



May 6, 2026

Mr. Mitch Goplen
Billings Clinic
2800 10th Ave N
Billings, MT 59101

Delivered via email: mgoplen@billingsclinic.org

**SUBJECT: Remedial Investigation Work Plan to Investigate Petroleum-Contaminated Media
Deaconess Medical Center of Billings
2825 10th Avenue North, Billings, Montana
DEQ Facility ID 56-02067; Release 1006, Work Plan 35131
Tetra Tech Project Number 117-001871-26006**

Dear Mr. Goplen:

Tetra Tech, Inc. (Tetra Tech), on behalf of Billings Clinic, has prepared this work plan to investigate petroleum-contaminated media at the Deaconess Medical Center release located at 2825 10th Avenue North, Billings, Montana (the “site”) as presented on **Figures 1 and 2**. This work plan has been prepared in response to a Work Plan Request from Mr. Jay Shearer of the Montana Department of Environmental Quality (DEQ) in correspondence dated January 9, 2026 (DEQ, 2026).

The following sections summarize Tetra Tech’s proposed scope of work and schedule to complete the requested tasks. A cost estimate is presented in **Appendix A**.

BACKGROUND INFORMATION

During expansion activities in 1991 by the Deaconess Medical Center of Billings (now owned by Billings Clinic), a 10,000-gallon underground storage tank (UST) used for diesel fuel (backup generator) was removed from the north side of the hospital’s Central Plan building. The tank was removed on November 7, 1991, and it appeared to be in good condition with no holes observed. However, petroleum impacts were observed at the tank's fill end (the east end). The impacts appeared to originate higher in the soil column and were believed to be due to overfills and spills. Two soil samples were collected from the base of the tank excavation. Sample results indicated that total petroleum hydrocarbon (TPH) as diesel was present at a concentration of 1,700 milligrams per kilogram (mg/kg) in the soil collected from the east, fill end of the tank basin (Braun Intertec, 1992). The sample collected from the west end of the tank basin did not indicate a detectable concentration of TPH as diesel.

A limited subsurface investigation was completed by Braun Intertec starting in November 1991. One test boring was completed, and soil and groundwater samples were collected. Results did not indicate evidence of contamination. However, due to ongoing construction activities, the test boring was placed in a location that was hydrologically cross-gradient to the release (groundwater in this area of Billings is assumed to flow in an easterly direction). The Department of Health and Environmental Sciences (precursor to the DEQ) requested additional work be conducted to further define the horizontal and vertical extent of the release. No work was performed, and the release remained open.

SCOPE OF WORK

Tetra Tech proposes to conduct the following tasks based on discussions with the DEQ and with the DEQ Work Plan Request.

Task 1 – Site Discovery

As part of the investigation, Tetra Tech will research available historical information to further assess the 1991 expansion of the Central Plant. This research will focus on excavation activities necessary for the construction of additional underground space and building footings. Documentation with information regarding the volume and total depth of soil removed during the 1991 construction activities will be reviewed, as the material removed for the building's basement addition (plumbing shop) and footings was immediately adjacent to the former UST basin.

Task 2 – Survey

A survey will be conducted to determine the location (both horizontal and vertical) of site features and to determine groundwater flow direction. Because the building expansion was completed over the release area, and because of the extensive buried utilities (water, sewer, natural gas, electric, and compressed gases) and infrastructure associated with the hospital's Central Plant, groundwater monitoring wells cannot be installed in the former UST basin or in the immediate vicinity of the release. To assess groundwater, Tetra Tech will collect samples (see Task 3) from the dewatering sumps located in the basements of the Central Plant (10-15 feet south of the former UST basin) and a shop approximately 50-60 feet east of the Central Plant (see **Figure 2**). The locations and elevations of these sumps, as well as the approximate area of the historic UST, will be surveyed. Using this data, the groundwater elevations measured at the sumps can be tied into elevations at nearby release sites (e.g. Downtown Conoco, Exxon RAS 6, and Zip Trip 57) to determine groundwater flow direction. Research will be necessary to identify existing monitoring wells in the vicinity of Billing Clinic.

The survey will require establishing a control point outside of the building with Montana State Plane coordinates and an elevation. A total station will be used to back sight the control point and run a traverse into the building that will include both sump locations, and then back outside to close the traverse loop. Following successful closure of the loop, coordinates and elevations will be established for both sump locations.

Task 3 – Groundwater Monitoring

Two groundwater monitoring events will be conducted to collect groundwater quality information at high and low groundwater elevation conditions. During each event, depth to water will be measured at both sumps and at monitoring well MW-3 associated with the Downtown Conoco petroleum release site (2701 6th Avenue North, Billings). Should other monitoring wells be identified in the area, they will be incorporated into the monitoring as appropriate. Depth to water will be measured using an electronic oil/water interface meter. The meter will be decontaminated between each well measurement using *Liquinox*[®] soap solution and clean potable water rinse.

Prior to groundwater sampling events, Tetra Tech will coordinate with Billings Clinic to inspect the sumps and determine the amount of water the sumps receive, along with their recharge rate. If the sumps receive a sufficient amount of water, the sump pumps will be operated to purge water prior to sample collection.

Groundwater samples will be collected from each sump using a peristaltic pump with new tubing. Each water

sample will be collected into laboratory-provided bottles and analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) screen. According to DEQ guidance, if the EPH concentration in water exceeds 1,000 micrograms per liter ($\mu\text{g/L}$), an EPH fractionation analysis is required (MDEQ, 2020). For cost estimation purposes, it is assumed that one groundwater sample per event will also be analyzed for EPH fractions.

Task 4 – Data Validation Reports

A data validation will be performed for each laboratory report. Each 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 and 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 investigation report and will follow DEQ's data validation guidelines as per <https://deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/DataValidationReport.pdf>.

Task 5 – Petroleum Vapor Intrusion Screening Analysis

To determine the risk of vapor intrusion, Tetra Tech will complete a petroleum vapor intrusion (PVI) screening assessment based on the groundwater analytical data collected from this investigation. The PVI screen will be completed with respect to the MDEQs Vapor Intrusion Guide (DEQ, 2021) to develop a conceptual site model to determine if additional vapor sampling is needed.

Task 6 - Reporting

Tetra Tech will prepare a report summarizing the results of the investigation once the work plan tasks are complete. The report will include research findings, methodologies, results of field activities, figures depicting site features, a summary of groundwater elevations from surrounding off-site wells and on-site sumps, a summary of groundwater analytical results, findings, and conclusions. Tetra Tech will also prepare a Release Closure Plan, which will be attached to the report to evaluate the potential for release closure.

SCHEDULE, COSTS, and AUTHORIZATION

Tetra Tech will initiate this work plan upon receiving written authorization to proceed from Billings Clinic and approval of the work plan from the DEQ. Estimated project costs are shown on the estimated cost worksheet in **Appendix A**. These costs will not be exceeded without your approval. We understand that a purchase order will be issued to authorize the project.

For your convenience, we have forwarded a copy of this work plan to Jay Shearer of the DEQ. Please call if you have questions regarding this work plan or any aspect of the project. We appreciate the opportunity to serve your environmental consulting needs.

Sincerely,

Tetra Tech, Inc.



Nickolas Woehlert
Environmental Geologist



Pam Reed
Project Manager

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Cc: Jay Shearer, MDEQ Petroleum Tank Cleanup Section; jshearer@mt.gov

List of Attachments:

Figures

Appendix A – Cost Estimate

REFERENCES

Braun Intertec, 1992. Follow-up Sampling at Deaconess Medical Center, MDHES Facility ID #56-02067. March 12.

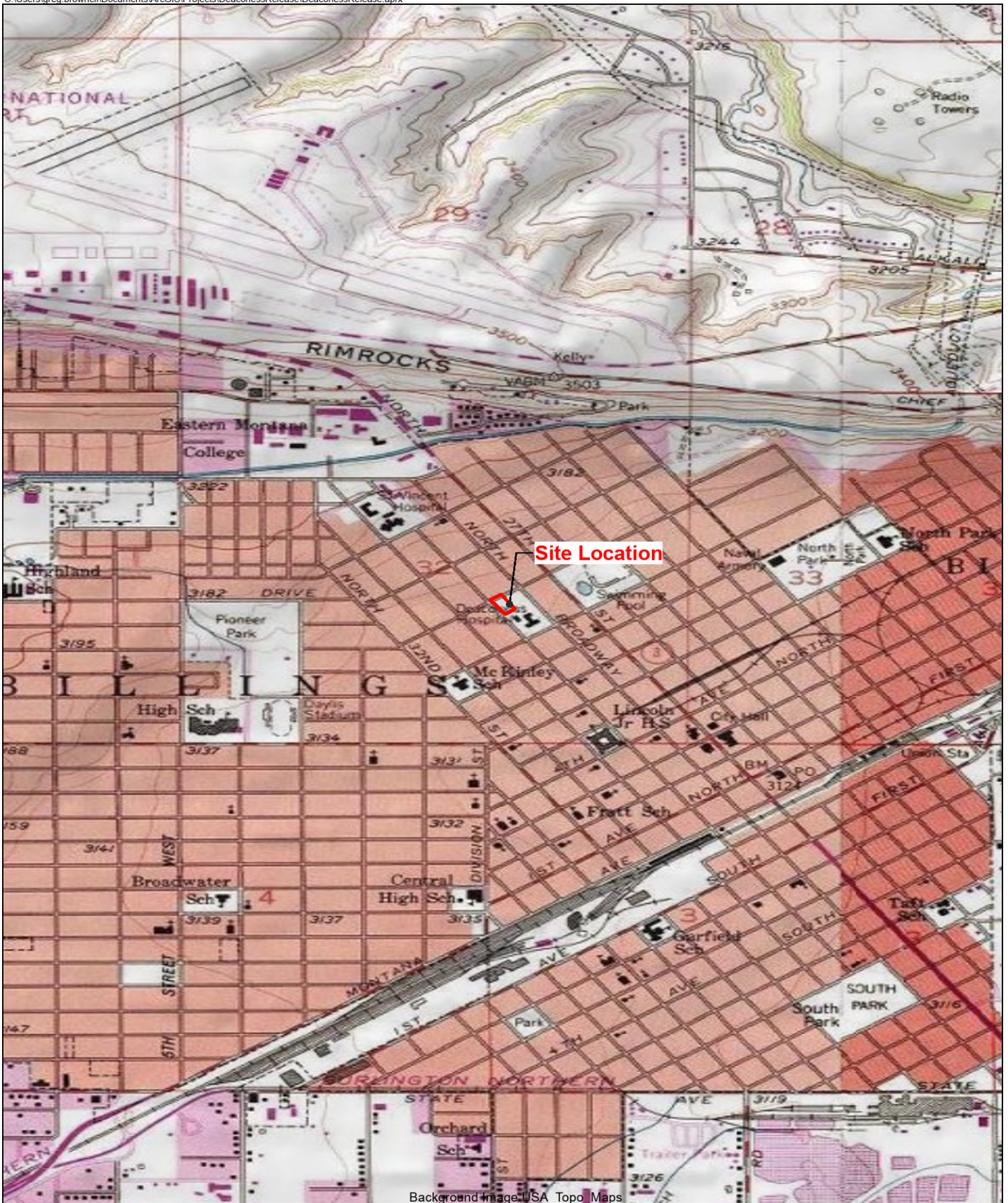
DEQ, 2020. Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. July.

Deq, 2021. Montana Vapor Intrusion Guide. September 2021

DEQ, 2026. Work Plan Requested to Investigate Petroleum-Contaminated Media at the Deaconess Medical Center of Billings Inc., 2825 10th Avenue North, Billings, MT; Facility ID 56-02067 (TID 29806), Release 1006, Work Plan 32131. January 9.

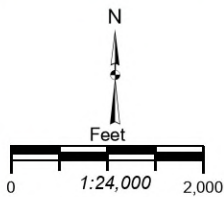


FIGURES



Background Image USA Topo Maps

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4/2/2026



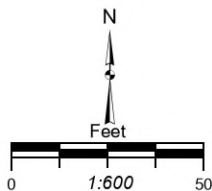
 Approximate Site Location

**Location Map
Deaconess Release
Billings, Montana
Figure 1**



Background Image ESRI World Topographic Map

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Note: All locations are approximate until surveyed.

Site Detail Map
Deaconess Release
Billings, Montana
Figure 2



ATTACHMENT A

COST ESTIMATE