ABBREVIATED PRELIMINARY ASSESSMENT CHECKLIST

This checklist can be used to help the site investigator determine if an Abbreviated Preliminary Assessment (APA) is warranted. This checklist should document the rationale for the decision on whether further steps in the site investigation process are required under CERCLA. Use additional sheets, if necessary.

Checklist Preparer: Denise Breen /Associate Project Scientist (Name/Title) — September 5, 2014 (Date)

205 Campus Drive, Edison, NJ 08837 (Address) — (732) 417-5814 (Phone)

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Site Name: Columbia Smelting & Refining Works

Previous Names (if any): None

Site Location: 98 Lorraine Street (Street)

Brooklyn (City) New York (ST) 11231 (Zip)

581 (Block) 1 (Lot)

Latitude: + 40.6740094 **Longitude:** - 74.005926*

* The site location coordinates were obtained from a Global Positioning System (GPS) point collected during the off-site reconnaissance on April 8, 2014. The point was collected from the estimated facility entrance of the former smelting building.

Describe the release (or potential release) and its probable nature:

The property was included in a list of hundreds of locations nationwide where secondary lead smelting or alloying might have been conducted between 1931 and 1964. The list was originally compiled by William P. Eckel in a doctoral dissertation for George Mason University, and was based on entries in historical trade publications. The research was summarized in the article "Discovering Unrecognized Lead-Smelting Sites by Historical Methods" (Eckel et al., 2001), which was published in the American Journal of Public Health. Based on review of additional historical documents, including city directories and Sanborn® fire insurance maps, as well as an evaluation of current circumstances, EPA is attempting to identify if further investigation is warranted to evaluate possible public health threats associated with Columbia Smelting & Refining Works in Brooklyn, NY (hereafter referred to as "Site or subject property"). Appendix A presents a Site Location Map, Site Map, and Site Vicinity Map.

The operational history of the Columbia Smelting & Refining Works (Columbia Smelting) as a smelter is documented. A 1931 advertisement for Columbia Smelting & Refining Works, Inc., 98-106 Lorraine St., indicated that the company manufactured soft lead, antimonial lead, Babbitts, solder, and several other metal products. The advertisement also listed items consumed by the company, including cable lead, battery plates, and soft lead. The 1938 Sanborn map indicates the presence of "Columbia Smelting & Refining Works Inc., refinery & furnaces" at the subject property. The 1938 Sanborn map also depicts the Red Hook Houses federal housing development, "built 1938", located across Lorraine Street and north of the subject property. Red Hook Houses is the largest public housing development in Brooklyn, covering a large area from west-northwest to east-northeast of the subject property. The next available Sanborn map coverage of 1950 shows that the buildings on the subject property had been demolished and the property had been incorporated into a playground, which extends from Lorraine Street to Bay Street and Hicks Street to Henry Street and covers over that section of Creamer Street. The subject property is shown as vacant on available historical aerial photographs dated 1924 and 1940, which pre- and post-date the documented years of operation (i.e., 1931–1938). The 1943 aerial photograph depicts four baseball fields (still present today) at the aforementioned playground area; the footprint of the Site is located within the baseball field located at the corner of Hicks and Lorraine Streets.

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On February 28, March 15, and March 20, 2012, the City of New York Department of Parks and Recreation (NYC DPR) collected soil samples from the baseball fields and surrounding grassy areas. Soil samples collected on February 28 and March 15, 2012 were analyzed for lead only; sample results indicated the presence of lead ranging between 119 milligrams per kilogram (mg/kg) and 2,630 mg/kg. Between February 28 and March 15, 2012, NYC DPR added 1 inch of soil to each infield area. The March 20th soil samples were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), polychlorinated biphenyls (PCB), and total metals (including mercury). There were no detections of VOCs or PCBs. There were several detections of SVOCs, primarily polyaromatic hydrocarbons (PAH). Analytical results of lead and mercury were 812 mg/kg and 0.63 mg/kg, respectively. The baseball fields were subsequently closed.

On April 8 and August 14, 2014, Weston Solutions, Inc. (WESTON®) and EPA personnel visited 98 Lorraine Street in Brooklyn, NY, being the address of the former Columbia Smelting & Refining Works facility as indicated in Eckel's report and on reviewed Sanborn maps. A baseball field (one of four baseball fields located on the aforementioned playground area) was observed on the former location of the subject property. During the August 2014 reconnaissance performed by WESTON, the baseball fields were not closed off to the public and children and adults were seen on the baseball park property. There is currently exposed historical soil nearby both north and south of the former location of the Columbia Smelting facility. An expansive apartment complex with exposed historical soil and a playground, New York City Housing Association's (NYCHA) Red Hook East, is located directly north of the site; the apartment complex and playground were there while Columbia Smelting was in operation. Historical exposed soil was observed south of the site within Red Hook Park and along right-of-ways on Hicks Street, Henry Street, and Bay Street, where street-side trees are currently located.

Smelting is a key process in lead production that involves heating lead ore or recovered lead with chemical reducing agents. The secondary smelting processes can be responsible for releasing large amounts of lead contamination into the surrounding environment; therefore, the potential of a lead release to the surrounding properties might have existed while Columbia Smelting was in operation.

Part 1 - Superfund Eligibility Evaluation

If all answers are "no" go on to Part 2, otherwise proceed to Part 3.	**YES**	**NO**
1. Is the site currently in CERCLIS or an "alias" of another site?	☒	☐
2. Is the site being addressed by some other remedial program (Federal, State, or Tribal)?	☐	☒
3. Are the hazardous substances potentially released at the site regulated under a statutory exclusion (e.g., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the NRC, UMTRCA, or OSHA)?	☐	☒
4. Are the hazardous substances potentially released at the site excluded by policy considerations (i.e., deferred to RCRA corrective action)?	☐	☒
5. Is there sufficient documentation to demonstrate that no potential for a release that could cause adverse environmental or human health impacts exists (e.g., comprehensive remedial investigation equivalent data showing no release above ARARs, completed removal action, documentation showing that no hazardous substance releases have occurred, or an EPA approved risk assessment completed)?	☐	☒

Please explain all "yes" answer(s).

The CERCLIS ID is NYN000206593; the site is not currently on the National Priorities List (NPL).

Part 2 - Initial Site Evaluation

For Part 2, if information is not available to make a "yes" or "no" response, further investigation may be needed. In these cases, determine whether an APA is appropriate. Exhibit 1 parallels the questions in Part 2. Use Exhibit 1 to make decisions in Part 3.

If the answer is "no" to any of questions 1, 2, or 3, proceed directly to Part 3.	**YES**	**NO**
1. Does the site have a release or a potential to release?	☒	☐
2. Does the site have uncontained sources containing CERCLA eligible substances?	Unknown – EPA plans to collect samples.	
3. Does the site have documented on-site, adjacent, or nearby targets?	☒	☐

If the answers to questions 1, 2, and 3 above were all "yes" then answer the questions below before proceeding to Part 3.	**YES**	**NO**
4. Does documentation indicate that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?	☐	☒
5. Is there an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site?	☐	☒
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but there are nearby targets (e.g., targets within 1 mile)?	☐	☒
7. Is there no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site?	☒	☐

EXHIBIT 1
SITE ASSESSMENT DECISION GUIDELINES FOR A SITE

Exhibit 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. You will use Exhibit 1 in determining the need for further action at the site, based on the answers to the questions in Part 2. Please use your professional judgment when evaluating a site. Your judgment may be different from the general recommendations for a site given below.

Suspected/Documented Site Conditions		**APA**	**Full PA**	**PA/SI**	**SI**
1. There are no releases or potential to release.		Yes	No	No	No
2. No uncontained sources with CERCLA-eligible substances are present on site.		Yes	No	No	No
3. There are no on-site, adjacent, or nearby targets.		Yes	No	No	No
4. There is documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	Option 1: APA →SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	NA
5. There is an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site.	Option 1: APA →SI	Yes	No	No	Yes
	Option 2: PA/SI	No	No	Yes	NA

6. There is an apparent release and no documented on-site targets and no documented targets immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.	No	Yes	No	No
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.	No	Yes	No	No

Part 3 - EPA Site Assessment Decision

When completing Part 3, use Part 2 and Exhibit 1 to select the appropriate decision. For example, if the answer to question 1 in Part 2 was "no," then an APA may be performed and the "NFRAP" box below should be checked. Additionally, if the answer to question 4 in Part 2 is "yes," then you have two options (as indicated in Exhibit 1): Option 1 --conduct an APA and check the "Lower Priority SI" or "Higher Priority SI" box below; or Option 2 -- proceed with a combined PA/SI assessment.

Check the box that applies based on the conclusions of the APA:

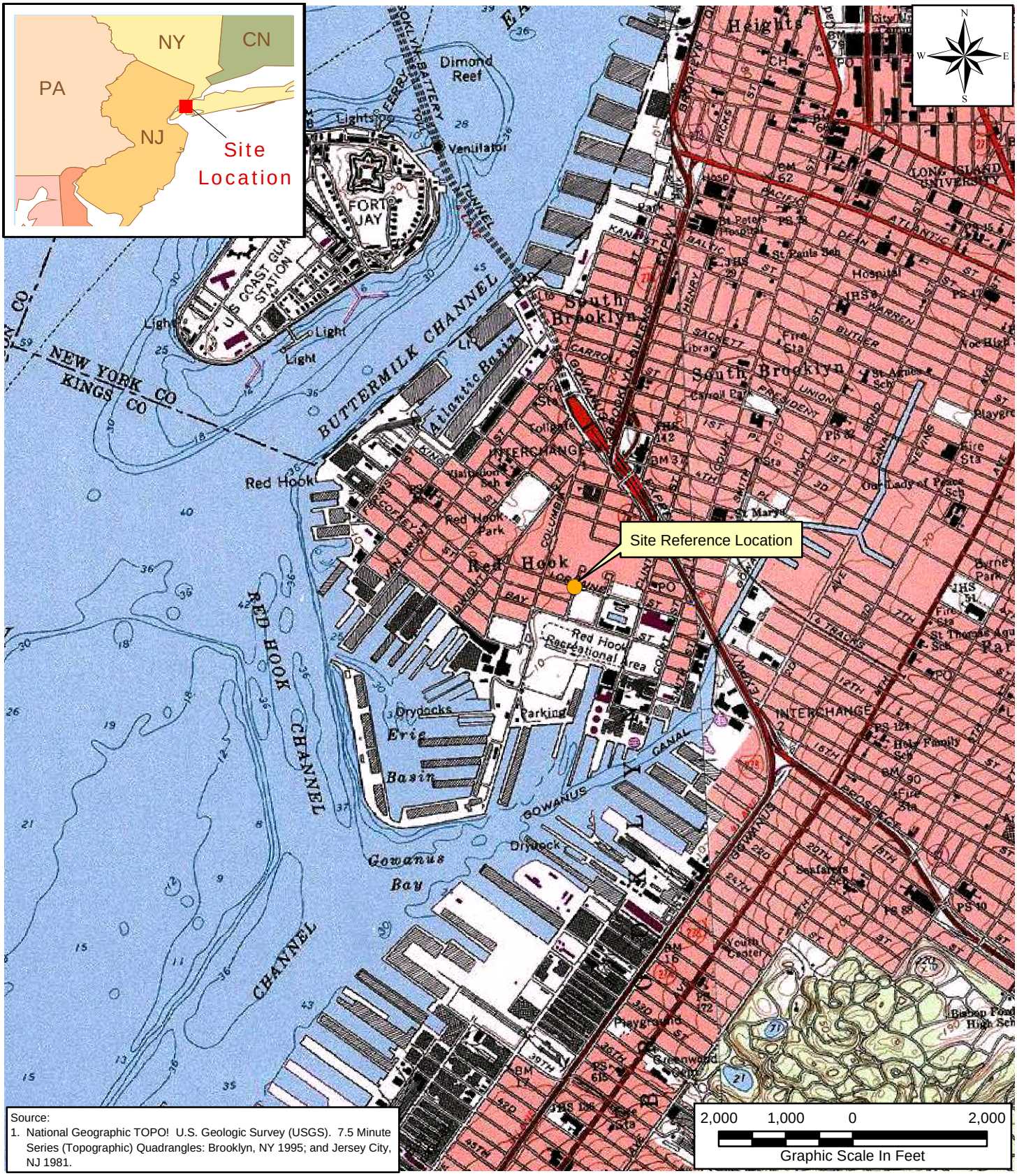
- ☐ NFRAP
- ☒ Higher Priority SI
- ☐ Lower Priority SI
- ☐ Defer to RCRA Subtitle C
- ☐ Defer to NRC
- ☐ Refer to Removal Program - further site assessment needed
- ☐ Refer to Removal Program - NFRAP
- ☐ Site is being addressed as part of another CERCLIS site
- ☐ Other: _____

Regional EPA Reviewer: _____ _____

Print Name/Signature Date

PLEASE EXPLAIN THE RATIONALE FOR YOUR DECISION: The Higher Priority SI decision is based on the historical presence of smelting operations at this address, and the presence of lead in on-site and downwind soil samples collected from a recreational area. The secondary smelting processes can be responsible for releasing large amounts of lead contamination into the surrounding environment; therefore, the potential of a lead release to the surrounding properties existed while the smelter was in operation. An SI can be used to determine if on-site waste sources are present and if nearby targets are exposed to site-related contamination.

Appendix A



Source:
1. National Geographic TOPO! U.S. Geologic Survey (USGS). 7.5 Minute Series (Topographic) Quadrangles: Brooklyn, NY 1995; and Jersey City, NJ 1981.

LEGEND:

Site Reference Location

TITLE:

Site Location Map
Columbia Smelting & Refining Works
98 Lorraine Street, Brooklyn, NY

PROJECT:
Columbia Smelting & Refining Works

CLIENT NAME:
EPA

WESTON SOLUTIONS

DATE:
September 2014

FIGURE #:
1

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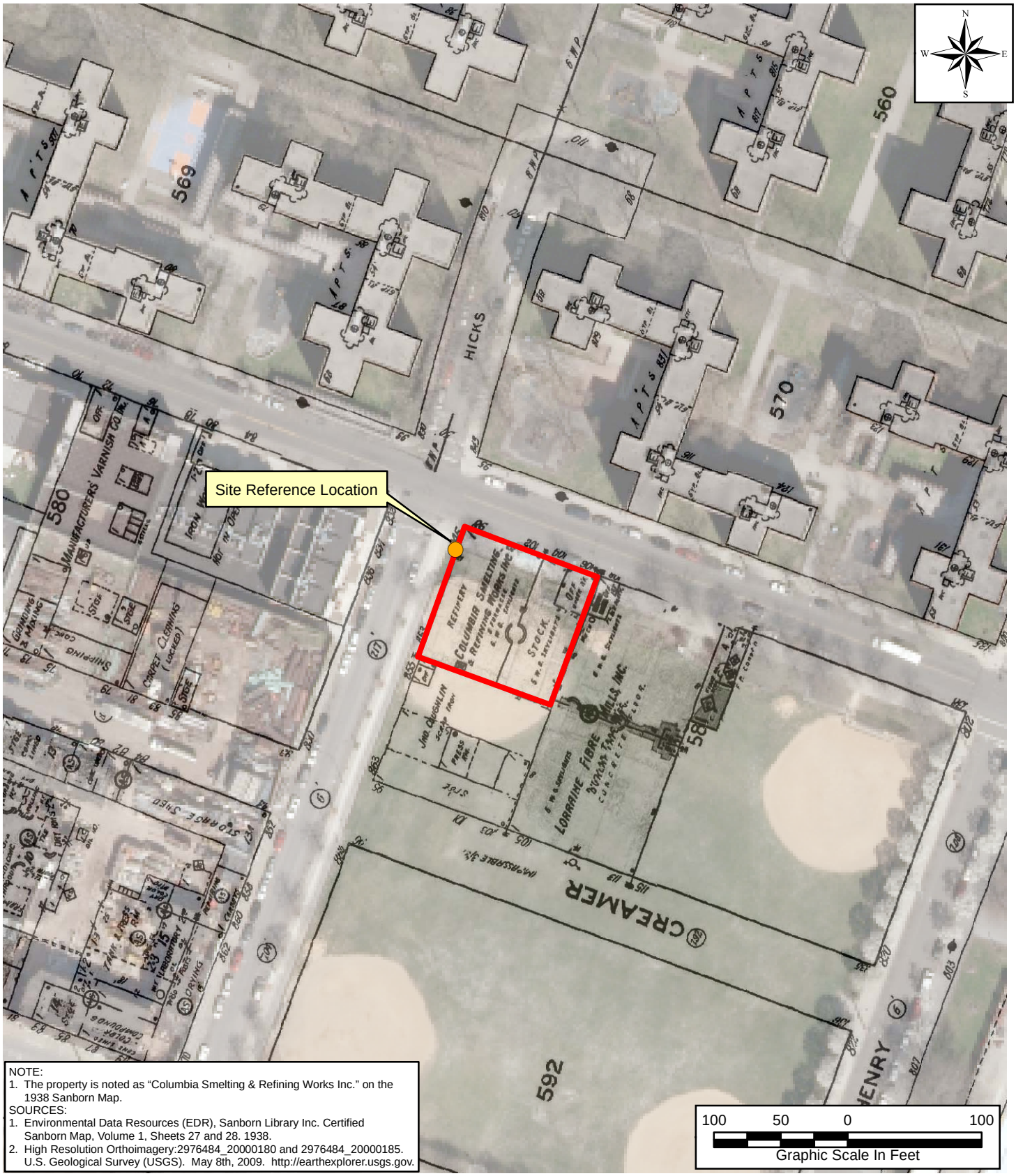

NOTE:
1. The property is noted as "Columbia Smelting & Refining Works Inc." on the 1938 Sanborn Map.

SOURCES:
1. Environmental Data Resources (EDR), Sanborn Library Inc. Certified Sanborn Map, Volume 1, Sheets 27 and 28. 1938.
2. High Resolution Orthoimagery:2976484_20000180 and 2976484_20000185. U.S. Geological Survey (USGS). May 8th, 2009. http://earthexplorer.usgs.gov.

LEGEND:

Site Reference Location

Approximate Footprint of the Former Smelter Facility

TITLE:

Site Map
Columbia Smelting & Refining Works
98 Lorraine Street, Brooklyn, NY

PROJECT:
Columbia Smelting & Refining Works

CLIENT NAME:
EPA

WESTON SOLUTIONS

DATE:
September 2014

FIGURE #:
2

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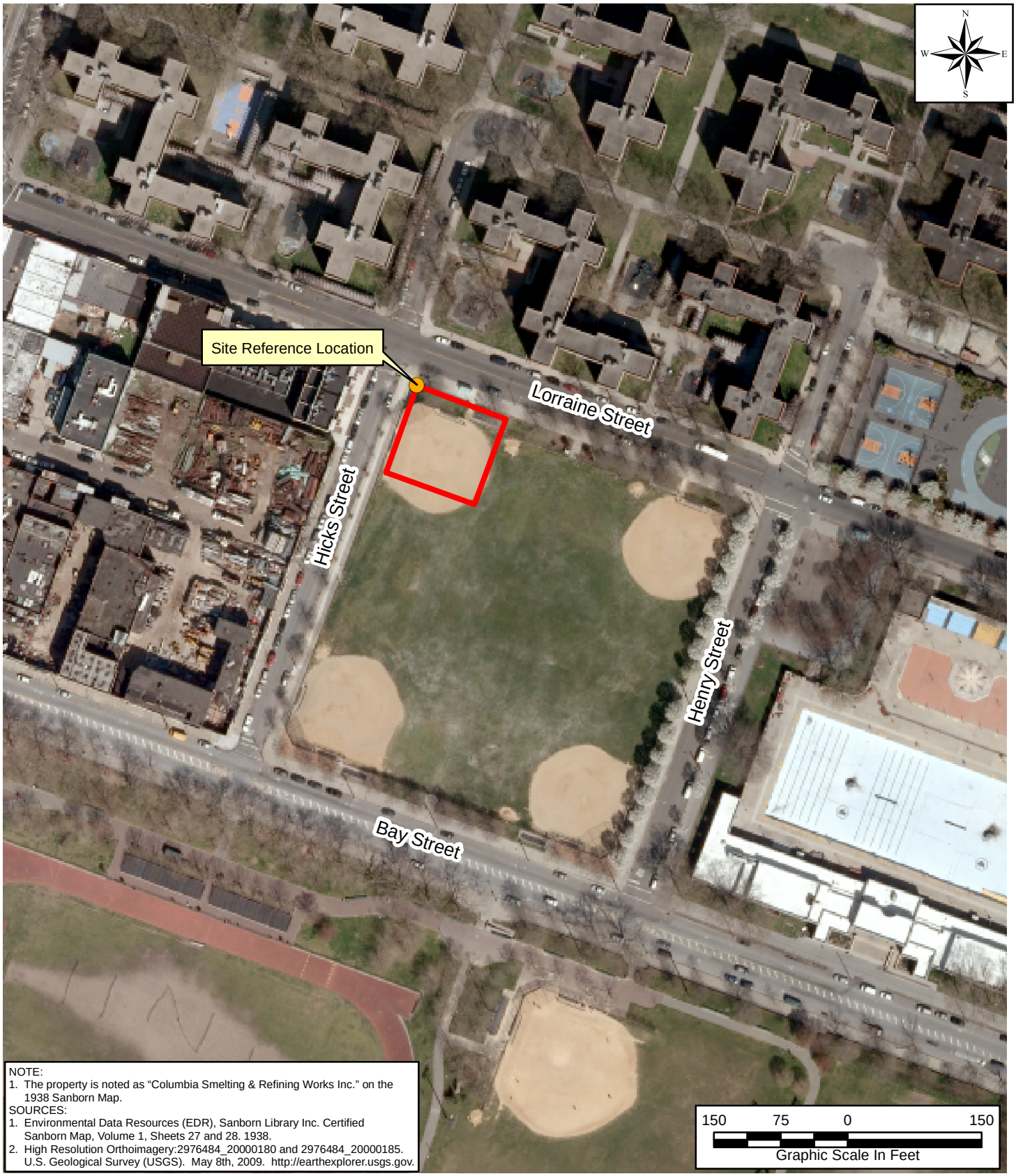

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LEGEND:

Site Reference Location

Approximate Footprint of the Former Smelter Facility

TITLE:

Site Vicinity Map
Columbia Smelting & Refining Works
98 Lorraine Street, Brooklyn, NY

PROJECT:
Columbia Smelting & Refining Works

CLIENT NAME:
EPA

WESTON SOLUTIONS

DATE:
September 2014

FIGURE #:
3

P:\SAT2\2014_Smelters_Sites\ColumbiaSmelting\MXD\15512_CSRW_Aerial_APA.mxd