YONKERS WATERFRONT DEVELOPMENT
ENVIRONMENTAL RESTORATION REPORT AND OPERATION AND MAINTENANCE PLAN
PARCELS E(V00190-3) AND F(B00045-3)
YONKERS, NEW YORK
PROJECT #214

Prepared for:

Hudson Park Investors, LLC
C/O Collins Enterprises, LLC
2001 West Main Street
Stamford, Connecticut 06902

Prepared by:
ADVANCED ENVIRONMENTAL REDEVELOPMENT
904 Madison Avenue, Suite 213
Bridgeport, Connecticut

July 2004

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, 11th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9622 • **FAX:** (518) 402-9627
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Erin M. Crotty
Commissioner

October 21, 2004

Christopher J. Kopley, LEP, PG
AER, LLC
904 Madison Avenue - Rm 213
Bridgeport, CT 06606

Re: Yonkers Downtown Waterfront Development
Parcels E (V00190-3) and F (B00045-3)
Yonkers, Westchester County
Construction Certification Report

Dear Mr. Kopley:

We have reviewed the Environmental Restoration Report and Operation and Maintenance Plan, which is included in the document, for the subject parcels. It is our determination that all of the comments and recommendations from our review of the draft report have been incorporated in the this final version.

This report also incorporates the engineer's certification that the work was completed in substantial compliance with the approved work plan. The Department, therefore, accepts this report an the Construction Certification Report indicating the completion of the remedial phase of the project. You are reminded that annual certification indicating that the requirements of the Operation and Maintenance Plan have been met and denoting any deficiencies must be made to the Department.

If you have any questions regarding this project, please contact me at (518) 402-9622. I will be out of the office from July 6 through July 22, however.

Sincerely,

Joseph A. Yavonditte, P.E.
Chief, Remedial Section B
Remedial Bureau A

cc: J. Pinto, City of Yonkers
A. Collins, Collins Enterprises
M. Marcante, Collins Enterprises
D. D'Ambrosio, Reg 3 Tarrytown
R. Pergadia, Region 3
M. Rivara, NYSDOH-BEEI

James Pinto, Director
Yonkers Downtown Waterfront Development
City Hall
Yonkers, NY 10701-3886

Arthur Collins
Collins Enterprises, LLC
2001 West Main Street
Stamford, CT 06902

Michael Marcante
Same as Collins

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CONSTRUCTION CERTIFICATION

WORK PLAN COMPLETION

ADVANCED ENVIRONMENTAL REDEVELOPMENT (AER) and James I. Moore, Jr., P.E. have provided limited on-site inspection for the completion of this Remedial Work Plan for the redevelopment of Parcels E and F, Yonkers Waterfront, Yonkers, New York. Based upon the field inspections completed and the laboratory test data, AER and James I. Moore, Jr., P.E. certify that the remedial elements were substantially completed in accordance with the Work Plan.

Signature:_____
James I. Moore Jr., P.E.

Date: _____

Signature:_____
Christopher J. Kopley, PG, LEP

Date: _____

1.0 INTRODUCTION

ADVANCED ENVIRONMENTAL REDEVELOPMENT is pleased to submit this environmental restoration report concerning completion of the Yonkers Waterfront Development Environmental Restoration Project, Parcels E and F, Yonkers, New York. The properties are located on Figure 1. After approval by the New York State Department of Environmental Conservation (NYSDEC)(October 19, 2001), AER was retained by Hudson Park Investors, LLC, the City of Yonkers and the Yonkers Community Development Agency to perform remedial activities at the Yonkers Waterfront Development Site, Parcel E and F, under the agreement to remediate between these parties and the NYSDEC.

The site remediation was conducted as part of the 1996 Clean Water/Clean Air Bond Act, Environmental Restoration Projects – Title 5, Project Numbers V00190-3 for Parcel E and B00045-3 for Parcel F. The Record of Decision was dated November 1998 and has been assigned contract No. C301900 by the Office of the State Comptroller. Site remedial activities were conducted in accordance with the approved Work Plan dated January 2002; the Addendum to Approved Work Plan dated August 2002 (voluntary clean-up agreement B0045-3); the approved Community Air Monitoring Plan dated January 2002; and the approved Health and Safety Plan dated November 2001. AER worked in conjunction with Turner Construction, the site developer and Mr. Joseph Yavonditte, Bureau of Construction Services, NYSDEC.

2.0 BACKGROUND

The study site is located in the downtown section of Yonkers, west of the New York Central Railroad right of way, and along the eastern bank of the Hudson River, as shown on Figure 1. The parcels have a history of industrial use dating back more than 100 years.

Parcel E (44,773 square feet) is abutted by: Sawmill River outlet to the north; MetroNorth Railroad to the east; Parcel F to the south; and The Hudson River to the west. Parcel F (52,846 square feet) is abutted by: Parcel E across the Main Street cul-de-sac to the north; the New York Central Railroad train tracks to the east; the Scrimshaw House condominium building to the south; and the Hudson River to the west.

Parcel E did not exist until some time between 1886 and 1917, at which time it was created with fill materials and utilized by the Water Department as a machine shop, stables and storage areas. The City of Yonkers Department of Public Works (DPW) occupied the site from 1951 until some time between 1971 and 1978, and included Water Bureau repairs, auto repairs and a boiler room. The Yonkers DPW leased the building to the Yonkers Post Office and was used for storage space by the Post Office until some time between 1978 and 1985. By 1991, the site was utilized as a wharf.

Parcel F was occupied by copper smiths and a sugarhouse from before 1886 until some time before 1917, at which time it was used by a sugar refining company. In 1951, the site was

occupied by a wire drawing mill that remained on-site until some time between 1971 and 1975. Four Star Beer Distributors then occupied the site until the building was demolished sometime before 1980. The site was then utilized as a parking lot for the Scrimshaw House condominium building.

3.0 HISTORIC DOCUMENTATION

According to the " Site Investigation Report of 'Phase I' Parcels E and F", prepared by AKRF, dated August 1998, the identified contaminants of concern included polynuclear aromatic hydrocarbons (PAHs), a class of semi-volatile organic compounds, and metals. This report complied with the requirements of the NYSDEC *Technical and Administrative Guidance Memorandum; Environmental Restoration Projects (Brownfields) Guidance Documents* and the *Municipal Assistance Brownfield Program Procedures Handbook.* AKRF collected 27 soil and 5 groundwater samples from test pits, soil borings and monitor wells, at locations selected based on the results of electromagnetic surveys, soil gas surveys, ground penetrating radar (GPR) surveys and known history. These activities helped to establish the extent of affected soil and groundwater on the site.

The approved Remedial Work Plan involved capping the parcels with either a two-foot clean soil cover on top of a high visibility (snow fence) layer, buildings, sidewalk or asphalt pavement. Soils that needed to be excavated for the intended construction were stockpiled on-site and tested to determine whether they could be used as on-site fill or require off-site disposal. The Work Plan included a soil management plan component that set forth how soils were to be handled through excavation, stockpiling and if necessary, off-site disposal. Soil samples collected from stockpiled soil would be analyzed for PAHs and total Target Analyte List (TAL) metals (contaminants of concern) at a New York State Department of Health certified laboratory in order to determine the appropriate disposal options, if any.

The only non-hardscaped areas were the limited landscaped areas within the promenade and limited planted areas along the building/sidewalk area. In the event that the elevations were such that a two-foot soil cover could not be placed in these areas, soil was excavated to an elevation that enabled the two-foot soil cover to be placed. The excavated soils were stockpiled on-site for analytical testing to determine whether they could be utilized as on-site fill, off-site fill, or would require off-site disposal as a special waste. The landscaped areas must be maintained to ensure the integrity of the soil cap and require an Operations and Management (O&M) to manage these areas. An Operations and Management Plan is attached as Appendix A. These activities were completed as required by the Work Plan.

4.0 FIELD ACTIVITIES

4.1 Air Monitoring

AER prepared a Community Air Monitoring Plan for construction monitoring during site preparation activities including soil excavation and sub-grade construction activities. The

Community Air Monitoring Plan was based upon previous air monitoring plans developed for similar properties and the New York State Department of Health Generic Community Air Monitoring Plan (October 2000) model. The plan was also based upon the results of the August 1998 AKRF Site Investigation Report. Both metals and semi-volatile organic compounds were identified as contaminants of concern.

On January 15, 2002 AER initiated the NYSDEC approved Community Air Monitoring Plan for parcels E and F of the Yonkers Waterfront Development Site. The air monitoring established and implemented a perimeter air monitoring program when ground intrusive site activities were performed and when affected soils were exposed.

AER began monitoring ambient air at the site on January 15 when soil excavation for foundation pile obstructions began. Air monitoring continued at parcels E and F during water and electric service excavations, trenching for foundations, grading for concrete slabs and the preparation of landscaped areas until November 2003. A PID meter (Thermoenvironmental Instruments model 580EZ) was used to monitor ambient air volatile organic vapors down gradient and upgradient of each excavation area. The meter was calibrated daily according to the manufacturer's instructions. Fifteen minute average readings did not exceed 0.0 units during the period of monitoring from the initiation of the air-monitoring program to its finish.

Dust monitoring (PM-10) had been performed using a Casella DustPro Monitor. Dust levels were monitored down gradient and upgradient of each excavation area as outlined in the Work Plan. The monitor was calibrated daily according to the manufacturer's instructions. Fifteen-minute averages did not exceed 0.1 mg/m^3. No visible dust was observed leaving the site during the period of monitoring from the initiation of the air-monitoring program to its finish.

Air monitoring, daily field logs and photographs documenting field activities are included in Appendix B.

4.2 Obstruction Removal

On January 9, 2002, AER observed the removal of two 3,000-gallon storage tanks located at the Yonkers Waterfront, Parcel E site as located on Figure 1. According to the site contractor, a 3,000-gallon storage tank was encountered during foundation pile driving activities. The tank was located in the northeast corner of Parcel E approximately 75 feet west of the site trailer. The tank was reported to be empty and dry. Upon excavation of the first tank, a second 3,000-gallon

storage tank was discovered adjacent to the first tank. The tanks were located within a masonry vault that included concrete block walls and a concrete floor. No cracks or perforations were noted in the tanks, concrete block walls or concrete floor slab. The bottom of the vault was below the high tide groundwater level; however, there was not evidence of moisture within the vault.

The newly discovered tank contained limited fuel oil and water. Approximately 2,000-gallons of a fuel and water mixture were pumped and cleaned from the tank by Northeast Environmental Inc./A.L. Eastmond & Sons of Mamaroneck and the Bronx, New York. A waste receipt is included in Appendix C.

The tanks were removed by JRP Demolition of Fairfield Connecticut. The tanks were excavated with a Bobcat 325 tracked excavator equipped with a ¼ yard bucket. After cleaning the tanks were crushed and then loaded into a dump truck and a flatbed trailer and disposed of at H. Bixon & Sons in New Haven, Connecticut. A waste receipt is included in Appendix C.

The space between the tanks was partially backfilled with sand that exhibited a petroleum odor. This affected soil was removed from the vault and stockpiled on and covered with PVC sheeting. This soil was stockpiled on an area approximately 15 feet east of the tank grave chosen by the site contractor. Soils observed adjacent to the vault consisted of brown sand and silt with some gravel; no unusual odors or staining were noted. Soils adjacent to the vault did not appear stained.

4.3 Petroleum Containing Soil Removal

On March 5, 2002, AER observed the removal and off-site disposal of approximately 21.22 tons of affected soil from the former tank graves. Sentrale, the site excavation contractor, loaded the affected soil into a single tri-axle dump truck supplied by Soil Safe, Inc., of New Jersey and transported to Soil Safe Inc., in Salem, New Jersey for disposal. Soil Safe is a licensed petroleum containing soil-recycling facility. Waste manifests are included in Appendix C.

4.4 Soil Sampling

Parcel E

As detailed in the Work Plan Addendum dated August 2002, AER collected 18 discrete, grab soil samples of the native soils and imported fill material in the area beneath the future-parking garage. These samples are designated “A” through “I” on Figure 1. The purpose of this sampling was to identify those affected soils that were to remain in place beneath the new building. No other site soils were exposed at the time of this sampling. Other anticipated on-site “green” areas were replaced with “hardscape”: asphalt, concrete, sidewalk, or building. On October 28, October 29, November 4, and November 14, 2002, AER collected soil samples in a grid like pattern at approximately 50-foot intervals along pile cap trenches. Two soil samples were collected from each location: one sample at an approximate depth of one to two feet below

the current grade within the imported backfill; and one sample collected one to two feet below the surface of the native fill.

Limited backfill was imported for Parcel E in order to reach the appropriate construction elevation across the property. Samples designated "1" were collected from the imported fill; samples designated "2" were collected from within the native fill. Soils generally consisted of dark brown-to-brown, fine to coarse sand and gravel with some brick. Since the native soils and imported backfill appeared similar, the depth of the native soil was determined by the recorded former surface elevation. According to the excavator, the excavations extended to a depth of approximately four feet below the top of the native fill. Samples were collected using laboratory prepared containers and were analyzed by American Analytical Laboratories, Inc., a New York State certified laboratory, for semi-volatile organic compounds (PAH's only), TCLP RCRA metals and total TAL metals as requested by the NYSDEC.

As described in the approved Work Plan soil samples were compared to NYSDEC TAGM 4046 guidelines. Analytical results are summarized on Table 1. Laboratory reports are included in Appendix D.

Parcel F

As detailed in the Work Plan Addendum dated August 2002, AER collected nine, discrete, grab soil samples of the native soils in the area of the parking garage area on Parcel F. These samples were designated "J" through "R" on Figure 1. On April 30, 2003, and June 25, 2003, AER collected soil samples in a grid like pattern at approximately 50-foot intervals along pile cap trenches. One sample was collected from each location between one and two feet below the surface of the native fill since no imported fill was used on this property. No samples were collected of imported fill since no additional fill was necessary to raise the existing grade. Soils generally consisted of dark brown-to-brown, fine to coarse sand and gravel with some brick. Samples were collected using laboratory prepared containers and were analyzed by American Analytical Laboratories, Inc., a New York State certified laboratory, for semi-volatile organic compounds (PAH's only), TCLP RCRA metals and total TAL metals as requested by the NYSDEC.

Soil samples were compared to NYSDEC TAGM 4046 guidelines. Analytical results are summarized on Table 2. Laboratory reports are included in Appendix D.

Parcel F Stockpile

During grading activities at Parcel F for the parking garage, soils were stockpiled along the eastern property border adjacent to the railroad right of way. On April 24, 2003, AER estimated that approximately 500 cubic yards of soil was stockpiled. As described in the approved Work Plan, AER collected two discrete, grab soil samples from the stockpiled soil to determine if the soil could be used as on-site fill or require off-site disposal. Soil samples were compared to NYSDEC TAGM 4046 guidelines. Analytical results indicated that soil samples S-1 and S-2

contained limited amounts of calcium, copper and zinc above the Eastern USA Background TAGM 4046 value. Concerning semi-volatile compounds, select compounds were detected above the Recommended Clean-up Objective including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene and chrysene. Turner Construction stockpiled this material on the property south of the Scrimshaw property (Parcel I) used by the city for the storage of earthen materials. Analytical results are summarized on Table 3. Laboratory reports are included in Appendix D.

Parcel F Landscaped Areas

As described in the Work Plan and discussed in the August 20, 2002 site meeting with the NYSDEC, AER collected soil samples from the four landscaped areas located on Parcel F on October 3, 2003. No other landscaped areas were constructed on either parcel. In the landscaped areas (those not below asphalt paving or buildings) native soils were excavated up to approximately two feet below finished grade. A polyehthylene high visibility fence (orange snow fence) was placed as a marker barrier followed by two feet of clean imported fill. Eleven, discrete, grab soil samples (L-1 through L-11) were collected from the native soil beneath the polyethylene barrier at approximately 20-foot intervals. Samples were collected using laboratory prepared containers and were analyzed by American Analytical Laboratories, Inc., a New York State certified laboratory, for semi-volatile organic compounds (PAH's only), TCLP RCRA metals and total TAL metals. Soil samples were compared to NYSDEC TAGM 4046 guidelines. Analytical results are summarized on Table 4. Laboratory reports are included in Appendix D.

On October 3 and 9, 2003, AER collected four discrete, grab soil samples from the imported fill material placed on top of the high visibility fence marker barrier after this soil had been distributed. One sample was collected from each landscaped area; these samples are designated "F" on Figure 1. Soil samples were collected from the imported fill material approximately one foot below grade and one foot above the native fill. Soils generally consisted of brown, fine to coarse sand and gravel with varying amounts of brick and concrete. According to Turner, this soil came from off-site stockpiled materials. AER also collected one soil sample from additionally stockpiled soil reportedly to be used as clean fill in the landscaped areas. The stockpiled soils were stored off-site south of the study site in the area where other site and off-site soils had been stockpiled. Samples were collected using laboratory prepared containers and were analyzed by American Analytical Laboratories, Inc., a New York State certified laboratory, for semi-volatile organic compounds (PAH's only), TCLP RCRA metals and total TAL metals.

Soil samples were compared to NYSDEC TAGM 4046 guidelines. Analytical results indicated that soil samples F-1 through F-4 and the stockpiled native soils contained limited amounts of calcium, copper and zinc above the Eastern USA Background TAGM 4046 value. Concerning semi-volatile compounds, select compounds were detected above the Recommended Clean-up Objective including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene and chrysene. Analytical results are summarized on Table 5. Laboratory reports are included in Appendix D. AER recommended that this fill material be removed from the landscaped areas and disposed of off-site as special waste.

On October 30, 2003 AER visited the site to observe the removal of the affected fill material above the snow fence barrier from each of the four landscape areas. The removed soils were stockpiled off-site south of the study area with other site and area soils. New imported soil was provided by Sentrale (the site excavator) and Turner Construction that was reported to be natural fill obtained from a local (Yonkers) church excavation. The soil appeared to be a natural earthen product consisting of brown to light brown, fine to coarse sand and silt; some fine gravel was observed. No man-made products (brick, masonry, lumber, plastic, etc.) were noted in the soil.

One composite soil sample was collected from the stockpile of the newly imported fill material from the stockpile of this material prior to distribution within the four landscape areas. Only one soil sample was collected since the stockpile consisted of less than 300 cubic yards of soil as designated in the Work Plan. The sample was collected as a composite sample; approximately four locations within the pile were combined. American Analytical Laboratories, Inc. analyzed the sample, a New York State certified laboratory, for semi-volatile organic compounds (PAH's only), TCLP RCRA metals and total TAL metals.

The initial analytical results indicated that levels of chromium, magnesium and zinc were detected above NYSDEC TAGM levels. The levels of metals were not consistent with the nature of the soil encountered, and these results may have been the consequence of laboratory artifact or cross-contaminants. Therefore, on November 11, 2003 AER collected an additional composite sample of the imported soil fill to be placed above the snow fence barrier after assurance from the contractor that this soil was a natural earthen product. The sample was again collected using laboratory prepared containers and was analyzed by American Analytical Laboratories, Inc., a New York State certified laboratory for total TAL metals. Analytical results indicated that no TAL metals were detected above NYSDEC TAGM levels; these results were representative of the actual soils observed, reported and encountered. Analytical results are summarized on Tables 6 and 7. Laboratory reports are included in Appendix D. AER concluded that the imported fill material was appropriate for surficial fill in an urban area.

5.0 CONCLUSIONS

ADVANCED ENVIRONMENTAL REDEVELOPMENT is pleased to submit this report concerning completion of the Yonkers Waterfront Development Environmental Restoration Project of Parcels E and F in Yonkers, New York. AER was retained by Hudson Park Investors, LLC, the City of Yonkers and the Yonkers Community Redevelopment Agency to perform remedial activities at the Yonkers Waterfront Development Sites, Parcels E and F. The site remediation was conducted as part of the 1996 Clean Water/Clean Air Bond Act, Environmental Restoration Projects – Title 5, Project Number B00045-3 and V00190-3. The study site is located in the downtown section of Yonkers, west of the New York Central Railroad right of way, and along the eastern bank of the Hudson River. The parcels have a history of industrial use dating back more than 100 years. Previous site investigations have shown that metals and semivolatile organic compounds were detected at both sites above NYSDEC Soil Cleanup Objectives. Site remedial activities were conducted in accordance with AER's approved Work Plan dated January

2002 and the Addendum to Approved Work Plan dated August 2002 (voluntary clean-up agreement B0045-3 and V00190-3), AER's approved Community Air Monitoring Plan dated January 2002, and AER's approved Health and Safety Plan dated November 2001.

The approved Remedial Work Plan involved capping the parcels with either a two-foot soil cover, buildings, or asphalt pavement. The Work Plan included a soil management plan component that set forth how soils were to be handled through excavation, stockpiling and if necessary, off-site disposal. Soil samples collected from any stockpile would be analyzed for PAHs and total Target Analyte List (TAL) metals in a New York State Department of Health certified laboratory. The only limited landscaped areas on either property were within the limited planted areas along the building/sidewalk area within Parcel F only.

On January 15, 2002 AER initiated the NYSDEC approved Community Air Monitoring Plan for parcels E and F of the Yonkers Waterfront Development Site. The air monitoring established and implemented a perimeter air monitoring program when ground intrusive site activities were performed and when affected soils were exposed. A PID meter (Thermoenvironmental Instruments model 580EZ) was used to monitor ambient air volatile organic vapors down gradient and upgradient of each excavation area. Fifteen minute average readings did not exceed 0.0 units from the initiation of the air-monitoring program to its finish. Dust monitoring (PM-10) was performed using a Casella DustPro Monitor. Dust levels were monitored down gradient and upgradient of each excavation area. Fifteen minute averages did not exceed 0.1 mg/m^3. No visible dust was observed leaving the site.

On January 9, 2002, AER observed the removal of two 3,000-gallon storage tanks located at the Yonkers Waterfront, Parcel E. The tanks were located within a masonry vault that included concrete block walls and a concrete floor. The space between the tanks was backfilled with sand (approximately 21 tons) that exhibited a petroleum odor. This affected soil was removed from the vault and disposed of at The Soil Safe Inc., facility in Salem, New Jersey. No affected soils were observed adjacent to the tank area.

AER collected 18 discrete, grab soil samples from the existing native soils and imported fill material from the parking garage area on Parcel E. Two soil samples were collected from each location: one sample at an approximate depth of one to two feet below the current grade within the imported backfill; and one sample collected one to two feet below the surface of the native fill.

AER collected nine soil samples from the existing native soils from the parking garage area within Parcel F on April 30, 2003, and June 25, 2003. The grab soil samples were collected in a grid like pattern at approximately 50-foot intervals along pile cap trenches. One sample was collected from each location at one to two feet below the surface of the native fill. No imported fill was needed at this site to establish grade.

As described in the Work Plan a polyethylene high visibility barrier (snow fence) was placed as a marker barrier followed by two feet of clean fill within the four small landscape areas shown on

Parcel F. Samples of the imported fill located above the high visibility barrier indicated that the soil meets NYSDEC guidelines and was appropriate for its intended use.

These remedial activities meet the goals stipulated in the Record of Decision. The remedial actions have reduced, controlled and/or eliminated the contamination present within the surface soils found on Parcels E and F. Direct human contact has been eliminated. Within the two property boundaries, surficial soils now meet appropriate NYSDEC standards and guidance to the extent practicable.

5.1 Elements of the Work Plan

AER completed the Work Plan elements as noted below:

Work Plan Element	***Completion***
Community Air Monitoring	No adverse air monitoring results detected; Work Plan requirements met.
Obstruction Removal	Removal of storage tank and 21.22 tons of petroleum containing soil. Work Plan contingencies met.
Soil Sampling Parcel E	Identified soil quality remaining on-site; Work Plan requirements met.
Soil Sampling Parcel F	Identified soil quality remaining on-site; Work Plan requirements met.
Soil Sampling Stockpiled Soil on Parcel F	Identified soil quality; Work Plan requirements met. Soils removed to Parcel I.
Parcel E Cap	Parcel E was compeletd with no landscape areas. The entire site is hardscape; Work Plan requirements met.
Parcel F Cap	Backfill soil met Work Plan requirements; visibility barrier installed as described in landscape areas.
Operation and Maintenance Plan	Completed as required by the Work Plan

6.0 LIMITATIONS

The purpose of this investigation was to convey a professional opinion about the potential presence or absence of contamination, or possible sources of contamination on the property, and to identify existing and/or potential environmental problems associated with the property. AER personnel performed this work in accordance with our General Terms and Conditions.

OPERATIONS AND MAINTENANCE PLAN
ENGINEERING CONTROL MANAGEMENT PLAN
PARCELS E AND F
YONKERS, NEW YORK
Voluntary Clean-up Agreement B0045-3 and V00190-3

Prepared for:

Hudson Park Investors, LLC
C/O Collins Enterprises, LLC
2001 West Main Street
Stamford, Connecticut 06902

Prepared by:

ADVANCED ENVIRONMENTAL REDEVELOPMENT
904 Madison Avenue – Suite 213
Bridgeport, Connecticut

July 2004

_____

Christopher J. Kopley, L.E.P., P.G.
Principal

OPERATIONS AND MAINTENANCE PLAN
ENGINEERING CONTROL MANAGEMENT PLAN
PARCELS E AND F
YONKERS, NEW YORK

As part of the planned development of the Yonkers Waterfront sites, the majority of the study sites were capped with a building, paved roadway, sidewalk or other "hardscape" along the promenade. The necessary operation and maintenance of the cap is provided in this Engineering Control Management Plan. In the areas that were not capped with impermeable surfaces the site contractor placed at least two feet of clean fill to act as a soil cap. A high visibility barrier fence (orange snow fence) was placed on top of the affected, native soil remaining in place and beneath the clean fill approximately two feet below the final grade. The visual demarcation barrier consisted of a horizontal layer of orange snow fence. Maintenance of the cap is minimal, however, AER recommends the following to ensure the integrity and function of the soil cap:

- Landscaped areas must be maintained with a pitch away from buildings to keep water from entering the building and the pooling of water in the landscaped areas.

- The soil cap above the orange snow must be maintained at two feet.

- The vegetation in the landscaped areas must be kept in place and maintained to retain the cover and prevent soil erosion.

- If the soil cap is breached for any reason, any native soils removed from below the orange snow fence must be stockpiled on and covered with a PVC liner and then returned to the same location below the orange snow fence. The breached snow fence must be repaired or replaced.

- Imported fill soils from above the orange snow fence must be segregated from the deeper soils during any excavation. The imported fill may be returned to any portion of the excavation.

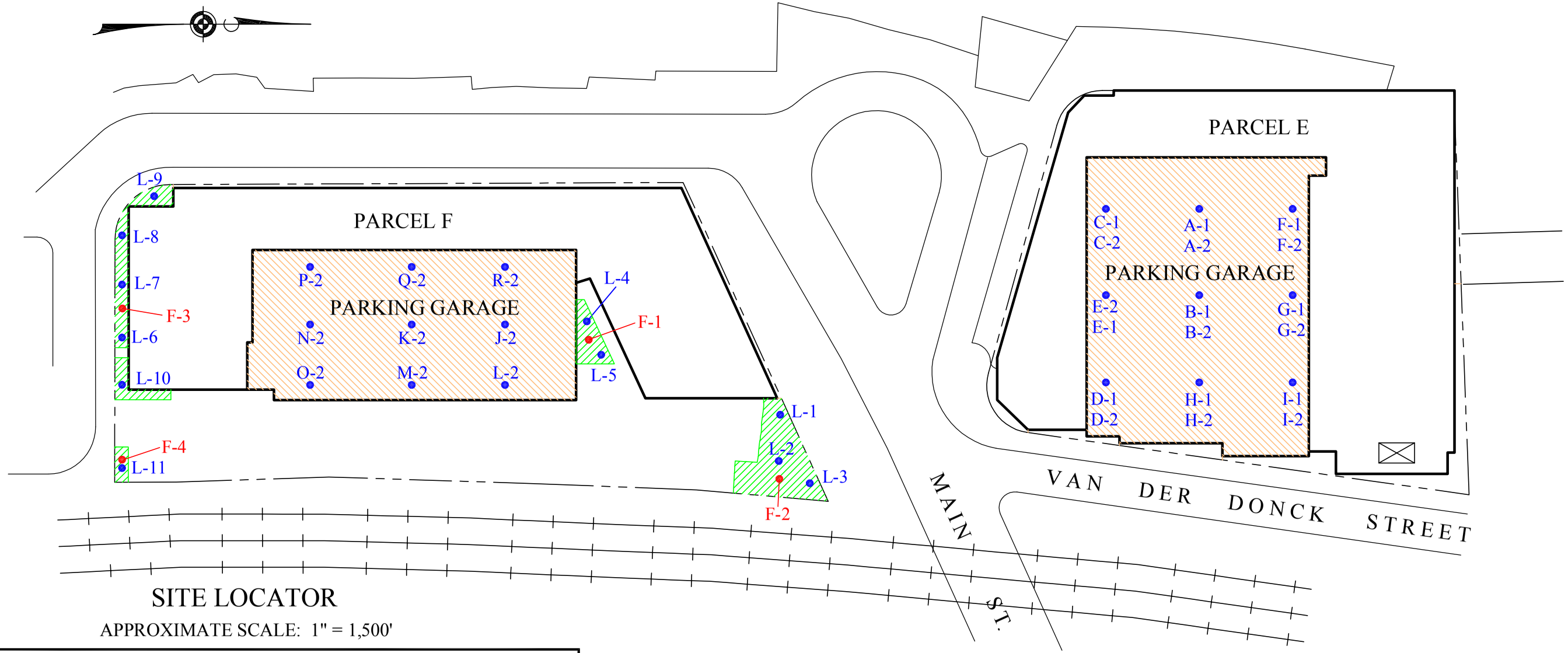
- Any additional soils needed to be placed above the orange snow fence and imported from off-site must be analyzed for semivolatile compounds (EPA 8270 PAH's only), volatile organic compounds (EPA 8260) and Total and TCLP TAL metals. The analytical results should be compared to NYSDEC TAGM 4046 guidelines.

- If the native stockpiled soils removed below the snow fence cannot be returned to their original area, these soils must disposed of off-site as special waste at a licensed soil recycling facility.

- Soils beneath the buildings, garages, sidewalks or other "hardscape" areas must be considered affected soil. Therefore, if any soils are excavated from beneath these areas, they must be treated as special waste and be placed back into the excavation and capped with "hardscape" or orange snow fence and two feet of clean fill. Any soil not returned to the excavation must be disposed of off-site at a licensed facility.

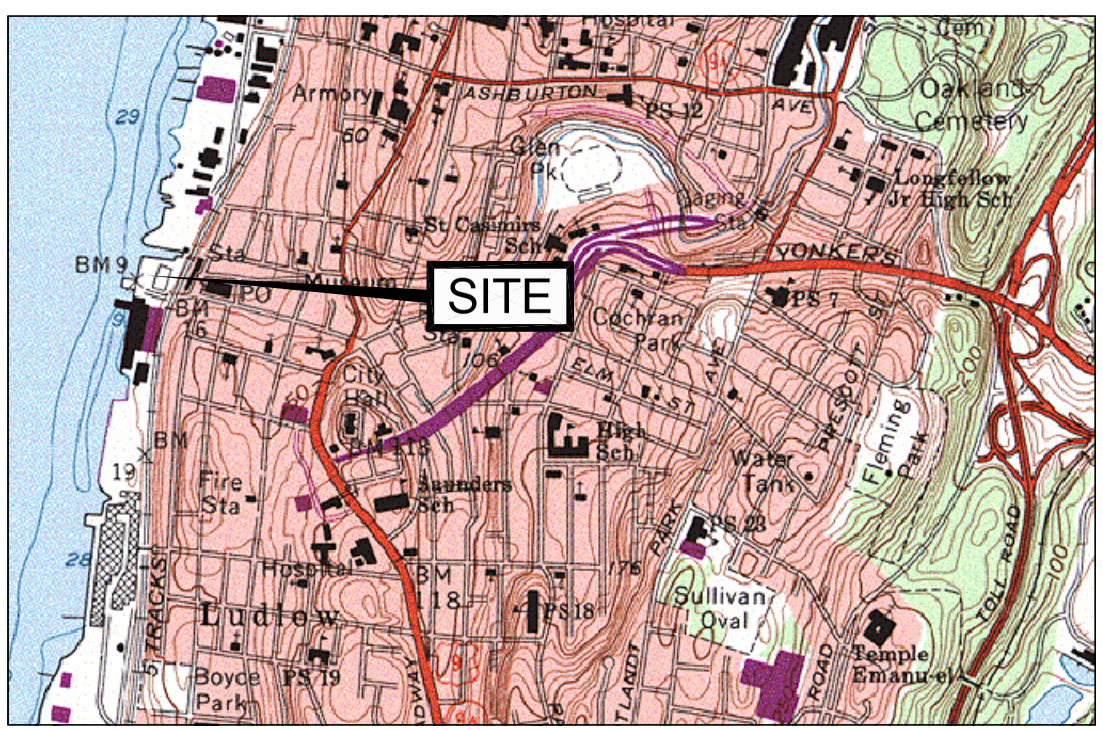
- A copy of this O & M Plan must be kept on file in the maintenance office of both building.

- An annual certification must be made to the NYSDEC indicating that the requirements of this Plan have been met and denote areas where deficiencies have occurred, if any.



SITE LOCATOR

APPROXIMATE SCALE: 1" = 1,500'



0 30 60 90 120

Scale in Feet

LEGEND

L-2 ●	APPROXIMATE LOCATION OF SOIL SAMPLE COLLECTED FROM APPROXIMATELY TWO FEET BELOW NATIVE SOIL SURFACE
F-1 ●	APPROXIMATE LOCATION OF SOIL SAMPLE COLLECTED FROM APPROX. ONE FOOT BELOW IMPORTED FILL
	APPROXIMATE LOCATION OF LANDSCAPED AREA
	APPROXIMATE LOCATION OF UNDERGROUND STORAGE TANKS
— — —	APPROXIMATE LOCATION OF PROPERTY LINE

AER
ADVANCED ENVIRONMENTAL REDEVELOPMENT, LLC
904 MADISON AVENUE – SUITE 213
BRIDGEPORT, CONNECTICUT 06606

PARCELS E & F
YONKERS, NEW YORK

SOIL SAMPLING LOCATIONS

DRAWN BY:	JJS
APPROVED BY:	CK
REVISION DATE:	1/7/04
FILE No.	0214-1D
DATE CREATED	6/1/02
SCALE	AS SHOWN
PROJECT No.	0214
FIGURE No.	1

TABLE 1 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL E
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	A-1	A-2	B-1	B-2	C-1	C-2	D-1	D-2	E-1	E-2	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)												
Aluminum	327	190	342	5710	6940	7200	8380	5390	6940	7340	SB	33,000
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	0.34	ND	SB	NA
Arsenic	0.140	0.208	0.132	4.34	2.17	3.31	5.23	4.95	7.69	2.89	7.5 or SB	3-12
Barium	3.01	2.32	3.31	67.2	49.1	65.0	79.1	69.8	64.0	72.4	300 or SB	15-600
Cadmium	0.0061	0.0103	0.0109	0.224	0.11	0.16	0.222	0.17	0.240	0.13	1 or SB	0.1-1
Calcium	1470	625	902	14800	15200	23000	19900	12700	16200	18000	SB	130-3500
Chromium	0.674	0.288	0.661	13.9	13.1	14.2	15.5	10.0	13.8	15.8	10 or SB	1.5-40
Cobalt	0.384	0.338	0.384	7.65	7.87	8.06	9.26	6.57	9.76	8.33	30 or SB	2.5-60
Copper	1.17	3.11	1.63	34.9	27.5	27.8	45.7	39.8	38.4	28.7	25 or SB	1-50
Iron	644	540	600	13900	12600	13000	12600	9970	15800	13500	2,000 or SB	2,000-550,000
Lead	2.22	7.75	4.74	182	66.8	88.7	116	200	106	106	SB	*
Magnesium	305	170	293	5290	4160	6270	5060	4070	4790	5600	SB	100-5000
Manganese	7.32	6.70	8.83	161	158	154	259	140	138	138	SB	50-5000
Mercury	ND	ND	ND	ND	ND	ND	0.156	ND	0.161	ND	0.1	0.001-0.2
Nickel	0.570	0.479	0.568	11.1	10.7	11.8	12.2	9.18	13.6	12.9	13 or SB	0.5-25
Potassium	148	49.2	119	1650	2020	2770	2510	1540	2340	2920	SB	8500-4300
Silver	ND	ND	ND	ND	ND	ND	ND	153	0.890	ND	SB	NA
Sodium	17.5	19.8	18.1	330	432	340	321	325	279	250	SB	6000-8000
Thallium	ND	ND	ND	ND	ND	ND	0.806	ND	ND	ND	SB	NA
Vanadium	1.05	0.757	1.03	16.6	22.5	21.1	21.3	16.0	19.5	20.8	150 or SB	1-300
Zinc	3.33	6.28	5.0	106	45.6	68.4	84.4	85.9	85.2	67.5	20 or SB	9-50
TCLP Metals (mg/l)												
Barium	0.932	0.828	0.974	0.941	0.941	1.004	0.900	0.994	0.885	1.032	NS	NS
Cadmium	ND	ND	ND	ND	ND	0.010	ND	ND	0.005	ND	NS	NS
Lead	0.075	0.367	0.824	0.077	0.08	4.464	0.912	0.271	0.496	0.342	NS	NS
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	0.036	ND	NS	NS

TABLE 1 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL E
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	A-1	A-2	B-1	B-2	C-1	C-2	D-1	D-2	E-1	E-2	NYSDEC RSCO	Eastern USA Background
Polynuclear Aromatics (mg/kg)												
Acenapthene	ND	ND	0.16	0.41	0.084	0.22	0.68	0.083	0.49	0.16	50.0	NS
Acenepthylene	0.21	0.79	0.25	0.39	0.22	0.25	0.72	0.12	0.4	0.15	41.0	NS
Anthracene	0.19	0.56	0.55	1.3	0.39	0.63	2.6	0.24	1.6	0.48	50.0	NS
Benzo[a]anthracene	0.66	1.1	1.3	5.2	0.97	1.5	4.2	0.56	2.7	1.0	0.224 or MDL	NS
Benzo[a]pyrene	0.75	1.9	1.5	6.2	1.1	1.6	3.9	0.63	2.8	1.1	0.061 or MDL	NS
Benzo[b]flouranthene	0.94	2.2	1.7	7.4	1.3	1.8	4.7	0.75	3.3	1.2	1.1	NS
Benzo[g,h,I]perylene	0.57	1.5	0.99	3.9	0.73	1.1	2.2	0.42	1.6	0.68	50.0	NS
Benzo[k]flouranthene	0.43	0.8	0.73	2.5	0.47	0.84	1.4	0.27	1.1	0.55	1.1	NS
Chrysene	0.81	1.4	1.5	5.3	1.0	1.6	4.0	0.62	2.6	1.0	0.4	NS
Dibenzo(a,h)anthracene	0.17	0.43	0.3	1.2	0.22	0.33	0.69	0.13	0.52	0.22	0.014 or MDL	NS
Flourantrhene	1.5	1.5	2.4	8.3	1.6	2.8	8.9	1.1	6.2	2.0	50.0	NS
Fluorene	ND	0.11	0.19	0.35	0.14	0.23	1.2	ND	0.68	0.18	50.0	NS
Indeno[1,2,3-cd]pyrene	0.49	1.4	0.89	3.7	0.66	0.92	2.2	0.36	1.6	0.61	3.2	NS
Napthalene	ND	0.11	0.1	ND	ND	0.083	0.77	ND	0.27	0.092	13.0	NS
Phenanthrene	0.74	0.76	1.5	4.1	1.0	1.8	8.1	0.66	5.1	1.4	50.0	NS
Pyrene	1.3	1.6	2.3	7.9	1.7	2.6	8.7	1.1	5.8	1.8	50.0	NS

TABLE 1 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL E
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	F-1	F-2	G-1	G-2	H-1	H-2	I-1	I-2	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)										
Aluminum	6940	4570	8260	7570	7050	6720	10900	15200	SB	33,000
Arsenic	4.01	3.97	3.87	3.29	3.74	4.53	2.84	5.18	7.5 or SB	3-12
Barium	79.7	49.3	86.3	94.3	72.5	64.8	65.3	158	300 or SB	15-600
Cadmium	0.335	0.15	0.197	0.17	0.18	0.233	0.17	0.339	1 or SB	0.1-1
Calcium	15200	10900	15500	14700	17100	15200	24200	12300	SB	130-3500
Chromium	13.1	19.7	14.2	13.1	13.1	15.1	16.5	38.5	10 or SB	1.5-40
Cobalt	8.19	7.15	7.46	7.71	8.27	7.99	9.32	17.8	30 or SB	2.5-60
Copper	40.9	36.5	27.9	25.4	30.0	42.4	31.9	76.8	25 or SB	1-50
Iron	13000	10000	11800	12000	12500	11600	18200	24800	2,000 or SB	2,000-550,000
Lead	265	81.5	69.4	60.1	71.9	193	56.6	203	SB	*
Magnesium	4710	4010	4690	4600	4930	5120	5650	7870	SB	100-5000
Manganese	174	103	149	169	148	146	121	277	SB	50-5000
Mercury	0.637	0.333	0.309	0.144	0.143	0.196	0.162	0.105	0.1	0.001-0.2
Nickel	15.6	9.06	11.9	10.8	10.7	12.1	14.2	33.3	13 or SB	0.5-25
Potassium	2340	1360	2840	2710	2520	2090	2840	5830	SB	8500-4300
Selenium	ND	0.527	ND	0.38	ND	ND	ND	0.749	2 or SB	0.1-3.9
Silver	ND	ND	ND	ND	ND	ND	ND	ND	SB	NA
Sodium	361	354	604	432	537	322	311	578	SB	6000-8000
Thallium	ND	ND	ND	ND	ND	ND	ND	0.438	SB	NA
Vanadium	21.8	17.9	20.8	19.7	20.1	21.3	20.3	42.5	150 or SB	1-300
Zinc	88.1	71.9	91.9	83.5	74.6	84.7	84.8	128	20 or SB	9-50
TCLP Metals (mg/l)										
Barium	0.970	0.733	0.916	0.873	0.831	0.876	0.918	0.891	NS	NS
Cadmium	0.006	ND	ND	ND	0.005	0.005	ND	0.005	NS	NS
Chromium	ND	0.037	0.018	ND	0.011	ND	0.021	ND	NS	NS
Lead	0.425	0.166	0.282	0.215	0.283	1.532	0.319	1.271	NS	NS
Selenium	0.036	ND	0.040	0.034	ND	0.027	0.027	ND	NS	NS

TABLE 1 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL E
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	F-1	F-2	G-1	G-2	H-1	H-2	I-1	I-2	NYSDEC RSCO	Eastern USA Background
Polynuclear Aromatics (mg/kg)										
Acenapthene	0.49	ND	ND	ND	ND	ND	0.21	ND	50.0	NS
Acenepthylene	0.27	0.24	ND	ND	ND	ND	0.16	0.12	41.0	NS
Anthracene	2.9	0.38	0.42	0.96	0.48	0.49	0.58	0.39	50.0	NS
Benzo[a]anthracene	2.8	1.1	1.2	1.8	1.3	1.3	1.2	0.98	0.224 or MDL	NS
Benzo[a]pyrene	2.8	1.4	1.4	1.8	1.5	1.5	1.4	1.2	0.061 or MDL	NS
Benzo[b]flouranthene	3.1	2.0	1.8	2.0	1.6	2.0	1.7	1.5	1.1	NS
Benzo[g,h,I]perylene	1.7	1.2	1.0	1.1	0.97	1.0	0.84	0.76	50.0	NS
Benzo[k]flouranthene	1.2	0.51	0.5	0.87	0.76	0.57	0.53	0.41	1.1	NS
Chrysene	2.8	1.2	1.2	1.7	1.2	1.4	1.2	1.0	0.4	NS
Dibenzo(a,h)anthracene	0.5	0.31	0.36	ND	0.31	0.27	0.25	0.23	0.014 or MDL	NS
Flourantrhene	6.3	1.9	2.5	4.8	2.7	2.8	2.7	2.1	50.0	NS
Fluorene	0.84	ND	ND	0.54	ND	ND	0.22	0.081	50.0	NS
Indeno[1,2,3-cd]pyrene	1.6	1.1	0.93	1.1	0.96	1.0	0.85	0.75	3.2	NS
Napthalene	0.42	ND	ND	ND	ND	ND	ND	ND	13.0	NS
Phenanthrene	5.0	0.85	1.1	3.2	1.3	1.5	2.0	1.0	50.0	NS
Pyrene	5.1	1.8	2.2	3.9	2.3	2.4	2.3	1.7	50.0	NS

Notes:

1 – Imported fill; 2 – Native soil
mg/kg – milligrams/kilograms
mg/l – milligrams/liter
NA – Not Available
ND – Not detected above method detection limit
NS – No Standard
SB – Site Background
MDL – Method detection limit
NYSDEC RSCO – New York State Department of Environmental Conservation Recommended Soil Clean-up Objective

* - Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropoilitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

TABLE 2 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	J-2	K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)											
Aluminum	6000	4510	6290	4320	5370	4140	5210	4940	4800	SB	33,000
Arsenic	5.17	3.07	3.64	1.98	3.49	4.10	3.60	3.14	3.21	7.5 or SB	3-12
Barium	70.8	89.5	53.9	44.4	234	70.6	99.7	82.0	84.8	300 or SB	15-600
Cadmium	0.13	0.14	0.10	ND	0.201	ND	0.18	ND	ND	1 or SB	0.1-1
Calcium	20100	5380	5390	3570	11200	14200	14200	14300	12300	SB	130-3500
Chromium	16.9	10.7	11.9	30.2	12.6	8.73	11.3	10.2	9.94	10 or SB	1.5-40
Cobalt	9.39	7.30	7.9	6.79	6.79	5.95	7.59	7.0	7.99	30 or SB	2.5-60
Copper	59.5	39.2	67.8	30.9	62.6	20.3	26.6	23.3	31.8	25 or SB	1-50
Iron	5380	4810	5120	3370	4780	4260	5140	4600	4980	2,000 or SB	2,000-550,000
Lead	83.4	92.3	73.9	28.2	99.6	31.9	33.5	34.0	41.0	SB	*
Magnesium	375	368	392	326	391	371	418	156	414	SB	100-5000
Manganese	155	182	201	109	180	119	128	156	141	SB	50-5000
Mercury	0.106	0.143	0.197	0.167	0.081	ND	ND	0.062	0.111	0.1	0.001-0.2
Nickel	13.1	10.5	10.9	17.3	11.0	5.07	7.30	6.34	7.50	13 or SB	0.5-25
Potassium	2460	1140	1320	1760	1600	2370	3280	2750	2690	SB	8500-4300
Selenium	ND	ND	ND	ND	ND	0.580	0.44	0.908	0.525	2 or SB	0.1-3.9
Sodium	556	382	328	432	542	485	511	537	572	SB	6000-8000
Thallium	0.813	0.462	0.28	0.909	ND	1.14	2.05	1.86	2.21	SB	NA
Vanadium	22.1	15.6	16.8	25.2	17.1	14.9	18.4	15.5	16.1	150 or SB	1-300
Zinc	80.8	118	135	39.4	253	50.7	66.4	64.5	95.7	20 or SB	9-50
TCLP Metals (mg/l)											
Arsenic	0.015	0.012	ND	0.017	0.019	0.010	ND	ND	0.010	NS	NS
Barium	0.653	1.028	0.767	0.79	0.765	0.656	0.763	0.645	0.675	NS	NS
Cadmium	ND	0.005	ND	ND	ND	ND	ND	ND	ND	NS	NS
Chromium	ND	ND	ND	ND	ND	0.021	ND	0.022	0.022	NS	NS
Lead	0.009	0.336	1.27	0.073	0.06	ND	ND	ND	ND	NS	NS
Selenium	ND	ND	ND	ND	0.019	0.020	ND	ND	0.036	NS	NS

TABLE 2 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
PARKING GARAGE PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	J-2	K-2	L-2	M-2	N-2	O-2	P-2	Q-2	R-2	NYSDEC RSCO	Eastern USA Background
Polynuclear Aromatics (mg/kg)											
Acenaphthene	ND	ND	0.1	0.065	0.099	ND	ND	0.2	ND	50.0	NS
Acenaphthylene	0.11	0.25	0.1	0.073	0.16	ND	ND	ND	ND	41.0	NS
Anthracene	0.24	0.36	0.4	0.26	0.42	0.14	0.2	0.29	0.2	50.0	NS
Benzo[a]anthracene	0.89	1.7	1.3	0.79	1.8	0.34	0.57	0.4	0.46	0.224 or MDL	NS
Benzo[a]pyrene	0.86	1.6	1.2	0.8	1.5	0.32	0.54	0.35	0.44	0.061 or MDL	NS
Benzo[b]flouranthene	1.1	2.1	1.3	0.98	2.0	0.44	0.73	0.46	0.52	1.1	NS
Benzo[g,h,I]perylene	0.59	1.1	0.79	0.48	0.98	0.25	0.43	0.26	0.33	50.0	NS
Benzo[k]flouranthene	0.44	0.67	0.64	0.37	0.86	0.12	0.2	0.13	0.21	1.1	NS
Chrysene	0.94	1.7	1.3	0.83	1.9	0.37	0.61	0.46	0.5	0.4	NS
Dibenzo(a,h)anthracene	0.17	0.28	0.22	0.14	0.31	ND	ND	ND	ND	0.014 or MDL	NS
Fluoranthene	1.7	3.2	2.3	1.5	3.5	0.74	1.2	1.2	1.1	50.0	NS
Fluorene	ND	ND	0.12	0.08	0.11	ND	ND	0.3	ND	50.0	NS
Indeno[1,2,3-cd]pyrene	0.64	1.2	0.8	0.52	1.1	0.21	0.37	0.23	0.33	3.2	NS
Napthalene	ND	ND	ND	ND	0.064	ND	ND	ND	ND	13.0	NS
Phenanthrene	0.81	1.2	1.4	0.97	1.7	0.53	0.76	1.5	0.83	50.0	NS
Pyrene	1.6	3.0	2.4	1.4	2.6	0.66	1.1	0.97	0.94	50.0	NS

Notes:

2 – Native soil
mg/kg – milligrams/kilograms
mg/l – milligrams/liter
NA – Not Available
ND – Not detected above method detection limit
NS – No Standard
SB – Site Background
MDL – Method detection limit
NYSDEC RSCO – New York State Department of Environmental Conservation Recommended Soil Clean-up Objective
* - Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

TABLE 3 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
STOCKPILED SOIL PARKING GARAGE PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	S-1	S-2	NYSDEC RSCO	Eastern USA Background	EPA MCCTC
TAL Metals (mg/kg)					
Aluminum	5810	6440	SB	33,000	NS
Arsenic	3.24	4.33	7.5 or SB	3-12	NS
Barium	59.2	117	300 or SB	15-600	NS
Cadmium	0.12	0.451	1 or SB	0.1-1	NS
Calcium	**13200**	**8210**	SB	130-3500	NS
Chromium	13.9	24.9	10 or SB	1.5-40	NS
Cobalt	7.75	10.7	30 or SB	2.5-60	NS
Copper	**163**	**78.5**	25 or SB	1-50	NS
Iron	4,950	5510	2,000 or SB	2,000-550,000	NS
Lead	73.7	226	SB	*	NS
Magnesium	384	384	SB	100-5000	NS
Manganese	157	167	SB	50-5000	NS
Mercury	0.0921	**0.72**	0.1	0.001-0.2	NS
Nickel	11.5	16.5	13 or SB	0.5-25	NS
Potassium	1930	2190	SB	8500-4300	NS
Selenium	0.593	0.30	2 or SB	0.1-3.9	NS
Silver	ND	0.798	SB	N/A	NS
Sodium	430	417	SB	6000-8000	NS
Vanadium	18.5	24.5	150 or SB	1-300	NS
Zinc	**93.3**	**346**	20 or SB	9-50	NS
TCLP Metals (mg/l)					
Arsenic	0.009	ND	NS	NS	5.0
Barium	0.769	0.657	NS	NS	100
Cadmium	0.005	ND	NS	NS	1.0
Chromium	ND	0.010	NS	NS	5.0
Lead	0.313	0.073	NS	NS	5.0
Selenium	0.028	0.031	NS	NS	1.0

TABLE 3 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
STOCKPILED SOIL PARKING GARAGE PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	S-1	S-2	NYSDEC RSCO	Eastern USA Background	EPA MCCTC
Polynuclear Aromatics (mg/kg)					
Acenepthylene	0.41	ND	41.0	NS	NS
Anthracene	0.45	ND	50.0	NS	NS
Benzo[a]anthracene	**1.8**	0.86	0.224 or MDL	NS	NS
Benzo[a]pyrene	**2.1**	**0.86**	0.061 or MDL	NS	NS
Benzo[b]flouranthene	**2.4**	1.0	1.1	NS	NS
Benzo[g,h,I]perylene	1.5	0.56	50.0	NS	NS
Benzo[k]flouranthene	0.94	ND	1.1	NS	NS
Chrysene	**2.0**	**0.92**	0.4	NS	NS
Fluoranthene	3.9	2.1	50.0	NS	NS
Indeno[1,2,3-cd]pyrene	1.6	0.65	3.2	NS	NS
Phenanthrene	1.5	1.2	50.0	NS	NS
Pyrene	2.8	1.5	50.0	NS	NS

Notes:

mg/kg – milligrams/kilograms
NA – Not Available
ND – Not detected above method detection limit
NS – No Standard
SB – Site Background
MDL – Method detection limit
EPA MCCT – Environmental Protection Agency Maximum Concentration of Contaminants for the Toxicity Characteristic
NYSDEC RSCO – New York State Department of Environmental Conservation Recommended Soil Clean-up Objective
* - Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropoilitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

TABLE 4 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
LANDSCAPED AREAS PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	L-1	L-2	L-3	L-4	L-5	L-6	L-7	L-8	L-9	L-10	L-11	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)													
Aluminum	6390	6480	7040	5830	5570	5060	5730	5500	5240	6380	6500	SB	33,000
Arsenic	2.96	4.99	5.77	4.01	4.25	3.56	2.81	2.55	3.53	3.44	3.51	7.5 or SB	3-12
Barium	112	52.1	61.8	147	151	83.2	54.3	91.3	135	50.5	51.5	300 or SB	15-600
Cadmium	0.289	0.441	0.505	0.572	0.578	0.375	0.351	0.291	0.346	0.389	0.383	1 or SB	0.1-1
Calcium	6890	8580	8740	14900	15100	14400	21900	9160	10400	10100	9640	SB	130-3500
Chromium	11.8	12.3	13.5	11.2	13.0	11.6	9.51	13.4	12.4	15.6	13.0	10 or SB	1.5-40
Cobalt	8.46	7.69	8.68	7.61	8.15	8.48	6.16	7.94	8.51	8.14	7.97	30 or SB	2.5-60
Copper	35.8	31.8	79.8	101	581	170	827	51.7	79.1	76.3	46.3	25 or SB	1-50
Iron	10400	9560	11300	10200	9960	10600	8120	9380	11500	10300	10300	2,000 or SB	2,000-550,000
Lead	48.1	64.5	89.4	132	388	84.2	73.1	107	103	72.9	388	SB	*
Magnesium	3370	5990	4560	4040	4030	6750	4370	5490	4920	4720	4420	SB	100-5000
Manganese	172	173	191	196	179	176	164	186	172	159	168	SB	50-5000
Mercury	0.138	0.081	0.098	0.174	0.157	0.108	0.028	0.097	0.056	0.093	0.100	0.1	0.001-0.2
Nickel	10.6	9.57	11.5	10.1	13.3	11.0	7.46	12.7	12.7	9.82	10.2	13 or SB	0.5-25
Potassium	1680	1840	1930	2170	2260	2640	2430	1870	1880	2040	2000	SB	8500-4300
Selenium	0.947	0.841	0.858	0.833	1.10	1.13	0.772	0.510	0.772	0.602	0.665	2 or SB	0.1-3.9
Sodium	449	416	409	615	668	330	332	234	293	295	310	SB	6000-8000
Thallium	2.84	3.65	4.19	2.63	3.43	4.45	3.47	3.20	2.82	3.15	2.81	SB	NA
Vanadium	15.6	17.8	17.6	15.7	18.1	16.8	12.8	17.0	15.8	18.6	17.1	150 or SB	1-300
Zinc	67.6	52.5	99.9	216	245	123	175	79.8	115	89.7	94.5	20 or SB	9-50
TCLP Metals (mg/l)													
Barium	0.830	0.882	0.881	0.81	0.778	0.845	0.662	0.845	0.900	0.84	0.835	NS	NS
Lead	0.030	0.056	0.083	0.067	0.049	0.148	0.012	0.257	0.232	0.043	0.054	NS	NS

TABLE 4 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
LANDSCAPED AREAS PARCEL F
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	L-1	L-2	L-3	L-4	L-5	L-6	L-7	L-8	L-9	L-10	L-11	NYSDEC RSCO	Eastern USA Background
Polynuclear Aromatics (mg/kg)													
Acenaphthene	ND	ND	ND	ND	0.071	ND	ND	ND	ND	0.26	0.95	50.0	NS
Acenaphthylene	0.084	ND	0.11	0.18	0.33	0.087	ND	ND	ND	ND	ND	41.0	NS
Anthracene	0.16	ND	0.16	0.24	0.47	0.16	0.12	0.12	0.12	0.55	1.5	50.0	NS
Benzo[a]anthracene	0.57	0.24	0.71	1.3	1.8	0.62	0.69	0.5	0.5	1.4	3.1	0.224 or MDL	NS
Benzo[a]pyrene	0.58	0.22	0.71	1.2	1.6	0.66	0.65	0.51	0.45	1.4	2.7	0.061 or MDL	NS
Benzo[b]flouranthene	0.61	0.34	1.1	1.7	2.1	0.94	0.79	0.8	0.48	1.8	2.7	1.1	NS
Benzo[g,h,I]perylene	0.42	0.15	0.48	0.78	1.0	0.44	0.46	0.34	0.32	0.86	1.4	50.0	NS
Benzo[k]flouranthene	0.32	0.12	0.33	0.67	1.0	0.38	0.38	0.26	0.24	0.89	1.3	1.1	NS
Chrysene	0.63	0.27	0.73	1.4	1.8	0.7	0.76	0.6	0.61	1.5	3.2	0.4	NS
Dibenzo(a,h)anthracene	ND	ND	ND	ND	0.31	ND	0.13	ND	ND	0.24	ND	0.014 or MDL	NS
Fluoranthene	1.0	0.39	1.2	2.0	3.2	1.1	0.95	1.1	0.9	3.2	7.1	50.0	NS
Fluorene	ND	ND	ND	ND	0.17	ND	ND	ND	ND	0.28	0.95	50.0	NS
Indeno[1,2,3-cd]pyrene	0.41	0.17	0.51	0.81	1.0	0.47	0.48	0.39	0.36	0.96	1.7	3.2	NS
Napthalene	0.054	ND	ND	0.16	0.26	ND	ND	ND	ND	0.41	0.32	13.0	NS
Phenanthrene	0.62	0.23	0.68	0.94	1.8	0.63	0.38	0.64	0.71	2.8	8.2	50.0	NS
Pyrene	1.0	0.45	1.3	2.2	3.3	1.2	1.2	1.0	1.1	2.9	6.6	50.0	NS

Notes:

mg/kg – milligrams/kilograms
mg/l – milligrams/liter
NA – Not Available
ND – Not detected above method detection limit
NS – No Standard
SB – Site Background
MDL – Method detection limit
NYSDEC RSCO – New York State Department of Environmental Conservation Recommended Soil Clean-up Objective
* - Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

TABLE 5 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL REMOVED FROM LANDSCAPED AREAS
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	F-1	F-2	F-3	F-4	Stockpile	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)							
Aluminum	5950	6340	4730	5100	9750	SB	33,000
Arsenic	2.68	3.02	2.34	2.46	2.63	7.5 or SB	3-12
Barium	68.5	72.3	54.2	79.5	45	300 or SB	15-600
Cadmium	0.311	0.365	0.269	0.31	0.315	1 or SB	0.1-1
Calcium	**8140**	**9060**	**11000**	**11100**	**3990**	SB	130-3500
Chromium	13.5	15.5	10.0	12.8	13.1	10 or SB	1.5-40
Cobalt	9.22	9.14	7.17	7.95	9.48	30 or SB	2.5-60
Copper	**56.6**	**76.7**	**63.2**	**65.5**	**26.3**	25 or SB	1-50
Iron	11100	11100	9280	10500	12400	2,000 or SB	2,000-550,000
Lead	184	109	69.6	95.9	44.2	SB	*
Magnesium	**5540**	**5550**	**6410**	**6600**	3190	SB	100-5000
Manganese	173	197	139	159	185	SB	50-5000
Mercury	0.063	0.045	0.052	**0.106**	0.051	0.1	0.001-0.2
Nickel	14.8	14.2	9.25	12.3	10.2	13 or SB	0.5-25
Potassium	2360	2540	1610	2130	2010	SB	8500-4300
Sodium	302	300	308	266	211	SB	6000-8000
Thallium	3.32	3.37	3.36	2.57	2.58	SB	NA
Vanadium	18.2	19.8	15.4	17.3	18.8	150 or SB	1-300
Zinc	**92.9**	**87.3**	**75.3**	**76.9**	**60.5**	20 or SB	9-50
TCLP Metals (mg/l)							
Barium	0.832	0.852	0.831	0.698	0.719	100	NS
Lead	0.154	0.392	0.198	0.161	0.035	5	NS

TABLE 5 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL REMOVED FROM LANDSCAPED AREAS
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	F-1	F-2	F-3	F-4	Stockpile	NYSDEC RSCO	Eastern USA Background
Polynuclear Aromatics (mg/kg)							
Anthracene	0.29	ND	ND	0.22	0.049	50.0	NS
Benzo[a]anthracene	**1.1**	**1.2**	**0.67**	**0.86**	**0.25**	0.224 or MDL	NS
Benzo[a]pyrene	**1.0**	**1.0**	**0.7**	**0.8**	**0.24**	0.061 or MDL	NS
Benzo[b]flouranthene	**1.1**	1.0	0.78	**1.1**	0.25	1.1	NS
Benzo[g,h,I]perylene	0.67	0.67	0.44	0.57	0.16	50.0	NS
Benzo[k]flouranthene	0.5	0.83	0.5	0.5	0.12	1.1	NS
Chrysene	**1.1**	**1.1**	**0.76**	**0.91**	0.25	0.4	NS
Fluoranthene	2.0	1.9	1.2	1.5	0.47	50.0	NS
Indeno[1,2,3-cd]pyrene	0.73	0.66	0.49	0.58	0.16	3.2	NS
Phenanthrene	1.2	1.3	0.75	0.87	0.19	50.0	NS
Pyrene	2.1	2.2	1.3	1.6	0.5	50.0	NS

Notes:

mg/kg – milligrams/kilograms
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NA – Not Available
ND – Not detected above method detection limit
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NYSDEC RSCO – New York State Department of Environmental Conservation Recommended Soil Clean-up Objective
* - Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

TABLE 6 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL IN LANDSCAPED AREAS INITIAL RESULTS
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	Fill	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)			
Aluminum	15,200	SB	33,000
Arsenic	2.27	7.5 or SB	3-12
Barium	94.3	300 or SB	15-600
Calcium	3370	SB	130-3500
Chromium	**61.5**	10 or SB	1.5-40
Cobalt	13.6	30 or SB	2.5-60
Copper	24.7	25 or SB	1-50
Iron	18,300	2,000 or SB	2,000-550,000
Lead	33.2	SB	*
Magnesium	**6430**	SB	100-5000
Manganese	195	SB	50-5000
Mercury	0.043	0.1	0.001-0.2
Nickel	23.8	13 or SB	0.5-25
Potassium	2840	SB	8500-4300
Sodium	161	SB	6000-8000
Thallium	3.28	SB	NA
Vanadium	56	150 or SB	1-300
Zinc	**63.2**	20 or SB	9-50
TCLP Metals (mg/l)			
Barium	0.931	100	NS
Lead	0.043	5	NS
Polynuclear Aromatics (mg/kg)			
Benzo[b]flouranthene	0.061	1.1	NS
Chrysene	0.042	0.4	NS
Fluoranthene	0.076	50.0	NS
Pyrene	0.062	50.0	NS

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TABLE 6 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL IN LANDSCAPED AREAS INITIAL RESULTS
YONKERS WATEFRONT
YONKERS, NEW YORK

TABLE 7 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL IN LANDSCAPED AREAS FINAL RESULTS
YONKERS WATEFRONT
YONKERS, NEW YORK

Compound/Location	Fill	NYSDEC RSCO	Eastern USA Background
TAL Metals (mg/kg)			
Aluminum	12700	SB	33,000
Arsenic	7.83	7.5 or SB	3-12
Barium	92.8	300 or SB	15-600
Calcium	0.209	SB	130-3500
Chromium	38.7	10 or SB	1.5-40
Cobalt	12.9	30 or SB	2.5-60
Copper	22.2	25 or SB	1-50
Iron	16400	2,000 or SB	2,000-550,000
Lead	91.9	SB	*
Magnesium	4200	SB	100-5000
Manganese	233	SB	50-5000
Mercury	0.023	0.1	0.001-0.2
Nickel	21.8	13 or SB	0.5-25
Potassium	2260	SB	8500-4300
Sodium	142	SB	6000-8000
Thallium	3.86	SB	NA
Vanadium	43.9	150 or SB	1-300
Zinc	84.5	20 or SB	9-50

Notes:

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mg/l – milligrams/liter
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MDL – Method detection limit
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TABLE 7 DRAFT
SUMMARY OF DETECTED COMPOUNDS IN SOIL
IMPORTED FILL IN LANDSCAPED AREAS FINAL RESULTS
YONKERS WATEFRONT
YONKERS, NEW YORK

PROPOSED WORK, SAMPLING AND QA/QC PLAN, FOR YONKERS DOWNTOWN WATERFRONT DEVELOPMENT ENVIRONMENTAL RESTORATION – PHASE 1 (PARCELS H AND I) YONKERS, NEW YORK

WORK PLAN

Integrated Technical Services, Inc., (ITS) is submitting this work plan for the above referenced site work to the City of Yonkers.

Upon receiving the contract, ITS will secure all required permits and utility mark out. ITS will then mobilize to the site with all necessary personnel and equipment to complete the following tasks:

Mobilization to the site (Parcels H and I)

Carry out the site specific health and safety plan and monitoring

Excavate, load or stockpile hazardous and non-hazardous soils

Transport and dispose of hazardous and non-hazardous soils to an approved facility

Collect end-point samples of the excavations

Site restoration

Demobilization

Work will start at Parcel I, the non-hazardous dieldrin-containing soil area. ITS will excavate and load the soil directly into a dump truck for disposal. Endpoint samples will be collected from the excavation. Based on the size and depth of the excavation, a clean hand shovel should be sufficient for collection.

ITS will decontaminate the equipment from the previous non-hazardous excavation and move to Parcel H, the hazardous lead containing soil. The soil will be excavated and depending on approval either stockpiled, or loaded directly into dump trucks/trailers for disposal, after each excavation is complete endpoint samples will be collected. Due to the size and depth of the excavations the equipment used to dig the excavation will be used to collect samples. The bucket will be decontaminated prior to collecting endpoint samples.

Based upon the resultant analytical from the endpoint samples, ITS will either continue excavation activities or backfill with certified clean fill and existing fill and compacted in two-foot lifts.

ITS will use the following pieces of equipment for this job:

(1) Excavator
(1) 3.5 cubic yard Wheel Loader
(1) 10 ton roller
(1) Case 580 Backhoe
(1) D-3 Dozer

ITS personnel for this job:

Project Manager – Mark Burton
Overall responsibility for the safety of operations and the Health and Safety of all personnel.

Site Health and Safety Officer – Frank Quinton
Daily implementation of the Health and Safety Plan including daily monitoring and reporting.

Project Foreman – David Hartman
Overall coordinator of all construction activities. Senior on-site person and responsible for safety of operations during remedial activities.

HEALTH AND SAFETY

ITS will conduct all work in accordance with the Certified Industrial Hygienist (CIH) approved site specific health and safety plan (HASP). The plan shall include, but not be limited to

Implementing baseline medical program

Providing PPE and safety equipment

Maintain on-site first aid equipment

Provide personnel and equipment decontamination stations

Health and safety requirements for excavation activities

Community and personnel protection, accident prevention, emergency response

Daily air monitoring and safety log and personnel training log

In addition dust generated by soil excavation, loading, stockpiling and backfill operations will be kept to a minimum through adequate dust control measures. ITS will

implement and maintain spill control measures for potential spills from dust control and soil stockpiling and loading. These measures include stockpiling and covering soil with 6 mil plastic and securing plastic at the end of each day. If needed hay bales will be used to collect any contaminated runoff from the piles.

To prevent safety hazards around the work areas, all open excavations will be secured with high visibility fencing at the end of each day.

The CIH will delegate the implementation and enforcement of air monitoring and the HASP to a Health and Safety Officer (HSO) who will be on-site for all intrusive work. The HSO shall meet the requirements of section 3.21 of the supplemental specifications.

The site will be secured at all times to prevent unauthorized personnel from entering the work site. All excavations and soil stockpiles will be fenced of and equipment will be locked up each day.

QA/QC

All endpoint samples will be sent to a New York State certified laboratory for analysis. Prior to sampling all equipment will be decontaminated to prevent cross contamination as required. All samples will be taken in laboratory-supplied glass or plastic containers. All samples will be accompanied with and chain-of-custody. A log and drawing will be kept to identify where samples were taken from.

Manifests will be kept for all soil leaving the site for disposal and all clean fill that enters the site.

If necessary waste characterization samples will be taken for the proper disposal facility.

Prior to sampling and between excavations the necessary equipment (i.e. excavator, shovel) will be decontaminated using a high-pressure washer and/or a cleaning solution with alconox on a plastic decontamination pad. All wash waters will be drummed and properly disposed of off-site.