

PHASE I ENVIRONMENTAL SITE ASSESSMENT
SOUTH LINCOLN PARK
WEST 10TH AVENUE AND NAVAJO STREET
DENVER, COLORADO 80204

Prepared for
City and County of Denver, Denver, Colorado
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BROWN AND CALDWELL

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LIST OF ACRONYMS

AAI	All Appropriate Inquiries
ACM	Asbestos Containing Material
amsl	above mean sea level
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
AUL	activity and use limitation
bgs	below ground surface
CCoD	City and County of Denver
CDL	Clandestine Drug Lab
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CFR	Code of Federal Regulations
Client	CCoD
CORRACTS	Corrective Action Report
CSEV	Colorado Soil Evaluation Values
DEUR	Declaration of Environmental Use Restriction
DHA	Denver Housing Authority
DOD	Department of Defense
DOT	Department of Transportation
EDR	Environmental Data Resources, Inc.
EP	Environmental Professional
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FUDS	Formerly Used Defense Sites
HMIRS	Hazardous Material Information Resource System
LAST	Leaking Aboveground Storage Tank
LQG	Large Quantity Generator
LUCIS	Land Use Control Information System
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
msd	minimum search distance
NFRAP	No Further Remedial Action Planned
NPL	National Priorities List
ODI	Open Dump Inventory
PAH	polynuclear aromatic hydrocarbon
PA/SI	Preliminary Assessment/Site Investigation
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
REC	recognized environmental condition
ROD	Record of Decision
RTD	Regional Transportation District

Site	South Lincoln Park property
SQG	Small Quantity Generator
SWLF	Solid Waste Facility
TSD	treatment, storage, and disposal
UMTRA	Uranium Mill Tailings Sites
UPRR	Union Pacific Railroad
U.S.C.	United States Code
USGS	United States Geologic Survey
UST	underground storage tank
VCP	Voluntary Cleanup
VEMURS	Voluntary Environmental Mitigation Use Restriction
VOC	volatile organic compound

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

EXECUTIVE SUMMARY

Brown and Caldwell performed a Phase I Environmental Site Assessment (ESA) for the South Lincoln Park property approximately located between West 9th Avenue and West 11th Avenue, Osage Street and Mariposa Street, Denver, Colorado (Site). This Phase I ESA is intended to serve as an appropriate, commercially prudent, and reasonable inquiry regarding the potential for *recognized environmental conditions* (RECs) in connection with the Site.

Property Description

The Site consists of approximately 16.5 acres of residential-developed land. The Site is located in an area generally developed for commercial, residential, and industrial use in Denver, Colorado. The Site is irregular in shape. See Figures 1 and 2 for a Site Vicinity Map and Site Plan, respectively. The topography of the Site is generally level. The geographic coordinates at the center of the Site are approximately longitude 105° 0' 14.8" West and latitude 39° 43' 55.9" North.

The current owner of the Site, according to the property deed and/or the 50-year chain of title report, is the Denver Housing Authority (DHA). The current owner has owned the Site since 1952. The Site has been developed as residential and commercial properties since at least 1890 according to the Sanborn Maps provided by Environmental Data Resources (EDR). The Site is generally flat, with surface water drainage toward the northwest onto the adjoining property. The regional topographic gradient is generally toward the northwest to the South Platte River.

Records Review

There is one NPL site, two CERCLIS sites, two NFRAP sites, seven CORRACTS sites, one RCRIS-SQG, five RCRIS-CESQG, 10 RCRIS-Non-Gen sites, one US Engineering Controls site, one US Institutional Controls site, one CONSENT site, one ROD, three SWF/LF, one AUL site, and four Colorado Voluntary Remediation sites within the minimum search distance (msd) of the site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There are 17 UST sites, 52 LUST sites, 10 LUST TRUST sites, and four AST sites within the msd of the Site. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time.

There are seven Historical Dry Cleaners and 29 Historical Auto Stations within the msd of the Site. Of these, three historical auto stations and one historical dry cleaner sites are located on the Site. Two of the 29 sites in the Historical Auto Station database are also included on the LUST site list with a closed status, but are not located on the target property. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time. Previous investigations conducted at 944 and 1001 Osage Street by Brown and Caldwell (BC 2005 and 2008) adjacent to and west of the Site indicated the presence of elevated concentrations of polynuclear aromatic

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hydrocarbons (PAHs) in surface soils. The proximity of these addresses to the Site may indicate the potential presence of elevated concentrations of PAHs in surface soils at the Site and may represent an environmental concern.

Physical Setting

The general flow direction of storm water run-off across the Site appears to be toward the northwest. The reported depth to groundwater in the vicinity of the Site is approximately 25 feet below ground surface (bgs) and the regional flow direction is approximately northwest.

Site Reconnaissance

Brown and Caldwell conducted a Site visit on December 17, 2009. The Site visit conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. The Site contains a multi-family residential housing development owned and operated by the DHA since 1952. Access inside the individual private residences was not possible during the Site visit; however an asbestos investigation will be conducted in the individual residences after this report has been submitted. The only hazardous materials observed during the Site visit were located at the maintenance facility at 1000 Navajo Street. These materials were either stored in a flammables cabinet located immediately outside of the maintenance building or on shelves inside the building. Staining was not observed on the ground or floors in the vicinity of these materials. Housekeeping procedures appeared to be good.

Interviews

Brown and Caldwell conducted interviews of regulatory agency staff and persons knowledgeable about the current and past uses of the Site during this Phase I ESA. Interviews conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. However, based on information obtained from these interviews, any subsequent subsurface investigations to be conducted at the Site should be conducted with the awareness of the potential for asbestos containing material (ACM) in soil and the potential for low levels of tetrachloroethene (PCE) in groundwater.

Findings, Opinions, and Conclusions

Based on the results of this Phase I ESA, Brown and Caldwell provides the following findings, opinions, and conclusions in connection with the Site.

This Phase I ESA has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

- The buildings demolished at the Site to make way for the existing housing project may have contained ACM. Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.
- The identification of historical dry cleaners and auto stations formerly located at the Site may indicate the potential presence of volatile organic compounds (VOCs) in soil or groundwater. While no regulatory records were identified indicating direct evidence of a release, subsequent subsurface investigations at the Site should be conducted with the awareness of the potential for VOCs in soil and/or groundwater.
- The presence of the three former cleaners at 1225 West 9th Ave, 1003 Mariposa (St), and 951 Mariposa St identified in the city directory search constitutes a REC.

This Phase I ESA has revealed no evidence of historical recognized environmental conditions in connection with the property.

This Phase I ESA has revealed no de minimis conditions or environmental concerns in connection with the property; except for the following:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential surface soil impacts due to railroad activities and the surface soil impacts identified during previous investigations conducted at 944 and 1001 Osage Streets discussed in section 4.2.

Based on our understanding of the City and County of Denver's (CCoD's) unique interests in this Site and based on the results of this Phase I ESA, Brown and Caldwell provides the following recommendations:

- Conduct a subsurface investigation at the Site to address the REC indicating the potential for ACM in soil. A qualified person should be available to identify ACM if demolished building debris is encountered. Samples should be submitted for laboratory analysis if potential ACM is identified.
- During the course of the subsurface investigation at the Site, collect surface soil samples (between zero and two feet bgs) for laboratory analysis to address the potential for PAHs in soil based on the results of the sampling conducted at 944 and 1001 Osage Street.
- During the course of the subsurface investigation at the Site, field screen soil samples for VOCs to address the potential for impacts from the historical auto stations and dry cleaners identified to have existed at the Site. If field screening indicates potentially elevated VOC concentrations, submit soil samples for laboratory analysis. Additionally, collect groundwater samples for laboratory VOC analysis. These borings should be focused at locations where the highest potential for impacts may occur as indicated by the historical use investigation and database review in this report.

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

1. INTRODUCTION

1.1 Purpose

The City and County of Denver (CCoD) has retained Brown and Caldwell to perform a Phase I Environmental Site Assessment (ESA) for the property located between West 9th Avenue and West 11th Avenue, Osage Street and Mariposa Street, Denver, Colorado (Site). The Site consists of approximately 16.5 acres of residential-developed land. The Site is currently owned by the Denver Housing Authority (DHA) who has owned the Site since 1952. CCoD (Client) stated that the specific reason for this Phase I ESA was to evaluate environmental conditions at the Site in support of the Client redeveloping the Site. This Phase I ESA is intended to serve as an appropriate, commercially prudent, and reasonable inquiry regarding the potential for recognized environmental conditions in connection with the Site. This report is intended to satisfy the Phase I ESA portion of “*all appropriate inquiry*” into the previous ownership and uses of the Site as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at Title 42 of the United States Code (U.S.C.) §9601(35)(B) and in accordance with 40 Code of Federal Regulations (CFR) Part 312, Standards and Practices for All Appropriate Inquiries; Final Rule (AAI Rule).

1.2 Scope OF Services

Based on the requirements presented in the American Society for Testing and Materials (ASTM) Standard Practice E 1527-05, Brown and Caldwell performed the following tasks as part of this Phase I ESA. At the Client’s request, the scope of services included the following tasks to provide them with a baseline evaluation of the environmental conditions at the Site.

Task 1 - Records Review. Obtain and review records that identify potential recognized environmental conditions or historical recognized environmental conditions in connection with the Site. The minimum search distance (msd) followed ASTM recommendations for standard and additional environmental record sources. This includes a review of the Site’s deed of record to identify environmental liens that may have been recorded for the Site and a 50-year Chain-of-Title report.

Task 2 - Site Reconnaissance. Conduct a Site visit to determine the potential for a recognized environmental condition present at the Site. Also, observe neighboring properties, to the degree possible, for land uses or other aspects that indicate potential recognized environmental conditions that could adversely affect the Site.

Task 3 – Interviews. Interview people with knowledge of the Site to obtain information regarding the potential for recognized environmental conditions or historical recognized environmental conditions.

Task 4 - Evaluation and Report Preparation. Brown and Caldwell prepared this report detailing the findings associated with each of the above-listed tasks.

The detailed scope of Brown and Caldwell’s services for this project is included as **Appendix A**.

1.3 Limiting Conditions

This Phase I ESA report has been prepared for the exclusive use of the CCoD and their assignees in accordance with the standards of the environmental consulting industry at the time the services were performed, and in general accordance with the master services agreement between CCoD and Brown and Caldwell dated February 3, 2009. This work has been performed for the sole purpose of assisting in the evaluation of *recognized environmental conditions* associated with the Site. This Phase I ESA report is governed by the specific scope of work authorized by CCoD and is not intended to be relied upon by any other party. The findings presented herein are based upon observations of Site conditions as of the date the assessment was performed and a review of *reasonably ascertainable* standard records sources. The findings and conclusions presented herein should not be assumed to apply to conditions or operating practices on this property occurring subsequent to Brown and Caldwell's actual Site visit.

The findings of the Phase I ESA, as represented within this report, must be viewed in recognition of certain limiting conditions. The scope of work commissioned for this project does not represent an exhaustive study, but rather a reasonable inquiry, consistent with good commercial practice, in general accordance with ASTM Practice E 1527-05. In the course of this assessment, Brown and Caldwell has relied on information provided by outside parties, such as regulatory agencies and interview sources. Brown and Caldwell has made no independent investigation as to the validity, completeness, or accuracy of such information provided by third-party sources. For the purposes of this assessment, such third-party information is assumed to be accurate unless contradictory evidence is noted, and Brown and Caldwell does not express or imply any warranty regarding information provided by third-party sources. This Phase I ESA report makes no representation that environmental contamination does not exist at this Site beyond that described in this report.

Throughout this Phase I ESA report, italicized terms refer to specific definitions set forth in Section 3.2 of the ASTM Standard. Some of the specific definitions relating to Phase I ESAs are included in **Appendix B**.

The purpose of this Phase I ESA is to identify, to the extent feasible, pursuant to the scope and limitation of the guidelines set forth in the ASTM Practice E 1527-05, *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the property. The term *recognized environmental condition* is defined by ASTM (2005) as:

The presence or likely presence of any *hazardous substances* or *petroleum products* on a property under conditions that indicate an existing release, a past release, or a *material threat* of a release of any hazardous substance or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or to the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The term *historical recognized environmental condition* is defined by ASTM (2005) as:

An environmental condition which in the past would have been considered a *recognized environmental condition*, but which may or may not be considered a *recognized environmental condition* currently. The final decision rests with the environmental professional and will be influenced by the current impact of the *historical recognized environmental condition* on the property. If a past release of any hazardous substances or petroleum products has occurred in connection with the property and has been remediated, with such remediation accepted by the responsible regulatory agency (for example, as evidenced by the issuance of a no further

action letter or equivalent), this condition shall be considered an *historical recognized environmental condition* and included in the findings section of the Phase I Environmental Site Assessment report.

The term *reasonably ascertainable* is defined by ASTM (E 1527-05) as:

Information that is *publicly available* to anyone upon request, obtainable from its source within reasonable time and cost constraints, and *practically reviewable*.

The term *practically reviewable* is defined by ASTM (E 1527-05) as:

Information is provided by the source in a manner and in a form that, upon examination, yields information relevant to the property without the need for extraordinary analysis of irrelevant data. The form of the information shall be such that the user can review the records for a limited geographic area. Records that cannot be feasibly retrieved by reference to the location of the property or a geographic area in which the property is located are not generally *practically reviewable*.

Reasonable time and cost means that the information will be provided by the source within 20 calendar days of receiving a written, telephone, or in-person request at no more than a nominal cost intended to cover the source's cost of retrieving and duplicating the information.

1.4 Exceptions or Deviations from Standard

Exceptions or deviations for this assessment include the following:

- Aerial photographs and other historical records were not available at 5 year intervals as required under the ASTM E 1527-05 standard. This resulted in a data gap for years that records were not available regarding the area of the Site. However, it appears that based on the information provided by the owner of the property and the chain-of-title report, the Site has been owned by DHA since 1952. Therefore, this data gap is not considered to be significant in determining *recognized environmental conditions* at the Site.

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

2. USER PROVIDED INFORMATION

The *Client* is the party seeking to use Practice E1527 to complete an environmental site assessment of the property. The *user* has specific obligations for completing a successful application of the Practice.

The *Client* obtained a completed ASTM User Questionnaire from CCoD. A copy of the completed form is included in **Appendix C**. The following summarizes the information provided to Brown and Caldwell regarding the Site.

2.1 Reason for Performing Phase I ESA

CCoD has informed Brown and Caldwell that the specific reason for this Phase I ESA was to evaluate the potential for *recognized environmental conditions* at the Site in support of the Client redeveloping the Site. This Phase I ESA is therefore intended to serve as an appropriate, commercially prudent, and reasonable inquiry regarding the potential for *recognized environmental conditions* in connection with the Site. This report will provide the Client an “*all appropriate inquiry*” into the previous ownership and uses of the Site defined under CERCLA at Title 42 of the U.S.C. §9601(35)(B), as clarified by 40 CFR 312.

2.2 Commonly Known or Reasonably Ascertainable Information

DHA completed the User Questionnaire and indicated the following in regards to the Site:

- DHA is unaware of any other commonly known or reasonably ascertainable information regarding the Site.

2.3 Property Value Comparison to Purchase Price

DHA reported to Brown and Caldwell in the User Questionnaire that the anticipated purchase or lease price of the property is not applicable since a property transfer will not occur. The Site will remain the property of the DHA as part of the South Lincoln Park redevelopment plan.

2.4 Specialized Knowledge

In the User Questionnaire, DHA indicated that they did not have specialized knowledge regarding environmental conditions at the Site.

2.5 Title Records

DHA did not provide title records for the Site. Brown and Caldwell was contracted to obtain a 50-year chain-of-title report to provide historic ownership information and to conduct a search for environmental liens for the Site. The information regarding the title records is further discussed in Section 4.1.1 and can be found in **Appendix D**.

2.6 Environmental Liens or Activity and Use Limitations

Brown and Caldwell contracted Environmental Data Resources (EDR) to perform an environmental lien search on the property (Site). According to EDR, there are no environmental liens associated with the Site. The environmental lien search report is included in **Appendix E**.

2.7 Owner, Property Manager, or Occupant Information

CCoD indicated that the DHA, a quasi-municipal corporation governed by a nine-member Board of Commissioners appointed by the Mayor of Denver, currently owns, manages, and conducts operations at the Site. The contact names, numbers and other information are as follows:

Kimball Crangle
DHA Redevelopment Project
Manager
720-932-3123
kcrang@denverhousing.org

Cathy Martinez
Maintenance Supervisor
South Lincoln Homes
303-534-3731 office
720-854-8214 -work cell
303-893-4237 - fax #
cmarti@denverhousing.org

Dave Wilmoth, PE, PG
City and County of Denver
Dept. Of Environmental Health
Env. Quality Division
200 W. 14th Ave, Dept. 310
Denver, CO 80204
Phone: (720) 865-5438
Fax: (720) 865-5534
Mobile: (303) 619-9685
dave.wilmoth@denvergov.org

The nature of these operations is low income housing.

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

3. SITE PHYSICAL SETTING OVERVIEW

3.1 Location

The Site is located in an area generally developed for commercial, residential, and industrial use in Denver, Colorado. See **Figure 1** for a Site Vicinity Map. Brown and Caldwell completed a site visit checklist for the Site that is included as **Appendix F**.

Site Address: Located between West 9th Avenue and West 11th Avenue, Osage Street and Mariposa Street, Denver, Colorado.

Legal Description: The description is included in the 50-year Chain-of-Title report in **Appendix D**.

Property Uses in Surrounding Area: The Site is situated within a developed urban area, mainly with residential areas nearby.

Zoning: According to the Denver County Assessor's website, the Site is currently zoned R3. This is "a residential structure which is the primary residence of eight or fewer persons, but housing a number of unrelated persons in excess of the number of unrelated persons allowed per dwelling unit in the zone district or transitional housing of any size. This use shall not include a residence for older adults, community corrections facility, shelter for the homeless, rooming and/or boarding house, nursing home, safehouse or large special care home."

3.2 Current Ownership/Use of Site and Adjoining Properties

3.2.1 Current Site Uses

The current owner of the Site, according to the property deed and/or the 50-year chain of title report, is the DHA. The DHA has owned the Site since 1952. The current use of the Site is multi-family residential housing. The Site has been developed as residential and commercial properties since at least 1890 according to the Sanborn Maps provided by EDR.

3.2.2 Current Adjoining Property Uses

For the purpose of this Phase I ESA, the term *adjoining property*, as defined by ASTM E-1527-05 Standard, refers to properties that border, or are contiguous or partially contiguous to the Site, or properties that would be if a street, road, or other public thoroughfare did not separate them.

Adjoining properties were visually observed from public access right-of-ways to make a cursory assessment of current land use and its potential for *recognized environmental conditions* that may have an impact on the Site. Reconnaissance of *adjoining properties* was performed by review of vicinity records, viewing land use from legal boundaries, or by walking upon the *adjoining properties* that were legally accessible. Uses of the *adjoining properties* to the Site are as follows:

Uses of Adjoining Properties	
North	Lincoln Park (CCoD park)
East	Single and multi-family residential housing
West	Railroad tracks (Regional Transportation District [RTD] and Union Pacific Railroad [UPRR])
South	Commercial property and residential housing

3.3 Physical Characteristics

3.3.1 Physical Features and Topography

Approximate Size of Site (acres): The Site is approximately 16.5 acres.

Approximate Shape of Site: The Site is irregular in shape. See **Figure 2** for a general Site Plan.

Site Topography: The topography of the Site is generally level, but slopes slightly to the northwest. Geographic coordinates are approximately: longitude 105° 0' 14.8" West and latitude 39° 43' 55.9" North. Please refer to **Figure 1**, Site Vicinity Map.

Regional Surface Topography and Manmade Features: Brown and Caldwell reviewed available United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps for the Site and vicinity to determine the physical setting of the Site. The 1994, 7.5-minute USGS topographic quadrangle map of Fort Logan indicates the general direction of surface slope to be northwest. See Site Topographic Map included in **Appendix G**.

The 1994, 7.5-minute USGS topographic quadrangle map of Fort Logan indicates the general area of the Site is a developed urban area. There is a railroad track along the western border and the South Platte River is located approximately 0.5 miles west of the Site.

Approximate Elevation of Site: Surface elevation for the Site is approximately 5,240 feet above mean sea level (amsl) based on information from the EDR report.

Surface Drainage on the Site: The general flow direction of surface storm water across the Site appears to be toward the northwest into the adjoining property. However, storm water drains are present throughout most of the Site (see **Figure 2**).

Drainage from Adjacent Sites: It is not believed that storm water from adjacent sites drain on to the Site due to existing storm water collection infrastructure to the north, east, and south of the Site.

Flood Zones: According to the Radius Map provided by EDR, the Site does not lie within a 100-year or 500-year flood plain.

3.3.2 Geology and Hydrology

General Regional Geology: The Site is located within the South Platte River Valley, a broad alluvial basin which includes much of the greater Denver area. The underlying bedrock is generally referred to as the Denver Formation.

The South Platte River is located approximately 0.5 miles to the west of the Site.

Soil Conditions: According to the Soil Conservation Service information provided in the EDR report, the soil component at the Site is named Nederland.

Approximate Depth and Flow Direction of Groundwater: The depth to groundwater reported in Brown and Caldwell's 2005 soil and groundwater investigation for 944 and 1001 Osage Street (BC 2005) is approximately 25 feet bgs and the apparent groundwater flow direction is likely to the northwest.

Regional Groundwater Conditions: Information received from EDR regarding wells in the vicinity of the Site was used to infer the potential depth to groundwater in the vicinity of the Site. There were 446 wells identified within one mile of the Site. The average water levels reported for these wells ranged from 5.06 feet to 375 feet below ground level. The EDR radius map report is included in **Appendix H**.

It should be noted that regional hydrogeologic data may not predict site-specific conditions, such as isolated perched-water systems or local variations in groundwater flow due to recent precipitation or high-volume pumping in the area.

3.4 Site Physical Summary

The Site is a primarily a residential developed property located within the City limits of Denver, Colorado. The Site is owned by the DHA who has owned the property for the last 58 years and has operated multi-family residential housing there. Prior to this, the Site was residential property. The surrounding properties are mixed residential, commercial, and industrial property. The Site is generally flat, with surface water drainage toward the northwest into the adjoining property. The regional topographic gradient is generally toward the northwest toward the South Platte River. The soils in the general area of the Site are a sandy loam with moderate infiltration and intermediate water holding capacity. The depth to groundwater reported in Brown and Caldwell's 2005 soil and groundwater investigation for 944 and 1001 Osage Street (BC 2005) is approximately 25 feet bgs. The approximate groundwater flow direction for the Site is toward the northwest. There were 446 wells identified within one mile of the Site. The average water levels reported for these wells ranged from 5.06 feet to 375 feet below ground level.

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

4. RECORDS REVIEW

4.1 Historical Use Information

Brown and Caldwell reviewed *reasonably ascertainable* standard historical sources in an attempt to develop a history of the previous uses or occupancies of the Site and surrounding area. The objective was to identify those uses or occupancies that were likely to have led to *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the Site. Brown and Caldwell attempted to identify uses or occupancies of the Site dating from the present back to when the property was first developed, or dating to at least 1940. These sources and findings are summarized in the sections which follow.

4.1.1 Chain of Title Report (50 Years)/Property Deed Review/Environmental Lien Search

Denver County warranty deeds were reviewed by EDR to obtain a 50-year Chain-of-Title report for the Site. Supporting information is included in **Appendix D**.

According to the ownership information, the current owner of the Site is the DHA.

The ownership information did not reveal past owners of the Site whose company titles or individual names suggest activities typically associated with the use, generation, storage, or disposal of hazardous materials or petroleum products. In addition, no petroleum pipeline easements were identified on the Site.

Based on the results of the title inquiry by EDR, the Site has had no activity and use limitations, leases, Notices of Voluntary Environmental Mitigation Use Restriction (VEMURs), Declarations of Environmental Use Restriction (DEURs), or Environmental liens.

4.1.2 Historical Aerial Photographs

Brown and Caldwell reviewed *reasonably ascertainable* aerial photographs depicting development of the Site and vicinity at a minimum of 5-year intervals, as summarized in **Table 4-1**. Aerial photographs and other historical records were not available at 5 year intervals as required under the ASTM E 1527-05 standard. However, it appears that based on the information provided by the owner of the property and the chain-of-title report, the Site has been owned by DHA since 1952. The aerial photographs were provided for review by EDR. The quality of evaluation of aerial photographs is controlled by the photograph's scale and quality. Copies of the aerial photographs provided by EDR have been included in **Appendix I**.

Table 4-1. Aerial Photograph Summary

Date	Source of Aerial	Photo ID No. (if available)	Site	Adjacent Properties
1937	EDR	NA	The Site appears to be developed residential property.	The property to the north appears to be a park (Lincoln Park). Properties to the east and south appear to be primarily residential with some likely commercial and industrial. To the west are multiple railroad tracks and maintenance facilities. A roundhouse can be seen on railroad property southwest of the Site,
1954	EDR	NA	The Site appears to be redeveloped into the housing project that currently exists.	Little or no change from the previous photograph. The adjoining properties to the south are not visible.
1963	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph.
1977	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph except that the roundhouse appears to have been removed, though some remnants remain.
1983	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph.
1988	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph.
1994	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph.
2005	EDR	NA	Little or no change from the previous photograph.	Little or no change from the previous photograph.

NA – Not Applicable

No environmental concerns were observed at the Site in the aerial photographs reviewed, nor were there likely RECs or HRECs with the following exceptions:

- The presence of multiple railroad tracks, the maintenance facility, and the roundhouse on adjacent properties to the west and southwest likely constitute an environmental concern based on soil sampling results from previous investigations conducted on portions of the Site (BC 2005 and 2007). However, it is not anticipated that groundwater beneath the Site would be impacted due to the suspected northwest groundwater flow direction.
- The buildings demolished at the Site to make way for the existing housing project may have contained asbestos containing material (ACM). Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.

4.1.3 Historical City Directories

EDR conducted a review of available City Directories within the vicinity of the Site. Brown and Caldwell reviewed the results and identified in **Table 4-2** pertinent information relating to the historic use of the Site. Copies of the City directory review by EDR have been included in **Appendix J**.

Table 4-2. Historical City Directory Summary

Year	Listing Address	Listing Name	Approximate Distance and Direction from Site
1926	1225 (West) 9 th Ave.	Martin Lee Lula B clothes cleaner	TP
1921	1003 Mariposa Way	Cleaners & Dyers	TP
1940	1020 Osage St.	Beger John F mach General Machy & Sup Co	TP
1951	951 Mariposa St.	Mariposa Cleaners	TP
1966-1986	1101 Osage St.	Mountain Bell Telephone Co Garage	Adjoining north
1966-1970	944 Osage St.	Pinkard Construction Co Genl Contr	On Site
1985	1325 N (West) 9 th Ave. W	American Coal/Abba Rock	0.1 miles south
1970	1325 West 9 th Ave.	Fulton Distributing Co Auto Parts, Central Tire & Oil Co, Giant Oil Co Ofs	0.1 miles south
1966	1325 West 9 th Ave.	Giant Oil Co Ofs, Fulton Distributing Co Auto Parts, Central Tire & Oil Co	0.1 miles south
1956	1325 West 9 th Ave.	Central Tire & Oil Co	0.1 miles south
1951	1325 West 9 th Ave.	Phillips Petroleum Co sis dept	0.1 miles south
1940	1325 West 9 th Ave.	Phillips Petroleum Co L G Wilke mgr of	0.1 miles south
1936	1325 West 9 th Ave.	Phillips Petroleum Co office R F Householter city mgr	0.1 miles south

TP – Target Property

Based on a review of the City Directory report provided by EDR, the Site appears to have been primarily used as residential property. The adjoining property to the south (1325 West 9th Ave) may have been associated with the storage and use of petroleum products since at least 1936 and may represent an environmental concern. However, a groundwater sample from a previous investigation (BC 2005) collected at the southern end of the 944 Osage Street property, presumably in the downgradient direction from 1325 West 9th Ave., did not show elevated concentrations of volatile organic compounds (VOCs) or semivolatile organic compounds (SVOCs) at the time it was sampled. The presence of the three former cleaners at 1225 West 9th Ave, 1003 Mariposa (St), and 951 Mariposa St constitutes a REC.

4.1.4 Historical Topographic Maps

Brown and Caldwell reviewed available historical topographic maps for the vicinity of the Site. The topographic maps were provided by EDR. A brief discussion of each map reviewed is included in **Table 4-3**. Copies of the maps are provided in **Appendix G**.

Table 4-3. Historical USGS Topographic Map Summary

Date	Map Name	Site	Adjacent Properties
1901	Denver	City streets shown.	Lincoln Park may be shown to the north (based on lack of streets shown on the map). Railroads adjoining to the west and farther away south and east. City streets to the south and east.
1957	Denver Vicinity NW	Residential over most of the Site. Some commercial/ industrial property and buildings are on the western portions of the Site.	Lincoln Park to the north. Railroads are adjoining to the west and farther away south with some buildings. Residential/ commercial property to the south and east.
1965	Fort Logan	Little change from previous map.	Little change from previous map.
1971	Fort Logan	Little change from previous map.	Little change from previous map.

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Table 4-3. Historical USGS Topographic Map Summary

Date	Map Name	Site	Adjacent Properties
1980	Fort Logan	Little change from previous map.	Little change from previous map.
1994	Fort Logan	Fewer buildings are on the western portions of the Site.	Fewer buildings on the adjacent properties.
1957	Englewood	Not shown.	Shows area east of the Site. Mainly residential. Some commercial/ industrial properties with buildings to the south along the railroad. West High School is to the East of the Site.
1965	Englewood	Not shown.	Little change from previous map.
1980	Englewood	Not shown.	Little change from previous map.
1994	Englewood	Not shown.	Little change from previous map.
1997	Englewood	Not shown.	Little change from previous map.

No environmental concerns were observed in the topographic maps reviewed with the following exceptions:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities and the surface soil impacts identified during previous investigations conducted at 944 and 1001 Osage Streets (BC 2005 and 2008).

4.1.5 Sanborn Fire Insurance Maps

The Sanborn Fire Insurance Map series illustrates detailed historical development in some older areas of the metropolitan areas. EDR maps were requested for the Site and the *adjoining properties*. EDR identified 5 maps available for the Site and vicinity. The listing of each map and a brief review are provided in **Table 4-4**. The EDR document is provided in **Appendix K**.

Table 4-4. Sanborn Map Summary

Year	ID	Site	Adjacent and Surrounding Areas
1890	C706-4E6A-9C5C	Mainly residential housing is shown. Several boarding houses and hotels along Osage Street (referred to as South Seventh St. on map). A tobacco store on Navajo Street (South Eighth St.). The Mill Ditch runs south to north through the center of the Site.	Railroad tracks to the west of the Site. Lincoln Park is to the north. Residential properties are to the east. South of the Site is not shown.
1903	C706-4E6A-9C5C	A stone cutting shop on the northern portion of the 1001 Osage Street property. Fewer boarding houses are along Osage Street. The tobacco store is no longer shown.	Little change from previous map.
1929	C706-4E6A-9C5C	The Mill Ditch is no longer shown. An additional stone cutting shop is on the southern portion of the 1001 Osage Street property.	Little change from previous map.
1951	C706-4E6A-9C5C	The 1001 Osage Street property contains a Western Electric Co. facility instead of the stone cutting operations. An auto repair shop is on the northeast portion of the Site. A facility with an "Oil and Grease" label is in the southwestern portion of the Site.	Little change from previous map.
1974	C706-4E6A-9C5C	The Site is now in the current configuration of multi-family housing units covering most of the property.	Little change from previous map.

No environmental concerns were observed in the Sanborn maps reviewed with the following exceptions:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities and the surface soil impacts identified during previous investigations conducted at 944 and 1001 Osage Streets (BC 2005 and 2008).
- The buildings demolished at the Site to make way for the existing housing project may have contained ACM. Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.

4.1.6 Historical Use Summary

The Site appears to have been at least partially developed since the first available records (1890 Sanborn map) for residential and commercial use. The Site was apparently redeveloped in 1952 as a low income residential area by the DHA, which is its current configuration. The following summarizes the environmental concerns identified at the Site in the historical use investigation section:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities.
- The buildings demolished at the Site to make way for the existing housing project may have contained ACM. Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.
- The presence of the three former cleaners at 1225 West 9th Ave, 1003 Mariposa (St), and 951 Mariposa St identified in the city directory search constitutes a REC.

4.2 Previous Investigations and Assessments

Brown and Caldwell obtained and reviewed documents, which describe research, investigative, and remedial activities that have been conducted at the Site. The following discussion provides a summary of information presented in these documents.

4.2.1 Phase II ESA, 944 and 1001 Osage Street

Brown and Caldwell conducted soil and groundwater characterization activities at these properties adjoining the Site on October 28 and 31, 2005. Specific tasks and observations included soil and groundwater sampling. The characterization activities were completed to determine the nature and extent of contamination present at the site. Based on the results of assessment activities described in this report and previous reports, Brown and Caldwell concluded the following:

- One of the soil samples exceeded the CCoD Soil Screening Level of 24 milligrams per kilogram (mg/kg) for arsenic. Seven soil samples also exceeded the draft Colorado Department of Public Health and Environment (CDPHE) direct exposure soil standard (and CCoD Screening Level) for benzo(a)pyrene and one soil sample exceeded the standard for benzo(b)fluoranthene and dibenzo(a,h)anthracene.
- No CDPHE groundwater standards were exceeded in the five samples collected across the site.

4.2.2 10th and Osage Brownfield Site Subsurface Investigation Report

Brown and Caldwell performed a subsurface investigation for the CCoD at 944 and 1001 Osage Street located in Denver, Colorado in support of a redevelopment effort. These activities were conducted on February 11, 2008. The purpose of this investigation was to identify and evaluate potential soil impacts associated with historical activities on the site. Specific tasks included soil sampling.

- Field headspace screening results with a PID did not indicate the presence of VOCs in soils at the site.
- Soil sample results for two samples exceeded the CCoD Residential/ Unrestricted Use Soil Screening Level and the Colorado Soil Evaluation Values (CSEV) of 400 mg/kg for lead as well as the screening level for the Maximum Concentration of Contaminants for Toxicity Characteristics of 100 mg/kg. One soil sample result also exceeded the CCoD Special Case Soil Screening Level for arsenic of 24 mg/kg. Each soil sample had results exceeding the CCoD Residential/Unrestricted Use Soil Screening Level and the CSEV of 0.39 mg/kg for arsenic, but these results likely represent background conditions for the Denver area.
- Analytical results for 11 of 28 samples in 9 of 14 exceeded one or more CCoD Residential/ Unrestricted Use Soil Screening Levels for polynuclear aromatic hydrocarbons (PAHs). Analytical results for 15 of 28 samples in 11 of 14 borings exceeded one or more CSEV for PAHs.

4.3 Standard Environmental Regulatory Record Sources

The purpose of the records review is to obtain and review *reasonably ascertainable* records that will help identify *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the Site. For this review, records were obtained from EDR. As noted under ASTM E 1527-05, information that is not *reasonably ascertainable* may not be incorporated into this Phase I ESA report. The msd for the Site vicinity review is noted under each database listed in **Table 4-5** based on the ASTM E 1527-05 Standard and the AAI Rule. The EDR report with a complete listing is included in **Appendix H**.

The review of records was performed keeping in mind that the groundwater flow direction in the vicinity of the Site is approximately toward the northwest.

Table 4-5. Environmental Database Descriptions and Search Distances

Database Name	Date of Last Update	Minimum Search Distance (Miles)	Agency	Number of Listed Sites
National Priorities List (NPL)	10/01/2009	1.0	Environmental Protection Agency (EPA)	1
Proposed NPL Sites	10/01/2009	1.0	EPA	0
NPL Liens	10/15/1991	TP	EPA	0
Delisted NPL Sites	10/01/2009	0.5	EPA	0
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	6/30/2009	0.50	EPA	2
CERCLIS-No Further Remedial Actions Planned (NFRAP)	6/23/2009	0.50	EPA	2
Corrective Action Report (CORRACTS)-TSD	9/15/2009	1.0	EPA	7
Resource Conservation and Recovery Information System (RCRIS) – Transporters, Storage and Disposal (TSD)	11/12/2008	0.5	EPA	0
RCRIS- Large Quantity Generators (LQG)	11/12/2008	0.25	EPA	0
RCRIS- Small Quantity Generators (SQG)	11/12/2008	0.25	EPA	1

Table 4-5. Environmental Database Descriptions and Search Distances

Database Name	Date of Last Update	Minimum Search Distance (Miles)	Agency	Number of Listed Sites
RCRIS- Conditionally Exempt Small Quantity Generators (CESQG)	11/12/2008	0.25	EPA	5
Emergency Response Notification System (ERNS)	8/31/2009	TP	USCG	0
Hazardous Materials Information Reporting System (HMIRS) Database*	10/5/2009	TP	US DOT	0
US Engineering Controls	10/01/2009	TP	EPA	1
US Institutional Controls	10/01/2009	TP	EPA	1
Federal Department of Defense (DOD) Sites*	12/31/2005	1.0	USGS	0
State Hazardous Waste Sites	N/A	1.0	CDPHE	0
Colorado Solid Waste Facility (SWF) List	8/3/2009	0.50	CDPHE	3
Underground Storage Tank (UST) Program	6/8/2009	0.25	Department of Labor and Employment, Oil Inspection Section	17
Leaking Underground Storage Tank (LUST) Program	9/29/2009	0.50	Department of Labor and Employment, Oil Inspection Section	52
Lust Trust Sites (Trust)	10/20/2009	0.50	Department of Labor and Employment, Oil Inspection Section	10
Aboveground Tank List (AST)	6/8/2009	TP	Department of Labor and Employment, Oil Inspection Section	4
Leaking Aboveground Storage Tank (LAST) Listing	10/19/2009	TP	Department of Labor & Employment	0
Environmental Real Covenants List (AULs)	8/26/2009	0.50	CDPHE	1
Colorado Voluntary Remediation Program (VCP) Sites	4/1/2008	0.50	CDPHE	4
US Brownfields Sites	7/1/2009	0.50	EPA	0
Debris Region 9	1/12/2009	0.50	EPA	0
Open Dump Inventory (ODI)	6/30/1985	0.50	EPA	0
Historical Landfill List	1/31/1993	0.50	CDPHE	0
Indian ODI	12/31/1998	0.50	EPA	0
US Clandestine Drug Labs (CDL)	3/1/2009	TP	DEA	0
Colorado CDL	8/20/2007	TP	CDPHE	0
US Historical CDL	9/1/2007	TP	DEA	0
CERCLA Liens 2	8/18/2009	TP	EPA	0
Land Use Control Information System (LUCIS)	12/9/2005	0.50	Department of the Navy	0
Spills Database (CO ERNS)	10/8/2009	TP	CDPHE	0
Department of Transportation, Office of Pipeline Safety (DOT OPS)	5/14/2008	TP	Department of Transportation, Office of Pipeline Safety	0
Formerly Used Defense Sites (FUDS)	12/31/2007	1.0	US Army Corps of Engineers	0

Table 4-5. Environmental Database Descriptions and Search Distances

Database Name	Date of Last Update	Minimum Search Distance (Miles)	Agency	Number of Listed Sites
Superfund Consent Decrees (CONSENT)	8/3/2009	1.0	Department of Justice, Consent Decree Library	1
Records of Decision (ROD)	9/1/2009	1.0	EPA	1
Uranium Mill Tailings Sites (UMTRA)	1/5/2009	0.50	Department of Energy	0
Mines Master Index File (MINES)	8/7/2009	0.25	Department of Labor, Mine Safety and Health Administration	0
TRIS	12/31/2007	TP	EPA	0
TSCA	12/31/2002	TP	EPA	0
FTTS	4/9/2009	TP	EPA / Office of Prevention, Pesticides and Toxic Substances	0
HIST FTTS	10/19/2006	TP	EPA	0
SSTS	12/31/2007	TP	EPA	0
ICIS	8/21/2009	TP	EPA	0
PADS	5/27/2009	TP	EPA	0
MLTS	7/6/2009	TP	NRC	0
RADINFO	7/28/2009	TP	EPA	0
FINDS	7/23/2009	TP	EPA	0
RAATS	4/17/1995	TP	EPA	0
Methane Site	12/31/1980	TP	Jefferson County Health Department	0
Methane Investigation	3/15/1979	TP	Colorado Department of Health	0
NPDES	9/9/2009	TP	CDPHE	0
Colorado Dry Cleaners List*	10/1/2009	0.25	CDPHE	0
SCRD Drycleaners	9/9/2009	0.50	EPA	0
AIRS Permitted Facility & Emissions Listing	10/1/2009	TP	CDPHE	0
Resource Conservation and Recovery Act (RCRA) – Non Generators (NonGen)	11/12/2008	0.25	EPA	10
UMTRA	11/23/2004	0.50	CDPHE	0
Asbestos Abatement & Demolition Projects (ASBESTOS)	8/31/2009	TP	CDPHE	0
PCB Transformer	1/1/2008	TP	EPA	0
Indian Reservations*	12/31/2005	1.0	USGS	0
Indian LUST	8/24/2009	0.50	EPA	0
Indian UST	8/24/2009	0.25	EPA	0
EDR Historic Dry Cleaners*		0.25		7
EDR Historic Gasoline Stations*		0.25		29

SG – small quantity generators

LG – large quantity generators

TSD – treatment, storage, disposal facilities

TP – target property (Site)

* Denotes additional environmental record sources, not required by E1527-05

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Results of the search of the various applicable government agencies by EDR resulted in 159 listings at the Site or within the msd of the Site. The majority of the identified facilities are located either at a lower elevation to the Site or are hydraulically cross- or down-gradient of the Site. Those facilities identified with a potential to impact soil and/or groundwater beneath the Site are further discussed below within the applicable subsections.

4.3.1 Site Listings

The Site was identified on the following databases searched by EDR:

- EDR Historical Auto Stations
- EDR Historical Cleaners
- LUST
- UST

A detailed discussion regarding each of the Site listings is included under the following appropriate sections.

4.3.2 Federal NPL

EDR identified one NPL site within the msd of the Site; Denver Radium Site, <1/8 mile northwest at the area of 12th Avenue and Quivas Street.

4.3.3 Proposed NPL Sites

This list includes facilities that have been proposed for listing on the NPL by the EPA. EDR identified no proposed NPL sites within the msd of the Site.

4.3.4 Delisted NPL Sites

This list includes facilities that have been removed from the NPL by the EPA. EDR identified no delisted NPL sites within the msd of the Site.

4.3.5 Federal CERCLIS

The Federal CERCLIS List was reviewed to identify EPA potentially hazardous waste sites pursuant to Section 103 of CERCLA within the msd of the Site. EDR identified two CERCLIS sites within the msd of the Site. These sites are listed in **Table 4-6** below.

Table 4-6. CERCLIS Facilities within MSD of Site			
Facility Name/Location Identification Number	Approximated Distance and Direction from the Site	Apparent Hydraulic Gradient from the Site	Status and Status Date
Denver Radium, 12 th Avenue and Quivas Street, Denver, CO CERCLIS ID No. 1000430696	<1/8 mile northwest	Downgradient	Five-Year Review – 9/30/2008
Denver Toluene, 13 th and Rio Court, Denver, CO CERCLIS ID No. 1000430699	1/8 - 1/4 mile north-northwest	Downgradient	Lien of PRP Property – 9/29/2004

These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that it does not represent *recognized environmental conditions* at this time.

4.3.6 Federal CERCLIS-NFRAP

A NFRAP site is a CERCLA site that had a Preliminary Assessment/Site Investigation (PA/SI) conducted but was not eligible for further investigation or action under CERCLA as it did not score greater than 28.5 on EPA's Hazardous Ranking System, used to determine if a site is eligible for placement on the NPL. It is important to note that a PA/SI site that has been issued a NFRAP determination by EPA does not necessarily mean that there are not any soil or groundwater contamination issues associated with the site. Rather, the site may be located within another PA/SI or NPL site or there are not significant receptors within the site's immediate vicinity. The CERCLIS-NFRAP sites identified by EDR within the msd of the Site are: Industrial Chrome Plating, $\frac{1}{8}$ - $\frac{1}{4}$ mile east at 919 N Santa Fe Dr; and West 13th Ave, $\frac{1}{4}$ - $\frac{1}{2}$ mile northwest at 1820 W 13th Ave. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time.

4.3.7 Federal CORRACTS

The CORRACTS list was reviewed to identify present or former hazardous waste handlers with RCRA corrective action activity within the msd of the Site. EDR identified 7 CORRACTS facilities within the msd of the Site. A listing of these sites is provided in **Table 4-7**.

Table 4-7. CORRACTS Facilities within MSD of Site

Facility Name and Address	RCRA Designation and Code*	CORRECTIVE Action Status	Approximated Distance and Direction from the Site
Alert Polishing and Plating 345 Santa Fe Dr	RCRA-SQG COR000016204	2/20/2008 – CA190 – RFI Report Received 3/21/2008 – CA370 – Petition for No Further Action Receipt Date 3/21/2008 – CA999NF – Corrective Action Process Terminated, No Further Action 3/21/2008 – CA375 – Decision of Petition for No Further Action 3/21/2008 – CA550NR 3/21/2008 – CA200 – RFI Approved 8/10/2007 – CA070YE- RFA Determination of Need for an RFI, RFI is Necessary 8/10/2007 – CA100 – RFI Imposition 8/10/2007 – CA075LO – CA Prioritization, Facility or area was assigned a low corrective action priority 9/7/2007 – CA110 – RFI Workplan Received 9/14/2007 – CA150 – RFI Workplan Approved 10/5/2007 – CA110 – RFI Workplan Received 12/3/2007 – CA150 – RFI Workplan Approved	$\frac{1}{2}$ - 1 mile south-southeast
G & K Service Incorporated 999 Vallejo St.	RCRA-NonGen COD983789447	3/2/1992 – CA190 – RFI Report Received 3/4/2003 – CA250 – CMS Imposition 3/4/2003 – CA200 – RFI Approved 3/11/1993 – CA120 – RFI Workplan Modification Requested	$\frac{1}{4}$ - $\frac{1}{2}$ mile west-southwest

		<p>by Agency</p> <p>5/13/1993 – CA150 – RFI Workplan Approved</p> <p>5/13/1993 – CA110 – RFI Workplan Received</p> <p>7/9/1993 – CA180 – RFI Supplemental Implementation Begun</p> <p>7/17/1990 – CA110 – RFI Workplan Received</p> <p>7/17/1990 – CA060 – Notice of Contamination</p> <p>8/1/1995 – CA725YE – Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified</p> <p>8/1/1995 – CA225IN – Stabilization Measures Evaluation</p> <p>8/3/1993 – CA195 – FI Progress Reports Received</p> <p>8/11/1995 – CA075ME – CA Prioritization, Facility or area was assigned a medium correction action priority</p> <p>8/28/1990 – CA100 – RFI Imposition</p> <p>8/28/1990 – CA150 – RFI Workplan Approved</p> <p>10/16/2006 – CA260 – CMS Workplan Received</p> <p>10/16/2006 – CA190 – RFI Report Received</p> <p>10/16/2006 – CA260 – CMS Workplan Received</p> <p>10/16/2006 – CA195 – FI Progress Reports Received</p> <p>11/21/2002 – CA190 – RFI Report Received</p> <p>11/30/2006 – CA270 – CMS Workplan Modification Requested by Agency</p> <p>11/30/2006 – CA200 – RFI Approved</p>	
Katzson Brothers Inc 960 Vallejo St.	RCRA- GESQG COD031992225	<p>1/11/1993 – CA110 – RFI Workplan Received</p> <p>1/23/1996 – CA110 – RFI Workplan Received</p> <p>1/27/1993 – CA120 – RFI Workplan Modification Requested by Agency</p> <p>3/11/1993 – CA150 – RFI Workplan Approved</p> <p>4/14/1994 – CA195 – FI Progress Reports Received</p> <p>5/15/1993 – CA180 – RFI Supplemental Implementation Begun</p> <p>6/9/1994 – CA195 – FI Progress Reports Received</p> <p>6/17/1993 – CA110 – RFI Workplan Received</p> <p>6/17/1993 – CA190 – RFI Report Received</p> <p>6/18/1993 – CA150 – RFI Workplan Approved</p> <p>6/18/1993 – CA120 – RFI Workplan Modification Requested by Agency</p> <p>8/1/1995 – CA225YE – Stabilization Measures Evaluation</p> <p>8/1/1995 – CA725YE – Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified</p> <p>9/26/1994 – CA195 – FI Progress Reports Received</p> <p>11/3/1992 – CA060 – Notice of Contamination</p> <p>12/7/1992 – CA100 – RFI Imposition</p> <p>12/7/1992 – CA075ME – CA Prioritization, Facility or area was assigned a medium correction action priority</p> <p>12/7/1992 – CA070YE- RFA Determination of Need for an RFI, RFI is Necessary</p>	¼ - ½ mile west-southwest
Lincoln Plating Company 777 Umatilla St	RCRA-NonGen COD007073901	<p>3/14/2002 – CA100 – RFI Imposition</p> <p>3/15/2007 – CA999RM – Corrective Action Process</p>	¼ - ½ mile west-southwest

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		<p>Terminated, Remedial Activities</p> <p>4/4/2002 – CA260 – CMS Workplan Received</p> <p>4/15/2002 – CA450 – Corrective Measures Design Approved</p> <p>4/15/2002 – CA400 – Date For Remedy Selection (CM Imposed)</p> <p>4/15/2002 – CA300 – CMS Workplan Approved</p> <p>4/22/1998 – CA190 – RFI Report Received</p> <p>5/15/1997 – CA075ME – CA Prioritization, Facility or area was assigned a medium correction action priority</p> <p>5/15/1997 – CA060 – Notice of Contamination</p> <p>5/15/1997 – CA070YE- RFA Determination of Need for an RFI, RFI is Necessary</p> <p>5/28/1997 – CA110 – RFI Workplan Received</p> <p>5/30/1997 – CA120 – RFI Workplan Modification Requested by Agency</p> <p>6/8/1998 – CA155 –RFI Supplemental Information Requested by Agency</p> <p>7/20/1998 – CA260 – CMS Workplan Received</p> <p>7/31/1998 – CA270 – CMS Workplan Modification Requested by Agency</p> <p>9/19/2000 – CA160 – RFI Supplemental Information Received</p> <p>9/29/1998 – CA150 – RFI Workplan Approved</p> <p>9/29/2000 – CA155 –RFI Supplemental Information Requested by Agency</p> <p>10/1/1998 – CA600 – Stabilization Measures Implemented</p> <p>10/28/1997 – CA075LO – CA Prioritization, Facility or area was assigned a low corrective action priority</p> <p>10/28/1997 – CA225YE – Stabilization Measures Evaluation</p> <p>10/28/1997 – CA725NO – Current Human Exposures Under Control, Current human exposures are NOT under control</p> <p>10/28/1997 – CA750NO – Migration of Contaminated Groundwater under Control, Unacceptable migration of contaminated groundwater is observed or expected</p> <p>10/28/1997 – CA100 – RFI Imposition</p> <p>12/15/1998 – CA650 – Stabilization Construction Completed</p>	
Eversman Manufacturing Company 1145 5 th St	RCRA-NonGen COD007064397	<p>1/19/1994 – CA999 – Corrective Action Process Terminated</p> <p>3/8/1991 – CA190 – RFI Report Received</p> <p>3/16/1992 – CA195 – FI Progress Reports Received</p> <p>3/30/1990 – CA060 – Notice of Contamination</p> <p>5/14/1190 – CA100 – RFI Imposition</p> <p>6/8/1999 –CA225NR – Stabilization Measures Evaluation</p> <p>6/8/1999 – CA999 – Corrective Action Process Terminated</p> <p>6/8/1999 – CA750YE – Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified</p> <p>6/8/1999 – CA725YE – Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified</p>	½ - 1 mile north-northwest

		<p>7/7/1993 – CA195 – FI Progress Reports Received</p> <p>8/1/1995 – CA225YE – Stabilization Measures Evaluation</p> <p>8/1/1995 – CA750YE – Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified</p> <p>8/1/1995 – CA725YE – Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified</p> <p>8/11/1995 – CA075LO – CA Prioritization, Facility or area was assigned a low corrective action priority</p> <p>8/27/1990 – CA110 – RFI Workplan Received</p> <p>10/10/1990 – CA120 – RFI Workplan Modification Requested by Agency</p> <p>10/29/1993 – CA195 – FI Progress Reports Received</p> <p>11/1/1993 – CA250 – CMS Imposition</p> <p>11/1/1993 – CA200 – RFI Approved</p> <p>11/15/1993 – CA260 – CMS Workplan Received</p> <p>11/17/1993 – CA450 – Corrective Measures Design Approved</p> <p>11/17/1993 – CA300 – CMS Workplan Approved</p> <p>11/17/1993 – CA500 – CMI Workplan Approved</p> <p>11/22/1993 – CA330 – CMS Implementation Begun</p> <p>11/28/1990 – CA180 – RFI Supplemental Implementation Begun</p> <p>12/1/1993 – CA600SR – Stabilization Measures Implemented, Primary measure is source removal and/or treatment</p>	
<p>Auraria Higher Education Center</p> <p>1156 7th St.</p>	<p>RCRA-CESQG</p> <p>COD981540545</p>	<p>1/10/1990 – CA150 – RFI Workplan Approved</p> <p>1/17/1990 – CA200 – RFI Approved</p> <p>1/23/1990 – CA400 – Date For Remedy Selection (CM Imposed)</p> <p>1/23/1990 – CA350 – CMS Approved</p> <p>1/23/1990 – CA250 – CMS Imposition</p> <p>1/23/1990 – CA300 – CMS Workplan Approved</p> <p>4/6/1990 – CA500 – CMI Workplan Approved</p> <p>4/6/1990 – CA450 – Corrective Measures Design Approved</p> <p>5/26/1994 – CA110 – RFI Workplan Received</p> <p>7/28/1994 – CA150 – RFI Workplan Approved</p> <p>8/12/1994 – CA180 – RFI Supplemental Implementation Begun</p> <p>10/23/1995 – CA190 – RFI Report Received</p> <p>11/17/1995 – CA155 – RFI Supplemental Information Requested by Agency</p> <p>12/21/1989 – CA100 – RFI Imposition</p> <p>12/21/1989 – CA050 – RFA Completed</p>	<p>½ - 1 mile north</p>
<p>RMO Inc</p> <p>650 W Colfax Ave</p>	<p>RCRA-SQG</p> <p>COD007058183</p>	<p>2/5/2004 – CA100 – RFI Imposition</p> <p>4/22/2004 – CA160 – RFI Supplemental Information Received</p> <p>5/31/2007 – CA160 – RFI Supplemental Information Received</p> <p>6/11/2004 – CA170 – RFI Supplemental Information</p>	<p>½ - 1 mile northeast</p>

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	Deemed Satisfactory 6/15/2007 – CA155 –RFI Supplemental Information Requested by Agency 6/20/2005 – CA250 – CMS Imposition 7/23/2004 – CA100 – RFI Imposition 7/26/2004 – CA190 – RFI Report Received 8/5/2005 – CA260 – CMS Workplan Received 8/24/2004 – CA155 –RFI Supplemental Information Requested by Agency 10/25/2005 – CA300 – CMS Workplan Approved	
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*TSDF – Treatment, Storage, and Disposal Facility, SQG – Small quantity generator, LQG – Large quantity generator, CESQG – Conditionally Exempt Small Quantity Generator

These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, or are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time. Furthermore, previous soil and groundwater sampling conducted at 944 and 1001 Osage Street (BC 2005 and 2008) did not indicate the presence of impacts that may have been the result of activities at the one site identified in the potentially upgradient direction (Alert Polishing and Plating) of the Site.

4.3.8 Federal RCRIS List

Facilities listed in the RCRIS database are designated as hazardous waste TSD facilities, hazardous waste generators, or hazardous waste transporters. This database was searched for facilities within the msd from the Site. There were no RCRA hazardous waste TSD facilities or RCRA hazardous waste large-quantity generators located within the msd of the Site. There was one RCRA hazardous waste small-quantity generator located within the msd of the Site: Denver Water – Westside, <1/8 mile north-northwest at 1600 W 12th Ave. There are five RCRA hazardous waste conditionally exempt small-quantity generators located within the msd of the Site: B&R Screen Graphics, 1/8 - 1/4 mile southeast at 1045 W 8th Ave; DPS Greenlee, <1/8 mile northeast at 1150 Lipan St; Lafarge Quivas Garage, 1/8 - 1/4 mile northwest at 1145 Quivas St; Lafarge Regional QA/QC Lab, 1/8 - 1/4 mile northwest at 1195 Quivas St; and Flame Spray, Inc, 1/8 - 1/4 mile west-northwest at 1900 W 12th Ave. There are 10 RCRA hazardous waste non-generators located within the msd of the Site: Southern Pacific – 9th and Navajo, <1/8 mile at 1325 W 9th Ave; Industrial Chrome Plating, 1/8 - 1/4 mile east at 919 N Santa Fe Dr; Industrial hard Chrome Plating, 1/8 - 1/4 mile east at 919 N Santa Fe Dr; Textile Emporium Inc, 1/8 - 1/4 mile east at 900 Santa Fe Dr; Property owned by E & H Stoner, 1/8 - 1/4 mile east-southeast at 821 Santa Fe Dr (rear); Osage Resource Recovery, <1/8 mile north at 1111 Osage St; Komac Paint Inc, <1/8 mile north at 1201 Osage St; Neiman's Industrial Recycling, 1/8 - 1/4 mile south at 730 Navajo; Union Oil Company of California, 1/8 - 1/4 mile north at 1535 W 13th Ave; and J-8 Equipment Co, 1/8 - 1/4 mile north at 1305 Osage St.

4.3.9 Federal ERNS List

A review of the Federal ERNS database was conducted to identify reported releases of oil and hazardous substances on the Site. The database contains information from spill reports made to federal agencies, including the EPA, the U.S. Coast Guard, the National Response Center, and the DOT. The EDR search report of the databases identified no ERNS incidents reported for the Site.

4.3.10 HMIRS

HMIRS is the US DOT listing of hazardous material spill incidents reported to DOT. A review of the HMIRS database was conducted to identify reported hazardous materials spills on the Site. A search of the databases identified no incidents on the Site.

4.3.11 United States Engineering and Institutional Controls

These databases contain lists of recorded engineering and institutional controls for properties relating to environmental remediation. According to the AAI Rule, institutional controls are to be reviewed for the Site, and engineering controls for the Site and surrounding areas within 0.5 miles of the Site boundaries. These databases were searched by EDR for properties within 0.5 miles of the Site boundaries. EDR conducted a search of both engineering and institutional controls within 0.5 miles of the Site boundaries and identified institutional or engineering controls for the Site or surrounding properties within 0.5 miles of the Site boundaries: Denver Radium Site, $1/8$ mile northwest at the area of 12th Avenue and Quivas Street.

4.3.12 Federal DOD Sites

EDR conducted a search of the DOD sites located within the msd of the Site. No DOD sites were identified within the msd of the Site.

4.3.13 United States/State/Tribal Brownfields Sites

EDR conducted a search of the EPA's list of Brownfields remediation sites for sites located within the msd of the Site. Brownfields are remediation sites that are conducting investigations and remedial activities in accordance with the Small Business Liability Relief and Brownfields Revitalization Act of 2002, Title 42 of the U.S.C. §§9601 (Brownfields Act). EDR's search of the list identified no Federal Brownfields sites within the msd of the Site.

4.3.14 State and/or Tribal Voluntary Clean-Up Sites

EDR conducted a search for sites being cleaned up under state and/or tribal voluntary clean-up programs. The following sites were reported within the msd of the property: Denver Toluene, $1/8$ - $1/4$ mile north at 1535 13th Ave; Denver Toluene, $1/8$ - $1/4$ mile north-northwest at 1635 W 13th Ave; Denver Toluene, $1/8$ - $1/4$ mile north-northwest at 1709 W 13th Ave; and Rocky Mountain News, $1/4$ - $1/2$ mile north at 1350 Rio Court.

4.3.15 State Solid Waste Disposal Facility (SWLF) Listings

EDR conducted a search of the CDPHE list of SWLFs within the msd of the Site. EDR's report identified the following SWLFs within the msd of the Site, listed in **Table 4-8**.

Table 4-8. SWLFs within MSD of Site			
Facility Name and Address	Approximated Distance and Direction from the Site	Apparent Hydrologic Gradient from the Site	Status (Closed vs. Active)
Not reported 1300 Osage St.	$1/8$ - $1/4$ mile north	Cross gradient	Not reported
Not reported 13 th and Rio Court	$1/8$ - $1/4$ mile north-northwest	Cross gradient	Not reported

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Not reported 490 Osage St	¼ - ½ mile south	Cross gradient	Not reported
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These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, or are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

4.3.16 LUSTs

EDR conducted a search of the Colorado Department of Labor and Employment, Oil Inspection Section list of LUSTs within the msd of the Site. EDR identified 52 LUST incidents within the msd of the Site, listed in **Table 4-9**.

Table 4-9. LUST Facilities within MSD of Site			
Facility Name/Location Identification Number	Distance and Direction from the Site	Apparent Hydrologic Gradient from the Site	Case Status
City and County of Denver Property 1001 Osage St LUST: S109351130	TP	TP	Closed
ADCO General Corp 1080 Kalamath St LUST: U003120029	⅛ - ¼ mile east	Up-gradient	Closed
ADCO General Corporation Property 1021 W 8 th Ave LUST: U003517935	⅛ - ¼ mile southeast	Cross-gradient	Closed
Carlo's 66 800 Kalamath St LUST: U003124735	⅛ - ¼ mile southeast	Cross gradient	Closed
Craig and Associates 745 Lipan St LUST: U003197374 LUST Trust	⅛ - ¼ mile south-southeast	Cross gradient	Closed
Amick Moving and Storage 1029 Santa Fe Dr LUST: U004007222	⅛ - ¼ mile east	Up-gradient	Closed
H & M Investments 900 Santa Fe LUST: S105143667	⅛ - ¼ mile east	Up-gradient	Closed
Carter Lubrication AKA Grease Monkey 901 W 8 th Ave LUST: S103852419	⅛ - ¼ mile east-southeast	Cross gradient	Closed
Neighborhood Gas 801 W 8 th Ave LUST Trust	¼ - ½ mile east-southeast	Cross gradient	
TS Gas 801 W 8 th Ave LUST: 1001268540	¼ - ½ mile east-southeast	Cross gradient	Closed

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Art Leisenring 1025 Galapago St LUST: S10279851	¼ - ½ mile east	Up-gradient	Closed
Kalamath Associates Property 570 Kalamath St LUST: S102719064	¼ - ½ mile south-southeast	Cross gradient	Closed
Sixth & Santa Fe Car Wash 603 Santa Fe Dr LUST: U003241096	¼ - ½ mile southeast	Cross gradient	Closed
Conoco SS 571 Santa Fe Dr LUST: S107555175	¼ - ½ mile south-southeast	Cross gradient	Closed
Masters Studio 1140 W 5 th St LUST: U003241058	¼ - ½ mile south	Cross gradient	Closed
Formerly Amoco Oil Co 875 Navajo St LUST Trust	< ⅛ mile south	Cross gradient	
Stout Street Foundation 875 Navajo St LUST: S102327549	< ⅛ mile south	Cross gradient	State Lead
Mobil Premix Concrete Inc 1590 W 12 th St LUST: S103852292 LUST Trust	< ⅛ mile north-northwest	Down-gradient	Open
Westside Yard 1600 W 12 th St LUST: S107556392	< ⅛ mile north-northwest	Down-gradient	Closed
Pennzoil Products Co 1520 W 13 th Ave LUST: S107982370	⅛ - ¼ mile north	Cross gradient	Closed
Pennzoil Products Co 1520 W 13 th Ave LUST: U003123383	⅛ - ¼ mile north	Cross gradient	Closed
7-Eleven #1823-13194 1104 Santa Fe LUST: S105566852	⅛ - ¼ mile east	Cross gradient	Closed
Materials Handling 1740 W 13 th Ave LUST: S102719134	⅛ - ¼ mile north-northwest	Down-gradient	Closed
RTD-LRT Maintenance Facility 655 Mariposa LUST: COD983770488	¼ - ½ mile south	Cross gradient	Closed
Jebco Heating & Air Conditioning 666 Lipan St LUST: U003400715	¼ - ½ mile south-southeast	Cross gradient	Closed

United Materials Inc 1777 W 13 th Ave LUST: U003120611 LUST Trust	¼ - ½ mile north-northwest	Down-gradient	Closed
K L Bliss 1081 W 13 th Ave LUST: S102719969	¼ - ½ mile northeast	Cross gradient	Closed
Floyd Pool Property 1365 Osage St LUST: U003124822 LUST Trust	¼ - ½ mile north	Cross gradient	Closed
Belcon Mechanical 630 Lipan LUST: S102719933	¼ - ½ mile south-southeast	Cross gradient	Closed
United Western Supply 1365 Rio Ct LUST: S107556296	¼ - ½ mile north	Down-gradient	Closed
CEI West Roofing Inc 1881 W 13 th Ave LUST: S102052782	¼ - ½ mile northwest	Down-gradient	Closed
Boys & Girls Club of Denver 901 Tejon St LUST: S102530446 LUST Trust	¼ - ½ mile west-southwest	Down-gradient	Closed
Newstrom-Davis Construction Co 2000 W 8 th Ave LUST: U004007486	¼ - ½ mile west-southwest	Down-gradient	Closed
Conrads Warehouse 595 Quivas LUST: S102719907 LUST Trust	¼ - ½ mile south-southwest	Down-gradient	Closed
Katzson Brothers Inc 960 Vallejo St LUST: COD031992225	¼ - ½ mile west-southwest	Down-gradient	Closed
Sears Roebuck & Co 1701 W 6 th Ave LUST: U003401686	¼ - ½ mile south-southwest	Down-gradient	LUST Trust
740 Investors 740 Umatilla St LUST: S102052722 LUST Trust	¼ - ½ mile west-southwest	Down-gradient	Closed
Elms Investment Property 730 Umatilla St LUST: U003124060 LUST Trust	¼ - ½ mile west-southwest	Down-gradient	Closed
Southeastern Public Service Co 1450 Cottonwood Dr	¼ - ½ mile north-northwest	Down-gradient	Closed

LUST: S102530509			
CDOT Denver 2300 W 11 th Ave LUST: S107554973	¼ - ½ mile west	Down-gradient	Closed
Deluxe Speedometer Shop 1410 Speer Blvd LUST: S108670457	¼ - ½ mile northeast	Cross gradient	Closed
Customart Industries Inc 1801 W 14 th Ave LUST: U003195936	¼ - ½ mile northwest	Down-gradient	Closed
ML Foss Inc Steel Service Center 1485 Rio Ct LUST: S107555773	¼ - ½ mile north	Down-gradient	Closed
AAA Crane Service Inc 1941 W Myrtle Dr LUST: S105567044	¼ - ½ mile northwest	Down-gradient	Closed
Denver Housing Authority 1100 W Colfax Ave LUST: COR000004135	¼ - ½ mile north	Cross gradient	Closed
Jones Heartz Lime Co Inc 1450 W Colfax Ave LUST: U003116723	¼ - ½ mile north	Cross gradient	Closed
Rio Grande Co Residential Products Div 500 Osage St LUST: U004008009	¼ - ½ mile south	Down-gradient	Closed
Wells Fargo Armored Service Co 2330 W 11 th St LUST: S107556371	¼ - ½ mile west	Down-gradient	Closed
Heb's Service 2214 W 8 th Ave LUST: U003119109	¼ - ½ mile west-southwest	Down-gradient	Closed
Sullivan Trucking Inc 1380 Umatilla St LUST: U003124398	¼ - ½ mile northwest	Down-gradient	Closed
Not reported 490 Osage St LUST: S101840629	¼ - ½ mile south	Down-gradient	Closed
Penhall Corp 1385 Umatilla LUST: COD981548654	¼ - ½ mile northwest	Down-gradient	Closed
Ralph S Marrs 501 W 12 th Ave LUST: U003124855	¼ - ½ mile east-northeast	Cross gradient	Closed
Loomis 974 Yuma St LUST: S109254466	¼ - ½ mile west	Down-gradient	Closed

The 52 LUST sites listed in **Table 4-9** appear to have a low probability of impacting the Site, since these sites do not adjoin the Site, are located greater than 1/2-mile from the Site with defined groundwater impacts, or are located hydraulically cross-gradient or down-gradient from the Site and it appears that they do not represent *recognized environmental conditions* at this time. Furthermore, a previous BC soil and groundwater investigation conducted at the 944 and 1001 Osage Street properties did not indicate the presence of petroleum hydrocarbon impacts. Of the sites listed, 10 sites are also on the LUST Trust list. The 1989 Colorado General Assembly established Colorado's Petroleum Storage Tank Fund. The Fund reimburses eligible applicants for allowable costs incurred in cleaning up petroleum contamination from underground and aboveground petroleum storage tanks, as well as the third-party liability expenses.

4.3.17 USTs

EDR conducted a search of the Colorado Department of Labor and Employment, Oil Inspection Section list of facilities with registered USTs within the msd of the Site. EDR identified the following registered UST facilities within the msd of the Site, listed in **Table 4-10**.

Table 4-10. UST Facilities within MSD of Site			
Facility Name/Location Identification Number	Distance and Direction from the Site	Apparent Hydrologic Gradient from the Site	Case Status
City and County of Denver Property 1001 Osage St UST: U004127674	TP	TP	Closed
ADCO General Corp 1080 Kalamath St	1/8 - 1/4 mile	Up-gradient	Closed
ADCO General Corporation Property 1021 W 8 th Ave	1/8 - 1/4 mile southeast	Cross-gradient	Closed
Carlo's 66 800 Kalamath St	1/8 - 1/4 mile southeast	Cross gradient	Closed
Craig and Associates 745 Lipan St	1/8 - 1/4 mile south-southeast	Cross gradient	Closed
Amick Moving and Storage 1029 Santa Fe Dr	1/8 - 1/4 mile east	Up-gradient	Closed
Formerly Amoco Oil Co 875 Navajo St UST: U003196144	<1/8 mile south	Cross gradient	Closed
SPEC AGG MPM S & G 1590 W 12 th Ave UST: U003123789	<1/8 mile north-northwest	Down-gradient	Closed
Lafarge West Inc 1590 W 12 th Ave UST: U003517947	<1/8 mile north-northwest	Down-gradient	Closed
Denver Water BD – Westside 1600 W 12 th Ave UST: U003123919	<1/8 mile north-northwest	Down-gradient	Open
Neiman Industrial Recycling 730 Navajo St	<1/8 mile south	Cross gradient	Closed

UST: U003121979			
Roderick R Brown Property 751-775 Mariposa St UST: U003116591	<1/8 mile south	Cross gradient	Closed
Pennzoil Products Co 1520 W 13 th Ave	1/8 - 1/4 mile north	Cross gradient	Closed
Unocal Chemicals Divisions 1535 W 13 th Ave UST: U003124316	1/8 - 1/4 mile north	Cross gradient	Closed
Burnham Shops 800 Seminole Rd UST: U003240522	1/8 - 1/4 mile southwest	Down-gradient	Closed
7-Eleven #13194 1107 Santa Fe Dr UST: U003748472	1/8 - 1/4 mile east	Cross gradient	Open
Unknown Owner 1740 W 13 th Ave	1/8 - 1/4 mile north-northwest	Down-gradient	Closed

These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time. Furthermore, a previous BC soil and groundwater investigation conducted at the 944 and 1001 Osage Street properties did not indicate the presence of petroleum hydrocarbon impacts as a result of the UST located at 1001 Osage Street.

4.3.18 ASTs

EDR conducted a search of the Colorado Department of Labor and Employment, Oil Inspection Section list of facilities with registered ASTs within the msd of the Site. EDR identified the following registered AST facilities within the msd of the Site, listed in **Table 4-11**.

Table 4-11. AST Facilities within MSD of Site

Facility Name/Location Identification Number	Distance and Direction from the Site	Apparent Hydrologic Gradient from the Site	Case Status
Denver Water BD – Westside 1600 W 12 th Ave	<1/8 mile north-northwest	Down-gradient	Open
Quivas Ready Mix 1151 Quivas St AST: A100280875	1/8 - 1/4 mile northwest	Down-gradient	Open
Pennzoil Products Co 1520 W 13 th Ave	1/8 - 1/4 mile north	Cross gradient	Closed
Burnham Shops 800 Seminole Rd	1/8 - 1/4 mile southwest	Down-gradient	Open

These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time.

4.3.19 State and Tribal Institutional Control / Engineering Control Registries (AUL)

The CDPHE Environmental Real Covenants List contains contaminated sites that are not cleaned up completely and where land use restrictions may be used to ensure that the selected cleanup remedy is adequately protective of human health and the environment. EDR's search of the list identified the following AUL site within the msd of the Site: Atlas Metals, 1/4 - 1/2 mile west-northwest at 1100 Umatilla St.

4.3.20 ROD

EDR conducted a search of the EPA list of facilities with a Record of Decision within the msd of the Site. EDR identified one within the msd of the Site: Denver Radium Site, Denver Radium Site, <1/8 mile northwest at the area of 12th Avenue and Quivas Street.

4.3.21 Superfund (CERCLA) Consent Decrees (Consent)

EDR conducted a search of the Department of Justice, Consent Decree Library list of facilities that have had major legal settlements that establish responsibility and standards for cleanup at Superfund sites within the msd of the Site. EDR identified one within the msd of the Site: Denver Radium Site, Denver Radium Site, <1/8 mile northwest at the area of 12th Avenue and Quivas Street.

4.3.22 EDR Proprietary Records

EDR has searched selected national collections of business directories and has collected listings of potential gas stations and potential dry cleaner sites. EDR identified two historical auto stations and one historical cleaners sites at the target property of the Site: Newell Elmer R Rear, 965 Navajo, auto station; Legler Garage Rear, 1061 Mariposa Way, auto station; and Mariposa Cleaners, 951 Mariposa Way, cleaner.

4.3.23 Regulatory Records Review Summary

There is one NPL site within the msd of the Site but this facility appears to have a low probability of impacting the Site. Since this site does not adjoin the Site, is located hydraulically cross-gradient or down-gradient from the Site, it appears that it does not represent *recognized environmental conditions* at this time.

There are two CERCLIS sites, two NFRAP sites and seven CORRACTS sites within the msd of the Site. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time.

There are one RCRIS-SQG, five RCRIS-CESQG and 10 RCRIS-Non-Gen sites within the msd of the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There is one US Engineering Controls site, one US Institutional Controls site, one CONSENT site and one ROD site within the msd of the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There are three SWF/LF sites within the msd of the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There are 17 UST sites, 52 LUST sites, 10 LUST TRUST sites, and four AST sites within the msd of the Site. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time. Furthermore, a previous BC soil and groundwater investigation conducted at the 944 and 1001 Osage Street properties did not indicate the presence of petroleum hydrocarbon impacts.

There is one AUL site and four Colorado Voluntary Remediation sites within the msd of the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There are seven Historical Dry Cleaners and 29 Historical Auto Stations within the msd of the Site. Of these, two historical auto stations and one historical dry cleaner sites are located at the target property. These sites represent *recognized environmental conditions* due to the potential for past releases of petroleum hydrocarbons and/or chlorinated solvents into the soil and groundwater.

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5. INTERVIEWS

The purpose of interviews is to obtain information indicating *recognized environmental conditions* or *historical recognized environmental conditions* in connection with the Site, as described in the ASTM Standard. Selected individuals who were knowledgeable about current and past Site operations were interviewed. The following is a brief summary of the information obtained about the Site. The completed supporting documentation, if applicable, is included in **Appendix L**.

5.1 Interviews with Owners, Occupants, and Others Knowledgeable of the Site

The following is a summary of interviews of individuals who may have knowledge concerning the Site. The interviews were conducted by Brown and Caldwell either in person or over the telephone.

Summary of Interviews with Owners, Occupants, and Others	
Owner, Occupant or Other	Cathy Martinez
Date	12/17/2009
Knowledge of Site	Maintenance Supervisor
Pertinent Information	Ms. Martinez indicated that she was not aware of any conditions that could represent <i>recognized environmental condition</i> at the Site. She identified a natural gas structure located next to the Site a maintenance headquarters that is owned and operated by Xcel Energy. She identified the materials stored at the Site maintenance headquarters during the Site visit as the only known potentially hazardous materials stored at the Site.

5.2 Local Government Agency Interviews

Brown and Caldwell conducted several interviews with local government officials to obtain information regarding hazardous or petroleum materials at the Site. The results of the interviews are provided below.

Summary of Interviews with Local Government Agencies	
Interview Subject	Dave Wilmoth – City and County of Denver, Department of Environmental Health
Date	1/6/2010
Knowledge of Site	Working with DHA on the Site redevelopment
Pertinent Information	Mr. Wilmoth is unaware of any hazardous materials stored at the Site or of any existing environmental reports or documents relevant to the Site other than those listed in section 4.2.2. He indicated that an asbestos survey of the Site buildings will be conducted shortly. The redevelopment will include townhomes with basements and a parking structure with a subsurface level, therefore a subsurface soil and groundwater investigation will be conducted.
Interview Subject	Fonda Apostolopoulos - CDPHE
Date	1/6/2010
Knowledge of Site	Reviewed 10 th & Osage VCUP Application

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Pertinent Information	Mr. Apostolopoulos indicated that there may be a regional groundwater plume with low levels of tetrachloroethene (PCE), but was unsure if it travels through the Site. He did recall the VCUP application for the 10 th & Osage site for addressing the PAHs in soil.
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5.3 Summary of Interviews

Interviews conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. However, any subsequent subsurface investigations at the Site should be conducted with the awareness of the potential for ACM in soil and the potential for low levels of PCE in groundwater.

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

6. SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

The Site was inspected by transecting the Site by foot at such intervals that the entire Site could be viewed, except areas that were blocked by debris and materials. The Site boundaries and adjacent properties were viewed and observations noted during the Site visit.

The objective of the Site reconnaissance was to identify potential *recognized environmental conditions* in connection with the Site. This can be limited by weather conditions, bodies of water, adjacent buildings, or other obstacles. Limitations are noted below:

- Brown and Caldwell was unable to observe all areas of the Site, as the majority of the buildings are currently in use as private residences. Based on observation made during a walk through on public access at the Site, there does not appear to be surface stains or hidden objects such as wells, drains, etc., beneath the trash and debris at the Site.

6.2 Site Observations

The purpose of the Site reconnaissance was to note evidence of potential *recognized environmental conditions*. Additionally, observations of *adjoining properties* were performed to identify uses and associated potential *recognized environmental conditions* that might impact the Site. Site photographs are included in **Appendix M**. The Site Vicinity Map is illustrated in **Figure 1** and the general Site Plan as **Figure 2**.

Brown and Caldwell conducted a Site visit on December 12, 2009. The weather conditions were noted as sunny. The Site visit was conducted by Brown and Caldwell *Environmental Professional* Todd Pomerantz.

6.2.1 Site Improvements and Features

Structures: The Site is comprised of 39 buildings designated as follows: one office/maintenance shop, one community common building, and 37 multi-family residences.

Pavement, Roads, and Driveways: The Site is composed of several city blocks and has city streets throughout. Concrete walkways and driveways provide access to the housing throughout the Site.

Fences or Walls: Several low fences are found throughout the Site. A larger chain link fence is found surrounding the maintenance facility located at 1000 Navajo Street.

Other Features: Brown and Caldwell did not observe any other notable features at the Site.

6.2.2 Site Physical Observations

Surface Stains: Brown and Caldwell did not observe any surface stains at the Site during the Site visit.

Unusual Odors: Brown and Caldwell did not observe any unusual odors at the Site during the Site visit with the exception of a slight natural gas odor next to the Xcel Energy natural gas pipeline house located next to the maintenance facility.

Stressed Vegetation: Stressed vegetation due to conditions other than climate was not observed by Brown and Caldwell during the Site visit.

Storage Tanks: Indications of storage tanks were not observed at the Site during the Site visit.

Drums, Other Containers: Brown and Caldwell did not observe any drums or containers at the Site during the Site visit. A flammable storage cabinet was observed outside of the maintenance facility located at 1000 Navajo Street.

Floor Drains, Grates, Sumps, Catch Basins, Oil Water Separators: Brown and Caldwell did not observe any floor drains, grates, sumps, catch basins or oil/water separators at the Site during the Site visit.

Stationary Hydraulic Lifts or Elevators (below grade or above grade): Brown and Caldwell did not observe any hydraulic lifts or elevators at the Site during the Site visit.

Transformers or Other Sources of Polychlorinated Biphenyls: Brown and Caldwell did not observe any capacitors or other sources of polychlorinated biphenyls (PCBs) at the Site during the Site visit. PCB free transformers were observed on telephone poles at the Site.

Paint Booth, Wash Rack, Other: Brown and Caldwell did not observe any paint booths, wash racks, or sand blasting at the Site during the Site visit.

6.2.3 Surface and Drainage Observations

Pavement Cracks or Patching: Some cracks and patches in the street pavement and concrete walkways of the Site were observed.

Fill Dirt or Previous Fill Activities: Earth-moving Activities (past and present): There were no indications of past or present fill dirt at the Site.

Ponds, Pits, Lagoons, Retention Basins: There were no ponds, pits, lagoons, or retention basins observed or reported at Site or the adjoining properties.

Storm Sewer (Flow of Storm Water across Site): Municipal storm sewers are found throughout the Site. The general flow direction of surface storm water across the Site appears to be toward the northwest.

6.2.4 Water Wells, Dry Wells, and Monitoring Wells

Brown and Caldwell did not observe any indications of wells at the Site.

6.2.5 Material and Waste Storage Areas

Solid Waste: Dumpsters for residential trash were observed throughout the Site.

Hazardous Materials, Petroleum Products, and/or Waste Storage Areas: A flammable storage cabinet was observed outside of the maintenance facility located at 1000 Navajo Street.

6.2.6 Wastewater Systems

Septic Systems, Leach Fields, or Other On-site Disposal Systems: Brown and Caldwell did not observe evidence of former or current septic systems at the Site.

Municipal or Other Sewer: Brown and Caldwell did not observe any indications of municipal or other sanitary sewer systems at the Site; however it is assumed that the buildings at the Site are connected to the municipal sanitary sewer system.

6.2.7 Site Utilities

The following utility services were observed or reported for the Site.

Drinking Water: Denver Water provides potable drinking water to the Site.

Wastewater: Metro Wastewater provides wastewater services to the Site.

Electricity: Xcel Energy provides electrical power to the Site.

Garbage Removal: Waste Management provides domestic garbage removal services at the Site.

Propane or Natural Gas: Xcel Energy provides natural gas at the Site.

6.2.8 Environmental Concerns Observed on Adjoining Properties

Adjoining properties were visually observed to the degree possible without trespass for potential *recognized environmental conditions* that may cause an impact on the Site. Reconnaissance of adjoining properties was performed by viewing each property from the legal boundaries, or by walking upon the *adjoining properties* that were legally accessible. *Adjoining properties* environmental concerns are noted as follows:

Adjoining Properties Environmental Concerns	
North – Lincoln Park	The park consists of an outdoor park, a recreation center, and an outdoor swimming pool. Containers marked “corrosive” were observed as part of the swimming pool maintenance facility. The containers did not appear to be leaking.
East – Residential	Private residential housing was observed to the east of the Site
West – Buckhorn Exchange restaurant, RTD light rail 10 th & Osage Station, Union Pacific Railroad tracks	The Buckhorn Exchange restaurant, RTD light rail 10 th & Osage Station, Union Pacific Railroad (UPRR) tracks were observed to the west of the Site. A business with no posted name was observed at 901 Osage Street.
South – WesTest, Castle Works	WesTest geotechnical testing and Castle Works architectural company were observed to the South of the Site.

Other Concerns Raised by Site Visit: No other environmental concerns were observed during the Site visit.

Observations of Adjacent Sites: Brown and Caldwell observed the adjacent properties to the degree possible during the Site visit. Environmental concerns were not observed on the adjacent properties during the Site visit With the exception of an RTD maintenance facility and a UPRR maintenance facility located south and east of the Site. The current and/or past uses of the adjacent properties, to the extent that these uses were visually and/or physically observable, have been noted in Section 3.6.

6.3 Summary of Site Observations

The Site visit conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. The Site contains a multi-family residential housing development owned and operated by the DHA since 1952. Access inside the individual private residences was not possible during the Site visit; however an asbestos investigation will be conducted in the individual residences after this report has been submitted. The only hazardous materials observed during the Site visit were located at the maintenance facility at 1000 Navajo Street. These materials were either stored in a flammables cabinet located immediately outside of the maintenance building or on shelves inside the building. Staining was not observed on the ground or floors in the vicinity of these materials. Housekeeping procedures appeared to be good.

PHASE I ENVIRONMENTAL SITE ASSESSMENT

7. FINDINGS, OPINIONS, CONCLUSIONS, AND RECOMMENDATIONS

7.1 Summary of Findings

Brown and Caldwell has performed a Phase I ESA of the Site located at West 9th Avenue and West 11th Avenue, Osage Street and Mariposa Street, in Denver, Denver County, Colorado in conformance with the scope and limitations of ASTM Practice E 1527-05. Any exceptions to, or deviations from, this practice are described in Section 1.4 of this Phase I ESA report.

The Site is located in an area generally developed for commercial, residential, and industrial use in Denver, Colorado. It is located between West 9th Avenue and West 11th Avenue, Osage Street and Mariposa Street, Denver, Colorado. The Site is situated within a developed urban area, mainly with residential areas nearby. The current owner of the Site, according to the property deed and/or the 50-year chain of title report, is the DHA. The current owner has owned the Site since 1952. The current use of the Site is as multi-family residential housing. The Site has been developed as residential and commercial properties since at least 1890 according to the Sanborn Maps provided by EDR. The Site is generally flat, with surface water drainage toward the northwest onto the adjoining property. The regional topographic gradient is generally toward the northwest to the South Platte River.

CCoD has informed Brown and Caldwell that the specific reason for this Phase I ESA was to evaluate the potential for *recognized environmental conditions* at the Site in support of the Client redeveloping the Site. In the User Questionnaire, CCoD indicated that they did not have specialized knowledge regarding environmental conditions at the Site.

The following summarizes the environmental concerns identified at the Site in the historical use investigation section:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities and the surface soil impacts identified during previous investigations conducted at 944 and 1001 Osage Streets.
- The buildings demolished at the Site to make way for the existing housing project may have contained ACM. Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.

Previous investigations conducted at 944 and 1001 Osage Street by Brown and Caldwell (BC 2005 and 2008) indicated the presence of elevated concentrations of PAHs in surface soils. The proximity of these addresses to the Site may indicate the potential presence of elevated concentrations of PAHs in surface soils at the Site and may represent an environmental concern.

There is one NPL site within the msd of the site but this facility appears to have a low probability of impacting the Site. There are two CERCLIS sites, two NFRAP sites, seven CORRACTS sites, one RCRIS-SQG, five RCRIS-CESQG, 10 RCRIS-Non-Gen sites, one US Engineering Controls site, one US Institutional Controls site, one CONSENT site, one ROD, three SWF/LF, one AUL site, and four Colorado Voluntary Remediation sites within the msd of the Site. Since these sites do not adjoin the Site, are located

hydraulically cross-gradient or down-gradient from the Site, it appears that they do not represent *recognized environmental conditions* at this time.

There are 17 UST sites, 52 LUST sites, 10 LUST TRUST sites, and four AST sites within the msd of the Site. These facilities appear to have a low probability of impacting the Site. Since these sites do not adjoin the Site, are located hydraulically cross-gradient or down-gradient from the Site, or the facility status is closed, it appears that they do not represent *recognized environmental conditions* at this time. Furthermore, a previous BC soil and groundwater investigation conducted at the 944 and 1001 Osage Street properties did not indicate the presence of petroleum hydrocarbon impacts.

There are seven Historical Dry Cleaners and 29 Historical Auto Stations within the msd of the Site. Of these, three historical auto stations and one historical dry cleaner sites are located at the target property. These sites represent *recognized environmental conditions* due to the potential for past releases of petroleum hydrocarbons and/or chlorinated solvents into the soil and groundwater.

Interviews conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. However, any subsequent subsurface investigations to be conducted at the Site should be conducted with the awareness of the potential for ACM in soil and the potential for low levels of PCE in groundwater.

The Site visit conducted as part of this Phase I ESA did not indicate the potential for *recognized environmental conditions* at the Site. The Site contains a multi-family residential housing development owned and operated by the DHA since 1952. Access inside the individual private residences was not possible during the Site visit; however an asbestos investigation will be conducted in the individual residences after this report has been submitted. The only hazardous materials observed during the Site visit were located at the maintenance facility at 1000 Navajo Street. These materials were either stored in a flammables cabinet located immediately outside of the maintenance building or on shelves inside the building. Staining was not observed on the ground or floors in the vicinity of these materials. Housekeeping procedures appeared to be good.

7.2 Data Failures and Gaps

Through the course of this assessment, Brown and Caldwell may have encountered *data failures* or *data gaps*. These failures or gaps, if any, are discussed below. The following provides the opinion of the Environmental Professional as to the significance of the data gaps in terms of defining *recognized environmental conditions* at the Site. Data failures may or may not be significant data gaps, and the discussion also provides information pertaining to whether the data failures resulted in significant data gaps.

7.2.1 Data Failures

Data failure is a failure to achieve the historical (property use) research objectives specified in the ASTM Standard Practice even after reviewing the eight standard historical sources that are reasonably ascertainable and likely to be useful. Data failure is one type of data gap.

No *data failures* were encountered during this investigation.

7.2.2 Data Gaps

A *data gap* is a lack of or inability to obtain information required by the ASTM Standard Practice, despite good faith efforts by the EP to gather such information. This could include any component of the Practice, e.g., standard environmental records, interviews, or a complete reconnaissance. A data gap by itself is not inherently significant, but if other information and/or the EP's experience raises reasonable concerns about the gap, it may be judged to be significant.

- Aerial photographs and other historical records were not available at 5 year intervals as required under the ASTM E 1527-05 standard. This resulted in a data gap for years that records were not available regarding the area of the Site. However, it appears that based on the information provided by the owner of the property and the chain-of-title report, the Site has been owned by DHA since 1952. Therefore, this data gap is not considered to be significant in determining recognized environmental conditions at the Site.

7.3 Conclusions

The following summarizes the environmental concerns identified at the Site:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities and the surface soil impacts identified during previous BC investigations conducted at 944 and 1001 Osage Streets.

Based on the results of this Phase I Environmental Site Assessment, Brown and Caldwell provides the following conclusions with regard to the Site.

Recognized Environmental Conditions

This Phase I ESA has revealed no evidence of *recognized environmental conditions* in connection with the Site, except for the following:

- The buildings demolished at the Site to make way for the existing housing project may have contained ACM. Since the final disposition of the demolished materials can not be determined, the potential ACM in soils at the Site constitutes a REC.
- The identification of historical dry cleaners and auto stations at the Site may indicate the potential presence of VOCs in soil or groundwater. While no regulatory records were identified indicating direct evidence of a release, subsequent subsurface investigations at the Site should be conducted with the awareness of the potential for VOCs in soil and/or groundwater.
- The presence of the three former cleaners at 1225 West 9th Ave, 1003 Mariposa (St), and 951 Mariposa St identified in the city directory search constitutes a REC.

7.3.1 Historical Recognized Environmental Conditions

This Phase I ESA has revealed no evidence of *historical recognized environmental conditions* in connection with the Site.

7.3.2 Environmental Concerns and De Minimis Conditions

This Phase I ESA has revealed no *de minimis* conditions or environmental concerns in connection with the Site, except for the following:

- The presence of railroad tracks and associated facilities to the west of the Site shown beginning with the 1901 map may be an environmental concern as a result of potential impacts due to railroad activities and the surface soil impacts identified during previous BC investigations conducted at 944 and 1001 Osage Streets.

7.4 Recommendations

Based on our understanding of CCoD's unique interests in this Site and based on the results of this Phase I ESA, Brown and Caldwell provides the following recommendations:

- Conduct a subsurface investigation at the Site to address the REC indicating the potential for ACM in soil. A qualified person should be available to identify ACM if demolished building debris is encountered. Samples should be submitted for laboratory analysis if potential ACM is identified.
- During the course of the subsurface investigation at the Site, collect surface soil samples (between zero and two feet bgs) for laboratory analysis to address the potential for PAHs in soil based on the results of the sampling conducted at 944 and 1001 Osage Street.
- During the course of the subsurface investigation at the Site, field screen soil samples for VOCs to address the potential for impacts from the historical auto stations and dry cleaners identified to have existed at the Site. If field screening indicates potentially elevated VOC concentrations, submit soil samples for laboratory analysis. Additionally, collect groundwater samples for laboratory VOC analysis. These borings should be focused at locations where the highest potential for impacts may occur as indicated by the historical use investigation and database review in this report.

7.5 Environmental Professional's(s) Statement and Signature(s)

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional(s) as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312.



Todd Pomerantz
Project Scientist



David Fishbaugh
Managing Scientist

PHASE I ENVIRONMENTAL SITE ASSESSMENT SOUTH LINCOLN PARK

8. ENVIRONMENTAL PROFESSIONAL'S (S') QUALIFICATIONS

Brown and Caldwell personnel involved with this project are listed below along with pertinent information regarding their qualifications and specialized knowledge. Additional details regarding each listed professional have been included in Appendix N.

Brown and Caldwell Environmental Professionals conducting the assessment include:

Mr. Todd Pomerantz

Mr. David Fishbaugh

REFERENCES

- American Society for Testing and Materials (ASTM), November 2005. *Standard Practice E1527 05 for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.
- 40 CFR 312, Standards and Practices for All Appropriate Inquiries; Final Rule, November 2005 (AAI Rule).
- Fox and Sprader Enterprises, LLC, CHAIN AND ENVIRONMENTAL LIEN SEARCH. December 23, 2009. 2637799.9.
- Environmental Data Resources, Inc., *The EDR Radius Map with Geocheck*. Inquiry number 2637799.2s November 13, 2009.
- Environmental Data Resources, Inc., *The EDR-City Directory Abstract*. Inquiry number 2637799.6 November 13, 2009
- Environmental Data Resources, Inc., *EDR Historical Topographic Map Report*. Inquiry number 2637799.4 November 13, 2009
- Environmental Data Resources, Inc., *The EDR Aerial Photo Decade Package*. Inquiry number 2637799.5 November 13, 2009.
- Environmental Data Resources, Inc., *Sanborn Map Report*. Inquiry number 2637799.3 November 13, 2009.
- Environmental Data Resources, Inc., *The EDR Property Tax Map Report*. Inquiry number 2637799.8 November 13, 2009.
- Brown and Caldwell, Phase II Environmental Site Assessment, 944 and 1001 Osage Street, December 2, 2005.
- Brown and Caldwell, 10th and Osage Brownfield Site Subsurface Investigation Report, December 2, 2005.

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REF-1