



July 28, 2025

Mr. Anthony Bell
Circle K Stores, Inc.
1100 Situs Court, Suite 100
Raleigh, NC 27606

Delivered via email: abell@circlek.com

**SUBJECT: Monitor Petroleum-Contaminated Media
Circle K Store 2746285, 785 South 20th Street West, Billings, Montana
MDEQ Facility I.D. No. 56-09753; Petroleum Release No. 3131; WP ID# 35052
Tetra Tech Project No.: 117-082722-25002**

Dear Mr. Bell:

Tetra Tech, Inc. (Tetra Tech) is pleased to submit this work plan for groundwater monitoring at the Circle K Store #2746285 located at 785 South 20th Street West, Billings, Montana (Figures 1 and 2). This work plan was prepared in response to a request from Jonathan Love of the Montana Department of Environmental Quality (MDEQ) in correspondence dated June 4, 2025 (MDEQ, 2025).

The following work plan presents a brief discussion of the site's history and the proposed scope of work to meet the MDEQ request.

BACKGROUND

The Circle K Store #2746285 is a retail gasoline and diesel refueling facility and convenience store operating at 785 South 20th Street West in Billings, Montana (Figures 1 and 2). The site is located on alluvial clays, sands, and gravels of Quaternary age, deposited as a terrace of the Yellowstone River (Lopez, 2002). The site consists of a store building, an underground storage tank (UST) basin, and seven fuel dispenser islands.

During March 1997, a release of regular unleaded gasoline, estimated at approximately 2,000 gallons, was discovered through inspection of inventory records and confirmed by tank tightness testing (Maxim Technologies, 1998a). During April 1997, four USTs were removed from the site along with associated distribution piping and fuel dispensers. Approximately 1,300 cubic yards of soil containing gasoline petroleum hydrocarbon concentrations in excess of MDEQ regulatory action levels were removed from the UST basin and piping trenches (MDEQ, 1997).

During November 1997, a soil vapor extraction system was installed at the site in response to volatile petroleum hydrocarbon vapors detected within the Holiday StationStore #285 building. The system was connected to the UST basin recovery well (Figure 2) and began operation in November 1997. Operation of the system was discontinued in May 1998 when organic vapors were no longer detected in the store building (Maxim Technologies, 1998b). Following two additional periods of operation during the intervening years, the system was shut down in January 2004 due to mechanical problems and has not operated since. A

chemical oxidation field pilot test was conducted during December 1999 which showed a decrease in contaminant concentrations. However, subsequent monitoring did not demonstrate sustained, site-wide decreases in dissolved-phase petroleum hydrocarbon concentrations, and the strategy was not pursued (Maxim Technologies, 2000).

Groundwater monitoring has been conducted at the site since April 1997. However, the last monitoring event was conducted during July 2009. The results of monitoring indicated that groundwater generally flows toward the east-northeast under a gradient of approximately 0.7 percent. Dissolved-phase petroleum hydrocarbon concentrations exceeded MDEQ risk based screening levels (RBSLs) of several volatile petroleum hydrocarbon (VPH) constituents in groundwater samples collected from wells HSK-8, HSK-9, and HSK-10 (Figure 2) during the July 2009 sampling event (Tetra Tech 2009). Recommendations included that a monitoring well be installed along the easternmost property boundary to document the plume extent and magnitude, resurvey of all monitoring wells, and to perform semi-annual groundwater monitoring of select monitoring wells (Tetra Tech 2009).

Monitoring well HSK-3 was abandoned on December 22, 2011. A well abandonment report was filed with the Montana Bureau of Mines and Geology Groundwater Information Center (Tetra Tech 2012).

SCOPE OF WORK

This project's general scope of work is as follows:

GROUNDWATER MONITORING

Tetra Tech will conduct one groundwater monitoring event at the facility site. Static water level measurements and groundwater samples will be collected from wells HSK-2 and HSK-4 through HSK-13. Monitoring well HSK-6 was not located during the most recent sampling event performed on July 28, 2009.

The following methods will be used for collecting static water level measurements and groundwater sampling:

- Tetra Tech will inspect the condition of the monitoring wells for collecting groundwater samples. Since the most recent groundwater sampling event occurred in 2009, Tetra Tech will redevelop the existing monitoring wells. Each monitoring well will be redeveloped using a surge block and water pumping technique. The wells will be surged and pumped until the pumped water is sediment-free and clear. Development water will be containerized in accordance with *Disposal of Untreated Water from Monitoring Wells Flow Chart* and disposed of appropriately following receipt of laboratory results (MDEQ, 2015).
- After a minimum of 48 hours following completion of well development activities, depth to groundwater will be measured using a decontaminated electronic oil/water interface meter. The meter will be decontaminated between each measurement.
- Each monitoring well will be purged using the low-flow, slow-purge pumping method, a peristaltic pump or submersible bladder pump, and dedicated polyethylene tubing. During purging, field instruments will analyze the water for pH, temperature, dissolved

oxygen, specific conductivity, oxidation-reduction potential, and turbidity. Purge water will be containerized by the *Disposal of Untreated Water from the Monitoring Wells Flow Chart* and disposed of appropriately following receipt of laboratory results (MDEQ, 2015). If a bladder pump is used, the pump will be decontaminated between wells using a Liquinox[®] solution followed by a triple rinse technique. Additionally, a new bladder will be installed between sampling each well.

- A groundwater sample from each monitoring well will be collected using a peristaltic pump or submersible bladder pump and dedicated polyethylene tubing. Groundwater samples will be analyzed for VPH and extractable petroleum hydrocarbons (EPH) using the Montana Method based on the Massachusetts Department of Environmental Protection (MADEP) methods (MDEQ, 2024). By MDEQ guidance, if the EPH concentration in water exceeds 1,000 micrograms per liter (µg/L), then an EPH fractionation analysis is required (MDEQ, 2024). Groundwater samples will also be analyzed for intrinsic biodegradation indicators (IBIs). The IBIs include dissolved ferrous iron (Method E200.7), dissolved manganese (Method E200.7/E200.8), sulfate (Method E300.0), nitrates/nitrites (nitrate plus nitrite as nitrogen; Method E353.2), and methane (GS-FID/Kampbell (SW8015 Modified). For cost-estimating purposes, it is assumed that eleven monitoring wells will be sampled during each event, and three groundwater samples will be analyzed for EPH fraction.
- One duplicate sample will be collected from a well with presumed petroleum hydrocarbon impacts during each sampling event. Also, a trip blank will accompany the sample cooler during sampling and shipment. The duplicate and trip blank samples will be analyzed for the same constituents as the natural samples.

MONITORING WELL SURVEY

The measuring point of each monitoring well PVC casing will be surveyed to an accuracy of 0.01 feet vertically in the NAVD 88 datum and to the nearest 0.10 feet horizontally in the Montana State Plane Coordinate system. Surveying activities will be conducted by or overseen by a licensed surveyor or engineer.

DATA VALIDATION

The analytical data package will include a summary report that cross-references the sample identification with the laboratory identification and identifies variations from standard operating procedures; laboratory analytical results; quality control data, which may include but is not limited to surrogate recoveries, initial and continuing calibration blanks and spikes, method blanks, laboratory control blanks, laboratory spikes, and matrix spike and matrix spike duplicates; FID chromatograms; chain of custody form(s); and a sample receipt checklist. Additionally, data validation will be included with the groundwater monitoring report and will follow MDEQ's data validation guideline as per <https://deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/DataValidationReport.pdf>. It is anticipated that one data validation will be completed for this project.

REPORTING

A Groundwater Monitoring Report will be prepared and submitted to MDEQ after the groundwater monitoring event and validation of laboratory data. This report will present the field and analytical results of both groundwater monitoring events and compare laboratory analytical results to MDEQ Risk Based Screening Levels (RBSLs). Conclusions and

recommendations detailing site conditions, and the extent and magnitude of the plume will be discussed, along with a to-scale map presenting necessary site information. Additionally a Release Closure Plan (RCP) will be prepared to evaluate the potential path for closure of the release.

SCHEDULE AND BUDGET

Tetra Tech will schedule this work within three business days upon receiving formal authorization by Circle K Stores, Inc. and the MDEQ. The work described above will be conducted on a unit cost basis per attached cost estimate (Attachment A). This site is eligible for reimbursement through the Montana Petroleum Tank Release Compensation Board (MPTRCB).

AUTHORIZATION

This work will be conducted in accordance with the terms and conditions of the Master Consulting Services Agreement between Holiday Companies and Tetra Tech, Inc. dated March 28, 2017. This work plan may be accepted by signing the attached *Work Authorization #25* (Attachment B) and returning a copy to our Billings office. If you have questions or comments regarding this work plan, please call us at (406) 248-9161. For your convenience we have forwarded a copy of this work plan to Mr. Jonathan Love (MDEQ).

We appreciate the continuing opportunity to provide Circle K with consulting services and look forward to hearing from you. Please call if you have any questions or comments regarding this work plan.

Sincerely,

Tetra Tech, Inc.



Steven A. Marie, PE
Senior Engineer



Jeff Rice
Senior Project Manager

SAM/JR

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cc: Jonathan Love-MDEQ, Billings jlove@mt.gov

Attachments: Figures
Attachment A: Cost Estimate
Attachment B: Work Authorization #25

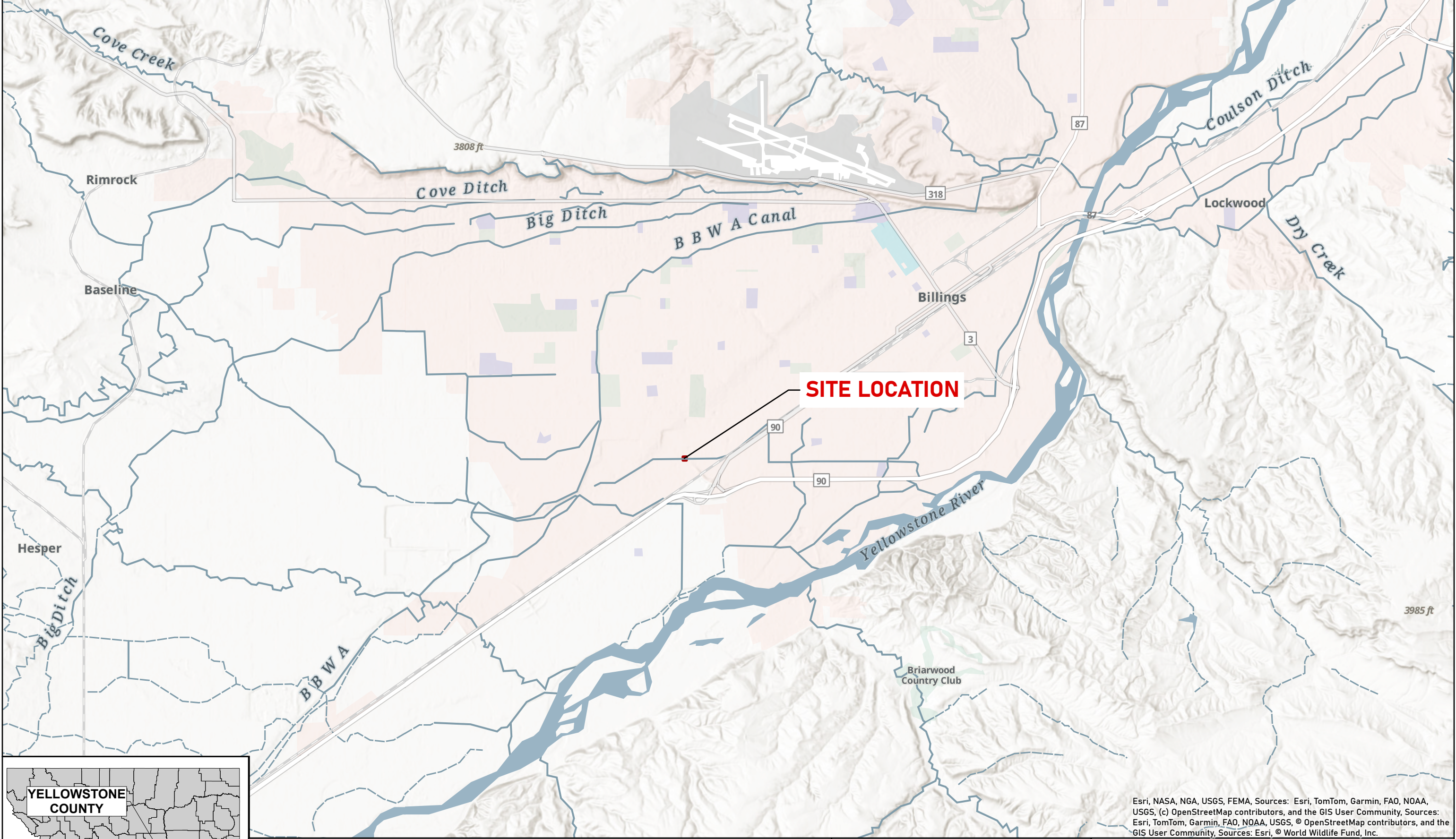
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Tetra Tech, 2012. Well HSK-3 Abandonment, Holiday StationStore #285, Billings, Montana.
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FIGURES

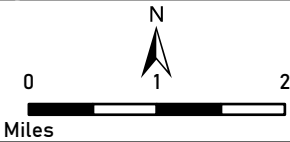


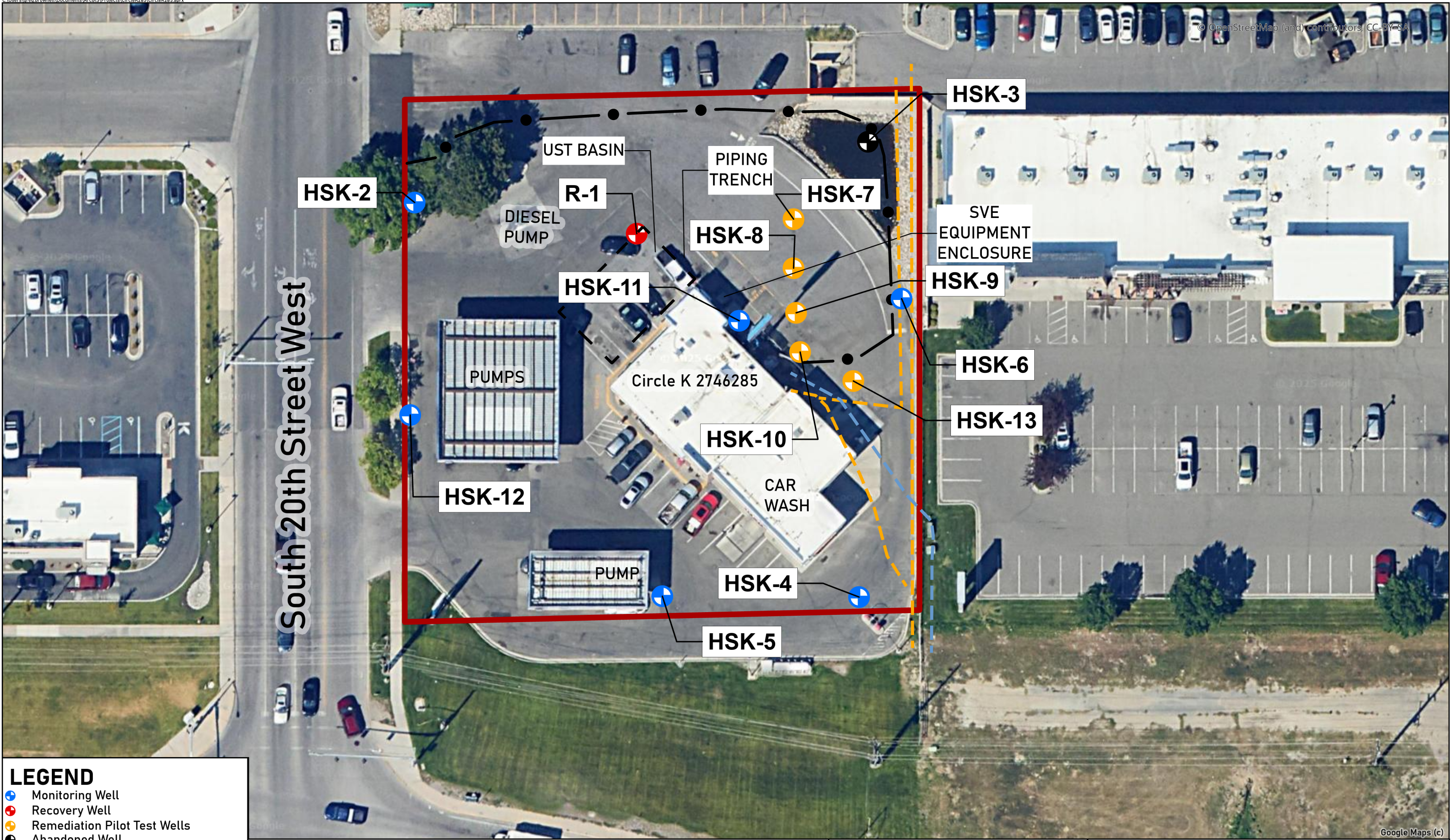
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SITE LOCATION MAP
CIRCLE K STORE 2746285
785 S 20th St W
BILLINGS, MONTANA
FIGURE 1



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LEGEND

- Monitoring Well
- Recovery Well
- Remediation Pilot Test Wells
- Abandoned Well
- Water Line
- Gas Line
- Telephone Line
- Site Boundary

SITE MAP
CIRCLE K STORE 2746285
785 S 20th St W
BILLINGS, MONTANA
FIGURE 2



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