City of **Montgomery**, *Alabama*

OFFICE OF THE MAYOR
Todd Strange, Mayor

Post Office Box 1111
Montgomery, Alabama
36101-1111

PH 334.625.2000
FX 334.625.2600

May 21, 2019

Ms. Ashley Mastin
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, AL 36110-2400

Subject: Draft Institutional Control Plan; Downtown Environmental Alliance; Montgomery, AL

Dear Ms. Mastin:

In accordance with the *Settlement Agreement for Site Response* executed between the Downtown Environmental Alliance and ADEM, I am enclosing three hard copies and one electronic copy of the *Draft Institutional Control Plan,* which is being submitted by the City of Montgomery on behalf of the Downtown Environmental Alliance.

We look forward to receiving your review of the document. Should you have any questions regarding this document, please contact Glen Davis at 334-215-9016 or glendon.davis@jacobs.com.

Sincerely,

Todd Strange, Mayor
City of Montgomery

c: Downtown Alliance Members
Samantha Downing/ADEM
J.P. Martin/Jacobs (Formerly CH2M)
Amy Graham/Jacobs
Glen S. Davis/Jacobs

Institutional Controls Plan Downtown Environmental Assessment Project, Montgomery, Alabama

Prepared for

Alabama Department of Environmental Management by the Downtown Environmental Alliance

May 2019

ch2m

PE Certification

This Institutional Controls Plan was prepared under the supervision of a Professional Engineer licensed by the Alabama Board of Licensure for Professional Engineers and Land Surveyors.

Glen S. Davis
Alabama PE No. 26705

5/20/19
Date

Contents

Acronyms and Abbreviations

AA	alternatives analysis
ADEM	Alabama Department of Environmental Management
AG	Attorney General
Annex	County Annex III
AOI	Area of Interest
ARAR	applicable, relevant, and appropriate requirement
ARBCA	Alabama Risk-Based Corrective Action
CH2M	CH2M HILL Engineers, Inc.
City	City of Montgomery
COG	Community Outreach Group
COPC	chemical of potential concern
CSM	conceptual site model
DCE	dichloroethene
DEA	Downtown Environmental Alliance
DEAP	Downtown Environmental Assessment Project
DU	Decision Unit
EC	Environmental Covenant
EI	Environmental Investigation
EPA	U.S. Environmental Protection Agency
FYR	Five-year Review
GIS	geographic information system
HHRA	human health risk assessment
IC	institutional control
ICP	Institutional Control Plan
MCL	maximum contaminant level
MNA	monitored natural attenuation
MWWSSB	Montgomery Water Works and Sanitary Sewer Board
PCE	tetrachloroethene
RA	remedial action
RAO	remedial action objective
ROW	right-of-way
RSA	Retirement Systems of Alabama
RSL	Regional Screening Level
site	Montgomery DEAP site
SLERA	screening-level ecological risk assessment
TCE	trichloroethene
VC	vinyl chloride
VF	volatilization factor
VI	vapor intrusion
VIMS	vapor intrusion monitoring system
VISL	vapor intrusion screening level

SECTION 1

Introduction

This Institutional Controls Plan (ICP) is being submitted to the Alabama Department of Environmental Management (ADEM) by the Downtown Environmental Alliance (DEA) to detail the Institutional Controls (ICs), Five-year Reviews (FYRs), and Monitoring that were selected as the recommended remedial action (RA) alternative for the Downtown Environmental Alliance Project (DEAP), in accordance with the ADEM-approved *Risk Assessment/Alternatives Analysis Report* (CH2M, 2019). Tetrachloroethene (PCE) in groundwater originally was discovered in former public water supply well PW-09W in 1991 and during the construction of the Retirement Systems of Alabama (RSA) Tower Energy Plant (hereinafter referred to as the RSA Energy Plant) in 1993. Figure 1-1 presents the DEAP investigation area boundary and investigation locations.

Since the discovery of PCE-impacted groundwater, the site has been the subject of numerous investigations (see Section 2.1.3). A human health risk assessment (HHRA), screening level ecological risk assessment (SLERA), and RA alternatives analysis (AA) were performed to assess potential risks to human health and the environment and evaluate alternatives to mitigate those potential risks. The assessments were performed using the results of the supplemental environmental investigation (EI) conducted by the DEA in 2016 and 2017 (CH2M, 2017). The results of these assessments indicated minimal potential future risks to human health exist due to PCE in groundwater and soil vapor. The selected controls in this document provide risk management approaches to eliminate potential risks.

SECTION 2

DEAP Details

2.1 DEAP Description

The DEAP covers approximately 30 city blocks in downtown Montgomery and includes groundwater and soil vapor potentially impacted by the PCE discovered in PW-09W in 1991 and during the construction of the RSA Energy Plant in 1993 (Figure 2-1). Prior to completing construction of the RSA Energy Plant, impacted soil was excavated as an emergency removal action. Following the removal action, concentrations of PCE exceeding the EPA Regional Screening Level (RSL) were not identified in soil, indicating that the source was removed. Therefore, surface and subsurface soil are not considered media of interest at the DEAP site.

2.1.1 Land Use

The DEAP is in a downtown commercial, municipal, and industrial area. The area is covered primarily with private and public buildings, paved streets, and parking areas, with few areas of open space. A land use assessment within the DEAP boundary was performed to determine building use type, as shown on Figure 2-1. The land use assessment (conducted in November 2018 based on ADEM comments received during October 2018 meetings) included a review of the city's geographical information system (GIS), parcel boundaries, parcel land use codes (residential, hotel, retail, etc.), basement locations, and ownership information for state, city, and RSA parcels. Most of the buildings were identified as governmental (i.e., municipal, state, or RSA) or industrial/commercial.

A windshield survey of parcels classified in the records as residential was conducted in November 2018 to identify which parcels included first-floor residential occupancy. In addition, properties identified with second floor apartments or lofts were called to confirm whether any apartments were occupied on the first floor.

Three first-floor residential properties, one vacant residentially-zoned lot without buildings, one school, and a child care facility were identified within the assessment boundary; however, these properties (Figure 2-1) are outside the extents of PCE concentrations exceeding the maximum contaminant level (MCL) in groundwater (plume areas). No parcels located within the plume areas, or within a 100-foot buffer of the plume areas, are currently used as first-floor residential properties. The current land use is not expected to change significantly in the future within the DEAP boundary.

2.1.2 Groundwater Use

In response to the 1991 discovery of PCE in well PW-09W, the Water Works and Sanitary Sewer Board of the City of Montgomery, Alabama (MWWSSB), discontinued use of the North Well Field, which is located near the north border of the DEAP boundary. PW-09W was located within the North Well Field just north of the plume area. All water supply wells within the North Well Field were abandoned in 2011, except PW-09W, which was retained for environmental monitoring and abandoned in January 2019. Potable water throughout the DEAP boundary is currently served by the MWWSSB. The primary surface water source for the MWWSSB is from the Tallapoosa River, a tributary to the Alabama River, located several miles upstream of the DEAP boundary. Potable water is also obtained from supply wells located at MWWSSB's West and Southwest well fields, located generally 4 to 5 miles from the DEAP boundary, respectively.

MWWSSB is not aware of any domestic wells in use at the DEAP boundary (ATSDR, 2004). Additionally, the City enacted an ordinance (City of Montgomery Code of Ordinances Chapter 5, Article VIII,

Section 5-483) in 2003 to prohibit the digging of any wells within a specifically-defined area that includes the DEAP boundary.

One industrial well was known to exist within the site boundary at the Capital Trailways bus station on North Court Street (Figure 1-1). The industrial well was historically used for bus washing and was never used as a potable source. The power and plumbing connected to the well and the water storage tank used to supply the bus washing system were removed in February 2017, rendering the well unusable. Capital Trailways notified ADEM that the well would not be used in any capacity in the future (Appendix A). Subsequently, the City notified Capital Trailways in January 2019 that, according to City of Montgomery Code of Ordinances Chapter 14, Article IV, Sec. 14-138, Capital Trailways must keep the unused well completely filled or securely closed with a 6-inch cement cap. A February 2019 inspection report from the City of Montgomery Inspections Department (Appendix A) documented that Capital Trailways has complied with the City ordinance and capped the well. The well is no longer being used, is not useable in its current state, and there are no plans by Capital Trailways to use it in the future.

2.1.3 History and Chemicals of Potential Concern

Following the 1993 emergency removal at the RSA Energy Plant and prior to the DEA's involvement, multiple investigations were conducted in the area to assess the nature and extent of remaining contamination, and other investigations were conducted as environmental site assessments for commercial and industrial properties within downtown Montgomery. These investigations evaluated soil, groundwater, sewer water, soil vapor, and tree core samples through 2012.

Over the course of these investigations, a PCE plume in groundwater emanating from the former RSA Energy Plant location was identified and subsequently monitored; however, no residual PCE contamination was identified in vadose zone soil.

Investigation results also concluded that multiple sources of contamination likely exist within the downtown Montgomery area. However, as previously noted, the DEAP evaluation consists of groundwater and soil vapor potentially impacted by the PCE discovered in PW-09W in 1991 and during the construction of the RSA Energy Plant in 1993. Therefore, although other chemicals that are commonly found in industrial or commercial areas were observed during the historical investigations, chemicals of potential concern (COPCs) for the DEAP are PCE in groundwater, identified at the RSA Energy Plant and former public water supply well PW-09W, and associated degradation products, namely trichloroethene (TCE), cis-1,2-dichloroethene (DCE), trans-1,2-DCE, and vinyl chloride (VC).

In 2016 and 2017, the supplemental EI conducted by the DEA included groundwater and soil vapor sampling to assess the nature and extent of site COPCs in groundwater and to provide sufficient data to evaluate vapor intrusion (VI) potential. Soil vapor sampling included evaluation of the County Annex III (Annex) and Attorney General (AG) Buildings to address EPA concerns of indoor air quality. The EI also included a transducer study to evaluate groundwater/surface water interaction along the segment of Cypress Creek adjacent to the site (CH2M, 2017). Key results are summarized as follows:

- Groundwater
  - Only PCE and TCE exceeded their respective EPA RSLs; however, TCE did not exceed the MCL.
  - PCE in groundwater exists as shown on Figure 2-1.
  - PCE concentrations generally increase in the downgradient areas of the plumes, with the highest concentration reported at the farthest downgradient well, TMPZ-1/MW-13S.
  - Where sufficient data exists for time-series evaluation, concentrations in wells where PCE exceeds the MCL are decreasing.

- Soil Vapor
  - Only PCE and TCE exceeded their respective VISLs.
  - The highest PCE concentrations in soil vapor (above VISLs) were reported at MW-02S, downgradient of the RSA Energy Plant where PCE also is present in groundwater.
  - Soil vapor TCE concentrations exceeding VISLs were reported at MW-08S and from the 10- and 50-foot vapor intrusion monitoring system (VIMS) points (VIMS-10 and VIMS-50, respectively), installed by the U.S. Geological Survey at the northeast corner of Washington Avenue and North Lawrence Street across from the Annex Building. Based on the EI results:
    - TCE in soil vapor at these locations is not related to the PCE groundwater plume at the DEAP site.
    - TCE in soil vapor at these locations is attributed to historical vadose zone releases from other sources.
    - TCE in soil vapor in concentrations exceeding VISLs does not extend to the Annex Building located within 100 feet of the VIMS.
- Surface Water
  - Surface water and porewater of the Alabama River communicates directly with, and is the primary influence of, the movement of surface water in the downstream portion of Cypress Creek (connected via an open culvert) and groundwater at TMPZ-1/MW-13S, respectively.
  - Influence on groundwater from the Alabama River occurs as porewater exchange, the cycling of water between the river's surface and the associated sediments.
  - Because of the large volume of flow in the Alabama River near Montgomery (over 37 billion liters per day), porewater from the Alabama River acts as a hydraulic barrier that limits the migration of the PCE plume into the creek and dilutes concentrations of PCE at the downgradient edge.

2.2 Risk Assessment Summary

Because PCE and TCE in groundwater and PCE in soil vapor were identified in 2018 as site-related chemicals at concentrations exceeding their appropriate screening levels, a HHRA and SLERA were conducted to assess potential risks to human health and the environment, respectively. To evaluate alternatives to mitigate those potential risks, an AA was also conducted. Results of the HHRA, SLERA, and AA are included in the RA/AA report (CH2M, 2019). Figure 2-3 summarizes the exposure pathways that were considered potentially complete for the DEAP boundary, based on the current and likely future land uses (i.e., primarily industrial/ commercial and potential future residential) and the potential sources and migration pathways associated with the plume areas. The COPC sources and fate and transport pathways are summarized in the conceptual exposure model (CEM), presented on Figure 2-3.

PCE and TCE concentrations exceeding the tap water RSLs and PCE concentrations exceeding the MCL were identified in groundwater. Although groundwater exposures for a potable use scenario are highly unlikely, in accordance with ADEM guidance, the HHRA conservatively assumed that potable groundwater use may occur in the future. The estimated potential risks for hypothetical potable use of groundwater exceeded ADEM-acceptable risk levels at three monitoring wells (MW-08S, MW-12S, and TMPZ-1/MW-13S). However, there is no potable use of groundwater in the DEAP boundary and an existing ordinance, Montgomery City Ordinance 58-2003, prohibits drilling of new wells within a boundary that encompasses the DEAP boundary.

The elevated concentrations of TCE and/or PCE in soil vapor at the VIMS, MW-08S, and MW-02S were identified as posing potential future risks to human health through the VI exposure pathway. In particular, potential future industrial and commercial risk was identified at the VIMS and MW-08S but only potential future residential risk was identified at MW-02S. However, no VI exposure concerns were identified under current site conditions. No unacceptable risks were identified for the groundwater discharge to surface water exposure scenario and the potential commercial use of wash water at the Capital Trailways bus station (CH2M, 2019). However, it should be noted that this well has since been capped (see Appendix A).

The results of the SLERA indicated little potential for significant risk to receptor populations associated with the potential discharge of COPCs in groundwater into Cypress Creek. In addition, because of development within most of the Cypress Creek watershed upstream of the DEAP site, the habitat in the reach of Cypress Creek at the downgradient boundary of the DEAP site is considered to be poor to very poor (CH2M, 2012). As a result, no further risk assessment or consideration of remedy was recommended for ecological receptors (CH2M, 2019).

2.3 Alternatives Analysis Summary

RA alternatives were evaluated to address potential risks identified in the HHRA (CH2M, 2019). Remedial action objectives (RAOs) establish the goals of the proposed RA and provide the basis for the RA alternatives. Based on the results of the site investigations, HHRA, and SLERA, the RAOs are:

- Protect human health and the environment from exposure to COPCs in groundwater at concentrations above their respective MCLs.
- Protect human health from potential future exposure to PCE and TCE in soil vapor within the plume areas.
- Minimize disruptions to property owners and business from activities related to the implementation of the RA.

RA alternatives were initially screened based on satisfaction of the two threshold criteria established by EPA (overall protection of human health and the environment and compliance with applicable, relevant, and appropriate requirement (ARARs), as well as implementability, technical effectiveness, safety, and security. Following the initial screening, four RAs were considered potentially applicable to the DEAP site:

- Alternative 1 – No Action
- Alternative 2 – ICs with FYRs
- Alternative 3 – ICs with FYRs and Monitoring
- Alternative 4 – ICs with FYRs and MNA

These RA alternatives were evaluated further using the five “balancing criteria” established by EPA. The “balancing” criteria evaluate the balance between the relative effectiveness and reduction of toxicity, mobility, or volume through treatment, implementability, and cost. Based on the results of the evaluation against the balancing criteria, Alternative 3 – ICs with FYRs and Monitoring was recommended. Use of ICs are effective in the short term by immediately preventing direct exposure of human health to groundwater contaminants at the site and notifying current property owners of the potential for VI and building alternatives to mitigate potential VI. In the long term, ICs mitigate the potential for VI through building codes and construction alternatives. If needed, FYRs will confirm that protections remain in-place and include the evaluation of updated plume data to assess when the remedy can be terminated. ICs with FYRs and Monitoring are readily implemented, as there are well-established processes for implementing ICs, monitoring, and conducting FYRs. The monitoring aspects of the plan are discussed further in Sections 4 and 5 of this document.

SECTION 3

Proposed Institutional Controls

Institutional controls are non-engineered instruments that help to minimize human exposure to contamination. ICs are typically presented in the form of administrative, informational, and/or legal tools. They can, but are not required to, mandate engineered controls, if necessary. This section presents the ICs proposed to address potential risk within the DEAP plume areas. The DEA will use a two-tiered approach for the implementation of these ICs for the project: 1) Environmental Covenants (ECs) and 2) Institutional Control Tools. This approach is detailed in the following sections.

3.1 Environmental Covenants

The DEA will employ ECs in a tiered approach, based on locations within the PCE plume areas and 100-foot radius of the groundwater plume (Figure 3-1) with associated potential future human health risk. In general, ECs that are obtained will restrict the use of groundwater for properties within a 100-foot radius of the PCE Groundwater Plume, while property-specific ECs will apply to AOIs for known soil vapor risk. As explained in the RA/AA Report (CH2M, 2019), an AOI is defined by a 100-foot radius from a potential soil vapor risk exceedance, which includes soil vapor sample locations within the plume areas near MW-02S, MW-08S, and the VIMS (see Figure 3-1). Two of these three AOIs will be part of the initial ECs for the DEAP (MW-08S and the VIMS). To address the potential residential risk at MW-08S, the City will file an EC on the City-owned property to restrict its use by permanently maintaining its current use as parking only. The City also proposes to file an EC on the portion of the VIMS AOI that it owns; this includes a sidewalk and right-of-way (ROW). The City will declare in the EC that the current use will be maintained permanently.

The DEA and ADEM will continue to evaluate the site conditions and provide future RA progress reports (i.e., FYR Reports, etc.) to ADEM. There are approximately 100 properties located within the 100-foot radius of the groundwater plume, with many of them being owned by various private entities. Also, EC information and an example will be made available to private property owners via the DEAP website and will be presented as part of the public notice process. In the event that the DEA and ADEM deem that these efforts (i.e., posting ECs on the DEA website and public notice activities) to obtain an executed covenant for a property within the DEA Overlay (see Figure 3-1) is likely futile (through the FYR process), the DEA will propose alternative land use controls for those parcels subject to ADEM's review and approval, if necessary. In future RA progress reports, the DEA will provide ADEM an update of any ECs that have been confirmed from the DEAP website. Additionally, the DEA proposes to employ other institutional control tools described in Section 3.2.

3.2 Institutional Control Tools

Additional ICs are proposed to serve as protective measures that can be readily implemented and enforced under the City of Montgomery's existing governing authority. The DEA will employ ICs in a tiered approach, based on locations within the PCE plume areas and 100-foot radius of the groundwater plume (Figure 3-1) with associated potential future human health risk. Specifically, some ICs apply within the entire DEAP, while others only apply to an AOI and/or Decision Unit (DU), which is consistent with Alabama Risk-Based Corrective Action (ARBCA) guidance. A DU is defined as any building wholly or partially within the AOI. Currently, there is no exposure risk from soil vapor at these locations (Figure 3-1) because:

- There are no residential buildings within the AOI at the soil vapor sample site near MW-02S.
- There are no buildings within the AOI at the soil vapor sample site near MW-08S or the VIMS.

The ICs presented in this ICP will apply to two Overlay areas (shown on Figure 3-1). Overlays are areas where the City will implement ICs, as follows:

- Informational Tools (across DEAP Overlay; see the ”Downtown Environmental Overlay” on Figure 3-1) will notify downtown property owners about the ICs within the DEAP Overlay and the existing well drilling ordinance.
- Residential use restriction (within the AOI Overlay near MW-02S only), which will be achieved thought the City SmartCode system (see the “2S AOI Overlay” on Figure 3-1).

3.2.1 Regulatory/Legal Elements

To prevent future use of groundwater as a drinking water source, the Montgomery City Council passed Ordinance 58-2003 on September 16, 2003, which has been codified in the Montgomery Code of Ordinances Chapter 5, Article VIII, Sec. 5-483 (Wells Prohibited in Capital City Plume Site) and prohibits the drilling of water wells (see Figure 3-1 – ”Current Groundwater Well Drilling Ban Ordinance”). The City will amend this 2003 ordinance by referencing the ADEM agreement with the DEA. The DEAP is located within the City’s current area of applicability.

3.2.1.1 DEAP Overlay

Under Article 6 of the City of Montgomery’s SmartCode, the provisions for Special Districts and Overlays allow specific characteristics or requirements to affect a specifically-defined boundary. The City will amend its SmartCode to establish a DEAP Overlay (Figure 3-1) that will include the permanent City ordinance pertaining to water wells (Section 3.1.1). The proposed DEAP Overlay will extend beyond the DEAP investigation boundary to the north to accommodate the City’s SmartCode Overlay requirement to follow city streets, railways, and ROWs.

As part of this ICP, the DEA assessed the current and proposed City ordinances to determine if the requirements should be enhanced to ensure current and future exposure to groundwater would be sufficiently impeded. It was determined that the only modifications to the ordinances would be to reference the ADEM agreement.

3.2.1.2 2S AOI Overlay

As previously discussed, within the proposed DEAP Overlay, there are two AOIs for which potential exposure risk to soil vapor exists. Those are the soil vapor sample locations near MW-08S and MW-02S. The AOI near MW-02S is due to a potential residential risk related to potential VI.

To address the potential residential risk at MW-02S, the City will create an Overlay (“2S AOI Overlay,” Figure 3-1) within its SmartCode to restrict the affected properties in the AOI by permanently prohibiting residential use (including schools or daycares). The 2S AOI Overlay extends beyond the actual boundary of the AOI to accommodate the City’s SmartCode Overlay requirements to follow city streets, railways, and ROWs.

3.2.2 Informational Tools and Outreach

Informational tools are ICs that are used to communicate information about a site and alert property owners, potential property owners, tenants, and others about the potential risks that may be present. These will apply to parcels that are within the ”Downtown Environmental Overlay” shown on Figure 3-1.

3.2.2.1 Public Notice Methods

Although potential VI risk within the plume areas is present only at the 8S AOI and 2S AOI, the DEA will inform affected parties within the DEAP Overlay of potential risks and relevant, proposed land use restrictions (including those related to the AOIs), and the availability of ECs for use by private property

owners. The DEA will mail letters once, upon finalizing the ICP, to each property owner within an Overlay with information regarding any restrictions that apply to the affected properties. The letters will also include City personnel contact information. An example of these notification letters will be provided to ADEM for review as part of the Remedial Action Report, which will follow this document.

Additionally, the dissemination of information regarding the DEAP will occur based on the following events within the DEAP Overlay:

1. Sale of City-owned property
2. Sale of privately-owned property (i.e., change in ownership through tax assessment records)
3. Submittal of a building permit application, including renovations
4. Submittal of a well drilling permit application (which would not be issued/allowed in the DEAP Overlay)

The Montgomery County Tax Appraisal Department will send out notices within about 30 days of the notice-of-sale for each property. Interested parties will also be informed during property and zoning searches because the DEAP Overlay will direct them to the relevant City department(s) as well as the DEAP website (http://www.montgomeryal.gov/live/about-montgomery/capital-city-plume-information).

To apprise property owners and potential buyers of the land use restrictions within the Overlays, information will be added to the property tax bills of properties within the DEAP Overlay. Property tax notices/ invoices are issued to property owners twice per calendar year in Montgomery County. Additionally, at the point of sale, buyers are provided with information to ensure the property taxes are paid. Both instruments will provide pertinent information about the property. The information will include a brief statement about the Overlays, the specific land use restrictions that apply to the property, and links to the DEAP website for more detailed information. An example of this notification language will be provided to ADEM for review as part of the Remedial Action Report, which will follow this document.

The City maintains a DEAP website that is populated with reports, sampling results, contact information, maps and photographs, information regarding the Community Outreach Group (COG), and other pertinent information. The website will continue to be maintained and updated with any new information and data.

Periodic meetings with members of the community (through the COG) are held to update interested parties on the status of any work being performed in conjunction with the DEAP. These meetings will continue to be held to report the ongoing effectiveness of this ICP as well as any future monitoring results.

3.2.2.2 Education of City Personnel

To ensure the proper information is disseminated as necessary, City personnel will be educated about the relevant requirements and restrictions within each Overlay and the need for them. Furthermore, personnel will be given instructions for how and when to transmit the information. This training would be implemented as part of the City employees on-the-job training process.

SECTION 4

Institutional Controls Enforcement

Enforcement of the ICs presented in this ICP will largely be carried out through the legal and administrative processes adopted by the City. The City is given the authority to adopt and implement ordinances within its city limits by Alabama Code Section 11-45-1 (“Adoption and enforcement authorized”). The Montgomery City Council is authorized to propose new ordinances and amend existing ordinances when necessary. Ordinance adoption includes public notice, public participation through public hearing, and ultimately passing and approving a new ordinance or amendment by a majority of the Council present at the time of the vote.

While existing City ordinances may generally be repealed or amended, some contain specific background information that explains the necessity of the ordinance (e.g., purchase/sale agreement, litigation settlement, consent order, state or federal law or regulation references) to inform future City Council members of the background and any restrictions/limitations to be reviewed in consideration of repealing or amending specific City ordinances. The ordinances described in this ICP will be permanent and annotated with references to this document and the ADEM Settlement Response Agreement such that any proposed changes to the ordinances would require notice and consent by ADEM before any City Council action.

4.1 Institutional Controls Monitoring

City inspectors will perform checks to evaluate that the City ordinances and property use restrictions are still in-place (i.e., no wells are being installed, property zoning ordinances are being adhered to, environmental covenant requirements are being followed, etc.). If needed, groundwater use restrictions could be monitored by the City through inspections required when building permits or property transactions occur.

Any changes or modifications to the ICs or ECs proposed in this document must be reviewed and approved by ADEM prior to implementing these modifications.

SECTION 5

Groundwater Monitoring

In order to provide periodic evaluation of the groundwater conditions at the DEAP site, the DEA will conduct groundwater monitoring for selected, existing wells within the DEAP monitoring well network. The DEA will select up four existing groundwater monitoring wells that will address the downgradient and upgradient portions of the PCE groundwater plume, to evaluate groundwater concentration. These groundwater monitoring events will be initially conducted on a 5-year frequency. The DEA may elect to increase the frequency of these monitoring events if conditions are appropriate for site closure.

SECTION 6

References

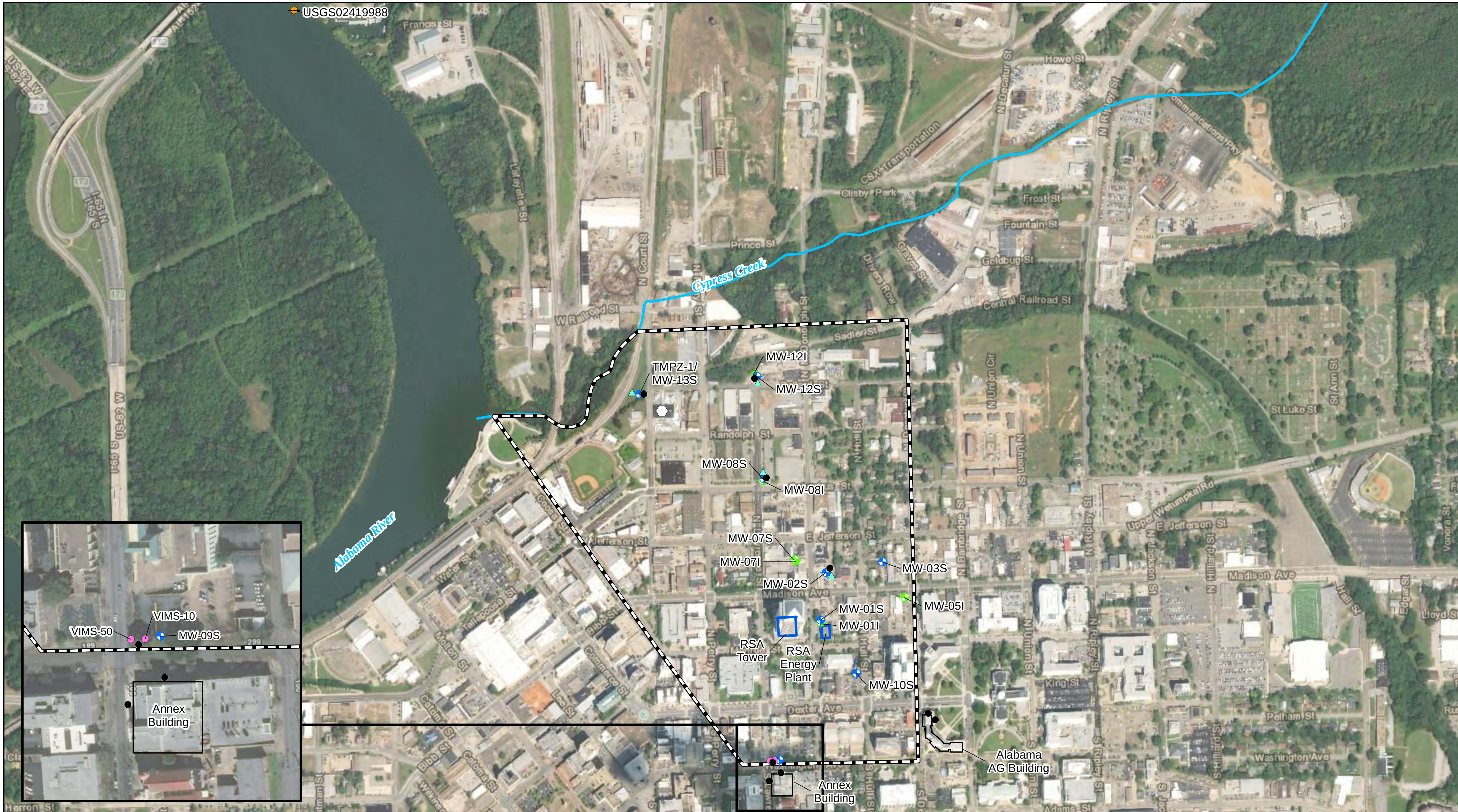
Agency for Toxic Substances and Disease Registry (ATSDR). 2004. *Public Health Assessment for Capitol City Plume, Montgomery, Alabama*. January.

CH2M HILL Engineers, Inc. (CH2M). 2012. *Problem Areas Report for the Cypress Creek Aquatic Ecosystem Restoration Feasibility Study*. September.

CH2M HILL Engineers, Inc. (CH2M). 2017. *Supplemental Environmental Investigation Report Downtown Environmental Assessment Project, Montgomery, Alabama*. Prepared for Alabama Department of Environmental Management by the Downtown Environmental Alliance. October.

CH2M HILL Engineers, Inc. (CH2M). 2019. *Risk Assessment/Alternatives Analysis Report Downtown Environmental Assessment Project, Montgomery, Alabama.* Prepared for Alabama Department of Environmental Management by the Downtown Environmental Alliance. February.

Figures



LEGEND

- Shallow Monitoring Well
- Intermediate Monitoring Well
- VIMS
- Soil Vapor Sampling Location
- Geotechnical Sampling Location
- Alabama River Gauge Station
- Commercial Bus-Washing Station
- RSA Building
- Site Boundary

Notes:
1. AG = Attorney General
2. RSA = Retirement Systems of Alabama
3. VIMS = Vapor Intrusion Monitoring System
4. DigitalGlobe Aerial Imagery (September 26, 2017).
5. Figure extent increased to show location of the Alabama River Gauge.

N

0 350 700
Feet

FIGURE 1-1
Site Map with Investigation Locations
Institutional Controls Plan
Downtown Environmental Assessment Project
Montgomery, AL

ch2m

R:\ENBG\00_Proj\M\MontgomeryDEAP\MapFiles\RAAA_Report\Figure_1-1_Site_Map_with_Investigation_Locations.mxd AESPEJO 6/15/2018

LEGEND

- Monitoring Well
- Former City Water Supply Well
- Temporary Piezometer
- RSA Building
- Site Boundary
- Approximate Extent of PCE > 5 µg/L
- PCE Plume 100-foot Buffer
- Parcel Boundary
- Property with Basement
- City-owned Property
- State Property
- RSA Property
- School/Daycare Property
- Residential (First Floor Commercial)
- Residential (First Floor Occupancy)
- Empty Residential Lot

Notes:
1. AG = Attorney General
2. PCE = tetrachloroethene
3. RSA = Retirement Systems of Alabama
4. µg/L = micrograms per liter
5. Parcel is industrial/commercial use unless otherwise indicated.

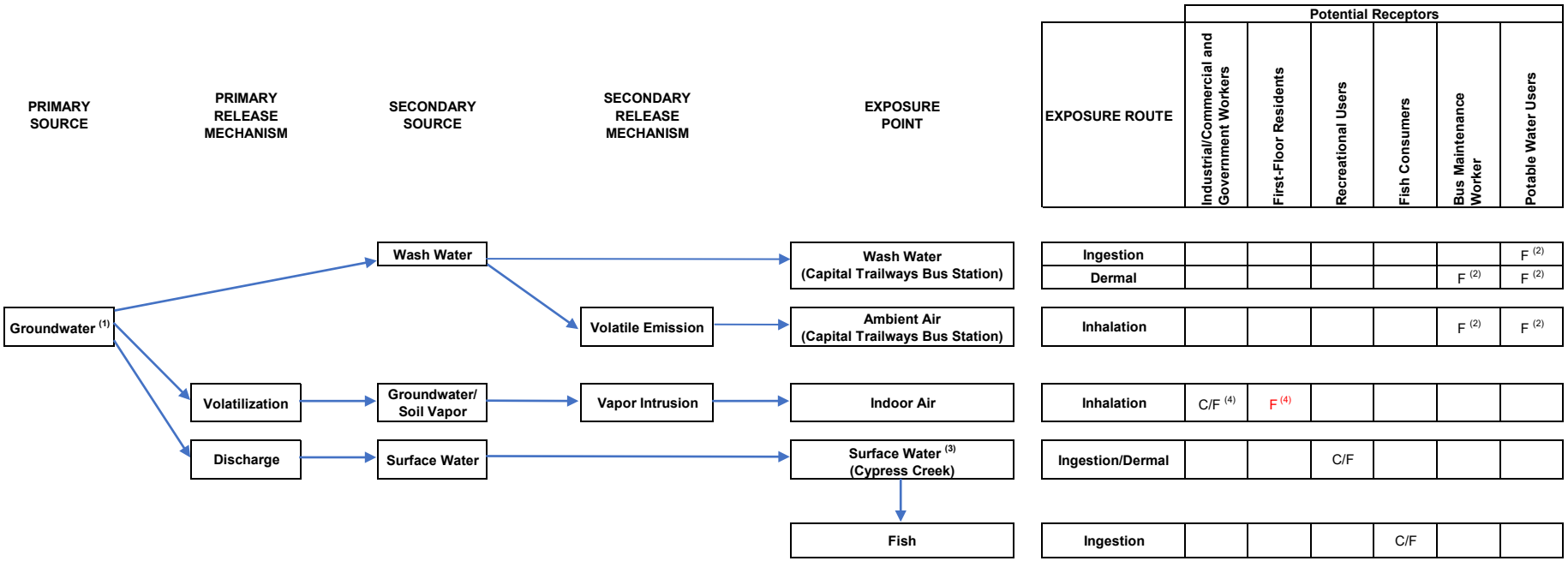
N

0 250 500
Feet

FIGURE 2-1
Extent of PCE Plume and Current Property Use Map
Downtown Environmental Assessment Project
Montgomery, AL

ch2m

R:\ENBG\00_Proj\M\MontgomeryDEAP\MapFiles\Misc\Fig2-1_Extent_of_PCE_Plume_and_Property_Use_Map.mxd ROSENBJ 4/30/2019



Notes:

(1) Potable use of groundwater is an incomplete pathway under current and future site conditions. The DEAP site is currently served by the Montgomery Water Works and Sanitary Sewer Board. All public water supply wells from the former North Well Field were abandoned and there are no known domestic wells in use at the DEAP site. Additionally, the City enacted an ordinance in 2003 to prohibit future well drilling in the downtown area.

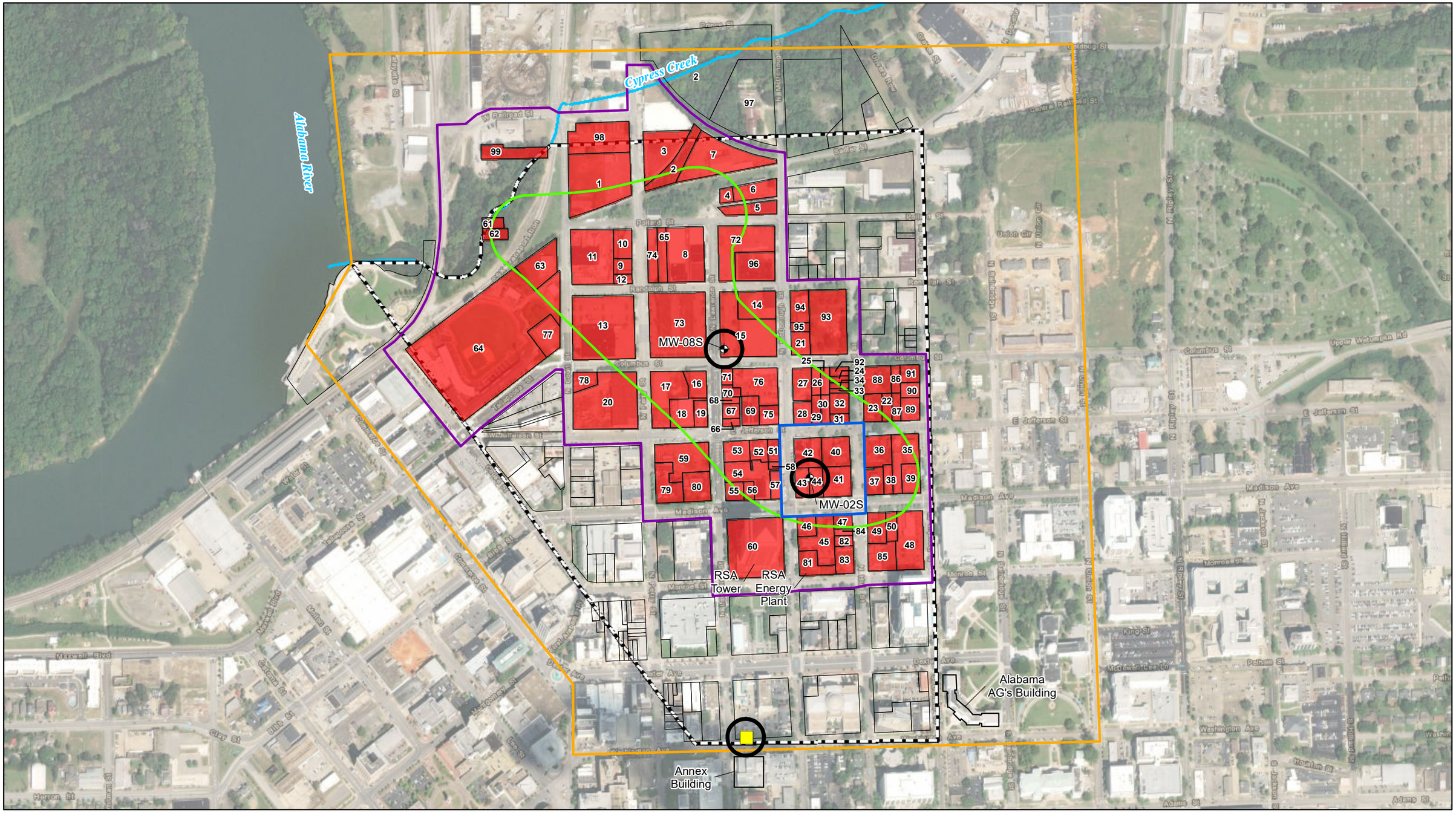
(2) As discussed in Section 1.2.6 of the text, the Capital Trailways well has been decommissioned and it is unlikely to be reconstructed and used in the future. However, per ADEM's request, the following potential future exposure scenarios were evaluated:
- Bus maintenance workers were assumed to be exposed to water through dermal contact an d inhaltion exposure pathways.
- Potable water users were assumed to be exposed to water through ingestion, dermal contact, and inhalation exposure pathways.

(3) Potential surface water concentrations were estimated using groundwater concentrations from monitoring well TMPZ-1 and a site-specific attenuation factor.

(4) Potential exposures to indoor air associated with vapor intrusion from groundwater were not evaluated because preference is given to the soil vapor data, which were collected at locations with groundwater concentrations greater than the vapor intrusion screening levels.

C/F - Potentially Complete Pathway under Current and Future Exposure Scenarios
F - Potentially Complete Pathway under Future Exposure Scenario

FIGURE 2-2
Conceptual Exposure Model
Institutional Controls Plan
Downtown Environmental Assessment Project, Montgomery, AL



LEGEND

- Site Boundary
- PCE Plume 100-foot Buffer
- Parcel Boundary
- Parcels Intersecting Plume and 100-ft Buffer
- Downtown Environmental Overlay
- 2S AOI Overlay
- Current Groundwater Well Drilling Ban Ordinance
- Areas of Interest
- Monitoring Well
- Vapor Intrusion Monitoring System

Notes:
1. AG = Attorney General
2. PCE = tetrachloroethene
3. RSA = Retirement Systems of Alabama

N

0 250 500
Feet

FIGURE 3-1
DEAP Overlays and AOI
Downtown Environmental Assessment Project
Montgomery, AL

R:\ENBG\00_Proj\M\MontgomeryDEAP\MapFiles\Misc\Fig3-1_DEAP_Overlays_and_AOI.mxd ROSENBJ 5/2/2019

ch2m.

Appendix A
Capital Trailways Correspondence

CAPITAL - COLONIAL - SOUTHERN

TRAILWAYS

520 North Court St.

Montgomery, AL. 36104

February 14, 2018

Mrs. Ashley Mastin

Alabama Department of Environmental Management

P.O. Box 301463

Montgomery, Al. 36130-1463

The well that is located at the Capital Trailways 520 North Court Street Montgomery, Alabama 36104 is no longer in use. The well was deactivated and taken out of service in February of 2017. Power lines and plumbing connected to the well have been removed and the water storage tank that the water was pumped into has also been removed. Capital Trailways has connected to the city water supply and will continue to wash our buses with the city water supply. The well was used only for washing buses and will not be used in any capacity in the future.

Regards,

Tom Fletcher

Tom Fletcher
President of Capital/Colonial Trailways

City of **Montgomery**, *Alabama*

Inspections Department
Jerry Russell, Chief Building Official

Todd Strange, Mayor

City Council Members
Charles W. Jinright, President
Tracy Larkin – Pres. Pro Tem
Fred F. Bell
Richard N. Bollinger
Audrey Graham
William A. Green, Jr.
Arch M. Lee
Brantley W. Lyons
Glen O. Pruitt, Jr.

January 23, 2019

Tom Fletcher
President, Capitol/Colonial Trailways
520 North Court Street
Montgomery, AL. 36105

RE: Discontinued use of well located at 520 North Court Street

Mr. Fletcher,

Thank you for the information with regards to discontinued use of the well located at 520 North Court Street. In order to abate any potential hazardous condition the City of Montgomery Code of Ordinances, Section 14-138 requires that all such wells be completely filled or securely closed with six inch cement cap.

Please understand that as the responsible party, non-compliance with such request within 30 days may result in further action in accordance with City of Montgomery Code of Ordinances.

If I may be of further assistance, please contact me at 334-625-2080.

Sincerely,

Jerry Russell
City of Montgomery
Chief Building Official

City of **Montgomery**, *Alabama*

Inspections Department
Jerry Russell, Chief Building Official

January 23, 2019

Tom Fletcher
President, Capitol/Colonial Trailways
520 North Court Street
Mongomery, AL. 36105

RE: Discontinued use of well located at 520 North Court Street.

Please sign and date as receipt of letter dated January 23, 2019, being delivered by the City of Montgomery, Inspections Department.

Sandra Alexander
Signature

1-24-19
Date

PERMIT DEPARTMENT REPORT OF COMPLAINT INSPECTIONS
CITY OF MONTGOMERY INSPECTIONS DEPARTMENT

COMPLAINT: **C01306**
STATUS: CLOSE **COMPLAINT TYPE:** OTHER **COMPLAINT DATE:** 4/8/2019
LETTER SENT:

ADDRESS: 520 NORTH COURT ST **FILED BY:**
PHONE NO:

GENERAL LOC:
LEGAL DESC: SCOTT PLAT PLAT BK X PAGE 800 11 LESS E 100FT SCOTT PLAT BLK MONTGY MAP BK P 800
LOT: **SUBDIVISION:**
BLOCK: **ZONING:** T4-O **SECTION:**
FH: X - 500 / 0093 - J
OWNER: CAPITAL MOTOR LINES **PHONE:**

COMPLAINT REMARKS:
COMPLAINT STATES UN-CAPPED WELL IN AREA OF CAPITOL CITY PLUME.

COMPLAINT ACTIVITIES / COMMENTS

Activity Result Comments	Complaint Type	Sch Date	Comp Date	Inspector
INSPECTION	OTHER	1/23/2019	2/13/2019	
01/23/19 VISITED LOCATION AND OBSERVED UN-CAPPED WELL. ALL UTILITY SERVICES TO WELL HAVE BEE TERMINATED. DELIVERED NOTICE TO REPAIR (CAP ABANDON WELL). 02/13/19 CONFIRMED WELL CAPPED AS REQUIRED FOR COMPLIANCE.				
REINSPECTION	OTHER			
PUBLIC HEARING	OTHER			

PRINTED ON: 4/8/2019

PRINTED BY: PATRICK M. MCGILBERRY

FIELD NOTES: