

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT
APN #006-0204-001 through APN #006-0204-018
Resources Building Replacement Project
Sacramento, CA 95814



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1.0 Summary of Assessment

The Sanberg Group, Inc. (Sanberg) was contracted by Ascent Environmental, Inc. to conduct a Phase I Environmental Site Assessment (ESA) of the State-owned property bounded by O Street and P Street to the north and south, and 7th Street and 8th Street to the west and east, in the City of Sacramento, Sacramento County, California (Project site). The proposed Resources Building Replacement Project (Project) site consists of a State-owned historic building, as well as paved surface parking areas. The Project site is located on Assessor Parcel Numbers (APN) 006-0204-001 through 006-0204-018, legal description of T8N, R4E (latitude 38° 34' 34" north and longitude 121° 29' 54" west) in general conformance with the scope and limitations of ASTM Practice (E 1527-13). In addition, this ESA was performed in compliance with ASTM Standard E 2600-10.

The proposed Project consists of the construction of a new building of approximately 800,000 gross square feet with an expected capacity of approximately between 3,000 and 3,500 employees. However, for the purpose of evaluating environmental impact, a number of 3,500 occupants will be used. The proposed new building is estimated to be approximately 300 feet in elevation above ground surface. One level of below ground parking will be included in the construction. The existing surface parking lot and the supporting infrastructure will be demolished prior to construction. Heating and cooling will be provided by the existing State owned Central Plant.

Based on the age of the State-owned historic building, the Heilbron House, potential recognized environmental conditions (REC) may be present. These may include:

- Asbestos containing materials that may have been used in remodeling activities in the mid-1970s;
- Lead based paint both inside and outside of the building;
- Radon gas in the basement;
- PCB in the hydraulic oil associated with the elevator installed in the mid-1970s;
- Universal waste that may contain mercury and PCB; and
- Mold in the basement areas and in any area where water has seeped into the structure.

Should future activities result in disturbance of the structure (including physical relocation), sampling to identify which, if any, of these RECs is present is recommended.

Based upon the information obtained during this assessment, it is our opinion that the potential for subsurface volatile organic compound (VOC) contamination at the Project site at concentrations that may require statutory cleanup is **low** with no vapor encroachment condition (VEC) identified.

Current and past activities in proximity of the Project site do not appear to have impacted the Project site.

2.0 Purpose, Scope, and Involved Parties

The Sanberg Group, Inc. (Sanberg) was contracted by Ascent Environmental, Inc. to conduct a Phase I Environmental Site Assessment (ESA) of the Resources Building Replacement Project (Project) site, bounded by O Street and P Street to the north and south, and 7th Street and 8th Street to the west and east, in the City of Sacramento, Sacramento County, California (Project site) in general conformance with the scope and limitations of ASTM Practice (E 1527). The proposed Project site contains a State-owned historic building, as well as paved surface parking areas. The Project site is located on Assessor Parcel Numbers (APN) 006-0204-001 through 006-0204-018, legal description of T8N, R4E (latitude 38° 34' 34" north and longitude 121° 29' 54" west) in general conformance with the scope and limitations of ASTM Practice (E 1527-13). In addition, this ESA was performed in compliance with ASTM Standard E 2600-10.

The intent of this Phase I ESA is to evaluate areas of potential environmental concern or recognized environmental conditions (RECs), including potential vapor encroachment conditions (VEC), based on available information of current and past land uses at or near the Site involving the use, storage, or release of hazardous materials. For the purposes of this report, hazardous materials are defined as those substances listed as hazardous or extremely hazardous in Title 22 of the California Code of Regulations. The scope of the authorized site assessment work included site reconnaissance; review of available public data, historical records, topographic maps, and aerial photographs; and the preparation of this report.

3.0 Project Site Description

3.1 Project Site Location

The Project site is located in downtown Sacramento, Sacramento County, California. It is approximately 0.85 miles east of the Interstate-5 freeway/Sacramento River, and 0.75 miles north of the Highway 50 freeway (Figure 3-1).

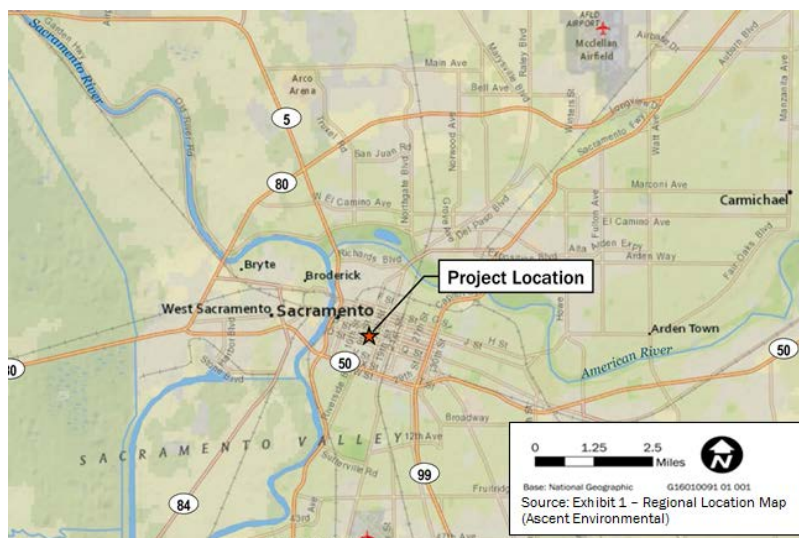


Figure 3-1 Project Location Map

This location, in which the proposed Project is planned to be implemented, is situated in an urban environment within the vicinity and southwest of the State Capitol building and the associated Capitol Park (Figure 3-2). The Project site consists of the Heilbron House, which is a historic structure, and paved surface parking. The Heilbron House is a 2,300 square foot wooden structure constructed in 1881 at the northwest corner of the site. The immediate area surrounding the Project

site includes multi-story government buildings, apartments, restaurants, and ground-level surface and multi-level parking. State Office Buildings 8 and 9 (OB 8/9) are located in the adjacent block to the south; the State owned Bateson Building is located on the adjacent block to the southeast; The Capitol Athletic Club and Physical Therapy Center, and the California Energy Commission are located in the adjacent block to the east; the existing Resources Building and the Leland Stanford Mansion State Historic Park are located in the adjacent block to the northeast; the State owned Subterranean Building is located on the adjacent block to the north, the Capitol Towers Apartment Homes and multi-level parking structure are located in the adjacent blocks to the northwest and west; and the California General Services Department and Central Plant are located in the adjacent block to the southwest.

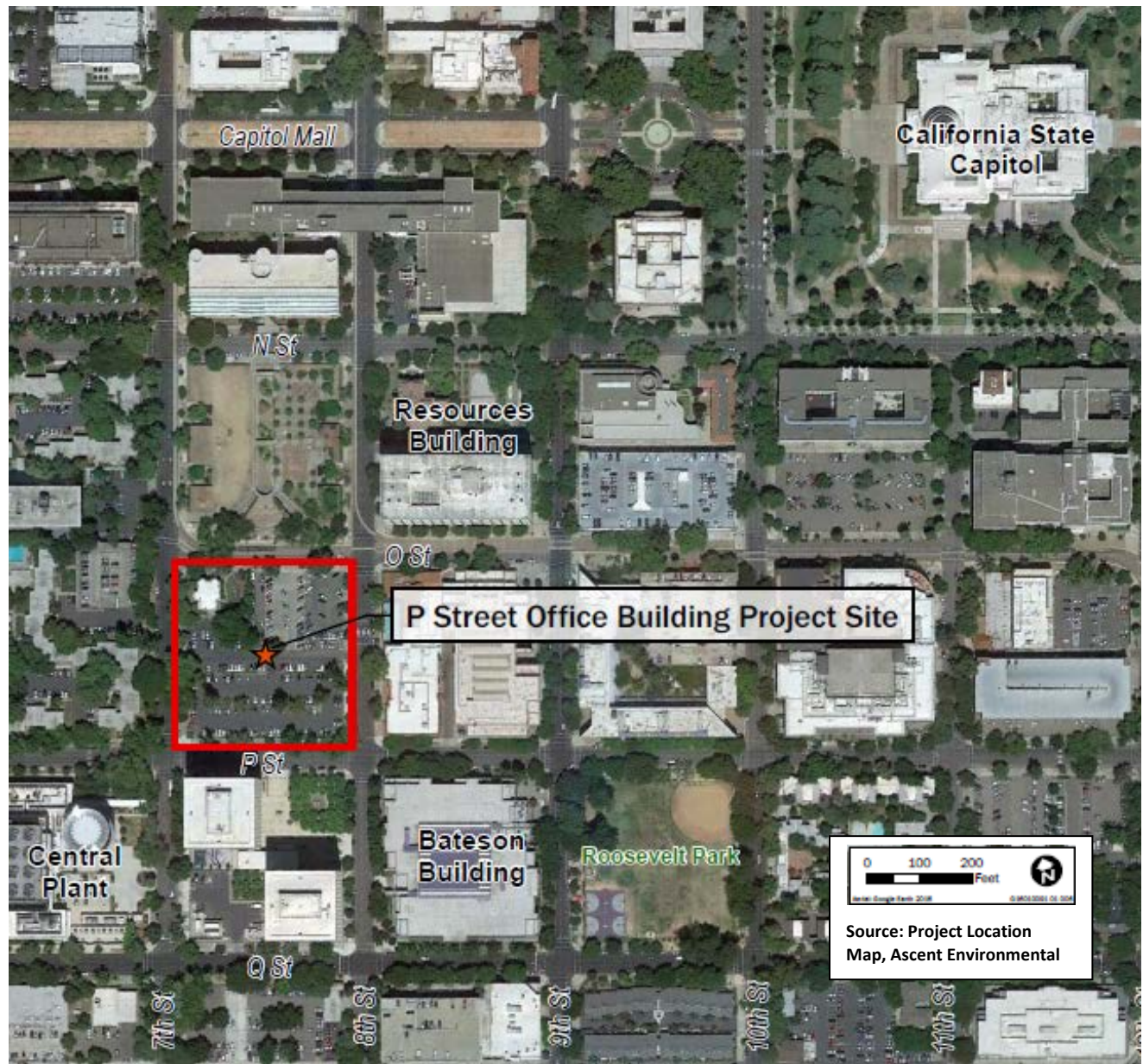


Figure 3-2 Project Site Map



3.2 Proposed Project

The proposed Project consists of the construction of a new building of approximately 800,000 gross square feet with an expected capacity of approximately 3,000 and 3,500 employees. For the purpose of evaluating environmental impact, a number of 3,500 occupants will be used. The proposed new building is estimated to be approximately 300 feet in elevation above ground surface. One level of below ground parking will be included in the construction. The existing surface parking lot and the supporting infrastructure will be demolished prior to construction. Heating and cooling will be provided by the Central Plant. In addition to providing department workspace for State employees, amenities will include retail, a food court, conference center, auditorium, wellness center, and art/public spaces.

Emergency diesel generators will be provided to serve emergency building loads required by Code, as well as to back up a selected building loads in the event of a power failure. Due to site constraint and aesthetic issues, it is anticipated the generators will be located in the basement of the building or at ground level inside of the building. A fuel tank for the generator will be sized based on the electrical requirement and the tank will be constructed of double-containment type fiberglass. The fuel tank may be sized to provide 8 hours continuous operation.

The proposed Project includes retaining the Heilbron House located at the corner of O Street and 7th Street.

3.3 Physical Setting

Topography

The topography in area surrounding the proposed Project is nearly level to very gently sloping ground. Variations in topography in the immediate region include stream channels, levees, terraces, overflow basins, and small areas of floodplain, with fluvial erosion and deposition acting as the main geomorphic processes (USDA 1998). The topography in the immediate region includes stream channels, levees, terraces, overflow basins, and small areas of floodplain, with fluvial erosion and deposition acting as the main geomorphic processes (USDA 1998). The elevation at the Project site is reported in the Environmental Data Resources, Inc. (EDR) report to be 20 feet msl. The topographic gradient is to the south-southwest. The Project site is in an urban setting with numerous buildings and considerable surface paving including streets, sidewalks, and parking areas.

Geology

The Project site is located on a relatively flat alluvial plain within the Great Valley geomorphic province. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California, and is a trough in which sediments have been deposited almost continuously since the Jurassic Period. Its northern area is the Sacramento Valley, drained by the Sacramento River, and its southern area is the San Joaquin Valley, drained by the San Joaquin River. The Project site is located near the southeastern end of the Sacramento Valley, an alluvial plain composed of a deep sequence of sediments derived from erosion of the Coast Ranges to the west and Sierra Nevada Mountains to the east, within the confines of a structural trough. The thickness of the alluvial deposits beneath the Project site is approximately 8,000 feet (Hackel 1966: Figure 1); however, a minimum of 60,000 feet of Mesozoic sediments consisting of siltstone, claystone, and sandstone of predominantly marine origin were laid down in the area west of the present margin of the Sacramento Valley (Hackel 1966: 217), and west of the Project site. The uppermost part of the alluvial plain is comprised of Holocene age basin deposits and Pleistocene age riverbank formation sediments, both alluvial in origin. These alluvial deposits are underlain by undifferentiated early Tertiary age marine deposits which overlie upper Cretaceous age deposits of the Great Valley Sequence.

The sedimentary sequence rests on a basement complex composed of metamorphosed Paleozoic and Mesozoic sediments, volcanics, and granites extending west from the Sierra Nevada Mountains. Refer to Table 3-1 for a summary of the geologic units.

**TABLE 3-1
 GENERAL DESCRIPTIONS AND CHARACTERISTICS
 OF THE GEOLOGIC FORMATIONS**

| Symbol | Unit | Age | Description |
|--------|-----------------------|--------------------------|--|
| Qb | Basin Deposits | Quaternary - Holocene | Alluvium (exposed mostly in the northwest and along the Sacramento River) |
| Qr | Riverbank Formation | Quaternary – Pleistocene | Alluvium (exposed over most of the project area) |
| Tmu | Marine Deposits | Tertiary | Undifferentiated early Tertiary marine deposits beneath Sacramento Valley |
| Ku | Great Valley Sequence | Upper Cretaceous | Includes the Winters Sand (Formation); reservoir rock, gas-bearing sand unit |
| Jmx | Metamorphic Rocks | Jurassic (?) | Paleozoic - Mesozoic metamorphic sediments, volcanics, and granites rocks of the Sierra Nevada |

Sources: Wagner, et al. 1981; Hackel, Otto, 1966.

Soils

Based on data provided in the November 30, 2016 EDR Radius Map Report (EDR 2016) and the Web Soil Survey/NRCS (accessed 05/02/2017), the soil at and surrounding the Project site are classified as Urban Land of variable surface texture, and as non-hydric.

A subsurface investigation was performed by Arup North America, Limited (Arup, 2017; Appendix A) to establish a general understanding of the geotechnical, geological, and geophysical properties of the site soils. The Project site is located on alluvial deposits set down by the confluence of the Sacramento and American rivers. Based on the results of the geotechnical investigation and review of historical reports, the following were encountered at depth: stratigraphic layers of artificial fill, younger alluvium, and an older alluvial clay deposit. The younger alluvium includes distinct upper and lower layers of sands, silts, and clays separated by a layer of river cobbles and gravel. Bedrock was not encountered in the subsurface exploration.

Liquefaction occurs when loose, saturated sandy or silty soils are subjected to strong and rapid shaking from a seismic event. Under the cyclic loads imposed by a seismic event, loose soils tend to contract (reduce in volume). Susceptibility to soil liquefaction is primarily a function of soil gradation and density. Soils that are most susceptible to liquefaction are recently deposited clean, loose, uniformly graded, saturated sands. Based on the results of the geotechnical investigation, the effects of liquefaction will not contribute toward ground failure or manifest as more than minor settlements beneath the proposed structure (Arup, 2017).

Groundwater

Depth to groundwater could not be conclusively determined from the geotechnical investigation performed at the Project site (Arup, 2017; Appendix A). Based on observations during the advancement of geotechnical borings, estimates of depth to groundwater were approximately 12 to 15 feet, which is consistent with what is typical in the region. Several wells exist on site and were monitored in late 2012. These well readings show the depth to groundwater ranging from 12 to 17 feet, with an average depth of 15 feet.



Groundwater has in the past varied seasonally from approximately 10 feet in the winter to approximately 18 feet in the summer and fall (Arup, 2017; [Appendix A](#)).

Faulting and Seismicity

The Project site is located along the eastern margin of the circum-Pacific earthquake zone, which is a result of the processes of plate tectonics, and is the most seismically active area in the United States. A major feature of the circum-Pacific earthquake zone associated with this region of California is the San Andreas Fault System, which defines the boundary between the North American Plate to the east (on which the Proposed Project is located) and the Pacific Plate to the west. The San Andreas Fault System is generally expressed as a 40-mile wide elongated zone of fracturing and rock deformation that creates the general northwest-southeast trending valleys and ridges in the Coast Ranges, as well as the overall physiographic nature of the California's Central Valley. Another consequence of its proximity to the Project site is exposure to the earthquake activity that is common throughout California.

A review of available published maps of geologic and seismic hazards indicates that there are no known active faults identified in or adjacent to the City of Sacramento and the Proposed Project area. In addition, there has been no documented movement on faults mapped in Sacramento County during the past 150 years. However, the region has experienced numerous instances of groundshaking originating from faults in the San Andreas Fault System.

The closest known potentially active fault mapped by the California Geological Survey is the Dunnigan Hills fault located about 20 miles northwest of Sacramento, with the closest branches of the seismically active San Andreas Fault System (Historic activity, i.e., within the last 200 years) being the Green Valley and Concord faults, 43 and 50 miles to the southwest, respectively. The main trace of the San Andreas Fault System is approximately 80 miles to the southwest. Other active faults within 100 miles of the Proposed Project area are listed on [Table 3-2](#).

TABLE 3-2
ACTIVE FAULTS WITHIN 100 MILES OF THE PROPOSED PROJECT SITE

| Fault Name | Distance from Fault to Project Site (Miles) | Age of Movement | Characteristic Earthquake (moment magnitude) |
|------------------------------|---|-----------------------------|--|
| Dunnigan Hills | 20 | Holocene (<15,000 years) | 6.6 ¹ |
| Vaca | 28 | Quaternary | 6.1 ¹ |
| Foothills, N central section | 30 | Quaternary (<130,000 years) | 6.0 ^{2,3} |
| Foothills, S central section | 36 | Quaternary | 6.0 ^{2,3} |
| Greenville | 43 | Holocene | 6.6 |
| Green Valley | 43 | Recent (<150 years) | 6.2 |
| Cordelia | 43 | Holocene (<15,000 years) | NA |
| Concord | 50 | Recent | 6.2 |
| Healdsburg / Rogers Creek | 56 | Quaternary / Holocene | 7.1 |
| Hayward | 61 | Recent | 6.9 – 7.1 |
| Calaveras | 61 | Holocene | 7.5 |
| San Andreas | 80 | Recent | 7.9 |

Source: Jennings and Bryant 2010

Notes: ¹ Wesnousky, S.G., 1986

² General Plan, 2011

³ Richter scale magnitudes

Seismic hazards resulting from earthquakes can include but are not limited to ground rupture along a fault line (surface rupture), ground shaking, and liquefaction. Surface rupture is the surface expression of movement along a fault. Structures built over an active fault can be torn apart if the ground ruptures. Surface rupture along faults is generally limited to a linear zone a few meters wide. The Project site is not located within an Alquist-Priolo active fault zone (Bryant & Hart, 2007), and there is no evidence of active faulting within the project site.

The probable seismic ground shaking expected at the Project site is anticipated to produce peak ground accelerations between 10 and 20 percent of the acceleration of gravity, 0.1g and 0.2g, respectively (Probabilistic Seismic Hazard Assessment Maps, 2002). Earthquake intensities generally associated with this amount of ground shaking are typically between VI and VII on the Modified Mercalli Intensity Scale (MMI). An expected characteristic earthquake on the entire San Andreas Fault System is Mw 7.9 (Moment Magnitude) and is probably the largest earthquake that would be felt in the Project site. Given the distance between the San Andreas Fault and the Project site, the felt intensity would be expected to be between MMI IV and V (light to moderate shaking). However, a felt intensity between MMI VII and VIII would be caused by a characteristic earthquake on the Dunnigan Hills fault of Mw 6.6 because it is much closer to the project area. Based on mapping conducted pursuant to the Alquist-Priolo Act, the Project site and surrounding area are not located on a site of potential liquefaction (Bryant & Hart, 2007).

The preliminary findings of the geotechnical investigation (Arup, 2017; [Appendix A](#)), using the USGS web-based tool (USGS, 2014) with the 2014 Seismic Hazard Update, the California Building Code-compliant seismic response spectrum was determined for the Project site. Based on the results of the analysis, the peak ground acceleration expected at the site is 0.233g.

Other Observations

Standing water or other drainage features containing flowing or standing water were not observed during the Site reconnaissance.

Rainfall is typically highest (greater than one inch) from November through April of the year with an average precipitation of approximately 18.51 inches annually (www.worldclimate.com). Annual temperatures range from an average high of 73.6 °F to an average low of 48.3 °F. Weather conditions during the Site reconnaissance were clear and cool/dry, with temperatures in the low 50s.

Current Uses

The Project site and immediate surrounding areas include a historic building (Heilbron House), multi-story government buildings, apartments, restaurants, and ground-level surface and multi-level parking. Capitol Park, including the California State Capitol building, is located to the northeast. A Central Plant facility, used for providing heating and cooling is located immediately to the southwest.

3.4 Site Inspection and Interviews

A pedestrian site inspection of the Project site was performed on February 24, 2017 by Sanberg staff. Photographs of the Project site included the exterior and surrounding environs ([Appendix B](#)). No other information (interviews) regarding the building was available at the time of the site inspection.

According to the NRHP application form, the Heilbron House was constructed in 1881. It is primarily constructed of wood, along with various masonry/stone work as appropriate. The interior of the building underwent some modifications to suit prior uses (e.g.: San Diego Federal Saving and Loan Association branch office, 1973). Other uses included a restaurant and an art gallery. Currently, the Heilbron House is being used by the California Department of Parks and Recreation as office space.

Identified Potentially Hazardous Materials

Inspection of the interior of the Heilbron House was not performed as part of this scope of work. Potentially hazardous materials were not observed outside of the structure or in the adjoining parking areas on the Project site.

Underground Storage Tanks (USTs)

No USTs were reported or observed at the Project site and no visible signs of USTs were observed.

Asbestos

Asbestos containing materials (ACM) may have been used in the remodeling that occurred in the early to mid-1970s as building materials that contain ACM was typical until the late 1970s. The building's interior was not sampled for ACM. Should disturbance of the structure result from future activities, sampling to identify locations where ACM may be present is recommended.

Lead Based Paint

Building material prior to 1978 should be suspected of containing lead based paint (LBP). The exterior of the building is constructed primarily of wood and is painted (refer to Photo 1, [Appendix B](#)). It is assumed the interior is of similar construction. The building's exterior and interior were not sampled for LBP. Should future activities result in disturbance of the structure, sampling to identify locations where LBP may be present is recommended.

Radon

Radon is a radioactive gas that occurs naturally in the environment and cannot be seen, smelled or tasted. A human health effect associated with exposure to elevated levels of radon is an increased risk of developing lung cancer. The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. The Federal EPA Radon zone for Sacramento County, the Project site, and surrounding area is Zone 3, average indoor level < 2 pCi/L. This determination is based on 52 sites. The data indicate that 100% of all first floor and second floor living areas are <4 pCi/L; for basement areas, 50% are <4 pCi/L and 50% are between 4 and 20 pCi/L. Based on these data, radon does not pose a risk to human health within areas of buildings occupied at or above ground level. However, there may be a potential risk in poorly ventilated basement areas. Testing for Radon gas is recommended for future development that may include below ground structures (e.g.: subterranean parking, etc.).

PCBs

Polychlorinated Biphenyls (PCBs) were used in the past as insulating oils in electrical transformers or as hydraulic oils in elevator equipment prior to the 1980s. Between 1950 and 1979 PCB-containing building materials were used in buildings and fluorescent light ballasts. According to historical records (NHRP 1976), an elevator was installed at the rear of the building. Sampling for PCB was not performed as part of the scope of this assessment. Should future activities result in disturbance of the structure, sampling to identify the presence of PCB at the Project site is recommended.

A curbside mounted electrical transformer/circuit breaker and meter was observed about mid-way along the eastern boundary of the Project site (refer to Photo 11, [Appendix B](#)). However, it is not likely that it would contain PCB oil and does not represent a REC.

Universal Wastes

Universal wastes are defined as those that are classified as hazardous but containing materials that are very common. Common universal wastes include mercury-containing fluorescent lamps and high intensity discharge bulbs, and mercury-containing thermostats and switches. Lighting ballasts may contain PCBs. Inspection of the interior of the Heilbron

House was not performed during the site visit. Should disturbance of the structure result from future activities, verification of the presence of universal waste at the Project site is recommended.

Trash

Based on the observations made during the Project site reconnaissance, evidence of illegal dumping did not appear to be a concern. Very minimal trash or other debris was observed.

Utilities

Electricity, gas, water, sewer and telephone appear to be supplied and made available to the Project site from underground utilities.

Septic Tanks and Cesspools

Septic tanks and cesspools are often associated with the disposal of wastewater from structures that are not served by public sewer systems. Septic tanks and cesspools may be associated with hazardous materials if such materials have been inappropriately disposed of in the past via sinks. No septic tanks or evidence of a cesspool was observed at the Project site.

In the latter part of the nineteenth century, with the exception of civic sanitation in the form of redwood sewers in the commercial district designed primarily for storm water drainage and not sanitation, the vast majority of privies in Sacramento were mere holes dug in the ground. In the case of the better homes and best hotels, cesspools were still common even in the 1880s. Following the floods of 1861 and 1862, which raised concerns of miasmatic diseases and set into motion the first sanitation reforms, the city proposed that connections be made from each back yard to sewer pipes laid below ground surface in the center of the street alleys. These in turn would be connected with larger street sewers at the intersections. Implementation proceeded slowly over the next 15 years with a hodgepodge system of brick and redwood conduits, ceramic pipe, and open ditch sewers (Hamilton et al., 2005).

Water closets were seen in wealthier residences and civic buildings by the 1870s, but the large-scale move to indoor plumbing took a slow course in Sacramento. The city passed several ordinances that decade, including the first “mandatory use of cesspools as intermediary settling tanks before hookups to alley sewers could be made” in 1878. The Heilbron House, constructed in 1881, had indoor plumbing but it is not certain if it was connected to a sewer system or to a cesspool. Their Heilbron’s old home had been moved down the block to make way for their new home, and it most likely had an outdoor privy. The 1895 Sanborn portrays the site of the Heilbron House (Block 204) as an established neighborhood. Only two possible privies are depicted, and they are associated with homes constructed in the 1850s and 1860s. Heilbron’s neighbors followed suit, tying into the slowly evolving sewer system that was installed in the alleys (Hamilton et al., 2005).

By 1890 the city had paved many streets with asphalt, built cement sidewalks downtown, and constructed a new water system, but the sanitation problem still loomed large for many years after. City health officials were constantly attending to complaints of odors and poor plumbing. A 1902 Sacramento Bee article estimated that 5,500 privies remained in the city, suggesting they were still a prime means of waste disposal. It would still be another decade before city legislation and modern plumbing codes finally ended the unsanitary conditions (Hamilton et al., 2005).

Any environmental biological hazard associated with the use of outdoor privies and cesspools is not expected as the organic material would be thoroughly degraded after over a century of exposure to the natural processes of biological decomposition. This would not represent a REC.

Pits, Ponds, and Lagoons

Pits, ponds, and lagoons are often associated with the disposal of solid and liquid wastes, which may include hazardous materials. Information obtained from the site inspection, historical records review, and interviews indicated that no pits, ponds, or lagoons exist or have existed on the Project site that would be used for disposal of solid or liquid wastes. No evidence of solid or liquid wastes was observed during the site reconnaissance.

3.5 Past Uses of Project Site and Adjoining Properties

Information obtained from the review of Sanborn maps, historic topographic maps, and aerial photography indicates that the Project site has been developed as far back as 1895 (Sanborn maps), potentially 1891 (topographic maps), and 1937 (aerial photographs). The following is a summary of the review of each data source.

Sanborn Maps

The Project site appears to have individual structures as indicated on the 1895 and 1915 Sanborn maps, including the Heilbron House in the northwest corner. Similar development is indicated for the surrounding properties; apartments are located in the north, south, east, and west. On the 1950 Sanborn map, the Project site still appears occupied with individual structures but some buildings appear to have been removed from the Project site in the northeast. In addition, new apartment buildings have appeared in the southern and southeastern portions of the Project site. In 1952, the development appears similar to the 1950 map. On the 1957 Sanborn map, the area surrounding the Heilbron House in the northwest appears to have been converted to a parking lot.

By 1960 the parcel to the northeast of the Project site appears to have been cleared of the previous structures and replaced by ground level parking. This conversion continues in the 1964 map, with lots in the southern and western portions of the Project site being switched to parking. Maps from 1965, 1966, 1968, and 1970 show the culmination of the conversion to ground level parking, as all parcels have been converted to parking aside from the parcel containing the Heilbron House in the northwest corner of the Project site. The copies of the Sanborn maps are provided in [Appendix C](#).

Historic Topographic Maps

Topographic maps are provided in [Appendix D](#) with the dates or revised dates of 1891, 1892, 1893, 1902/1907, 1911/1916, 1949, 1954, 1967, 1975, 1980, 1992, and 2012. Specific development of the Project site cannot be ascertained from the scale of the maps from years 1891 through 1893. Beginning in 1902/1907 the topographic map appears to indicate some development but the type cannot be determined. This is similar for the 1911/1916, 1949, and 1954 maps. By 1967 the historic topographic map indicates structures in the north (Heilbron House) and northeastern parts of the Project site; a structure to the northeast is also indicated and is likely the Department of Water Resources building. No further development is indicated on the 1975 and 1980 maps. In the 1992 and 2012 maps, individual buildings are no longer indicated.

Historic Aerial Photographs

Historical aerial photographs were reviewed for evidence of past development or land use on the Project site and surrounding areas, and are provided in [Appendix E](#). Features described on the images are interpretive and are valid only for the date of flight, index number, and frame number. The following features relative to the land-use history are summarized in [Table 3-3](#).



**TABLE 3-3
 SUMMARY OF AERIAL PHOTOGRAPHS**

| | |
|------|--|
| 1937 | The Project site is developed, likely mixed-use residential and commercial, with development to the north, south, east and west (Scale 1"=500') |
| 1947 | The Project site is developed similar to 1937 (Scale 1"=500') |
| 1953 | The Project site is developed similar to 1947, with two parcels in the north being converted to parking (Scale 1"=500') |
| 1957 | The Project site is developed similar to 1953 (Scale 1"=500') |
| 1964 | The Project site is developed similar to 1957, with the property across O Street to the north being redeveloped, and the Department of Water Resources building appearing to the northeast (Scale 1"=500') |
| 1966 | The Project site shows the development of more surface parking on the parcels along P Street to the southern portion of the Project site; the property to the east has been converted to surface parking (Scale 1"=500') |
| 1972 | Project site and surrounding area is similar to the 1966 aerial photograph (Scale 1"=500') |
| 1984 | Project site is similar to the 1972 aerial photograph; new buildings appear across 8 th Street to the east (Scale 1"=500') |
| 1993 | Project site is similar to the 1984 aerial photograph; new buildings appear across 8 th Street to the east (Scale 1"=500') |
| 1998 | Project site and surrounding area is similar to the 1993 aerial photograph (Scale 1"=500') |
| 2005 | Project site and surrounding area is similar to the 1998 aerial photograph (Scale 1"=500') |
| 2006 | Project site and surrounding area is similar to the 2005 aerial photograph (Scale 1"=500') |
| 2009 | Project site and surrounding area is similar to the 2006 aerial photograph (Scale 1"=500') |
| 2010 | Project site and surrounding area is similar to the 2009 aerial photograph (Scale 1"=500') |
| 2012 | Project site and surrounding area is similar to the 2010 aerial photograph (Scale 1"=500') |

The review of the historic aerial photographs indicated no readily apparent RECs.

National Register of Historic Places/California Register of Historic Resources

The Heilbron House is listed on the National Register of Historic Places #76000511 (NRHP 1976), the California Register of Historic Resources (CRHR) under Criteria A and C, and is Sacramento Register-listed. Because the Heilbron brothers are considered important in local and regional history, any archaeological features situated in the lot would also be considered significant. Built in Italianate style, the Heilbron House was completed in 1881, and still occupies the corner of 7th and O streets today. The parcel of land that the Heilbron House is situated on has undergone little development since the 1880s. Review of historical data suggests that residential structures were present on the parcel sometime in the 1850s and continuing until the 1960s when the property was purchased by the State. At this time, most residential structures were raised and replaced with surface parking lots. Prehistoric and historical archaeological deposits may remain intact in this area (Hamilton et al., 2005).

3.6 Current and Past Uses of Adjoining Properties

The land use prior to development of the Project site appears to have been mostly a mix of commercial and residential development. Over time, the Project site and surrounding areas became more developed with larger office buildings;



many owned by the State of California. Currently the area is mostly developed with a mix of State office buildings, commercial, multi-family residential (apartments), and parking (both surface and multi-level structures) uses.

4.0 Records Review

4.1 Standard Environmental Records

Sanberg environmental staff reviewed available databases from federal and state regulatory agencies to identify use, generation, storage, and treatment and/or disposal of hazardous materials and chemicals, or release incidents of such materials, which may have impacted the Site. The regulatory databases were provided to Sanberg from EDR Radius Map Report with GeoCheck ([Appendix F](#)). The radius search was performed using the addresses and latitude and longitude coordinates to locate the Site. The environmental and regulatory databases that were included in this review follow the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) guidelines.

The radius report contains records of registered sites in the vicinity of the Site for the classifications and distances listed in [Table 4-1](#). The target property was not listed in any of the database lists provided by EDR as potential environmental concerns. Report dates for each database searched are listed in [Appendix F](#).

**TABLE 4-1
 SUMMARY OF REGULATORY DATABASE SEARCH**

| Database | Distance Searched (miles) | Map Finding Summary |
|---|---------------------------|---------------------|
| CERCLIS NFRAP | 0.5 | 1 |
| RCRA Corrective Actions | 1 | 1 |
| RCRA TSDFs | 0.5 | 1 |
| RCRA Large Quantity Generators (LQG) | 0.25 | 1 |
| RCRA Small Quantity Generators (SQG) | 0.25 | 20 |
| CA RESPONSE | 1 | 11 |
| Leaking Underground Storage Tank (LUST) | 0.5 | 33 |
| Spills, Leaks, Investigation & Cleanup Recovery Listing (SLIC) | 0.5 | 8 |
| CA Sacramento Co. CS | 0.5 | 36 |
| Underground Storage Tanks – (UST) | 0.25 | 8 |
| CA Aboveground Storage Tanks (AST) | 0.25 | 8 |
| CA Voluntary Cleanup sites (VCP) | 0.5 | 3 |
| CA Brownfields | 0.5 | 1 |
| US Brownfields | 0.5 | 5 |
| CA HIST Cal-Sites | 1 | 12 |
| Historical Underground Storage Tanks (HIST UST) | 0.25 | 17 |
| CA FID UST | 0.25 | 24 |
| Statewide Environmental Evaluation and Planning System (SWEEPS UST) | 0.25 | 28 |



| | | |
|---------------------------------------|-------|----|
| FUDS | 1 | 1 |
| CA BOND EXP PLAN | 1 | 5 |
| ENVIROSTOR Cleanup Sites (ENVIROSTOR) | 1.0 | 38 |
| Historic Cortese List (HIST CORTESE) | 0.5 | 23 |
| CA HWP | 1 | 2 |
| CA Sacramento Co. ML | 0.25 | 89 |
| Notify 65 | 1 | 6 |
| EDR Manufactured Gas Plants (MGP) | 1 | 3 |
| EDR Historical Auto Stations | 0.125 | 19 |
| EDR Historical Cleaners | 0.125 | 7 |

FEDERAL RECORDS

Federal CERCLIS NFRAP List

Tracks sites that have no further interest under the Federal Superfund Program based on available information; now SEMS-ARCHIVE.

The Project site is not listed in the search of this database, while one site is listed within 0.5 miles of the site.

Federal RCRA CORRACTS Facilities List

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

The Project site is not listed in the search of this database, while one site is listed within 1.0 miles of the site.

RCRA TSDF Facilities List

RCRAInfo is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

The Project site is not listed in the search of this database, while one site is listed within 0.5 miles of the site.

RCRA Large Quantity Generators (RCRA-LQG)

Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

The Project site is not listed in the search of this database, while one site is listed within 0.25 mile of the site.

RCRA Small Quantity Generators (RCRA-SQG)

Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

The Project site is not listed in the search of this database, while 20 sites are listed within 0.25 miles of the site.

STATE AND LOCAL RECORDS

CA Response (RESPONSE)

Identifies confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.



The Project site is not listed in the search of this database, while 11 sites are located within 1.0 miles of the site.

Leaking Underground Storage Tanks (LUST)

This data is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents.

The Project site is not listed in the search of this database, while 33 sites are located within 0.5 miles of the Site.

Spills, Leaks, Investigation & Cleanup Recovery Listing (SLIC)

These records are maintained by the California Regional Water Quality Control Board (RWQCB). This list includes contaminated sites that impact groundwater or have the potential to impact groundwater. Refer to CLEANUPSITES database as source of current data.

The Project site is not listed in the search of this database, while 8 sites are located within 0.5 miles of the site.

CA Sacramento Co. CS

State of California and tribal leaking storage tank lists.

The Project site is not listed in the search of this database, with 36 sites located within 0.5 miles of the site.

Underground Storage Tanks (UST)

Active UST facilities gathered from the local regulatory agencies.

The Project site is not listed in the search of this database, with eight sites located within 0.25 miles of the site.

Aboveground Storage Tanks (AST)

A listing of AST petroleum storage tank locations.

The Project site is not listed in the search of this database, with eight sites located within 0.25 miles of the site.

Voluntary Cleanup Program Properties (CA VCP)

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that the Department of Toxic Substances Control (DTSC) oversee investigation and/or cleanup activities and have agreed to provide coverage for the DTSC's costs.

The Project site is not listed in the search of this database, with three sites located within 0.5 miles of the site.

CA Brownfields

State of California and tribal Brownfields sites. Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment.

The Project site is not listed in the search of this database, with one site located within 0.5 miles of the site.

US Brownfields

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on Brownfields properties assessed or cleaned up with grant funding, as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to the EPA, as well as areas served by Brownfields grant programs.

The Project site is not listed in the search of this database, with five sites located within 0.5 miles of the site.

CA HIST Cal-Sites

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, the California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

The Project site is not listed in the search of this database, with 12 sites located within 1.0 miles of the site.

Historical Underground Storage Tanks (CA HIST UST)

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987. The hazardous substances stored within these tanks include, but are not restricted to, petroleum products, industrial solvents, and other materials.

The Project site is not listed in the search of this database, while 17 other sites are listed within 0.25 miles of the site.

CA FID UST

The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

The Project site is not listed in the search of this database, while 24 other sites are listed within 0.25 miles of the site.

Statewide Environmental Evaluation and Planning System (CA SWEEPS UST)

This underground storage tank listing was updated and maintained by a company contracted by the SWRCB in the early 1990's. The listing is no longer updated or maintained.

The local agency is the contact for more information on a site on the SWEEPS list.

The Project site is not listed in the search of this database, while 28 other sites are listed within 0.25 miles of the site.

FUDS

This listing includes locations of Formerly Used Defense Sites Properties where the US Army Corps Of Engineers is actively working or will take necessary cleanup actions.

The Project site is not listed in the search of this database, while 28 other sites are listed within 0.25 miles of the site.

CA BOND EXP PLAN

The Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

The Project site is not listed in the search of this database, with five sites located within 1.0 miles of the site.

Envirostor Cleanup Sites (ENVIROSTOR)

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination, and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where the DTSC has made a "No Action Required" determination are not included in this database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

The Project site is not listed in the search of this database, while 38 sites are located within 1.0 miles of the site.



Hazardous Waste & Substances Site List (HIST CORTESE)

The sites for the list are designated by the State Water Resource Control Board (through the LUST program), the Integrated Waste Board (through the SWF/LS program), and the Department of Toxic Substances Control (through the Cal-Sites program). This listing is no longer updated by the state agency.

The Project site is not listed in the search of this database, while 23 sites are listed within 0.5 miles of the site.

CA HWP

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

The Project site is not listed in the search of this database, while two sites are listed within 1.0 miles of the site.

CA Sacramento Co. ML

Sacramento County Master List. This list identifies any business that has hazardous materials on site, hazardous materials storage sites, underground storage tanks, and/or waste generators.

The Project site is listed in the search of this database but is identified as inactive and no longer updated. The list also identifies 89 sites listed within 0.25 miles of the site.

Proposition 65 Records (Notify 65)

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

The Project site is not listed in the search of this database, while six other sites are listed within 1.0 miles of the site.

Manufactured Gas Plants (EDR MGP)

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils, and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

The Project site is not listed in the search of this database, with three other listings within 1.0 miles of the site.

EDR Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

The Project site is not listed in the search of this database, with 19 other listings within 0.125 miles of the site.

EDR Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to, dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry, etc.

The Project site is not listed in the search of this database, with seven other listings within 0.125 miles of the site.

4.2 Additional Record Sources

4.2.1 Building Records and Permits

A search of building department records was conducted by EDR for the Project site and surrounding properties. Information was collected from both the City of Sacramento Community Development and from the County of Sacramento Planning and Community Development. Records were returned for the City of Sacramento Community Development for the years 2011 - 2016; and for the County of Sacramento Planning and Community Development for the years 2013 - 2016. The building department records were identified for adjoining properties only. No permits were identified for the Project site in the EDR report. The results indicated no past activities that would be associated with a potential REC.

A search for Environmental Liens and Activity Use Limitations (AUL) did not reveal evidence of environmental liens or other activity and use limitations associated with RECs at the Project site. The City of Sacramento gifted the property to the State of California on July 7, 1969. Refer to [Appendix G](#) for additional information.

4.2.2 Chain-of-Title

A 50-Year Chain-of-Title report was not provided for review and incorporation into this report.

4.2.3 Oil and Gas Well Maps

Two Oil/Gas wells are identified in the EDR database as being operated by the Sacramento Natural Gas Company. The wells, CAOG11000235424 and CAOG11000235425, were abandoned on July 12, 2001. They were located approximately 0.70 miles west of the Project site. Refer to EDR Report for details in the [Appendix F](#).

4.2.4 Wetlands

Information obtained from the site inspection, aerial photographs, and topographic maps indicated that the proposed Project site does not appear to impact any identified wetlands. However, wetlands are present within one mile of the Project site. Refer to EDR Report for details in the [Appendix F](#).

4.2.5 Groundwater Wells

The EDR report indicates there are three potential water wells located within one mile of the Project site. The closest is slightly more than 0.25 miles to the northeast (CADW60000003129). A second well is located approximately 0.75 miles to the southwest (CADW600000029660). A third well is located approximately 0.90 miles to the west (CADW600000029664). Refer to EDR Report for details in the [Appendix F](#).

4.2.6 City Directories

Business directories including city, cross reference and telephone directories were reviewed at approximately five year intervals for the years spanning 1920 through 2013. One site identified as Holland Cleaners was listed in 1937 at 1427 11th Street. Additional information is available in the EDR report in [Appendix G](#).

5.0 Vapor Encroachment Condition

5.1 ASTM Standards

ASTM E1527-13 specifically requires assessing the potential for hazardous vapors to migrate onto or within the target property. It does so by defining “migrate/migration” as “the movement of hazardous substances or petroleum products in any form, including, for example, solid and liquid at the surface or subsurface, and vapor in the subsurface,” and then requiring an analysis of surrounding property uses and data-base records for migration potential.

ASTM Standard E2600-10 is a Standard Guide for Vapor Encroachment Screening for volatile organic compounds (VOC) on Property Involved in Real Estate Transactions (Guide 2600). A footnote to the definition of “migrate/migration” in ASTM E1527-13 states “vapor migration in the subsurface is described in Guide 2600,” thereby placing some reliance on Guide 2600. Further, the goal of Guide 2600 is to identify a Vapor Encroachment Condition (VEC) which is “the presence or likely presence of [chemicals of concern] vapors in the subsurface of the target property (TP) caused by the release of vapors from contaminated soil or groundwater either on or near the TP as identified by Tier 1 ... or Tier 2 ... procedures.” Similarly, the goal of ASTM E1527-13 is to identify a Recognized Environmental Condition (REC) which is “the presence or likely presence of any substances or petroleum products in, on, or at a property... due to release to the environment... ”

Guide 2600 specifies use of “Phase I ESA-type information to determine if a VEC exists” as part of a “Tier 1” screen. This includes an analysis of historical records, historical uses, federal, state, local and tribal governmental records, physical setting information and user-specialized knowledge. The Tier 1 screen even uses minimum search distances, focusing its analysis on potential petroleum releases within 1/10 of a mile from the target property, and up to 1/3 of a mile for hazardous material releases that migrate more easily than petroleum. Unless a Tier 1 screen can rule out a VEC, Guide 2600 calls for regulatory file reviews and/or soil, soil gas, or groundwater sampling under a Tier 2 screen process, similar to what occurs if a REC is identified under ASTM E1527-13.

5.2 Vapor Encroachment Screening Listings and Data

A Vapor Encroachment Screen model ([Appendix H](#)) was performed to identify the potential for any VEC that may be present within the Project site. The model identified up-gradient sites that could represent potential sources for vapor intrusion at the proposed Project site. After review of these sites, there were no identified threats resulting from past activities that would be classified as a potential VEC affecting the proposed Project site.

6.0 Previous Environmental Assessments

Sampling for asbestos, lead-based paint, and PCB was performed (refer to Section 3.4). No other environmental assessments, other than those discussed in previous sections of this report, are known for the Project site. If these exist, none were provided at the time of the preparation of this Phase I ESA report.

7.0 Findings and Conclusions

Sanberg performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice (E) 1527-13 of the Project site located at the State-owned property bounded by O Street and P Street to the north and south, and 7th Street and 8th Street to the west and east, in the City of Sacramento, Sacramento County, California. Any exceptions to, or deletions from, this practice are described below in Section 8.0 of this report.

The EDR Radius Report identified 277 locations within a mile radius of the Project site (target property in EDR report). Of these, one was identified at the Project site, from the National Pollutant Discharge Elimination System (NPDES) database which regulates point sources that discharge pollutants to waters of the United States.

The potential for REC at the Project site appears to be associated with the existing historic Heilbron House. Potential RECs could include ACM, LBP, Radon gas, PCB, universal waste, and mold. Testing for these was not performed as part of this Phase I ESA. Should future activities result in disturbance of the structure (including physical relocation), sampling to identify which, if any, of these RECs is present is recommended.

Based upon the information obtained during this assessment, it is our opinion that the potential for subsurface VOC contamination at the Project site at concentrations that may require statutory cleanup is **low**, with no VEC identified.



Current and past activities in proximity of the Project site do not appear to have impacted the Project site.

8.0 Exceptions

No exceptions to or deletions from ASTM Practice (E) 1527 occurred during this assessment.

9.0 Limitations

This report has been prepared for the exclusive use of Ascent Environmental, Inc. as it pertains to the Project site located at the State-owned property bounded by O Street and P Street to the north and south, and 7th Street and 8th Street to the west and east, in the City of Sacramento, Sacramento County, California. The conclusions and recommendations rendered herein are opinions based upon information obtained within the scope of work authorized by the client. This report should not be regarded as a guarantee that no further contamination, beyond that which may have been detected within the scope of this study, is present on or beneath the Project site. If additional information regarding the possible present or past use of hazardous materials at the Project site becomes available, then the need for further field investigation should be re-evaluated. Similarly, if suspected contamination is encountered during earthwork or construction activities, a qualified engineer or geologist should be on-site to monitor the soils and collect samples for laboratory analysis. Unless otherwise indicated in this Report, no attempt was made to check on the compliance of present or past owners of the Site with federal, state, or local laws and regulations. The Sanberg Group, Inc. shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the assessments were performed. All work has been performed in accordance with the generally accepted practices in environmental consulting, environmental geology, and hydrogeology. No other warranty, either expressed or implied, is made.

Sincerely,
The Sanberg Group, Inc.

Dale Schneeberger, M.S., P.G.
Vice President Environmental Service
May 10, 2017

Ray Rothwell
Staff Environmental Scientist
May 10, 2017

10.0 References

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APPENDIX A – Preliminary Geotechnical Engineering Report (ARUP 2017)

APPENDIX B – Selected Project Site Photographs

APPENDIX C – Sanborn Maps

APPENDIX D – Historic Topographic Maps

APPENDIX E- Aerial Photographs

APPENDIX F – EDR Radius Report

APPENDIX G – Other EDR Report Data

APPENDIX H – VEC Screening Report