FINAL REMEDIATION REPORT

WORK ASSIGNMENT D004440-22.1

EAST FERRY STREET SITE — SITE NO. 9-15-175
CITY OF BUFFALO (C) — ERIE COUNTY, NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York

Alexander B. Grannis, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation
77 Goodell Street
Buffalo, New York 14203

March 2009

STATE SUPERFUND WORK ASSIGNMENT

CONTRACT NO. D005971

FINAL REMEDIATION REPORT

FOR

858 EAST FERRY STREET

SITE No. 9-15-175

BUFFALO, NEW YORK

SUBMITTED BY:

URS CORPORATION

77 GOODELL STREET

BUFFALO, NEW YORK 14203

MARCH 2009

CERTIFICATION

OF

CONSTRUCTION QUALITY ASSURANCE

AT

858 EAST FERRY STREET SITE

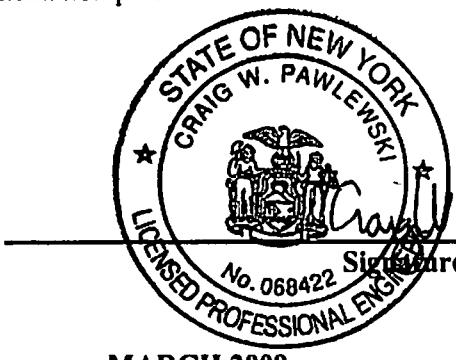
REMEDIAL ACTION CONSTRUCTION

BUFFALO, NEW YORK

CONTRACT NO. D005971

URS Corporation's (URS's) personnel have provided oversight of the remedial action construction at the 858 East Ferry Street Site according to generally accepted practices. Based on field observations and inspections made by on-site personnel, field and laboratory test data, and data provided by the Contractor and his subcontractors, my professional opinion is that the remedial action construction at the site has been performed in substantial conformance with the New York State Department of Environmental Conservation (NYSDEC)-approved Contract Documents (D005971) as stated in this report.

This report certifies only the activities and documentation presented herein. The final change order(s) and cost are not included in this report.



Signature

MARCH 2009

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ACRONYMS AND ABBREVIATIONS

BSA	Buffalo Sewer Authority
CSX	CSX Corporation
CY	cubic yards
mg/kg	milligram per kilogram
M/WBE	minority/woman-owned business enterprise
NES	National Environmental Services, Inc.
NTP	Notice to Proceed
NYCRR	New York Code, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSOGS	New York State Office of General Services
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCO	proposed change order
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
RFI	Request for Information
ROD	Record of Decision
RODA	Record of Decision Amendment
SCG	Standard, Criteria, or Guidance
STARS	Spill Technology and Remediation Series
SVOC	semivolatile organic compound
TAGM	Technical and Administrative Guidance Memorandum

TAL	Target Analyte List
TCL	Target Compound List
TCLP	toxicity characteristic leaching procedure
UCQ	uniform contracting questionnaire
URS	URS Corporation
VOC	volatile organic compound
µg/kg	microgram per kilogram

FINAL REMEDIATION REPORT
858 EAST FERRY STREET SITE
NYSDEC SITE NO. 9-15-175

1.0 INTRODUCTION

This report documents the remedial activities completed for Contract No. D005971 at the 858 East Ferry Street site. URS Corporation (URS) provided services during construction, including construction oversight services, to the New York State Department of Environmental Conservation (NYSDEC) under Work Assignment No. D004440-22.

This report was prepared in accordance with the *Project Management Work Plan and Budget for Construction and O&M,* prepared by URS in May 2006. As required under Task 4 of that plan, this report summarizes construction activities at the site and identifies all variations from the Contract Documents. Survey information, as-built drawings, and other project documentation are included as appendices to this report.

The report does not include the final change order and cost. This documentation will be included in an addendum to this certification report that will be issued in the future.

1.1 Site Description

The 858 East Ferry Street Site is a Class 2 site, listed on the NYSDEC Registry of Inactive Hazardous Waste Sites (NYSDEC Site No. 9-15-175). The site is situated on the north side of East Ferry St., City of Buffalo, Erie County, New York (Figure 1-1). The 858 East Ferry Street site occupies approximately 3.3 acres and is owned by the City of Buffalo. The property is zoned industrial land and is referred to as the "on site" area (Figure 1-1). Properties (including 856 East Ferry Street) located west of 858 East Ferry Street are referred to as the "off site" area (Figure 1-1). The approximate boundaries of 858 East Ferry Street, 856 East Ferry Street, and other properties impacted by lead-contaminated fill that include 828 East Ferry Street, 812 East Ferry Street, and 810 East Ferry Street (Erie County Youth Detention Center) 1 Junction RR, 3 Junction RR, and 5 Junction RR are shown on Figure 1-2.

1.2 Site History

Historic maps and photographs from the early 1900s suggest that the 858 East Ferry Street site was never occupied by any type of building. However, surface and subsurface soil

sampling showed that the property was used for the disposal of ash evidenced by the presence two distinct ash beds. The first was a white ash that occupied much of the central and western portions of the site and was covered by a soil layer. The second was a gray ash deposited in the northern and some central portions of the site. This gray ash was deposited more recently and was over the white ash layer in the central portion of the site. The gray ash contained numerous glass bottles and ceramic fragments.

At the adjacent property to the west, now occupied by the used auto lot, the 1939 Sanborn map showed that a Michael Heyman Company operated a zinc and lead smelting and refining facility. Two buildings were once located on the Heyman property; the west building was the foundry and blast furnace, and the east building, nearest the 858 East Ferry Street site, housed a metal casting facility. A 1958 aerial photo showed a path leading from the Heyman property to the central part of the 858 East Ferry Street site. In the photo, the path fans out to a wide area on the East Ferry Street site that appears devoid of vegetation. The location of the Heyman facility adjacent to the site and the path leading onto the site support analytical findings which indicate past disposal of lead-contaminated ash.

1.3 Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of contamination resulting from previous activities at the site. The investigation was conducted in two phases. The first phase was conducted between October and November 1997 and the second phase in June 1998. A report entitled "Site Investigation and Remedial Alternatives" describes the field activities and findings of the investigation in detail. An additional investigation was completed in 2001 by the NYSDEC at the property just west of the site, i.e. the TNT Auto lot (856 East Ferry Street).

The results of the investigations showed that the on site soil and soil at TNT Auto were contaminated with lead. However, the results showed that groundwater posed no risks to human health so that groundwater remediation was not required.

1.4 Record of Decision Amendment (RODA) Summary

The approach to remediation at the East Ferry Street Site was first presented in the March 1999 Record of Decision (ROD) (NYSDEC 1999), and revised in the August 2005 RODA (NYSDEC 2005). The NYSDEC selected an amended remedy to excavate contaminated soil from the site and dispose of it in a permitted landfill to achieve a cleanup goal protective enough for unrestricted future use of the site (i.e., 400 parts per million [ppm] lead), and to excavate contaminated soil from off-site properties and dispose of it in a permitted landfill to achieve a cleanup goal protective enough for industrial/commercial use consistent with current zoning and property use (i.e., 1,000 ppm lead). The remedy for the site, as specified in the RODA, included the following components:

1. Contaminated soil from on site will be excavated and staged. The soils will be excavated to achieve a cleanup goal of 400 ppm of lead to provide unrestricted future use of the site.
2. Contaminated soil from off-site properties will be excavated and staged. The soils will be excavated to achieve a cleanup goal of 1,000 ppm of lead.
3. Hazardous soils excavated from on-site and off-site properties will be stabilized at the site.
4. All contaminated stabilized soils will be transported and disposed of in an off-site permitted landfill.
5. All the excavated areas will be backfilled with clean fill and any contaminated surface soils will be used to the extent practicable to fill in the excavations prior to backfilling.
6. A long-term groundwater monitoring program will be implemented to monitor the groundwater quality.
7. A Site Management Plan will be developed in which the City of Buffalo will certify periodically that the off-site properties remain zoned for industrial/commercial use.

The design included all the components identified above except that item number 5 has been modified. Based on further evaluation, contaminated material was not be used to backfill excavations. All excavated areas were backfilled with clean fill.

1.5 Summary of the Pre-Design Investigation

As the first part of the Remedial Design, a pre-design investigation (completed in 2004) was conducted to better define the limits of soil contamination. This investigation included the area between East Ferry Street and the railroad tracks, from west of the TNT Auto property to the vicinity of 750 East Ferry Street and the large blue water tower (Figure 1-2).

The investigation included the installation of 114 soil borings on a 100-foot grid covering the entire area; testing over 360 surface and subsurface soil samples for lead; installation of 4 new off-site bedrock groundwater monitoring wells west of the 858 East Ferry Street site; testing the new wells and the 4 existing wells to see if the groundwater was contaminated; and a geophysical survey (i.e., electromagnetic techniques and ground penetrating radar) of the area to locate the Scajaquada Creek tunnel (the tunnel is a 33' wide x 15' high subsurface concrete drain that extends for several miles) and buried objects such as old drums or underground storage tanks.

The results from this investigation indicated that the highest concentrations (i.e., greater than 10,000 parts per million (ppm)) of lead contamination in surface soil were reported in samples collected from the northern half of 856 East Ferry Street, and the central and western portion of 858 East Ferry Street. The area of lead contaminated soils above 1,000 ppm extended into the central and southern portion of the 856 East Ferry Street property, the central and north-central portion of the 858 East Ferry Street property, and also extended westward from the 856 East Ferry Street property.

The highest concentrations (i.e., greater than 10,000 ppm) of lead contaminated soils in subsurface were reported in samples collected from the central portion of the 858 East Ferry Street property, along the western edge of the northern portion of the 856 East Ferry Street property, and two other isolated areas. The areas of lead contaminated soils above 1,000 ppm occurred near the central portion of the 858 East Ferry Street property, the northern two-thirds of the 856 East Ferry Street property, an area immediately adjacent to the western edge of the 856 East Ferry Street property, and several isolated areas north of the Scajaquada Creek Drain extending westward to the Buflovak property. The area of samples reporting lead concentrations

above 400 ppm extended from the 858 East Ferry Street property across the study area, generally north of the Scajaquada Creek Drain.

Based on the results of the investigation, the volume of contaminated soil above 1,000 ppm of total lead was estimated at approximately 111,234 tons. Additionally, the analytical results gathered as part of the pre-design investigation indicated that the fill materials in the study were not leaching contaminants to groundwater at concentrations above Standards, Criteria and Guidance (SCGs).

1.6 Remediation Standards

Remediation standards for contaminated soil were established in the Record of Decision Amendment dated August 2005. The remediation standard established for on site (858 East Ferry Street) soil was 400 ppm for lead for unrestricted future use. The remediation standard established for off site (all properties west of 858 East Ferry Street) soil was 1,000 ppm for lead consistent with the current industrial use and zoning.

1.7 Remedial Design

URS received notice-to-proceed for remedial design in October 2005. The design Work Assignment was administered by the New York State Office of General Services (NYSOGS) under Contract S8351 with URS Corporation on behalf of the New York State Department of Environmental Conservation (NYSDEC). The project corresponded to NYSOGS Project No. 43049 or Work Order No. 55 to Contract S8351. In addition to the Work Plan, the work assignment included a soil stabilization pilot study (Task 2), preparation of plans and specifications (Task 3), and pre-award services (Task 4).

The soil stabilization pilot study (Task 2) was carried out between October 9 and 16, 2005. In the study, lead contaminated material excavated from the site was mixed with Ecobond® binder, a treatment agent for lead. Ecobond® was mixed with lead-contaminated material in ratios of 1%, 2%, 3%, 4% and 5% by weight. The pilot study showed that a 1% mixture of Ecobond® reduced TCLP lead concentrations below the regulatory threshold of 5.0 mg/l for material containing low (below 10 mg/kg) concentrations of total lead. An Ecobond® mixture of 2% was required to achieve the same results for material with high (above 30 mg/kg) concentrations of total lead.

Under Task 3, URS prepared six drawings, specifications, a design engineering report, a limited site data document, and an engineer's estimate. The Contract Documents (drawings and specifications) are included as Appendix O to this report.

1.8 Description of Remedial Action

The construction contract for remedial action at the site consisted of the following major elements:

- Mobilize trailers, offices, and equipment; survey and identify properties, existing, utilities, and facilities; and install temporary utilities.
- Remove surface debris, clear and grub work area, and dispose of material offsite.
- Remove concrete and other paved surfaces in areas of excavation.
- Excavate contaminated material in designated areas.
- Stabilize excavated contaminated material.
- Dispose of all stabilized material offsite.
- Backfill excavated areas.
- Grade, spread topsoil, and seed in designated areas.
- Restore concrete and paved surfaces.
- Install and decommission monitoring wells.

1.9 Project Bidding and Award

Contract Documents, prepared by URS, were issued for bid by NYSDEC (Appendix O). The documents consisted of bidding instructions, specifications, drawings, and the Limited Site Data Document. A mandatory pre-bid meeting was held on the site on February 22, 2006. Two addendums to the Contract Documents was prepared and issued prior to bid opening. Addendum One included pre-bid meeting minutes, responses to questions from bidders, and a pre-bid attendance list. Addendum Two added new NYSDEC Guidelines Regarding Permissible Contacts During Procurement. Eight sealed bids were opened on March 7, 2006. The approved low bidder was National Environmental Services Corporation (NES). The low bid was

$7,683,003. The $10,000 Pollution Liability Insurance was accepted by the NYSDEC resulting in a total contract price of $7,693,003.

1.10 Pre-Construction Meeting

A pre-construction meeting was held on August 16, 2006. Attendees included representatives from NYSDEC, URS, Watts Engineering (a subcontractor to URS for inspection services), and NES. Topics of discussion included the following: the responsibilities of the project participants and lines of communication; Minority/Women-Owned Business Enterprise (M/WBE) and Equal Opportunity (EEO) goals; contract time and liquated damages, progress schedules and meetings; working hours; approval of sub-contractors; maintenance of as-built drawings; submittal requirements; changes in the work; payments; completion of the work and final acceptance; dispute resolution; project plans; certified payrolls; and health and safety.

1.11 Project Schedule

The Notice to Proceed date for the construction contract was established as September 19, 2006. Under the terms of the original contract, 270 days were allotted for completion of the work. The date established for project completion was June 19, 2007.

The contract was extended by 104 days by Change Order No. 1, 36 days by Change Order No. 2, and 0 days by Change Order No. 3 (Appendix J). Based on these changes the final completion date for the project was established as November 3, 2007.

1.12 Submittals

Required submittals were received from NES, and reviewed by URS in a timely manner. All submittals were approved by URS. The submittal log is included as Appendix N.

1.13 Subcontractors

NES used several subcontractors to complete the contract. Uniform Contracting Questionnaires (UCQs) were submitted to NYSDEC for all subcontracts with a contract value greater than $10,000. Subcontractor information is provided in Appendix K.

2.0 SUMMARY OF REMEDIAL WORK

URS maintained a resident engineer(s)/inspector(s) on site during all construction activities. On site personnel were from URS's Buffalo, New York office and from URS's subcontractor Watts Architecture and Engineering, P.C. located in Buffalo New York. Daily inspection reports documenting the Contractor's progress during construction are included as Appendix A. This section summarizes remedial activities at the site.

2.1 Site Preparation, Facilities and Services

NES mobilized three trailers to the site and made connections for power. The trailers were used as the Engineer's trailer, the Contractor's trailer, and the decontamination trailer. The project sign was mounted on the fence at 858 East Ferry Street.

NES obtained a sidewalk closure permit from the City of Buffalo. NES installed temporary, movable fence along East Ferry Street to restrict access to the site and to control union picketing activities during construction. Union picketing began on May 2, 2007 and ended on June 25, 2007.

Security services were provided by Eye-to-Eye Security beginning in April 2007. Security was upgraded to 24 hours a day, 7 days a week beginning on May 2, 2007 because Local Union 17 began picketing activities on that date. Eye-to-Eye Security was replaced by U.S. Security Associates, Inc. on May 24, 2007 – the date that off-site shipment of excavated material began.

Temporary and movable fence was installed around the perimeter of the site in areas where no fence existed to improve site security. A total of 2,250 linear feet of temporary security fence was installed for the project.

2.2 Site Clearing

Site clearing, the first activity at the site, was performed by NES's subcontractor Eastwood Industries, Inc. Eastwood mobilized equipment including the Hydro Ax-7212, a tree chipper, two brush chippers, and two trucks to the site on September 22 and 25, 2006. Site clearing work commenced on September 25, 2006 and was completed on October 9, 2006 in eleven workdays. All chipped material was hauled off site by Eastwood.

2.3 Debris Removal and Disposal

The three major types of debris removed from the site included tires, scrap metal, and construction debris. Quantities of debris removed from the site were as follows: 64.04 tons of tires; 50.58 tons of scrap metal and 161.86 tons of construction debris. Disposal facilities for debris include the following. Buffalo Fuel Corp. and Modern Landfill for tires; Metalico Buffalo, Inc. and Diamond Horwitz Scrap, LLC for metals; and Browning Ferris Industries (BFI) in Niagara Falls, New York for construction debris. Further information regarding debris removal, including waste manifests, is presented in Appendix R.

Abatement of asbestos-containing debris was performed by Fibertech Environmental Services, Inc. of Buffalo, New York in accordance with Section XIV of the Contract Documents (Appendix O). The work included removal and disposal of two debris piles with asbestos-containing roof shingles and siding located on the northeast portion of the 858 East Ferry Street property. The asbestos abatement work took place on November 3, 2006. A total of 51.33 tons of asbestos-containing material was disposed of at Waste Management's Chaffee Landfill located in Chaffee, New York. A complete report for the asbestos abatement work at the 858 East Ferry Street site is presented in Appendix C.

2.4 UST Removal and Disposal

NES removed two underground storage tanks (USTs) from the site in June 2007. These tanks were designated as UST #1 West (located at 812 East Ferry St.), and UST #1 East (located at 856 East Ferry St.) UST #1 West was a 23-foot long, 7-foot diameter, steel tank. UST #1 East was a 35-foot long, 8-foot diameter, steel tank.

Prior to removal, NES tested the tank atmosphere for each tank with a four gas PID (Mini-Rae) and determined that all concentrations were within acceptable limits. After testing, the tanks were purged with nitrogen for 30 minutes as an additional precautionary measure.

After sampling the tank contents, approximately 1,200 gallons of a nonhazardous oil/water mixture was removed from UST West #1 and approximately 500 gallons of nonhazardous oil was removed from UST East #1. The waste oil and waste oil/water mixture were transported offsite for disposal by Safety-Kleen, Inc. of Lackawanna, New York.

UST # 1 East was removed from the site on June 19, 2007 and UST #1 West was removed on June 22, 2007. Soil samples were collected after excavation as required by the Contract Documents. The tanks were sold as scrap metal to Metalico Buffalo, Inc. Complete UST closure reports are included in Appendix D.

UST #1 West removal was included in the Contract Documents; however, UST #1 East was identified after remedial activities were underway. Contract modifications required for the additional UST removal are discussed in Section 3.2.

2.5 Excavation and Disposal of PCB Contaminated Material

Excavation of PCB contaminated material was performed on May 8, 2007. An approximately 800 square foot area located on the 858 East Ferry Street property (Appendix P) was excavated to a depth of one foot. A total of 77.23 tons of PCB contaminated material was transported offsite for disposal. Five confirmation samples were taken from the excavated area. All analytical results were below the detection limits (Appendix G) for the seven PCB congeners (aroclors 1016, 1221, 1232, 1242, 1248, 1254 and 1260), so no further excavation was required. Excavated material was transported to Modern Landfill for disposal.

2.6 Excavation, Stabilization, and Disposal of Lead Contaminated Material

Construction activities at the site occurred during two periods. The first period began on September 22, 2006 and lasted until January 25, 2007. After a winter shutdown, NES worked on the site from April 2, 2007 to November 7, 2007.

During the first period of construction activities, in November 2006, American Paving and Excavation, Inc. installed an asphalt work pad on the 858 East Ferry Street property. Also during this period, NES completed excavation of cells No. 11, 13, 15, and 16 (see Drawing C-001 in Appendix O). Excavated material from these cells was placed on the work pad and sampled for TCLP lead as required under Field Order No. 1 (Appendix L). Because samples results were below 5.0 ppm for TCLP lead, the Department waived the stabilization requirement for this material, and the excavated material was transported directly to the Ontario County Landfill (Casella Waste Systems), a Part 360 sanitary landfill, without treatment. Approximately 3,500 tons of excavated material was transported to the Ontario County Landfill for disposal.

After the winter shutdown, NES remobilized at the site in early April 2007. During April, NES completed the work on the asphalt work pad and stabilization area at 858 East Ferry Street. The stabilization area included soil-mixing bins, soil staging areas constructed with concrete blocks, and an area for storing and dispensing reagents used to stabilize the lead-contaminated soil. The work pad was also used by trucks for delivery of raw materials and for pick-up of stabilized material and included a decontamination area for the trucks.

Field tests were conducted in April 2007 using the stabilization reagents used for the full-scale stabilization operation, namely Redoxite and Terra Bond. These reagents were used in place of Ecobond® (Section 1.6) since sufficient quantities of Ecobond® were not readily available for full-scale remediation. Full-scale stabilization began shortly after the field test results were approved. During the full-scale stabilization operation, reagents were delivered to the site and emptied into transfer bins or "pigs". The reagents were then fed into a silo in equal proportions. The mixture of reagents was dispensed to a transfer sump prior to being used on site. During the project, 2,096.59 tons or an average of 1.5% by weight of the reagent mixture was utilized to stabilize lead-contaminated material.

The remedial cleanup goals for the project were to remove all soils exceeding a concentration of 400 mg/kg total lead at 858 East Ferry Street and a concentration of 1,000 mg/kg total lead at all other locations included in the remediation. During the excavation activities, verification samples were collected from the sidewalls and bottoms of excavations to determine if the goals were achieved. Sampling was performed in compliance with Section 02220 of the Contract Documents (Appendix O). In general, excavation of material continued if concentrations of total lead were detected in the verification samples above the remedial goal. However, excavation was terminated at property lines, right of ways, fence lines or if there were utility interferences even if results for total lead were above the remediation goal, as approved by the NYSDEC. A summary of samples above the goal where excavation was terminated and material above the goal was left in place is presented in Table 2-1 and shown on Figure 2-1. Notification letters were submitted to property owners informing them of this remaining material and are included in Appendix S.

A total of 136,020.57 tons of stabilized material was transported offsite for disposal. The original estimate included in the Contract Documents for transportation and disposal was 111,234 tons. The contract modifications required for excavation work are discussed in Section 3.4.

During the excavation activities, water collected in the excavations resulting from rainfall, was pumped from the excavation area to a frac tank located on the 858 East Ferry Street property. The water was then discharged to the sewer under a temporary permit granted by the Buffalo Sewer Authority (BSA). Water resulting from decontamination was also pumped to the frac tank and discharged to the BSA sewer.

Air monitoring was performed in accordance with the Contract Documents (Appendix O) during the excavation activities. Air monitoring records are included in Appendix F.

2.7 Backfill

Cells No. 11, 13, 15 and 16 were backfilled in December 2006 and January 2007 before the winter shutdown. The remainder of the excavated cells was backfilled after the winter shutdown, i.e. from April to October 2007.

A summary of backfill materials used on the project is provided below.

Backfill Source	Backfill Description
Buffalo Crushed Stone, Inc. – Wherle Plant	Silt/Clay Material
Modern Landfill	Clay/Silt Fill Material
Villa Maria College	Sandy Silt with Gravel, Brown
Wardman Street	Brown Clay/Silt, Little Sand, Trace Gravel
Artmeyer Pit	Brown Sand, Little Gravel, Trace Fines
Harlem Road	Information Not Available

Backfill materials were compacted in accordance with Section 02222 of the Contract Documents (Appendix O). Compaction testing was performed by SJB Services, Inc. Compaction test results are provided in Appendix H. Back fill analytical results are presented in Appendix G.

A total of 112,219.02 cubic yards of backfill was placed and compacted. The backfill quantity exceeded the contract quantity (74,156 cubic yards) because more material was excavated than originally specified. The contract modifications related to backfill are discussed further in Section 3.6.

2.8 Site Restoration

All excavated areas were restored. Restoration work in the excavated areas included concrete restoration, roadway restoration, and topsoil/hydroseeding. In addition, new fence was installed in areas where existing fence had been abandoned or as required for site security.

Quantities of restoration work are summarized below.

Type of Restoration	Quantity of Restoration
Concrete Restoration	967 square yards
Roadway Restoration	1,845 square yards
Topsoil/Seed	28,652.10 square yards
Security Fence left in place	1,929 linear feet
Permanent Fence	2,243 linear feet

Some modifications to the original restoration plan were required based on field conditions as discussed in Section 3.8.

2.9 Wells

Six monitoring wells (EF-MW-01, EF-MW-02, EF-MW-03, EF-MW-04, MW-3, and MW-4) were decommissioned by SJB Services, Inc. Four monitoring wells (MW-5, MW-6, MW-7, and MW-8) were installed by Natures Way. All new wells are installed into bedrock, are 6-inch diameter, and are 25 – 30 feet deep. Well decommissioning and construction was completed in accordance with Section 02733 of the Contract Documents (Appendix O). Well construction data is included in Appendix I.

3.0 CONTRACT MODIFICATIONS

This section discusses significant variations from the Contract Documents. All modifications were included in executed Change Orders No. 1 and No. 2 (Appendix J). Change Order No. 3 will be executed later and will be added as an addendum to this document.

3.1 Site Facilities and Services

This Section will be incorporated into a report addendum after Change Order No. 3 is approved.

3.2 Underground Storage Tank (UST) Removal

An additional Underground Storage Tank (UST) was found on site near the north property line at 856 East Ferry St. The UST was an approximately 10,000 gallon tank that was partially filled with petroleum. Costs associated with labor and equipment for tank removal, testing and disposal of tank contents, and testing of surrounding soil after removal were incurred for this unforeseen site condition. UST removal modifications are included in Change Order No. 1 (Appendix J).

3.3 Clearing and Grubbing

A larger area was cleared and grubbed than estimated in the Contract Documents. The area increased because confirmatory sampling showed that additional excavation and hence additional clearing and grubbing, was required to meet the remedial goals for the site. The area of clearing and grubbing increased from the contract amount of 29,000 square yards to 32,792 (an additional 3,792 square yards). Clearing and grubbing modifications are included in Change Order No. 1 (Appendix J).

3.4 PCB Waste Excavation and Disposal

Additional PCB wastes were identified during remediation, and they were excavated and disposed of at a licensed facility. The quantity of PCB waste increased from the contract amount of 50 tons to 77.23 tons (an additional 27.23 tons). PCB waste excavation and disposal modifications are included in Change Order No. 2 (Appendix J).

3.5 Lead Waste Excavation, Stabilization, Transportation and Disposal

The results from some post-excavation samples were above remedial goals indicating that the extent of lead contamination was greater than estimated in the Contract Documents. Consequently, a greater amount of lead contaminated material needed to be excavated, stabilized, and transported off site for disposal. The quantity of lead waste increased from the contract amount of 111,234 tons to 136,020.57 tons. Lead waste related modifications are included in change Orders No. 1 and No. 2 (Appendix J).

3.6 Clean Fill

Because the quantity of material excavated (Section 3.5) increased from the contract amount, more clean fill was needed to backfill the excavations. The quantity of clean fill increased from the contract amount of 74,156 cubic yards to 112,219.02 cubic yards. Contract modifications required to address the increased quantity of fill are included in Change Orders No. 1, No. 2 and No. 3 (Appendix J).

3.7 Security Fence

Much of the existing fence on site was obscured by vegetation. After clearing and grubbing, it was discovered that much of the existing fence was inadequate for site security and there were also some gaps found in the existing fence. Because of this unforeseen condition, additional fence was installed to secure the construction area. The quantity of security fence was increased from the contract amount of 1,111 linear feet to 2,250 linear feet. Contract modifications related to security fence are included in Change Orders No. 1 and No. 2 (Appendix J).

3.8 Site Restoration

Restoration of the site included concrete pad replacement, roadway replacement, fence replacement, and placement of topsoil and seed in disturbed areas. Modifications to the restoration plan included in the Contract Documents are discussed below.

3.8.1 Restore Roadway

Additional crushed stone road surface was needed to restore the driveway to Cell Tower No. 2 and the parking area behind 828 and 854 East Ferry Street. The quantity of roadway restoration increased from the contract amount of 945 square yards to 1,845 square yards. The roadway restoration modification is included in Change Order No. 2 (Appendix J).

3.8.2 Permanent Fence

The design of the permanent fence was modified to match existing fences at the site. The height of the fence was reduced from 8 feet to 6 feet and concrete footings for fence posts were eliminated. The design change reduced the unit cost of the permanent fence from $18 per linear foot to $14 per linear foot.

Excavation areas increased based on the results of confirmation sampling, and as a result more existing fence was removed and needed to be replaced. The quantity of permanent fence increased from the contract amount of 800 linear feet to 1,800 linear feet. The permanent fence modification is included in Change Order No. 2 (Appendix J).

3.8.3 Stone Replacement at No. 3 and No. 5 Junction Railroad

At the No. 3 and No. 5 Junction Railroad properties, the restoration plan included in the Contract Documents specified replacement of the existing concrete pad after excavation under the pad and placement of topsoil/seed in other areas disturbed by the excavation activities. At the request of the property owner, the surface of all disturbed areas was restored with crushed stone instead of concrete or topsoil/seed. This substitution resulted in a $4,800 savings to the State. The restoration modification at No. 3 and No. 5 Junction Railroad is included in Change Order No. 2 (Appendix J).

3.8.4 Additional Site Preparation at 812 East Ferry Street

The property owner at 812 East Ferry Street requested that the concrete restoration area at his property be moved closer to his building. To accomplish this relocation of the concrete area, the owner accepted a lesser quantity of concrete. However, a cost increase was required to cover work necessary to prepare the site for concrete work in the new area. The cost increase is included in Change Order No. 2 (Appendix J).

3.8.5 Asphalt Paving at TNT Auto (Cell No. 16)

Based on confirmatory sampling results, the excavation at cell No. 16 was expanded into the asphalt parking area at the TNT Auto (856 East Ferry Street) property. This expansion was not included in the Contract Documents nor was restoration of asphalt surfaces included as a bid item in the Contract Documents. Consequently, a new pay item for asphalt paving was included in Change Order No. 2 (Appendix J).

3.9 Additional Items

A number of items were added to the contract as a result of unforeseen site conditions. These items are discussed below.

3.9.1 Stone Placement at Cells No. 15 and No. 16

The Contract Documents specified that cells No. 15 and No. 16 were to be backfilled with clean fill. However, weather conditions were extremely wet during November 2006 when the backfilling needed to take place. Consequently, No. 2 limestone was substituted for clean fill in cells No. 15 and No. 16 to allow the project to continue in a timely and safe manner. The cost associated with the limestone substitution for cells No. 15 and No. 16 is included in Change Order No. 2 (Appendix J).

3.9.2 Buried Tires

Large quantities of buried tires were unearthed during excavation activities. Disposal was required, and the disposal facility required that the tires be pressure washed prior to disposal. Approximately 12 tons of buried tires were removed; and disposed of off site. The cost for buried tires is included in Change Order No. 2 (Appendix J).

3.9.3 Demarcation Barrier

After the excavation reached the northern property lines at 856 and 858 Ferry Street, samples showed lead concentrations above remediation goals; however, excavation did not continue on to the adjacent CSX property. Consequently, a poly barrier was placed along in the excavation demarcating the boundary between the end of the excavation and the residual lead

contaminated material left in place. The cost of the demarcation barrier is included in Change Order No. 2 (Appendix J).

3.9.4 Additional STARS Testing

Discoloration of soils and odors indicated soil in cell No. 9B might be contaminated with petroleum. The material was sampled and analyzed for STARS parameters. Costs associated with STARS testing are included in Change Order No. 2 (Appendix J).

3.9.5 Cell Tower Utility Relocation

Underground power and communication utilities connecting to a cell tower, not known to be present at the beginning of the project, were identified during the remediation. These utilities ran through areas of contamination that needed to be excavated. The Contractor worked with the utility companies to de-energize the lines and provided temporary power to the cell tower so that lead contaminated material under and around the utilities could be removed. Costs associated with cell tower utility relocation are included in Change Order No. 2 (Appendix J).

3.10 Final Contract Prices and Change Orders

Change Order No. 1 included six items. This change order increased contract amount by $943,458.31 and extended the contract time by 104 days.

Change Order No. 2 included fourteen items. This change order increased the contract amount by $925,032.41 and extended the contract time by 36 days.

Change Order No. 3 is not included in this Final Remediation Report because it is not yet complete. The final Remediation Report will be amended to reflect the final items and quantities after it is approved.

Table 3-1 summarizes both the bid and actual quantities and costs for the project through Change Order No 2.

TABLE 2-1
EAST FERRY STREET REMEDIATION PROJECT
NYSDEC SITE NUMBER 9-15-175
HIGH LEAD SAMPLE RESULTS - Materials Left In Place

Cell #	*Sample Location*	*Sample Result (ppm)*	*Action Taken*
1	**North Sidewall 3**	**462**	**Excavation terminated at propery line.**
1	**North Sidewall 5**	**929**	**Excavation terminated at propery line.**
1	**North Sidewall 7**	**1930**	**Excavation terminated at propery line.**
1	**North Sidewall 9**	**38800**	**Excavation terminated at propery line.**
1	**North Sidewall 10**	**1380**	**Excavation terminated at propery line.**
7	**North Sidewall**	**491**	**Excavation terminated at propery line.**
8	**North Sidewall 2**	**1150**	**Excavation terminated at propery line.**
8	**West Sidewall 1**	**3550**	**Excavation terminated due to water line.**
8	**West Sidewall 2**	**12300**	**Excavation terminated due to water line.**
9A	**South Sidewall 1**	**1100**	**Excavation terminated due to water line.**
9A	**North Sidewall 6**	**1570**	**Excavation terminated due to Cell Tower 2.**
9A	**Electric Pole Dutton East**	**2570**	**Excavation terminated due to utility. Approximately 180 cy. remains.**
9A	**Electric Pole Dutton West**	**5110**	**Excavation terminated due to utility.**
9A	**Conduit West**	**4830**	**Excavation terminated due to utility.**
9A	**Conduit West Sidewall**	**1110**	**Excavation terminated due to utility.**
9A	**Conduit East Sidewall**	**6040**	**Excavation terminated due to utility.**
9A	**Conduit Bottom**	**4250**	**Excavation terminated due to utility.**
9B	**South Sidewall 1**	**2500**	**Excavation terminated due to water line.**
9B	**South Sidewall 2**	**1810**	**Excavation terminated due to water line.**
9B	**South Sidewall 6**	**1040**	**Excavation terminated due to water line.**
9B	**South Sidewall 8**	**3060**	**Excavation terminated due to water line.**
9B	**South Sidewall 11**	**1310**	**Excavation terminated due to water line.**
9B	**Telephone & Electric Vault North**	**1100**	**Excavation terminated due to utility. Approximately 25 cy. remains.**
9B	**Telephone & Electric Vault South**	**60200**	**Excavation terminated due to utility.**
10A	**South Sidewall 1**	**1400**	**Excavation terminated due to water line.**
10A	**South Sidewall 2**	**1760**	**Excavation terminated due to water line.**
10A	**South Sidewall 3**	**1650**	**Excavation terminated due to water line.**
10B	**Electric Pole South West Side**	**1310**	**Excavation terminated due to utility. Approximately 100 cy. remains.**
10B	**Electric Pole North East Side**	**1740**	**Excavation terminated due to utility.**
16	**North Sidewall 1**	**2870**	**Excavation terminated due to active business.**
16	**North Sidewall 2**	**1160**	**Excavation terminated due to active business.**

Note: Bold indicates soil above clean-up criteria to remain in-place.

Table 3-1

Comparison of Bid Quantities and Costs to Actual Quantities and Costs

Item No.	Description	Units	Estimated Bid Quantity	Unit Price	Original Contract Amount	Change Order Quantity [2]	Change Order Amount [2]	Estimated + Change Order Quantity	Original + Change Order Amount	Actual Quantity	Amount Paid [1]
LS-1	Site Mobilization/Demobilization	Lump Sum	1	$326,000.00	$326,000.00			1	$326,000.00	1	$326,000.00
LS-2	Site Facilities and Servixces	Lump Sum	1	$258,000.00	$258,000.00			1	$258,000.00	1	$258,000.00
LS-3	UST Removal	Lump Sum	1	$4,000.00	$4,000.00	1	$24,134.15	1	$28,134.15	1	$28,134.15
LS-4	Debris Removal	Lump Sum	1	$9,000.00	$9,000.00			1	$9,000.00	1	$9,000.00
LS-5	Additional Site Prep - 812 East Ferry Street	Lump Sum				1	$2,887.03	1	$2,887.03	1	$2,887.03
LS-6	Stone Replacement at Cells #15 and #16	Lump Sum				1	$7,198.00	1	$7,198.00	1	$7,198.00
LS-7	Dispose Buried Tires	Lump Sum				1	$7,206.12	1	$7,206.12	1	$7,206.12
LS-8	Placement of Demarcation Barrier	Lump Sum				1	$1,666.99	1	$1,666.99	1	$1,666.99
LS-9	Additional STARS Testing	Lump Sum				1	$491.40	1	$491.40	1	$491.40
LS-10	Cell Tower Utility Relocation	Lump Sum				1	$30,082.82	1	$30,082.82	1	$30,082.82
LS-11	Asphalt Paving at TNT Auto	Lump Sum				1	$3,898.55	1	$3,898.55	1	$3,898.55
LS-12	Pollution Liability Insurance	Lump Sum	1	$10,000.00	$10,000.00			1	$10,000.00	1	$10,000.00
UC-1	Health and Safety	Days	170	$500.00	$85,000.00			170	$85,000.00	149	$74,500.00
UC-2	Post Excavation Sampling - Lead	Each	500	$50.00	$25,000.00			500	$25,000.00	313	$15,650.00
UC-3	Clearing and Grubbing	SY	29,000	$1.73	$50,170.00	3,792	$6,560.16	32,792	$56,730.16	32,792	$56,730.16
UC-4	PCB Waste Excavation and Sampling	Ton	50	$250.00	$12,500.00	27.23	$6,807.50	77.23	$19,307.50	77.23	$19,307.50
UC-5	Excavation,Stabilization,Transportation and Disposal	Ton	111,234	$52.00	$5,784,168.00	25,000	$1,300,000.00	136,234	$7,084,168.00	136,021	$7,073,069.64
UC-6	Clean Fill	CY	74,156	$11.74	$870,591.44	30,000	$352,200.00	104,156	$1,222,791.44	94,156	$1,105,391.44
UC-7	Top Soil/Fertilizer/Mulch/Seed	SY	24,157	$3.00	$72,471.00			24,157	$72,471.00	24,157	$72,471.00
UC-8	Decomission Esisting Monitoring Wells	Each	6	$2,500.00	$15,000.00			6	$15,000.00	6	$15,000.00
UC-9	Install Monitoring Wells	LF	105	$100.00	$10,500.00			105	$10,500.00	105.0	$10,500.00
UC-10	Security Fence	LF	1111	$12.00	$13,332.00	1139	$13,668.00	2,250	$27,000.00	2,243	$26,916.00
Total Page					**$7,545,732.44**		**$1,756,800.72**		**$9,302,533.16**		**$9,154,100.80**

1. Costs are based on CAP#6. Final CAP has not yet been submitted by the Contractor.
2. Based on CO#2. CO#3 has not been approved yet.

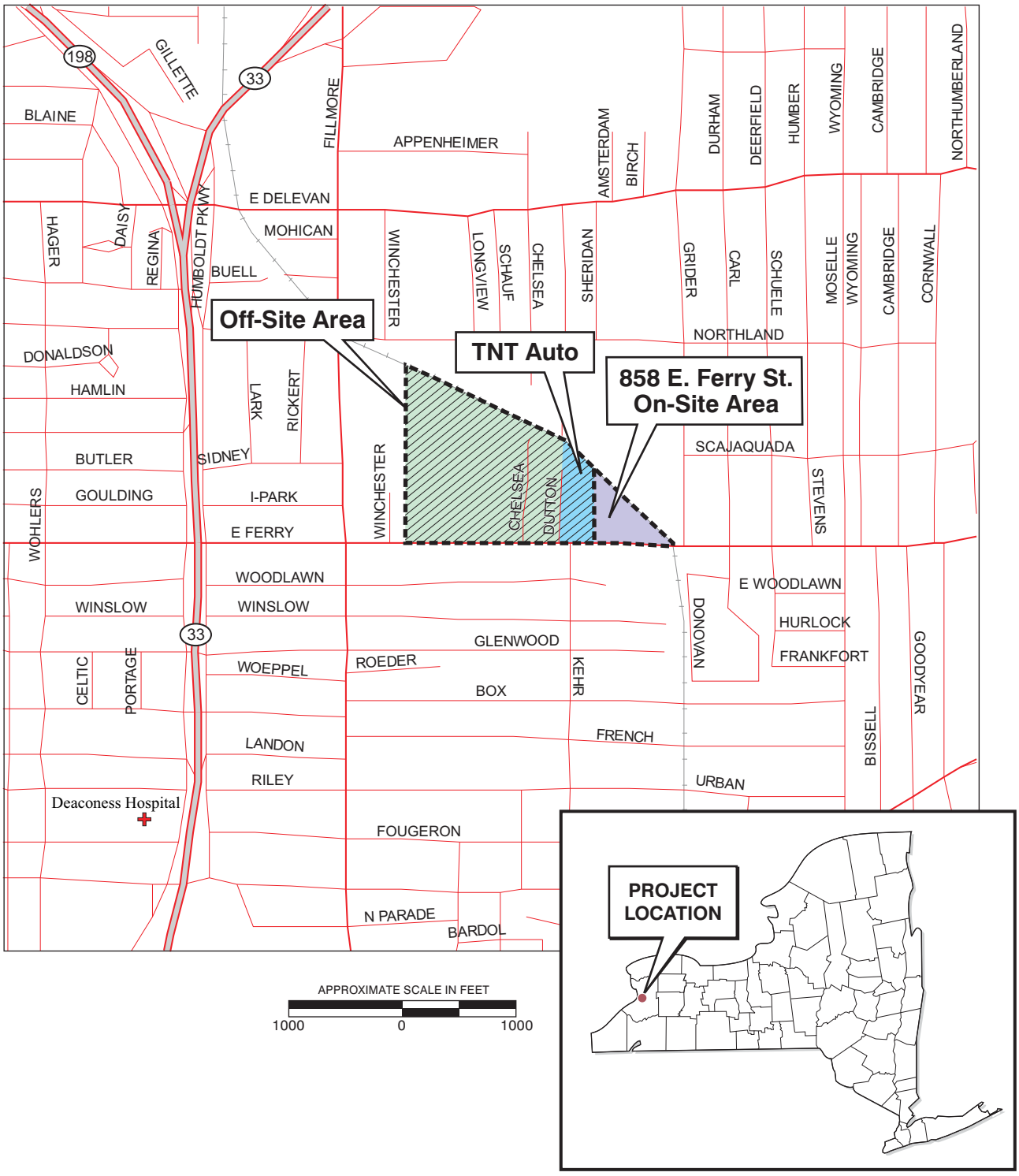
Table 3-1

Comparison of Bid Quantities and Costs to Actual Quantities and Costs

Item No.	Description	Units	Estimated Bid Quantity	Unit Price	Original Contract Amount	Change Order Quantity [2]	Change Order Amount [2]	Estimated + Change Order Quantity	Original + Change Order Amount	Actual Quantity	Amount Paid 1
UC-11	Permanent Replacement Fence	LF	800	$18.00	$14,400.00			800	$14,400.00	158	$2,844.00
UC-12	Concrete Demolition and Disposal	Ton	1,741	$10.00	$17,410.00			1,741	$17,410.00	0	$0.00
UC-13	Asphalt Demolition and Disposal	Ton	88	$10.00	$880.00			88	$880.00	9.26	$92.60
UC-14	Restore Demolished Concrete	SY	3,433	$32.00	$109,856.00			3,433	$109,856.00	985	$31,520.00
UC-15	Restore Roadway	SY	945	$5.00	$4,725.00	900	$4,500.00	1,845	$9,225.00	1,845	$9,225.00
UC-16	Revised Permanent Fence	LF		$14.00	$0.00	1,800	$25,200.00	1,800	$25,200.00	1,771	$24,794.00
UC17	Stone Placement at #3 nad #5 Junction RR	SY		$7.09	$0.00	11,000	$77,990.00	11,000	$77,990.00	10,689	$75,785.01

Total Page	**$147,271.00**	**$107,690.00**	**$254,961.00**	**$144,260.61**
Grand Total	**$7,693,003.44**	**$1,864,490.72**	**$9,557,494.16**	**$9,298,361.41**

1. Costs are based on CAP #6. Final CAP has not yet been submitted by the Contractor.
2. Based on CO#2. CO#3 has not been approved yet.



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AREA OF INVESTIGATION
EAST FERRY SITES - BUFFALO, NEW YORK
NYSDEC SITE #9-15-175

FIGURE 1-1

N

BUFFALO VAK

New York Central Railroad

1
JUNCTION RR

3
JUNCTION RR

5
JUNCTION RR

CELL TOWER

CELL TOWER

750
EAST FERRY ST.

Erie County
Youth
Detention Facility

810
EAST FERRY ST.

812
EAST FERRY ST.

828
EAST FERRY ST.

854
EAST FERRY
ST.

TNT AUTO

856
EAST FERRY ST.

858
EAST FERRY ST.

Winchester Ave

Dutton Ave

East Ferry St

Legend

Interpreted Location of Scajaquada Creek Drain

0 75 150 300
Feet

EAST FERRY STREET
SITE PLAN

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FIGURE 1-2

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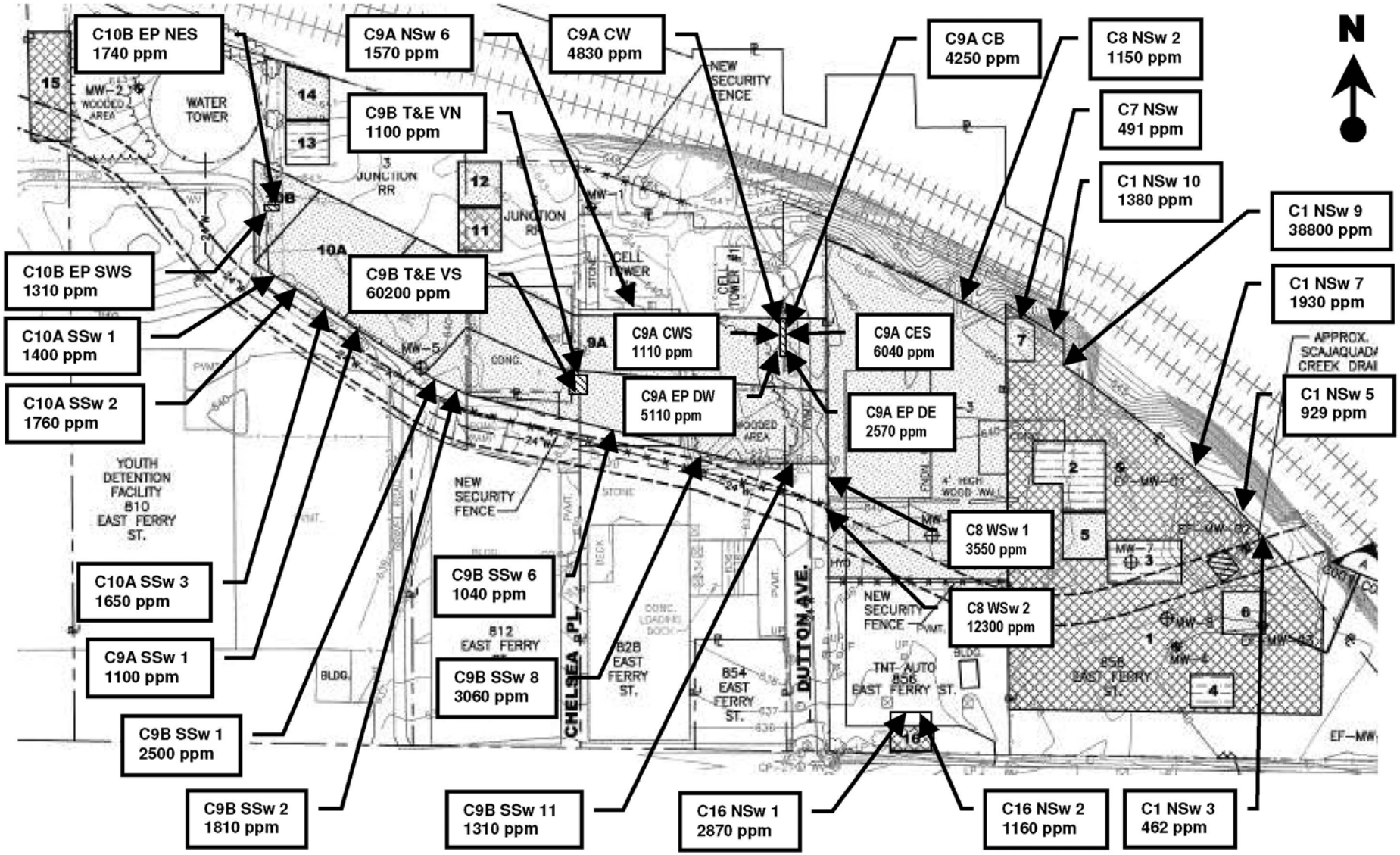

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EAST FERRY STREET REMEDIATION PROJECT
NYSDEC SITE # 9-15-175
HIGH LEAD SAMPLING LOCATIONS - MATERIALS LEFT IN PLACE

FIGURE 2-1