyclopentadiene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Hexachloroethane	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Indeno(1,2,3-cd)pyrene	0.69 UJ	0.25 J	R	1.2 UJ	0.69 UJ	0.31 J	0.13 J
Isophorone	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
N-Nitrosodipropylamine	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
N-Nitrosodiphenylamine	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Naphthalene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Nitrobenzene	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Pentachlorophenol	1.7 UJ	3.5 UJ	2.7 UJ	3.0 UJ	1.7 UJ	3.2 UJ	2.1 UJ
Phenanthrene	0.14 J	0.48 J	0.25 J	0.30 J	0.12 J	0.44 J	0.23 J
Phenol	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Pyrene	0.34 J	1.2 J	0.83 J	0.69 J	0.25 J	1.0 J	0.49 J
Bis(2-chloroethoxy)methane	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Bis(2-chloroethyl)ether	0.69 UJ	1.4 UJ	1.1 UJ	1.2 UJ	0.69 UJ	1.3 UJ	0.85 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	0.29 J	0.56 J	0.40 J	0.46 J	0.17 J	0.48 J	0.31 J
Total organic carbon (mg/Kg)	33800	66800	62000	55200	54700	58700	55500
Percent solids (%)	45.8	25	32.4	33.5	47.9	28.8	35.7

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK01-C	WP-01-A	WP-04.45-9	WP-09A	WP-11A	LG-OUT	WP-LGOUT2
Location Cross Reference	Background	Section 1	Section 1	Section 1	Section 1	Section 1	Section 1
Sample Date	05/10/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/13/2003
Sample Depth	26 - 32 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
1,2-Dichlorobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.14 J	0.066 J
1,3-Dichlorobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
1,4-Dichlorobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Bis(2-chloroisopropyl) ether	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2,4,5-Trichlorophenol	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
2,4,6-Trichlorophenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2,4-Dichlorophenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2,4-Dimethylphenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2,4-Dinitrophenol	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
2,4-Dinitrotoluene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2,6-Dinitrotoluene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2-Chloronaphthalene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2-Chlorophenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2-Methylnaphthalene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2-Methylphenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
2-Nitroaniline	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
2-Nitrophenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
3,3-Dichlorobenzidine	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
3-Nitroaniline	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
4,6-Dinitro-2-methylphenol	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
4-Bromophenyl phenyl ether	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
4-Chloro-3-methylphenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
4-Chloroaniline	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
4-Chlorophenyl phenyl ether	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
4-Methylphenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
4-Nitroaniline	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
4-Nitrophenol	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
Acenaphthene	0.69 UJ	0.40 U	0.43 J	0.43 U	0.45 U	0.096 J	0.44 U
Acenaphthylene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Anthracene	0.69 UJ	0.40 U	1.9 J	0.10 J	0.45 U	0.39 J	0.15 J
Benzo(a)anthracene	0.13 J	0.40 U	6.1	0.29 J	0.34 J	2.6	0.65
Benzo[a]pyrene	0.18 J	0.40 U	5.9	0.27 J	0.38 J	3.6	0.65
Benzo(b)fluoranthene	0.24 J	0.047 J	8.8	0.46	0.48	4.6	0.81
Benzo(ghi)perylene	0.38 J	0.40 U	1.4 J	0.12 J	0.22 J	1.7	0.32 J
Benzo(k)fluoranthene	0.69 UJ	0.40 U	2.2	0.15 J	0.18 J	1.4	0.29 J
Butyl benzyl phthalate	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Carbazole	0.69 UJ	0.40 U	1.2 J	0.053 J	0.45 U	0.20 J	0.088 J
Chrysene	0.19 J	0.40 U	5.8	0.41 J	0.34 J	2.5	0.60
Di-n-butyl phthalate	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-LK01-C	WP-01-A	WP-04.45-9	WP-09A	WP-11A	LG-OUT	WP-LGOUT2
Location Cross Reference	Background	Section 1	Section 1	Section 1	Section 1	Section 1	Section 1
Sample Date	05/10/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/13/2003
Sample Depth	26 - 32 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Dibenzo(a,h)anthracene	0.69 UJ	0.40 U	0.67 J	0.43 U	0.45 U	0.90	0.12 J
Dibenzofuran	0.69 UJ	0.40 U	0.47 J	0.43 U	0.45 U	0.85 U	0.44 U
Diethyl phthalate	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Dimethyl phthalate	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Fluoranthene	0.27 J	0.050 J	11	0.64	0.49	2.8	0.97
Fluorene	0.69 UJ	0.40 U	0.41 J	0.054 J	0.45 U	0.099 J	0.44 U
Hexachlorobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Hexachlorobutadiene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Hexachlorocyclopentadiene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Hexachloroethane	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Indeno(1,2,3-cd)pyrene	0.11 J	0.40 U	2.2 J	0.18 J	0.26 J	2.6	0.36 J
Isophorone	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
N-Nitrosodipropylamine	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
N-Nitrosodiphenylamine	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Naphthalene	0.69 UJ	0.40 U	0.37 J	0.43 U	0.45 U	0.13 J	0.048 J
Nitrobenzene	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Pentachlorophenol	1.7 UJ	0.95 U	5.3 U	1.0 U	1.1 U	2.1 U	1.1 U
Phenanthrene	0.15 J	0.40 U	7.5	0.61	0.19 J	1.5	0.64
Phenol	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Pyrene	0.37 J	0.053 J	9.2	0.75	0.53	3.3	1.1
Bis(2-chloroethoxy)methane	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Bis(2-chloroethyl)ether	0.69 UJ	0.40 U	2.2 U	0.43 U	0.45 U	0.85 U	0.44 U
Bis(2-ethylhexyl)phthalate (BEHP)	0.16 J	0.097 J	2.2 U	0.49	0.14 J	0.55 J	0.44 U
Total organic carbon (mg/Kg)	38800	18600	22100	65500	76500	56000	12400 J
Percent solids (%)	49.8	81	73.2	65.6	65.2	77.2	75

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-MW4	WP-MW4 DUP	WP-16	WP-18	WP-18	WP-M2	WP-M2
Location Cross Reference	Section 1	Section 1	Section 1	Section 2	Section 2	Section 2	Section 2
Sample Date	05/13/2003	05/13/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003	05/14/2003
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
1,2-Dichlorobenzene	0.41 U	0.19 J	0.048 J	0.49 U	0.51 U	1.2 UJ	5.1 U
1,3-Dichlorobenzene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
1,4-Dichlorobenzene	0.41 U	0.092 J	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Bis(2-chloroisopropyl) ether	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2,4,5-Trichlorophenol	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
2,4,6-Trichlorophenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2,4-Dichlorophenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2,4-Dimethylphenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2,4-Dinitrophenol	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
2,4-Dinitrotoluene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2,6-Dinitrotoluene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2-Chloronaphthalene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2-Chlorophenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2-Methylnaphthalene	0.052 J	0.14 J	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2-Methylphenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
2-Nitroaniline	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
2-Nitrophenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
3,3-Dichlorobenzidine	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
3-Nitroaniline	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
4,6-Dinitro-2-methylphenol	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
4-Bromophenyl phenyl ether	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
4-Chloro-3-methylphenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
4-Chloroaniline	0.047 J	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
4-Chlorophenyl phenyl ether	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
4-Methylphenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
4-Nitroaniline	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
4-Nitrophenol	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
Acenaphthene	0.042 J	0.18 J	0.087 J	0.13 J	0.51 U	1.2 UJ	1.4 J
Acenaphthylene	0.47	0.38 J	0.40 U	0.49 U	0.51 U	1.2 UJ	1.7 J
Anthracene	0.80	1.2	0.27 J	0.33 J	0.51 U	0.34 J	5.8
Benzo(a)anthracene	3.8 D	4.7 D	0.82	0.95	0.082 J	1.4 J	17
Benzo[a]pyrene	3.7 D	4.5 D	0.67	0.74	0.066 J	1.1 J	14
Benzo(b)fluoranthene	4.5 D	6.2 D	0.92	1.0	0.14 J	2.0 J	17
Benzo(ghi)perylene	1.2	1.5	0.29 J	0.23 J	0.51 U	0.65 J	4.3 J
Benzo(k)fluoranthene	1.4	2.0	0.31 J	0.36 J	0.51 U	0.59 J	6.8
Butyl benzyl phthalate	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Carbazole	0.14 J	0.42 J	0.12 J	0.49 U	0.51 U	1.2 UJ	5.1 U
Chrysene	2.9	4.2 D	0.80	0.84	0.089 J	1.2 J	14
Di-n-butyl phthalate	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-MW4	WP-MW4 DUP	WP-16	WP-18	WP-18	WP-M2	WP-M2
Location Cross Reference	Section 1	Section 1	Section 1	Section 2	Section 2	Section 2	Section 2
Sample Date	05/13/2003	05/13/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003	05/14/2003
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Dibenzo(a,h)anthracene	0.58	0.69	0.16 J	0.11 J	0.51 U	0.23 J	1.9 J
Dibenzofuran	0.12 J	0.25 J	0.059 J	0.49 U	0.51 U	1.2 UJ	0.70 J
Diethyl phthalate	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Dimethyl phthalate	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Fluoranthene	6.4 D	9.0 D	1.5	1.7	0.20 J	2.4	33
Fluorene	0.20 J	0.30 J	0.12 J	0.49 U	0.51 U	1.2 UJ	1.6 J
Hexachlorobenzene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Hexachlorobutadiene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Hexachlorocyclopentadiene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Hexachloroethane	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Indeno(1,2,3-cd)pyrene	1.6	1.9	0.47	0.31 J	0.51 U	0.66 J	5.1 J
Isophorone	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
N-Nitrosodipropylamine	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
N-Nitrosodiphenylamine	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Naphthalene	0.16 J	0.44	0.40 U	0.49 U	0.51 U	1.2 UJ	1.2 J
Nitrobenzene	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Pentachlorophenol	1.0 U	1.1 U	0.96 U	1.2 U	1.2 U	3.0 UJ	13 U
Phenanthrene	2.4	4.4 D	1.3	0.57	0.060 J	0.84 J	11
Phenol	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Pyrene	5.4 D	7.2 D	1.5	1.6	0.29 J	2.7 J	29
Bis(2-chloroethoxy)methane	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Bis(2-chloroethyl)ether	0.41 U	0.42 U	0.40 U	0.49 U	0.51 U	1.2 UJ	5.1 U
Bis(2-ethylhexyl)phthalate (BEHP)	0.41 U	0.42 U	0.25 J	0.16 J	0.14 J	1.2 UJ	5.1 U
Total organic carbon (mg/Kg)	25400	12100	8770	23400	24400	11300 e BJ	11300 e BJ
Percent solids (%)	81	79	78.6	68.4	63.9	28	66

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-M2	WP-M3	WP-M3	WP-DOT	WP-DOT	WP-DOT	WP-29A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	12 - 17 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
1,2-Dichlorobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.4
1,3-Dichlorobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	0.20 J
1,4-Dichlorobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.3
Bis(2-chloroisopropyl) ether	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2,4,5-Trichlorophenol	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
2,4,6-Trichlorophenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2,4-Dichlorophenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2,4-Dimethylphenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2,4-Dinitrophenol	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
2,4-Dinitrotoluene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2,6-Dinitrotoluene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2-Chloronaphthalene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2-Chlorophenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2-Methylnaphthalene	0.42 U	0.85 U	0.97 J	5.2 U	11 U	18 U	1.1 U
2-Methylphenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
2-Nitroaniline	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
2-Nitrophenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
3,3-Dichlorobenzidine	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
3-Nitroaniline	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
4,6-Dinitro-2-methylphenol	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
4-Bromophenyl phenyl ether	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
4-Chloro-3-methylphenol	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
4-Chloroaniline	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
4-Chlorophenyl phenyl ether	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
4-Methylphenol	0.043 J	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
4-Nitroaniline	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
4-Nitrophenol	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
Acenaphthene	1.0	0.095 J	2.7 J	5.2 U	4.9 J	6.6 J	0.25 J
Acenaphthylene	0.21 J	0.11 J	5.1 U	1.2 J	11 U	18 U	0.29 J
Anthracene	1.0	0.34 J	5.1	4.5 J	17	31	1.1 J
Benzo(a)anthracene	4.2 D	1.3	8.7	13	27	27	3.8
Benzo[a]pyrene	3.6 D	1.2	8.1	10	20	21	3.6 DJ
Benzo(b)fluoranthene	4.4 D	1.8	9.5	12	25	24	4.7 DJ
Benzo(ghi)perylene	1.2 JD	0.64 J	2.5 J	2.8 J	8.6 J	7.0 J	1.1 DJ
Benzo(k)fluoranthene	1.7 JD	0.68 J	4.0 J	4.0 J	7.7 J	8.3 J	1.8 DJ
Butyl benzyl phthalate	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Carbazole	0.16 J	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Chrysene	3.7 D	1.5	8.6	10	22	24	3.4
Di-n-butyl phthalate	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-M2	WP-M3	WP-M3	WP-DOT	WP-DOT	WP-DOT	WP-29A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	12 - 17 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.42 UJ	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 UJ
Dibenzo(a,h)anthracene	0.53 JD	0.23 J	1.2 J	1.2 J	3.6 J	2.8 J	0.45 DJ
Dibenzofuran	0.32 J	0.85 U	1.4 J	5.2 U	2.5 J	3.1 J	0.13 J
Diethyl phthalate	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Dimethyl phthalate	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Fluoranthene	8.4 D	2.4	18	24	61	65	6.0
Fluorene	0.51	0.85 U	1.9 J	0.59 J	6.6 J	9.2 J	0.30 J
Hexachlorobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Hexachlorobutadiene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Hexachlorocyclopentadiene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Hexachloroethane	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Indeno(1,2,3-cd)pyrene	1.4 JD	0.63 J	3.2 J	3.6 J	9.3 J	7.6 J	1.2 DJ
Isophorone	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
N-Nitrosodipropylamine	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
N-Nitrosodiphenylamine	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Naphthalene	0.34 J	0.85 U	2.6 J	0.54 J	3.1 J	2.6 J	0.33 J
Nitrobenzene	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Pentachlorophenol	1.1 U	2.1 U	13 U	13 U	27 U	46 U	2.8 U
Phenanthrene	1.6	1.0	14	6.9	45	80	2.4
Phenol	0.11 J	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Pyrene	7.7 D	2.9	15	20	47	54	6.0
Bis(2-chloroethoxy)methane	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Bis(2-chloroethyl)ether	0.42 U	0.85 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Bis(2-ethylhexyl)phthalate (BEHP)	0.42 U	1.2 U	5.1 U	5.2 U	11 U	18 U	1.1 U
Total organic carbon (mg/Kg)	11300 BJ	63800 BJ	50000 e BJ	13400 BJ	13400 e BJ	13400 e BJ	50000 e BJ
Percent solids (%)	79	39	65	64	61	73	59

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-29A	WP-29A DUP	WP-29A	WP-29	WP-29	WP-29	WP-CKOUT
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003
Sample Depth	6 - 12 in.	6 - 12 in.	12 - 17 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
1,2-Dichlorobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
1,3-Dichlorobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
1,4-Dichlorobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Bis(2-chloroisopropyl) ether	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2,4,5-Trichlorophenol	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
2,4,6-Trichlorophenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2,4-Dichlorophenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2,4-Dimethylphenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2,4-Dinitrophenol	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
2,4-Dinitrotoluene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2,6-Dinitrotoluene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2-Chloronaphthalene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2-Chlorophenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2-Methylnaphthalene	1.9 J	2.7 J	22 U	17 UJ	1.1 J	56 U	0.48 U
2-Methylphenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
2-Nitroaniline	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
2-Nitrophenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
3,3-Dichlorobenzidine	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
3-Nitroaniline	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
4,6-Dinitro-2-methylphenol	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
4-Bromophenyl phenyl ether	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
4-Chloro-3-methylphenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
4-Chloroaniline	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 UJ
4-Chlorophenyl phenyl ether	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
4-Methylphenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
4-Nitroaniline	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
4-Nitrophenol	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
Acenaphthene	6.6	12 J	9.6 J	11 J	9.1	46 J	0.48 U
Acenaphthylene	0.82 J	24 U	22 U	17 UJ	9.0 U	56 U	0.055 J
Anthracene	14	32	29	6.0 J	15	86	0.16 J
Benzo(a)anthracene	19	33	30	20 J	13	84	0.92
Benzo[a]pyrene	16	27	23	17 J	9.3	64	0.94
Benzo(b)fluoranthene	20	29	28	19 J	11	74	1.4
Benzo(ghi)perylene	4.2 J	9.5 J	7.2 J	6.2 J	2.6 J	15 J	0.25 J
Benzo(k)fluoranthene	8.1	13 J	8.0 J	6.5 J	3.7 J	32 J	0.60
Butyl benzyl phthalate	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Carbazole	6.3 U	24 U	22 U	5.2 J	9.0 U	56 U	0.48 U
Chrysene	18	31	25	18 J	11	77	0.76
Di-n-butyl phthalate	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-29A	WP-29A DUP	WP-29A	WP-29	WP-29	WP-29	WP-CKOUT
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003
Sample Depth	6 - 12 in.	6 - 12 in.	12 - 17 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Dibenzo(a,h)anthracene	1.9 J	3.8 J	3.1 J	2.3 J	1.7 J	9.8 J	0.11 J
Dibenzofuran	2.9 J	6.0 J	3.7 J	2.3 J	5.4 J	30 J	0.48 U
Diethyl phthalate	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Dimethyl phthalate	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Fluoranthene	45	71	72	43 J	34	180	2.0
Fluorene	6.2 J	14 J	11 J	6.2 J	8.9 J	46 J	0.48 U
Hexachlorobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Hexachlorobutadiene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Hexachlorocyclopentadiene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Hexachloroethane	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Indeno(1,2,3-cd)pyrene	5.3 J	10 J	9.0 J	6.9 J	4.7 J	28 J	0.31 J
Isophorone	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
N-Nitrosodipropylamine	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
N-Nitrosodiphenylamine	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Naphthalene	5.5 J	6.8 J	2.6 J	3.1 J	2.1 J	56 U	0.072 J
Nitrobenzene	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Pentachlorophenol	16 U	61 U	56 U	41 UJ	22 U	140 U	1.2 U
Phenanthrene	44	86	87	14 J	42	210	0.37 J
Phenol	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Pyrene	36	64	59	35 J	28	140	1.6
Bis(2-chloroethoxy)methane	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Bis(2-chloroethyl)ether	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Bis(2-ethylhexyl)phthalate (BEHP)	6.3 U	24 U	22 U	17 UJ	9.0 U	56 U	0.48 U
Total organic carbon (mg/Kg)	62900 BJ	70100 BJ	50000 e BJ	21700	7330	105000	35900
Percent solids (%)	53	55	60	56.2	62.2	58.2	70

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-OD3	WP-OD3	WP-PL	WP-PL DUP	WP-PL	WP-PL1	WP-PL1
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/08/2001	05/08/2001	05/08/2001	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	0 - 6 in.	6 - 11 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
1,2-Dichlorobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
1,3-Dichlorobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
1,4-Dichlorobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Bis(2-chloroisopropyl) ether	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2,4,5-Trichlorophenol	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
2,4,6-Trichlorophenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2,4-Dichlorophenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2,4-Dimethylphenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2,4-Dinitrophenol	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
2,4-Dinitrotoluene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2,6-Dinitrotoluene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2-Chloronaphthalene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2-Chlorophenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2-Methylnaphthalene	0.46 U	0.12 J	1.2 UJ	1.1 UJ	0.12 J	1.1 UJ	0.78 UJ
2-Methylphenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
2-Nitroaniline	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
2-Nitrophenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
3,3-Dichlorobenzidine	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
3-Nitroaniline	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
4,6-Dinitro-2-methylphenol	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
4-Bromophenyl phenyl ether	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
4-Chloro-3-methylphenol	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
4-Chloroaniline	0.46 UJ	0.22 J	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
4-Chlorophenyl phenyl ether	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
4-Methylphenol	0.46 U	0.068 J	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
4-Nitroaniline	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
4-Nitrophenol	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
Acenaphthene	0.11 J	0.32 J	0.17 J	1.1 UJ	0.11 J	1.1 UJ	0.78 UJ
Acenaphthylene	0.31 J	0.80	0.27 J	0.16 J	0.11 J	0.12 J	0.78 UJ
Anthracene	1.3	3.6	1.2 J	0.59 J	0.77 J	0.50 J	0.78 UJ
Benzo(a)anthracene	4.6 DJ	11 D	4.6 J	3.2 J	2.6 J	2.2 J	0.27 J
Benzo[a]pyrene	4.0 DJ	9.1 DJ	4.5 J	3.2 J	2.5 J	1.1 J	0.25 J
Benzo(b)fluoranthene	5.3 DJ	11 DJ	5.9 J	4.6 J	4.0 J	2.4 J	0.39 J
Benzo(ghi)perylene	0.94 J	1.9 J	1.5 J	1.1 J	1.2 J	0.54 J	0.081 J
Benzo(k)fluoranthene	2.2 J	3.5 J	2.3 J	1.5 J	0.99 J	1.2 J	0.17 J
Butyl benzyl phthalate	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Carbazole	0.46 U	0.14 J	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Chrysene	2.8	10 D	4.5 J	2.9 J	2.7 J	2.1 J	0.30 J
Di-n-butyl phthalate	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as:. Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-OD3	WP-OD3	WP-PL	WP-PL DUP	WP-PL	WP-PL1	WP-PL1
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/08/2001	05/08/2001	05/08/2001	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	0 - 6 in.	6 - 11 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.46 UJ	0.49 UJ	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Dibenzo(a,h)anthracene	0.34 J	0.83 J	0.81 J	0.73 J	0.59 J	0.25 J	0.78 UJ
Dibenzofuran	0.065 J	0.23 J	0.13 J	1.1 UJ	0.28 J	1.1 UJ	0.78 UJ
Diethyl phthalate	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Dimethyl phthalate	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Fluoranthene	7.3 D	17 D	5.7 J	3.6 J	4.2 J	4.0 J	0.55 J
Fluorene	0.19 J	0.45 J	0.23 J	0.16 J	0.27 J	1.1 UJ	0.78 UJ
Hexachlorobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Hexachlorobutadiene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Hexachlorocyclopentadiene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Hexachloroethane	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Indeno(1,2,3-cd)pyrene	1.1 J	2.2 J	2.7 J	2.0 J	1.8 J	0.67 J	0.11 J
Isophorone	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
N-Nitrosodipropylamine	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
N-Nitrosodiphenylamine	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Naphthalene	0.14 J	0.75	0.28 J	0.22 J	0.29 J	1.1 UJ	0.78 UJ
Nitrobenzene	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Pentachlorophenol	1.2 U	1.2 U	3.0 UJ	2.8 UJ	2.0 UJ	2.9 UJ	1.9 UJ
Phenanthrene	3.3	7.1 DJ	2.2 J	1.2 J	1.1 J	1.2 J	0.12 J
Phenol	0.46 U	0.083 J	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Pyrene	8.2 D	20 D	8.4 J	5.9 J	5.6 J	3.5 J	0.55 J
Bis(2-chloroethoxy)methane	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Bis(2-chloroethyl)ether	0.46 U	0.49 U	1.2 UJ	1.1 UJ	0.83 UJ	1.1 UJ	0.78 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	0.46 U	0.49 U	0.70 J	0.75 J	0.83 UJ	1.1 UJ	0.78 UJ
Total organic carbon (mg/Kg)	30500 e	30500	115000	115000	82300	108000 J	80500 J
Percent solids (%)	72	68	25.6	24.7	39.5	29	43

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-PL1	WP-PL2	WP-PL2	WP-PL2	WP-PL3	WP-PL3	WP-T1A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/14/2003
Sample Depth	12 - 18 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
1,2-Dichlorobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
1,3-Dichlorobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
1,4-Dichlorobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Bis(2-chloroisopropyl) ether	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2,4,5-Trichlorophenol	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
2,4,6-Trichlorophenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2,4-Dichlorophenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2,4-Dimethylphenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2,4-Dinitrophenol	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
2,4-Dinitrotoluene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2,6-Dinitrotoluene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2-Chloronaphthalene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2-Chlorophenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2-Methylnaphthalene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2-Methylphenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
2-Nitroaniline	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
2-Nitrophenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
3,3-Dichlorobenzidine	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	1.4 UJ	0.95 UJ	0.98 UJ
3-Nitroaniline	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
4,6-Dinitro-2-methylphenol	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
4-Bromophenyl phenyl ether	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
4-Chloro-3-methylphenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
4-Chloroaniline	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
4-Chlorophenyl phenyl ether	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
4-Methylphenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
4-Nitroaniline	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
4-Nitrophenol	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
Acenaphthene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Acenaphthylene	0.60 U	0.18 J	0.14 J	0.78 UJ	1.4 UJ	0.13 J	0.98 UJ
Anthracene	0.60 U	0.68 J	0.32 J	0.19 J	0.17 J	0.24 J	0.20 J
Benzo(a)anthracene	0.60 U	2.6 J	1.5 J	0.89 J	0.78 J	1.1 J	0.68 J
Benzo[a]pyrene	0.60 U	1.2 J	0.82 J	0.84 J	0.54 J	1.0 J	0.32 J
Benzo(b)fluoranthene	0.60 U	3.6 J	2.2 J	1.1 J	0.87 J	1.8 J	0.39 J
Benzo(ghi)perylene	0.60 U	0.71 J	0.49 J	0.31 J	0.21 J	0.46 J	0.13 J
Benzo(k)fluoranthene	0.60 U	1.1 J	0.77 J	0.51 J	0.43 J	0.56 J	0.23 J
Butyl benzyl phthalate	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Carbazole	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	1.4 UJ	0.11 J	0.98 UJ
Chrysene	0.60 U	2.1 J	1.4 J	0.86 J	0.78 J	1.3 J	0.95 J
Di-n-butyl phthalate	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	0.20 J	0.95 UJ	0.98 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-PL1	WP-PL2	WP-PL2	WP-PL2	WP-PL3	WP-PL3	WP-T1A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/14/2003
Sample Depth	12 - 18 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Dibenzo(a,h)anthracene	0.60 U	0.28 J	0.19 J	0.12 J	1.4 UJ	0.17 J	0.98 UJ
Dibenzofuran	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.11 J	0.98 UJ
Diethyl phthalate	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Dimethyl phthalate	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Fluoranthene	0.60 U	4.5 J	2.2 J	1.5 J	1.4 J	2.5 J	1.2 J
Fluorene	0.60 U	0.15 J	0.98 UJ	0.78 UJ	1.4 UJ	0.13 J	0.98 UJ
Hexachlorobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Hexachlorobutadiene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Hexachlorocyclopentadiene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Hexachloroethane	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Indeno(1,2,3-cd)pyrene	0.60 U	0.85 J	0.57 J	0.37 J	0.22 J	0.47 J	0.13 J
Isophorone	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
N-Nitrosodipropylamine	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
N-Nitrosodiphenylamine	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Naphthalene	0.60 U	1.3 UJ	0.98 UJ	0.11 J	1.4 UJ	0.22 J	0.98 UJ
Nitrobenzene	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Pentachlorophenol	1.5 U	3.2 UJ	2.5 UJ	1.9 UJ	3.5 UJ	2.4 UJ	2.5 UJ
Phenanthrene	0.60 U	1.5 J	0.76 J	0.39 J	0.54 J	1.2 J	0.37 J
Phenol	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Pyrene	0.60 U	4.3 J	2.4 J	1.6 J	1.2 J	2.3 J	1.3 J
Bis(2-chloroethoxy)methane	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Bis(2-chloroethyl)ether	0.60 U	1.3 UJ	0.98 UJ	0.78 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	0.60 U	1.3 UJ	0.98 UJ	0.77 UJ	1.4 UJ	0.95 UJ	0.98 UJ
Total organic carbon (mg/Kg)	51700	58700 BJ	64200 BJ	77000 BJ	93900 BJ	118000 BJ	50000 e J
Percent solids (%)	56	26	34	43	24	35	34

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T1A	WP-T1A	WP-T1C	WP-T1C	WP-OD2	WP-OD2	WP-OD2
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 10 in.	0 - 6 in.	6 - 12 in.	12 - 22 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
1,2-Dichlorobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
1,3-Dichlorobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
1,4-Dichlorobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Bis(2-chloroisopropyl) ether	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2,4,5-Trichlorophenol	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
2,4,6-Trichlorophenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2,4-Dichlorophenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2,4-Dimethylphenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2,4-Dinitrophenol	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
2,4-Dinitrotoluene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2,6-Dinitrotoluene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2-Chloronaphthalene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2-Chlorophenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2-Methylnaphthalene	0.085 J	0.10 J	0.092 J	0.27 J	1.1 UJ	0.68 UJ	0.53 U
2-Methylphenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
2-Nitroaniline	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
2-Nitrophenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
3,3-Dichlorobenzidine	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
3-Nitroaniline	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
4,6-Dinitro-2-methylphenol	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
4-Bromophenyl phenyl ether	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
4-Chloro-3-methylphenol	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
4-Chloroaniline	0.78 UJ	0.56 UJ	0.48 UJ	0.54 UJ	1.1 UJ	0.68 UJ	0.53 UJ
4-Chlorophenyl phenyl ether	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
4-Methylphenol	0.087 J	0.070 J	0.061 J	0.11 J	1.1 UJ	0.68 UJ	0.53 U
4-Nitroaniline	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
4-Nitrophenol	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
Acenaphthene	0.72 J	0.76	0.12 J	0.33 J	1.1 UJ	0.16 J	0.68
Acenaphthylene	0.59 J	0.31 J	0.088 J	0.16 J	1.1 UJ	0.12 J	0.19 J
Anthracene	3.3 J	3.2 DJ	0.91	2.4	0.19 J	0.32 J	1.6
Benzo(a)anthracene	8.6 DJ	6.8 DJ	2.2	4.6 D	0.89 J	1.6 J	3.4
Benzo[a]pyrene	8.8 DJ	5.8 DJ	2.1 DJ	3.9 DJ	0.51 J	1.2 J	3.0 DJ
Benzo(b)fluoranthene	11 DJ	7.0 DJ	3.1 DJ	5.3 DJ	0.84 J	1.8 J	3.8 DJ
Benzo(ghi)perylene	2.1 J	1.9 DJ	0.72 DJ	1.2 DJ	0.16 J	0.36 J	1.0 DJ
Benzo(k)fluoranthene	4.7 J	3.4 DJ	0.86 DJ	1.9 DJ	0.46 J	0.93 J	1.6 DJ
Butyl benzyl phthalate	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Carbazole	0.10 J	0.082 J	0.48 U	0.089 J	1.1 UJ	0.68 UJ	0.058 J
Chrysene	4.6 J	6.6 DJ	1.6	2.9	1.2 J	0.96 J	2.3
Di-n-butyl phthalate	0.14 J	0.098 J	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T1A	WP-T1A	WP-T1C	WP-T1C	WP-OD2	WP-OD2	WP-OD2
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 10 in.	0 - 6 in.	6 - 12 in.	12 - 22 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.78 UJ	0.56 UJ	0.48 UJ	R	1.1 UJ	0.29 J	0.53 UJ
Dibenzo(a,h)anthracene	0.81 J	0.91 DJ	0.34 DJ	0.61 DJ	1.1 UJ	0.68 UJ	0.44 DJ
Dibenzofuran	0.21 J	0.26 J	0.14 J	0.36 J	1.1 UJ	0.68 UJ	0.095 J
Diethyl phthalate	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Dimethyl phthalate	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Fluoranthene	15 DJ	12 DJ	3.9 D	8.2 D	1.9 J	3.0 J	6.7 D
Fluorene	0.53 J	0.58	0.19 J	0.52 J	1.1 UJ	0.68 UJ	0.29 J
Hexachlorobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Hexachlorobutadiene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Hexachlorocyclopentadiene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Hexachloroethane	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Indeno(1,2,3-cd)pyrene	2.3 J	2.2 DJ	0.82 DJ	1.4 DJ	0.19 J	0.39 J	1.2 DJ
Isophorone	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
N-Nitrosodipropylamine	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
N-Nitrosodiphenylamine	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Naphthalene	0.39 J	0.48 J	0.77	0.93	1.1 UJ	0.093 J	0.095 J
Nitrobenzene	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Pentachlorophenol	1.9 UJ	1.4 U	1.2 U	1.3 U	2.8 UJ	1.7 UJ	1.3 U
Phenanthrene	6.1 DJ	5.6 DJ	2.2	4.8 D	0.48 J	0.61 J	3.5
Phenol	0.091 J	0.092 J	0.049 J	0.075 J	1.1 UJ	0.68 UJ	0.53 U
Pyrene	15 DJ	13 DJ	4.1 D	8.8 D	1.5 J	2.2 J	7.5 D
Bis(2-chloroethoxy)methane	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Bis(2-chloroethyl)ether	0.78 UJ	0.56 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Bis(2-ethylhexyl)phthalate (BEHP)	0.78 UJ	0.58 U	0.48 U	0.54 U	1.1 UJ	0.68 UJ	0.53 U
Total organic carbon (mg/Kg)	50000 e J	85400 J	31100 e	31100	41100 e J	41100 e J	41100 J
Percent solids (%)	43	59	70	63	30	49	63

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T2A	WP-T2A	WP-T2B	WP-T2B	WP-T2B	WP-T2C	WP-T2C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
1,2-Dichlorobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
1,3-Dichlorobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
1,4-Dichlorobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Bis(2-chloroisopropyl) ether	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2,4,5-Trichlorophenol	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
2,4,6-Trichlorophenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2,4-Dichlorophenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2,4-Dimethylphenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2,4-Dinitrophenol	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
2,4-Dinitrotoluene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2,6-Dinitrotoluene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2-Chloronaphthalene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2-Chlorophenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2-Methylnaphthalene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2-Methylphenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
2-Nitroaniline	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
2-Nitrophenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
3,3-Dichlorobenzidine	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
3-Nitroaniline	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
4,6-Dinitro-2-methylphenol	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
4-Bromophenyl phenyl ether	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
4-Chloro-3-methylphenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
4-Chloroaniline	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
4-Chlorophenyl phenyl ether	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
4-Methylphenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
4-Nitroaniline	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
4-Nitrophenol	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
Acenaphthene	1.2 UJ	0.17 J	0.13 J	0.064 J	0.49 U	10 UJ	6.7 U
Acenaphthylene	1.2 UJ	0.16 J	0.12 J	0.10 J	0.49 U	10 UJ	0.79 J
Anthracene	0.35 J	0.71	0.57 J	0.37 J	0.49 U	6.0 J	6.5 J
Benzo(a)anthracene	1.9 J	3.4	1.8 J	1.2	0.10 J	18 J	13
Benzo[a]pyrene	0.90 J	2.8	1.6 J	0.91 J	0.085 J	15 J	11
Benzo(b)fluoranthene	2.6 J	3.7 D	2.2 J	1.4 J	0.10 J	20 J	13
Benzo(ghi)perylene	0.60 J	0.94	0.45 J	0.28 J	0.49 UJ	5.8 J	4.4 J
Benzo(k)fluoranthene	0.57 J	0.98	0.78 J	0.37 J	0.49 UJ	6.0 J	4.3 J
Butyl benzyl phthalate	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Carbazole	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Chrysene	1.4 J	2.5	1.6 J	0.89	0.088 J	15 J	12
Di-n-butyl phthalate	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T2A	WP-T2A	WP-T2B	WP-T2B	WP-T2B	WP-T2C	WP-T2C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	1.2 UJ	0.53 U	1.0 UJ	0.44 UJ	0.49 UJ	10 UJ	6.7 U
Dibenzo(a,h)anthracene	0.22 J	0.35 J	0.20 J	0.13 J	0.49 UJ	2.3 J	1.8 J
Dibenzofuran	1.2 UJ	0.068 J	1.0 UJ	0.045 J	0.49 U	10 UJ	6.7 U
Diethyl phthalate	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Dimethyl phthalate	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Fluoranthene	2.6 J	4.8 D	2.4 J	2.0	0.15 J	30 J	25
Fluorene	1.2 UJ	0.15 J	0.14 J	0.069 J	0.49 U	10 UJ	6.7 U
Hexachlorobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Hexachlorobutadiene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Hexachlorocyclopentadiene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Hexachloroethane	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Indeno(1,2,3-cd)pyrene	0.62 J	1.1	0.53 J	0.36 J	0.49 UJ	6.9 J	4.9 J
Isophorone	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
N-Nitrosodipropylamine	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
N-Nitrosodiphenylamine	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Naphthalene	1.2 UJ	0.15 J	1.0 UJ	0.097 J	0.49 U	10 UJ	6.7 U
Nitrobenzene	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Pentachlorophenol	3.1 UJ	1.3 U	2.5 UJ	1.1 U	1.2 U	25 UJ	17 U
Phenanthrene	0.75 J	1.3	1.0 J	0.72	0.088 J	12 J	8.4
Phenol	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Pyrene	3.0 J	5.3 D	3.1 J	2.3	0.19 J	29 J	20
Bis(2-chloroethoxy)methane	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Bis(2-chloroethyl)ether	1.2 UJ	0.53 U	1.0 UJ	0.44 U	0.49 U	10 UJ	6.7 U
Bis(2-ethylhexyl)phthalate (BEHP)	1.2 UJ	0.53 U	1.0 UJ	0.44 UJ	0.49 U	10 UJ	6.7 U
Total organic carbon (mg/Kg)	49600 BJ	31400 B	49000 J	26400 J	19100	45000 BJ	59000 B
Percent solids (%)	27	63	33	75	68	33	51

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T2C	WP-OD1	WP-OD1	WP-OD1	WP-T3A	WP-T3A DUP	WP-T3A
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 19 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
1,2,4-Trichlorobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
1,2-Dichlorobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
1,3-Dichlorobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
1,4-Dichlorobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Bis(2-chloroisopropyl) ether	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2,4,5-Trichlorophenol	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
2,4,6-Trichlorophenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2,4-Dichlorophenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2,4-Dimethylphenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2,4-Dinitrophenol	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
2,4-Dinitrotoluene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2,6-Dinitrotoluene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2-Chloronaphthalene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2-Chlorophenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2-Methylnaphthalene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2-Methylphenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
2-Nitroaniline	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
2-Nitrophenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
3,3-Dichlorobenzidine	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
3-Nitroaniline	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
4,6-Dinitro-2-methylphenol	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
4-Bromophenyl phenyl ether	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
4-Chloro-3-methylphenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
4-Chloroaniline	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
4-Chlorophenyl phenyl ether	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
4-Methylphenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
4-Nitroaniline	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
4-Nitrophenol	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
Acenaphthene	0.48 U	0.23 J	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Acenaphthylene	0.48 U	0.51 J	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Anthracene	0.48 U	3.0 J	0.29 J	0.63 U	0.13 J	0.17 J	0.20 J
Benzo(a)anthracene	0.48 U	10 DJ	1.3	0.63 U	0.51 J	0.62 J	0.86 J
Benzo[a]pyrene	0.49	9.1 J	1.1 J	0.63 U	0.61 J	0.41 J	0.84 J
Benzo(b)fluoranthene	0.48 U	11 DJ	1.5 J	0.63 U	0.93 J	1.0 J	1.1 J
Benzo(ghi)perylene	0.48 U	3.3 J	0.52 J	0.63 U	0.27 J	0.28 J	0.33 J
Benzo(k)fluoranthene	0.48 U	3.1 J	0.42 J	0.63 U	0.32 J	0.26 J	0.41 J
Butyl benzyl phthalate	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Carbazole	0.48 U	0.13 J	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Chrysene	0.48 U	6.8 J	1.1	0.63 U	0.48 J	0.52 J	0.75 J
Di-n-butyl phthalate	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T2C	WP-OD1	WP-OD1	WP-OD1	WP-T3A	WP-T3A DUP	WP-T3A
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 19 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Di-n-octyl phthalate	0.48 U	1.2 UJ	0.67 UJ	0.63 U	0.14 J	0.16 J	0.93 UJ
Dibenzo(a,h)anthracene	0.48 U	1.1 J	0.19 J	0.63 U	0.12 J	1.1 UJ	0.16 J
Dibenzofuran	0.48 U	0.15 J	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Diethyl phthalate	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Dimethyl phthalate	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Fluoranthene	0.48 U	16 DJ	2.0	0.63 U	0.77 J	0.88 J	1.1 J
Fluorene	0.48 U	0.40 J	0.070 J	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Hexachlorobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Hexachlorobutadiene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Hexachlorocyclopentadiene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Hexachloroethane	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Indeno(1,2,3-cd)pyrene	0.48 U	3.8 J	0.53 J	0.63 U	0.31 J	0.28 J	0.39 J
Isophorone	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
N-Nitrosodipropylamine	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
N-Nitrosodiphenylamine	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Naphthalene	0.48 U	0.27 J	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Nitrobenzene	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Pentachlorophenol	1.2 U	3.1 UJ	1.7 U	1.6 U	2.8 UJ	2.9 UJ	2.3 UJ
Phenanthrene	0.48 U	5.5 J	0.44 J	0.63 U	0.30 J	0.35 J	0.48 J
Phenol	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Pyrene	0.48 U	15 DJ	2.2	0.63 U	0.79 J	1.0 J	1.4 J
Bis(2-chloroethoxy)methane	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Bis(2-chloroethyl)ether	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	0.48 U	1.2 UJ	0.67 U	0.63 U	1.1 UJ	1.1 UJ	0.93 UJ
Total organic carbon (mg/Kg)	11000 B	56500 BJ	60700 B	37600 B	56400 J	69300 BJ	57700 J
Percent solids (%)	70	27	51	53	30	29	36

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T3A	WP-T3B	WP-T3B	WP-T3B	WP-T3C	WP-T3C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 11 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound						
1,2,4-Trichlorobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
1,2-Dichlorobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
1,3-Dichlorobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
1,4-Dichlorobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Bis(2-chloroisopropyl) ether	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2,4,5-Trichlorophenol	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
2,4,6-Trichlorophenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2,4-Dichlorophenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2,4-Dimethylphenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2,4-Dinitrophenol	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
2,4-Dinitrotoluene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2,6-Dinitrotoluene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2-Chloronaphthalene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2-Chlorophenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2-Methylnaphthalene	0.066 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2-Methylphenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
2-Nitroaniline	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
2-Nitrophenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
3,3-Dichlorobenzidine	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
3-Nitroaniline	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
4,6-Dinitro-2-methylphenol	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
4-Bromophenyl phenyl ether	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
4-Chloro-3-methylphenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
4-Chloroaniline	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
4-Chlorophenyl phenyl ether	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
4-Methylphenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
4-Nitroaniline	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
4-Nitrophenol	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
Acenaphthene	0.099 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Acenaphthylene	0.15 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.087 J
Anthracene	1.6	1.1 UJ	0.088 J	0.62 U	1.1 UJ	0.15 J
Benzo(a)anthracene	2.3	0.42 J	0.50 J	0.62 U	0.27 J	0.65 J
Benzo[a]pyrene	2.1	0.34 J	0.48 J	0.62 U	0.45 J	0.66 J
Benzo(b)fluoranthene	2.9	0.75 J	0.67 J	0.62 U	0.51 J	0.97 J
Benzo(ghi)perylene	0.49 J	0.27 J	0.20 J	0.62 U	0.11 J	0.23 J
Benzo(k)fluoranthene	0.95	0.20 J	0.21 J	0.62 U	0.18 J	0.32 J
Butyl benzyl phthalate	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Carbazole	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Chrysene	2.4	0.54 J	0.49 J	0.62 U	0.35 J	0.64 J
Di-n-butyl phthalate	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Semivolatile Organic Compound Concentrations

Sample ID	WP-T3A	WP-T3B	WP-T3B	WP-T3B	WP-T3C	WP-T3C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 11 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound						
Di-n-octyl phthalate	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Dibenzo(a,h)anthracene	0.23 J	1.1 UJ	0.098 J	0.62 U	1.1 UJ	0.095 J
Dibenzofuran	0.093 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Diethyl phthalate	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Dimethyl phthalate	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Fluoranthene	4.9	0.77 J	0.75 J	0.62 U	0.51 J	0.96 J
Fluorene	0.16 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Hexachlorobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Hexachlorobutadiene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Hexachlorocyclopentadiene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Hexachloroethane	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Indeno(1,2,3-cd)pyrene	0.63	0.28 J	0.24 J	0.62 U	0.13 J	0.25 J
Isophorone	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
N-Nitrosodipropylamine	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
N-Nitrosodiphenylamine	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Naphthalene	0.23 J	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.099 J
Nitrobenzene	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Pentachlorophenol	1.5 U	2.9 UJ	1.8 UJ	1.5 U	2.7 UJ	1.9 UJ
Phenanthrene	2.0	0.31 J	0.17 J	0.62 U	0.17 J	0.38 J
Phenol	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Pyrene	4.0	0.84 J	0.82 J	0.62 U	0.55 J	1.2 J
Bis(2-chloroethoxy)methane	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Bis(2-chloroethyl)ether	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Bis(2-ethylhexyl)phthalate (BEHP)	0.62 U	1.1 UJ	0.72 UJ	0.62 U	1.1 UJ	0.74 UJ
Total organic carbon (mg/Kg)	44200 J	39600 BJ	38000 BJ	19700 B	72000 J	63800 J
Percent solids (%)	54	29	46	54	31	45

NOTES: U - not detected, J - estimated value, B - blank contamination.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-LK1	WP-LK2	WP-LK3	WP-LK4	WP-LK5	WP-LK01-A	WP-LK01-A
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/10/2001	05/10/2001
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	19200 J	14500 J	14300 J	16000 J	17600 J	14500 J	11400 J
Antimony	2.4 UJN	3.8 UJN	3.1 UJN	1.8 UJN	1.2 UJN	1.1 UJN	3.2 JN
Arsenic	4.9 BJ	4.0 BJ	6.3 BJ	4.7 BJ	4.7 BJ	4.6 J	6.6 J
Barium	120 BJ	88 BJ	92 BJ	98 BJ	100 BJ	94.1 J	73.8 J
Beryllium	0.86 BJ	0.67 BJ	0.64 BJ	0.70 BJ	0.81 BJ	0.57 J	0.53 J
Cadmium	1.3 BJ	1.4 BJ	0.80 BJ	0.93 BJ	1.2 BJ	0.19 UJ	0.16 J
Calcium	10200 J	11900 J	18800 J	11600 J	11100 J	7600 J	6330 J
Chromium	27 J	26 J	21 J	22 J	24 J	18.4 J	14.6 J
Chromium (Hexavalent)	54 U	86 U	14 U	41 U	28 U	17.9 U	11.5 U
Cobalt	14 BJ	11 BJ	8.8 BJ	11 BJ	13 BJ	8.6 J	9.3 J
Copper	51 J	90 J	90 J	83 J	64 J	36.7 J	30.5 J
Iron	32800 J	31800 J	26900 J	29600 J	32700 J	29800 J	23500 J
Lead	66 J	187 J	79 J	99 J	126 J	49.4 J	41.5 J
Magnesium	8570 J	6950 BJ	8150 J	7310 J	8700 J	7130 J	5540 J
Manganese	707 J	579 J	551 J	1000 J	637 J	594 J	566 J
Mercury	0.31 J	0.57 J	0.29 J	0.33 J	0.30 J	0.35 UJ	0.26 UJ
Nickel	33 BJ	29 BJ	26 BJ	26 BJ	30 J	25.2 J	21.5 J
Potassium	1740 BJ	1510 BJ	1420 BJ	1350 BJ	1360 BJ	1090 J	852 J
Selenium	3.0 UJ	4.8 UJ	3.9 UJ	2.3 UJ	1.6 UJ	2.5 J	1.2 J
Silver	1.4 UJ	2.2 UJ	1.8 UJ	1.1 UJ	0.72 UJ	0.57 UJ	0.42 UJ
Sodium	330 BJ	386 BJ	357 BJ	212 BJ	328 BJ	124 J	82.2 J
Thallium	3.5 UJ	5.5 UJ	4.4 UJ	2.6 UJ	1.8 UJ	2.8 UJN	2.1 UJN
Vanadium	29 BJ	38 BJ	29 BJ	22 BJ	26 BJ	19.8 J	18.8 J
Zinc	221 J	359 J	224 J	228 J	230 J	204 J	136 J
Cyanide, total	2.7 UJ	4.3 UJ	3.5 UJ	2.0 UJ	1.4 UJ	1.9 UJ	1.4 UJ
Cyanide, amenable to chlorination	---	---	---	---	---	---	---
Percent solids (%)	18	12	14	25	36	22.4	34.9
pH	---	---	---	---	---	7.3	7.5
Total organic carbon (mg/Kg)	102000 J	91600 J	63300 J	42100 J	46100 J	99100	47000

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-LK01-A	WP-LK01-B	WP-LK01-B	WP-LK01-B DUP	WP-LK01-B	WP-LK01-C	WP-LK01-C
Location Cross Reference	Background	Background	Background	Background	Background	Background	Background
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth	19 - 25 in.	0 - 6 in.	6 - 12 in.	6 - 12 in.	25 - 31 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	13700 J	14200 J	11700 J	13300 J	13100 J	14600 J	13200 J
Antimony	0.59 UJN	1.2 UJN	0.92 UJN	1 UJN	0.58 UJN	1.1 UJN	0.73 UJN
Arsenic	5 J	5 J	5.2 J	4.3 J	4.9 J	4.1 J	4.8 J
Barium	82.4 J	89.5 J	72.7 J	83.1 J	80.1 J	90.3 J	80.6 J
Beryllium	0.62 J	0.53 J	0.42 J	0.53 J	0.55 J	0.57 J	0.55 J
Cadmium	0.34 J	0.21 UJ	0.16 UJ	0.18 UJ	0.36 J	0.2 UJ	0.2 J
Calcium	9540 J	7030 J	5980 J	6640 J	5350 J	7240 J	6750 J
Chromium	17.2 J	17.7 J	14.7 J	16.5 J	16.5 J	18.3 J	16.6 J
Chromium (Hexavalent)	8.73 U	16 U	12.3 U	11.9 U	8.35 U	13.9 U	11.2 U
Cobalt	9.2 J	7.9 J	6.5 J	7.6 J	8.9 J	8.3 J	8.5 J
Copper	37.8 J	34.2 J	30.2 J	34.2 J	37 J	36.7 J	33.8 J
Iron	28500 J	27000 J	24300 J	27200 J	27500 J	28600 J	26500 J
Lead	61.7 J	45.9 J	41.4 J	46.3 J	58.5 J	46.5 J	43.9 J
Magnesium	6390 J	6850 J	5720 J	6440 J	5800 J	6990 J	6410 J
Manganese	636 J	460 J	541 J	640 J	616 J	569 J	613 J
Mercury	0.2 J	0.4 UJ	0.3 UJ	0.33 UJ	0.21 J	0.37 UJ	0.23 UJ
Nickel	22.9 J	23.5 J	21.8 J	24.1 J	21.8 J	24.3 J	23.9 J
Potassium	932 J	1110 J	888 J	956 J	888 J	1140 J	996 J
Selenium	1.4 J	1.6 UJ	1.7 J	2.1 J	1.6 J	1.5 UJ	2 J
Silver	0.31 UJ	0.64 UJ	0.48 UJ	0.53 UJ	0.3 UJ	0.59 UJ	0.38 UJ
Sodium	66.7 J	145 J	112 J	108 J	62.1 J	148 J	96.7 J
Thallium	1.5 UJN	3.2 UJN	2.4 UJN	2.6 UJN	1.5 UJN	2.9 UJN	1.9 UJN
Vanadium	18.2 J	18.9 J	20.1 J	21.9 J	17.9 J	18.7 J	21.7 J
Zinc	145 J	168 J	141 J	162 J	136 J	162 J	135 J
Cyanide, total	1.1 UJ	2.2 UJ	1.6 UJ	1.8 UJ	1 UJ	3.2 J	1.3 UJ
Cyanide, amenable to chlorination	---	---	---	---	---	3.2 U	---
Percent solids (%)	45.8	25	32.4	33.5	47.9	28.8	35.7
pH	7.9	7.6	7.7	7.7	8.1	7.5	7.8
Total organic carbon (mg/Kg)	33800	66800	62000	55200	54700	58700	55500

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-LK01-C	WP-01-A	WP-04.45-9	WP-09A	WP-11A	LG-OUT	WP-LGOUT2
Location Cross Reference	Background	Section 1	Section 1	Section 1	Section 1	Section 1	Section 1
Sample Date	05/10/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/13/2003
Sample Depth	26 - 32 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	12900 J	10000	10700	7850	4650	7350	10100
Antimony	0.58 UJN	0.52 JN	1.2 JN	0.51 JN	0.63 JN	2.3 JN	0.90 BNJ
Arsenic	4.3 J	6.5	8.9	18.5	10.2	9.9	6.6
Barium	77.7 J	53.5	78.8	61.2	27.8 J	80.1	118
Beryllium	0.53 J	0.45 J	0.43 J	0.45 J	0.27 J	0.36 J	0.45 B
Cadmium	0.31 J	1 J	1.3 J	0.34 J	0.54 J	2.4	1.7
Calcium	9730 J	24900	4140	6120	1460	10800	13000
Chromium	16.4 J	19.2	25.8	24.8 J	25.9 J	29.2	23
Chromium (Hexavalent)	8.03 U	4.94 U	5.46 U	6.1 U	6.13 U	5.18 U	13 U
Cobalt	8.5 J	7.6 J	7.9 J	7.9 J	5.3 J	6.5 J	7.9 B
Copper	36.4 J	47.6	91.4	40.9	172	88	63
Iron	27600 J	34400	43200	28000	14400	30600	33700
Lead	58.9 J	93.6	152	73.2	225	235	141
Magnesium	6190 J	18900	7180	4480	1960	6490	7210
Manganese	666 J	912 J	1790 J	902 JN	440 JN	566 J	345
Mercury	0.19 UJ	0.51	0.15 J	0.17 J	0.44	1.1	0.34
Nickel	22 J	21.8	26	17.1	12.7	34.2	56
Potassium	890 J	636 J	709 J	759 J	297 J	617 J	861 B
Selenium	1.5 J	0.94 J	1.9	1.5	1.2 J	1.1 J	0.74 U
Silver	0.3 UJ	0.17 U	0.27 J	0.19 U	0.2 U	0.19 U	0.34 U
Sodium	67.7 J	68.7 J	81 J	99.2 J	84 J	90.3 J	99 B
Thallium	1.5 UJN	0.86 UJN	0.96 UJN	0.93 UJ	0.98 UJ	0.92 UJN	0.85 U
Vanadium	17.6 J	14	17.6	24.2	10.3 J	16.7	20
Zinc	132 J	163	210	77.8	196	285	262
Cyanide, total	1 UJ	0.6 U	0.66 U	0.65 U	1.1	0.64 U	0.33 BJN
Cyanide, amenable to chlorination	---	---	---	---	1.1 U	---	---
Percent solids (%)	49.8	81	73.2	65.6	65.2	77.2	75
pH	7.6	8.2	8.1	8.1	8.4	8.3	---
Total organic carbon (mg/Kg)	38800	18600	22100	65500	76500	56000	12400 J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-MW4	WP-MW4 DUP	WP-16	WP-18	WP-18	WP-M2	WP-M2
Location Cross Reference	Section 1	Section 1	Section 1	Section 2	Section 2	Section 2	Section 2
Sample Date	05/13/2003	05/13/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003	05/14/2003
Sample Depth	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	12000	12600	10800	9880	10100	15400 J	10600
Antimony	0.87 BNJ	25 NJ	0.87 JN	0.41 UJN	0.43 UJN	1.7 BNJ	0.66 UJN
Arsenic	6.3	8.4	7	5	5.6	6.6 BJ*	15 J
Barium	62	74	57.1	31 J	33.5 J	93 BJ	46 B
Beryllium	0.48 B	0.52 B	0.43 J	0.48 J	0.47 J	0.77 BJ	0.45 B
Cadmium	1.2 B	1.2 B	1.9	0.2 J	0.098 J	1.8 BJ	2.6
Calcium	5390	9830	2130	2500	2900	9540 J	2350
Chromium	18	17	17	16.7	16.4	34 J	482
Chromium (Hexavalent)	12 U	13 U	5.09 U	5.85 U	6.26 U	36 U	15 U
Cobalt	8.4 B	9.5 B	7.3 J	9 J	9 J	14 BJ	10 B
Copper	53	62	61	16.4	16.2	58 J	71
Iron	35600	41000	33400	27000	26500	35600 J	25900
Lead	130	1450	66.5	23.6	20.2	129 J	210
Magnesium	7290	7330	6880	4830	4960	8490 J	5830
Manganese	541	579	489 J	293 J	244 J	874 J	324
Mercury	0.16	0.14	0.17 J	0.15 J	0.44 J	0.83 J	34
Nickel	25	26	23.2	21	20.2	32 J	24
Potassium	817 B	710 B	748 J	1180 J	1140 J	1150 BJ	766 B
Selenium	0.69 U	0.71 U	1 J	1 J	0.94 J	2.0 UJ	0.84 U
Silver	0.32 U	0.33 U	0.18 U	0.21 U	0.22 U	0.94 UJ	0.39 U
Sodium	83 B	74 B	50.8 J	87.9 J	78.6 J	159 BJ	58 U
Thallium	0.79 U	0.81 U	0.87 UJN	1.1 UJN	1.1 UJN	2.3 UJ	1.1 B
Vanadium	17	18	15.6	16.2	15.9	24 BJ	18
Zinc	231	246	309	74.3	68.6	325 J	396
Cyanide, total	0.34 BJN	0.35 BJN	0.6 U	0.74 U	0.76 U	1.3 BJN	5.1 JN
Cyanide, amenable to chlorination	---	---	---	---	---	---	5.1 U
Percent solids (%)	81	79	78.6	68.4	63.9	28	66
pH	---	---	8.2	7.5	7.4	---	---
Total organic carbon (mg/Kg)	25400	12100	8770	23400	24400	11300 e BJ	11300 e BJ

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-M2	WP-M3	WP-M3	WP-DOT	WP-DOT	WP-DOT	WP-29A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	12 - 17 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	10900	9500 J	10900	14400	12400	11700	9600
Antimony	0.55 UJN	1.1 UJN	92 NJ	5.4 BNJ	27 NJ	0.60 UJN	13 BNJ
Arsenic	14 J	5.5 J*	33 J	9.5 J	103 J	35 J	5.7 J
Barium	37 B	53 BJ	63	33 B	68	54 B	80
Beryllium	0.45 B	0.50 BJ	0.60 B	0.53 B	0.61 B	0.50 B	0.43 B
Cadmium	1.2 B	1.4 BJ	23	4.2	53	7.4	3.6
Calcium	1170 B	17000 J	13100	3820	4810	2290	4220
Chromium	465	27 J	280	50	2270	2130	55
Chromium (Hexavalent)	13 U	25 U	15 U	16 U	16 U	14 U	17 U
Cobalt	9.4 B	10 BJ	11 B	13 B	9.7 B	9.9 B	12 B
Copper	51	77 J	187	44	426	214	56
Iron	28200	23100 J	25000	35900	26500	26500	21900
Lead	174	182 J	399	113	803	452	106
Magnesium	5670	11400 J	9670	8960	7060	5950	5970
Manganese	285	527 J	418	339	320	229	272
Mercury	68	0.73 J	27	0.86	186	88	4.6
Nickel	22	24 J	23	33	22	22	27
Potassium	647 B	821 BJ	1000 B	724 B	937 B	844 B	705 B
Selenium	0.71 U	1.4 UJ	1.2 B	0.88 U	0.92 U	0.76 U	0.96 U
Silver	0.33 U	0.66 UJ	0.40 U	0.41 U	0.43 U	0.35 U	0.44 U
Sodium	37 U	138 BJ	99 U	80 U	156 U	106 U	85 U
Thallium	0.85 B	1.6 UJ	0.98 U	1.0 B	1.2 B	0.87 U	1.2 B
Vanadium	13	22 BJ	16	18	16 B	15	15 B
Zinc	195	294 J	1780	732	4650	1210	466
Cyanide, total	1.7 JN	1.3 UJN	16 JN	0.52 BJN	26 JN	2.7 JN	0.32 BJN
Cyanide, amenable to chlorination	1.7 U	---	16 U	---	26 U	2.7 U	---
Percent solids (%)	79	39	65	64	61	73	59
pH	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	11300 BJ	63800 BJ	50000 e BJ	13400 BJ	13400 e BJ	13400 e BJ	50000 e BJ

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

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Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-29A	WP-29A DUP	WP-29A	WP-29	WP-29	WP-29	WP-CKOUT
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/09/2001	05/09/2001	05/09/2001	05/14/2003
Sample Depth	6 - 12 in.	6 - 12 in.	12 - 17 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	13000	11600	18700	11800	10500	12800	11400
Antimony	91 NJ	105 NJ	0.73 UJN	159 JN	3 JN	0.48 UJN	1.7 BNJ
Arsenic	162 J	114	31 J	20	26.6	43.9	18
Barium	82	70 B	44 B	68.8 J	31.1 J	80.7	130
Beryllium	0.69 B	0.60 B	0.73 B	0.53 J	0.44 J	0.6 J	0.59 B
Cadmium	79	68	7.0	26.5	32.1	9.9	1.8
Calcium	6140	5380	2280	5840	2360	3900	3200
Chromium	2000	1490	1040	267 J	620 J	4120 J	64
Chromium (Hexavalent)	19 U	18 U	17 U	7.12 U	6.43 U	6.87 U	14 U
Cobalt	10 B	8.9 B	13 B	10.8 J	6.6 J	9.4 J	12 B
Copper	504	391	173	154	115	462	154
Iron	26900	23900	41600	26900	25500	30300	30000
Lead	1050	859	348	376	321	637	182
Magnesium	6910	6410	10600	7320	5570	6190	4860
Manganese	369	316	254	366 JN	208 JN	322 JN	2390
Mercury	144	130 J	95	31.9	86.8	118	9.6 J
Nickel	23	20	37	24.6	18	21.3	25
Potassium	1080 B	901 B	883 B	1000 J	679 J	1180 J	888 B
Selenium	1.1 U	1.3 B	0.93 U	1.4 J	0.49 J	2.1	1.8
Silver	0.49 U	0.47 U	0.43 U	0.29 U	0.2 U	0.25 J	0.37 U
Sodium	119 U	92 U	64 U	112 J	47.8 J	97.6 J	114 U
Thallium	1.4 B	1.2 U	1.1 U	1.4 UJ	0.97 UJ	1.2 UJ	2.2 B
Vanadium	17 B	15 B	24	15.5 J	12.1 J	16.4 J	19
Zinc	6500	5410	926	1980	2610	1330	836
Cyanide, total	34 JN	34 JN	6.2 JN	27.7	6	6.1	0.27 BJN
Cyanide, amenable to chlorination	34 U	34 U	6.2 U	27.7 U	6 U	6.1 U	---
Percent solids (%)	53	55	60	56.2	62.2	58.2	70
pH	---	---	---	8.4	7.8	7.6	---
Total organic carbon (mg/Kg)	62900 BJ	70100 BJ	50000 e BJ	21700	7330	105000	35900

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-OD3	WP-OD3	WP-PL	WP-PL DUP	WP-PL	WP-PL1	WP-PL1
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2
Sample Date	05/14/2003	05/14/2003	05/08/2001	05/08/2001	05/08/2001	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	0 - 6 in.	6 - 11 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	9310	11300	12500 J	11900 J	14000 J	16000 J	16700 J
Antimony	1.7 BNJ	2.9 BNJ	6.3 JN	4.5 JN	3.4 JN	7.1 BNJ	4.7 BNJ
Arsenic	6.4	7.0	16.4 J	9.6 J	105	13 J	28 J
Barium	58	58 B	73.9 J	70.4 J	87.3 J	90 BJ	106 J
Beryllium	0.41 B	0.54 B	0.63 J	0.59 J	0.67 J	0.79 BJ	0.83 BJ
Cadmium	1.7	2.3	8.5 J	6.4 J	19.1	4.6 J	2.3 BJ
Calcium	1780	1880	6040 J	5930 J	4230	7220 J	5050 J
Chromium	48	89	544 J	412 J	3760 J	335 J	474 J
Chromium (Hexavalent)	14 U	15 U	15.6 U	16.2 U	10.1 U	35 U	24 U
Cobalt	8.2 B	9.7 B	13.3 J	11.9 J	9.6 J	14 BJ	12 BJ
Copper	68	104	183 J	158 J	345	109 J	104 J
Iron	24600	23100	28400 J	25600 J	27800	30000 J	26200 J
Lead	130	243	279 J	281 J	629	181 J	213 J
Magnesium	5110	5250	5700 J	5350 J	4990	6570 J	5670 J
Manganese	690	171	386 JN	408 JN	354 JN	456 J	276 J
Mercury	1.2 J	2.4 J	17 J	9 J	182	8.5 J	14 J
Nickel	19	22	40.7 J	37 J	22.9	37 J	25 J
Potassium	599 B	887 B	1330 J	1230 J	1140 J	1470 BJ	1170 BJ
Selenium	0.78 U	0.82 U	3.3 J	1.7 J	3.5	2.0 UJ	1.4 BJ
Silver	0.36 U	0.38 U	1.2 J	1.1 J	0.55 J	0.91 UJ	0.61 UJ
Sodium	49 U	72 U	189 J	176 J	147 J	185 BJ	133 BJ
Thallium	1.4 B	1.5 B	2.7 UJ	2.5 UJ	1.8 UJ	2.2 UJ	1.5 UJ
Vanadium	13 B	15	21.2 J	20.5 J	17.2 J	25 BJ	20 BJ
Zinc	244	307	825 J	654 J	1820	501 J	275 J
Cyanide, total	0.69 UJN	0.28 BJN	7.3 J	1.7 UJ	41.6	0.87 BJ	0.52 BJ
Cyanide, amenable to chlorination	---	---	2.2	---	12.7	---	---
Percent solids (%)	72	68	25.6	24.7	39.5	29	43
pH	---	---	7.2	7.7	7.4	---	---
Total organic carbon (mg/Kg)	30500 e	30500	115000	115000	82300	108000 J	80500 J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-PL1	WP-PL2	WP-PL2	WP-PL2	WP-PL3	WP-PL3	WP-T1A
Location Cross Reference	Section 2	Section 2	Section 2	Section 2	Section 2	Section 2	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/14/2003
Sample Depth	12 - 18 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	16600	15000 J	15700 J	13200 J	15900 J	17100 J	13700 J
Antimony	0.79 UJN	1.7 UJN	1.3 UJN	7.8 BNJ	1.8 UJN	21 BNJ	1.3 UJN
Arsenic	4.5	3.4 BJ	5.6 BJ	20 J	4.3 BJ	34 J	6.8 J
Barium	105	79 BJ	86 BJ	77 BJ	87 BJ	103 BJ	68 BJ
Beryllium	0.80 B	0.74 BJ	0.78 BJ	0.63 BJ	0.79 BJ	0.82 BJ	0.67 BJ
Cadmium	0.40 B	4.7 J	5.0 J	4.7 J	4.9 J	8.9 J	1.9 BJ
Calcium	4340	6420 J	5450 J	3670 J	7350 J	5310 J	5910 J
Chromium	24	204 J	211 J	574 J	244 J	1170 J	53 J
Chromium (Hexavalent)	18 U	38 U	30 U	24 U	42 U	28 U	29 U
Cobalt	12 B	13 BJ	13 BJ	9.7 BJ	14 BJ	13 BJ	17 BJ
Copper	24	162 J	195 J	112 J	146 J	225 J	70 J
Iron	24300	25500 J	27000 J	22600 J	27800 J	27900 J	28700 J
Lead	19	297 J	405 J	193 J	258 J	435 J	87 J
Magnesium	5800	6200 J	6190 J	4750 J	6590 J	5940 J	6250 J
Manganese	299	335 J	301 J	256 J	349 J	335 J	527 J
Mercury	0.30	8.1 J	8.5 J	20 J	9.5 J	27 J	1.7 J
Nickel	24	41 J	36 J	21 J	43 J	29 J	35 J
Potassium	1040 B	1490 BJ	1350 BJ	954 BJ	1540 BJ	1360 BJ	1190 BJ
Selenium	1.1 B	2.1 UJ	2.0 BJ	1.3 UJ	2.3 UJ	1.9 BJ	1.6 UJ
Silver	0.47 U	0.98 UJ	0.97 BJ	0.61 UJ	1.1 UJ	0.74 UJ	0.76 UJ
Sodium	100 B	221 BJ	189 BJ	134 BJ	249 BJ	199 BJ	137 BJ
Thallium	1.1 U	2.4 UJ	1.9 UJ	1.5 UJ	3.0 BJ	1.8 UJ	3.3 BJ
Vanadium	18	22 BJ	25 BJ	16 BJ	25 BJ	24 BJ	24 BJ
Zinc	79	488 J	515 J	431 J	492 J	887 J	240 J
Cyanide, total	0.65 B	1.9 UJ	0.49 BJ	8.0 J	0.68 BJ	11 J	0.65 BJ
Cyanide, amenable to chlorination	---	---	---	1.7	---	11 U	---
Percent solids (%)	56	26	34	43	24	35	34
pH	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	51700	58700 BJ	64200 BJ	77000 BJ	93900 BJ	118000 BJ	50000 e J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-T1A	WP-T1A	WP-T1C	WP-T1C	WP-OD2	WP-OD2	WP-OD2
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 10 in.	0 - 6 in.	6 - 12 in.	12 - 22 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	12900 J	13500	9690	11500	12600 J	11700 J	12700
Antimony	3.7 BNJ	0.75 UJN	40 NJ	52 NJ	1.5 UJN	0.91 UJN	0.70 UJN
Arsenic	8.0 J	13	6.2	22	5.3 BJ	5.1 J	16
Barium	69 BJ	57 B	42 B	60 B	66 BJ	60 BJ	48 B
Beryllium	0.66 BJ	0.62 B	0.46 B	0.58 B	0.61 BJ	0.54 BJ	0.56 B
Cadmium	4.5 J	1.6 B	3.3	13	2.3 BJ	2.2 J	4.0
Calcium	4730 J	2700	4590	4060	5310 J	3120 J	1950
Chromium	148 J	242	74	274	68 J	78 J	351
Chromium (Hexavalent)	23 U	17 U	14 U	16 U	33 U	21 U	16 U
Cobalt	14 BJ	11 B	10 B	10 B	14 BJ	12 BJ	12 B
Copper	117 J	48	61	132	69 J	63 J	55
Iron	25900 J	26000	22400	24900	25300 J	24900 J	27800
Lead	210 J	101	92	230	96 J	111 J	102
Magnesium	5960 J	5920	5590	5550	6150 J	5370 J	5780
Manganese	351 J	284	363	306	433 J	305 J	284
Mercury	4.6 J	3.1 J	4.8 J	20 J	1.9 J	2.5 J	19 J
Nickel	35 J	23	22	22	36 J	31 J	24
Potassium	1090 BJ	1020 B	756 B	916 B	1260 BJ	951 BJ	1080 B
Selenium	1.5 BJ	0.95 U	0.80 U	0.90 U	1.8 UJ	1.2 UJ	0.90 U
Silver	0.61 UJ	0.44 U	0.37 U	0.42 U	0.86 UJ	0.53 UJ	0.42 U
Sodium	102 BJ	69 U	124 U	115 U	156 BJ	90 BJ	381 U
Thallium	3.0 BJ	1.1 B	1.0 B	1.5 B	2.4 BJ	1.3 UJ	1.6 B
Vanadium	25 J	16 B	14 B	15 B	24 BJ	21 J	16 B
Zinc	452 J	192	323	1050	266 J	250 J	442
Cyanide, total	0.84 BJN	0.33 BN	3.9 N	4.3 N	1.7 UJN	0.34 UJN	0.80 UN
Cyanide, amenable to chlorination	---	---	3.9 U	4.3 U	---	---	---
Percent solids (%)	43	59	70	63	30	49	63
pH	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	50000 e J	85400 J	31100 e	31100	41100 e J	41100 e J	41100 J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-T2A	WP-T2A	WP-T2B	WP-T2B	WP-T2B	WP-T2C	WP-T2C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	0 - 6 in.	6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	13100 J	10300	14700 J	11800	11400	11900 J	14000
Antimony	1.6 UJN	8.9 BNJ	1.4 UJN	0.58 UJN	0.65 UJN	1.3 UJN	0.87 UJN
Arsenic	5.3 BJ	7.5	6.5 J	3.8	2.2 B	7.7 J	40
Barium	70 BJ	45 B	78 BJ	28 B	41 B	65 BJ	60 B
Beryllium	0.70 BJ	0.44 B	0.69 BJ	0.38 B	0.44 B	0.61 BJ	0.64 B
Cadmium	1.9 BJ	2.8	1.5 BJ	1.1 B	0.56 B	4.6 J	5.6
Calcium	6070 J	2290	7300 J	1630	1740	6760 J	3170
Chromium	58 J	119	34 J	27	17	64 J	826
Chromium (Hexavalent)	15 U	6.3 U	31 U	13 U	15 U	31 U	20 U
Cobalt	14 BJ	11 B	18 BJ	14	10 B	18 BJ	14 B
Copper	69 J	46	50 J	22	14	90 J	129
Iron	27500 J	22400	29600 J	26900	23300	25700 J	27800
Lead	86 J	91	106 J	40	26	125 J	287
Magnesium	6270 J	4830	7780 J	7170	5240	6670 J	6280
Manganese	633 J	228	506 J	248	247	421 J	290
Mercury	1.4 J	3.9	0.46 J	0.17	0.18	1.7 J	33
Nickel	32 J	21	35 J	26	20	37 J	29
Potassium	1400 BJ	896 B	1540 BJ	740 B	960 B	1310 BJ	1270 B
Selenium	2.0 UJ	0.89 U	1.7 UJ	0.74 U	0.82 U	1.7 UJ	1.1 U
Silver	0.95 UJ	0.41 U	0.80 UJ	0.34 U	0.38 U	0.80 UJ	0.51 U
Sodium	184 BJ	76 B	195 BJ	56 B	88 B	163 BJ	124 B
Thallium	2.3 UJ	1.0 U	2.0 UJ	0.86 BJ	1.5 BJ	2.0 UJ	1.3 U
Vanadium	22 BJ	13 B	23 BJ	13 B	13 B	22 BJ	18 B
Zinc	265 J	311	238 J	155	82	470 J	588
Cyanide, total	1.8 UJ	0.44 B	1.5 UJ	0.33 B	0.74 U	1.5 UJ	1.5
Cyanide, amenable to chlorination	---	---	---	---	---	---	1.5 U
Percent solids (%)	27	63	33	75	68	33	51
pH	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	49600 BJ	31400 B	49000 J	26400 J	19100	45000 BJ	59000 B

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-T2C	WP-OD1	WP-OD1	WP-OD1	WP-T3A	WP-T3A DUP	WP-T3A
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 19 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	13400	12200 J	17000	15800	15800 J	14600 J	19000 J
Antimony	0.63 UJN	1.6 UJN	0.87 UJN	0.83 UJN	1.5 UJN	1.5 UJN	1.2 UJN
Arsenic	3.8	16 J	21	5.0	6.1 BJ	6.1 BJ	10 J
Barium	45 B	67 BJ	87	81	92 BJ	84 BJ	95 BJ
Beryllium	0.50 B	0.69 BJ	0.83 B	0.79 B	0.82 BJ	0.73 BJ	0.94 BJ
Cadmium	0.42 B	5.8 J	1.8 B	0.58 B	2.8 BJ	2.4 BJ	3.7 J
Calcium	1710	6940 J	3700	3130	8830 J	8110 J	10200 J
Chromium	31	247 J	566	23	66 J	60 J	110 J
Chromium (Hexavalent)	5.7 U	15 U	20 U	19 U	34 U	34 U	28 U
Cobalt	10 B	20 BJ	14 B	12 B	17 BJ	15 BJ	19 BJ
Copper	18	89 J	89	23	84 J	73 J	99 J
Iron	25500	28000 J	29200	26800	30800 J	28300 J	38100 J
Lead	37	138 J	218	66	106 J	94 J	136 J
Magnesium	6130	6070 J	6320	5930	8070 J	7860 J	12900 J
Manganese	242	450 J	366	374	469 J	445 J	492 J
Mercury	0.095	8.3 J	20	0.11	1.1 J	1.3 J	2.7 J
Nickel	23	47 J	29	26	42 J	38 J	48 J
Potassium	990 B	1490 BJ	1560 B	1470 B	1900 BJ	1720 BJ	1840 BJ
Selenium	0.80 U	2.1 UJ	1.1 U	1.1 U	1.9 UJ	1.9 UJ	1.5 UJ
Silver	0.37 U	0.97 UJ	0.51 U	0.49 U	0.88 UJ	0.90 UJ	0.72 UJ
Sodium	99 B	222 BJ	185 B	165 B	223 BJ	207 BJ	180 BJ
Thallium	0.91 U	3.1 BJ	1.7 BJ	2.2 BJ	2.2 UJ	2.2 UJ	1.8 UJ
Vanadium	15	28 BJ	23	22	38 J	31 BJ	51 J
Zinc	73	611 J	251	84	316 J	281 J	364 J
Cyanide, total	0.27 B	1.9 UJ	0.60 B	0.95 U	1.7 UJ	1.7 UJ	1.4 UJ
Cyanide, amenable to chlorination	---	---	---	---	---	---	---
Percent solids (%)	70	27	51	53	30	29	36
pH	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	11000 B	56500 BJ	60700 B	37600 B	56400 J	69300 BJ	57700 J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations

Sample ID	WP-T3A	WP-T3B	WP-T3B	WP-T3B	WP-T3C	WP-T3C
Location Cross Reference	Section 3	Section 3	Section 3	Section 3	Section 3	Section 3
Sample Date	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth	12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 11 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound						
Aluminum	15900	14500 J	16500 J	16600	15700 J	15400 J
Antimony	2.4 BNJ	1.5 UJN	0.96 UJN	0.82 UJN	1.4 UJN	1.3 BNJ
Arsenic	30	5.0 BJ	8.4 J	6.4	5.8 BJ	9.3 J
Barium	86	94 BJ	91 J	81	92 BJ	91 J
Beryllium	0.76 B	0.79 BJ	0.82 BJ	0.80 B	0.89 BJ	0.81 BJ
Cadmium	5.3	1.7 BJ	1.5 BJ	0.61 B	2.6 BJ	3.4 J
Calcium	4460	11500 J	4860 J	3150	8620 J	5800 J
Chromium	322	44 J	159 J	53	60 J	115 J
Chromium (Hexavalent)	18 U	14 U	8.7 U	7.4 U	32 U	22 U
Cobalt	13 B	14 BJ	15 BJ	14 B	15 BJ	14 BJ
Copper	81	56 J	53 J	29	79 J	78 J
Iron	27900	30200 J	30200 J	29600	31500 J	31100 J
Lead	160	67 J	94 J	188	94 J	125 J
Magnesium	6970	7180 J	7110 J	6520	7830 J	6830 J
Manganese	400	702 J	495 J	430	508 J	466 J
Mercury	13	0.77 J	0.44 J	0.13	0.84 J	4.9 J
Nickel	27	31 J	34 J	29	41 J	33 J
Potassium	1610 B	1750 BJ	1650 BJ	1640 B	2010 BJ	1590 BJ
Selenium	1.1 B	2.0 UJ	1.2 UJ	1.0 U	1.8 UJ	1.5 BJ
Silver	0.48 U	0.91 UJ	0.57 UJ	0.48 U	0.83 UJ	0.58 UJ
Sodium	129 B	195 BJ	144 BJ	132 B	249 BJ	179 BJ
Thallium	1.2 U	2.3 BJ	2.5 BJ	2.0 BJ	2.1 UJ	1.4 UJ
Vanadium	21	25 BJ	28 J	23	42 J	28 J
Zinc	508	222 J	179 J	92	269 J	353 J
Cyanide, total	2.7	1.7 UJ	1.1 UJ	0.93 U	1.6 UJ	0.36 BJ
Cyanide, amenable to chlorination	2.7 U	---	---	---	---	---
Percent solids (%)	54	29	46	54	31	45
pH	---	---	---	---	---	---
Total organic carbon (mg/Kg)	44200 J	39600 BJ	38000 BJ	19700 B	72000 J	63800 J

NOTES: U - not detected, J - estimated value, B - blank contamination, N - presumptive evidence to tentatively identify the compound.
e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%.
Sample locations are defined as: Background - upstream of site. Section 1 - adjacent to site. Section 2 - downstream of site. Section 3 - lower portion of creek.

DRAFT - Table A-4
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Sediment Samples
Pesticides/PCB Data

Sample ID	WP-LK01-A	WP-LK01-A	WP-LK01-A	WP-LK01-B	WP-LK01-B	WP-LK01-B	WP-LK01-C
Location Cross Reference							
Sample Date	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth	0 - 72 in.	6 - 144 in.	19 - 300 in.	0 - 72 in.	6 - 144 in.	25 - 372 in.	0 - 72 in.
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
4,4'-DDD	13 UJ	9.5 UJ	9.2 J	15 UJ	11 UJ	12 J	14 UJ
4,4'-DDE	13 UJ	9.5 UJ	9.4 J	15 UJ	6.7 J	13 JP	14 UJ
4,4'-DDT	13 UJ	9.5 UJ	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Aldrin	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
Aroclor 1016	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Aroclor 1221	260 UJ	190 UJ	140 UJ	290 UJ	220 UJ	140 UJ	67 UJ
Aroclor 1232	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Aroclor 1242	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Aroclor 1248	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Aroclor 1254	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Aroclor 1260	130 UJ	95 UJ	70 UJ	150 UJ	110 UJ	69 UJ	140 UJ
Dieldrin	13 UJ	9.5 UJ	3.2 J	15 UJ	11 UJ	6.9 UJ	14 UJ
Endosulfan I	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
Endosulfan II	13 UJ	9.5 UJ	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Endosulfan sulfate	13 UJ	9.8 JNP	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Endrin	13 UJ	5.7 JP	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Endrin aldehyde	13 UJ	9.5 UJ	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Endrin ketone	13 UJ	9.5 UJ	7 UJ	15 UJ	11 UJ	6.9 UJ	14 UJ
Heptachlor	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
Heptachlor epoxide	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
Methoxychlor	65 UJ	47 UJ	35 UJ	73 UJ	55 UJ	34 UJ	67 UJ
Toxaphene	650 UJ	470 UJ	350 UJ	730 UJ	550 UJ	340 UJ	670 UJ
alpha-BHC	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
alpha-Chlordane	6.5 UJ	4.7 UJ	3.5 UJ	BJ UJ	3.6 JP	3.4 UJ	6.8 UJ
beta-BHC	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
delta-BHC	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
gamma-BHC (Lindane)	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	3.4 UJ	6.8 UJ
gamma-Chlordane	6.5 UJ	4.7 UJ	3.5 UJ	7.3 UJ	5.5 UJ	2 J	6.8 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

DRAFT - Table A-4
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Sediment Samples
Pesticides/PCB Data

Sample ID	WP-LK01-C	WP-LK01-C	WP-01-A	WP-04.45-9	WP-09A	WP-11A	LG-OUT
Location Cross Reference							
Sample Date	05/10/2001	05/10/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001
Sample Depth	6 - 144 in.	26 - 384 in.	0 - 72 in.	0 - 72 in.	0 - 72 in.	0 - 72 in.	0 - 72 in.
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
4,4'-DDD	8.6 UJ	6.9 UJ	4 U	4.4 U	4.3 U	4.5 U	2.9 JP
4,4'-DDE	7.8 J	8 JP	4 U	4.4 U	4.3 U	4.5 U	4.3 U
4,4'-DDT	8.6 UJ	6.9 UJ	4 U	6.6 BPJ	4.3 U	4.5 U	5.4 BPJN
Aldrin	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
Aroclor 1016	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Aroclor 1221	170 UJ	140 UJ	80 U	89 U	86 U	90 U	85 U
Aroclor 1232	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Aroclor 1242	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Aroclor 1248	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Aroclor 1254	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Aroclor 1260	86 UJ	69 UJ	40 U	44 U	43 U	45 U	43 U
Dieldrin	8.6 UJ	6.9 UJ	4 U	4.4 U	6.8 PNJ	4.5 U	4.3 U
Endosulfan I	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
Endosulfan II	8.6 UJ	6.9 UJ	4 U	4.4 U	4.3 U	4.5 U	4.3 U
Endosulfan sulfate	8.6 UJ	6.9 UJ	4 U	4.4 U	4.3 U	4.5 U	4.3 U
Endrin	8.6 UJ	6.9 UJ	4 U	R	R	4.5 U	R
Endrin aldehyde	R	6.9 UJ	4 U	4.4 U	4.3 U	4.5 U	4.3 U
Endrin ketone	8.6 UJ	6.9 UJ	4 U	4.4 U	4.3 U	4.5 U	R
Heptachlor	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
Heptachlor epoxide	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
Methoxychlor	43 UJ	34 UJ	20 U	22 U	22 UJ	23 UJ	21 U
Toxaphene	430 UJ	340 UJ	200 U	220 U	220 U	230 U	210 U
alpha-BHC	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
alpha-Chlordane	2.5 JP	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
beta-BHC	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
delta-BHC	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
gamma-BHC (Lindane)	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U
gamma-Chlordane	4.3 UJ	3.4 UJ	2 U	2.2 U	2.2 U	2.3 U	2.1 U

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

DRAFT - Table A-4
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Sediment Samples
Pesticides/PCB Data

Sample ID	WP-16	WP-18	WP-18	WP-29	WP-29	WP-29	WP-PL
Location Cross Reference							
Sample Date	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/08/2001
Sample Depth	0 - 72 in.	0 - 72 in.	6 - 144 in.	0 - 72 in.	6 - 144 in.	12 - 216 in.	0 - 72 in.
Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Compound							
4,4'-DDD	4 U	4.9 U	2.5 JP	6.6 U	4.5 U	5.7 U	12 JP
4,4'-DDE	4 U	4.9 U	3.9 U	6.6 U	4.5 U	5.7 U	12 UJ
4,4'-DDT	4 U	4.9 U	3.9 U	6.6 U	4.5 U	5.7 U	12 UJ
Aldrin	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
Aroclor 1016	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Aroclor 1221	80 U	98 U	78 U	130 U	90 U	67 U	250 UJ
Aroclor 1232	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Aroclor 1242	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Aroclor 1248	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Aroclor 1254	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Aroclor 1260	40 U	49 U	39 U	66 U	45 U	33 U	120 UJ
Dieldrin	4 U	5.3 JP	3.9 U	6.6 U	4.5 U	5.7 U	12 UJ
Endosulfan I	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
Endosulfan II	4 U	4.9 U	3.9 U	6.6 U	3 BJ	6.4 BPJN	6.8 BJ
Endosulfan sulfate	4 U	4.9 U	3.9 U	6.6 U	4.5 U	5.7 U	12 UJ
Endrin	4 U	3.3 J	3.9 U	6.6 U	4.5 U	5.7 U	R
Endrin aldehyde	4 U	4.9 U	3.9 U	6.6 U	4.5 U	5.7 U	12 UJ
Endrin ketone	4 U	4.9 U	4.6 PJN	6.6 U	13 PJ	32 JN	7 JP
Heptachlor	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
Heptachlor epoxide	2 U	2.5 U	1 JP	3.3 U	2.2 U	2.8 U	6.2 UJ
Methoxychlor	20 U	25 U	20 U	66 UJ	22 UJ	17 UJ	62 UJ
Toxaphene	200 U	250 U	200 U	660 U	220 U	170 U	170 UJ
alpha-BHC	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 JP	6.2 UJ
alpha-Chlordane	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
beta-BHC	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
delta-BHC	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
gamma-BHC (Lindane)	2 U	2.5 U	2 U	3.3 U	2.2 U	2.8 U	6.2 UJ
gamma-Chlordane	2 U	2.5 U	2 U	3.3 U	2.2 U	R	6.2 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

DRAFT - Table A-4
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Sediment Samples
Pesticides/PCB Data

Sample ID	WP-PL
Location Cross Reference	
Sample Date	05/08/2001
Sample Depth	6 - 132 in.
Units	ug/Kg
Compound	
4,4'-DDD	8.4 UJ
4,4'-DDE	8.4 UJ
4,4'-DDT	8.4 UJ
Aldrin	4.2 UJ
Aroclor 1016	84 UJ
Aroclor 1221	170 UJ
Aroclor 1232	84 UJ
Aroclor 1242	84 UJ
Aroclor 1248	84 UJ
Aroclor 1254	84 UJ
Aroclor 1260	84 UJ
Dieldrin	8.4 UJ
Endosulfan I	4.2 UJ
Endosulfan II	4.9 BJP
Endosulfan sulfate	8.4 UJ
Endrin	8.4 UJ
Endrin aldehyde	8.4 UJ
Endrin ketone	8.4 UJ
Heptachlor	4.2 UJ
Heptachlor epoxide	4.2 UJ
Methoxychlor	42 UJ
Toxaphene	420 UJ
alpha-BHC	4.2 UJ
alpha-Chlordane	4.2 UJ
beta-BHC	4.2 UJ
delta-BHC	4.2 UJ
gamma-BHC (Lindane)	4.2 UJ
gamma-Chlordane	4.2 UJ

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

DRAFT - Table A-5
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Surface Water Samples
Volatile Organic Compound Data

Sample ID	Wappingers Lake	Site Bridge 1	Site Bridge 2	WP13-SW	WP18-SW	WP35-SW
Location Cross Reference	Route 9D	WP5-SW	WP10-SW			
Sample Date	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001
Sample Depth						
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound						
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10 U	3 J	10 U	10 U	10 U	10 U
Carbon disulfide	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone (MEK)	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropylene	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (MIBK)	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U	10 U	10 U
Styrene	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (total)	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value.

DRAFT - Table A-6
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Surface Water Samples
Semi-Volatile Organic Compound Data

Sample ID	Wappingers Lake	Site Bridge 1	Site Bridge 2	WP13-SW	WP18-SW	WP35-SW
Location Cross Reference	Route 9D	WP5-SW	WP10-SW			
Sample Date	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001
Sample Depth						
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound						
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroisopropyl) ether	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodipropylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
2,4-Dinitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	25 U	25 U	25 U	25 U	25 U	25 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value.

DRAFT - Table A-6
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Surface Water Samples
Semi-Volatile Organic Compound Data

Sample ID	Wappingers Lake	Site Bridge 1	Site Bridge 2	WP13-SW	WP18-SW	WP35-SW
Location Cross Reference	Route 9D	WP5-SW	WP10-SW			
Sample Date	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001
Sample Depth						
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound						
4-Nitroaniline	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U
3,3-Dichlorobenzidine	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate (BEHP)	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-octyl phthalate	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo[a]pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(ghi)perylene	10 U	10 U	10 U	10 U	10 U	10 U

NOTES: U - not detected, J - estimated value.

DRAFT - Table A-7
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Surface Water Samples
Pesticides/PCB Data

Sample ID	Wappingers Lake	Site Bridge 1	Site Bridge 2	WP13-SW	WP18-SW	WP35-SW
Location Cross Reference	Route 9D	WP5-SW	WP10-SW			
Sample Date	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001	07/12/2001
Sample Depth						
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound						
4,4'-DDD	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aldrin	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
Aroclor 1016	1.1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1221	2.2 U	2 U	2 U	2 U	2 U	2 U
Aroclor 1232	1.1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1242	1.1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1248	1.1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1254	1.1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1260	1.1 U	1 U	1 U	1 U	1 U	1 U
Dieldrin	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan I	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
Endosulfan II	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin ketone	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Heptachlor	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
Heptachlor epoxide	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
Methoxychlor	0.56 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 U
Toxaphene	5.6 U	5 U	5 U	5 U	5 U	5.1 U
alpha-BHC	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
alpha-Chlordane	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
beta-BHC	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
delta-BHC	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
gamma-BHC (Lindane)	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U
gamma-Chlordane	0.056 U	0.05 U	0.05 U	0.05 U	0.05 U	0.051 U

NOTES: U - not detected, J - estimated value, B - blank contamination, P - more than 25% difference between results from the primary and confirmatory chromatographic columns.

APPENDIX F

Tentatively identified compounds
(not included with the draft Creek RI report)

APPENDIX G

Sediment physical parameter data

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

September 8, 2003

Mr. William Ayling
O'Brien & Gere Laboratories, Inc.
5000 Brittonfield Parkway
East Syracuse, New York 13057

Re: L-03058
Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

Dear Mr. Ayling:

Enclosed are the results of laboratory testing performed at your request on four tube sediment samples delivered to our laboratory on May 28, 2003 for the above referenced project. Results include:

1. Sieve Analysis ASTM D422 & D1140
   Laboratory I.D. #17193- 17196 — 4 each

2. Hydrometer Analysis ASTM D422
   Laboratory I.D. #17193- 17196 — 4 each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on October 8, 2003. Please notify PW Laboratories, Inc. by letter or telephone prior to October 8, 2003 if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period of time.

Thank you for this opportunity to work with you.

Very truly yours,

PW LABORATORIES, INC.

Virginia J. Thoma

Virginia J. Thoma
Manager - Laboratory Services
VJT/klw
encs:

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

SIEVE ANALYSIS OF SOIL / AGGREGATE

PROJECT TITLE: Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

PROJECT # L-03058
TEST METHOD ASTM D422 & D1140

REPORT # 1
REPORT DATE September 8, 2003

			Sieve Size - Percent Passing Sieve													
Lab I.D. #	Sample	Depth (inches)	1 1/2"	1"	3/4"	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200	
17193	WP- T3A	0.0- 6.0	--	100	99.4	99.2	98.6	97.8	97.4	96.1	78.3	74.4	66.9	57.4	44.2	
17194	SED Core 2	0.0- 6.0	--	--	--	--	--	100	99.9	99.0	82.3	76.8	64.1	48.8	32.3	
17195	SED Core 3	0.0- 6.0	--	100	99.4	99.4	99.4	99.4	99.2	98.4	88.1	84.7	74.0	50.2	30.7	
17196	SED Core 4	0.0- 6.0	100	91.5	91.2	76.6	68.5	62.3	58.6	53.4	35.8	31.8	26.4	22.0	17.4	

Sample mass, as received, meets minimum mass requirements of test method: Yes X No

Prewashed: Yes X No

Remarks:

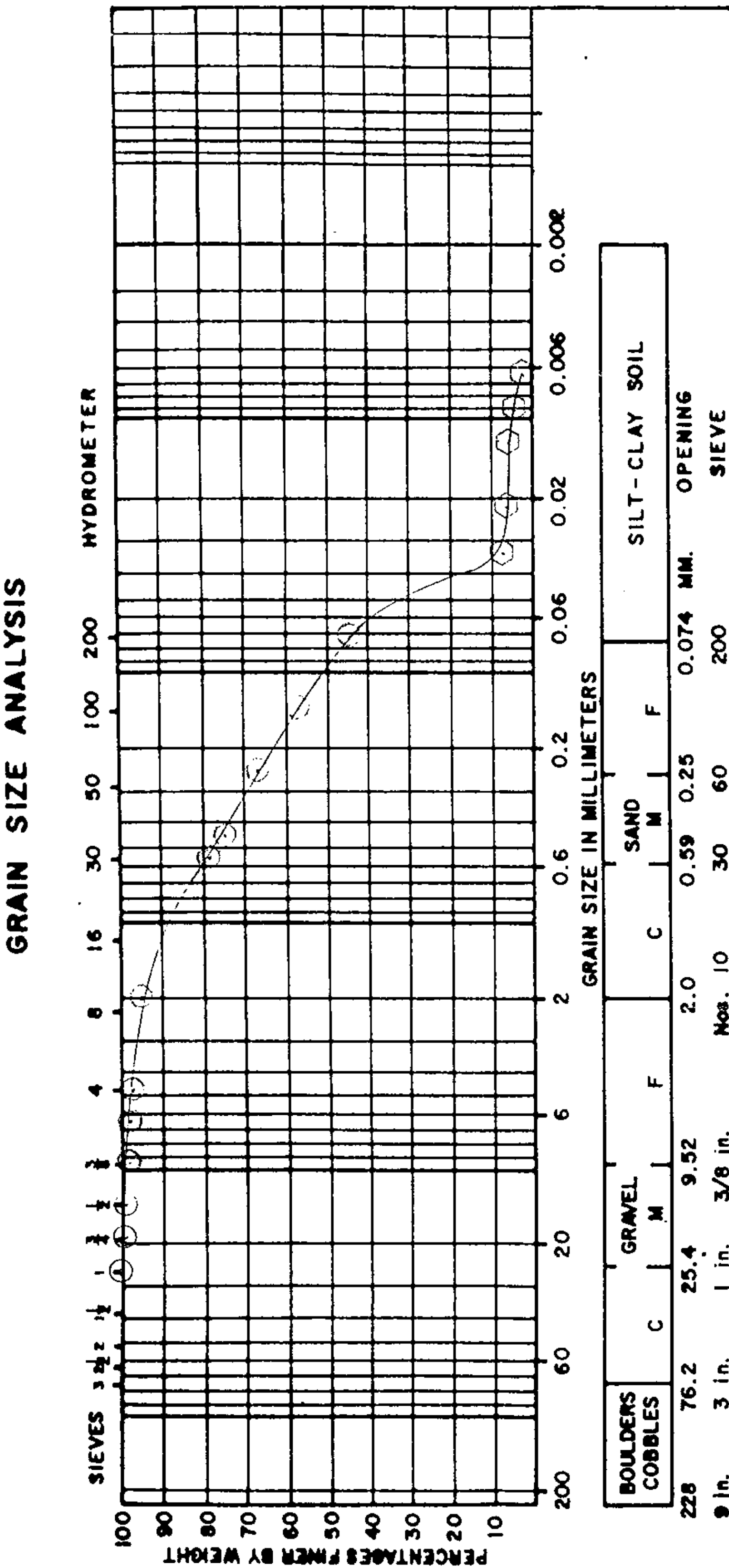
Performed By: TT

Checked By: V.J. Thoma

PW labs

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
315-437-1420 • (866) 7PW-LABS • FAX 315-437-1752

Job No.: L-03058
Report No: 1
September 8, 2003



Lab I.D. #: 17193
Sample WP-T3A
Depth: 0.0"-6.0"

L-03058
Laboratory Testing
Wappingers Creek
Sediment Investigation
Job No. 10653/27258

⊙ Sieve Analysis ASTM D422 & D1140
⬡ Hydrometer Analysis ASTM D422

PW LABORATORIES INC.
P.O. BOX 56, 5879 FISHER ROAD, EAST SYRACUSE, NY 13057
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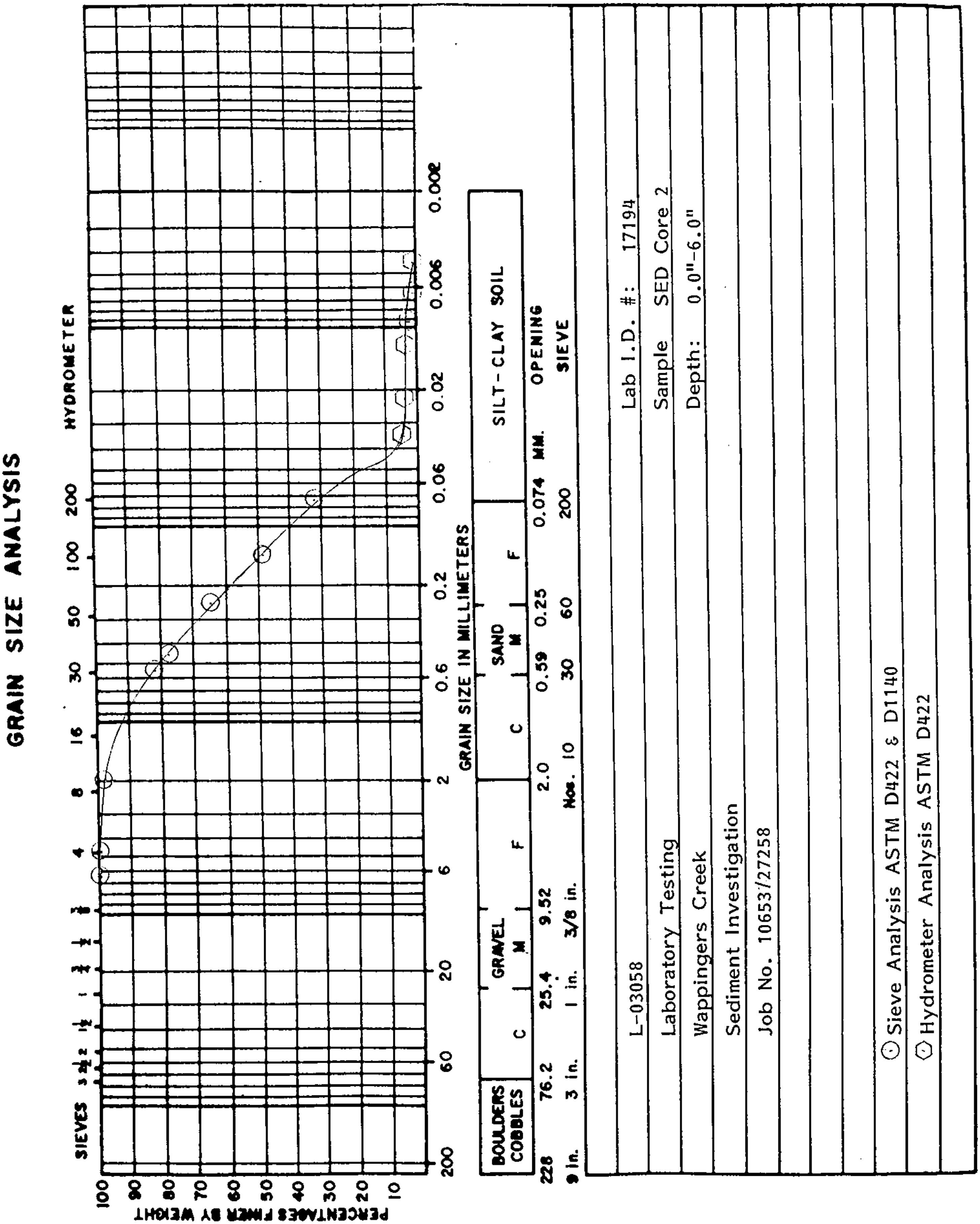
Job No.: L-03058
Report No: 2
September 8, 2003



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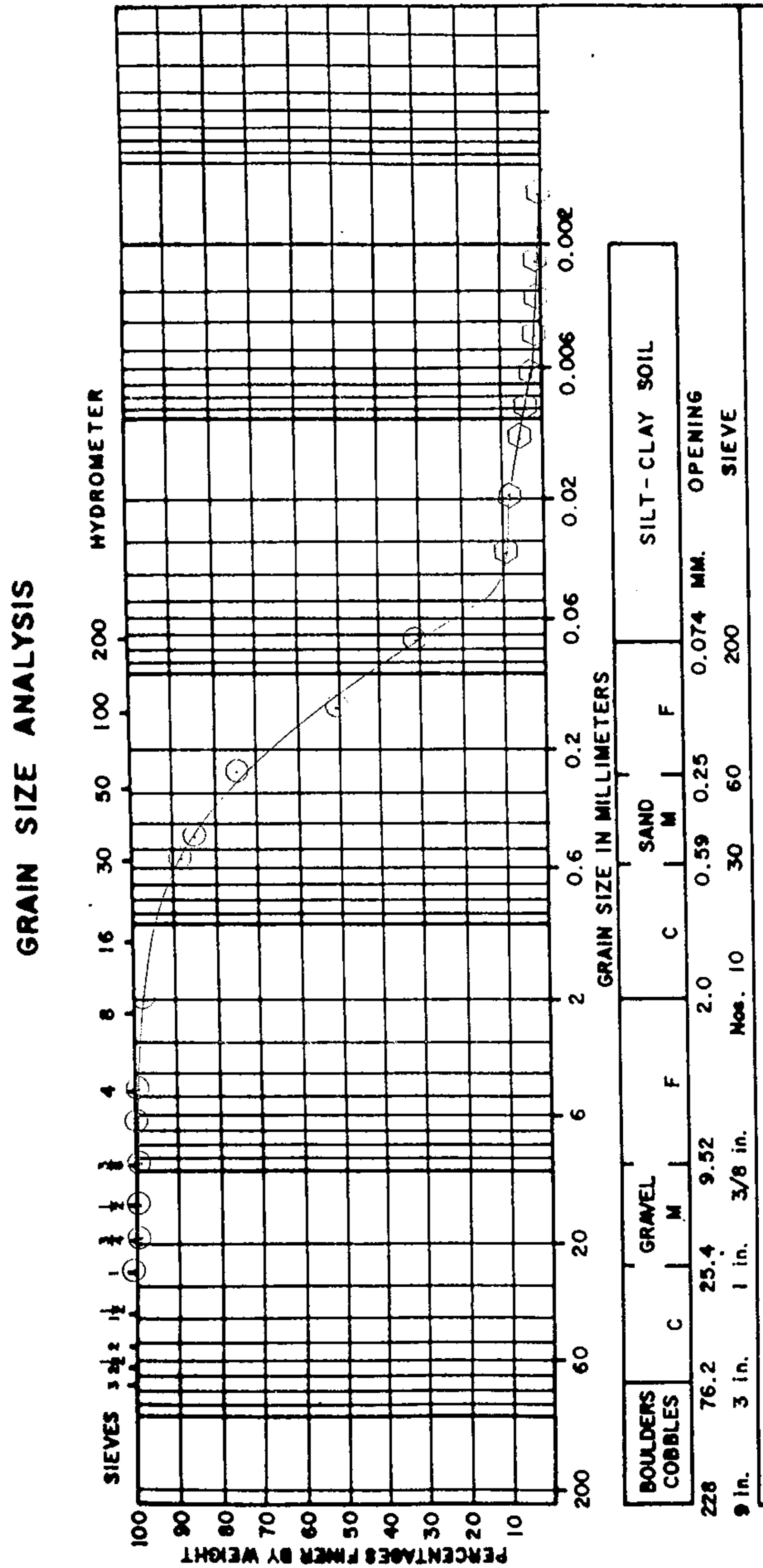
Report No: 3

September 8, 2003



Lab I.D. #: 17195

Sample SED Core 3

Depth: 0.0"-6.0"

L-03058

Laboratory Testing

Wappingers Creek

Sediment Investigation

Job No. 10653/27258

○ Sieve Analysis ASTM D422 & D1140

⬡ Hydrometer Analysis ASTM D422

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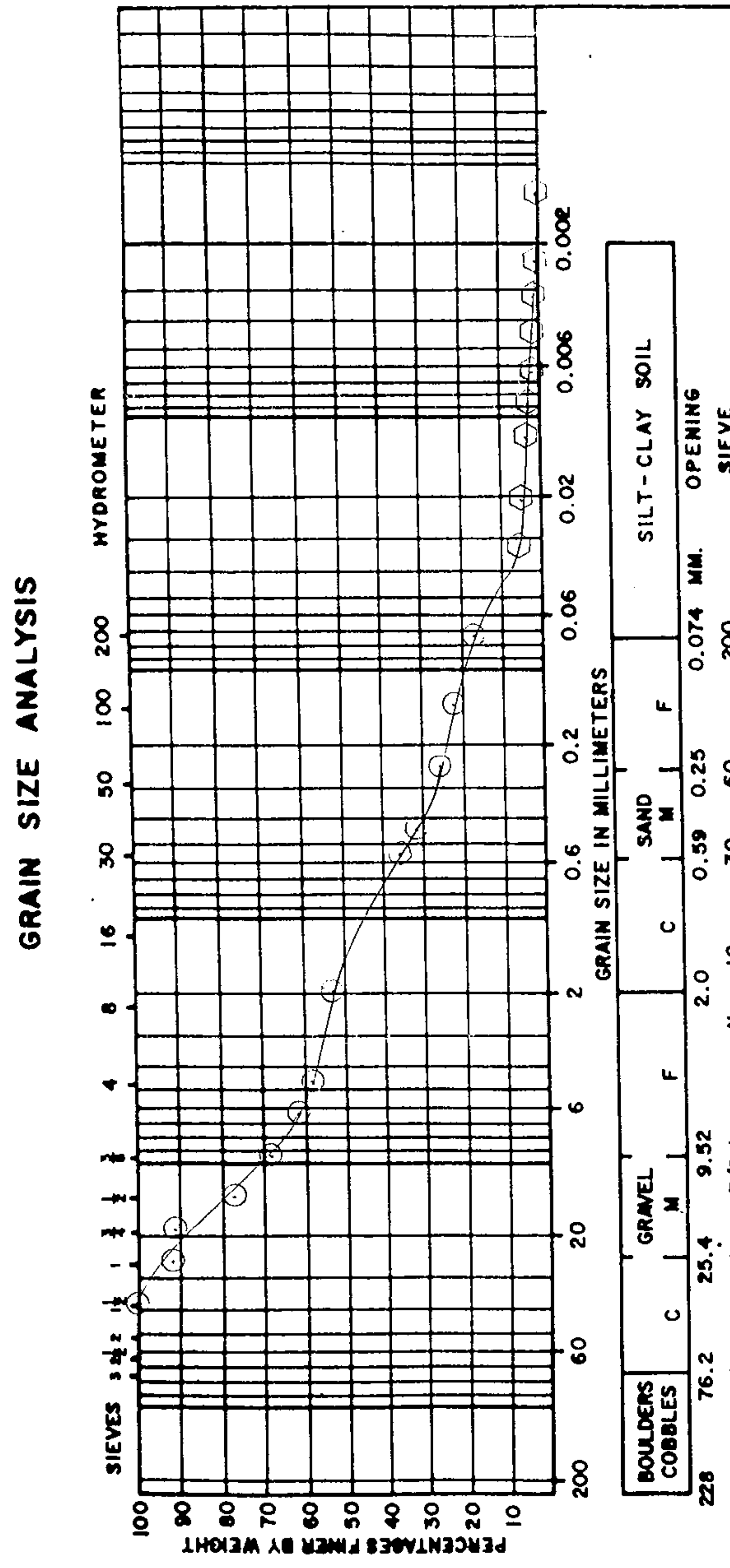
Job No.: L-03058

Report No: 4

September 8, 2003

GRAIN SIZE ANALYSIS



Lab I.D. #: 17196

Sample SED Core 4

Depth: 0.0"-6.0"

L-03058

Laboratory Testing

Wappingers Creek

Sediment Investigation

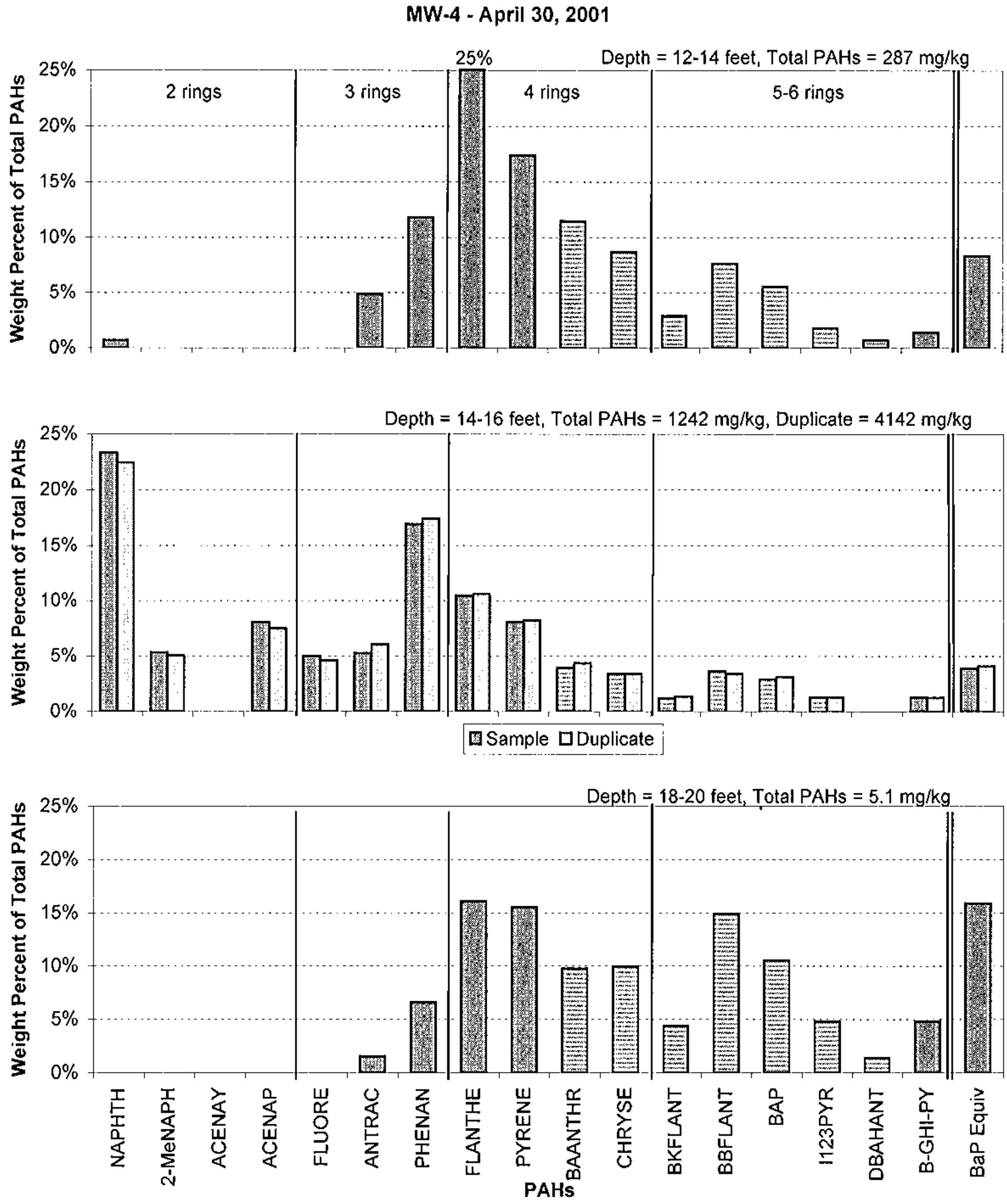
Job No. 10653/27258

⊙ Sieve Analysis ASTM D422 & D1140

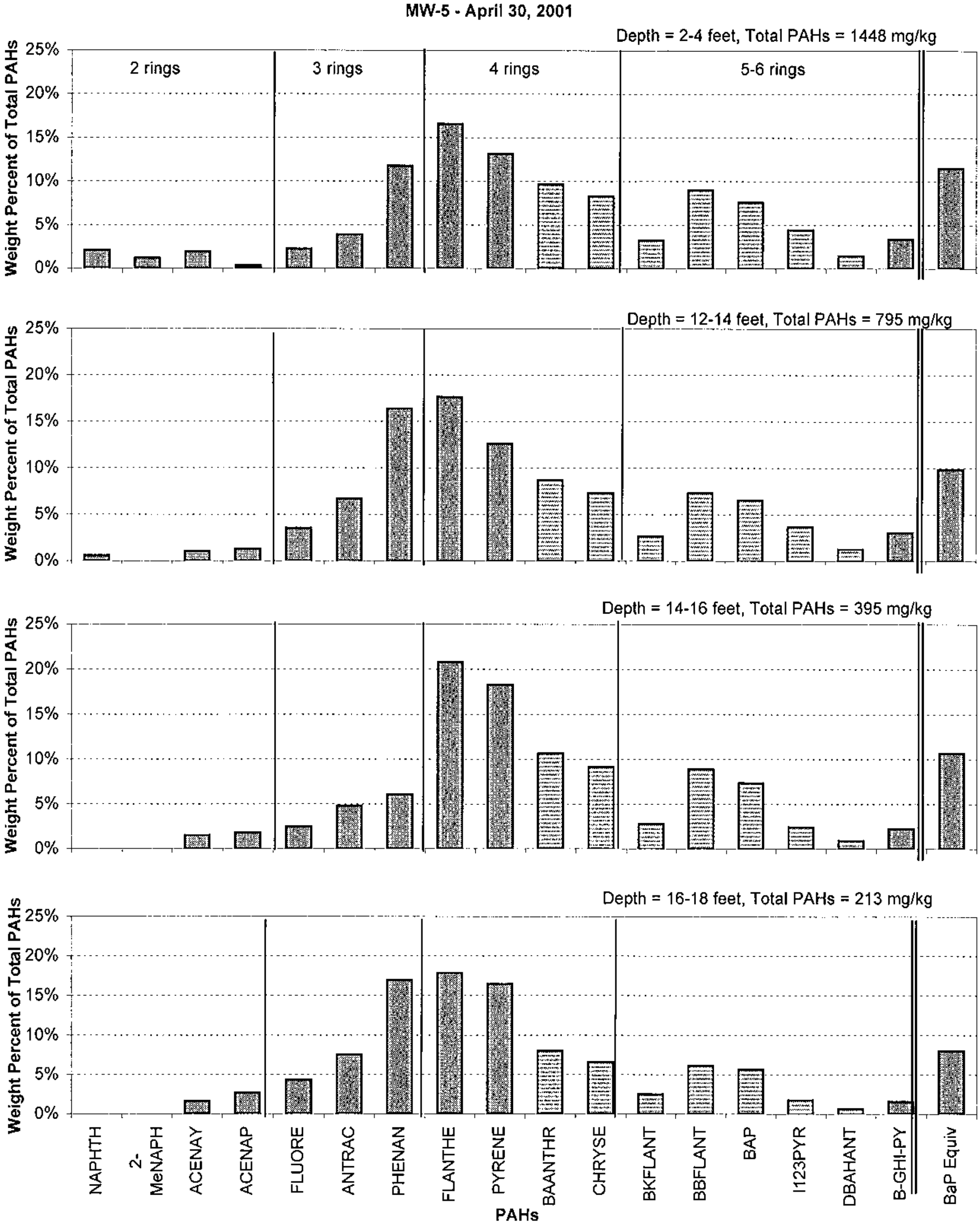
⬡ Hydrometer Analysis ASTM D422

APPENDIX H

PAH Composition Evaluation

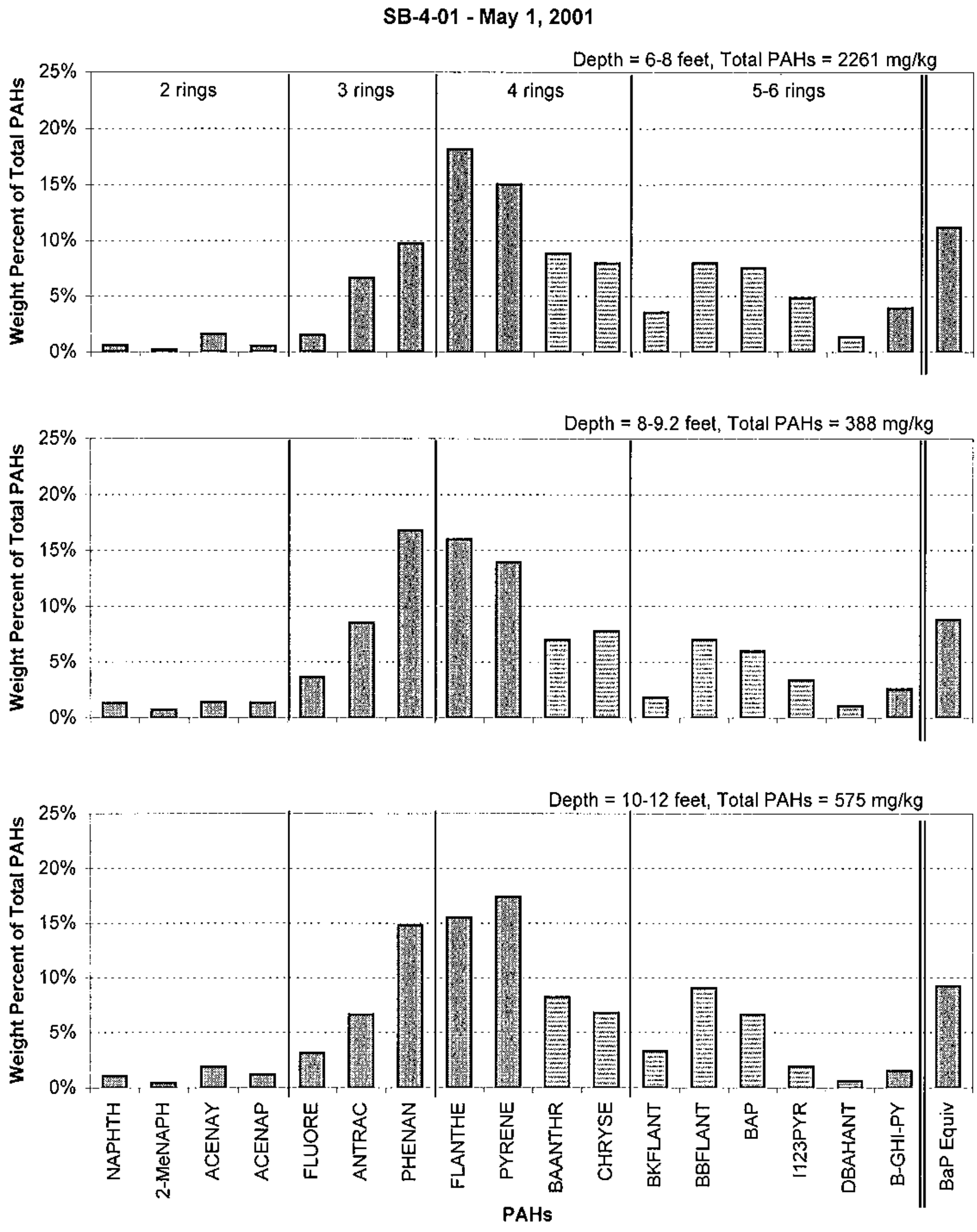


Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.



Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

Figure 3.
Weight Percent Distribution of PAHs - SB-4-01



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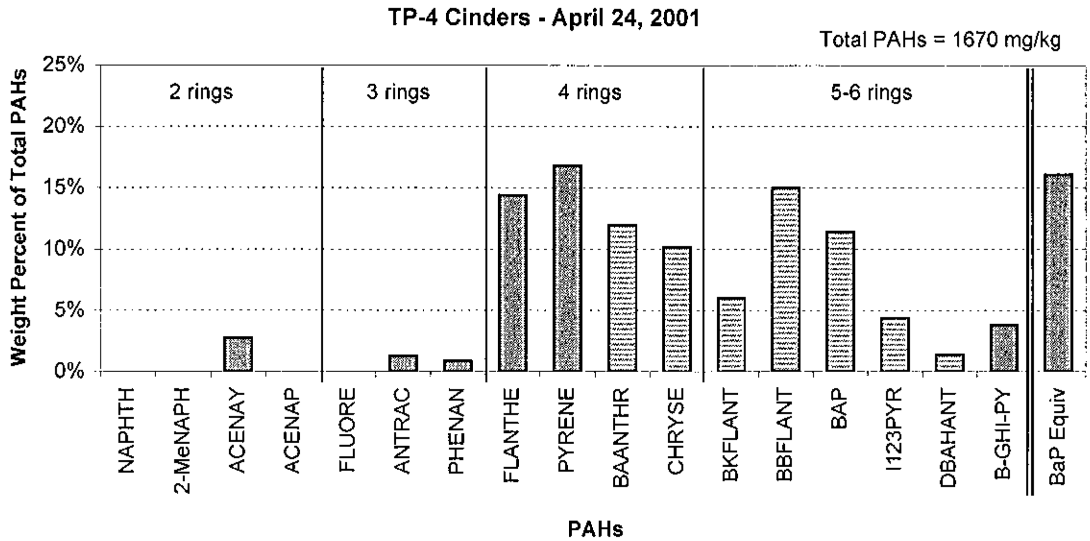
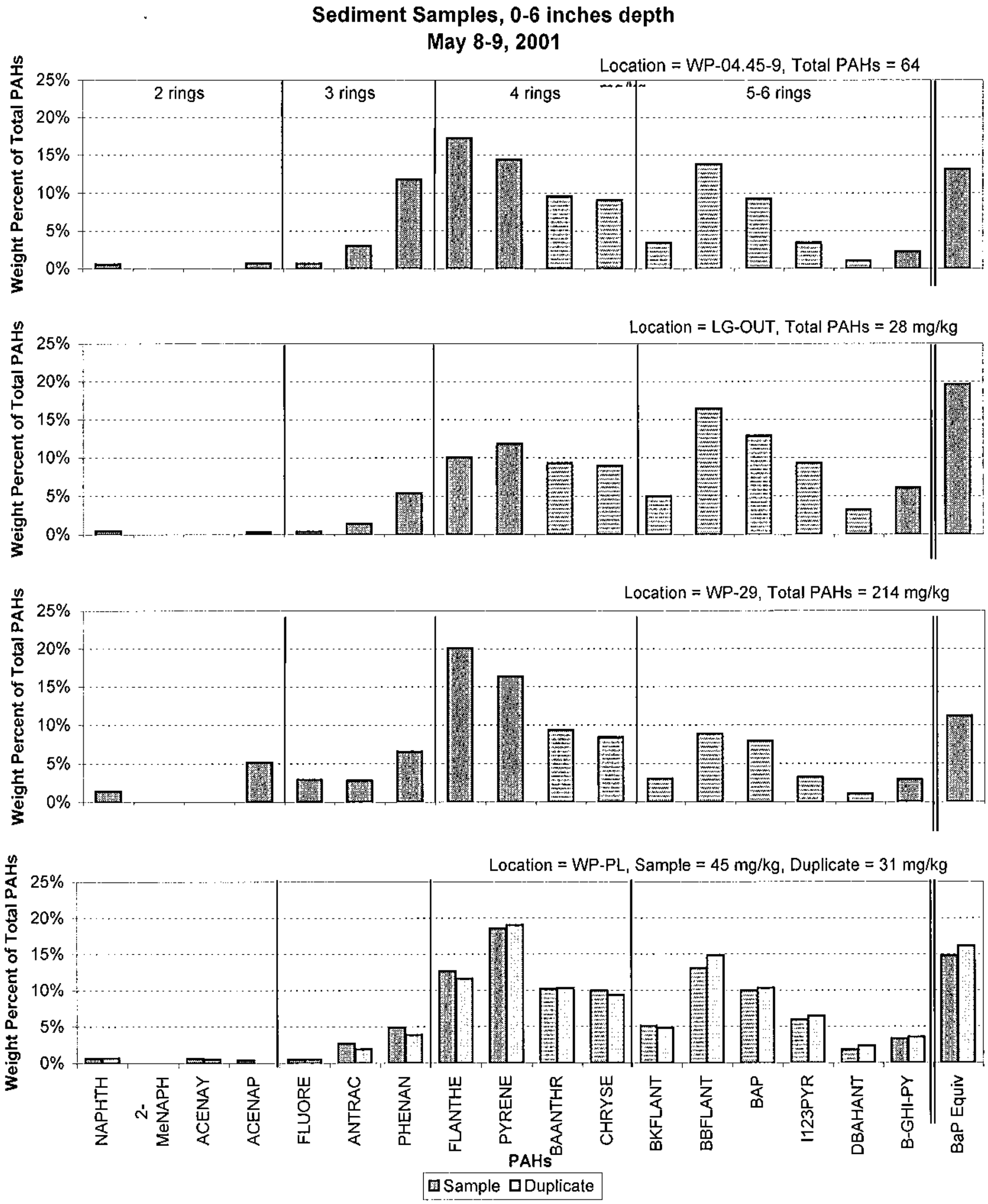
Numbers above groups of bars indicate the number of benzene rings in each compound.



Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

PAH Composition Evaluation: Surface sediment



Notes:
Abbreviations are defined in the text accompanying this graphic.
Data bars with horizontal pattern represent carcinogenic PAHs.
Numbers above groups of bars indicate the number of benzene rings in each compound.

PAH Composition Evaluation: Deeper sediment

APPENDIX I

Screening Level Ecological Risk Assessment Report

REVISED DRAFT REPORT

Fish and Wildlife Impact Analysis
Step IIC - Wappingers Creek
Three Star Anodizing Site
Wappingers Falls, New York

New York State Department of
Environmental Conservation
Albany, New York

February 2007

Job No. 10653/27258

REVISED DRAFT REPORT

Fish and Wildlife Impact Analysis
Step IIC - Wappingers Creek
Three Star Anodizing Site
Wappingers Falls, New York

New York State Department of Environmental Conservation
Albany, New York

Chief Scientist
O'Brien & Gere Engineers, Inc.

February 2007

O'BRIEN & GERE

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1. Introduction

This report presents the results of a Step IIC Fish and Wildlife Impact Analysis (FWIA) completed for Wappingers Creek by O'Brien & Gere Engineers, Inc. (O'Brien & Gere). This FWIA of Wappingers Creek is associated with the Remedial Investigation (RI) of the Three Star Anodizing Site (Three Star Site). This FWIA report is presented as an appendix to the RI report for Wappingers Creek (Creek RI). The results of on-site investigation of the Three Star Site and FWIA are reported in a separate RI report (O'Brien & Gere 2007a).

The FWIA was conducted according to the New York State Department of Environmental Conservation (NYSDEC) protocols, appearing in the document entitled *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC 1994; FWIA Guidance). Step I of a FWIA consists of a description of the physical and biological features of a site. Results of the Step I FWIA for Wappingers Creek, completed in 2002, are presented in Attachment 1. The purpose of this Step IIC Report is to evaluate the potential impacts of site-related constituents on fish and wildlife resources in a *Toxic Effects Analysis*. Therefore, the specific objectives of this Step IIC FWIA are to:

- identify potentially complete pathways between site-related constituents and fish and wildlife resources
- compare site chemical data to applicable ecologically-based criteria or screening values
- evaluate potential risk to ecological receptors via screening-level risk calculations.

1.1. FWIA Project Background

The RI for the Three Star Site, which included the RI of Wappingers Creek, was completed in two phases. Following the NYSDEC's review and comment on the Draft Phase I RI Report (O'Brien & Gere 2002a), which included the FWIA Step I report, discussions were held between the NYSDEC and O'Brien & Gere concerning the performance of additional steps of the FWIA. Based on these discussions, a streamlined FWIA Step II approach was prepared and presented to the NYSDEC for review in the Phase II RI Work Plan Addendum (O'Brien & Gere 2002b). This report presents the results of the Step II FWIA evaluation of Wappingers Creek, and utilizes surface water and sediment data collected for the RI.

As detailed in the final Phase II RI Work Plan Addendum (O'Brien & Gere 2002b), the FWIA Step II performed for the creek consists of a streamlined screening-level ecological risk assessment (SLERA). The SLERA presents a comparison of site media data to ecologically-based screening values to identify constituents of potential ecological concern (COPEC). Following the screening step, risk calculations are performed to estimate a receptor's exposure to the COPEC. Subsequent sections of this report present additional details concerning the SLERA approach. The same approach was used to complete the SLERA for the Three Star Site (O'Brien & Gere 2007a).

1.2. Report Organization

The Step II FWIA/SLERA is organized into the following sections:

1. *Introduction.* This section presents general information about the performance of the FWIA, the objectives of the study and the format of the report.

2. *Study area characterization.* This section presents a summary of the FWIA Step I findings related to fish and wildlife resources of the site and vicinity and describes the site areas within the scope of this study. An exposure pathway assessment is also presented.

3. *Comparison of site data to screening values.* This section presents the results of comparisons of site media data to regulatory and ecologically-based screening criteria and/or benchmark values.

4. *Screening-level risk calculation.* This section presents the methods and results of conservative risk calculations prepared to evaluate potential site risk to upper trophic level receptors potentially utilizing the site.

5. *Conclusions.* This section presents the FWIA Step II conclusions regarding the screening-level risk assessment.

2. Study Area Characterization

This section summarizes the physical and biological components of the site and study area under current conditions. A detailed characterization of the physical and biological components of the study area was provided in the Step I FWIA (Attachment 1).

2.1. Site Description

The tidal portion of Wappingers Creek (tidal creek) is the subject of this FWIA and comprises the approximately 1.5 mile length between the Site and the Hudson River (Figure 1-1). Upstream of the tidal creek is Wappingers Falls and Wappingers Lake. At the downstream of end of the tidal creek is the confluence with the Hudson River. The Three Star Site is located on an oxbow of the tidal creek and consists of an 8.5 acre industrial facility on the south bank of Wappingers Creek, approximately 1,000 feet downstream of Wappingers Falls. In the vicinity of the Three Star Site, the creek is generally less than 100 feet wide. Downstream of the Three Star Site, the creek widens and typically ranges from 250 to 750 feet wide. A backwater area with a shoal is located along the south shore of the creek, approximately 1,000 feet downstream of the Three Star Site. An embayment that is approximately 300 feet in diameter is located on the north side of the creek, approximately 2,000 feet downstream of the Three Star Site.

The Three Star Site is located on the 100-year flood and primarily consists of two buildings, paved parking areas, and access roadways. Additional buildings that were on the Three Star Site were destroyed by a fire that occurred in May 2004. The Three Star Site was the location of industrial activities for over 150 years. For the RI, it is operationally divided into two areas consisting of the Main Site and the former manufactured gas plant site (MGP site). Primary past uses of the Main Site included dye operations, metal plating and a number of other smaller industrial activities. The MGP site is located along the west portion of the Three Star Site. In general, most of the on-site areas do not support large or diverse wildlife communities, due to the amount of development and/or their proximity to anthropogenic disturbances.

A former raceway currently contains a pipe used to convey stormwater runoff from the Village of Wappingers Falls to an on-site lagoon that discharges to Wappingers Creek. The lagoon bisects the site with the Main Site located west of it and the MGP site located to the east. As described in the RI Report, the lagoon is reportedly unlined and covers approximately 0.5 acres. During operation of dye manufacturing facility and Three Star Anodizing Company, the lagoon/raceway reportedly received industrial wastes. Wastes from other industrial operations that have taken place at the Three Star Site may have also drained in the direction of the lagoon and the creek.

2.2. Study Area Description

Consistent with the FWIA Guidance, the study area evaluated for the Creek FWIA included in the description of cover types is defined as the Three Star Site property and the area within a half-mile radius of the Three Star Site. In addition to the half-mile radius around the Three Star Site that was evaluated for cover type descriptions, the Creek RI included sampling of representative locations throughout the 1.5 mile length of the tidal creek.

Natural and cultural covertypes exist within the study area. The cultural designation reflects the extent of human disturbance to the study area for land uses such as roadways, railroad beds, commercial businesses, industrial facilities, residences, and parks. In general, these areas do not support large or diverse wildlife communities due to their proximity to anthropogenic disturbances. The natural terrestrial covertypes of the study area, existing primarily west of the Three Star Site, are representative of forested communities. The tidal creek represents a deepwater estuarine habitat that bisects a major portion of the study area as it flows from northeast to southwest.

Other water bodies located in the vicinity of the Three Star Site provide additional open water aquatic habitat. Wappingers Lake is located approximately 1,500 feet upstream of the Three Star Site. For the Creek RI, surface water and sediment samples were collected from the lake to represent background conditions for the creek. In addition, there is a stream located in Reese Park located approximately 2000 feet southwest of the Three Star Site, and numerous wetland habitats exist at multiple locations within in the study area.

2.3. Exposure Pathway Summary

This exposure pathway summary was completed according to FWIA Guidance for Step IIA, Exposure Pathway Analysis (NYSDEC 1994). This subsection discusses potential routes of exposure to site-related contaminants for wildlife receptors along the creek. Exposure is the contact of a receptor (*e.g.*, flora and fauna inhabiting or utilizing the site) with a chemical or physical agent. An exposure pathway is a mechanism by which a receptor may be exposed to a chemical or physical agent at, or originating from, a source. The three primary potential routes of exposure are inhalation, ingestion, and dermal contact.

Exposure pathways may be classified as either *complete* or *incomplete*. An exposure pathway is *complete* when receptors exist that could contact a physical or chemical agent under specified conditions. An *incomplete* pathway exists if there are no receptors or no exposures that could occur under the specified conditions. For *complete* exposure pathways, further evaluation is required.

Sampling and analyses completed for the Creek RI identified chemical constituents in surface water and sediment. Therefore, complete exposure pathways potentially exist for terrestrial and aquatic receptors inhabiting and/or utilizing these media from the creek. Potentially complete exposures exist via direct contact and via the food chain for wildlife foraging from the sample areas, potentially exposed ecological receptors include, but are not limited to benthic invertebrates, fish, predatory birds, small mammals, songbirds, reptiles and amphibians. The conclusion section of this study presents the potential significance of the FWIA screening in terms of ecological risk.

3. Comparison of Site Data to Screening Values

This section presents the comparison of site chemical data to regulatory and ecologically-based criteria and/or screening values corresponding to Step IIB (Criteria Specific Analysis) of the FWIA Guidance (NYSDEC 1994). Both the methods used for the comparison and the results of the comparison are presented. Constituents that were detected at concentrations above the applicable screening values are identified as COPEC and are evaluated further via a screening-level risk calculation (Section 4). Although background media data were collected for the Creek RI, comparisons of tidal creek data to the background data were not performed as part of the COPEC selection process. Presented in the following subsections are descriptions of the creek data (surface water and sediment), sources of screening values, and the COPEC selection process.

3.1. Creek Data

Data utilized for the FWIA comparisons consist of surface water and sediment samples collected by O'Brien & Gere during field efforts related to the RI, as summarized in Section 2 of the Creek RI Report (O'Brien & Gere 2007b). The concentrations of VOCs, SVOCs, and inorganic constituents that were detected in sediment samples collected from the creek are presented in Tables 3-1, 3-2, and 3-3, respectively. For the purposes of this study, sediment samples that included the zero- to six-inch depth interval were evaluated in the screening process as the sedimentary zone of highest ecological importance. The concentrations of VOCs and SVOCs, and inorganic constituents detected in the surface water of the creek are present in Tables 3-4 and 3-5, respectively.

3.2. Screening Methods and Values

In accordance with Step IIB of the FWIA Guidance, the identification of COPEC for the site is based on comparisons of maximum detected concentrations to conservative ecologically-based screening criteria. Presented in the following subsections is a discussion of the media-specific screening values utilized in the COPEC identification process. Table 3-6 presents a summary of the sources of the screening values referenced in this report.

3.2.1. Surface Water Screening Comparison

The maximum concentrations of constituents detected in the surface water of Wappingers Creek were compared to the screening values presented in the *Technical and Operational Guidance Series Number 1.1.1. New York State Ambient Water Quality Standards and Guidance Values* (NYSDEC 1998) and the *National Recommended Ambient Water Quality* (USEPA 2002). The screening values presented in these references are described in Table 3-6. If a detected constituent concentration exceeded either the NYSDEC or the USEPA screening value, then it was selected as a COPEC. Additionally, detected constituents without available screening values were also selected as COPEC.

3.2.2. Sediment Screening Comparison

As described in the Creek RI report, the maximum concentrations of constituents detected in sediment samples collected from the bed of Wappingers Creek were compared to the screening values presented in *Technical Guidance for Screening Contaminated Sediments* (NYSDEC 1999). The screening values presented in the NYSDEC sediment document are included in Table 3-6.

As a conservative measure, the NYSDEC lowest effect level (LEL) was selected as the screening value for this study. For constituents without NYSDEC screening values, alternative screening values were researched and summarized from the available literature. The primary source of alternative sediment screening values is the USEPA Assessment and Remediation of Contaminated Sediment Program (ARCS) database accessed from the Oak Ridge National Laboratory web site (ORNL 2002). For constituents without NYSDEC guidance values, the *No Effects* concentration presented in the ARCS database was selected as the alternative screening value for this study, as a conservative measure.

If a concentration of detected constituent exceeded the NYSDEC or the alternative ecological screening value, then the constituent was selected as a COPEC. Additionally, detected constituents without NYSDEC or alternative ecological screening values were selected as COPEC.

3.3. COPEC Summary

The objective of COPEC identification process is to identify the specific constituents in the environmental media that are present at concentrations that exceed conservative screening values and, therefore, may require further evaluation as part of additional FWIA tasks. As described above, the identification of COPEC for the site was based on comparisons of maximum concentrations of constituents detected in a given media to NYSDEC or ecologically-based screening values. If the maximum concentration of a constituent in a given medium exceeded the lowest screening value, the constituent was identified as a COPEC. In addition, consistent with the FWIA Guidance, constituents for which screening values do not exist were included as COPEC. It should be recognized that evaluation of site data for exceedance of the screening values is the first step in the screening process. Exceedence of screening values does not, in itself, indicate a risk to wildlife, but suggests that further evaluation of potential exposures to those constituents may be necessary.

The results of the screening process completed in the Creek RI identified the COPEC for surface water and sediment through bracketing of the constituent concentrations presented in data summary tables (Tables 3-1 through 3-5). For sediment, organic constituents consisting of polycyclic aromatic hydrocarbons (PAHs) and dibenzofuran, and 11 inorganic constituents were identified as COPEC (Tables 3-1 through 3-3). For surface water, background levels of aluminum, iron, and silver detected during storm event sampling were identified as COPEC (Table 3-5). As presented in Section 3.2 previously, the maximum detected COPEC concentrations were selected for the FWIA risk evaluation process that is discussed in Section 4.

4. Screening Level Risk Calculations

The identification of COPEC for the creek, as presented in Section 3, included the comparison of constituent concentrations detected in creek media to applicable ecological screening values. Exceedence of a screening value indicates that a constituent requires further consideration of potential impacts to ecological receptors from direct contact exposures. In addition to direct contact exposures, exposures to site-related constituents by upper trophic level receptors may occur via ingestion of COPEC in forage. Therefore, constituents exceeding direct contact screening values were also evaluated for their potential to bioaccumulate and cause ecological effects to higher trophic level receptors.

Food chain models provide a simplified approach for assessing the transfer of COPEC from a source to receptors representing different trophic levels. The body burden of chemical via feeding and direct contact is estimated as the total daily intake (TDI, mg/kg/day). In food chain modeling, TDI of COPEC by the selected receptors is estimated based on site specific data and receptor specific information (such as feeding habits, habitat utilization, life history information). The site specific data typically consist of constituent concentrations present in media such as soil or sediment, water, or food base (forage) to which the selected receptors may be exposed. For this study, maximum concentrations of sediment and surface water data from the creek were used in the model. To estimate the levels present in forage, conservative, literature-derived, biota-sediment accumulation factors (BSAFs), bioaccumulation factors (BAFs), or bio-concentration factors were applied.

The output of the food chain model is a hazard quotient (HQ). To derive a HQ, the receptor's TDI is compared to conservative toxicity reference values (TRVs, mg/kg/day). The HQ is a unitless ratio of a receptor's TDI to the TRV. A HQ less than one indicates that adverse effects are not likely to the receptor. A HQ of one or greater does not necessarily indicate ecological impact, but suggests that the exposure pathway requires further evaluation. The derivations of the TDIs and TRVs used in the food chain model are presented below:

- TDI is the sum of potential exposures via ingestion from surface water, sediment, and forage. For the receptors selected for this study (mink and great blue heron), forage considered in the model included exclusively trophic level 4 fish.

- The TRVs used in the food chain model are conservative literature-derived toxicologic effect concentrations referred to as no observed adverse effect levels (NOAELs). The NOAELs are chemical and organism specific and typically based on laboratory toxicity studies. For the food chain model presented in this FWIA, literature research conducted by Oak Ridge National Laboratory, and summarized by Sample *et al.* (1996), was the primary reference for the NOAELs selected as TRVs. Sample *et al.* (1996) presents data related to the toxicity of chemicals to wildlife, including the extrapolation of laboratory-derived values for a specific species to a variety of other wildlife species. The TRV extrapolations presented in Sample *et al.* (1996) were based on ratios of body size, water ingestion, and food consumption.

In performing the food chain calculations, the maximum constituent concentration detected in sediment and surface water was applied to model potential exposures. The media concentrations were multiplied by biota uptake factors to estimate constituent specific concentrations in the forage. The biota uptake factors were compiled from literature sources or available databases. Conservative life history parameters (*e.g.* highest ingestion rates, lowest body weights), as presented in Wildlife Exposure Factors Handbook (USEPA 1993) were also utilized in the screening risk calculation.

For this report, a food chain model was developed for an aquatic ecosystem in two steps. First, the constituent concentrations in the forage were estimated for benthic invertebrates and piscivorous fish. Then, the forage estimates were incorporated into food chain models for the selected upper trophic level ecological receptors, as described below.

4.1. Selected Ecological Receptors

Ecological receptors evaluated for the FWIA of the creek consisted of the mink and the great blue heron as described in the following subsections.

4.1.1. Mink

The mink *(Mustela vison)* is a small nocturnal mammal that lives along rivers, creeks, lakes, ponds and marshes. The mink may use old muskrat burrows, abandoned beaver dens or hollow logs for dens. Mink may also dig out its own den along stream banks (Whitaker 1980). Mink hunt in and along the water and kill their prey by biting the neck (Whitaker 1980). The preferred food of mink is muskrats, but they also eat fish, frogs, young snapping turtles, snakes, small mammals, and marsh-dwelling birds. Mink may eat their prey on the spot or cache excess prey in their den (Whitaker 1980). The home range of the mink has been estimated to range between eight to 20 hectares in Montana rivers and from one to five kilometers along streams in Sweden (USEPA 1993).

Although no mink or indicators of their presence were observed during the wildlife survey of the study area, mink likely utilize the aquatic habitats in the vicinity of the creek. Selection of mink as a representative mammal provides a conservative evaluation for mammalian exposures to site COPECs. The mink is thought to be one of the most sensitive mammals to certain COPEC exposures. The mink was selected for the FWIA to evaluate food chain exposures to predacious mammals potentially utilizing the site.

4.1.2. Great Blue Heron

Great blue heron *(Ardea herodias)* are the most widespread of all the North American herons. They live in both salt water and fresh water and tend to frequent shallow waters of lakeshores, ponds, bays, oceans, marshes, tidal flats, sandbars, and streams (Terres 1980). Great blue heron perch and nest in trees, but spend the majority of time ashore or in shallow water. The great blue heron lives separate from other herons, except for when it nests communally in rookeries during breeding.

Great blue heron have been observed foraging up to 24 kilometers from their nest site (USEPA 1993). Herons prefer to fish just before dawn and dusk. This is accomplished by standing in shallow water or a perch and waiting for prey to come within striking distance or dropping into deep water to strike at schools of fish (Terres 1980). Small fish are swallowed whole and large fish are speared and swallowed.

Herons may also hunt in meadows and fields. Besides fish, the great blue heron will eat frogs, salamanders, snakes, shrimp, crabs, crayfish, grasshoppers, dragonflies, aquatic insects, small mammals, and the occasional rail and phalarope (Terres 1980).

4.2. Hazard Quotient Summary

Hazard quotient estimates calculated from the food chain model for Wappingers Creek are presented in Table 4-1. The table below summarizes the HQ ranges estimated for COPEC of the mink and great blue heron.

HQ ranges estimated for COPEC of the mink and great blue heron.

HQ	Mink	Great Blue Heron
1 to 10	chromium thallium zinc 2,4-dimethylphenol fluorene	cadmium chromium cyanide zinc 2,4-dimethylphenol phenol
10 to 100	aluminum antimony arsenic cadmium selenium phenol pyrene	mercury
Greater than 100	mercury benzo(a)pyrene benzo(b)fluoranthene chrysene Indeno(1,2,3-c,d)pyrene	antimony benzo(b)fluoranthene chrysene pyrene

Source: O'Brien & Gere Engineers, Inc.

The HQ values, estimated using conservative exposure estimates, and toxicity values provide a mechanism to assess if additional evaluation is necessary to estimate actual adverse impacts to exposed receptors. The interpretation of HQ results was presented previously in this Section. In most cases, there is insufficient dose-response data to directly compare HQs associated with different constituents. Therefore, it is not reasonable to infer that the constituent with an HQ of 100 is associated with ten times more risk than the HQ of ten. The numerical designation is a convention designed to facilitate evaluation of potential effect. In fact, the relative risk is not known and can not be directly correlated with the magnitude of the HQ.

Based on the screening-level HQ estimates, the COPEC identified above may require further evaluation as part of additional FWIA tasks, due to their potential for food chain exposures to the identified receptors. The other constituents identified on Table 4-1 resulted in HQs less than one. As shown on that table, TRVs were unavailable in the reviewed literature for cobalt, iron, magnesium, sodium, dibenzo (a,h)anthracene and carbazole. Therefore, HQs could not be calculated for those constituents.

5. Summary and Conclusions

This FWIA evaluated the physical and biological characteristics, potential ecological exposure pathways, and potential risks to selected receptors of Wappingers Creek. Results of Step I of the FWIA are presented elsewhere in this appendix. This report presents the methods and findings of the Step II FWIA through Step IIC, the *Toxic Effects Analysis*. This report was prepared as a streamlined screening level assessment incorporating maximum concentrations of constituents detected in surface water and sediment to conservatively estimate potential exposure of selected receptors.

A summary of the results of this analysis along with the conclusions of this assessment as they pertain to Wappingers Creek are presented below:

- Wappingers Creek provides aquatic/wetland habitats.
- Maximum concentrations of chemical constituents in creek media (surface water and sediment) were detected above conservative, ecologically-based screening values.
- Benthic macroinvertebrates and water column organisms may be exposed to COPEC where maximum concentrations of constituents occur in sediment.
- Higher trophic level organisms may also be exposed to COPEC by indirect accumulation of constituents via the food chain.
- The exposure concentrations for sediment were generally much higher than those for surface water indicating that sediment concentrations were primarily responsible for elevated HQs that were observed.
- Sediment COPEC resulting in HQ's greater than one consisted of SVOCs and inorganic constituents. Specifically, the SVOCs consisted of 2-dimethylphenol, phenol, and PAHs; the inorganic constituents primarily consisted of antimony, cadmium, chromium, mercury, and zinc. Additional inorganic constituents were also identified as COPEC for the individual species (mink or great blue heron).
- For both the mink and great blue heron, the maximum HQs were associated with potential exposure to PAHs.
- Inorganic COPEC that resulted in the highest calculated HQs values were mercury (mink) and antimony (great blue heron).

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DRAFT Table 3-1
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-LK01-A		WP-LK01-A		WP-LK01-A		WP-LK01-B		WP-LK01-B	
Sample Date		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.		05/10/2001 19 - 25 in.		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.02 J	0.2	0.02 J	0.3	0.03 J	0.8	0.01 J	0.2	0.03 J	0.5
Acetone	0.03 (W)	---	---	---	---	0.07 J	[2]	---	---	---	---
Carbon disulfide	NS	0.005 J	0.05	---	---	---	---	---	---	0.009 J	0.1
Chloromethane	NS	---	---	---	---	---	---	---	---	0.01 J	0.2
Methylene chloride	0.09 (W)	---	---	---	---	0.01 J	[0.3]	---	---	---	---
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	---	---	---	---	---	---
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---	---	---
Xylene (total)	92	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---	---	---
Total BTEX	NS	---	---	---	---	---	---	---	---	---	---
Total Chlorinated VOCs	NS	---	---	---	---	0.01	0.3	---	---	---	---
Total VOCs	NS	0.02	0.2	0.02	0.4	0.1	3	0.01	0.1	0.05	0.8
Total organic carbon (mg/Kg)	NA	99100	---	47000	---	33800	---	66800	---	62000	---
% TOC	NA	10	---	4.7	---	3.4	---	6.7	---	6.2	---
Percent solids (%)	NA	22	---	35	---	46	---	25	---	32	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-1

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-LK01-B DUP		WP-LK01-B		WP-LK01-C		WP-LK01-C		WP-LK01-C	
Sample Date		05/10/2001 6 - 12 in.		05/10/2001 25 - 31 in.		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.		05/10/2001 26 - 32 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.04 J	0.7	0.02 J	0.3	0.02 J	0.3	0.04 J	0.6	0.03 J	0.6
Acetone	0.03 (W)	---	---	---	---	---	---	0.1 J	[2]	0.1 J	[2]
Carbon disulfide	NS	0.006 J	0.1	0.004 J	0.07	---	---	---	---	---	---
Chloromethane	NS	---	---	0.002 J	0.04	0.004 J	0.07	---	---	---	---
Methylene chloride	0.09 (W)	0.006 J	[0.1]	---	---	---	---	0.003 J	0.05	---	---
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	0.004 J	0.07	---	---	---	---
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---	---	---
Xylene (total)	92	---	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---	---	---
Total BTEX	NS	---	---	---	---	0.004	0.07	---	---	---	---
Total Chlorinated VOCs	NS	0.006	0.1	---	---	---	---	0.003	0.05	---	---
Total VOCs	NS	0.05	0.9	0.02	0.4	0.02	0.3	0.1	2	0.1	3
Total organic carbon (mg/Kg)	NA	55200	---	54700	---	58700	---	55500	---	38800	---
% TOC	NA	5.5	---	5.5	---	5.9	---	5.6	---	3.9	---
Percent solids (%)	NA	34	---	48	---	29	---	36	---	50	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999). Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-1

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	LG-OUT		WP-LGOUT2		WP-16		WP-18		WP-18	
Sample Date		05/09/2001 0 - 6 in.		05/13/2003 0 - 6 in.		05/09/2001 0 - 6 in.		05/09/2001 0 - 6 in.		05/09/2001 6 - 12 in.	
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	---	---	---	---	---	---	0.008 J	0.3	0.007 J	0.3
Acetone	0.03 (W)	---	---	---	---	---	---	---	---	---	---
Carbon disulfide	NS	---	---	---	---	---	---	0.005 J	0.2	0.002 J	0.08
Chloromethane	NS	---	---	---	---	---	---	---	---	---	---
Methylene chloride	0.09 (W)	---	---	---	---	0.002 J	[0.2]	0.004 J	[0.2]	---	---
Tetrachloroethene	0.8 (H)	0.02	0.4	---	---	---	---	---	---	---	---
Toluene	49	---	---	---	---	---	---	---	---	---	---
Trichloroethene	2.0 (H)	0.02	0.4	0.001 J	0.08	---	---	---	---	---	---
Xylene (total)	92	0.002 J	0.04	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	0.6 (W)	0.003 J	0.05	0.002 J	0.2	---	---	---	---	---	---
trans-1,2-Dichloroethene	0.6	0.002 J	0.04	0.001 J	0.08	---	---	---	---	---	---
Total BTEX	NS	0.002	0.04	---	---	---	---	---	---	---	---
Total Chlorinated VOCs	NS	0.05	0.9	0.004	0.3	0.002	0.2	0.004	0.2	---	---
Total VOCs	NS	0.05	0.9	0.004	0.3	0.002	0.2	0.02	0.9	0.009	0.4
Total organic carbon (mg/Kg)	NA	56000	---	12400 J	---	8770	---	23400	---	24400	---
% TOC	NA	5.6	---	1.2 J	---	0.9	---	2.3	---	2.4	---
Percent solids (%)	NA	77	---	75	---	79	---	68	---	64	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-1

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Volatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	WP-29		WP-29		WP-29		WP-PL			
Sample Date		05/09/2001 0 - 6 in.		05/09/2001 6 - 12 in.		05/09/2001 12 - 18 in.		05/08/2001 6 - 11 in.			
Compound	ug/g OC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
2-Butanone (MEK)	NS	0.008 J	0.4	0.03 J	5	0.08 J	0.7	0.03 J	0.3		
Acetone	0.03 (W)	---	---	0.09 J	[12]	---	---	0.06 J	[0.7]		
Carbon disulfide	NS	---	---	0.003 J	0.4	0.01 J	0.1	---	---		
Chloromethane	NS	---	---	---	---	---	---	---	---		
Methylene chloride	0.09 (W)	---	---	0.02	[2]	---	---	---	---		
Tetrachloroethene	0.8 (H)	---	---	---	---	---	---	---	---		
Toluene	49	---	---	---	---	---	---	---	---		
Trichloroethene	2.0 (H)	---	---	---	---	---	---	---	---		
Xylene (total)	92	---	---	---	---	---	---	---	---		
cis-1,2-Dichloroethene	0.6 (W)	---	---	---	---	---	---	---	---		
trans-1,2-Dichloroethene	0.6	---	---	---	---	---	---	---	---		
Total BTEX	NS	---	---	---	---	---	---	---	---		
Total Chlorinated VOCs	NS	---	---	0.02	3	---	---	---	---		
Total VOCs	NS	0.008	0.4	0.1	14	0.09	0.9	0.09	1		
Total organic carbon (mg/Kg)	NA	21700	---	7330	---	105000	---	---	---		
% TOC	NA	2.2	---	0.7	---	11	---	---	---		
Percent solids (%)	NA	56	---	62	---	58	---	---	---		

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected, [ ] - concentration above screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location.
When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by methods NY ASP 95-1. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999).
Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source.
* Screening concentration (SC) calculated as concentration (C) / fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LK1 05/12/2003 0 - 6 in.		WP-LK2 05/12/2003 0 - 6 in.		WP-LK3 05/12/2003 0 - 6 in.		WP-LK4 05/12/2003 0 - 6 in.		WP-LK5 05/12/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	---	---	---	---	0.3 J	4	0.2 J	5	0.3 J	7
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.2 J	[2]	---	---	0.3 J	[4]	0.2 J	[5]	0.4 J	[8]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.4 J	[4]	0.4 J	[4]	0.5 J	[9]	0.4 J	[9]	0.6 J	[13]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	---	---	0.2 J	4	0.2 J	5
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	---	---	---	---	---	---	0.2 J	[5]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.3 J	[3]	0.3 J	[3]	0.4 J	[6]	0.3 J	[7]	0.4 J	[10]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	0.4 J	4	0.5 J	5	0.6 J	9	0.5 J	11	0.7 J	14
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	---	---	0.2 J	[4]	0.2 J	[5]
Naphthalene	30	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	120	---	---	---	---	---	---	---	0.2 J	4	0.2 J	5
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.4 J	4	0.5 J	5	0.6 J	10	0.5 J	11	0.8 J	17
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	102000 J	---	91600 J	---	63300 J	---	42100 J	---	46100 J	---
% TOC	NA	---	10 J	---	9.2 J	---	6.3 J	---	4.2 J	---	4.6 J	---
Percent solids (%)	NA	---	18	---	12	---	14	---	25	---	36	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	1.7	---	1.7	---	2.6	---	2.5	---	[4.1]	---
Total Carcinogenic PAHs	NS	NS	0.9	---	0.7	---	1.5	---	1.2	---	2.2	---
Total SVOCs	NS	---	1.7	---	1.7	---	2.6	---	2.5	---	4.1	---
BaP Equivalents	1.3 (H)	NS	0.3	[3]	0.04	0.4	0.4	[6]	0.3	[7]	0.5	[11]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-LK01-A		WP-LK01-A		WP-LK01-A		WP-LK01-B		WP-LK01-B	
Sample Date			05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.		05/10/2001 19 - 25 in.		05/10/2001 0 - 6 in.		05/10/2001 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	0.4 J	4	0.2 J	4	0.1 J	4	0.4 J	6	0.3 J	4
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 J}	[5]	0.2 J	[4]	0.1 J	[3]	{0.5 J}	[7]	0.3 J	[4]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	1.0 J	[10]	0.4 J	[9]	0.2 J	[6]	0.8 J	[12]	0.5 J	[9]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	---	---	0.2 J	2	---	---
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[3]	---	---	0.08 J	[2]	0.3 J	[5]	0.2 J	[3]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.6 J	[6]	0.3 J	[6]	0.2 J	[5]	0.6 J	[9]	0.3 J	[5]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	1.0 J	10	0.4 J	9	0.2 J	7	0.9 J	13	0.5 J	9
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	---	---	---	---	---	---
Naphthalene	30	---	---	---	---	---	---	---	0.3 J	[4]	---	---
Phenanthrene	120	---	0.4 J	4	0.2 J	5	0.1 J	4	0.5 J	7	0.3 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.3 J	13	0.6 J	13	0.3 J	10	1.2 J	18	0.8 J	13
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	1.1 J	11	0.5 J	11	0.3 J	9	0.6 J	8	0.4 J	6
Total organic carbon (mg/Kg)	NA	---	99100	---	47000	---	33800	---	66800	---	62000	---
% TOC	NA	---	10	---	4.7	---	3.4	---	6.7	---	6.2	---
Percent solids (%)	NA	---	22	---	35	---	46	---	25	---	32	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[5.4]	---	2.4	---	1.4	---	[5.5]	---	3.2	---
Total Carcinogenic PAHs	NS	NS	2.7	---	1.1	---	0.7	---	2.8	---	1.6	---
Total SVOCs	NS	---	6.5	---	2.9	---	1.7	---	6.1	---	3.6	---
BaP Equivalents	1.3 (H)	NS	0.6	[6]	0.3	[6]	0.1	[3]	0.6	[9]	0.4	[6]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%; when AS<5%, c=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LK01-B DUP 05/10/2001 6 - 12 in.		WP-LK01-B 05/10/2001 25 - 31 in.		WP-LK01-C 05/10/2001 0 - 6 in.		WP-LK01-C 05/10/2001 6 - 12 in.		WP-LK01-C 05/10/2001 26 - 32 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	---	---	---	---	---	---	---	---
Benzo(a)anthracene	12	---	0.3 J	5	0.09 J	2	0.4 J	7	0.2 J	4	0.1 J	3
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.3 J	[5]	0.09 J	[2]	0.4 J	[7]	0.2 J	[4]	0.2 J	[5]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.5 J	[9]	0.2 J	[3]	0.8 J	[14]	0.4 J	[7]	0.2 J	[6]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	---	---	0.2 J	3	0.1 J	2	0.4 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.2 J	[3]	---	---	0.3 J	[5]	0.1 J	[2]	---	---
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.4 J	[7]	0.1 J	[3]	0.6 J	[11]	0.3 J	[5]	0.2 J	[5]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	---	---	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	---	---
Fluoranthene	1020	---	0.6 J	10	0.2 J	3	0.9 J	16	0.4 J	8	0.3 J	7
Fluorene	8	---	---	---	---	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	---	---	0.3 J	[5]	0.1 J	[2]	0.1 J	[3]
Naphthalene	30	---	---	---	---	---	---	---	---	---	---	---
Phenanthrene	120	---	0.3 J	5	0.1 J	2	0.4 J	7	0.2 J	4	0.2 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.7 J	13	0.3 J	5	1.0 J	17	0.5 J	9	0.4 J	10
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.5 J	8	0.2 J	3	0.5 J	8	0.3 J	6	0.2 J	4
Total organic carbon (mg/Kg)	NA	---	55200	---	54700	---	58700	---	55500	---	38800	---
% TOC	NA	---	5.5	---	5.5	---	5.9	---	5.6	---	3.9	---
Percent solids (%)	NA	---	34	---	48	---	29	---	36	---	50	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	3.1	---	1.0	---	[5.4]	---	2.6	---	2.0	---
Total Carcinogenic PAHs	NS	NS	1.5	---	0.5	---	2.8	---	1.3	---	0.9	---
Total SVOCs	NS	---	3.5	---	1.2	---	5.9	---	2.9	---	2.2	---
BaP Equivalents	1.3 (H)	NS	0.3	[5]	0.1	[2]	0.6	[10]	0.3	[5]	0.2	[5]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999); t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-01-A 05/09/2001 0 - 6 in.		WP-04.45-9 05/09/2001 0 - 6 in.		WP-09A 05/09/2001 0 - 6 in.		WP-11A 05/09/2001 0 - 6 in.		LG-OUT 05/09/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	0.1 J	3
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.4 J	19	---	---	---	---	0.1 J	2
Acenaphthylene	NS	---	---	---	---	---	---	---	---	---	---	---
Anthracene	107	---	---	---	1.9 J	86	0.1 J	2	---	---	0.4 J	7
Benzo(a)anthracene	12	---	---	---	6.1	[276]	0.3 J	4	0.3 J	4	2.6	[46]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	---	---	{5.9 }	[267]	0.3 J	[4]	0.4 J	[5]	{3.6 }	[64]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.05 J	[3]	{8.8 }	[398]	0.5	[7]	0.5	[6]	{4.6 }	[82]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	1.4 J	63	0.1 J	2	0.2 J	3	1.7	30
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	2.2	[100]	0.2 J	[2]	0.2 J	[2]	1.4	[25]
Carbazole	NS	NS	---	---	1.2 J	54	0.05 J	0.8	---	---	0.2 J	4
Chrysene	1.3 (H)	---	---	---	5.8	[262]	0.4 J	[6]	0.3 J	[4]	2.5	[45]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.7 J	[30]	---	---	---	---	0.9	[16]
Dibenzofuran	NS	5.1 (2)	---	---	0.5 J	21	---	---	---	---	---	---
Fluoranthene	1020	---	0.05 J	3	11	498	0.6	10	0.5	6	2.8	50
Fluorene	8	---	---	---	0.4 J	[19]	0.05 J	0.8	---	---	0.1 J	2
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	2.2 J	[100]	0.2 J	[3]	0.3 J	[3]	2.6	[46]
Naphthalene	30	---	---	---	0.4 J	17	---	---	---	---	0.1 J	2
Phenanthrene	120	---	---	---	7.5	[339]	0.6	9	0.2 J	2	1.5	27
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	0.05 J	3	9.2	416	0.8	11	0.5	7	3.3	59
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.1 J	5	---	---	0.5	7	0.1 J	2	0.6 J	10
Total organic carbon (mg/Kg)	NA	---	18600	---	22100	---	65500	---	76500	---	56000	---
% TOC	NA	---	1.9	---	2.2	---	6.6	---	7.7	---	5.6	---
Percent solids (%)	NA	---	81	---	73	---	66	---	65	---	77	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.2	---	[64]	---	4.0	---	3.4	---	[28]	---
Total Carcinogenic PAHs	NS	NS	0.05	---	32	---	1.8	---	2.0	---	18	---
Total SVOCs	NS	---	0.2	---	66	---	4.6	---	3.6	---	29	---
BaP Equivalents	1.3 (H)	NS	0.005	0.3	8.4	[380]	0.4	[6]	0.5	[7]	5.5	[98]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%; when AS<5%, c=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-LGOUT2 05/13/2003 0 - 6 in.		WP-MW4 05/13/2003 0 - 6 in.		WP-MW4 DUP 05/13/2003 0 - 6 in.		WP-16 05/09/2001 0 - 6 in.		WP-18 05/09/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	0.07 J	5	---	---	0.2 J	[16]	0.05 J	5	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	0.09 J	8	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.05 J	2	0.1 J	12	---	---	---	---
4-Chloroaniline	NS	---	---	---	0.05 J	2	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.04 J	2	0.2 J	15	0.09 J	10	0.1 J	6
Acenaphthylene	NS	---	---	---	0.5	19	0.4 J	31	---	---	---	---
Anthracene	107	---	0.2 J	12	0.8	31	1.2	99	0.3 J	31	0.3 J	14
Benzo(a)anthracene	12	---	0.7	[52]	3.8 D	[150]	4.7 D	[388]	0.8	[94]	1.0	[41]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.7 }	[52]	{3.7 D}	[146]	{4.5 D}	[372]	{0.7 }	[76]	{0.7 }	[32]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.8	[65]	{4.5 D}	[177]	{6.2 D}	[512]	0.9	[105]	1.0	[43]
Benzo(ghi)perylene	NS	3.8 (1)	0.3 J	26	1.2	47	1.5	124	0.3 J	33	0.2 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[23]	1.4	[55]	2.0	[165]	0.3 J	[35]	0.4 J	[15]
Carbazole	NS	NS	0.09 J	7	0.1 J	6	0.4 J	35	0.1 J	14	---	---
Chrysene	1.3 (H)	---	0.6	[48]	2.9	[114]	4.2 D	[347]	0.8	[91]	0.8	[36]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.1 J	10	0.6	[23]	0.7	[57]	0.2 J	[18]	0.1 J	5
Dibenzofuran	NS	5.1 (2)	---	---	0.1 J	5	0.3 J	21	0.06 J	7	---	---
Fluoranthene	1020	---	1.0	78	6.4 D	252	9.0 D	744	1.5	171	1.7	73
Fluorene	8	---	---	---	0.2 J	8	0.3 J	[25]	0.1 J	[14]	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.4 J	[29]	1.6	[63]	1.9	[157]	0.5	[54]	0.3 J	[13]
Naphthalene	30	---	0.05 J	4	0.2 J	6	0.4	[36]	---	---	---	---
Phenanthrene	120	---	0.6	52	2.4	94	4.4 D	[364]	1.3	[148]	0.6	24
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.1	89	5.4 D	213	7.2 D	595	1.5	171	1.6	68
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	0.3 J	29	0.2 J	7
Total organic carbon (mg/Kg)	NA	---	12400 J	---	25400	---	12100	---	8770	---	23400	---
% TOC	NA	---	1.2 J	---	2.5	---	1.2	---	0.9	---	2.3	---
Percent solids (%)	NA	---	75	---	81	---	79	---	79	---	68	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[6.7]	---	[12]	---	[8.7]	---	[9.2]	---	[8.9]	---
Total Carcinogenic PAHs	NS	NS	3.5	---	6.5	---	4.6	---	4.2	---	4.3	---
Total SVOCs	NS	---	6.9	---	12	---	9.7	---	9.7	---	9.0	---
BaP Equivalents	1.3 (H)	NS	1.0	[81]	0.8	[31]	0.9	[74]	1.1	[125]	1.1	[47]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-18 05/09/2001 6 - 12 in.		WP-M2 05/14/2003 0 - 6 in.		WP-M2 05/14/2003 6 - 12 in.		WP-M2 05/14/2003 12 - 17 in.		WP-M3 05/14/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	0.04 J	4	---	---
Acenaphthene	NS	---	---	---	---	---	1.4 J	124	1.0	88	0.1 J	1
Acenaphthylene	NS	---	---	---	---	---	1.7 J	150	0.2 J	19	0.1 J	2
Anthracene	107	---	---	---	0.3 J	30	5.8	[513]	1.0	88	0.3 J	5
Benzo(a)anthracene	12	---	0.08 J	3	1.4 J	[124]	17	[1504]	4.2 D	[372]	1.3	[20]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.07 J	[3]	{1.1 J}	[97]	{14 }	[1239]	{3.6 D}	[319]	{1.2 }	[19]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.1 J	[6]	2.0 J	[177]	{17 }	[1504]	{4.4 D}	[389]	1.8	[28]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	0.7 J	58	{4.3 J}	381	1.2 JD	106	0.6 J	10
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.6 J	[52]	{6.8 }	[602]	1.7 JD	[150]	0.7 J	[11]
Carbazole	NS	NS	---	---	---	---	---	---	0.2 J	14	---	---
Chrysene	1.3 (H)	---	0.09 J	[4]	1.2 J	[106]	14	[1239]	3.7 D	[327]	1.5	[24]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.2 J	[20]	1.9 J	[168]	0.5 JD	[47]	0.2 J	4
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.7 J	62	0.3 J	28	---	---
Fluoranthene	1020	---	0.2 J	8	2.4	212	33	[2920]	8.4 D	743	2.4	38
Fluorene	8	---	---	---	---	---	1.6 J	[142]	0.5	[45]	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	0.7 J	[58]	5.1 J	[451]	1.4 JD	[124]	0.6 J	[10]
Naphthalene	30	---	---	---	---	---	1.2 J	[106]	0.3 J	30	---	---
Phenanthrene	120	---	0.06 J	2	0.8 J	74	11	[973]	1.6	[142]	1.0	16
Phenol	0.5 (t)	---	---	---	---	---	---	---	0.1 J	[10]	---	---
Pyrene	961	---	0.3 J	12	2.7 J	239	29	[2566]	7.7 D	681	2.9	45
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.1 J	6	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	24400	---	11300 e BJ	---	11300 e BJ	---	11300 BJ	---	63800 BJ	---
% TOC	NA	---	2.4	---	1.1 e BJ	---	1.1 e BJ	---	1.1 BJ	---	6.4 BJ	---
Percent solids (%)	NA	---	64	---	28	---	66	---	79	---	39	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.9	---	3.6	---	[165]	---	[4.7]	---	[9.6]	---
Total Carcinogenic PAHs	NS	NS	0.4	---	7.2	---	76	---	20	---	2.8	---
Total SVOCs	NS	---	1.1	---	3.6	---	166	---	5.3	---	9.6	---
BaP Equivalents	1.3 (H)	NS	0.09	[4]	1.8	[159]	20	[1770]	5.2	[460]	0.1	[2]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999); t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-M3 05/14/2003 6 - 12 in.		WP-DOT 05/14/2003 0 - 6 in.		WP-DOT 05/14/2003 6 - 12 in.		WP-DOT 05/14/2003 12 - 18 in.		WP-29A 05/14/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	1.4	[28]
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	0.2 J	4
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	1.3	[26]
2-Methylnaphthalene	34	---	1.0 J	19	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	2.7 J	54	---	---	4.9 J	366	6.6 J	493	0.3 J	5
Acenaphthylene	NS	---	---	---	1.2 J	90	---	---	---	---	0.3 J	6
Anthracene	107	---	5.1	102	4.5 J	[336]	17	[1269]	31	[2313]	1.1 J	22
Benzo(a)anthracene	12	---	8.7	[174]	13	[970]	27	[2015]	27	[2015]	3.8	[76]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{8.1 }	[162]	{10 }	[746]	{20 }	[1493]	{21 }	[1567]	{3.6 DJ}	[72]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{9.5 }	[190]	{12 }	[896]	{25 }	[1866]	{24 }	[1791]	{4.7 DJ}	[94]
Benzo(ghi)perylene	NS	3.8 (1)	2.5 J	50	2.8 J	209	{8.6 J}	642	{7.0 J}	522	1.1 DJ	22
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	4.0 J	[80]	4.0 J	[299]	{7.7 J}	[575]	{8.3 J}	[619]	1.8 DJ	[36]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	8.6	[172]	10	[746]	22	[1642]	24	[1791]	3.4	[68]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	1.2 J	[24]	1.2 J	[90]	3.6 J	[269]	2.8 J	[209]	0.5 DJ	9
Dibenzofuran	NS	5.1 (2)	1.4 J	28	---	---	2.5 J	187	3.1 J	231	0.1 J	3
Fluoranthene	1020	---	18	360	24	[1791]	61	[4552]	65	[4851]	6.0	120
Fluorene	8	---	1.9 J	[38]	0.6 J	[44]	6.6 J	[493]	9.2 J	[687]	0.3 J	6
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	3.2 J	[64]	3.6 J	[269]	9.3 J	[694]	7.6 J	[567]	1.2 DJ	[24]
Naphthalene	30	---	2.6 J	[52]	0.5 J	[40]	3.1 J	[231]	2.6 J	[194]	0.3 J	7
Phenanthrene	120	---	14	[280]	6.9	[515]	45	[3358]	80	[5970]	2.4	48
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	15	300	20	[1493]	47	[3507]	54	[4030]	6.0	120
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	63800 e BJ	---	13400 BJ	---	13400 e BJ	---	13400 e BJ	---	62900 e BJ	---
% TOC	NA	---	6.4 e BJ	---	1.3 BJ	---	1.3 e BJ	---	1.3 e BJ	---	6.3 e BJ	---
Percent solids (%)	NA	---	65	---	64	---	61	---	73	---	59	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[106]	---	[114]	---	[308]	---	[370]	---	[24]	---
Total Carcinogenic PAHs	NS	NS	43	---	54	---	115	---	115	---	7.2	---
Total SVOCs	NS	---	107	---	114	---	310	---	373	---	27	---
BaP Equivalents	1.3 (H)	NS	12	[240]	14	[1045]	30	[2239]	30	[2239]	0.4	[8]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-29A 05/14/2003 6 - 12 in.		WP-29A DUP 05/14/2003 6 - 12 in.		WP-29A 05/14/2003 12 - 17 in.		WP-29 05/09/2001 0 - 6 in.		WP-29 05/09/2001 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	1.9 J	30	2.7 J	[39]	---	---	---	---	1.1 J	[150]
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	6.6	105	12 J	171	9.6 J	192	11 J	507	9.1	1241
Acenaphthylene	NS	---	0.8 J	13	---	---	---	---	---	---	---	---
Anthracene	107	---	14	[223]	32	[456]	29	[580]	6.0 J	[276]	15	[2046]
Benzo(a)anthracene	12	---	19	[302]	33	[471]	30	[600]	20 J	[922]	13	[1774]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{16 }	[254]	{27 }	[385]	{23 }	[460]	{17 J}	[783]	{9.3 }	[1269]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{20 }	[318]	{29 }	[414]	{28 }	[560]	{19 J}	[876]	{11 }	[1501]
Benzo(ghi)perylene	NS	3.8 (1)	{4.2 J}	67	{9.5 J}	136	{7.2 J}	144	{6.2 J}	286	2.6 J	355
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	{8.1 }	[129]	{13 J}	[185]	{8.0 J}	[160]	{6.5 J}	[300]	3.7 J	[505]
Carbazole	NS	NS	---	---	---	---	---	---	5.2 J	240	---	---
Chrysene	1.3 (H)	---	18	[286]	31	[442]	25	[500]	18 J	[829]	11	[1501]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	1.9 J	[30]	3.8 J	[54]	3.1 J	[62]	2.3 J	[106]	1.7 J	[232]
Dibenzofuran	NS	5.1 (2)	2.9 J	46	{6.0 J}	86	3.7 J	74	2.3 J	106	{5.4 J}	737
Fluoranthene	1020	---	45	715	71	1013	72	[1440]	43 J	[1982]	34	[4638]
Fluorene	8	---	6.2 J	[99]	14 J	[200]	11 J	[220]	6.2 J	[286]	8.9 J	[1214]
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	5.3 J	[84]	10 J	[143]	9.0 J	[180]	6.9 J	[318]	4.7 J	[641]
Naphthalene	30	---	5.5 J	[87]	6.8 J	[97]	2.6 J	[52]	3.1 J	[143]	2.1 J	[286]
Phenanthrene	120	---	44	[700]	86	[1227]	87	[1740]	14 J	[645]	42	[5730]
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	36	572	64	913	59	[1180]	35 J	[1613]	28	[3820]
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	62900 BJ	---	70100 BJ	---	62900 e BJ	---	21700	---	7330	---
% TOC	NA	---	6.3 BJ	---	7.0 BJ	---	6.3 e BJ	---	2.2	---	0.7	---
Percent solids (%)	NA	---	53	---	55	---	60	---	56	---	62	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[253]	---	[445]	---	[404]	---	[214]	---	[197]	---
Total Carcinogenic PAHs	NS	NS	88	---	147	---	126	---	89	---	54	---
Total SVOCs	NS	---	255	---	451	---	407	---	221	---	203	---
BaP Equivalents	1.3 (H)	NS	23	[366]	38	[542]	33	[660]	24	[1106]	14	[1910]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-29 05/09/2001 12 - 18 in.		WP-CKOUT 05/14/2003 0 - 6 in.		WP-OD3 05/14/2003 0 - 6 in.		WP-OD3 05/14/2003 6 - 12 in.		WP-PL 05/08/2001 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	0.1 J	4	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	0.2 J	7	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	0.07 J	2	---	---
Acenaphthene	NS	---	46 J	438	---	---	0.1 J	4	0.3 J	10	0.2 J	1
Acenaphthylene	NS	---	---	---	0.06 J	2	0.3 J	10	0.8	26	0.3 J	2
Anthracene	107	---	86	[819]	0.2 J	4	1.3	43	3.6	[118]	1.2 J	10
Benzo(a)anthracene	12	---	84	[800]	0.9	[26]	4.6 DJ	[151]	11 D	[361]	4.6 J	[40]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{64 }	[610]	{0.9 }	[26]	{4.0 DJ}	[131]	{9.1 DJ}	[298]	{4.5 J}	[39]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{74 }	[705]	1.4	[39]	{5.3 DJ}	[174]	{11 DJ}	[361]	{5.9 J}	[51]
Benzo(ghi)perylene	NS	3.8 (1)	{15 J}	143	0.3 J	7	0.9 J	31	1.9 J	62	1.5 J	13
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	{32 J}	[305]	0.6	[17]	2.2 J	[72]	3.5 J	[115]	2.3 J	[20]
Carbazole	NS	NS	---	---	---	---	---	---	0.1 J	5	---	---
Chrysene	1.3 (H)	---	77	[733]	0.8	[21]	2.8	[92]	10 D	[328]	4.5 J	[39]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	9.8 J	[93]	0.1 J	3	0.3 J	11	0.8 J	[27]	0.8 J	7
Dibenzofuran	NS	5.1 (2)	{30 J}	286	---	---	0.07 J	2	0.2 J	8	0.1 J	1
Fluoranthene	1020	---	180	[1714]	2.0	56	7.3 D	239	17 D	557	5.7 J	50
Fluorene	8	---	46 J	[438]	---	---	0.2 J	6	0.5 J	[15]	0.2 J	2
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	28 J	[267]	0.3 J	[9]	1.1 J	[36]	2.2 J	[72]	2.7 J	[23]
Naphthalene	30	---	---	---	0.07 J	2	0.1 J	5	0.8	25	0.3 J	2
Phenanthrene	120	---	210	[2000]	0.4 J	10	3.3	108	7.1 DJ	[233]	2.2 J	19
Phenol	0.5 (t)	---	---	---	---	---	---	---	0.08 J	[3]	---	---
Pyrene	961	---	140	[1333]	1.6	45	8.2 D	269	20 D	656	8.4 J	73
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	0.7 J	6
Total organic carbon (mg/Kg)	NA	---	105000	---	35900	---	30500 e	---	30500	---	115000	---
% TOC	NA	---	11	---	3.6	---	3.1 e	---	3.1	---	12	---
Percent solids (%)	NA	---	58	---	70	---	72	---	68	---	26	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[1092 }	---	[9.5]	---	[13]	---	[14]	---	[45]	---
Total Carcinogenic PAHs	NS	NS	369	---	5.0	---	6.4	---	6.5	---	25	---
Total SVOCs	NS	---	1122	---	9.5	---	13	---	15	---	46	---
BaP Equivalents	1.3 (H)	NS	93	[886]	1.3	[36]	0.5	[16]	1.1	[36]	6.7	[58]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-PL DUP 05/08/2001 0 - 6 in.		WP-PL 05/08/2001 6 - 11 in.		WP-PL1 05/13/2003 0 - 6 in.		WP-PL1 05/13/2003 6 - 12 in.		WP-PL1 05/13/2003 12 - 18 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.1 J	1	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.1 J	1	---	---	---	---	---	---
Acenaphthylene	NS	---	0.2 J	1	0.1 J	1	0.1 J	1	---	---	---	---
Anthracene	107	---	0.6 J	5	0.8 J	9	0.5 J	5	---	---	---	---
Benzo(a)anthracene	12	---	3.2 J	[28]	2.6 J	[32]	2.2 J	[20]	0.3 J	3	---	---
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{3.2 J}	[28]	{2.5 J}	[30]	{1.1 J}	[10]	0.3 J	[3]	---	---
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	{4.6 J}	[40]	4.0 J	[49]	2.4 J	[22]	0.4 J	[5]	---	---
Benzo(ghi)perylene	NS	3.8 (1)	1.1 J	10	1.2 J	15	0.5 J	5	0.08 J	1	---	---
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	1.5 J	[13]	1.0 J	[12]	1.2 J	[11]	0.2 J	[2]	---	---
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	2.9 J	[25]	2.7 J	[33]	2.1 J	[19]	0.3 J	[4]	---	---
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.7 J	6	0.6 J	7	0.3 J	2	---	---	---	---
Dibenzofuran	NS	5.1 (2)	---	---	0.3 J	3	---	---	---	---	---	---
Fluoranthene	1020	---	3.6 J	31	4.2 J	51	4.0 J	37	0.6 J	7	---	---
Fluorene	8	---	0.2 J	1	0.3 J	3	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	2.0 J	[17]	1.8 J	[22]	0.7 J	[6]	0.1 J	1	---	---
Naphthalene	30	---	0.2 J	2	0.3 J	4	---	---	---	---	---	---
Phenanthrene	120	---	1.2 J	10	1.1 J	13	1.2 J	11	0.1 J	1	---	---
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	5.9 J	51	5.6 J	68	3.5 J	32	0.6 J	7	---	---
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	0.8 J	7	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	115000	---	82300	---	108000 J	---	80500 J	---	51700	---
% TOC	NA	---	12	---	8.2	---	11 J	---	8.1 J	---	5.2	---
Percent solids (%)	NA	---	25	---	40	---	29	---	43	---	56	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[31]	---	[29]	---	[20]	---	2.8	---	---	---
Total Carcinogenic PAHs	NS	NS	18	---	15	---	9.9	---	1.5	---	---	---
Total SVOCs	NS	---	32	---	29	---	20	---	2.8	---	---	---
BaP Equivalents	1.3 (H)	NS	5.0	[43]	4.0	[49]	1.9	[18]	0.3	[4]	---	---

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-PL2 05/13/2003 0 - 6 in.		WP-PL2 05/13/2003 6 - 12 in.		WP-PL2 05/13/2003 12 - 24 in.		WP-PL3 05/13/2003 0 - 6 in.		WP-PL3 05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthylene	NS	---	0.2 J	3	0.1 J	2	---	---	---	---	0.1 J	1
Anthracene	107	---	0.7 J	12	0.3 J	5	0.2 J	2	0.2 J	2	0.2 J	2
Benzo(a)anthracene	12	---	2.6 J	[44]	1.5 J	[23]	0.9 J	12	0.8 J	8	1.1 J	9
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{1.2 J}	[20]	{0.8 J}	[13]	{0.8 J}	[11]	{0.5 J}	[6]	{1.0 J}	[8]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	3.6 J	[61]	2.2 J	[34]	1.1 J	[14]	0.9 J	[9]	1.8 J	[15]
Benzo(ghi)perylene	NS	3.8 (1)	0.7 J	12	0.5 J	8	0.3 J	4	0.2 J	2	0.5 J	4
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	1.1 J	[19]	0.8 J	[12]	0.5 J	[7]	0.4 J	[5]	0.6 J	[5]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	0.1 J	0.9
Chrysene	1.3 (H)	---	2.1 J	[36]	1.4 J	[22]	0.9 J	[11]	0.8 J	[8]	1.3 J	[11]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	0.2 J	2	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.3 J	5	0.2 J	3	0.1 J	2	---	---	0.2 J	1
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---	---	---	0.1 J	0.9
Fluoranthene	1020	---	4.5 J	77	2.2 J	34	1.5 J	19	1.4 J	15	2.5 J	21
Fluorene	8	---	0.2 J	3	---	---	---	---	---	---	0.1 J	1
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.9 J	[14]	0.6 J	[9]	0.4 J	[5]	0.2 J	[2]	0.5 J	[4]
Naphthalene	30	---	---	---	---	---	0.1 J	1	---	---	0.2 J	2
Phenanthrene	120	---	1.5 J	26	0.8 J	12	0.4 J	5	0.5 J	6	1.2 J	10
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	4.3 J	73	2.4 J	37	1.6 J	21	1.2 J	13	2.3 J	19
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	58700 BJ	---	64200 BJ	---	77000 BJ	---	93900 BJ	---	118000 BJ	---
% TOC	NA	---	5.9 BJ	---	6.4 BJ	---	7.7 BJ	---	9.4 BJ	---	12 BJ	---
Percent solids (%)	NA	---	26	---	34	---	43	---	24	---	35	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[24]	---	[14]	---	[8.8]	---	[7.1]	---	[14]	---
Total Carcinogenic PAHs	NS	NS	12	---	7.5	---	4.7	---	3.6	---	6.4	---
Total SVOCs	NS	---	24	---	14	---	8.8	---	7.3	---	14	---
BaP Equivalents	1.3 (H)	NS	2.2	[37]	1.5	[23]	1.2	[16]	0.7	[7]	1.5	[13]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.)

DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T1A 05/14/2003 0 - 6 in.		WP-T1A 05/14/2003 6 - 12 in.		WP-T1A 05/14/2003 12 - 24 in.		WP-T1C 05/14/2003 0 - 6 in.		WP-T1C 05/14/2003 6 - 10 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	0.09 J	2	0.1 J	1	0.09 J	3	0.3 J	9
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	0.09 J	2	0.07 J	0.8	0.06 J	2	0.1 J	4
Acenaphthene	NS	---	---	---	0.7 J	14	0.8	9	0.1 J	4	0.3 J	11
Acenaphthylene	NS	---	---	---	0.6 J	12	0.3 J	4	0.09 J	3	0.2 J	5
Anthracene	107	---	0.2 J	4	3.3 J	66	3.2 DJ	37	0.9	29	2.4	77
Benzo(a)anthracene	12	---	0.7 J	[14]	8.6 DJ	[172]	6.8 DJ	[80]	2.2	[71]	4.6 D	[148]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.3 J	[6]	{8.8 DJ}	[176]	{5.8 DJ}	[68]	{2.1 DJ}	[68]	{3.9 DJ}	[125]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.4 J	[8]	{11 DJ}	[220]	{7.0 DJ}	[82]	3.1 DJ	[100]	{5.3 DJ}	[170]
Benzo(ghi)perylene	NS	3.8 (1)	0.1 J	3	2.1 J	42	1.9 DJ	22	0.7 DJ	23	1.2 DJ	39
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.2 J	[5]	{4.7 J}	[94]	3.4 DJ	[40]	0.9 DJ	[28]	1.9 DJ	[61]
Carbazole	NS	NS	---	---	0.1 J	2	0.08 J	1	---	---	0.09 J	3
Chrysene	1.3 (H)	---	1.0 J	[19]	4.6 J	[92]	6.6 DJ	[77]	1.6	[51]	2.9	[93]
Di-n-butyl phthalate	NS	---	---	---	0.1 J	3	0.1 J	1	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.8 J	[16]	0.9 DJ	11	0.3 DJ	11	0.6 DJ	[20]
Dibenzofuran	NS	5.1 (2)	---	---	0.2 J	4	0.3 J	3	0.1 J	5	0.4 J	12
Fluoranthene	1020	---	1.2 J	24	15 DJ	300	12 DJ	141	3.9 D	125	8.2 D	264
Fluorene	8	---	---	---	0.5 J	[11]	0.6	7	0.2 J	6	0.5 J	[17]
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.1 J	[3]	2.3 J	[46]	2.2 DJ	[26]	0.8 DJ	[26]	1.4 DJ	[45]
Naphthalene	30	---	---	---	0.4 J	8	0.5 J	6	0.8	25	0.9	30
Phenanthrene	120	---	0.4 J	7	6.1 DJ	[122]	5.6 DJ	66	2.2	71	4.8 D	[154]
Phenol	0.5 (t)	---	---	---	0.09 J	[2]	0.09 J	[1]	0.05 J	[2]	0.08 J	[2]
Pyrene	961	---	1.3 J	26	15 DJ	300	13 DJ	152	4.1 D	132	8.8 D	283
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	85400 e J	---	85400 e J	---	85400 J	---	31100 e	---	31100	---
% TOC	NA	---	8.5 e J	---	8.5 e J	---	8.5 J	---	3.1 e	---	3.1	---
Percent solids (%)	NA	---	34	---	43	---	59	---	70	---	63	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[5.9]	---	[20]	---	2.2	---	[8.2]	---	[7.5]	---
Total Carcinogenic PAHs	NS	NS	2.7	---	12	---	33	---	3.8	---	2.9	---
Total SVOCs	NS	---	5.9	---	21	---	2.8	---	8.4	---	8.1	---
BaP Equivalents	1.3 (H)	NS	0.5	[10]	1.1	[22]	8.4	[98]	0.2	[6]	0.03	1

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-OD2 05/14/2003 0 - 6 in.		WP-OD2 05/14/2003 6 - 12 in.		WP-OD2 05/14/2003 12 - 22 in.		WP-T2A 05/13/2003 0 - 6 in.		WP-T2A 05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.2 J	4	0.7	17	---	---	0.2 J	5
Acenaphthylene	NS	---	---	---	0.1 J	3	0.2 J	5	---	---	0.2 J	5
Anthracene	107	---	0.2 J	5	0.3 J	8	1.6	39	0.4 J	7	0.7	23
Benzo(a)anthracene	12	---	0.9 J	[22]	1.6 J	[39]	3.4	[83]	1.9 J	[38]	3.4	[108]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 J}	[12]	{1.2 J}	[29]	{3.0 DJ}	[73]	{0.9 J}	[18]	{2.8 }	[89]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	0.8 J	[20]	1.8 J	[44]	3.8 DJ	[92]	2.6 J	[52]	3.7 D	[118]
Benzo(ghi)perylene	NS	3.8 (1)	0.2 J	4	0.4 J	9	1.0 DJ	24	0.6 J	12	0.9	30
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.5 J	[11]	0.9 J	[23]	1.6 DJ	[39]	0.6 J	[11]	1.0	[31]
Carbazole	NS	NS	---	---	---	---	0.06 J	1	---	---	---	---
Chrysene	1.3 (H)	---	1.2 J	[29]	1.0 J	[23]	2.3	[56]	1.4 J	[28]	2.5	[80]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	0.3 J	7	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	---	---	0.4 DJ	11	0.2 J	4	0.4 J	11
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.1 J	2	---	---	0.07 J	2
Fluoranthene	1020	---	1.9 J	46	3.0 J	73	6.7 D	163	2.6 J	52	4.8 D	153
Fluorene	8	---	---	---	---	---	0.3 J	7	---	---	0.2 J	5
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.2 J	[5]	0.4 J	[9]	1.2 DJ	[29]	0.6 J	[13]	1.1	[35]
Naphthalene	30	---	---	---	0.09 J	2	0.1 J	2	---	---	0.2 J	5
Phenanthrene	120	---	0.5 J	12	0.6 J	15	3.5	85	0.8 J	15	1.3	41
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.5 J	36	2.2 J	54	7.5 D	182	3.0 J	60	5.3 D	169
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	41100 e J	---	41100 e J	---	41100 J	---	49600 BJ	---	31400 B	---
% TOC	NA	---	4.1 e J	---	4.1 e J	---	4.1 J	---	5.0 BJ	---	3.1 B	---
Percent solids (%)	NA	---	30	---	49	---	63	---	27	---	63	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[8.3]	---	[14]	---	[12]	---	[16]	---	[15]	---
Total Carcinogenic PAHs	NS	NS	4.1	---	6.9	---	5.7	---	8.2	---	11	---
Total SVOCs	NS	---	8.3	---	14	---	12	---	16	---	15	---
BaP Equivalents	1.3 (H)	NS	0.7	[17]	1.6	[39]	0.4	[10]	1.7	[34]	3.6	[115]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-T2B		WP-T2B		WP-T2B		WP-T2C		WP-T2C	
Sample Date			05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.		05/13/2003 12 - 24 in.		05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	0.1 J	3	0.06 J	2	---	---	---	---	---	---
Acenaphthylene	NS	---	0.1 J	2	0.1 J	4	---	---	---	---	0.8 J	13
Anthracene	107	---	0.6 J	12	0.4 J	14	---	---	6.0 J	[133]	6.5 J	[110]
Benzo(a)anthracene	12	---	1.8 J	[37]	1.2	[45]	0.1 J	5	18 J	[400]	13	[220]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{1.6 J}	[33]	{0.9 J}	[34]	0.09 J	[4]	{15 J}	[333]	{11 }	[186]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	2.2 J	[45]	1.4 J	[53]	0.1 J	[5]	{20 J}	[444]	{13 }	[220]
Benzo(ghi)perylene	NS	3.8 (1)	0.5 J	9	0.3 J	11	---	---	{5.8 J}	129	{4.4 J}	75
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.8 J	[16]	0.4 J	[14]	---	---	{6.0 J}	[133]	{4.3 J}	[73]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	1.6 J	[33]	0.9	[34]	0.09 J	[5]	15 J	[333]	12	[203]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	0.2 J	4	0.1 J	5	---	---	2.3 J	[51]	1.8 J	[31]
Dibenzofuran	NS	5.1 (2)	---	---	0.05 J	2	---	---	---	---	---	---
Fluoranthene	1020	---	2.4 J	49	2.0	76	0.2 J	8	30 J	667	25	424
Fluorene	8	---	0.1 J	3	0.07 J	3	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.5 J	[11]	0.4 J	[14]	---	---	6.9 J	[153]	4.9 J	[83]
Naphthalene	30	---	---	---	0.1 J	4	---	---	---	---	---	---
Phenanthrene	120	---	1.0 J	20	0.7	27	0.09 J	5	12 J	[267]	8.4	[142]
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	3.1 J	63	2.3	87	0.2 J	10	29 J	644	20	339
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	49000 J	---	26400 J	---	19100	---	45000 BJ	---	59000 B	---
% TOC	NA	---	4.9 J	---	2.6 J	---	1.9	---	4.5 BJ	---	5.9 B	---
Percent solids (%)	NA	---	33	---	75	---	68	---	33	---	51	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	[11]	---	[7.8]	---	0.6	---	[166]	---	[125]	---
Total Carcinogenic PAHs	NS	NS	3.4	---	2.1	---	0.2	---	83	---	60	---
Total SVOCs	NS	---	11	---	7.9	---	0.6	---	166	---	125	---
BaP Equivalents	1.3 (H)	NS	0.2	[4]	0.1	[4]	0.01	0.5	22	[489]	16	[271]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID	NYS Sediment Values	Ecological Screening Values	WP-T2C		WP-OD1		WP-OD1		WP-OD1		WP-T3A	
Sample Date			05/13/2003 12 - 24 in.		05/13/2003 0 - 6 in.		05/13/2003 6 - 12 in.		05/13/2003 12 - 19 in.		05/13/2003 0 - 6 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	---	---	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	0.2 J	4	---	---	---	---	---	---
Acenaphthylene	NS	---	---	---	0.5 J	9	---	---	---	---	---	---
Anthracene	107	---	---	---	3.0 J	53	0.3 J	5	---	---	0.1 J	2
Benzo(a)anthracene	12	---	---	---	10 DJ	[177]	1.3	[21]	---	---	0.5 J	9
Benzo[a]pyrene	1.3 (H)	0.44 (1)	{0.5 }	[45]	{9.1 J}	[161]	{1.1 J}	[18]	---	---	{0.6 J}	[11]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	---	---	{11 DJ}	[195]	1.5 J	[25]	---	---	0.9 J	[16]
Benzo(ghi)perylene	NS	3.8 (1)	---	---	3.3 J	58	0.5 J	9	---	---	0.3 J	5
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	3.1 J	[55]	0.4 J	[7]	---	---	0.3 J	[6]
Carbazole	NS	NS	---	---	0.1 J	2	---	---	---	---	---	---
Chrysene	1.3 (H)	---	---	---	6.8 J	[120]	1.1	[18]	---	---	0.5 J	[9]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---	---	---	0.1 J	2
Dibenzo(a,h)anthracene	15	---	---	---	1.1 J	[19]	0.2 J	3	---	---	0.1 J	2
Dibenzofuran	NS	5.1 (2)	---	---	0.2 J	3	---	---	---	---	---	---
Fluoranthene	1020	---	---	---	16 DJ	283	2.0	33	---	---	0.8 J	14
Fluorene	8	---	---	---	0.4 J	7	0.07 J	1	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	3.8 J	[67]	0.5 J	[9]	---	---	0.3 J	[5]
Naphthalene	30	---	---	---	0.3 J	5	---	---	---	---	---	---
Phenanthrene	120	---	---	---	5.5 J	97	0.4 J	7	---	---	0.3 J	5
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	---	---	15 DJ	265	2.2	36	---	---	0.8 J	14
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	11000 B	---	56500 BJ	---	60700 B	---	37600 B	---	56400 J	---
% TOC	NA	---	1.1 B	---	5.7 BJ	---	6.1 B	---	3.8 B	---	5.6 J	---
Percent solids (%)	NA	---	70	---	27	---	51	---	53	---	30	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	0.5	---	[37]	---	[12]	---	---	---	[5.5]	---
Total Carcinogenic PAHs	NS	NS	0.5	---	24	---	6.1	---	---	---	3.3	---
Total SVOCs	NS	---	0.5	---	37	---	12	---	---	---	5.7	---
BaP Equivalents	1.3 (H)	NS	0.5	[45]	11	[195]	1.6	[26]	---	---	0.9	[16]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations, (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T3A DUP 05/13/2003 0 - 6 in.		WP-T3A 05/13/2003 6 - 12 in.		WP-T3A 05/13/2003 12 - 24 in.		WP-T3B 05/13/2003 0 - 6 in.		WP-T3B 05/13/2003 6 - 12 in.	
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---	---	---	---	---
2-Methylnaphthalene	34	---	---	---	---	---	0.07 J	1	---	---	---	---
4-Chloroaniline	NS	---	---	---	---	---	---	---	---	---	---	---
4-Methylphenol	NS	---	---	---	---	---	---	---	---	---	---	---
Acenaphthene	NS	---	---	---	---	---	0.1 J	2	---	---	---	---
Acenaphthylene	NS	---	---	---	---	---	0.2 J	3	---	---	---	---
Anthracene	107	---	0.2 J	2	0.2 J	3	1.6	36	---	---	0.09 J	2
Benzo(a)anthracene	12	---	0.6 J	9	0.9 J	[15]	2.3	[52]	0.4 J	11	0.5 J	[13]
Benzo[a]pyrene	1.3 (H)	0.44 (1)	0.4 J	[6]	{0.8 J}	[15]	{2.1 }	[48]	0.3 J	[9]	{0.5 J}	[13]
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	1.0 J	[14]	1.1 J	[19]	2.9	[66]	0.8 J	[19]	0.7 J	[18]
Benzo(ghi)perylene	NS	3.8 (1)	0.3 J	4	0.3 J	6	0.5 J	11	0.3 J	7	0.2 J	5
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	0.3 J	[4]	0.4 J	[7]	1.0	[21]	0.2 J	[5]	0.2 J	[6]
Carbazole	NS	NS	---	---	---	---	---	---	---	---	---	---
Chrysene	1.3 (H)	---	0.5 J	[8]	0.8 J	[13]	2.4	[54]	0.5 J	[14]	0.5 J	[13]
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---	---	---	---	---
Di-n-octyl phthalate	NS	---	0.2 J	2	---	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	15	---	---	---	0.2 J	3	0.2 J	5	---	---	0.1 J	3
Dibenzofuran	NS	5.1 (2)	---	---	---	---	0.09 J	2	---	---	---	---
Fluoranthene	1020	---	0.9 J	13	1.1 J	19	4.9	111	0.8 J	19	0.8 J	20
Fluorene	8	---	---	---	---	---	0.2 J	4	---	---	---	---
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	0.3 J	[4]	0.4 J	[7]	0.6	[14]	0.3 J	[7]	0.2 J	[6]
Naphthalene	30	---	---	---	---	---	0.2 J	5	---	---	---	---
Phenanthrene	120	---	0.4 J	5	0.5 J	8	2.0	45	0.3 J	8	0.2 J	4
Phenol	0.5 (t)	---	---	---	---	---	---	---	---	---	---	---
Pyrene	961	---	1.0 J	14	1.4 J	24	4.0	90	0.8 J	21	0.8 J	22
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---	---	---	---	---
Total organic carbon (mg/Kg)	NA	---	69300 BJ	---	57700 J	---	44200 J	---	39600 BJ	---	38000 BJ	---
% TOC	NA	---	6.9 BJ	---	5.8 J	---	4.4 J	---	4.0 BJ	---	3.8 BJ	---
Percent solids (%)	NA	---	29	---	36	---	54	---	29	---	46	---
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	3.5	---	[8.0]	---	[25]	---	[4.7]	---	[4.7]	---
Total Carcinogenic PAHs	NS	NS	1.1	---	4.5	---	12	---	2.5	---	2.7	---
Total SVOCs	NS	---	3.5	---	8.0	---	25	---	4.7	---	4.7	---
BaP Equivalents	1.3 (H)	NS	0.07	1	1.2	[21]	2.9	[66]	0.5	[13]	0.7	[18]

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

DRAFT Table 3-2
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Detected Semivolatile Organic Compound Concentrations Compared to Screening Values Including TOC and Percent Solids Data

Sample ID / Sample Date	NYS Sediment Values	Ecological Screening Values	WP-T3B 05/13/2003 12 - 24 in.		WP-T3C 05/13/2003 0 - 6 in.		WP-T3C 05/13/2003 6 - 11 in.					
Compound	ug/g OC	mg/kg	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC	C mg/Kg	SC ug/gOC
1,2-Dichlorobenzene	12	---	---	---	---	---	---	---				
1,3-Dichlorobenzene	12	---	---	---	---	---	---	---				
1,4-Dichlorobenzene	12	---	---	---	---	---	---	---				
2-Methylnaphthalene	34	---	---	---	---	---	---	---				
4-Chloroaniline	NS	---	---	---	---	---	---	---				
4-Methylphenol	NS	---	---	---	---	---	---	---				
Acenaphthene	NS	---	---	---	---	---	---	---				
Acenaphthylene	NS	---	---	---	---	---	0.09 J	1				
Anthracene	107	---	---	---	---	---	0.2 J	2				
Benzo(a)anthracene	12	---	---	---	0.3 J	4	0.7 J	10				
Benzo[a]pyrene	1.3 (H)	0.44 (1)	---	---	{0.5 J}	[6]	{0.7 J}	[10]				
Benzo(b)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.5 J	[7]	1.0 J	[15]				
Benzo(ghi)perylene	NS	3.8 (1)	---	---	0.1 J	2	0.2 J	4				
Benzo(k)fluoranthene	1.3 (H)	4.0 (1)	---	---	0.2 J	[3]	0.3 J	[5]				
Carbazole	NS	NS	---	---	---	---	---	---				
Chrysene	1.3 (H)	---	---	---	0.4 J	[5]	0.6 J	[10]				
Di-n-butyl phthalate	NS	---	---	---	---	---	---	---				
Di-n-octyl phthalate	NS	---	---	---	---	---	---	---				
Dibenzo(a,h)anthracene	15	---	---	---	---	---	0.1 J	1				
Dibenzofuran	NS	5.1 (2)	---	---	---	---	---	---				
Fluoranthene	1020	---	---	---	0.5 J	7	1.0 J	15				
Fluorene	8	---	---	---	---	---	---	---				
Indeno(1,2,3-cd)pyrene	1.3 (H)	---	---	---	0.1 J	[2]	0.3 J	[4]				
Naphthalene	30	---	---	---	---	---	0.1 J	2				
Phenanthrene	120	---	---	---	0.2 J	2	0.4 J	6				
Phenol	0.5 (t)	---	---	---	---	---	---	---				
Pyrene	961	---	---	---	0.6 J	8	1.2 J	19				
Bis(2-ethylhexyl)phthalate (BEHP)	200	---	---	---	---	---	---	---				
Total organic carbon (mg/Kg)	NA	---	19700 B	---	72000 J	---	63800 J	---				
% TOC	NA	---	2.0 B	---	7.2 J	---	6.4 J	---				
Percent solids (%)	NA	---	54	---	31	---	45	---				
Total PAHs (mg/Kg)	4.0 (L)	85 (1)	---	---	3.2	---	[6.7]	---				
Total Carcinogenic PAHs	NS	NS	---	---	1.9	---	3.6	---				
Total SVOCs	NS	---	---	---	3.2	---	6.7	---				
BaP Equivalents	1.3 (H)	NS	---	---	0.5	[7]	1.0	[16]				

NOTES: J - estimated value, NS - no screening value, NA - not applicable, --- - analyte not detected. [ ] - concentration above sediment screening value. { } - concentration exceeds ecological screening value. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%; when AS<5%, e=AS TOC%. Samples analyzed by method NY ASP 95-2. NYS sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999): t = screening value for total unchlorinated phenols. Screening values are ecological values except as noted: H = human exposure by fish consumption; W = drinking water source protection; L = Long & Morgan 1990. Ecological screening values are: (1) EPA ARCS No Effects concentrations; (2) NOAA upper effects threshold concentration (1999). Screening concentration (SC) calculated as concentration (C)/fraction of organic carbon (foc) in units of ug/gOC. SC derived for sediment with %TOC ranging between 0.2% and 12%. SC was not calculated for %TOC outside that range (not calc.).

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DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-LK1	WP-LK2	WP-LK3	WP-LK4	WP-LK5
Sample Date			05/12/2003	05/12/2003	05/12/2003	05/12/2003	05/12/2003
Sample Depth			0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	19200 J	14500 J	14300 J	16000 J	17600 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.9 BJ	4 BJ	(6.3 BJ)	4.7 BJ	4.7 BJ
Barium	NS	NS	120 BJ	88 BJ	92 BJ	98 BJ	100 BJ
Beryllium	NS	NS	0.86 BJ	0.67 BJ	0.64 BJ	0.7 BJ	0.81 BJ
Cadmium	9.0 (P)	0.6 (P)	(1.3 BJ)	(1.4 BJ)	(0.8 BJ)	(0.93 BJ)	(1.2 BJ)
Calcium	NS	NS	10200 J	11900 J	18800 J	11600 J	11100 J
Chromium**	110.0 (P)	26.0 (P)	(27 J)	26 J	21 J	22 J	24 J
Cobalt	NS	NS	14 BJ	11 BJ	8.8 BJ	11 BJ	13 BJ
Copper	110.0 (P)	16.0 (P)	(51 J)	(90 J)	(90 J)	(83 J)	(64 J)
Iron	4% (P)	2% (P)	(3.3 J)	(3.2 J)	(2.7 J)	(3.0 J)	(3.3 J)
Lead	110.0 (L)	31.0 (P)	(66 J)	(187 J*)	(79 J)	(99 J)	(126 J*)
Magnesium	NS	NS	8570 J	6950 BJ	8150 J	7310 J	8700 J
Manganese	1100 (L)	460 (P)	(707 J)	(579 J)	(551 J)	(1000 J)	(637 J)
Mercury	1.3 (L)	0.15 (L)	(0.31 J)	(0.57 J)	(0.29 J)	(0.33 J)	(0.3 J)
Nickel	50 (L)	16 (P)	(33 BJ)	(29 BJ)	(26 BJ)	(26 BJ)	(30 J)
Potassium	NS	NS	1740 BJ	1510 BJ	1420 BJ	1350 BJ	1360 BJ
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	330 BJ	386 BJ	357 BJ	212 BJ	328 BJ
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	29 BJ	38 BJ	29 BJ	22 BJ	26 BJ
Zinc	270 (L)	120 (P/L)	(221 J)	(359 J*)	(224 J)	(228 J)	(230 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	18	12	14	25	36
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	10 J	9.2 J	6.3 J	4.2 J	4.6 J
Total organic carbon (mg/Kg)	NS	NS	102000 J	91600 J	63300 J	42100 J	46100 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-LK01-A	WP-LK01-A	WP-LK01-A	WP-LK01-B	WP-LK01-B
Sample Date			05/10/2001	05/10/2001	05/10/2001	05/10/2001	05/10/2001
Sample Depth			0 - 6 in.	6 - 12 in.	19 - 25 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (I)	14500 J	11400 J	13700 J	14200 J	11700 J
Antimony	25.0 (L)	2.0 (L)	---	(3.2 JN)	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.6 J	(6.6 J)	5 J	5 J	5.2 J
Barium	NS	NS	94 J	74 J	82 J	90 J	73 J
Beryllium	NS	NS	0.57 J	0.53 J	0.62 J	0.53 J	0.42 J
Cadmium	9.0 (P)	0.6 (P)	---	0.16 J	0.34 J	---	---
Calcium	NS	NS	7600 J	6330 J	9540 J	7030 J	5980 J
Chromium**	110.0 (P)	26.0 (P)	18 J	15 J	17 J	18 J	15 J
Cobalt	NS	NS	8.6 J	9.3 J	9.2 J	7.9 J	6.5 J
Copper	110.0 (P)	16.0 (P)	(37 J)	(31 J)	(38 J)	(34 J)	(30 J)
Iron	4% (P)	2% (P)	(3.0 J)	(2.4 J)	(2.9 J)	(2.7 J)	(2.4 J)
Lead	110.0 (L)	31.0 (P)	(49 J)	(42 J)	(62 J)	(46 J)	(41 J)
Magnesium	NS	NS	7130 J	5540 J	6390 J	6850 J	5720 J
Manganese	1100 (L)	460 (P)	(594 J)	(566 J)	(636 J)	460 J	(541 J)
Mercury	1.3 (L)	0.15 (L)	---	---	(0.2 J)	---	---
Nickel	50 (L)	16 (P)	(25 J)	(22 J)	(23 J)	(24 J)	(22 J)
Potassium	NS	NS	1090 J	852 J	932 J	1110 J	888 J
Selenium	NS	NS	2.5 J	1.2 J	1.4 J	---	1.7 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	124 J	82 J	67 J	145 J	112 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	20 J	19 J	18 J	19 J	20 J
Zinc	270 (L)	120 (P/L)	(204 J)	(136 J)	(145 J)	(168 J)	(141 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	22	35	46	25	32
pH	NA	NA	7.3	7.5	7.9	7.6	7.7
% TOC	NS	NS	10	4.7	3.4	6.7	6.2
Total organic carbon (mg/Kg)	NS	NS	99100	47000	33800	66800	62000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%. When AS<5%, c=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (I) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-LK01-B DUP 05/10/2001 6 - 12 in. mg/Kg	WP-LK01-B 05/10/2001 25 - 31 in. mg/Kg	WP-LK01-C 05/10/2001 0 - 6 in. mg/Kg	WP-LK01-C 05/10/2001 6 - 12 in. mg/Kg	WP-LK01-C 05/10/2001 26 - 32 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	13300 J	13100 J	14600 J	13200 J	12900 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	4.3 J	4.9 J	4.1 J	4.8 J	4.3 J
Barium	NS	NS	83 J	80 J	90 J	81 J	78 J
Beryllium	NS	NS	0.53 J	0.55 J	0.57 J	0.55 J	0.53 J
Cadmium	9.0 (P)	0.6 (P)	---	0.36 J	---	0.2 J	0.31 J
Calcium	NS	NS	6640 J	5350 J	7240 J	6750 J	9730 J
Chromium**	110.0 (P)	26.0 (P)	17 J	17 J	18 J	17 J	16 J
Cobalt	NS	NS	7.6 J	8.9 J	8.3 J	8.5 J	8.5 J
Copper	110.0 (P)	16.0 (P)	(34 J)	(37 J)	(37 J)	(34 J)	(36 J)
Iron	4% (P)	2% (P)	(2.7 J)	(2.8 J)	(2.9 J)	(2.7 J)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(46 J)	(59 J)	(47 J)	(44 J)	(59 J)
Magnesium	NS	NS	6440 J	5800 J	6990 J	6410 J	6190 J
Manganese	1100 (L)	460 (P)	(640 J)	(616 J)	(569 J)	(613 J)	(666 J)
Mercury	1.3 (L)	0.15 (L)	---	(0.21 J)	---	---	---
Nickel	50 (L)	16 (P)	(24 J)	(22 J)	(24 J)	(24 J)	(22 J)
Potassium	NS	NS	956 J	888 J	1140 J	996 J	890 J
Selenium	NS	NS	2.1 J	1.6 J	---	2 J	1.5 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	108 J	62 J	148 J	97 J	68 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	22 J	18 J	19 J	22 J	18 J
Zinc	270 (L)	120 (P/L)	(162 J)	(136 J)	(162 J)	(135 J)	(132 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(3.2 J)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	34	48	29	36	50
pH	NA	NA	7.7	8.1	7.5	7.8	7.6
% TOC	NS	NS	5.5	5.5	5.9	5.6	3.9
Total organic carbon (mg/Kg)	NS	NS	55200	54700	58700	55500	38800

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-01-A	WP-04.45-9	WP-09A	WP-11A	LG-OUT
Sample Date			05/09/2001	05/09/2001	05/09/2001	05/09/2001	05/09/2001
Sample Depth			0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	10000	10700	7850	4650	7350
Antimony	25.0 (L)	2.0 (L)	0.52 JN	1.2 JN	0.51 JN	0.63 JN	(2.3 JN)
Arsenic	33.0 (P)	6.0 (P)	(6.5)	(8.9)	(19)	(10)	(9.9)
Barium	NS	NS	54	79	61	28 J	80
Beryllium	NS	NS	0.45 J	0.43 J	0.45 J	0.27 J	0.36 J
Cadmium	9.0 (P)	0.6 (P)	(1 J)	(1.3 J)	0.34 J	0.54 J	(2.4)
Calcium	NS	NS	24900	4140	6120	1460	10800
Chromium**	110.0 (P)	26.0 (P)	19	26	25 J	26 J	(29)
Cobalt	NS	NS	7.6 J	7.9 J	7.9 J	5.3 J	6.5 J
Copper	110.0 (P)	16.0 (P)	(48)	(91)	(41)	(172 *)	(88)
Iron	4% (P)	2% (P)	(3.4)	(4.3 *)	(2.8)	1.4	(3.1)
Lead	110.0 (L)	31.0 (P)	(94)	(152 *)	(73)	(225 *)	(235 *)
Magnesium	NS	NS	18900	7180	4480	1960	6490
Manganese	1100 (L)	460 (P)	(912 J)	(1790 J*)	(902 JN)	440 JN	(566 J)
Mercury	1.3 (L)	0.15 (L)	(0.51)	0.15 J	(0.17 J)	(0.44)	(1.1)
Nickel	50 (L)	16 (P)	(22)	(26)	(17)	13	(34)
Potassium	NS	NS	636 J	709 J	759 J	297 J	617 J
Selenium	NS	NS	0.94 J	1.9	1.5	1.2 J	1.1 J
Silver	2.2 (L)	1.0 (L)	---	0.27 J	---	---	---
Sodium	NS	NS	69 J	81 J	99 J	84 J	90 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	14	18	24	10 J	17
Zinc	270 (L)	120 (P/L)	(163)	(210)	78	(196)	(285 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	(1.1)	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	81	73	66	65	77
pH	NA	NA	8.2	8.1	8.1	8.4	8.3
% TOC	NS	NS	1.9	2.2	6.6	7.7	5.6
Total organic carbon (mg/Kg)	NS	NS	18600	22100	65500	76500	56000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. c - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, c=5%. When AS<5%, c=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-LGOUT2	WP-MW4	WP-MW4 DUP	WP-16	WP-18
Sample Date			05/13/2003	05/13/2003	05/13/2003	05/09/2001	05/09/2001
Sample Depth			0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	10100	12000	12600	10800	9880
Antimony	25.0 (L)	2.0 (L)	0.9 BNJ	0.87 BNJ	(25 NJ)	0.87 JN	---
Arsenic	33.0 (P)	6.0 (P)	(6.6)	(6.3)	(8.4)	(7)	5
Barium	NS	NS	118	62	74	57	31 J
Beryllium	NS	NS	0.45 B	0.48 B	0.52 B	0.43 J	0.48 J
Cadmium	9.0 (P)	0.6 (P)	(1.7)	(1.2 B)	(1.2 B)	(1.9)	0.2 J
Calcium	NS	NS	13000	5390	9830	2130	2500
Chromium**	110.0 (P)	26.0 (P)	23	18	17	17	17
Cobalt	NS	NS	7.9 B	8.4 B	9.5 B	7.3 J	9 J
Copper	110.0 (P)	16.0 (P)	(63)	(53)	(62)	(61)	16
Iron	4% (P)	2% (P)	(3.4)	(3.6)	(4.1 *)	(3.3)	(2.7)
Lead	110.0 (L)	31.0 (P)	(141 *)	(130 *)	(1450 *)	(67)	24
Magnesium	NS	NS	7210	7290	7330	6880	4830
Manganese	1100 (L)	460 (P)	345	(541)	(579)	(489 J)	293 J
Mercury	1.3 (L)	0.15 (L)	(0.34)	(0.16)	0.14	(0.17 J)	0.15 J
Nickel	50 (L)	16 (P)	(56 *)	(25)	(26)	(23)	(21)
Potassium	NS	NS	861 B	817 B	710 B	748 J	1180 J
Selenium	NS	NS	---	---	---	1 J	1 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	99 B	83 B	74 B	51 J	88 J
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	20	17	18	16	16
Zinc	270 (L)	120 (P/L)	(262)	(231)	(246)	(309 *)	74
Cyanide, total	NS	0.1 (Eisler 1991)	(0.33 BJN)	(0.34 BJN)	(0.35 BJN)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	75	81	79	79	68
pH	NA	NA	---	---	---	8.2	7.5
% TOC	NS	NS	1.2 J	2.5	1.2	0.9	2.3
Total organic carbon (mg/Kg)	NS	NS	12400 J	25400	12100	8770	23400

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-18	WP-M2	WP-M2	WP-M2	WP-M3
Sample Date			05/09/2001	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth			6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 17 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	10100	15400 J	10600	10900	9500 J
Antimony	25.0 (L)	2.0 (L)	---	1.7 BNJ	---	---	---
Arsenic	33.0 (P)	6.0 (P)	5.6	(6.6 BJ*)	(15 J)	(14 J)	5.5 J*
Barium	NS	NS	34 J	93 BJ	46 B	37 B	53 BJ
Beryllium	NS	NS	0.47 J	0.77 BJ	0.45 B	0.45 B	0.5 BJ
Cadmium	9.0 (P)	0.6 (P)	0.098 J	(1.8 BJ)	(2.6)	(1.2 B)	(1.4 BJ)
Calcium	NS	NS	2900	9540 J	2350	1170 B	17000 J
Chromium**	110.0 (P)	26.0 (P)	16	(34 J)	(482 *)	(465 *)	(27 J)
Cobalt	NS	NS	9 J	14 BJ	10 B	9.4 B	10 BJ
Copper	110.0 (P)	16.0 (P)	16	(58 J)	(71)	(51)	(77 J)
Iron	4% (P)	2% (P)	(2.7)	(3.6 J)	(2.6)	(2.8)	(2.3 J)
Lead	110.0 (L)	31.0 (P)	20	(129 J*)	(210 *)	(174 *)	(182 J*)
Magnesium	NS	NS	4960	8490 J	5830	5670	11400 J
Manganese	1100 (L)	460 (P)	244 J	(874 J)	324	285	(527 J)
Mercury	1.3 (L)	0.15 (L)	(0.44 J)	(0.83 J)	(34 *)	(68 *)	(0.73 J)
Nickel	50 (L)	16 (P)	(20)	(32 J)	(24)	(22)	(24 J)
Potassium	NS	NS	1140 J	1150 BJ	766 B	647 B	821 BJ
Selenium	NS	NS	0.94 J	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	79 J	159 BJ	---	---	138 BJ
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	16	24 BJ	1.1 B	0.85 B	22 BJ
Zinc	270 (L)	120 (P/L)	69	(325 J*)	18	13	(294 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(1.3 BJN)	(396 *)	(195)	---
Cyanide, amenable to chlorination	NS	NS	---	---	(5.1 JN)	(1.7 JN)	---
Percent solids (%)	NA	NA	64	28	66	79	39
pH	NA	NA	7.4	---	---	---	---
% TOC	NS	NS	2.4	1.1 e BJ	1.1 e BJ	1.1 BJ	6.4 BJ
Total organic carbon (mg/Kg)	NS	NS	24400	11300 e BJ	11300 e BJ	11300 BJ	63800 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-M3	WP-DOT	WP-DOT	WP-DOT	WP-29A
Sample Date			05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth			6 - 12 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	10900	14400	12400	11700	9600
Antimony	25.0 (L)	2.0 (L)	(92 NJ*)	(5.4 BNJ)	(27 NJ*)	---	(13 BNJ)
Arsenic	33.0 (P)	6.0 (P)	(33 J)	(9.5 J)	(103 J*)	(35 J*)	5.7 J
Barium	NS	NS	63	33 B	68	54 B	80
Beryllium	NS	NS	0.6 B	0.53 B	0.61 B	0.5 B	0.43 B
Cadmium	9.0 (P)	0.6 (P)	(23 *)	(4.2)	(53 *)	(7.4)	(3.6)
Calcium	NS	NS	13100	3820	4810	2290	4220
Chromium**	110.0 (P)	26.0 (P)	(280 *)	(50)	(2270 *)	(2130 *)	(55)
Cobalt	NS	NS	11 B	13 B	9.7 B	9.9 B	12 B
Copper	110.0 (P)	16.0 (P)	(187 *)	(44)	(426 *)	(214 *)	(56)
Iron	4% (P)	2% (P)	(2.5)	(3.6)	(2.7)	(2.7)	(2.2)
Lead	110.0 (L)	31.0 (P)	(399 *)	(113 *)	(803 *)	(452 *)	(106)
Magnesium	NS	NS	9670	8960	7060	5950	5970
Manganese	1100 (L)	460 (P)	418	339	320	229	272
Mercury	1.3 (L)	0.15 (L)	(27 *)	(0.86)	(186 *)	(88 *)	(4.6 *)
Nickel	50 (L)	16 (P)	(23)	(33)	(22)	(22)	(27)
Potassium	NS	NS	1000 B	724 B	937 B	844 B	705 B
Selenium	NS	NS	1.2 B	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	---	---	---	---	---
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	16	1 B	1.2 B	---	1.2 B
Zinc	270 (L)	120 (P/L)	(1780 *)	18	16 B	15	15 B
Cyanide, total	NS	0.1 (Eisler 1991)	(16 JN)	(732 *)	(4650 *)	(1210 *)	(466 *)
Cyanide, amenable to chlorination	NS	NS	---	(0.52 BJN)	(26 JN)	(2.7 JN)	(0.32 BJN)
				---	---	---	---
Percent solids (%)	NA	NA	65	64	61	73	59
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	6.4 e BJ	1.3 BJ	1.3 e BJ	1.3 e BJ	6.3 e BJ
Total organic carbon (mg/Kg)	NS	NS	63800 e BJ	13400 BJ	13400 e BJ	13400 e BJ	62900 e BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Compound / Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-29A 05/14/2003 6 - 12 in. mg/Kg	WP-29A DUP 05/14/2003 6 - 12 in. mg/Kg	WP-29A 05/14/2003 12 - 17 in. mg/Kg	WP-29 05/09/2001 0 - 6 in. mg/Kg	WP-29 05/09/2001 6 - 12 in. mg/Kg
Aluminum	NS	73200 (1)	13000	11600	18700	11800	10500
Antimony	25.0 (L)	2.0 (L)	(91 NJ*)	(105 NJ*)	---	(159 JN*)	(3 JN)
Arsenic	33.0 (P)	6.0 (P)	(162 J*)	(114 *)	(31 J)	(20)	(27)
Barium	NS	NS	82	70 B	44 B	69 J	31 J
Beryllium	NS	NS	0.69 B	0.6 B	0.73 B	0.53 J	0.44 J
Cadmium	9.0 (P)	0.6 (P)	(79 *)	(68 *)	(7)	(27 *)	(32 *)
Calcium	NS	NS	6140	5380	2280	5840	2360
Chromium**	110.0 (P)	26.0 (P)	(2000 *)	(1490 *)	(1040 *)	(267 J*)	(620 J*)
Cobalt	NS	NS	10 B	8.9 B	13 B	11 J	6.6 J
Copper	110.0 (P)	16.0 (P)	(504 *)	(391 *)	(173 *)	(154 *)	(115 *)
Iron	4% (P)	2% (P)	(2.7)	(2.4)	(4.2 *)	(2.7)	(2.6)
Lead	110.0 (L)	31.0 (P)	(1050 *)	(859 *)	(348 *)	(376 *)	(321 *)
Magnesium	NS	NS	6910	6410	10600	7320	5570
Manganese	1100 (L)	460 (P)	369	316	254	366 JN	208 JN
Mercury	1.3 (L)	0.15 (L)	(144 *)	(130 J*)	(95 *)	(32 *)	(87 *)
Nickel	50 (L)	16 (P)	(23)	(20)	(37)	(25)	(18)
Potassium	NS	NS	1080 B	901 B	883 B	1000 J	679 J
Selenium	NS	NS	---	1.3 B	---	1.4 J	0.49 J
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	---	---	---	112 J	48 J
Thallium	NS	NS	1.4 B	---	---	---	---
Vanadium	NS	NS	17 B	15 B	24	16 J	12 J
Zinc	270 (L)	120 (P/L)	(6500 *)	(5410 *)	(926 *)	(1980 *)	(2610 *)
Cyanide, total	NS	0.1 (Eisler 1991)	(34 JN)	(34 JN)	(6.2 JN)	(28)	(6)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	53	55	60	56	62
pH	NA	NA	---	---	---	8.4	7.8
% TOC	NS	NS	6.3 BJ	7 BJ	6.3 e BJ	2.2	0.7
Total organic carbon (mg/Kg)	NS	NS	62900 BJ	70100 BJ	62900 e BJ	21700	7330

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-29	WP-CKOUT	WP-OD3	WP-OD3	WP-PL
Sample Date			05/09/2001	05/14/2003	05/14/2003	05/14/2003	05/08/2001
Sample Depth			12 - 18 in.	0 - 6 in.	0 - 6 in.	6 - 12 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	12800	11400	9310	11300	12500 J
Antimony	25.0 (L)	2.0 (L)	---	1.7 BNJ	1.7 BNJ	(2.9 BNJ)	(6.3 JN)
Arsenic	33.0 (P)	6.0 (P)	(44 *)	(18)	(6.4)	(7)	(16 J)
Barium	NS	NS	81	130	58	58 B	74 J
Beryllium	NS	NS	0.6 J	0.59 B	0.41 B	0.54 B	0.63 J
Cadmium	9.0 (P)	0.6 (P)	(9.9 *)	(1.8)	(1.7)	(2.3)	(8.5 J)
Calcium	NS	NS	3900	3200	1780	1880	6040 J
Chromium**	110.0 (P)	26.0 (P)	(4120 J*)	(64)	(48)	(89)	(544 J*)
Cobalt	NS	NS	9.4 J	12 B	8.2 B	9.7 B	13 J
Copper	110.0 (P)	16.0 (P)	(462 *)	(154 *)	(68)	(104)	(183 J*)
Iron	4% (P)	2% (P)	(3.0)	(3.0)	(2.5)	(2.3)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(637 *)	(182 *)	(130 *)	(243 *)	(279 J*)
Magnesium	NS	NS	6190	4860	5110	5250	5700 J
Manganese	1100 (L)	460 (P)	322 JN	(2390 *)	(690)	171	386 JN
Mercury	1.3 (L)	0.15 (L)	(118 *)	(9.6 J*)	(1.2 J)	(2.4 J*)	(17 J*)
Nickel	50 (L)	16 (P)	(21)	(25)	(19)	(22)	(41 J)
Potassium	NS	NS	1180 J	888 B	599 B	887 B	1330 J
Selenium	NS	NS	2.1	1.8	---	---	3.3 J
Silver	2.2 (L)	1.0 (L)	0.25 J	---	---	---	(1.2 J)
Sodium	NS	NS	98 J	---	---	---	189 J
Thallium	NS	NS	---	2.2 B	1.4 B	1.5 B	---
Vanadium	NS	NS	16 J	19	13 B	15	21 J
Zinc	270 (L)	120 (P/L)	(1330 *)	(836 *)	(244)	(307 *)	(825 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	(6.1)	(0.27 BJN)	---	(0.28 BJN)	(7.3 J)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	2.2
Percent solids (%)	NA	NA	58	70	72	68	26
pH	NA	NA	7.6	---	---	---	7.2
% TOC	NS	NS	11	3.6	3.1 e	3.1	12
Total organic carbon (mg/Kg)	NS	NS	105000	35900	30500 e	30500	115000

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 3-3
Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect	Sediment Lowest Effect	WP-PL DUP	WP-PL	WP-PL1	WP-PL1	WP-PL1
Sample Date	Level (SEL)	Level (LEL)	05/08/2001	05/08/2001	05/13/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 11 in.	0 - 6 in.	6 - 12 in.	12 - 18 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	11900 J	14000 J	16000 J	16700 J	16600
Antimony	25.0 (L)	2.0 (L)	(4.5 JN)	(3.4 JN)	(7.1 BNJ)	(4.7 BNJ)	---
Arsenic	33.0 (P)	6.0 (P)	(9.6 J)	(105 *)	(13 J)	(28 J)	4.5
Barium	NS	NS	70 J	87 J	90 BJ	106 J	105
Beryllium	NS	NS	0.59 J	0.67 J	0.79 BJ	0.83 BJ	0.8 B
Cadmium	9.0 (P)	0.6 (P)	(6.4 J)	(19 *)	(4.6 J)	(2.3 BJ)	0.4 B
Calcium	NS	NS	5930 J	4230	7220 J	5050 J	4340
Chromium**	110.0 (P)	26.0 (P)	(412 J*)	(3760 J*)	(335 J*)	(474 J*)	24
Cobalt	NS	NS	12 J	9.6 J	14 BJ	12 BJ	12 B
Copper	110.0 (P)	16.0 (P)	(158 J*)	(345 *)	(109 J)	(104 J)	(24)
Iron	4% (P)	2% (P)	(2.6 J)	(2.8)	(3.0 J)	(2.6 J)	(2.4)
Lead	110.0 (L)	31.0 (P)	(281 J*)	(629 *)	(181 J*)	(213 J*)	19
Magnesium	NS	NS	5350 J	4990	6570 J	5670 J	5800
Manganese	1100 (L)	460 (P)	408 JN	354 JN	456 J	276 J	299
Mercury	1.3 (L)	0.15 (L)	(9 J*)	(182 *)	(8.5 J*)	(14 J*)	(0.3)
Nickel	50 (L)	16 (P)	(37 J)	(23)	(37 J)	(25 J)	(24)
Potassium	NS	NS	1230 J	1140 J	1470 BJ	1170 BJ	1040 B
Selenium	NS	NS	1.7 J	3.5	---	1.4 BJ	1.1 B
Silver	2.2 (L)	1.0 (L)	(1.1 J)	0.55 J	---	---	---
Sodium	NS	NS	176 J	147 J	185 BJ	133 BJ	100 B
Thallium	NS	NS	---	---	---	---	---
Vanadium	NS	NS	21 J	17 J	25 BJ	20 BJ	18
Zinc	270 (L)	120 (P/L)	(654 J*)	(1820 *)	(501 J*)	(275 J*)	79
Cyanide, total	NS	0.1 (Eisler 1991)	---	(42)	(0.87 BJ)	(0.52 BJ)	(0.65 B)
Cyanide, amenable to chlorination	NS	NS	---	13	---	---	---
Percent solids (%)	NA	NA	25	40	29	43	56
pH	NA	NA	7.7	7.4	---	---	---
% TOC	NS	NS	12	8.2	11 J	8.1 J	5.2
Total organic carbon (mg/Kg)	NS	NS	115000	82300	108000 J	80500 J	51700

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-PL2	WP-PL2	WP-PL2	WP-PL3	WP-PL3
Sample Date			05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	15000 J	15700 J	13200 J	15900 J	17100 J
Antimony	25.0 (L)	2.0 (L)	---	---	(7.8 BNJ)	---	(21 BNJ)
Arsenic	33.0 (P)	6.0 (P)	3.4 BJ	5.6 BJ	(20 J)	4.3 BJ	(34 J*)
Barium	NS	NS	79 BJ	86 BJ	77 BJ	87 BJ	103 BJ
Beryllium	NS	NS	0.74 BJ	0.78 BJ	0.63 BJ	0.79 BJ	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	(4.7 J)	(5 J)	(4.7 J)	(4.9 J)	(8.9 J)
Calcium	NS	NS	6420 J	5450 J	3670 J	7350 J	5310 J
Chromium**	110.0 (P)	26.0 (P)	(204 J*)	(211 J*)	(574 J*)	(244 J*)	(1170 J*)
Cobalt	NS	NS	13 BJ	13 BJ	9.7 BJ	14 BJ	13 BJ
Copper	110.0 (P)	16.0 (P)	(162 J*)	(195 J*)	(112 J*)	(146 J*)	(225 J*)
Iron	4% (P)	2% (P)	(2.6 J)	(2.7 J)	(2.3 J)	(2.8 J)	(2.8 J)
Lead	110.0 (L)	31.0 (P)	(297 J*)	(405 J*)	(193 J*)	(258 J*)	(435 J*)
Magnesium	NS	NS	6200 J	6190 J	4750 J	6590 J	5940 J
Manganese	1100 (L)	460 (P)	335 J	301 J	256 J	349 J	335 J
Mercury	1.3 (L)	0.15 (L)	(8.1 J*)	(8.5 J*)	(20 J*)	(9.5 J*)	(27 J*)
Nickel	50 (L)	16 (P)	(41 J)	(36 J)	(21 J)	(43 J)	(29 J)
Potassium	NS	NS	1490 BJ	1350 BJ	954 BJ	1540 BJ	1360 BJ
Selenium	NS	NS	---	2 BJ	---	---	1.9 BJ
Silver	2.2 (L)	1.0 (L)	---	0.97 BJ	---	---	---
Sodium	NS	NS	221 BJ	189 BJ	134 BJ	249 BJ	199 BJ
Thallium	NS	NS	---	---	---	3 BJ	---
Vanadium	NS	NS	22 BJ	25 BJ	16 BJ	25 BJ	24 BJ
Zinc	270 (L)	120 (P/L)	(488 J*)	(515 J*)	(431 J*)	(492 J*)	(887 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(0.49 BJ)	(8 J)	(0.68 BJ)	(11 J)
Cyanide, amenable to chlorination	NS	NS	---	---	1.7	---	---
Percent solids (%)	NA	NA	26	34	43	24	35
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	5.9 BJ	6.4 BJ	7.7 BJ	9.4 BJ	12 BJ
Total organic carbon (mg/Kg)	NS	NS	58700 BJ	64200 BJ	77000 BJ	93900 BJ	118000 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

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DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-T1A	WP-T1A	WP-T1A	WP-T1C	WP-T1C
Sample Date			05/14/2003	05/14/2003	05/14/2003	05/14/2003	05/14/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 10 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13700 J	12900 J	13500	9690	11500
Antimony	25.0 (L)	2.0 (L)	---	(3.7 BNJ)	---	(40 NJ*)	(52 NJ*)
Arsenic	33.0 (P)	6.0 (P)	(6.8 J)	(8 J)	(13)	(6.2)	(22)
Barium	NS	NS	68 BJ	69 BJ	57 B	42 B	60 B
Beryllium	NS	NS	0.67 BJ	0.66 BJ	0.62 B	0.46 B	0.58 B
Cadmium	9.0 (P)	0.6 (P)	(1.9 BJ)	(4.5 J)	(1.6 B)	(3.3)	(13 *)
Calcium	NS	NS	5910 J	4730 J	2700	4590	4060
Chromium**	110.0 (P)	26.0 (P)	(53 J)	(148 J*)	(242 *)	(74)	(274 *)
Cobalt	NS	NS	17 BJ	14 BJ	11 B	10 B	10 B
Copper	110.0 (P)	16.0 (P)	(70 J)	(117 J*)	(48)	(61)	(132 *)
Iron	4% (P)	2% (P)	(2.9 J)	(2.6 J)	(2.6)	(2.2)	(2.5)
Lead	110.0 (L)	31.0 (P)	(87 J)	(210 J*)	(101)	(92)	(230 *)
Magnesium	NS	NS	6250 J	5960 J	5920	5590	5550
Manganese	1100 (L)	460 (P)	(527 J)	351 J	284	363	306
Mercury	1.3 (L)	0.15 (L)	(1.7 J*)	(4.6 J*)	(3.1 J*)	(4.8 J*)	(20 J*)
Nickel	50 (L)	16 (P)	(35 J)	(35 J)	(23)	(22)	(22)
Potassium	NS	NS	1190 BJ	1090 BJ	1020 B	756 B	916 B
Selenium	NS	NS	---	1.5 BJ	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	137 BJ	102 BJ	---	---	---
Thallium	NS	NS	3.3 BJ	3 BJ	---	---	---
Vanadium	NS	NS	24 BJ	25 J	1.1 B	1 B	1.5 B
Zinc	270 (L)	120 (P/L)	(240 J)	(452 J*)	16 B	14 B	15 B
Cyanide, total	NS	0.1 (Eisler 1991)	(0.65 BJ)	(0.84 BJN)	(192)	(323 *)	(1050 *)
Cyanide, amenable to chlorination	NS	NS	---	---	(0.33 BN)	(3.9 N)	(4.3 N)
					---	---	---
Percent solids (%)	NA	NA	34	43	59	70	63
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	8.5 e J	8.5 e J	8.5 J	3.1 e	3.1
Total organic carbon (mg/Kg)	NS	NS	85400 e J	85400 e J	85400 J	31100 e	31100

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID Sample Date Sample Depth Units Compound	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-OD2 05/14/2003 0 - 6 in. mg/Kg	WP-OD2 05/14/2003 6 - 12 in. mg/Kg	WP-OD2 05/14/2003 12 - 22 in. mg/Kg	WP-T2A 05/13/2003 0 - 6 in. mg/Kg	WP-T2A 05/13/2003 6 - 12 in. mg/Kg
Aluminum	NS	73200 (I)	12600 J	11700 J	12700	13100 J	10300
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	(8.9 BNJ)
Arsenic	33.0 (P)	6.0 (P)	5.3 BJ	5.1 J	(16)	5.3 BJ	(7.5)
Barium	NS	NS	66 BJ	60 BJ	48 B	70 BJ	45 B
Beryllium	NS	NS	0.61 BJ	0.54 BJ	0.56 B	0.7 BJ	0.44 B
Cadmium	9.0 (P)	0.6 (P)	(2.3 BJ)	(2.2 J)	(4)	(1.9 BJ)	(2.8)
Calcium	NS	NS	5310 J	3120 J	1950	6070 J	2290
Chromium**	110.0 (P)	26.0 (P)	(68 J)	(78 J)	(351 *)	(58 J)	(119 *)
Cobalt	NS	NS	14 BJ	12 BJ	12 B	14 BJ	11 B
Copper	110.0 (P)	16.0 (P)	(69 J)	(63 J)	(55)	(69 J)	(46)
Iron	4% (P)	2% (P)	(2.5 J)	(2.5 J)	(2.8)	(2.8 J)	(2.2)
Lead	110.0 (L)	31.0 (P)	(96 J)	(111 J*)	(102)	(86 J)	(91)
Magnesium	NS	NS	6150 J	5370 J	5780	6270 J	4830
Manganese	1100 (L)	460 (P)	433 J	305 J	284	(633 J)	228
Mercury	1.3 (L)	0.15 (L)	(1.9 J*)	(2.5 J*)	(19 J*)	(1.4 J*)	(3.9 *)
Nickel	50 (L)	16 (P)	(36 J)	(31 J)	(24)	(32 J)	(21)
Potassium	NS	NS	1260 BJ	951 BJ	1080 B	1400 BJ	896 B
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	156 BJ	90 BJ	---	184 BJ	76 B
Thallium	NS	NS	2.4 BJ	---	1.6 B	---	---
Vanadium	NS	NS	24 BJ	21 J	16 B	22 BJ	13 B
Zinc	270 (L)	120 (P/L)	(266 J)	(250 J)	(442 *)	(265 J)	(311 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	---	---	(0.44 B)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	30	49	63	27	63
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	4.1 e J	4.1 e J	4.1 J	5 BJ	3.1 B
Total organic carbon (mg/Kg)	NS	NS	41100 e J	41100 e J	41100 J	49600 BJ	31400 B

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (I) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-T2B	WP-T2B	WP-T2B	WP-T2C	WP-T2C
Sample Date			05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth			0 - 6 in.	6 - 12 in.	12 - 24 in.	0 - 6 in.	6 - 12 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	14700 J	11800	11400	11900 J	14000
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	(6.5 J)	3.8	2.2 B	(7.7 J)	(40 *)
Barium	NS	NS	78 BJ	28 B	41 B	65 BJ	60 B
Beryllium	NS	NS	0.69 BJ	0.38 B	0.44 B	0.61 BJ	0.64 B
Cadmium	9.0 (P)	0.6 (P)	(1.5 BJ)	(1.1 B)	0.56 B	(4.6 J)	(5.6)
Calcium	NS	NS	7300 J	1630	1740	6760 J	3170
Chromium**	110.0 (P)	26.0 (P)	(34 J)	(27)	17	(64 J)	(826 *)
Cobalt	NS	NS	18 BJ	14	10 B	18 BJ	14 B
Copper	110.0 (P)	16.0 (P)	(50 J)	(22)	14	(90 J)	(129 *)
Iron	4% (P)	2% (P)	(3.0 J)	(2.7)	(2.3)	(2.6 J)	(2.8)
Lead	110.0 (L)	31.0 (P)	(106 J)	(40)	26	(125 J*)	(287 *)
Magnesium	NS	NS	7780 J	7170	5240	6670 J	6280
Manganese	1100 (L)	460 (P)	(506 J)	248	247	421 J	290
Mercury	1.3 (L)	0.15 (L)	(0.46 J)	(0.17)	(0.18)	(1.7 J*)	(33 *)
Nickel	50 (L)	16 (P)	(35 J)	(26)	(20)	(37 J)	(29)
Potassium	NS	NS	1540 BJ	740 B	960 B	1310 BJ	1270 B
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	195 BJ	56 B	88 B	163 BJ	124 B
Thallium	NS	NS	---	0.86 BJ	1.5 BJ	---	---
Vanadium	NS	NS	23 BJ	13 B	13 B	22 BJ	18 B
Zinc	270 (L)	120 (P/L)	(238 J)	(155)	82	(470 J*)	(588 *)
Cyanide, total	NS	0.1 (Eisler 1991)	---	(0.33 B)	---	---	(1.5)
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	33	75	68	33	51
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	4.9 J	2.6 J	1.9	4.5 BJ	5.9 B
Total organic carbon (mg/Kg)	NS	NS	49000 J	26400 J	19100	45000 BJ	59000 B

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL)	Sediment Lowest Effect Level (LEL)	WP-T2C	WP-OD1	WP-OD1	WP-OD1	WP-T3A
Sample Date			05/13/2003	05/13/2003	05/13/2003	05/13/2003	05/13/2003
Sample Depth			12 - 24 in.	0 - 6 in.	6 - 12 in.	12 - 19 in.	0 - 6 in.
Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Compound							
Aluminum	NS	73200 (1)	13400	12200 J	17000	15800	15800 J
Antimony	25.0 (L)	2.0 (L)	---	---	---	---	---
Arsenic	33.0 (P)	6.0 (P)	3.8	(16 J)	(21)	5	(6.1 BJ)
Barium	NS	NS	45 B	67 BJ	87	81	92 BJ
Beryllium	NS	NS	0.5 B	0.69 BJ	0.83 B	0.79 B	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	0.42 B	(5.8 J)	(1.8 B)	0.58 B	(2.8 BJ)
Calcium	NS	NS	1710	6940 J	3700	3130	8830 J
Chromium**	110.0 (P)	26.0 (P)	(31)	(247 J*)	(566 *)	23	(66 J)
Cobalt	NS	NS	10 B	20 BJ	14 B	12 B	17 BJ
Copper	110.0 (P)	16.0 (P)	(18)	(89 J)	(89)	(23)	(84 J)
Iron	4% (P)	2% (P)	(2.6)	(2.8 J)	(2.9)	(2.7)	(3.1 J)
Lead	110.0 (L)	31.0 (P)	(37)	(138 J*)	(218 *)	(66)	(106 J)
Magnesium	NS	NS	6130	6070 J	6320	5930	8070 J
Manganese	1100 (L)	460 (P)	242	450 J	366	374	(469 J)
Mercury	1.3 (L)	0.15 (L)	0.095	(8.3 J*)	(20 *)	0.11	(1.1 J)
Nickel	50 (L)	16 (P)	(23)	(47 J)	(29)	(26)	(42 J)
Potassium	NS	NS	990 B	1490 BJ	1560 B	1470 B	1900 BJ
Selenium	NS	NS	---	---	---	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	99 B	222 BJ	185 B	165 B	223 BJ
Thallium	NS	NS	---	3.1 BJ	1.7 BJ	2.2 BJ	---
Vanadium	NS	NS	15	28 BJ	23	22	38 J
Zinc	270 (L)	120 (P/L)	73	(611 J*)	(251)	84	(316 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	(0.27 B)	---	(0.6 B)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	70	27	51	53	30
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	1.1 B	5.7 BJ	6.1 B	3.8 B	5.6 J
Total organic carbon (mg/Kg)	NS	NS	11000 B	56500 BJ	60700 B	37600 B	56400 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-T3A DUP 05/13/2003 0 - 6 in. mg/Kg	WP-T3A 05/13/2003 6 - 12 in. mg/Kg	WP-T3A 05/13/2003 12 - 24 in. mg/Kg	WP-T3B 05/13/2003 0 - 6 in. mg/Kg	WP-T3B 05/13/2003 6 - 12 in. mg/Kg
Compound							
Aluminum	NS	73200 (1)	14600 J	19000 J	15900	14500 J	16500 J
Antimony	25.0 (L)	2.0 (L)	---	---	(2.4 BNJ)	---	---
Arsenic	33.0 (P)	6.0 (P)	(6.1 BJ)	(10 J)	(30)	5 BJ	(8.4 J)
Barium	NS	NS	84 BJ	95 BJ	86	94 BJ	91 J
Beryllium	NS	NS	0.73 BJ	0.94 BJ	0.76 B	0.79 BJ	0.82 BJ
Cadmium	9.0 (P)	0.6 (P)	(2.4 BJ)	(3.7 J)	(5.3)	(1.7 BJ)	(1.5 BJ)
Calcium	NS	NS	8110 J	10200 J	4460	11500 J	4860 J
Chromium**	110.0 (P)	26.0 (P)	(60 J)	(110 J)	(322 *)	(44 J)	(159 J*)
Cobalt	NS	NS	15 BJ	19 BJ	13 B	14 BJ	15 BJ
Copper	110.0 (P)	16.0 (P)	(73 J)	(99 J)	(81)	(56 J)	(53 J)
Iron	4% (P)	2% (P)	(2.8 J)	(3.8 J)	(2.8)	(3.0 J)	(3.0 J)
Lead	110.0 (L)	31.0 (P)	(94 J)	(136 J*)	(160 *)	(67 J)	(94 J)
Magnesium	NS	NS	7860 J	12900 J	6970	7180 J	7110 J
Manganese	1100 (L)	460 (P)	445 J	(492 J)	400	(702 J)	(495 J)
Mercury	1.3 (L)	0.15 (L)	(1.3 J)	(2.7 J*)	(13 *)	(0.77 J)	(0.44 J)
Nickel	50 (L)	16 (P)	(38 J)	(48 J)	(27)	(31 J)	(34 J)
Potassium	NS	NS	1720 BJ	1840 BJ	1610 B	1750 BJ	1650 BJ
Selenium	NS	NS	---	---	1.1 B	---	---
Silver	2.2 (L)	1.0 (L)	---	---	---	---	---
Sodium	NS	NS	207 BJ	180 BJ	129 B	195 BJ	144 BJ
Thallium	NS	NS	---	---	---	2.3 BJ	2.5 BJ
Vanadium	NS	NS	31 BJ	51 J	21	25 BJ	28 J
Zinc	270 (L)	120 (P/L)	(281 J*)	(364 J*)	(508 *)	(222 J)	(179 J)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(2.7)	---	---
Cyanide, amenable to chlorination	NS	NS	---	---	---	---	---
Percent solids (%)	NA	NA	29	36	54	29	46
pH	NA	NA	---	---	---	---	---
% TOC	NS	NS	6.9 BJ	5.8 J	4.4 J	4 BJ	3.8 BJ
Total organic carbon (mg/Kg)	NS	NS	69300 BJ	57700 J	44200 J	39600 BJ	38000 BJ

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014.
Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (1) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-3

Three Star Anodizing Site
Wappingers Falls, New York
Wappinger Creek Investigation - Sediment Samples
Inorganic Concentrations Compared to Screening Values Including pH, TOC and Percent Solids Data

Sample ID / Sample Date / Sample Depth / Units — Compound	Sediment Severe Effect Level (SEL) mg/Kg	Sediment Lowest Effect Level (LEL) mg/Kg	WP-T3B 05/13/2003 12 - 24 in. mg/Kg	WP-T3C 05/13/2003 0 - 6 in. mg/Kg	WP-T3C 05/13/2003 6 - 11 in. mg/Kg
Aluminum	NS	73200 (I)	16600	15700 J	15400 J
Antimony	25.0 (L)	2.0 (L)	---	---	1.3 BNJ
Arsenic	33.0 (P)	6.0 (P)	(6.4)	5.8 BJ	(9.3 J)
Barium	NS	NS	81	92 BJ	91 J
Beryllium	NS	NS	0.8 B	0.89 BJ	0.81 BJ
Cadmium	9.0 (P)	0.6 (P)	(0.61 B)	(2.6 BJ)	(3.4 J)
Calcium	NS	NS	3150	8620 J	5800 J
Chromium**	110.0 (P)	26.0 (P)	(53)	(60 J)	(115 J*)
Cobalt	NS	NS	14 B	15 BJ	14 BJ
Copper	110.0 (P)	16.0 (P)	(29)	(79 J)	(78 J)
Iron	4% (P)	2% (P)	(3.0)	(3.2 J)	(3.1 J)
Lead	110.0 (L)	31.0 (P)	(188 *)	(94 J)	(125 J*)
Magnesium	NS	NS	6520	7830 J	6830 J
Manganese	1100 (L)	460 (P)	430	(508 J)	(466 J)
Mercury	1.3 (L)	0.15 (L)	0.13	(0.84 J)	(4.9 J*)
Nickel	50 (L)	16 (P)	(29)	(41 J)	(33 J)
Potassium	NS	NS	1640 B	2010 BJ	1590 BJ
Selenium	NS	NS	---	---	1.5 BJ
Silver	2.2 (L)	1.0 (L)	---	---	---
Sodium	NS	NS	132 B	249 BJ	179 BJ
Thallium	NS	NS	2 BJ	---	---
Vanadium	NS	NS	23	42 J	28 J
Zinc	270 (L)	120 (P/L)	92	(269 J)	(353 J*)
Cyanide, total	NS	0.1 (Eisler 1991)	---	---	(0.36 BJ)
Cyanide, amenable to chlorination	NS	NS	---	---	---
Percent solids (%)	NA	NA	54	31	45
pH	NA	NA	---	---	---
% TOC	NS	NS	2 B	7.2 J	6.4 J
Total organic carbon (mg/Kg)	NS	NS	19700 B	72000 J	63800 J

NOTES: J - estimated value, NS = no screening value, NA = not applicable, --- - no data. B = analyte detected above PQL in Prep Blank. e - estimated concentration using TOC data from another sample (AS) collected at the same location. When AS>=5%, e=5%. When AS<5%, e=AS TOC%. Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Sediment screening values are guidance values obtained from Technical Guidance for Screening Contaminated Sediment (NYSDEC 1998,1999), except for the total cyanide screening value obtained from Eisler 1991. L = Long & Morgan; P = Persaud; (I) = EPA ARCS No Effects concentration.
* - exceeds Sediment (SEL) screening value. ( ) - exceeds Sediment (LEL) screening value. Iron data are shown as percent. ** Hexavalent Chromium was also analyzed, but not detected.

DRAFT Table 3-4A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow July 2001
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

Sample ID / Location Cross Reference / Sample Date / Sample Depth / Units		Surface Water Screening Values	Wappingers Lake Route 9D 07/12/2001	Site Bridge 1 WP5-SW 07/12/2001	Site Bridge 2 WP10-SW 07/12/2001	Site Bridge 2 DUP WP10-SW 07/12/2001	WP13-SW 07/12/2001	WP18-SW 07/12/2001
Compound								
Volatile Organic Compounds								
Acetone	(ug/L)	50 G H(WS)	---	3 J	---	---	---	---
Semi-Volatile Organic Compounds (None Detected)								
Total suspended solids (mg/L)	(mg/L)	NS	7	5 U	5	5 U	5 U	5 U

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

DRAFT Table 3-4A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow July 2001
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS Data

Compound	Sample ID / Location Cross Reference / Sample Date / Sample Depth / Units	Surface Water Screening Values	WP35-SW 07/12/2001
Volatile Organic Compounds			
Acetone	(ug/L)	50 G H(WS)	---
Semi-Volatile Organic Compounds (None Detected)			
Total suspended solids (mg/L)	(mg/L)	NS	5 U

NOTES: U - not detected, J - estimated value, NS = no screening value, --- - no data, G - guidance value, H(WS) - health water source.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2.
[ ] - exceeds Surface Water screening value. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1.

DRAFT Table 3-4B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

Compound	Sample ID / Location Cross Reference / Sample Date / Sample Depth / Units	Surface Water Screening Values	Wappingers Lake WPLKSW-1 05/14/2002	Wappingers Lake DUP WPLKSW-1 DUP 05/14/2002	Wappingers Lake WPLKSW-2 05/15/2002	Site Bridge-1 05/14/2002	Site Bridge-2 05/15/2002	Lagoon (outlet) 05/15/2002
Volatile Organic Compounds (None Detected)								
Semi-Volatile Organic Compounds (None Detected)								
Total suspended solids (mg/L)	(mg/L)	NS	13	8	6	18	12	5 U

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.

DRAFT Table 3-4B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Detected Volatile and Semivolatile Organic Compound Concentrations Compared to Screening Values Including TSS data

Sample ID / Location Cross Reference / Sample Date / Sample Depth / Units		Surface Water Screening Values	Rt. 28 Bridge -1	Rt. 28 Bridge -2
Sample Date			05/14/2002	05/15/2002
Compound				
Volatile Organic Compounds (None Detected)				
Semi-Volatile Organic Compounds (None Detected)				
Total suspended solids (mg/L)	(mg/L)	NS	18	20

NOTES: U - not detected. NS - no screening value.
Samples analyzed by methods NY ASP 95-1 and NY ASP 95-2. Water quality screening value obtained from NYSDEC (1998) TOGS 1.1.1.
There were no volatile or semivolatile organic compounds detected in these samples.

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DRAFT Table 3-5A
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Low Flow, July 2001
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date / Units	Surface Water Screening Values	Wappingers Lake Route 9D 07/12/2001		Site Bridge 1 WP5-SW 07/12/2001		Site Bridge 2 WP10-SW 07/12/2001		WP13-SW 07/12/2001		WP18-SW 07/12/2001		WP35-SW 07/12/2001	
Compound	ug/L	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)
Aluminum	100 i-A(C)	82 J		34 J		74 J		28 J		38 J		18 J	
Antimony	3 H(WS)	1.4 U		1.4 U		1.4 U		1.4 U		1.4 U		1.4 U	
Arsenic	50/150 H(WS)/d-A(C)	1.6 U		1.6 U		1.6 U		1.6 U		1.6 U		1.6 U	
Barium	1000 H(WS)	16 J		15 J		16 J		15 J		17 J		16 J	
Beryllium	3 gd-H(WS)/A(C)	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100	0.08 U	1100
Cadmium	5/h H(WS)/A(C)	0.2 U	3.0	0.2 U	3.3	0.2 U	3.2	0.2 U	3.2	0.2 U	3.0	0.2 U	3.2
Calcium	NS	44800		44500		45100		47500		49600		46500	
Chromium	11 dhx-A(C)	1.8 J	109	1.0 J	120	1.7 J	114	1.3 J	114	1.9 J	109	1.7 J	114
Cobalt	5 A(C)	0.9 U		0.9 U		0.9 U		0.9 U		0.9 U		0.9 U	
Copper	200/h H(WS)/A(C)	1.9 J	13	1.4 J	15	1.4 J	14	1.0 J	14	1.4 J	13	1.3 J	14
Iron	300 A(C)	278		207		284		173		198		152	
Lead	50/h H(WS)/A(C)	0.7 U	6.3	0.7 U	7.1	0.7 U	6.7	0.7 U	6.7	0.7 U	6.3	0.7 U	6.7
Magnesium	35000 H(WS)	12500		12300		12400		13000		13600		12700	
Manganese	300 E	102		106		134		97		100		95	
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.2 U		0.2 U		0.2 U		0.2 U		0.2 U		0.2 U	
Nickel	100h H(WS)/A(C)	0.8 J	77	0.7 U	86	0.7 U	81	0.7 U	81	0.7 U	77	1.0 J	81
Potassium	NS	1010 J		1010 J		1030 J		1090 J		1150 J		1070 J	
Selenium	4.6 d-A(C)	1.8 U		1.8 U		1.8 U		1.8 U		1.8 U		1.8 U	
Silver	0.1 i-A(C)	0.7 U		0.7 U		0.7 U		0.7 U		0.7 U		0.7 U	
Sodium	NS	28800		28400		28800		30000		31200		29600	
Thallium	0.5/8 gd-H(WS)/A(C)	3.6 U		3.6 U		3.6 U		3.6 U		3.6 U		3.6 U	
Vanadium	14 A(C)	0.4 U		0.4 U		0.4 U		0.4 U		0.4 U		0.4 U	
Zinc	66 d-A(C)	1.3 J	123	2.1 J	136	4.8 J	130	4.7 J	130	5.0 J	123	1.1 J	130
Cyanide, total	5.2 f-A(C)	10.0 U		10.0 U		10.0 U		10.0 U		10.0 U		10.0 U	
Total suspended solids (mg/L)	NS	7		5 U		5		5 U		5 U		5 U	
Hardness (mg/L)	NS	160		180		170		170		160		170	

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

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DRAFT Table 3-5B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date	Surface Water Screening Values	Wappingers Lake WPLKSW-1 05/14/2002		Wappingers Lake WPLKSW-2 05/15/2002		Site Bridge-1 05/14/2002		Site Bridge-2 05/15/2002		Lagoon (outlet) 05/15/2002		Rt. 28 Bridge -1 05/14/2002	
Units	ug/L	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)	ug/L	Hardness A(C)
Compound													
Aluminum	100 i-A(C)	[451]		[256]		[593]		[412]		[143 J]		[696]	
Antimony	3 H(WS)	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
Arsenic	50/150 H(WS)/d-A(C)	3.3 U		3.3 U		3.3 U		3.3 U		3.3 U		3.3 U	
Barium	1000 H(WS)	17 J		13 J		19 J		15 J		18 J		19 J	
Beryllium	3 gd-H(WS)/A(C)	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 U	1100	0.1 J	1100
Cadmium	5/h H(WS)/A(C)	0.4 U	2.3	0.4 U	2.3	0.4 U	2.1	0.4 U	2.1	0.4 U	2.3	0.4 U	2.3
Calcium	NS	30100		30600		30700		30300		35300		30800	
Chromium	11 dhx-A(C)	1.2 U	80	1.2 U	80	1.2 U	74	1.2 U	74	1.2 U	80	1.2 U	80
Cobalt	5 A(C)	1.3 U		1.3 U		1.3 U		1.3 U		1.3 U		1.3 U	
Copper	200/h H(WS)/A(C)	2.3 J	10	3.4 J	10	1.8 U	9.0	2.1 J	9.0	2.4 J	10	2.1 J	10
Iron	300 A(C)	[610]		[386]		[708]		[581]		281		[834]	
Lead	50/h H(WS)/A(C)	0.8 J	4.2	0.8 U	4.2	0.9 J	3.8	1.1 J	3.8	1.7 J	4.2	0.9 J	4.2
Magnesium	35000 H(WS)	7120		7130		7250		7130		8540		7570	
Manganese	300 E	99		69		109		88		95		107	
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Nickel	100h H(WS)/A(C)	1.8 U	56	1.8 U	56	1.8 U	52	1.8 U	52	1.8 U	56	1.8 U	56
Potassium	NS	1350 J		1320 J		1390 J		1260 J		1410 J		1360 J	
Selenium	4.6 d-A(C)	2.9 U		2.9 U		2.9 U		2.9 U		2.9 U		2.9 U	
Silver	0.1 i-A(C)	[2.2 J]		[1.8 J]		[1.7 J]		[2.1 J]		[2.0 J]		1.5 U	
Sodium	NS	21200 J		20800 J		22400 J		20700 J		25700 J		24600 J	
Thallium	0.5/8 gd-H(WS)/A(C)	3.7 U		3.7 U		3.7 U		3.7 U		3.7 U		3.7 U	
Vanadium	14 A(C)	2.2 J		1.6 J		2.0 J		2.0 J		2.0 J		1.8 J	
Zinc	66 d-A(C)	4.8 J	90	6.8 J	90	7.4 J	83	6.4 J	83	6.5 J	90	7.0 J	90
Cyanide, total	5.2 f-A(C)	10.0 U		10.0 U		10.0 U		[20]		10.0 U		10.0 U	
Total suspended solids (mg/L)	NS	13		6		18		12		5 U		18	
Hardness (mg/L)	NS	110		110		100		100		110		110	

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

O'BRIEN & GERE ENGINEERS, INC.

DRAFT Table 3-5B
Three Star Anodizing Site
Wappingers Falls, New York
Wappingers Creek Surface Water Samples - Storm Event, May 2002
Inorganic Data Compared to Screening Values Including TSS and Hardness Data

Sample ID / Location Cross Reference / Sample Date / Units	Surface Water Screening Values ug/L	Rt. 28 Bridge -2 05/15/2002 ug/L	Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)		Hardness A(C)
Compound													
Aluminum	100 i-A(C)	[676]											
Antimony	3 H(WS)	2.0 U											
Arsenic	50/150 H(WS)/d-A(C)	3.3 U											
Barium	1000 H(WS)	17 J											
Beryllium	3 gd-H(WS)/A(C)	0.1 J	1100										
Cadmium	5/h H(WS)/A(C)	0.4 U	2.4										
Calcium	NS	31100											
Chromium	11 dhx-A(C)	1.2 U	86										
Cobalt	5 A(C)	1.3 U											
Copper	200/h H(WS)/A(C)	2.8 J	10										
Iron	300 A(C)	[895]											
Lead	50/h H(WS)/A(C)	2.0 J	4.6										
Magnesium	35000 H(WS)	7290											
Manganese	300 E	107											
Mercury	0.0007/0.77 d-H(FC)/A(C)	0.1 U											
Nickel	100h H(WS)/A(C)	1.8 U	61										
Potassium	NS	1370 J											
Selenium	4.6 d-A(C)	2.9 U											
Silver	0.1 i-A(C)	[1.7 J]											
Sodium	NS	21700 J											
Thallium	0.5/8 gd-H(WS)/A(C)	3.7 U											
Vanadium	14 A(C)	2.3 J											
Zinc	66 d-A(C)	8.6 J	96										
Cyanide, total	5.2 f-A(C)	[10.0]											
Total suspended solids (mg/L)	NS	20											
Hardness (mg/L)	NS	120											

NOTES: U - not detected, J - estimated value, NS = no screening value, E = aesthetic. Human Health Screening Values: H(WS) = water source, H(FC) = fish consumption. Ecological Screening Values for protection of fish: A(C) = fish propagation.
Screening value qualifiers: d = dissolved, dhx = dissolved hexavalent chromium, f = free cyanide, gd = guidance value, h = site-specific calculated from hardness, i = ionic.
Samples analyzed by methods 7196A/200.7/245.5/335.2/9010B/9014. Water quality screening values obtained from NYSDEC (1998) TOGS 1.1.1. Beryllium screening value (1100 ug/L) is based on Hardness concentrations exceeding 75 ppm.
[ ] - exceeds Surface Water Screening Value.

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Table 3-6
Three Star Anodizing Site – Wappingers Creek
Fish & Wildlife Impact Analysis
Description of Ecological Screening References

Title	Author/Date	Description
Surface Water		
Technical and Operational Guidance Series Number 1.1.1 – New York State Ambient Water Quality Standards and Guidance Values	NYSDEC (1998)	The NYSDEC surface water quality standards and guidance values are specific to each "class" of water identified by the state. Standards and guidance values are ambient water quality values derived according to procedures that are in regulation (6 NYCRR Part 702). Standards are values that have been promulgated and placed into regulation. Guidance values may be considered where a standard for a substance or group of substances has not been established for a particular water class and type, but do not have the regulatory implications of the standards. The NYSDEC standards and guidance values derived for the protection of *freshwater* aquatic life from *chronic* effects or for protection of wildlife for class "C" waters, were selected as screening values for this study. When a NYSDEC or USEPA ecological value was unavailable for a detected constituent, a human health protection value was selected from this reference as the screening value, as noted on the respective RI data tables.
National Recommended Ambient Water Quality Criteria-Correction	USEPA (2002)	The water quality criteria developed by USEPA under section 304(a) of the Clean Water Act are based on data and scientific judgments about the relationship between chemical concentrations and environmental and human health effects with provision of conservative scaling, or safety factors, to provide an additional margin of safety. National recommended water quality criteria have been developed for 147 constituents. For this study, the continuous chronic criterion was selected as the screening value. When a NYSDEC or USEPA ecological value was unavailable for a detected constituent, a human health protection value was selected from this reference as the screening value, as noted on the respective RI data tables.

Table 4-1
Three Star Anodizing Site - Wappingers Creek
Fish & Wildlife Impact Analysis
Hazard Quotient Calculations for Maximum Exposure Scenario of Wappingers Creek

Constituent	Sediment Maximum Exposure Point Conc. (mg/kg)	Surface Water Maximum Exposure Point Conc. (µg/l)	Trophic Level 4 Fish Exposure Point Conc. (mg/kg)	Mink TDI (mg/kg/day)	Mink TRV (mg/kg/day)	Mink HQ (1)	Great Blue Heron TDI (mg/kg/day)	Great Blue Heron TRV (mg/kg/day)	Great Blue Heron HQ (1)
Aluminum	1.90E+04	7.00E-01	1.92E+01	2.90E+01	8.03E-01	**3.60E+01**	3.23E+00	1.10E+02	2.90E-02
Antimony	1.60E+02	2.00E-03	5.44E+00	6.29E-01	5.20E-02	**1.20E+01**	7.00E-02	5.20E-04	**1.30E+02**
Arsenic	1.60E+02	3.30E-03	1.23E+01	1.13E+00	5.20E-02	**2.20E+01**	1.26E-01	5.10E+00	2.50E-02
Barium	1.30E+02	1.90E-02	3.38E+00	4.35E-01	4.10E+00	1.10E-01	4.84E-02	2.08E+01	2.30E-03
Beryllium	9.40E-01	1.20E-04	9.40E-04	1.44E-03	5.10E-01	2.80E-03	1.60E-04	5.10E-03	3.10E-02
Cadmium	5.30E+01	3.70E-04	5.97E+02	4.35E+01	7.42E-01	**5.90E+01**	4.84E+00	1.45E+00	**3.30E+00**
Calcium	2.50E+04	5.00E+01	8.50E+02	9.82E+01	NA	NA	1.09E+01	NA	NA
Chromium	4.10E+03	1.90E-03	1.21E+02	1.48E+01	2.52E+00	**5.90E+00**	1.65E+00	1.00E+00	**1.60E+00**
Cobalt	2.00E+01	1.30E-03	3.62E-01	5.54E-02	NA	NA	6.17E-03	NA	NA
Copper	4.60E+02	2.80E-03	5.35E+01	4.56E+00	1.17E+01	3.90E-01	5.08E-01	4.70E+01	1.10E-02
Cyanide	4.20E+01	2.00E-02	NAP	6.11E-02	4.97E+01	1.20E-03	6.80E-03	5.30E-03	**1.30E+00**
Iron	4.30E+04	9.00E-01	1.13E+02	7.08E+01	NA	NA	7.88E+00	NA	NA
Lead	8.00E+02	2.00E-03	9.84E+00	1.88E+00	6.15E+00	3.10E-01	2.09E-01	3.85E+00	5.40E-02
Magnesium	1.90E+04	1.40E+01	6.46E+02	7.46E+01	NA	NA	8.31E+00	NA	NA
Manganese	2.40E+03	1.30E-01	9.07E+01	1.01E+01	6.80E+01	1.50E-01	1.12E+00	9.97E+02	1.10E-03
Mercury	1.90E+02	1.80E-04	2.14E+03	1.56E+02	1.00E+00	**1.60E+02**	1.74E+01	4.50E-01	**3.90E+01**
Nickel	5.60E+01	1.80E-03	2.80E+00	2.85E-01	3.08E+01	9.30E-03	3.18E-02	7.74E+01	4.10E-04
Potassium	2.00E+03	1.40E+00	6.80E+01	7.86E+00	NA	NA	8.75E-01	NA	NA
Selenium	3.50E+00	2.90E-03	5.57E+01	4.06E+00	1.54E-01	**2.60E+01**	4.52E-01	5.00E-01	9.00E-01
Silver	1.20E+00	2.10E-03	4.08E-02	4.71E-03	1.81E+01	2.60E-04	5.25E-04	1.78E+01	2.90E-05
Sodium	3.80E+02	3.10E+01	1.29E+01	1.50E+00	NA	NA	1.68E-01	NA	NA
Thallium	3.30E+00	3.70E-03	1.12E-01	1.30E-02	6.00E-03	**2.20E+00**	1.44E-03	9.50E-02	1.50E-02
Vanadium	5.10E+01	2.30E-03	5.36E-01	1.13E-01	1.50E-01	7.50E-01	1.26E-02	1.14E+01	1.10E-03
Zinc	6.50E+03	8.60E-03	4.88E+03	3.64E+02	1.23E+02	**3.00E+00**	4.05E+01	1.45E+01	**2.80E+00**
1,4-Dichlorobenzene	5.60E+01	1.00E+01	2.01E+00	2.29E-01	8.57E+00	2.70E-02	2.58E-02	8.57E-01	3.00E-02
2,4-Dimethylphenol	5.60E+01	1.00E+01	2.14E+02	1.56E+01	5.00E+00	**3.10E+00**	1.74E+00	5.00E-01	**3.50E+00**
Benzo(a)pyrene	6.40E+01	1.00E+01	4.61E+03	3.35E+02	4.20E-01	**8.00E+02**	3.73E+01	NA	NA
Benzo(b)fluoranthene	7.40E+01	1.00E+01	3.05E+03	2.22E+02	4.20E-01	**5.30E+02**	2.47E+01	1.40E-05	**1.80E+06**
Chrysene	7.70E+01	1.00E+01	1.10E+03	8.01E+01	4.20E-01	**1.90E+02**	8.92E+00	1.00E-05	**8.90E+05**
Fluorene	4.60E+01	1.00E+01	1.15E+01	9.07E-01	4.20E-01	**2.20E+00**	1.01E-01	1.00E+03	1.00E-04
Indeno(1,2,3-cd)pyrene	2.80E+01	1.00E+01	3.43E+03	2.50E+02	4.20E-01	**5.90E+02**	2.78E+01	NA	NA
Phenol	5.60E+01	1.00E+01	2.14E+02	1.56E+01	6.00E-01	**2.60E+01**	1.74E+00	6.00E-01	**2.90E+00**
Pyrene	1.40E+02	1.00E+01	2.70E+02	1.99E+01	4.20E-01	**4.70E+01**	2.21E+00	1.40E-05	**1.60E+05**
2-Butanone	7.70E-02	1.00E+01	9.60E-03	1.89E-03	1.36E+03	1.40E-06	5.44E-04	1.36E+01	4.00E-05
Acetone	1.70E-01	1.20E+01	1.70E-02	2.78E-03	7.70E+00	3.60E-04	7.09E-04	7.70E-02	9.20E-03
Carbon disulfide	3.70E-02	1.20E+01	1.30E-01	1.08E-02	1.10E-01	9.80E-02	1.60E-03	1.10E-01	1.50E-02
Chlorobenzene	7.70E-02	1.00E+01	6.32E-01	4.72E-02	1.90E+00	2.50E-02	5.59E-03	1.90E-01	2.90E-02

NOTES:

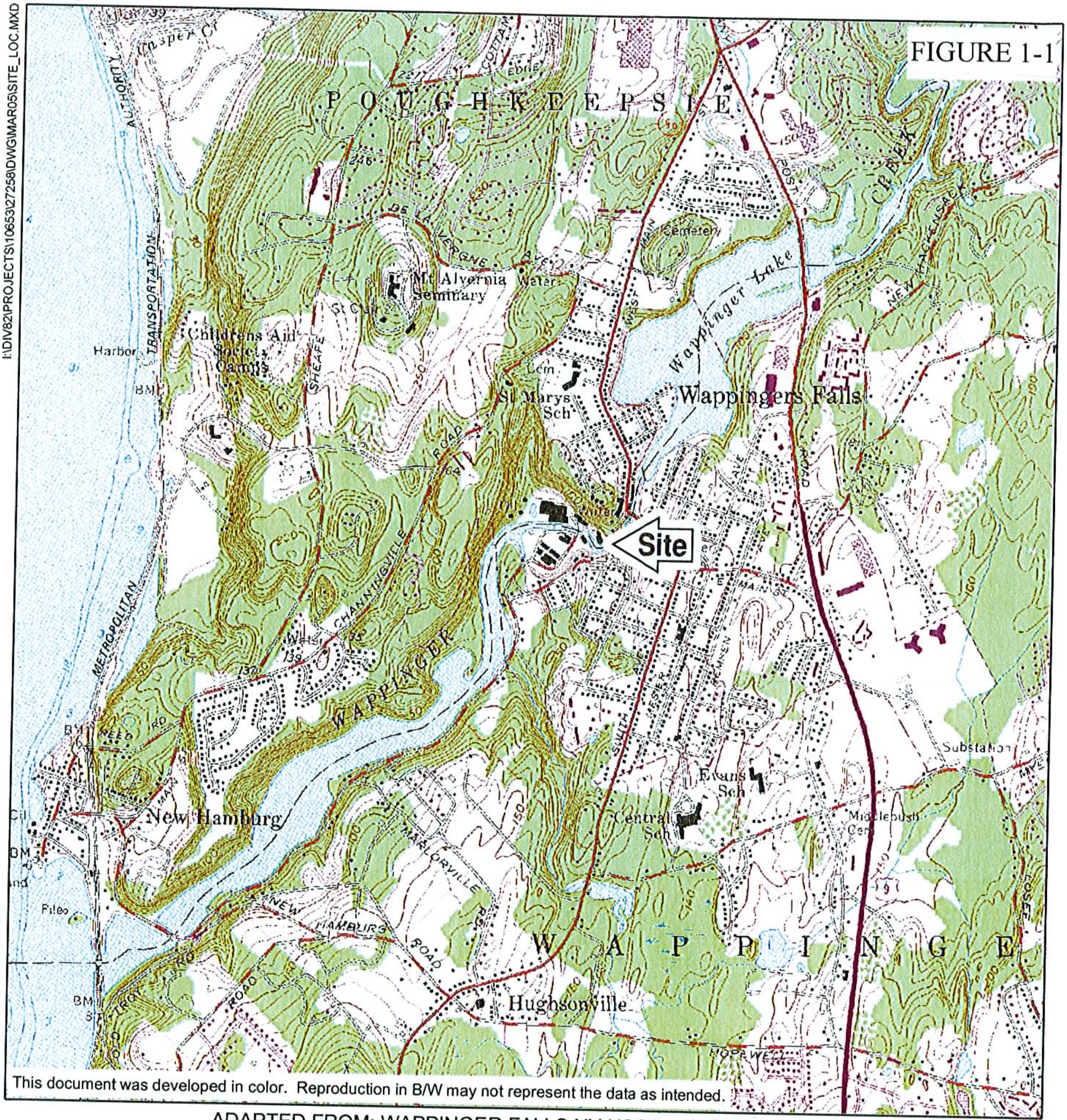
Definitions

NA = not available
NAP = not applicable

HQ = Hazard Quotient
TDI = Total Daily Intake
TRV = Toxicity Reference Value (No Observed Adverse Effects Level)

(1) Bold values indicate Hazard Quotients greater than 1.

DRAFT



ADAPTED FROM: WAPPINGER FALLS,NY USGS QUADRANGLE

NEW YORK STATE
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK

SITE LOCATION

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Feet

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MARCH 2005

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O'BRIEN & GERE ENGINEERS, INC

Fish and Wildlife Impact Analysis
Step I - Three Star Anodizing Site
Wappingers Falls, New York

REVISED DRAFT REPORT

Fish and Wildlife Impact Analysis Step I - Three Star Anodizing Site Wappingers Falls, New York

New York State Department of Environmental Conservation
Albany, New York

February 2007

Job No. 10653/27258

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Wappingers Falls, New York

New York State Department of Environmental Conservation
Albany, New York

Chief Scientist
O'Brien & Gere Engineers, Inc.

February 2007

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1. Introduction

This appendix presents the results of a Fish and Wildlife Impact Analysis (FWIA) for the Three Star Site. The FWIA was conducted according to the New York State Department of Environmental Conservation (NYSDEC) document entitled *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC 1994; Guidance). Step I - *Site Description* of the NYSDEC document is addressed in this report. The purpose of Step I of an FWIA is to characterize the physical and biological characteristics of a site. The specific objectives of this FWIA are to:

- describe the ecology of the site and surrounding environs within a 0.5 mile radius of the site
- describe fish and wildlife resources including observed vegetation and associated fauna for each covertype within the study area
- identify other resources including NYSDEC significant habitats and endangered, threatened, or species of special concern (ETSC)
- qualitatively describe the value of the identified resources to associated wildlife and humans

The FWIA is organized into five sections:

1. *Introduction.* This section presents general information about the performance of the FWIA, the objectives of the study and the format of the report.

2. *Study area characterization.* This section characterizes the covertypes of the study area based on vegetation, and associates wildlife species with the covertypes. This section also discusses resources other than wildlife, such as NYSDEC significant habitats; ETSC species; surface waters; and freshwater wetlands that exist within a two-mile radius of the site.

3. *Description of fish and wildlife resources.* This section presents a qualitative evaluation of the ability of the study area to provide habitat for wildlife and discusses the value to humans of wildlife resources within the study area.

4. *Identification of fish and wildlife criteria.* This section identifies applicable fish and wildlife regulatory criteria that would be used in additional steps of the FWIA, if conducted.

5. *Conclusions.* This section presents the FWIA conclusions regarding ecological resources within the study area.

2. Study Area Characterization

This subsection describes the physical and biological components of the site and study area under current conditions. In accordance with Step I of the Guidance, this information is used to identify the ecological communities of the study area, associate wildlife species with the communities, evaluate the value of the communities to wildlife and humans, and to provide information necessary for the design of future activities associated with the RI/FS, if required.

2.1. Site Description

As presented in Section 1 and on Figure 1-1 of the RI, the Three Star Site consists an 8.5 acre industrial facility on the south bank of Wappinger Creek. Several buildings, paved parking areas and access roadways are present on the site. The site is located on the 100-year flood plain along an oxbow of Wappinger Creek. The creek discharges to the Hudson River approximately 1.5 miles downstream and it is subjected to tidal influences of the river (NYSDEC 2000). A raceway that is currently used for stormwater runoff from the village and a lagoon on the southeast portion of the site discharge to Wappinger Creek. The site has been the location of industrial activities for over 150 years. Primary past uses of the site included dye operations, manufactured gas plant (MGP) operations, and metal plating (EA 1986). A number of other smaller industrial activities also took place at the site (O'Brien & Gere 2001). A parcel on the north bank is approximately 5 acres and features an old factory building, a large storage tank, an abandoned smoke stack, a new personal storage building, and paved parking areas (NYSDEC 2000).

2.2. Covertype Delineation

Consistent with the Guidance, the study area for the FWIA is defined as the site property and the area within a 0.5 mile radius of the site. The 0.5 mile radius includes the commercial, industrial and residential properties, and terrestrial and aquatic communities. Evaluation of ecological communities (covertypes) in the study area assists in the identification of ecological receptors of the site, which may enter the site from surrounding areas. The following subsections describe the ecological covertypes of the site and study area.

In the context of this report, a "covertype" is defined as an area characterized by a distinct pattern of natural (*e.g.* forest) or cultural (*e.g.* residential) land use. Covertypes of the study area were identified based on the physical and vegetative features observed by an O'Brien & Gere biologist during a study area reconnaissance in July 2001 and from interpretations of local mapping and aerial photographs that included the study area. A map indicating the covertypes of the study area is presented as Figure 2-1. Each covertype designation was selected based on a comparison of observed characteristics with the ecological community descriptions presented in the NYSDEC Natural Heritage Program document *Ecological Communities of New York State* (Reschke 1990).

A total of six covertypes were identified within the study area. Their locations and approximate boundaries are depicted on Figure 2-1. The description of each identified covertype, below, includes a list of dominant woody and herbaceous plant species observed during the study area reconnaissance. Communities within the study area are a mixture of cultural and natural land uses. Roadways, commercial businesses, industrial facilities, recreational parks, and schools comprise the majority of the cultural areas. Forested areas, palustrine (wetland) habitats and aquatic (open water) communities comprise the natural areas. Descriptions of the identified covertypes are presented below.

2.3. Terrestrial Covertypes

The upland communities within the study area consist of approximately equal portions of natural and cultural covertypes. The cultural designation reflects the extent of human disturbance to the study area for land uses such as roadways, railroad beds, commercial businesses, industrial facilities, residences, and parks. Physical characteristics of the residential areas consist of 0.25 acre to 2 acre lots with interspersed paved driveways and access roads. Commercial businesses, recreational parks, and schools are present in portions of the study area, with essentially the same physical characteristics as the residential areas. In general, these areas do not support large or diverse wildlife communities due to their proximity to anthropogenic disturbances.

The natural terrestrial covertypes of the study area, existing primarily in the western half of the study area, are representative of forested communities and are further described below.

Urban structure exterior. This covertype is characterized by the exterior surfaces of structures such as commercial buildings, apartment buildings, and bridges in an urban or densely populated suburban area (Reschke 1990). The eastern portion of the study area is comprised mostly of this covertype (Figure 2-1). The areas immediately surrounding the site included in this designation consist of industrial buildings associated with the site, and the residential and commercial structures associated with the Village of Wappinger Falls. Also included in this covertype are sub-communities typical of the *Mowed lawn/Mowed lawn with trees* covertypes. These areas typically contain landscaped areas of ornamental trees, shrubs and grasses.

Northern hardwood forest (NHF). This covertype is characterized by a mixed forest that typically occurs on middle to lower slopes of ravines, mid-elevation slopes, and on moist, well-drained sites (Reschke 1990). Based on the July, 2001 site reconnaissance of this covertype, primarily conducted by vehicle and limited traversing on foot, the NHF area has inclusions of *Hemlock-NHF* and *Maple-basswood rich mesic forest* communities. Additionally, relatively small (less than 3 acres) forested and palustrine wetland habitats are also present within the NHF covertype.

The dominant tree species observed in these communities consisted of 8-inch to 24-inch diameter (at breast height) specimens of hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), basswood (*Tilia americana*) and hickories (*Carya* spp.). The shrub layer, sparse in much of the covertype, included: dogwoods (*Cornus* spp.) raspberries (*Rubus* spp.), wild grape (*Vitus* spp.), honeysuckle (*Lonicera* spp.), and saplings of the tree species identified above. Numerous herbaceous species observed, include, but are not limited to, buttercup (*Ranunculus* spp), cinquefoil (*Potentilla* spp.) and miscellaneous grass species.

2.4. Aquatic and Palustrine Covertypes

Tidal river. Wappinger Creek, from below the dam at Wappinger Lake to the creek's confluence with the Hudson River approximately 1.5 miles downstream of the site, represents a deepwater estuarine habitat identified in Reschke (1990) as a tidal river. The creek dissects a major portion of the study area as it flows from northeast to southwest.

As presented in the RI, Wappinger Creek is approximately 15 to 20 feet wide in the vicinity of the site and is narrow with higher velocity relative to downstream portions. The daily mean flow of Wappinger Creek measured upstream of Wappinger Lake is 84 cfs and ranges from 6.1 to 1,060 cfs based on 71 years of record. Tide water level fluctuates approximately 4 feet during the normal tide cycle.

Due to the relatively higher velocity, the creek nearest the site has little sediment accumulation and, therefore, aquatic vegetation is minimal or non-existent. The creek bed in this area consists primarily of boulders, rocks, cobble and sand. Further downstream, west and south of the site, the creek widens, sediment accumulation is greater and aquatic vegetation is present. Water chestnut (*Trapa natans*) was the primary species observed. Canopy coverage of the creek ranges from approximately 80 percent in the reach upstream of the site, to approximately 5 percent where the creek exits the study area.

Eutrophic dimictic lake / artificial impoundment. Wappinger Lake, existing in and beyond the northeast quadrant of the study area, is representative of a *eutrophic dimictic lake* community. That is, the lake is nutrient rich, has two periods of mixing or turnover (spring and fall), is thermally stratified in the summer and freezes over in the winter. Additionally, because the lake represents an impounded portion of Wappinger Creek, the *artificial impoundment* designation of Reschke (1990) also applies to Wappinger Lake. The lake consists primarily of open water with much of the shallow water and shoreline areas containing floating, submerged and emergent aquatic vegetation including, but not limited to, duckweed (*Lemna* spp.), water chestnut and common reed (*Phragmites*). The lake was surrounded with human residences and forested areas.

Midreach stream. An open water aquatic community existing in Reese Park located approximately 2000 feet southwest of the site is representative of a *midreach stream* covertype. As this covertype has been defined in Reschke (1990), this unnamed stream has a well-defined pattern of alternating pool, riffle and run sections. The stream traverses a forested area of the public park, eventually discharging to Wappinger Creek. The channel of the creek is approximately 5 feet wide and contained approximately 6 inches of water at the time of the study area reconnaissance. Emergent vegetation was not observed within the creek. The banks of the creek are approximately 2 feet high and vegetated with goldenrod, purple loosestrife (*Lythrum salicaria*) and *Phragmites*.

Palustrine habitats (wetlands). As noted on Figures 2-1 and 2-2, numerous wetland habitats exist in the study area. Most of these wetlands are relatively small (less than 3 acres) and exist within the NHF covertype. The observed wetland habitats are representative of *open* and *forested mineral soil wetlands* as classified in Reschke (1990). Generally, these areas consist of open water areas with submerged and aquatic vegetation existing in the shoreline areas. Additional discussion concerning wetlands is presented in Section 3.4.

Two lagoons existing on or adjacent to the site boundaries are identified as wetland habitats on Figures 2-1 and 2-2. The lagoon existing on the west portion of the main site, as described in the RI, is reportedly unlined and covers approximately 0.5 acres of the site. Village storm water drains to the lagoon via the former raceway located along the east boundary of the site. The lagoon reportedly received industrial wastes during operation of Three Star Anodizing Company. Other industrial wastes may have also drained in the direction of the lagoon. At the time of the site reconnaissance, this lagoon contained approximately 3 feet of open water that was covered with duckweed. The substrate, as observed from the eastern shoreline/stonewall was comprised of organic sediment approximately 10 to 24 inches thick and gross organic debris (leaves, sticks and logs). A swale area was observed leading from this lagoon to Wappinger Creek. The swale did not contain surface water at the time of the site reconnaissance.

A second lagoon, approximately 0.2 acre in size, exists off-site north of Wappinger Creek near the downstream bridge and paved parking lot. The lagoon contained approximately 18 to 24 inches of relatively clear water with a sandy substrate at the time of the site reconnaissance. Submerged vegetation (likely pondweed) existed over approximately one-third of the lagoon area. It appears the lagoon receives runoff from the higher elevations north of the site, and discharges into Wappinger Creek.

3. Description of Fish and Wildlife Resources

The objective of this section is to identify potential ecological receptors of the study area based on observations conducted during the study area reconnaissance or by reasonable association of these resources with the identified covertypes. The results of the tasks performed to meet the objective are discussed in the following subsections.

3.1. Fish and Wildlife of the Study Area

The presence of fish and wildlife in the study area was assessed through contact with regulatory agencies, a literature review, and the study area reconnaissance performed by an O'Brien & Gere biologist in July 2001. During the study area reconnaissance, wildlife were identified based on actual sightings; audible indicators such as bird songs; or other indicators such as tracks, burrows, or scat. A listing of the fish and wildlife species that were either directly observed or concluded to be present based on observed indicators is presented below.

Observed fish and wildlife. Numerous avian species were observed frequenting the site and/or the study area at the time of the site reconnaissance, including, but not limited to: song sparrow (*Melospiza melodia*), Eastern phoebe (*Sayornis phoebe*), chimney swift (*Chaetura pelagica*), cedar waxwing (*Bombycilla cedrorum*), downy woodpecker (*Picoides pubescens*), American goldfinch (*Carduelis tristis*), tree swallow (*Tachycineta bicolor*), Northern cardinal (*Cardinalis cardinalis*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), Canada goose (*Branta canadensis*) and belted kingfisher (*Ceryle alcyon*).

Additional species observed in the study area include: white-tailed deer (*Odocoileus virginianus*), Eastern gray squirrel (*Sciurus carolinensis*) and green frog (*Rana clamitans*). Numerous attempts were conducted to observe aquatic invertebrates within Wappinger Creek by turning over the cobble and boulders of the substrate. However, aquatic invertebrates were not observed at the time of the site reconnaissance.

3.2. Fauna Expected within each Covertype

In addition to the observed wildlife, a variety of wildlife species typically inhabit the natural communities of the study area. The *northern hardwood forest*, Wappinger Creek, Wappinger Lake and wetland covertypes are likely to contain the most diverse wildlife populations.

Characteristic wildlife of the *northern hardwood forest* community include, but are not limited to various avian species, (songbirds, turkey, partridge, hawks and owls); small mammals (raccoon, fox) and large mammals such as white-tailed deer. The aquatic and palustrine habitats within the study area are likely to support benthic invertebrates, reptiles (snakes and turtles), amphibians (frogs, toads, salamanders), fish, waterfowl (ducks and geese), herons, shorebirds, gulls, kingfishers, and songbirds. Additionally, Wappinger Creek likely supports anadromous fish species such as striped bass (*Morone saxatilis*) and blueback herring (*Alosa aestivalis*). Potential wildlife inhabitants of the study area's natural covertypes are presented in Table 3-1. Additionally, a list of the breeding birds of the site vicinity, as recorded by the New York State Breeding Bird Atlas project, is presented in Attachment A.

3.3. Observation of Stress

During the study area reconnaissance, evidence of stress to flora or fauna related to the site, such as reduced vegetative growth or density, stained soils, leachate seeps, or wildlife mortality, were not observed in the study area.

3.4. Other Resources

Consistent with the FWIA Guidance, Step I includes the identification of other fish and wildlife resources, such as significant wildlife habitats; ETSC species; regulated wetlands; or special surface waters that are present within two miles of the site. Special resources were identified through contact with regulatory agencies and review of New York State Freshwater Wetlands (NYSFW) and National Wetland Inventory (NWI) maps. The results of these efforts are described below.

Significant habitats and endangered, threatened, or species of special concern. The presence of significant habitats and ETSC species in the study area was evaluated through contact with the New York Natural Heritage Program (NYNHP) and the United States Fish and Wildlife Service (USFWS). Letter responses received by O'Brien & Gere from these agencies are included with this report as Attachment A. The approximate location of the identified special resources, relative to the site, is presented on Figure 2-2.

The USFWS indicated that, except for occasional transient individuals, there are no federally-listed or proposed endangered or threatened species in the vicinity of the site.

The NYNHP database has record of the following protected species within two miles of the site: bald eagle (*Haliaeetus leucocephalus*), shortnose sturgeon (*Acipenser brevirostrum*), pied-billed grebe (*Podilymbus podiceps*), spongy arrowhead (*Sagittaria calycina* var. *spongiosa*), and estuary beggar-ticks (*Bidens bidentoides*). Additionally, the NYNHP identified the following ecological communities in the vicinity of the study area: anadromous fish concentration area, freshwater intertidal mudflats and freshwater tidal marsh. In accordance with NYNHP policy, the exact location of the reported special resources has been omitted from the Attachment.

Wetlands. The potential presence of freshwater wetlands in the study area was evaluated through a review of the Wappinger Falls quadrangle of the NYSFW map and the USFWS NWI map. The NYSFW map presents the boundaries of wetlands regulated and identified by NYSDEC. Seven state regulated wetlands were identified within two miles of the site perimeter (Figure 2-2).

Numerous NWI wetland habitats were identified within two miles of the site perimeter including many in similar locations as the state-regulated wetlands (see Figure 2-2). The NWI map presents wetlands inventoried by USFWS to monitor waterfowl habitat. The NWI maps have no regulatory significance but provide an indication of areas potentially meeting the federal criteria for wetlands regulated by the U.S. Army Corps of Engineers.

Surface waters. Wappinger Creek, Wappinger Lake, the Hudson River and associated tributaries are present within two miles of the site. A description of the creek and lake is presented in Section 2.4. The Hudson River is recognized by multiple federal, state and/or local agencies as valuable habitat for numerous fish and wildlife species.

Wappinger Creek from its mouth (at the Hudson River, approximately 1.5 miles southwest of the site) to Wappinger Lake (approximately 2000 feet northeast of the site) is a Class C water body with a Standard of C(T) (6NYCRR Part 857.2 (h)). Classification C is for waters that are designated to be suitable for fish propagation and survival, and suitable for primary and secondary contact recreation (6NYCRR Part 701.8). Standard T indicates that the water body is designated as trout waters and that the dissolved oxygen specification for trout waters applies (6NYCRR Part 931.2(g)).

Wappinger Lake is identified by NYSDEC's Division of Environmental Permits (www.dec.state.ny.us/website/dcs) as a Critical Environmental Area. Wappinger Lake is designated as a Class B water body, indicating its best use is swimming and other contact recreation, but not for drinking water.

3.5. Description of Fish and Wildlife Resource Value

The value of the covertypes to wildlife and society was evaluated based on habitat requirements of identified wildlife species and potential resource utilization by humans. In accordance with Step I of the Guidance, habitat requirements such as feeding preferences, home range, and cover for species identified in the study area were considered. Field observations used to evaluate habitat quality included: 1) the diversity of observed wildlife, 2) the availability of suitable habitat in the study area, 3) the size of the habitat, and 4) adjacent land use patterns.

3.5.1. Value of Habitat to Associated Fauna

Site. Terrestrial wildlife species identified in the study area were consistent with those expected to inhabit terrestrial and aquatic environments existing in suburban environments. Although some cover is afforded to birds and small mammals on the site, the gravel, asphalt and mowed lawn areas of the upland portions of the site do not provide sufficient food sources or nesting areas to make the site attractive to a high diversity of species. Therefore, the value of the site's upland habitat to wildlife is concluded to be low.

The portion of Wappinger Creek in vicinity of the site provides a foraging area for piscivorous animals frequenting the area and habitat for aquatic species including, but not limited to, warm water fish populations. Additionally, the on-site and off-site lagoons provide marginal habitat for aquatic receptors.

Study area. For the majority of the terrestrial cultural portions of the study area, suitable wildlife habitat to support a diverse or natural wildlife population is limited. These areas have limited vegetation and food sources and, therefore, provide inadequate resources to sustain a healthy and diverse wildlife community because of the high degree of development. Based on these considerations, the wildlife habitat value of the terrestrial cultural areas, including the *urban structure exterior* covertype, was considered to be low.

The *northern hardwood forest,* aquatic and wetland covertypes of the study area offer the most valuable habitat within the study area. Avian and small mammal species find suitable food and cover in these areas. Indicators of use of this covertype by other mammals such as muskrat (*Ondatra zibethicus*), beaver (*Castor canadensis*), fox, and deer were not observed during the study area reconnaissance; however, these species likely inhabit these areas.

Portions of Wappinger Creek and Wappinger Lake within the study area are likely important fish habitat. Additionally, the undeveloped areas surrounding these water bodies likely serve as a forage, nesting and roosting area for local and migratory wildlife.

3.5.2. Value of Resources to Humans

Site. The current character of the undeveloped areas of the site provides little value to humans, due in part to the relatively small size and restricted access.

Study Area. The *northern hardwood forest* areas of the study area likely provide opportunity for hiking and similar forms of outdoor recreation, including small and large mammal hunting. Similarly, Wappinger Creek and Wappinger Lake provide ample recreation opportunities for the public, including boating and year-round fishing.

The palustrine areas within the study area provide a number of wetland-related values to the public. These values include flood storage capacity, sediment/toxicant retention, productivity, and wildlife habitat. These characteristics assist in maintaining water quality in areas downstream of these habitats.

4. Identification of Applicable Fish and Wildlife Regulatory Criteria

Step I-D of the Guidance identifies contaminant-specific and site-specific criteria that are potentially applicable to the evaluation of fish and wildlife resources. The following sections describe these criteria.

4.1. Contaminant-Specific Criteria

The Guidance identifies New York State Water Quality Standards and Guidance Values, NYSDEC Division of Water Technical and Operational Guidance Series, and NYSDEC Technical Guidance for Screening Contaminated Sediments as examples of contaminant-specific criteria. These criteria, and other potentially applicable comparison values, are listed in the following table.

Environmental Media	**Potentially Applicable Criteria, Standards, or Guidance**
Soil	- NYSDEC has no established ecologically based criteria for contaminated soils - Toxicological Benchmarks (Efroymson *et al.* 1997a, 1997b) - Ecological Soil Screening Level Guidance (USEPA 2000)
Surface Water	- New York State water quality standards for the protection of aquatic life and wildlife (6 NYCRR Part 701) - NYSDEC Division of Water TOGS 1.1.1 (1998) - USEPA 1999
Sediments	- Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999) - Persaud *et al.* 1993

4.2. Site-Specific Criteria

Site-specific criteria identified in the FWIA Guidance include the Freshwater Wetlands Act (1975) and its implementing regulations (New York State Environmental Conservation Law [ECL] Article 24, 6 NYCRR Parts 663 and 664), and the laws and regulations governing streams and navigable water bodies (ECL Article 15, 6 NYCRR Part 608).

The Freshwater Wetlands Act (1975) is designed to prevent the destruction of freshwater wetlands by requiring permits for defined activities in wetlands. The Use and Protection of Waters is regulated by a permit system under 6 NYCRR Part 608. The basis for permit issuance is a determination that the proposal is in the public interest by being reasonable and necessary; will not endanger the health, safety, or welfare of the people; and will not cause unreasonable, uncontrolled, or unnecessary damage to the natural resources of the state.

5. Conclusions

This FWIA evaluated the physical and biological characteristics and potential ecological receptors at the Three Star Site in Wappinger Falls, New York. Step I of the FWIA Guidance was performed for this assessment. The results and conclusions of this assessment are presented below.

- The terrestrial portion of the site is developed with buildings, asphalt, and/or maintained lawns, which prevent or limit use by transient or residential wildlife species. Ecological receptors are unlikely to utilize the terrestrial portions of the site due to the lack of and/or poor quality habitat.

- Aquatic areas existing on-site include a portion of Wappinger Creek and the on-site and off-site lagoons. The lagoon areas provide limited habitat for foraging and resting for aquatic receptors. Wappinger Creek likely provides appropriate habitat for a variety of fish and other wildlife species that frequent aquatic habitats.

- The terrestrial areas surrounding the site and within the study area consist of a mixture of natural communities and areas exhibiting urban/suburban land use. The eastern portion of the study area is developed and consists of residential and light commercial areas which prevent or limit use by transient or residential wildlife species.

- The western portion of the study area consists largely of natural covertypes (northern hardwood forest, freshwater wetland and open water areas) that provide appropriate habitat for a variety of fish and wildlife species.

- Wappinger Creek and Wappinger Lake are located within the study area and likely contain high quality habitat for a variety of small mammal, avian, reptilian, amphibian and fish species.

- The NYSDEC and NYNHP has identified rare and/or protected flora and fauna and significant natural communities within a two-mile radius of the site. The protected species and communities are primarily associated with the aquatic, open water areas including Wappinger Creek, Wappinger Lake and the Hudson River.

- Federal and state wetlands were identified on and in the vicinity of the site. Several state-regulated wetlands and NWI wetland habitats are located within two miles of the site.

Potentially complete exposure pathways to terrestrial and aquatic receptors likely exist at the site. Results of the Phase II RI will be used to plan additional steps of the FWIA process.

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Tables

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes*

AMPHIBIANS	
American Toad	Northern Two-lined Salamander
Bullfrog	Pickerel Frog
Eastern Newt	Red back Salamander
Eastern Tiger Salamander	Red-spotted Newt
Four-toed Salamander	Slimy Salamander
Fowler's Toad	Southern Leopard Frog
Gray Treefrog	Spotted Salamander
Green Frog	Tiger Salamander
Jefferson Salamander	Western Chorus Frog
Marbled Salamander	Wood Frog
Mink Frog	
Mountain Dusky Salamander	
Northern Dusky Salamander	
Northern Red Salamander	
Northern Spring Peeper	
Northern Spring Salamander	

SOURCES:
Integrating Timber and Wildlife Management. Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

REPTILES	
Black Rat Snake	Eastern Worm Snake
Broadhead Skink	Five-lined Skink
Coal Skink	Ground Skink
Common Garter Snake	Milk Snake
Common Kingsnake	Northern Black Racer
Common Snapping Turtle	Northern Brown Snake
Copperhead	Northern Copperhead
Corn Snake	Northern Redbelly Snake
Eastern Box Turtle	Northern Ringneck Snake
Eastern Garter Snake	Northern Water Snake
Eastern Hognose Snake	Painted Turtle
Eastern Milk Snake	Queen Snake
Eastern Painted Turtle	Shorthead Garter Snake
Eastern Ribbon Snake	Wood Turtle
Eastern Smooth Green Snake	

SOURCES:
Integrating Timber and Wildlife Management. Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

BIRDS	
Acadian Flycatcher	Common Screech Owl
Alder Flycatcher	Common Yellowthroat
American Robin	European Starling
American Black Duck	Field Sparrow
American Crow	Grasshopper Sparrow
American Goldfinch	Northern Rough-winged Swallow
American Redstart	Northern Shrike
American Kestrel	Northern Three-toed Woodpecker
Bald Eagle	Pine Siskin
Bank Swallow	Prairie Warbler
Barn Owl	Red-eyed Vireo
Barn Swallow	Ring-billed Gull
Barred Owl	Yellow-billed Cuckoo
Bay-breasted Warbler	Yellow-rumped Warbler
Belted Kingfisher	Cape May Warbler
Black Duck	Cardinal
Black and White Warbler	Chipping Sparrow
Black-billed Cuckoo	Cedar Waxwing
Black-capped Chickadee	Chestnut-sided Warbler
Black-crowned Night Heron	Cerulean Warbler
Black-throated Green Warbler	Clay-colored Sparrow
Blackburnian Warbler	Cliff Swallow
Blackpoll Warbler	Common Crow
Blue Jay	Common Flicker
Blue-gray Gnatcatcher	Common Grackle
Blue-winged Warbler	Common Nighthawk
Boreal Chickadee	Common Merganser
Broad-winged Hawk	Cooper's Hawk
Brown Thrasher	Downy Woodpecker
Brown Creeper	Eastern Bluebird
Brown-headed Cowbird	Eastern Kingbird
Canada Warbler	Eastern Pewee
Great Crested Flycatcher	Eastern Phoebe
Great Blue Heron	Eastern Screech Owl
Great Horned Owl	Eastern Wood-Pewee
Green Heron	Evening Grosbeak

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

BIRDS	
Hairy Woodpecker	Golden-crowned Kinglet
Hermit Thrush	Gray Catbird
Herring Gull	Golden-winged Warbler
Hooded Merganser	Gray Jay
Hooded Warbler	Northern Saw-whet
House sparrow	Northern Raven
House Wren	Northern Waterthrush
House Finch	Orchard Oriole
Indigo Bunting	Osprey
Killdeer	Ovenbird
Least Flycatcher	Philadelphia Vireo
Loggerhead Shrike	Pileated Woodpecker
Long-eared Owl	Peregrine Falcon
Louisiana Waterthrush	Pine Warbler
Mallard	Prothonotary Warbler
Mourning Dove	Purple Finch
Mourning Warbler	Red-bellied Woodpecker
Nashville Warbler	Red-breasted Nuthatch
Northern Parula Warbler	Red-headed Woodpecker
Northern Parula	Red-shouldered Hawk
Northern Oriole	Red-tailed Hawk
Northern Mockingbird	Red-winged Blackbird
Northern Cardinal	Ring-necked Pheasant
Northern Junco	Warbling Vireo
Northern Goshawk	Whip-poor-will
Northern Flicker	White-breasted Nuthatch
Rusty Blackbird	White-eyed Vireo
Rufous-sided Towhee	White-throated Sparrow
Ruffed Grouse	Willow Flycatcher
Ruby-throated Hummingbird	Winter Wren
Rock dove	Wood Pewee
Ruby-crowned Kinglet	Wood Thrush
Rose-breasted Grosbeak	Wood Duck
Swainsons Thrush	Worm-eating Warbler
Swamp Sparrow	Yellow-breasted Chat
Tennessee Warbler	Yellow Warbler

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

BIRDS	
Tree Swallow	Yellow-bellied Flycatcher
Tufted Titmouse	Yellow-bellied Sapsucker
Turkey Vulture	Yellow-throated Vireo
Upland sandpiper	
Veery	

SOURCES:
Field Guide to the Birds of North America 2nd Edition. National Geographic Society. 1993.
Integrating Timber and Wildlife Management. Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

Table 3-1. *Potential wildlife inhabitants of the identified natural covertypes* (Continued)

MAMMALS	
Beaver	New England Cottontail
Big Brown Bat	Northern Flying Squirrel
Boreal Red-backed Vole	Opossum
Cotton Mouse	Pine Vole
Deer Mouse	Porcupine
Eastern Chipmunk	Raccoon
Eastern Cottontail	Red Bat
Eastern Mole	Red Fox
Eastern Pipistrelle	Red Squirrel
Eastern Spotted Skunk	River Otter
Eastern Woodrat	Shorttail Shrew
Fox Squirrel	Shorttail Weasel
Gray Fox	Silver-haired Bat
Gray Squirrel	Smoky Shrew
Hairytail Mole	Southern Bog Lemming
Hoary Bat	Southern Flying Squirrel
Indiana Myotis	Starnose Mole
Keen Myotis	Striped Skunk
Least Shrew	Virginia Opossum
Little Brown Myotis	White-footed Mouse
Long-tailed Weasel	White-tailed Deer
Masked Shrew	Woodchuck
Meadow Jumping Mouse	Woodland Jumping Mouse
Meadow Vole	Woodland Vole
Mink	

SOURCES:
Field Guide to the Birds of North America 2nd Edition. National Geographic Society. 1993.
Integrating Timber and Wildlife Management. Robert E. Chambers. New York State Department of Environmental Conservation and State University of New York. College of Environmental Science and Forestry. 1983.

Figures

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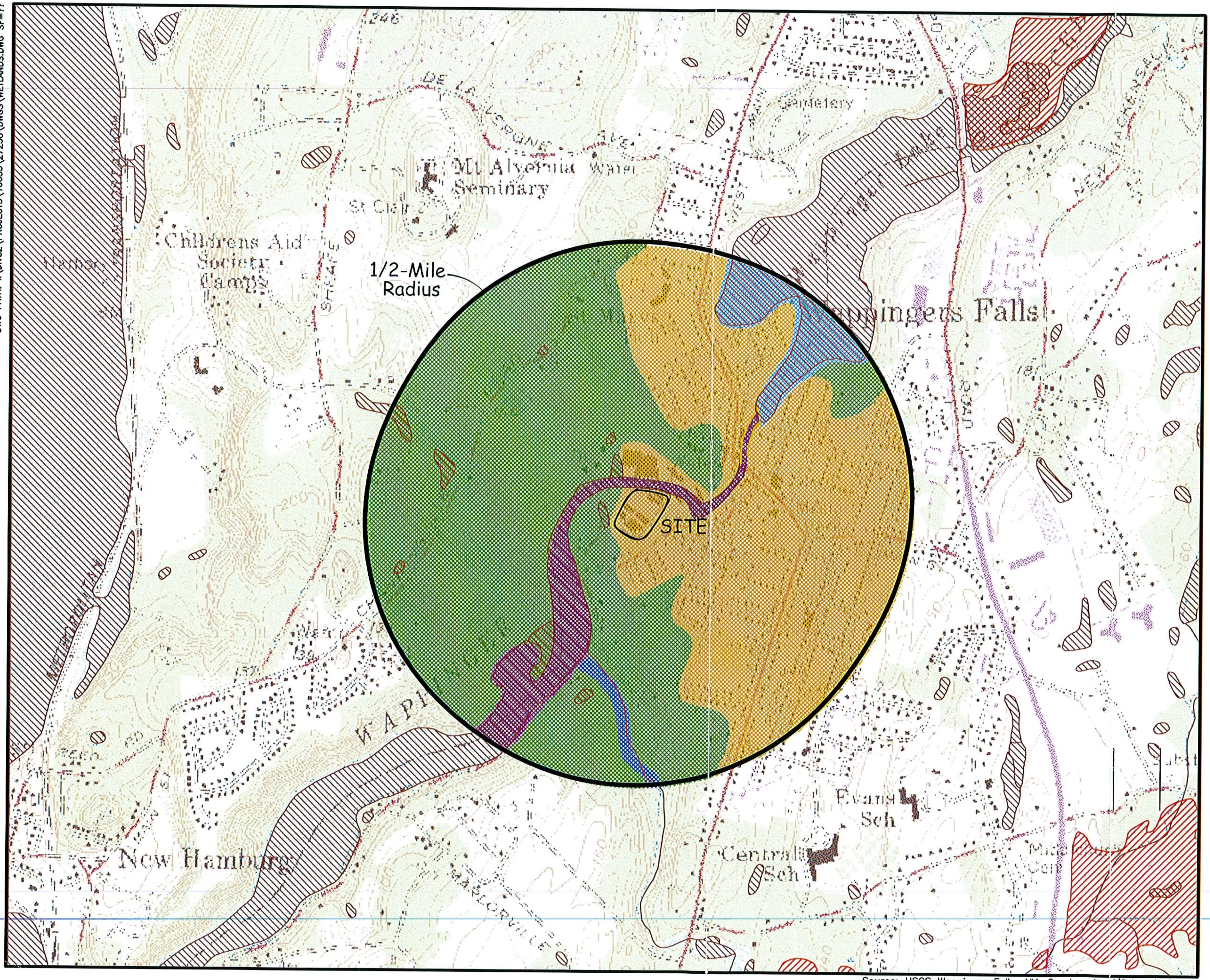


Source: USGS Wappinger Falls, NY, Quadrangle; O'Brien & Gere

PLOT DATE: 09/17/01 DIV82 baq

FIGURE 2–1

LEGEND

Note: Boundaries are approximate.

- NWI Habitat
- NYS Wetland
- Urban Structure Exterior
- Northern Hardwood Forest
- Tidal River
- Eutrophic Dimictic Lake
- Midreach Stream

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK
FISH & WILDLIFE IMPACT ANALYSIS

COVERTYPE

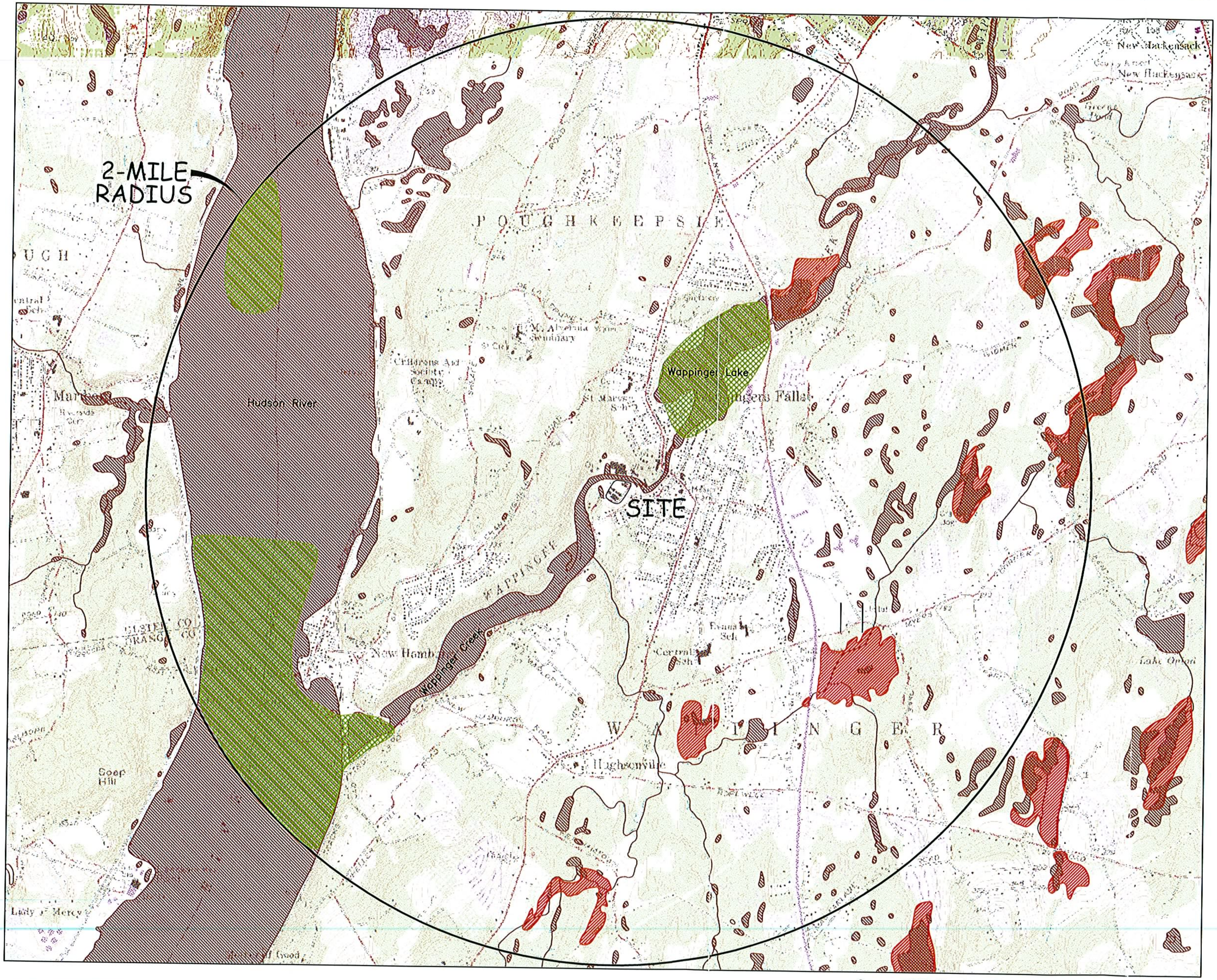
1000' 0 1000'

FILE NO. 10653–27258.004
SEPTEMBER 2001

O'BRIEN & GERE ENGINEERS INC.

DWG PATH: I:\DIV82\PROJECTS\10653\27258\DWGS\WETLANDS.DWG SF=??

FIGURE 2-2



Source: USGS Wappinger Falls, NY, Quadrangle; O'Brien & Gere

LEGEND

NWI Habitat

NYS Wetland

Approximate location of NYSDEC Ecological Communities and/or Rare Plants and Animals

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
THREE STAR ANODIZING SITE
WAPPINGER FALLS, NEW YORK
FISH & WILDLIFE IMPACT ANALYSIS

DOCUMENTED NATURAL RESOURCES

2500' 0 2500'

FILE NO. 10653-27258.004
SEPTEMBER 2001

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 09/17/01 DIV82 baq

Attachment A

USFWS and NHP information request letter responses

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

May 31, 2001

Mr. Stephen E. Mooney
Project Scientist
O'Brien & Gere Engineers, Inc.
P.O. Box 4873
Syracuse, NY 13221-4873

Dear Mr. Mooney:

This responds to your letter of April 16, 2001, requesting information on the presence of endangered or threatened species in the vicinity of the Three Star Anodizing Site in the City of Wappingers Falls, Dutchess County, New York.

Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Therefore, no Biological Assessment or further Section 7 consultation under the Endangered Species Act is required with the U.S. Fish and Wildlife Service (Service). Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

The above comments pertaining to endangered species under our jurisdiction are provided pursuant to the Endangered Species Act. This response does not preclude additional Service comments under other legislation.

For additional information on fish and wildlife resources or State-listed species, we suggest you contact the appropriate New York State Department of Environmental Conservation regional office(s) as shown on the enclosed map, and:

New York State Department of Environmental Conservation
New York Natural Heritage Program-Information Services
625 Broadway
Albany, NY 12233
(518) 402-8935

We are not aware of any Federally designated wild, recreational, or scenic rivers at or in the vicinity of the Three Star Anodizing Site. National Wetlands Inventory (NWI) maps may or may not be available for the project area. However, while the NWI maps are reasonably accurate, they should not be used in lieu of field surveys for determining the presence of wetlands or delineating wetland boundaries for Federal regulatory purposes. Copies of specific NWI maps can be obtained from:

Cornell Institute for Resource Information Systems
302 Rice Hall
Cornell University
Ithaca, NY 14853
(607) 255-4864

Work in certain waters and wetlands of the United States may require a permit from the U.S. Army Corps of Engineers (Corps). If a permit is required, in reviewing the application pursuant to the Fish and Wildlife Coordination Act, the Service may concur, with or without stipulations, or recommend denial of the permit depending upon the potential adverse impacts on fish and wildlife resources associated with project implementation. The need for a Corps permit may be determined by contacting the appropriate Corps office(s) as shown on the enclosed map.

If you require additional information please contact Michael Stoll at (607) 753-9334.

Sincerely,

Mark W. Clough

Acting For
David A. Stilwell
Field Supervisor

Enclosure

cc: NYSDEC, New Paltz, NY (Environmental Permits)
NYSDEC, Albany, NY (Natural Heritage Program)
COE, New York, NY

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
Wildlife Resources Center – New York Natural Heritage Program
700 Troy-Schenectady Road, Latham, New York 12110-2400
Phone: (518) 783-3932 FAX: (518) 783-3916

John P. Cahill
Commissioner

May 15, 2001

Stephen E Mooney
O'Brien & Gere Engineers Inc
5000 Brittonfield Pkwy, PO Box 4873
Syracuse, NY 13221

RECEIVED
MAY 18 2001

Dear Mr. Mooney:

In response to your recent request, we have reviewed the New York Natural Heritage Program databases with respect to the proposed Remedial Investigation of the Three Star Anodizing Site, area as indicated on the map you provided, including a two-mile radius, located in the Town of Wappingers Falls, Dutchess County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

Your project site is not within or adjacent to a NYS Wildlife Management Area. Please check with local agencies and organizations for any local wildlife preserve areas.

Your project location is within, or adjacent to, a designated Significant Coastal Fish and Wildlife Habitat. This habitat is part of New York State's Coastal Management Program (CMP), which is administered by the NYS Department of State (DOS). Projects which may impact the habitat are reviewed by DOS for consistency with the CMP. For more information regarding this designated habitat and applicable consistency review requirements, please contact:

Greg Capobianco or Steven C. Resler - (518) 474-6000
NYS Department of State
Division of Coastal Resources and Waterfront Revitalization
41 State Street, Albany, NY 12231

The presence of rare species may result in your project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should <u>not</u> be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Heidi Krahling jp

Heidi J. Krahling
Information Services
NY Natural Heritage Program

Encs.

cc: Reg. 3, Wildlife Mgr.
Reg. 3, Fisheries Mgr.
Peter Nye, Endangered Species Unit, Delmar
Pat Festa, Bureau of Fisheries, Albany

PLEASE NOTE:

As of June 1, 2001, our new address will be:

NYS DEC - Information Services
NY Natural Heritage Program
625 Broadway, 5th floor
Albany, NY 12233-4754
(518) 402-8935

Natural Heritage Report on Rar(,pecies and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields. We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.

* County ** Town Scientifc Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	EO Rank, Last Seen, & Acreage	Detailed Location	General Habitat and Quality	Office Use
* DUTCHESS					
** POUGHKEEPSIE, WAPPINGER					
Podilymbus podiceps PIED-BILLED GREBE Bird	THREATENED G5; S3B,S1N	E 1983 0.00			4107358 ESU
** WAPPINGER, POUGHKEEPSIE					
ANADROMOUS FISH CONCENTRATION AREA Other	UNPROTECTED ; S3	E 1986 222.00			4107358 S
Bidens bidentoides ESTUARY BEGGAR-TICKS Vascular Plant	RARE G3; S3	D 1985-08-08 1.00			4107358 S
FRESHWATER INTERTIDAL MUDFLATS Community	UNPROTECTED G3G4; S2	BC 1988-09-07 2.00			4107358 S

Natural Heritage Report on Rar‹ pecies and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

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* County ** Town Scientifc Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	EO Rank, Last Seen, & Acreage	Detailed Location	General Habitat and Quality	Office Use
* DUTCHESS ** WAPPINGER, POUGHKEEPSIE					
FRESHWATER TIDAL MARSH Community	UNPROTECTED G3G4; S2	C 1988-09-07 5.00			4107358 S
Sagittaria calycina var spongiosa SPONGY ARROWHEAD Vascular Plant	THREATENED G5T4; S2	A 1985-08-08 11.00			4107358 S
* DUTCHESS, ULSTER ** CITY OF POUGHKEEPSIE, POUGHKEEPSIE, HYDE PARK, ESOPUS, LLOYD, MARLBOROUGH					
Acipenser brevirostrum SHORTNOSE STURGEON Fish	ENDANGERED G3; S1 LE	A 1986 4,480.00			4107368 S BOF
* ORANGE, ULSTER ** NEWBURGH, MARLBOROUGH					

Natural Heritage Report on Rare Species and Ecological Communities

Prepared 14 May 2001 by NY Natural Heritage Program, NYS DEC, Latham, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields.
We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.

* County ** Town Scientifc Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	EO Rank, Last Seen, & Acreage	Detailed Location	General Habitat and Quality	Office Use
* ORANGE, ULSTER ** NEWBURGH, MARLBOROUGH					
Haliaeetus leucocephalus BALD EAGLE Bird	THREATENED G4; S2S3B,S2N (PS:LT,PDL)	D 1998-01-21 300.00			4107358 S ESU
* ORANGE, ULSTER, DUTCHESS ** NEWBURGH, MARLBOROUGH, WAPPINGER, POUGHKEEPSIE					
Haliaeetus leucocephalus BALD EAGLE Bird	THREATENED G4; S2S3B,S2N (PS:LT,PDL)	D 1998-01-21 987.00			4107358 S ESU

9 Records Processed

New York State Breeding Bird Atlas
Breeding Species for Block Number(s):
5860A, 5860B, 5860C, 5860

Common Name	Scientific Name	Breeding Class	Year	New York Legal Status	Heritage State Rank
Pied-billed Grebe	Podilymbus podiceps	FL	83	Threatened	S3
Great Blue Heron	Ardea herodias	X1	85	Protected	S5
Green Heron	Butorides virescens	FY	84	Protected	S5
Mute Swan	Cygnus olor	NE	84	Protected	SE
Canada Goose	Branta canadensis	NE	84	Game Species	S5
Wood Duck	Aix sponsa	FL	84	Game Species	S5
Mallard	Anas platyrhynchos	NY	80	Game Species	S5
Turkey Vulture	Cathartes aura	X1	84	Protected	S4
Broad-winged Hawk	Buteo platypterus	NY	81	Protected	S5
Red-tailed Hawk	Buteo jamaicensis	FL	83	Protected	S5
American Kestrel	Falco sparverius	FL	83	Protected	S5
Ring-necked Pheasant	Phasianus colchicus	D2	83	Game Species	SE
Ruffed Grouse	Bonasa umbellus	X1	84	Game Species	S5
American Crow	Corvus brachyrhynchos	NY	80	Game Species	S5
Killdeer	Charadrius vociferus	NY	80	Protected	S5
Spotted Sandpiper	Actitis macularia	DD	83	Protected	S5
American Woodcock	Scolopax minor	X1	84	Game Species	S5
Rock Dove	Columba livia	NE	82	Unprotected	SE
Mourning Dove	Zenaida macroura	NE	82	Protected	S5
Black-billed Cuckoo	Coccyzus erythropthalmus	P2	80	Protected	S5
Yellow-billed Cuckoo	Coccyzus americanus	T2	84	Protected	S5
Eastern Screech-Owl	Otus asio	P2	84	Protected	S5
Great Horned Owl	Bubo virginianus	P2	84	Protected	S5
Barred Owl	Strix varia	FL	84	Protected	S5
Chimney Swift	Chaetura pelagica	NY	80	Protected	S5
Ruby-throated Hummingbird	Archilochus colubris	T2	84	Protected	S5
Belted Kingfisher	Ceryle alcyon	NY	85	Protected	S5
Red-bellied Woodpecker	Melanerpes carolinus	X1	85	Protected	S5
Downy Woodpecker	Picoides pubescens	FY	84	Protected	S5
Hairy Woodpecker	Picoides villosus	FY	83	Protected	S5
Northern Flicker	Colaptes auratus	FL	85	Protected	S5
Pileated Woodpecker	Dryocopus pileatus	FL	83	Protected	S5
Eastern Wood-Pewee	Contopus virens	FL	84	Protected	S5
Least Flycatcher	Empidonax minimus	S2	84	Protected	S5
Eastern Phoebe	Sayornis phoebe	NY	84	Protected	S5
Great Crested Flycatcher	Myiarchus crinitus	T2	84	Protected	S5
Eastern Kingbird	Tyrannus tyrannus	NE	83	Protected	S5

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

Common Name	Scientific Name	Breeding Class	Year	New York Legal Status	Heritage State Rank
Tree Swallow	Tachycineta bicolor	FY	85	Protected	S5
Northern Rough-winged Swallow	Stelgidopteryx serripennis	FS	84	Protected	S5
Bank Swallow	Riparia riparia	X1	85	Protected	S5
Barn Swallow	Hirundo rustica	NY	83	Protected	S5
Blue Jay	Cyanocitta cristata	FY	81	Protected	S5
Fish Crow	Corvus ossifragus	FL	85	Protected	S4
Black-capped Chickadee	Poecile atricapillus	NY	80	Protected	S5
Tufted Titmouse	Baeolophus bicolor	FY	83	Protected	S5
White-breasted Nuthatch	Sitta carolinensis	FL	85	Protected	S5
Brown Creeper	Certhia americana	X1	85	Protected	S5
Carolina Wren	Thryothorus ludovicianus	NE	80	Protected	S5
House Wren	Troglodytes aedon	NY	80	Protected	S5
Blue-gray Gnatcatcher	Polioptila caerulea	FY	84	Protected	S5
Eastern Bluebird	Sialia sialis	P2	84	Protected	S5
Veery	Catharus fuscescens	FL	84	Protected	S5
Wood Thrush	Hylocichla mustelina	NY	80	Protected	S5
American Robin	Turdus migratorius	NY	83	Protected	S5
Gray Catbird	Dumetella carolinensis	NE	82	Protected	S5
Northern Mockingbird	Mimus polyglottos	NE	80	Protected	S5
Brown Thrasher	Toxostoma rufum	FY	84	Protected	S5
Cedar Waxwing	Bombycilla cedrorum	FY	84	Protected	S5
European Starling	Sturnus vulgaris	NY	82	Unprotected	SE
White-eyed Vireo	Vireo griseus	X1	84	Protected	S4
Warbling Vireo	Vireo gilvus	FY	83	Protected	S5
Red-eyed Vireo	Vireo olivaceus	NE	80	Protected	S5
Blue-winged Warbler	Vermivora pinus	FY	85	Protected	S5
Yellow Warbler	Dendroica petechia	FY	83	Protected	S5
Chestnut-sided Warbler	Dendroica pensylvanica	T2	84	Protected	S5
Prairie Warbler	Dendroica discolor	FY	84	Protected	S5
Black-and-white Warbler	Mniotilta varia	T2	84	Protected	S5
American Redstart	Setophaga ruticilla	FY	84	Protected	S5
Worm-eating Warbler	Helmitheros vermivorus	S2	84	Protected	S4
Ovenbird	Seiurus aurocapillus	FY	83	Protected	S5
Louisiana Waterthrush	Seiurus motacilla	S2	84	Protected	S5
Common Yellowthroat	Geothlypis trichas	NY	84	Protected	S5
Scarlet Tanager	Piranga olivacea	FY	83	Protected	S5
Northern Cardinal	Cardinalis cardinalis	NY	84	Protected	S5
Rose-breasted Grosbeak	Pheucticus ludovicianus	FL	85	Protected	S5
Indigo Bunting	Passerina cyanea	NY	80	Protected	S5
Eastern Towhee	Pipilo erythrophthalmus	FL	84	Protected	S5
Chipping Sparrow	Spizella passerina	FY	82	Protected	S5
Field Sparrow	Spizella pusilla	FL	84	Protected	S5

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

Common Name	Scientific Name	Breeding Class	Year	New York Legal Status	Heritage State Rank
Song Sparrow	Melospiza melodia	NE	80	Protected	S5
Swamp Sparrow	Melospiza georgiana	FL	83	Protected	S5
Red-winged Blackbird	Agelaius phoeniceus	NE	82	Protected	S5
Common Grackle	Quiscalus quiscula	FY	85	Protected	S5
Brown-headed Cowbird	Molothrus ater	NE	83	Protected	S5
Baltimore Oriole	Icterus galbula	NY	84	Protected	S5
House Finch	Carpodacus mexicanus	NY	83	Protected	SE
American Goldfinch	Carduelis tristis	B2	84	Protected	S5
House Sparrow	Passer domesticus	NY	83	Unprotected	SE

Total Species 88

Note: For reports covering multiple blocks, only the record containing the most recent year for the highest level of breeding recorded for each species is shown.

NEW YORK STATE - BREEDING BIRD ATLAS REPORT

The enclosed data from the New York State Breeding Bird Atlas represents a cumulative effort from 1980-1985. These data are the result of on-site surveys within each block conducted by numerous volunteers. The intensity level and effort in data collecting varies throughout the State. Some blocks have been more thoroughly searched than others. For these reasons, we cannot provide a definitive statement concerning the absence of a breeding record for a species not listed in a block. We can only provide a listing of species known to be breeding or suspected of breeding in each block or set of blocks.

For each species listed, its breeding class code and year, its New York State Legal Status, and its Natural Heritage Program state rarity rank are provided. Explanations of these fields are as follows:

BREEDING CLASS AND YEAR

Indicates the highest class of evidence used to document breeding in that block or set of blocks during the course of the Breeding Bird Atlas Survey, and the year this evidence was recorded. Breeding classes used, and their codes, are listed below, in descending order of breeding confirmation, from strongest evidence of confirmed breeding down to evidence of possible breeding.

	CODE	DEFINITION OF BREEDING EVIDENCE
Confirmed Breeding:		
	NY	Nest with young.
	NE	Identifiable nest and eggs, bird sitting on nest or eggs, identifiable eggshells found beneath nest, or identifiable dead nestling(s).
	FY	Adult(s) with food for young.
	FS	Adult carrying fecal sac.
	ON	Adult(s) entering or leaving nest site in circumstances indicating occupied nest.
	FL	Recently fledged young (including downy young of precocial species - waterfowl, shorebirds).
	FE	Female with egg in the oviduct.
	UN	Used nest found.
	DD	Distraction display or injury-feigning.
Probable Breeding:		
	B2	Nest building or excavation or a nest hole.
	N2	Visiting probable nest site. Nest building by wrens and woodpeckers.
	D2	Courtship and display, agitated behavior or anxiety calls from adults suggesting probable presence nearby of a nest or young; well-developed brood-patch or cloacal protuberance on trapped adult.
	T2	Bird (or pair) apparently holding territory.
	S2	Singing male present (or breeding calls heard) on more than one date in the same place.
	P2	Pair observed in suitable habitat in breeding season.

Continued on next page...

Possible Breeding:

X1 — Species observed in possible nesting habitat but no other indication of breeding noted, or singing male(s) present (or breeding calls heard), in breeding season (based upon one visit).

NEW YORK STATE LEGAL STATUS - ANIMALS

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E = Endangered Species: any species which meet one of the following criteria:

1) Any native species in imminent danger of extirpation
2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened Species: any species which meet one of the following criteria:

1) Any native species likely to become an endangered species within the foreseeable future in New York.
2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a licence to take may be required.

G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY NATURAL HERITAGE PROGRAM STATE RARITY RANKS:

Each species has a state rank, which reflects its rarity within New York State, as determined by the NY Natural Heritage Program. These ranks carry no legal weight.

S1 = Typically 5 or fewer occurrences in New York State, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Typically 6 to 20 occurrences in New York State, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 15 years.

SX = Apparently extirpated from New York State.

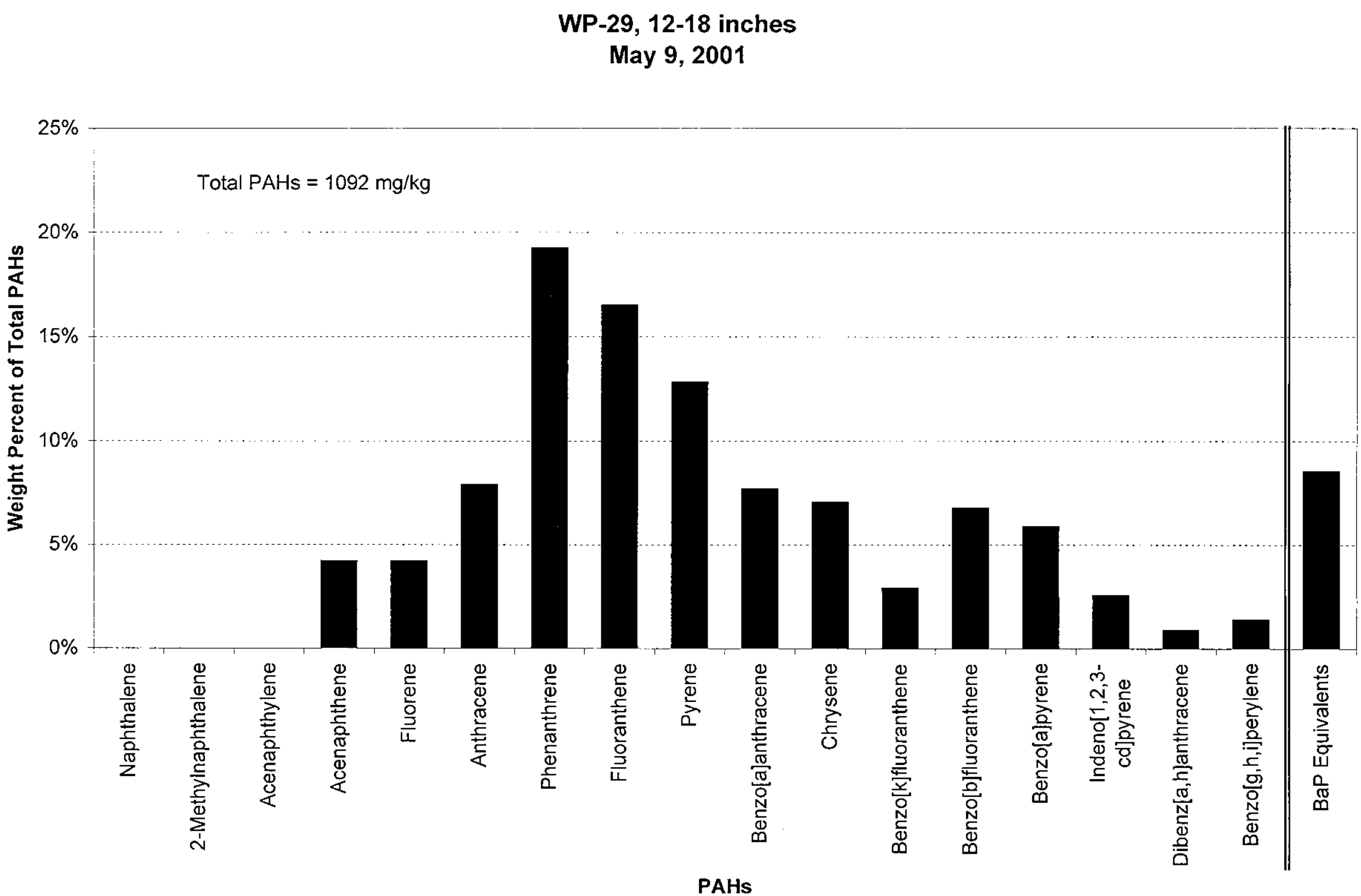
SE = Exotic, not native to New York State

NR = Not ranked (e.g., hybrids)

Questions concerning these data may be addressed to:

New York Natural Heritage Program
NYS DEC - Wildlife Resources Center
700 Troy-Schenectady Road
Latham, New York 12110-2400

Copies of the published book "The Atlas of Breeding Birds in New York State", Robert F. Andrle and Janet R. Carroll, Editors, may be purchased directly from Cornell University Press. Call phone number 1-800-666-2211 to order.


WP-29, 12-18 inches
May 9, 2001
Total PAHs = 1092 mg/kg
Weight Percent of Total PAHs
25%
20%
15%
10%
5%
0%
Naphthalene
2-Methylnaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Anthracene
Phenanthrene
Fluoranthene
Pyrene
Benzo[a]anthracene
Chrysene
Benzo[k]fluoranthene
Benzo[b]fluoranthene
Benzo[a]pyrene
Indeno[1,2,3-cd]pyrene
Dibenz[a,h]anthracene
Benzo[g,h,i]perylene
BaP Equivalents
PAHs

DRAFT

APPENDIX J

Qualitative Human Health Risk Assessment Report
(*not included with the draft Creek RI report*)

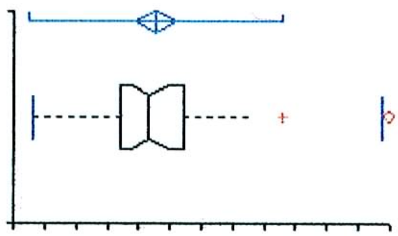
APPENDIX K

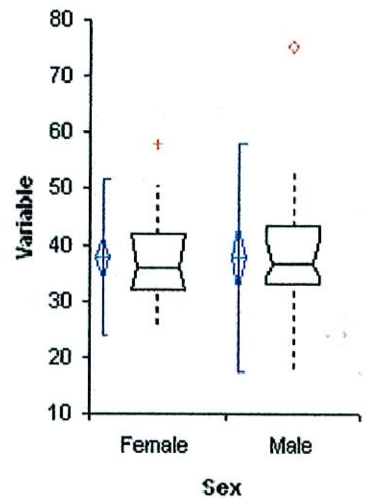
Box plot evaluations of spatial trends

Box-Whisker plots

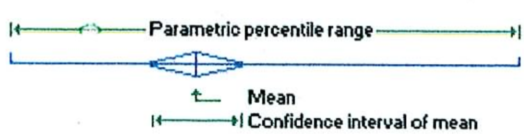
See also: Normality Test, Frequency histogram.

Box-plots graphically show the **central location** and **scatter/dispersion** of the observations of a sample(s). Single continuous descriptives shows a single horizontal box-plot for the sample. Comparative descriptives shows vertical box-plots for each sample, side-by-side for comparison.



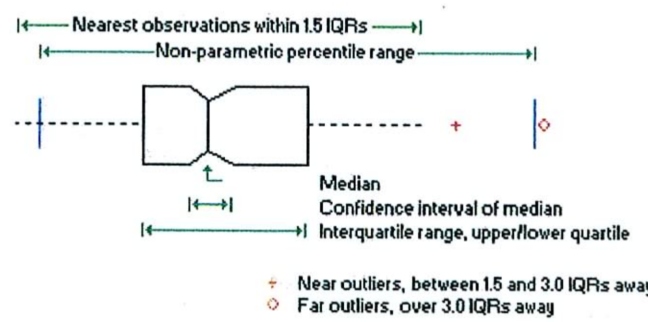


The blue line series shows **parametric statistics:**



- the blue diamond shows the **mean** and the requested **confidence interval around the mean**.
- the blue notched lines show the requested **parametric percentile range**.

The notched box and whiskers show **non-parametric statistics**:



- the notched box shows the **median**, lower and upper **quartiles**, and **confidence interval around the median**.
- the dotted-line connects the **nearest observations within 1.5 IQRs** (inter-quartile ranges) of the lower and upper quartiles.
- red crosses (+) and circles (o) indicate **possible outliers** - observations more than 1.5 IQRs (**near outliers**) and 3.0 IQRs (**far outliers**) from the quartiles.
- the blue vertical lines show the requested **non-parametric percentile range**.

Spatial trend analysis: Surface sediment

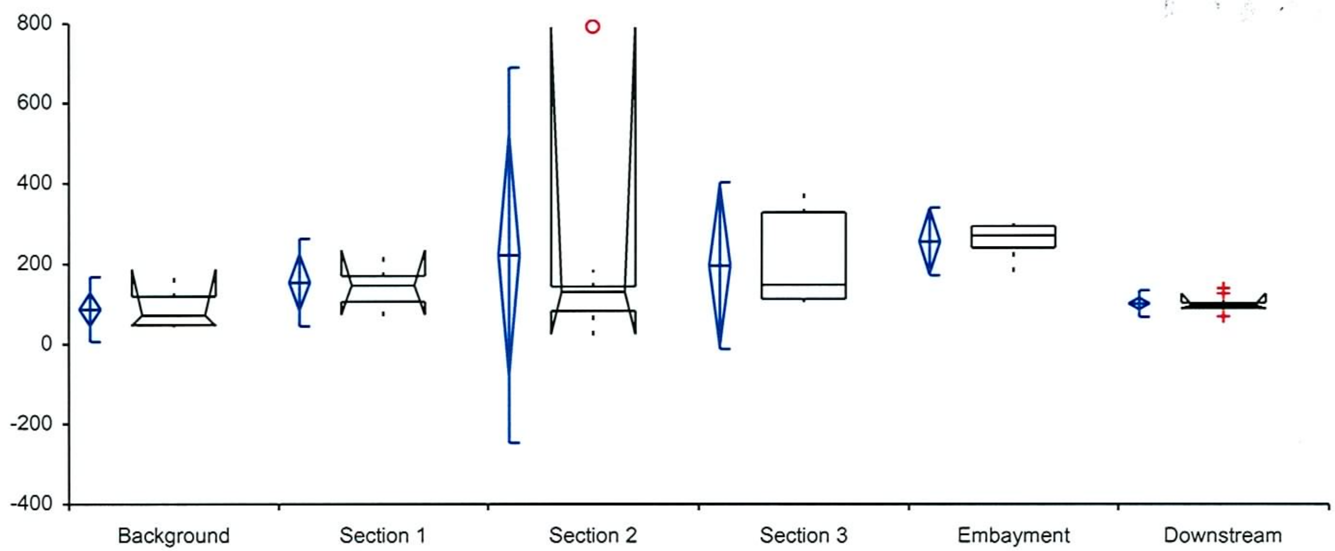
Spatial trend analysis: Surface sediment

Statistical analyses

Spatial trend analysis: Deeper sediment

Statistical analyses

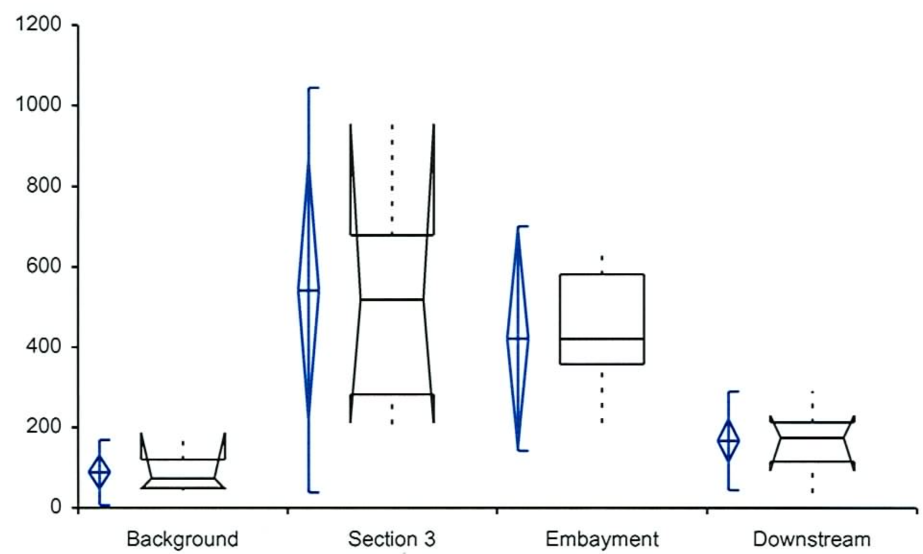
Test Comparative descriptives
Comparison of lead concentrations in surface sediment
Variables Lead: Background, Section 1, Section 2, Section 3, Embayment, Downstream
Performed by **Date** 5 November 2003



Lead	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	87	49	17	46 to 128	73	71	46 to 187
Section 1	6	153	66	27	84 to 223	147	65	73 to 235
Section 2	6	220	284	116	-78 to 519	130	61	24 to 790
Section 3	4	194	126	63	-6.1 to 395	148	216	- to -
Embayment	4	254	51	26	172 to 336	269	54	- to -
Downstream	10	99	20	6.4	85 to 114	95	13	86 to 125

Test	**Comparative descriptives**
	Comparison of lead concentrations in deeper sediment
Variables	Lead: Background, Section 3, Embayment, Downstream
Performed by	
Date	10 November 2003

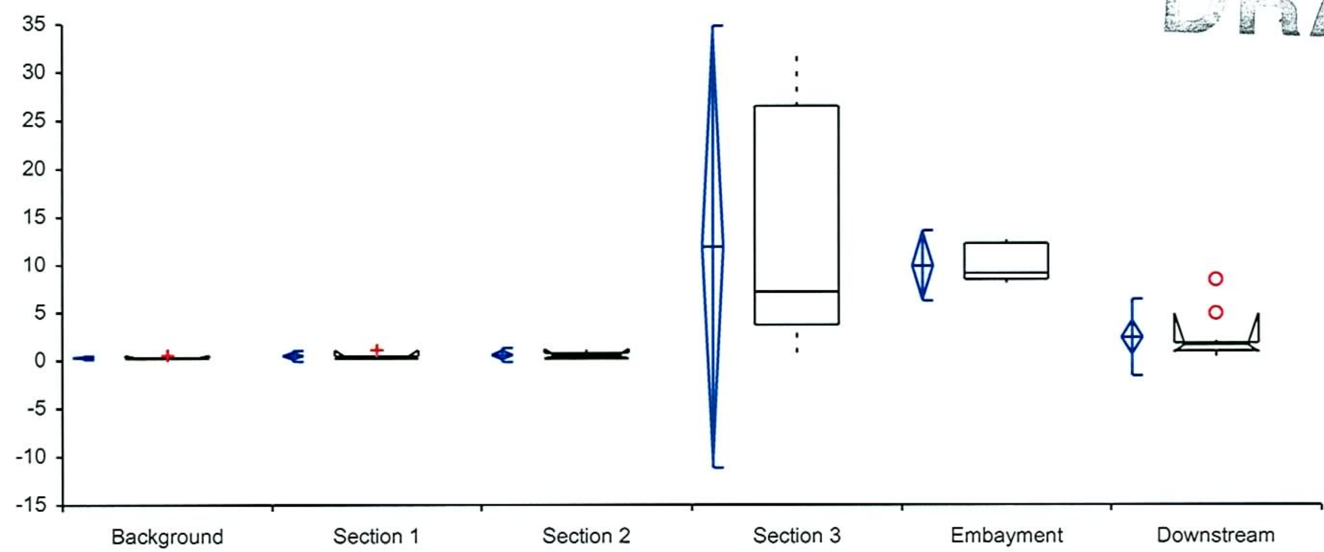
DRAFT



Lead	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	87	49	17	46 to 128	73	71	46 to 187
Section 3	6	541	306	125	220 to 862	518	397	210 to 955
Embayment	4	421	170	85	150 to 691	420	224	- to -
Downstream	10	166	75	24	113 to 219	174	98	91 to 230

Test	**Comparative descriptives**
	Comparison of mercury concentrations in surface sediment
Variables	Mercury: Background, Section 1, Section 2, Section 3, Embayment, Downstream
Performed by	**Date** 5 November 2003

DRAFT

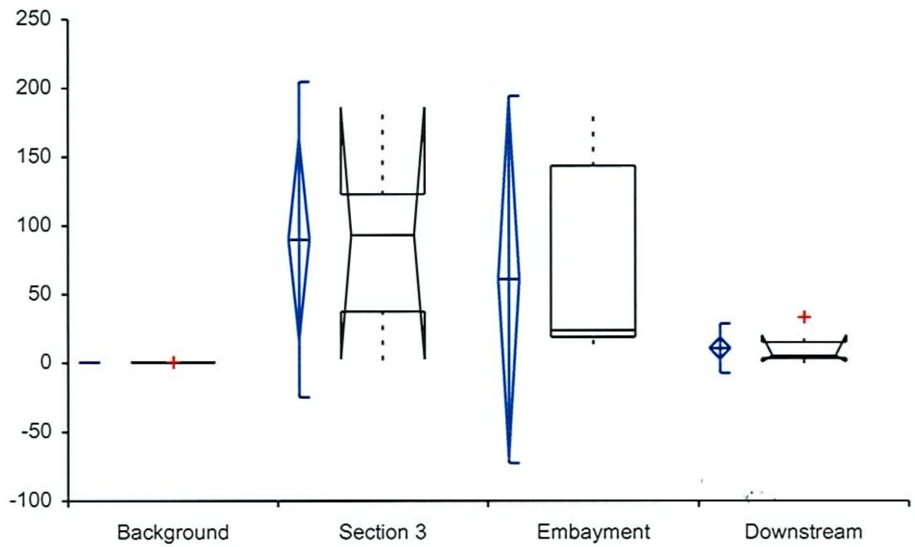


Mercury	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	0.30	0.13	0.04	0.19 to 0.40	0.30	0.13	0.18 to 0.57
Section 1	6	0.45	0.35	0.14	0.09 to 0.82	0.39	0.25	0.15 to 1.1
Section 2	6	0.54	0.45	0.18	0.07 to 1.0	0.45	0.60	0.15 to 1.2
Section 3	4	12	14	7.0	-10 to 34	7.1	23	- to -
Embayment	4	9.8	2.2	1.1	6.2 to 13	9.0	3.7	- to -
Downstream	10	2.3	2.4	0.77	0.57 to 4.0	1.6	0.82	0.77 to 4.8

analysed with: Analyse-it + General 1.68

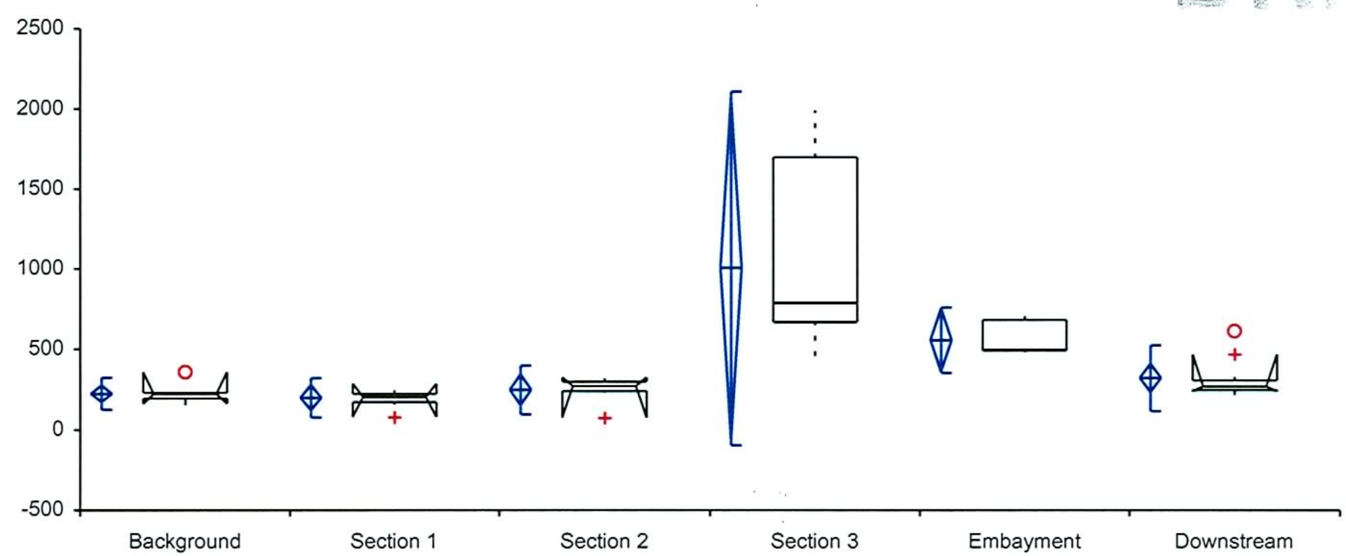
Test	**Comparative descriptives**
	Comparison of mercury concentrations in deeper sediment
Variables	Mercury: Background, Section 3, Embayment, Downstream
Performed by	
Date	10 November 2003

DRAFT



Mercury	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	0.30	0.13	0.04	0.19 to 0.40	0.30	0.13	0.18 to 0.57
Section 3	6	90	70	28	17 to 163	93	86	2.4 to 186
Embayment	4	61	81	41	-68 to 190	24	125	- to -
Downstream	10	10	11	3.4	2.5 to 18	4.8	12	0.4 to 20

Test	**Comparative descriptives**
	Comparison of zinc concentrations in surface sediment
Variables	Zinc: Background, Section 1, Section 2, Section 3, Embayment, Downstream
Performed by	
Date	5 November 2003

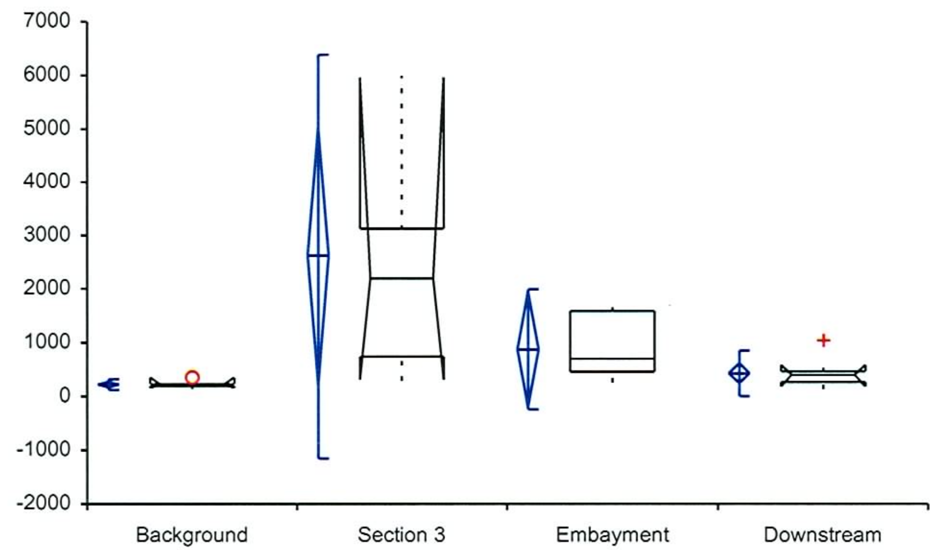


Zinc	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	225	61	21	174 to 275	223	35	162 to 359
Section 1	6	199	74	30	121 to 277	203	52	78 to 285
Section 2	6	247	92	37	151 to 344	269	58	74 to 325
Section 3	4	1004	669	335	-62 to 2069	784	1029	- to -
Embayment	4	555	123	62	359 to 751	497	189	- to -
Downstream	10	320	124	39	231 to 409	268	58	238 to 470

analysed with: Analyse-it + General 1.68

Test	**Comparative descriptives**
	Comparison of zinc concentrations in deeper sediment
Variables	Zinc: Background, Section 3, Embayment, Downstream
Performed by	
Date	10 November 2003

DRAFT



Zinc	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	225	61	21	174 to 275	223	35	162 to 359
Section 3	6	2616	2291	935	212 to 5021	2195	2378	307 to 5955
Embayment	4	874	679	339	-206 to 1955	701	1132	- to -
Downstream	10	429	260	82	243 to 615	398	200	179 to 588

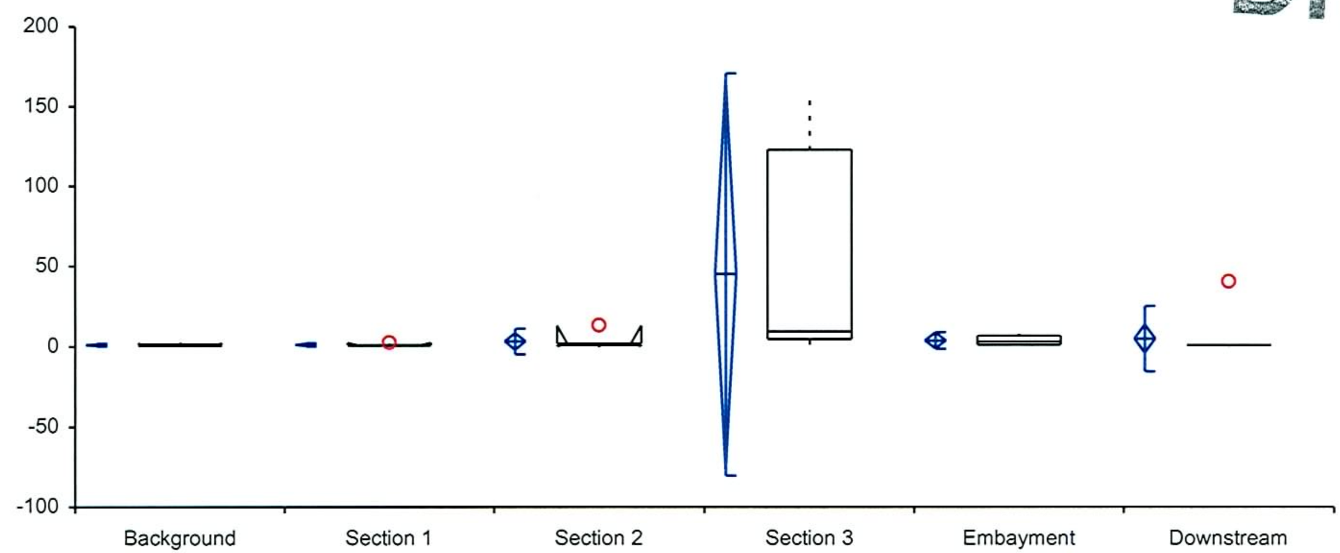
analysed with: Analyse-it + General 1.68

Test **Comparative descriptives**
Comparison of antimony concentrations in surface sediment

Variables Antimony: Background, Section 1, Section 2, Section 3, Embayment, Downstream

Date 5 November 2003

DRAFT

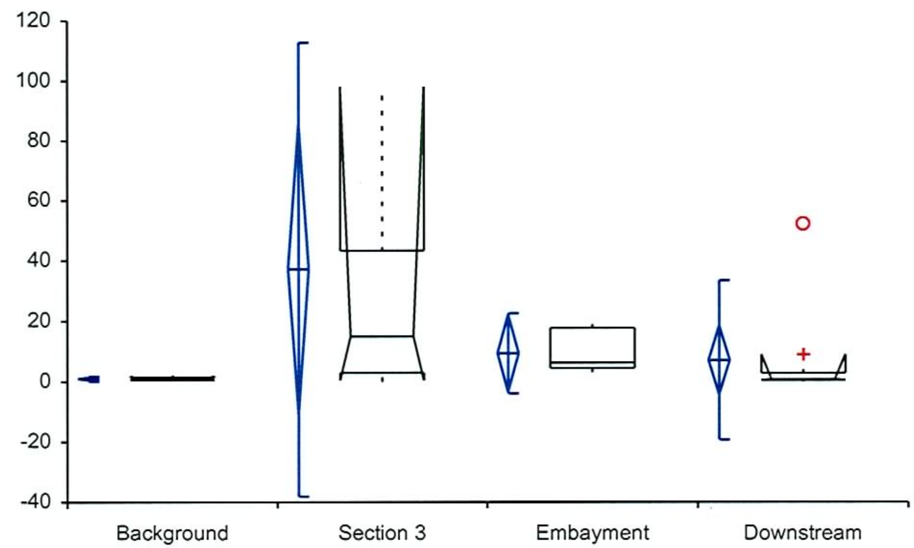


Antimony	n	Mean	SD	SE	95% CI of Mean
Background	8	0.98	0.52	0.18	0.5 to 1.4
Section 1	6	1.0	0.69	0.28	0.3 to 1.7
Section 2	6	3.0	4.9	2	-2.1 to 8.1
Section 3	4	45	76	38	-77 to 166
Embayment	4	3.6	3.2	1.6	-1.5 to 8.6
Downstream	10	4.7	12	3.9	-4.2 to 14

Antimony	Median	IQR	95% CI of Median
Background	0.75	0.88	0.55 to 1.9
Section 1	0.77	0.43	0.51 to 2.3
Section 2	1.3	1.0	0.20 to 13
Section 3	9.2	118	- to -
Embayment	3.2	5.8	- to -
Downstream	0.80	0.10	0.70 to 0.80

Test	**Comparative descriptives**
	Comparison of antimony concentrations in deeper sediment
Variables	Antimony: Background, Section 3, Embayment, Downstream
Performed by	
Date	10 November 2003

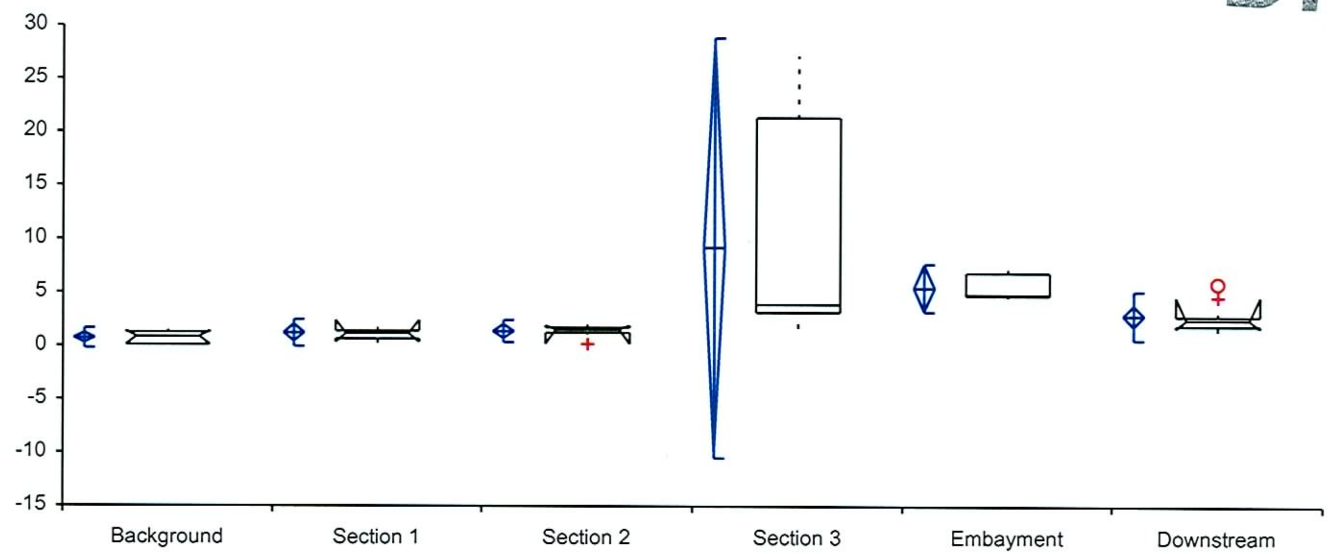
DRAFT



Antimony	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	1.0	0.52	0.18	0.55 to 1.4	0.75	0.88	0.55 to 1.9
Section 3	6	37.2	46	19	-11 to 85	15	40	0.33 to 98
Embayment	4	9.2	8.1	4.0	-3.6 to 22	6.3	13	- to -
Downstream	10	7.0	16	5.1	-4.5 to 18	0.6	2.3	0.40 to 8.9

Test	**Comparative descriptives**
	Comparison of cadmium concentrations in surface sediment
Variables	Cadmium: Background, Section 1, Section 2, Section 3, Embayment, Downstream
Performed by	
Date	5 November 2003

DRAFT



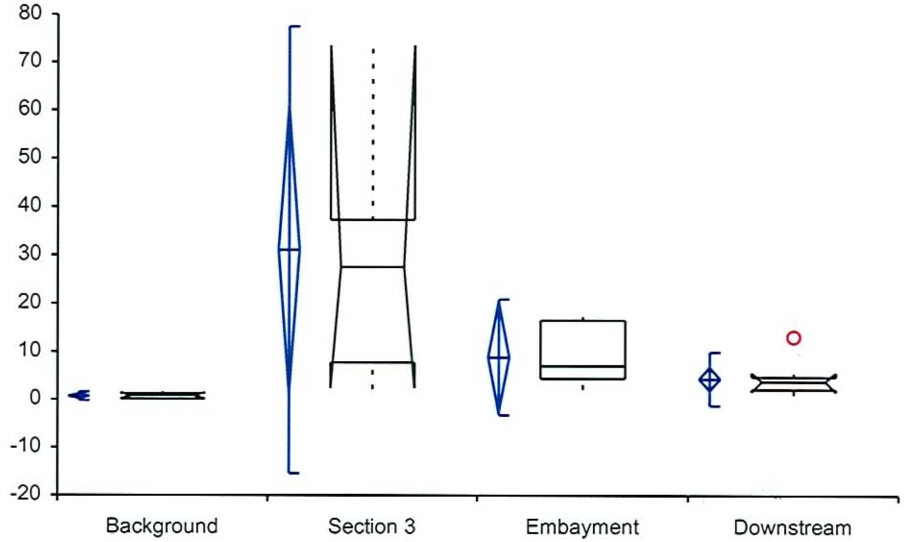
Cadmium	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	0.7	0.56	0.20	0.27 to 1.2	0.87	1.2	0.10 to 1.4
Section 1	6	1.2	0.76	0.31	0.41 to 2.0	1.2	0.75	0.34 to 2.4
Section 2	6	1.4	0.63	0.26	0.71 to 2.0	1.6	0.48	0.20 to 1.9
Section 3	4	9.2	12	5.97	-9.9 to 28	3.9	18	- to -
Embayment	4	5.4	1.4	0.68	3.2 to 7.6	4.8	2.1	- to -
Downstream	10	2.8	1.4	0.44	1.8 to 3.8	2.5	0.88	1.7 to 4.6

analysed with: Analyse-it + General 1.68

Test	**Comparative descriptives**
	Comparison of cadmium concentrations in deeper sediment
Variables	Cadmium: Background, Section 3, Embayment, Downstream
Performed by	

Date 10 November 2003

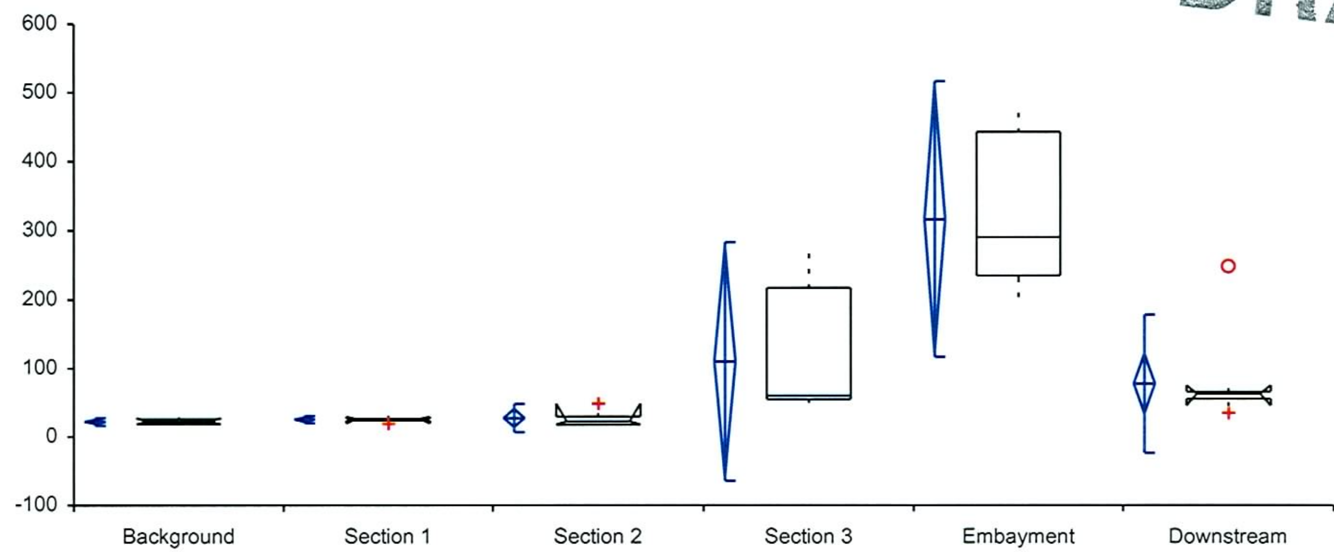
DRAFT



Cadmium	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	0.74	0.56	0.20	0.27 to 1.2	0.87	1.2	0.10 to 1.4
Section 3	6	31	28	12	1.4 to 61	28	30	2.3 to 74
Embayment	4	8.8	7.3	3.7	-2.8 to 20	7.0	12	- to -
Downstream	10	4.3	3.4	1.1	1.8 to 6.8	3.7	2.7	1.5 to 5.6

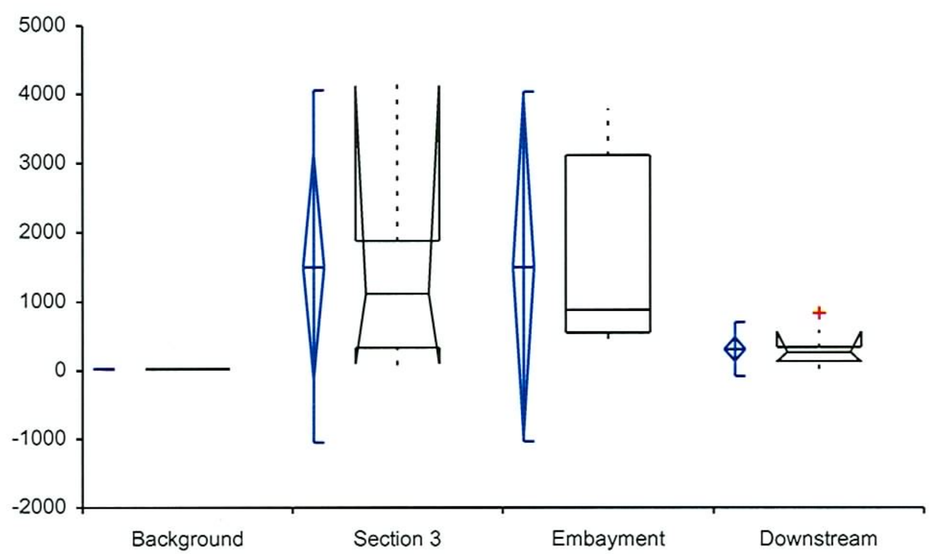
Test	**Comparative descriptives**
	Comparison of chromium concentrations in surface sediment
Variables	Chromium: Background, Section 1, Section 2, Section 3, Embayment, Downstream
Performed by	
Date	5 November 2003

DRAFT



Chromium	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	22	3.6	1.3	19 to 25	21.500	7.1	18 to 27
Section 1	6	25	3.4	1.4	21 to 28	25.500	2.5	19 to 29
Section 2	6	27	12	5.1	14 to 40	22.3	12	17 to 48
Section 3	4	109	105	53	-59 to 277	59.500	163	- to -
Embayment	4	315	122	61	122 to 509	289.500	208	- to -
Downstream	10	77	61	19	33 to 120	61.500	11	44 to 74

Test	**Comparative descriptives**
	Comparison of chromium concentrations in deeper sediment
Variables	Chromium: Background, Section 3, Embayment, Downstream
Performed by	
Date	10 November 2003



Chromium	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	8	22	3.6	1.3	19 to 25	22	7.1	18 to 27
Section 3	6	1498	1551	633	-130 to 3126	1114	1546	89 to 4120
Embayment	4	1495	1541	771	-958 to 3947	872	2564	- to -
Downstream	10	300	239	76	129 to 471	258	200	115 to 566

EXHIBIT A

Bathymetric map of Wappingers Creek

Source:

Map obtained from New York State Department of Environmental Conservation, Division of Fish, Wildlife, and Marine Resources.

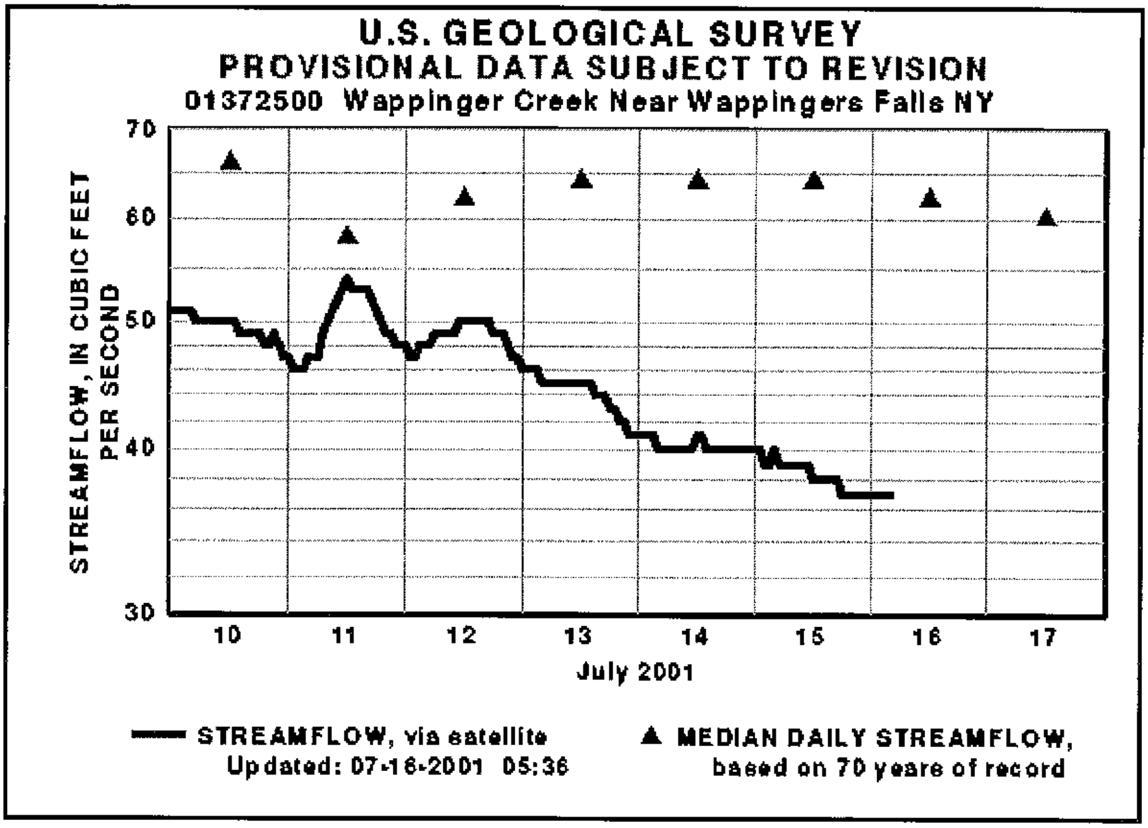
EXHIBIT B

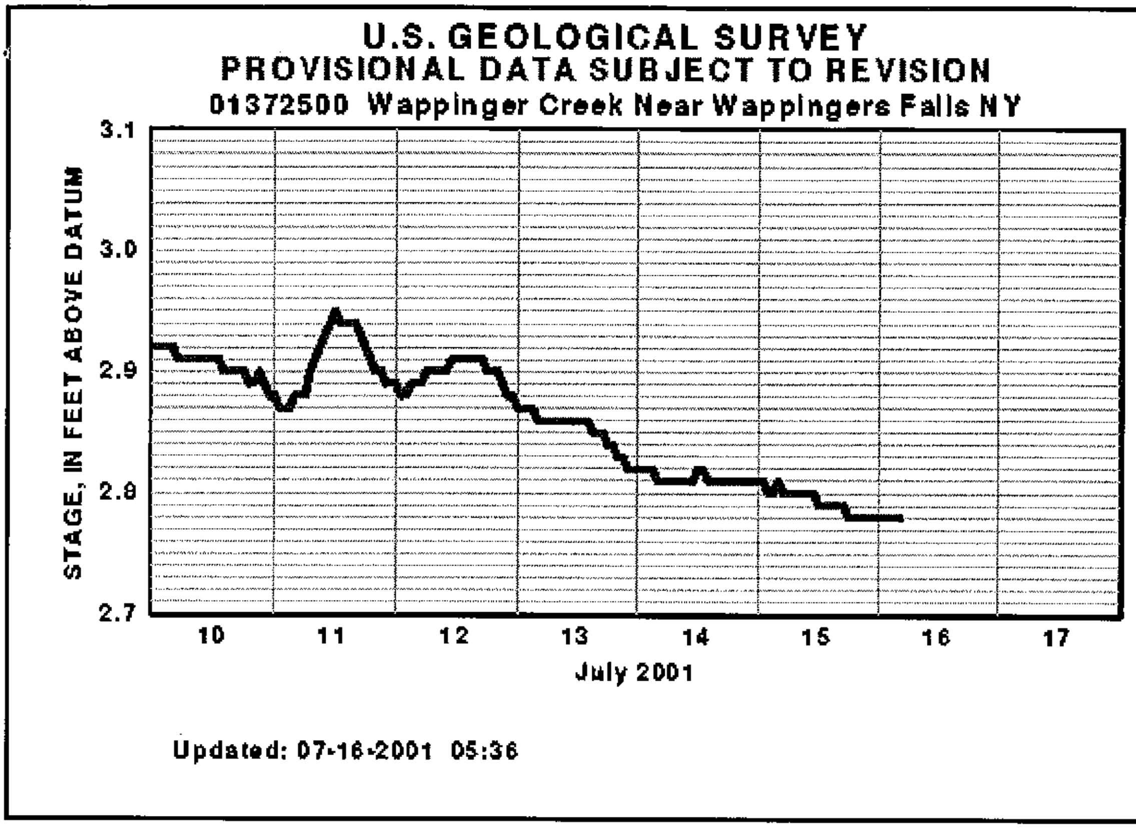
Wappingers Creek flow data, Hudson River tide data

PROVISIONAL DATA SUBJECT TO REVISION

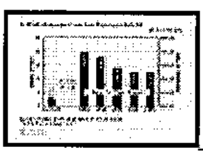
01372500-- Wappinger Creek Near Wappingers Falls NY

Latest Conditions			
Flow (ft^3/s)	Stage (ft)	Date	Time
37	2.8	07/16	04:45





- Additional sensor graph(s) available (click on graph or sensor name)



[Recorded Peak Stages]

- Download provisional data
- Retrieve historical daily value data
- Retrieve historical peak flow data
- Map of region surrounding station

	Daily Mean Discharge Statistics for 07/16 based on 70 years of record, in (ft^3/s)					
Latest flow 07/16 04:45	Minimum	Mean	Maximum	80 percent exceedance	50 percent exceedance	20 percent exceedance
37	9.2	127	1,860	24	62	133

Percent exceedance means that 80, 50, or 20 percent of all daily mean flows for 07/16 have been greater than the the value shown.

Flood Thresholds	
Flow (ft^3/s)	Stage (ft)
---	8.0

Return to Water Resources of New York Home page

Please direct questions or comments to <GS-W-NYalb_Webmaster@usgs.gov>
or contact:

Information Specialist
U.S. Geological Survey
425 Jordan Rd.
Troy, NY 12180
Tel. 518/285-5602

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rt_www -- (rev 1.1)

Current Conditions

Poughkeepsie, NY
as reported at Poughkeepsie, NY. Last updated Monday, July 16, at 7:53 AM Eastern Daylight Time

Fair

63°F Feels Like: N/A

UV Index:	1 Minimal
Wind:	calm
Dew Point:	59 °F
Humidity:	87 %
Visibility:	Unlimited
Barometer:	30.05 inches and rising

Averages & Records | Detailed Local Forecast | Hour by Hour Details | Audio and Video Forecast

Temperature Converter
Enter a number and click on the "Calculate" button
°F = °C Calculate Reset

10 Day Forecast

Poughkeepsie, NY
Monday, July 16, at 3:09 AM Eastern Daylight Time

		Hi (°F)	Lo (°F)
Today Jul 16	Partly Cloudy UV Index: 9 High	81 °F	63 °F
Tue Jul 17	Showers UV Index: 6 Moderate	80 °F	62 °F
Wed Jul 18	Scattered Showers UV Index: 8 High	80 °F	62 °F
Thu Jul 19	Isolated T-Storms UV Index: 9 High	78 °F	58 °F
Fri			

Weather and ...

Personalize this section to see how the weather impacts:

- Golf Courses
- Airport Delays
- Pollen Counts
- Sun Safety Tips
- Air Quality Info
- Gardening Tips
- Scenic Drives
- National Parks
- Water Temps

Personalize this section

Explore Related Sites

Maps

Click Here for Race Day Weather

Rec Loc

Visit by Ci
Sho by Di
Use from
Lon by Pl
Onli by M
Rea by H
Hot by H

Fri Jul 20	Isolated T-Storms UV Index: 8 High	81 °F	59 °F
Sat Jul 21	Partly Cloudy UV Index: 9 High	82 °F	62 °F
Sun Jul 22	Partly Cloudy UV Index: 9 High	82 °F	60 °F
Mon Jul 23	Partly Cloudy UV Index: 9 High	84 °F	61 °F
Tue Jul 24	Partly Cloudy UV Index: 9 High	82 °F	63 °F
Wed Jul 25	Partly Cloudy UV Index: 9 High	82 °F	60 °F

In The Spotlight

Local Linker

New York
Local Ski Resorts
Check New York Flu Conditions
Check La Guardia Flight Arrivals

New Jersey
Check N.J. Flu Conditions
Check Newark Flight Arrivals
Newark Pollen

Connecticut
Bradley Intl. Flight Arrivals
Mohawk Mntn. Ski Conditons
Check CT Flu Conditions

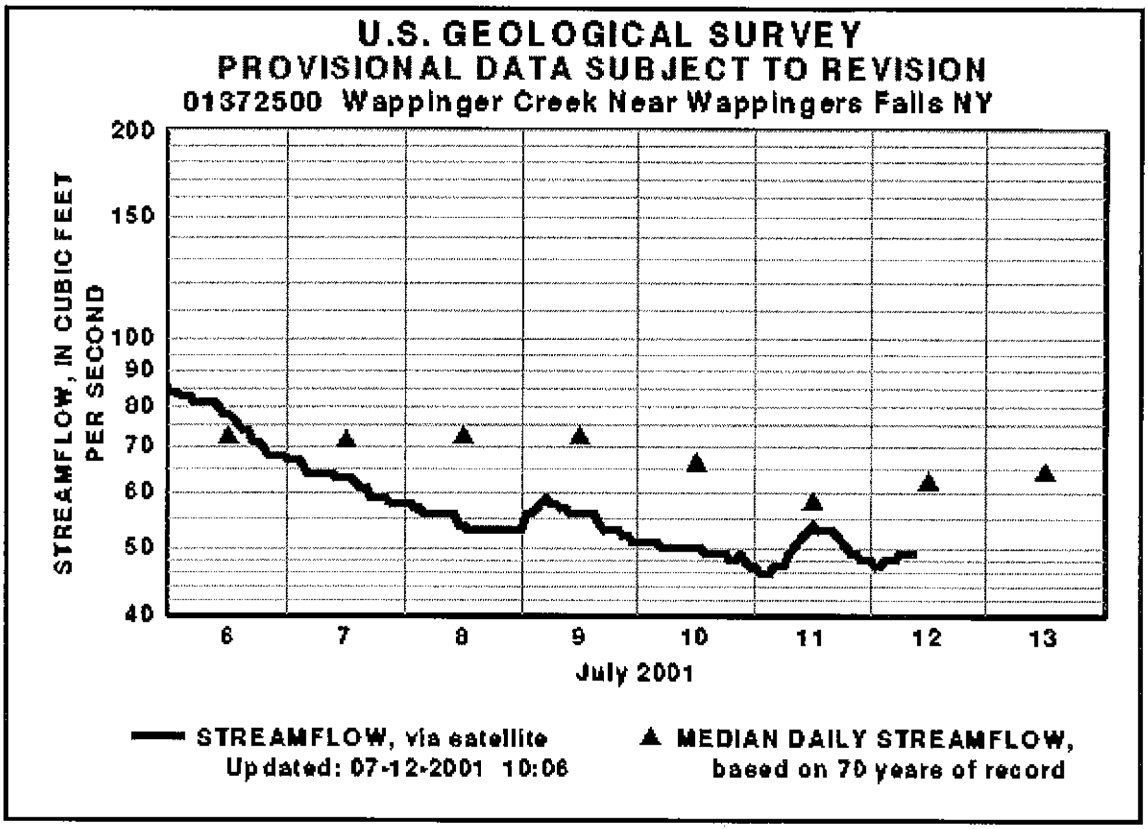
Send us your feedback about this page.

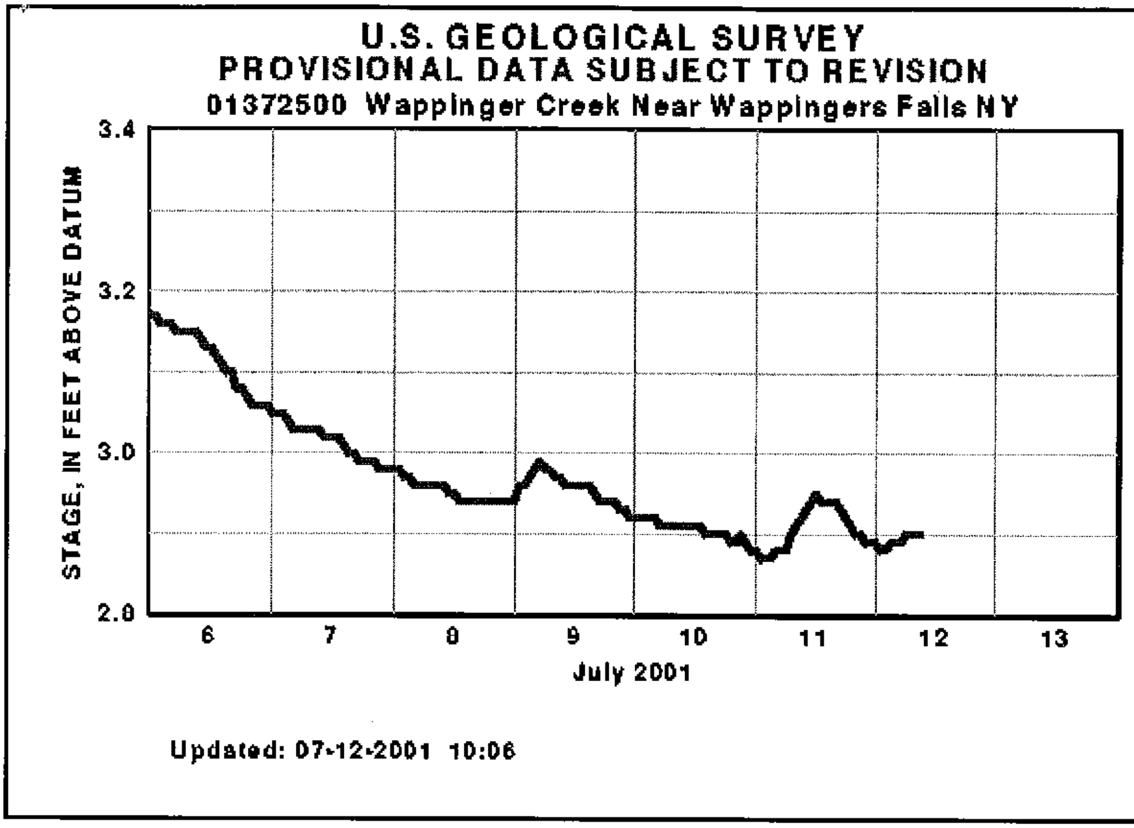
International Sites
weather.com Español | weather.com Brasil

PROVISIONAL DATA SUBJECT TO REVISION

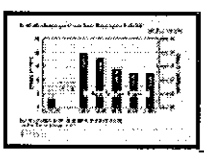
01372500-- Wappinger Creek Near Wappingers Falls NY

Latest Conditions			
Flow (ft^3/s)	Stage (ft)	Date	Time
49	2.9	07/12	09:15





Additional sensor graph(s) available (click on graph or sensor name)



[Recorded Peak Stages]

- Download provisional data
- Retrieve historical daily value data
- Retrieve historical peak flow data
- Map of region surrounding station

	Daily Mean Discharge Statistics for 07/12 based on 70 years of record, in (ft^3/s)					
Latest flow 07/12 09:15	Minimum	Mean	Maximum	80 percent exceedance	50 percent exceedance	20 percent exceedance
49	12	79	291	29	62	124

Percent exceedance means that 80, 50, or 20 percent of all daily mean flows for 07/12 have been greater than the the value shown.

Flood Thresholds	
Flow (ft^3/s)	Stage (ft)
---	8.0

Water Resources

Data Category: Surface Water
Geographic Area: New York
GO

Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

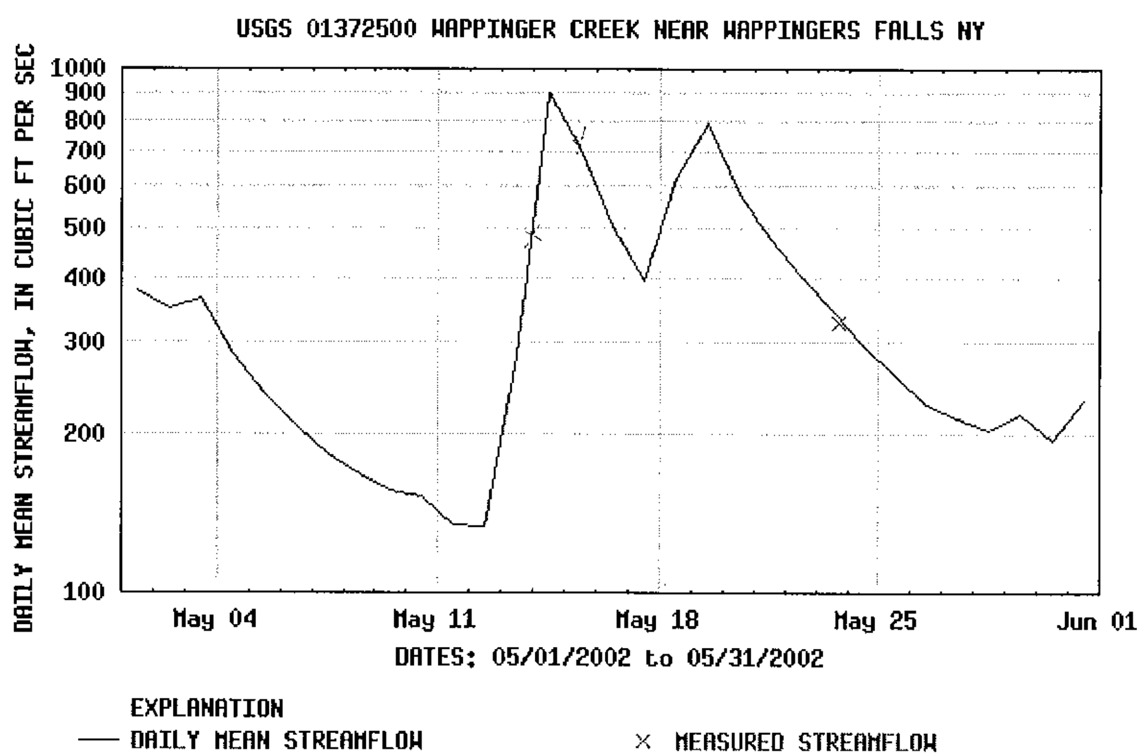
USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site Surface-water: Daily streamflow GO

Dutchess County, New York
Hydrologic Unit Code 02020008
Latitude 41°39'11", Longitude 73°52'23" NAD27
Drainage area 181.00 square miles
Contributing drainage area 181 square miles
Gage datum 114.37 feet above sea level NGVD29

Output formats

Tab-separated data file
Graph
Reselect output format



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Water Resources

Data Category: Surface Water
Geographic Area: New York
GO

Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site Surface-water: Daily streamflow GO

Dutchess County, New York
Hydrologic Unit Code 02020008
Latitude 41°39'11", Longitude 73°52'23" NAD27
Drainage area 181.00 square miles
Contributing drainage area 181 square miles
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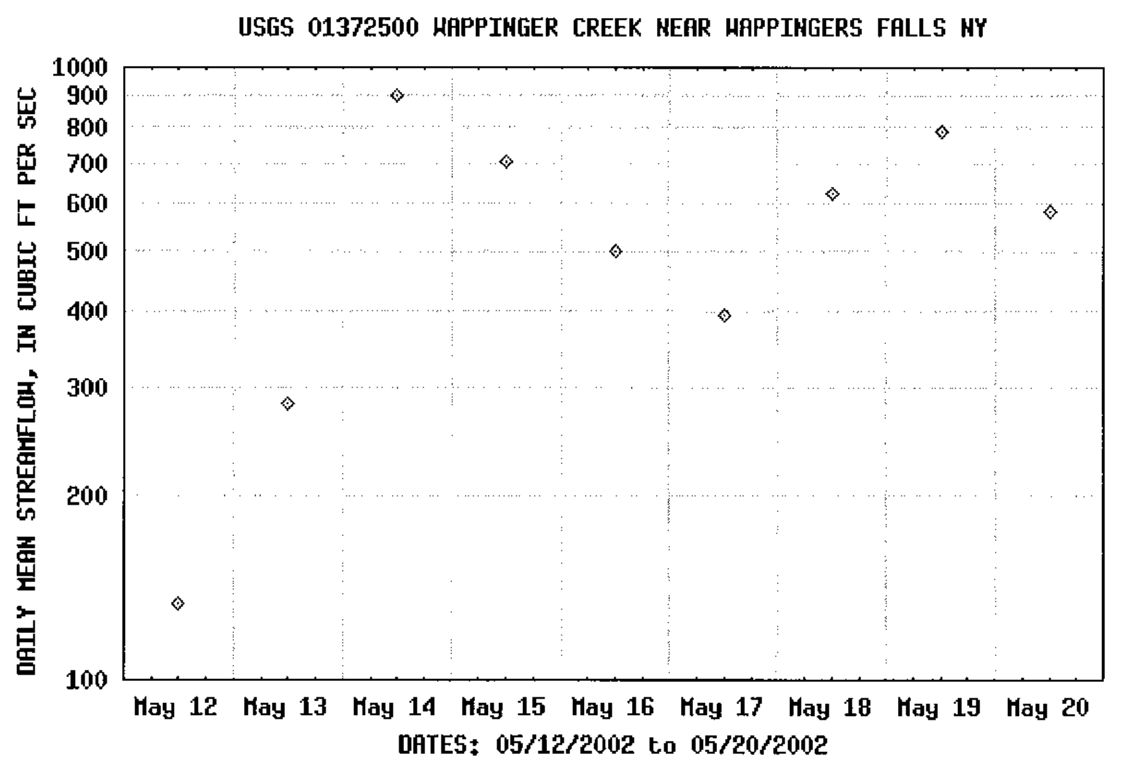
Output formats

Tab-separated data file
Graph
Reselect output format



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Water Resources

Data Category: Surface Water
Geographic Area: New York
GO

Daily Streamflow for New York

ALL DATA ARE EASTERN STANDARD TIME

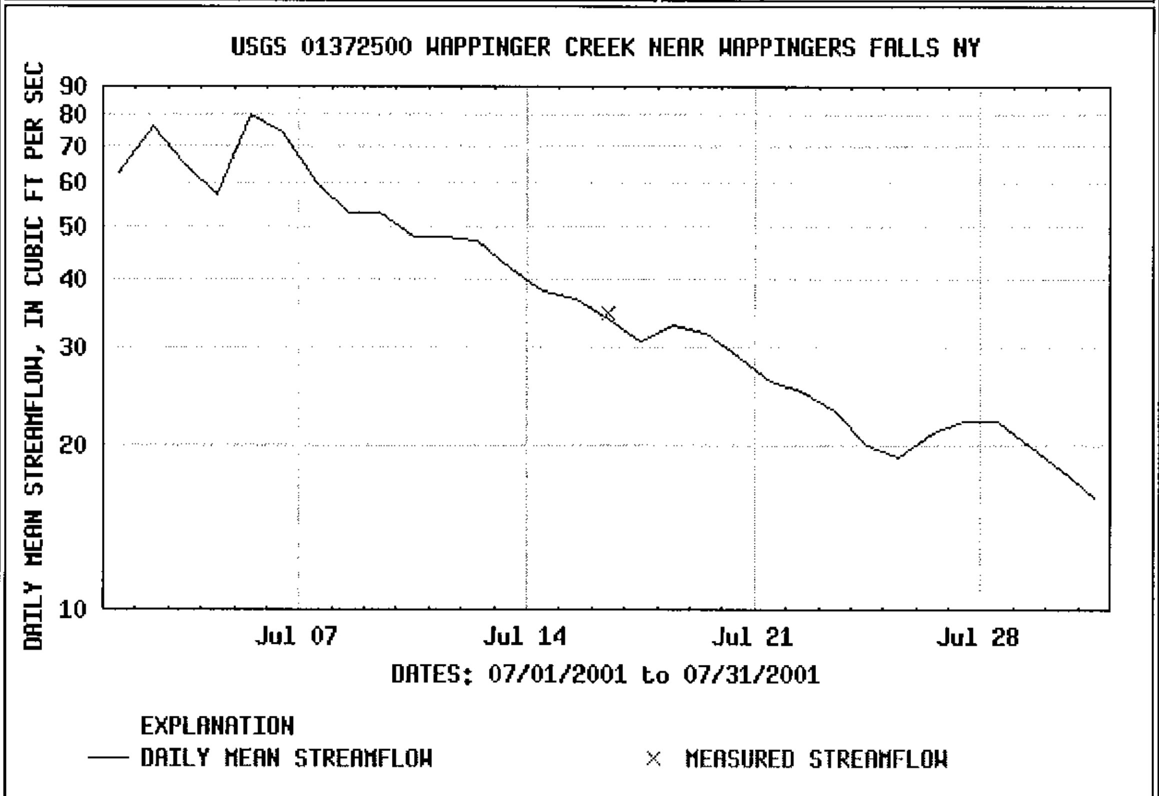
USGS 01372500 WAPPINGER CREEK NEAR WAPPINGERS FALLS NY

Available data for this site Surface-water: Daily streamflow GO

Dutchess County, New York
Hydrologic Unit Code 02020008
Latitude 41°39'11", Longitude 73°52'23" NAD27
Drainage area 181.00 square miles
Contributing drainage area 181 square miles
Gage datum 114.37 feet above sea level NGVD29

Output formats

Tab-separated data file
Graph
Reselect output format



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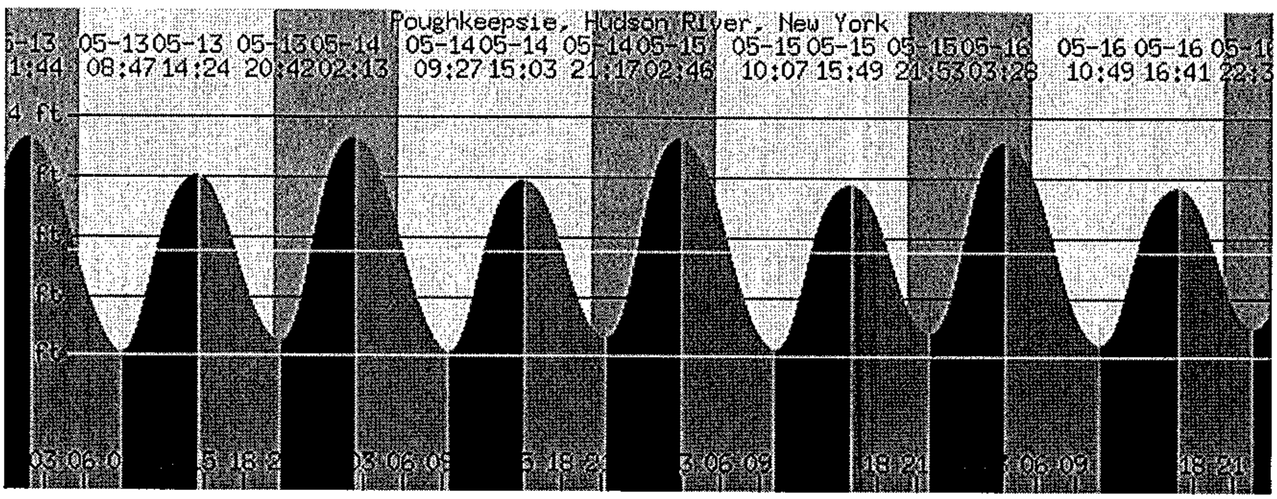
WWW Tide and Current Predictor

Web interface by Dean Pentcheff.
Calculations and graphics by David Flater's XTide Program.
(**Pick a different site** | **Frequently Asked Questions**)

Poughkeepsie, Hudson River, New York

13 May 2002 - 16 May 2002



If present, horizontal lines mark mean sea level and datum (usually mean lower low water). Colors under the curve indicate rising and falling tide (not ebb and flood currents).

[Make Prediction Using Options]

Prediction Options

Select a different site

Select display type

- ○ Tabular List (quickest)
- ○ Text Plot (Plot Type: ◉ Horizontal ○ Vertical) (more plot options below)
- ◉ Graphic Plot: size 640 by 240 pixels (more plot options below)
- ○ One-Month Calendar (Type: ◉ Compact ○ Compact+ ○ Calendar ○ Text)
- ○ Extreme Highest and Lowest Tides Only

○ Strict Intervals (Interval Time: 1 minute)

Select presentation options

4 days Length of time to display (ignored by One-Month Calendars)

+0 Change text size (only for browsers supporting font size changes)

Select tide height units: ○ meters ○ feet ◉ default

☐ Suppress credits and warnings on top of page

☐ Suppress sunrise/sunset and lunar information

☐ Printer-friendly bare output (☐ Force plot to B&W lines)

☐ Show site information from database

☐ Show the URL that would recreate this prediction

Starting time and time display options

Start at: 2002 May 13 at 00 : 00

◉ Local timezone: [America/New_York] (automatic daylight saving correction)

○ UTC (also known as GMT or Zulu time)

Hour format: ◉ 24-hour time ○ am/pm time

☐ Show day of week

Select options for plots

☐ Omit mean sea level and datum lines on plot

☐ Omit high/low times on plots (clears overlapping text)

☐ Plot with lines only, not color-filled (graphical plot only)

Pick colors for color elements (graphical plot only):

Colors:	black	white	yellow	red	skyblue	deep-skyblue	seagreen	blue
Elements:								
Text Color	◉	○	○	○	○	○	○	○
Datum Line Color	○	◉	○	○	○	○	○	○
Mean Sea Level Line	○	○	◉	○	○	○	○	○
Mark Tics Color	○	○	○	◉	○	○	○	○
Day Background	○	○	○	○	◉	○	○	○
Night Background	○	○	○	○	○	◉	○	○
Falling/Ebb Color	○	○	○	○	○	○	◉	○
Rising/Flood Color	○	○	○	○	○	○	○	◉

[Make Prediction Using Options]

Puzzled by something? Please check the Frequently Asked Questions list.
Send queries about the **WWW interface** to Dean Pentcheff at dean2@biol.sc.edu.
Send queries about the **XTide program** to David Flater at software@flaterco.com.

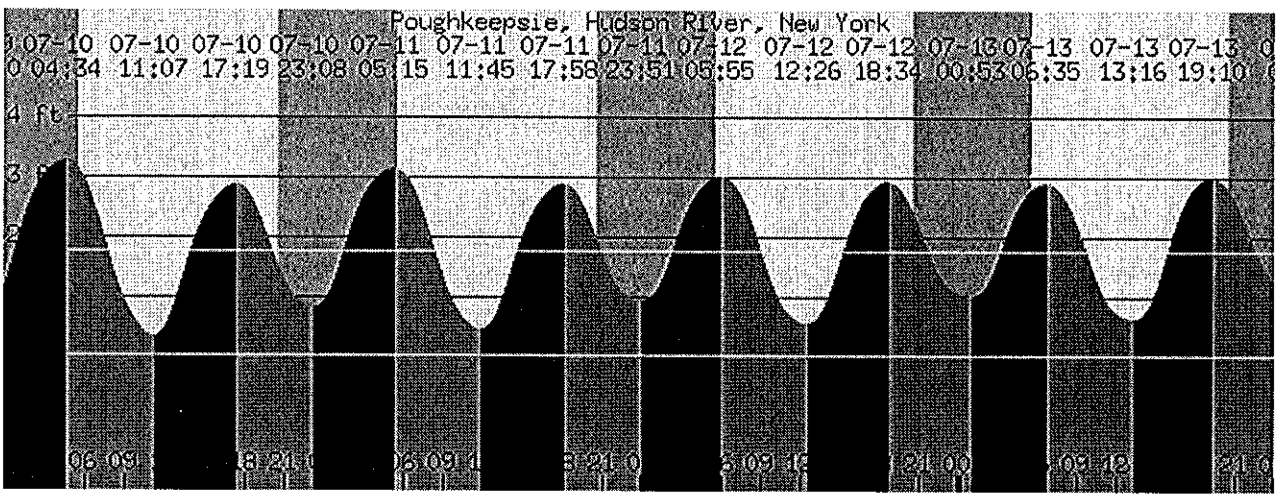
WWW Tide/Current Predictor: `http://tbone.biol.sc.edu/tide`
Dean Pentcheff, <dean2@biol.sc.edu>
Biological Sciences, University of South Carolina, Columbia SC 29208 USA

WWW Tide and Current Predictor

Web interface by Dean Pentcheff.
Calculations and graphics by David Flater's XTide Program.
(Pick a different site | Frequently Asked Questions)

Poughkeepsie, Hudson River, New York

10 July 2001 - 13 July 2001



If present, horizontal lines mark mean sea level and datum (usually mean lower low water). Colors under the curve indicate rising and falling tide (not ebb and flood currents).

[Make Prediction Using Options]

Prediction Options

Select a different site

Select display type

- ○ Tabular List (quickest)
- ○ Text Plot (Plot Type: ◉ Horizontal ○ Vertical) (more plot options below)
- ◉ Graphic Plot: size 640 by 240 pixels (more plot options below)
- ○ One-Month Calendar (Type: ◉ Compact ○ Compact+ ○ Calendar ○ Text)
- ○ Extreme Highest and Lowest Tides Only

◌ Strict Intervals (Interval Time: 1 minute)

Select presentation options

4 days Length of time to display (ignored by One-Month Calendars)

+0 Change text size (only for browsers supporting font size changes)

Select tide height units: ◌ meters ◌ feet ◉ default

☐ Suppress credits and warnings on top of page

☐ Suppress sunrise/sunset and lunar information

☐ Printer-friendly bare output (☐ Force plot to B&W lines)

☐ Show site information from database

☐ Show the URL that would recreate this prediction

Starting time and time display options

Start at: 2001 Jul 10 at 00 : 00

◉ Local timezone: [America/New_York] (automatic daylight saving correction)

◌ UTC (also known as GMT or Zulu time)

Hour format: ◉ 24-hour time ◌ am/pm time

☐ Show day of week

Select options for plots

☐ Omit mean sea level and datum lines on plot

☐ Omit high/low times on plots (clears overlapping text)

☐ Plot with lines only, not color-filled (graphical plot only)

Pick colors for color elements (graphical plot only):

Colors:	black	white	yellow	red	skyblue	deep-skyblue	seagreen	blue
Elements:								
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Datum Line Color	◌	◉	◌	◌	◌	◌	◌	◌
Mean Sea Level Line	◌	◌	◉	◌	◌	◌	◌	◌
Mark Tics Color	◌	◌	◌	◉	◌	◌	◌	◌
Day Background	◌	◌	◌	◌	◉	◌	◌	◌
Night Background	◌	◌	◌	◌	◌	◉	◌	◌
Falling/Ebb Color	◌	◌	◌	◌	◌	◌	◉	◌
Rising/Flood Color	◌	◌	◌	◌	◌	◌	◌	◉

[Make Prediction Using Options]

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Dean Pentcheff, <dean2@biol.sc.edu>
Biological Sciences, University of South Carolina, Columbia SC 29208 USA

analysed with: Analyse-it + General 1.68

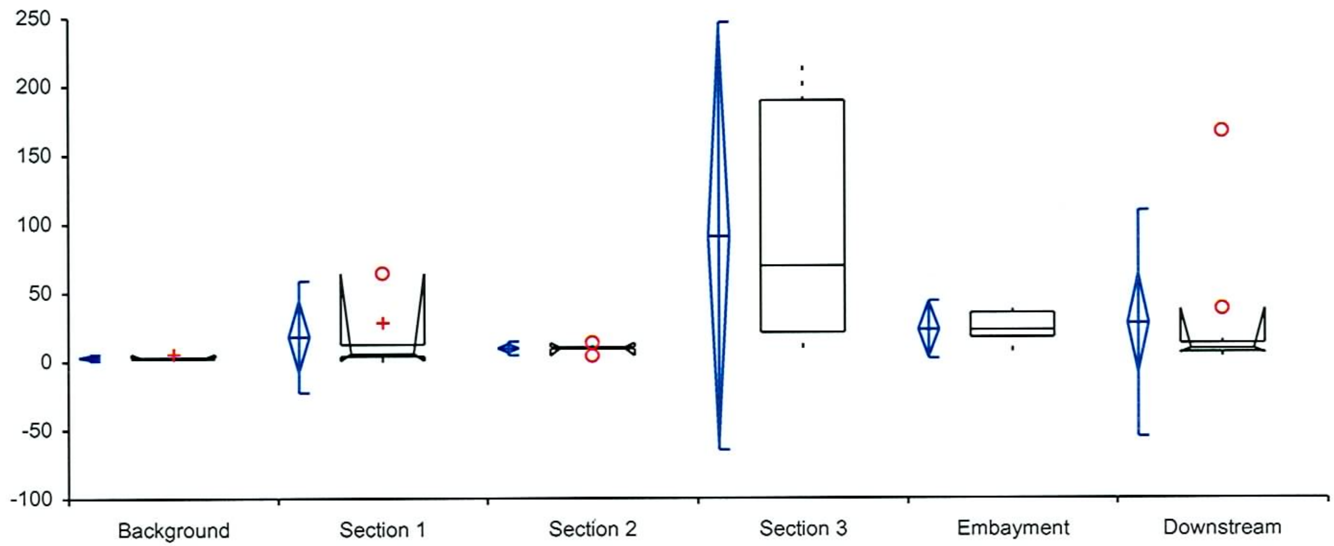
Test **Comparative descriptives**

Comparison of tPAH concentrations in surface sediment

Variables tPAH: Background, Section 1, Section 2, Section 3, Embayment, Downstream

Date 6 November 2003

DRAFT



tPAH	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
Background	6	3.0	1.5	0.6	1.4 to 4.6	2.6	1.1	1.7 to 5.5
Section 1	6	18	25	10	-8.3 to 44	5.4	8.5	0.2 to 64
Section 2	6	9.1	3.1	1.3	5.9 to 12	9.4	0.81	3.6 to 13
Section 3	4	90	94	47	-60 to 241	69	169	- to -
Embayment	4	22	13	6.4	2.0 to 43	22	18	- to -
Downstream	10	27	50	16	-9.2 to 62	8.3	6.7	4.7 to 37