RIVERBANK FILTRATION ALONG THE WABASH RIVER IN TIPPECANOE COUNTY

STREAM-AQUIFER CHARACTERIZATION AND YIELD ESTIMATES

TEST WELL SITE 3

Prepared for:
State of Indiana

Prepared by:
INTERA, Incorporated

February 23, 2024

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1.0 INTRODUCTION

The State of Indiana has identified the need to assess the feasibility of developing a large-scale water supply in Central Indiana. The area identified for investigation is along the Wabash River where it crosses an unconsolidated aquifer in the shallow subsurface. The analysis focuses on evaluating the potential for water production from a series of radial collector wells (collector wells) located along the Wabash River downstream of West Lafayette.

This document presents the results of exploration and testing at a third potential collector well site (Site 3), conducted on a single 42-acre parcel (Parcel 2), located on the south bank of the river downstream of West Lafayette (Figure 1). The exploration and testing program at Parcel 2 was conducted to characterize the hydrogeologic setting and determine critical aquifer properties used for predictive modeling. Results from the field investigation were incorporated into a previously developed regional groundwater flow model (INTERA, 2023a) to estimate the potential yield by simulating collector wells located on Parcel 2. Results from an exploration and testing program at Parcel 1 (Test Well Sites 1 and 2) are reported in INTERA (2023b).

A collector well consists of a circular central caisson sunk into the ground with horizontal screens (laterals) at the bottom of the caisson that are hydraulically jacked into the aquifer sediments. The planned collector wells along the river will be located adjacent to the river and will utilize riverbank filtration (RBF) to sustain high yields and provide quality source water. By design, an RBF well induces recharge of river water through the riverbed sediments.

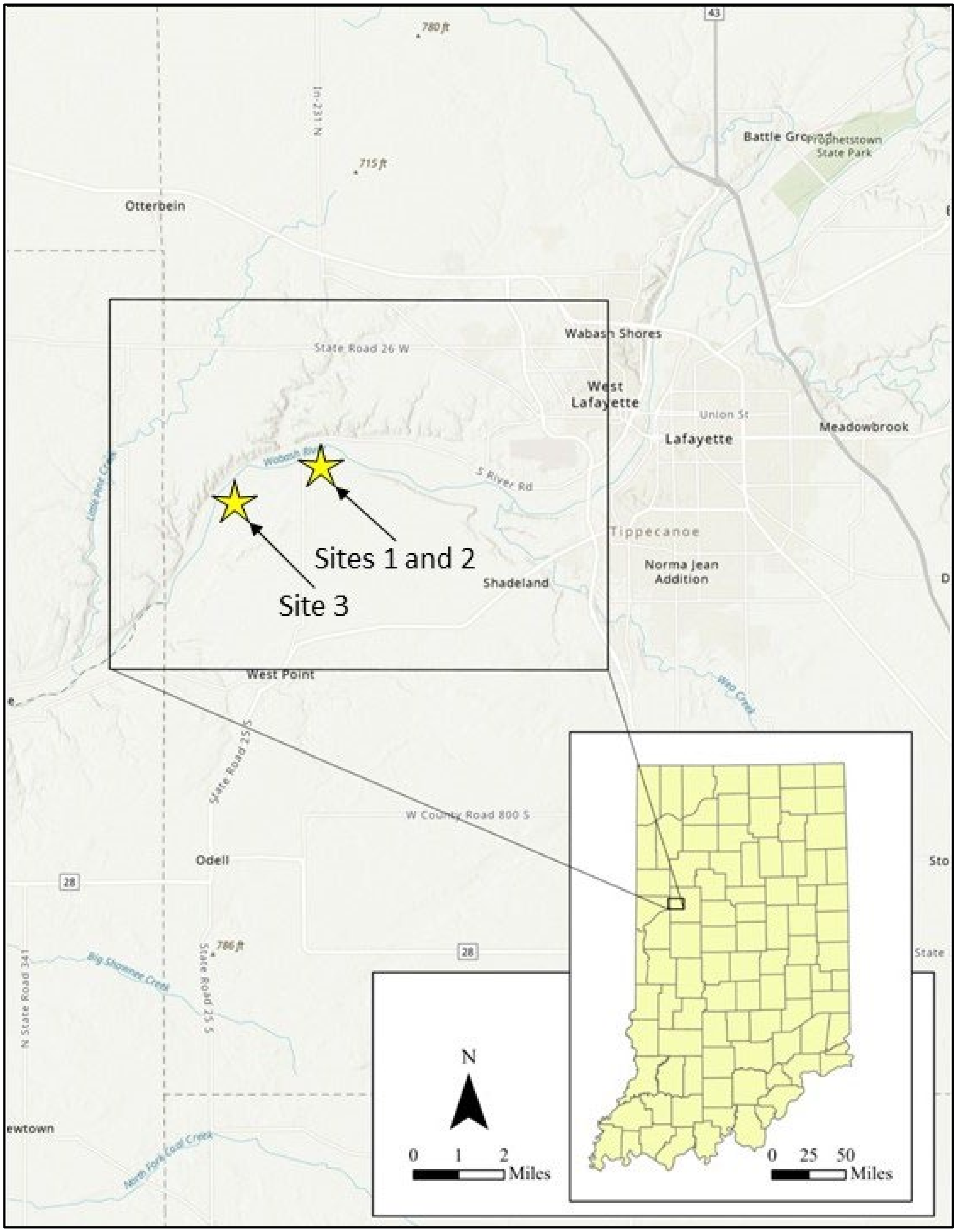


Figure 1. Location of target area and Test Well Sites 1, 2, and 3 along the Wabash River in Tippecanoe County.

2.0 PROCESS FOR PRELIMINARY DESIGN OF HORIZONTAL COLLECTOR WELLS AND YIELD ESTIMATES

Producing an estimate of the yield of a collector well prior to construction requires expert knowledge of groundwater mechanics (groundwater-surface water interactions in particular), field testing and analysis, and collector well design, construction, and operation.

The process followed for evaluating yield includes geologic exploration, aquifer testing, analysis of aquifer test data to evaluate best-fit hydraulic parameters, a conservative collector well design, seasonal yield evaluation, and a predictive uncertainty analysis. This process is illustrated in Figure 2. Details and results of each step are summarized below and expanded upon in the report.

2.1 Geologic Exploration

Extensive local and regional geologic exploration was conducted.

- A regional conceptual geologic model was constructed using existing geologic coverages from the Indiana Geological and Water Survey and private well logs in the region publicly available from the Indiana Department of Natural Resources.

- At Parcel 3, nine lithologic borings were logged and analyzed.

- Finally, a regional AEM geophysical survey of the area was conducted (Abraham and other, 2023), and the results incorporated into the geologic model.

Conclusions from the exploration is that there is a thick regional sand and gravel aquifer adjacent to the Wabash River in the target area. Near the river, there is an 80- to 90 foot thick sand and gravel aquifer overlying bedrock or a basal clay layer. Local borings show the aquifer to be very homogeneous at each site.

2.2 Aquifer Testing

Aquifer testing was conducted to evaluate the critical hydraulic design parameters needed for the preliminary collector well design and yield analysis.

- Lithologic borings were converted to monitoring wells and equipped with pressure transducers to monitor groundwater levels. Shallow piezometers were installed near the river and equipped with pressure transducers to measure groundwater levels near the river. Stilling basins were installed in the river and instrumented with pressure transducers to monitor river stages.

- A long record of ambient monitoring was collected prior to site testing.
- A test production well (test well) was drilled, constructed, and developed at each of the three test sites.
- 72-hour, constant rate tests were performed at three test sites. During testing at each site, water levels in multiple monitoring wells and piezometers were recorded, and river stages were recorded in stilling wells. 24 hours of recovery data was collected at the conclusion of pumping.
- A GPS survey was conducted by American Structurepoint at all three well sites to tie the test wells and monitoring points to a common horizontal and vertical datum.

Results from the testing include time series records of both water elevation and drawdown prior to pumping, during pumping, and during recovery at all monitoring wells, piezometers, and stilling wells.

2.3 Analysis of Aquifer Test Data

All test data were analyzed to evaluate the hydraulic properties of the aquifer, including the aquifer transmissivity and streambed resistance of the Wabash River.

- Initial estimates of transmissivity and streambed resistance were made using standard, approximate methods (Rorabaugh, 1956) to provide an initial range of property values.
- At Site 3, the Cooper-Jacob Method (Cooper and Jacob, 1946) was used to estimate the transmissivity from early-time pumping data, and recovery data.
- Transient models of the pumping tests were developed using TTim software (Bakker, 2013; Bakker, 2023). The models were calibrated to drawdown records at the monitoring wells and river. Results of the analysis include multiple combinations of transmissivity and resistance (multiple realizations) that produce similar calibration attributes.
- Additional information was incorporated into the analysis to narrow the range of potential streambed resistance values. Steady-state groundwater models were

developed for each test site. The models were calibrated to: static conditions prior to pumping, near-static conditions during pumping, and drawdown. The static site conditions, particularly the elevation of the river relative to water elevations in the monitoring wells, provides information about the resistance of the streambed. The steady-state models were used to identify the best fit set of hydraulic parameters within the multiple realizations obtained from the transient analysis.

- This stepwise approach to evaluating the hydraulic parameters was followed to minimize the uncertainty of the individual hydraulic parameters.

Conclusions of the aquifer test analysis include the best-fit hydraulic parameters at each site, and multiple realizations of parameters from the transient analysis. Water level data obtained from the monitoring wells during testing indicates a very homogeneous aquifer at all test sites, with high transmissivity and good connection to the river, which are conducive to high collector well yields. The uncertainty of the hydraulic properties was significantly reduced through the extensive testing and analysis performed.

2.4 Preliminary Collector Well Design and Yield Estimate

Steps taken to develop a conservative yield estimate for collector wells constructed at the sites are presented below.

- Conservative values were chosen to be used as design parameters based on the best-fit hydraulic parameters.
- Seasonal stage-frequency curves for the Wabash River were developed for each test site. The curves provide seasonal low flow and low stage water levels to be used as boundary conditions in the yield model.
- A standard collector well design was chosen for each site, including: a minimum 200-foot setback from the riverbank, six evenly spaced 200-foot screened laterals, and a 20-foot diameter central caisson. The laterals are placed 17 feet above the aquifer base, and minimum pumping level in the caisson was set at 15 feet above the laterals. This allows for 10 additional feet of drawdown in the caisson to increase yield if construction difficulties are encountered.
- The construction process introduces the largest parameter uncertainty associated with yield estimates. During installation of the lateral screens in the collector well, a skin

resistance develops around the screens due to the natural formation collapsing around the screen. That skin resistance is unknown prior to construction and performance testing of the well. An average and a high skin resistance were specified to provide a range of possible well yields.

- Regional flow was not included in the yield model. Within the model, the river is assumed to be the source of all groundwater discharging to the well. This is a conservative assumption for the purpose of estimating yield.
- A seasonal yield analysis was conducted using seasonal low and average river stages, and the design hydraulic parameters from the aquifer testing and analysis. The yields were evaluated using GFLOW groundwater modeling software. Winter yields estimated with GFLOW were reduced by 30% to account for the higher viscosity of the cold river water entering the aquifer.

2.5 Analysis of Predictive Uncertainty

The uncertainty of the hydraulic parameters was minimized by extensive testing and analysis programs. The effects of the remaining uncertainty on the predicted yield of the collector wells were then investigated, including a worst-case lower bound that assumes the river is in direct connection with the aquifer.

- Results of the yield model with design parameters based on the best parameter fit to all data, with average and high lateral resistances are reported.
- Yields for alternate realizations of parameters are evaluated to show the likely range of uncertainty in the best fit yield estimate. Note that the alternate realizations are calibrated to drawdowns only – they do not include calibration to static and pumping water elevations.
- A yield model was developed for the extreme case of the river in direct connection with the aquifer and low aquifer hydraulic conductivity for the lowest feasible bound on yield. This is the lowest yield case as the collector well yield is sensitive to lateral arm resistance, and low hydraulic conductivity translates to high lateral arm resistance.

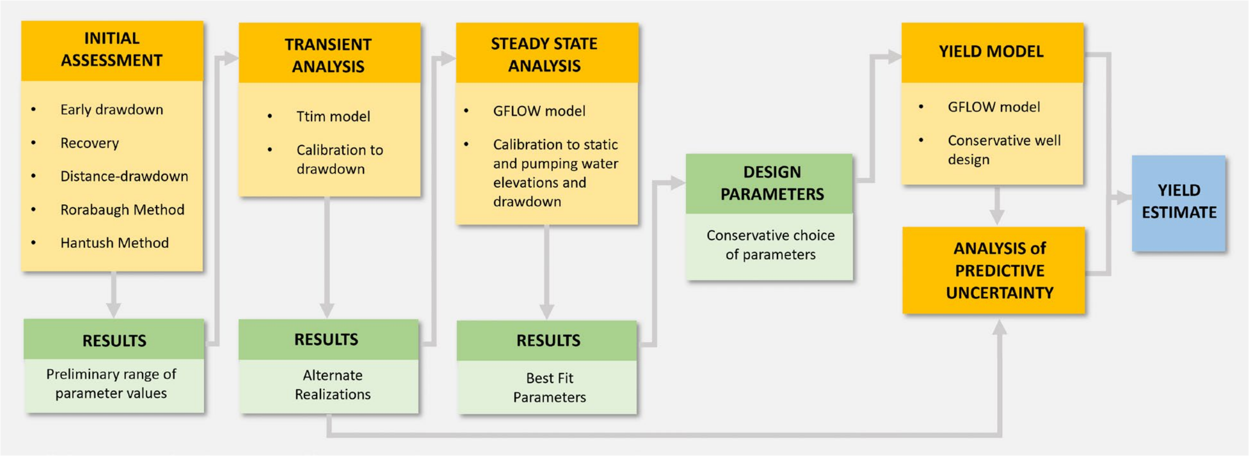


Figure 2. The process of preliminary design of a horizontal collector well: assessment of aquifer testing data through preliminary design and yield estimate.

3.0 SITE 3 TEST DRILLING

The field program at Parcel 2 included: drilling sonic test borings, logging geologic sediments from the borings, installation of nine monitoring wells, installation of a test production well (test well), an aquifer test, and water-quality sampling. In addition, a geophysical survey was completed throughout the region. The survey was conducted by Aqua Geo Frameworks using an airborne electro-magnetic (AEM) method to fill in data gaps between existing well log information (Abraham and others, 2023). Results from the field program were integrated into the predictive modeling analysis (Section 5.0).

3.1 Test Borings

Nine exploratory test boreholes were drilled on Parcel 2 to characterize the lithology of the unconsolidated material (Figure 3). All test borings were advanced to bedrock with a sonic drill rig to depths ranging between 103 – 119 feet below ground surface (bgs). Continuous cores were collected with a 6-inch diameter core barrel. All test borings were completed as monitoring wells to support data collection during aquifer testing. Lithologic descriptions and well construction logs are included in Appendix A.

3.2 Conceptual Geologic Model

The lithologic information gathered during drilling and AEM results were used to refine a three-dimensional (3D) conceptual geologic model (CGM) of the aquifer system, described in INTERA (2023a). The 3D CGM illustrates the aquifer system and surrounding area and was used as input for the conceptual aquifer model.

The aquifer system in the area consists of large bodies of highly permeable unconsolidated sand and gravel which were deposited as glacial outwash or alluvial valley fill (Fenelon and Bobay, 1994). These permeable sediments fill both the recent alluvial valleys as well as the ancient valleys eroded into the bedrock by pre-glacial drainage. The bedrock topography reflects the regional, pre-glacial drainage system that converged into a trunk valley near Lafayette, called the Lafayette Bedrock Valley (historically referred to as the Teays-Mahomet Bedrock Valley) (McBeth, 1901; Bleuer, 1991; Wayne, 1956).

Glacial advances that shaped the bedrock surface also deposited sediments including clay, silt, sand, gravel, and cobbles with various sorting and layering. Unconsolidated deposits in the area range from thick sections of hydrologically unproductive glacial till with high contents of clay and silt to thick sections of outwash and alluvium consisting of highly productive sands and gravels. The physical characteristics of these sediments play a role in determining the capacity of the aquifer system.

3.3 Geologic Cross Sections

Results of the test drilling show that the underlying stratigraphy at the site is consistent with the regional setting. Transect locations for two geologic cross sections are shown on Figure 3. Cross section A-A’ runs through the center of the parcel, perpendicular to the river, through MW-5, MW-1 (TW-3), MW-9, and MW-8 (Exhibit A). Cross-section B-B’ runs parallel to the river, on the northwest side of the parcel, and includes MW-5, MW-1 (TW-3), MW-2, MW-3, and MW-4 (Exhibit B).

In general, there is approximately 10-15 feet of clay and fine sand at the surface that overlies a laterally continuous zone of sand and gravel that has an average thickness of 90 feet (Exhibit A). The permeable zone of sand and gravel is comprised of multiple distinct layers of sands and gravels. At the top of this sand and gravel formation, there is a 15 to 20 feet thick upper sand layer. The upper sand is mostly orange to brown in color. Beneath the upper sand layer is a middle sand zone about 15 to 20 feet thick overlying 40 to 50 feet of lower sand. The middle sand is mostly brown to orange in color, while the lower sand is grey to green. Beneath the lower sand is a thin layer, 5-10 ft thick, of silty sand and gravel that lies directly on bedrock. The basal clay that was present at Site 1 and 2 was not found in borings at this parcel. Limestone and shale bedrock were both encountered as subcrop within this parcel.

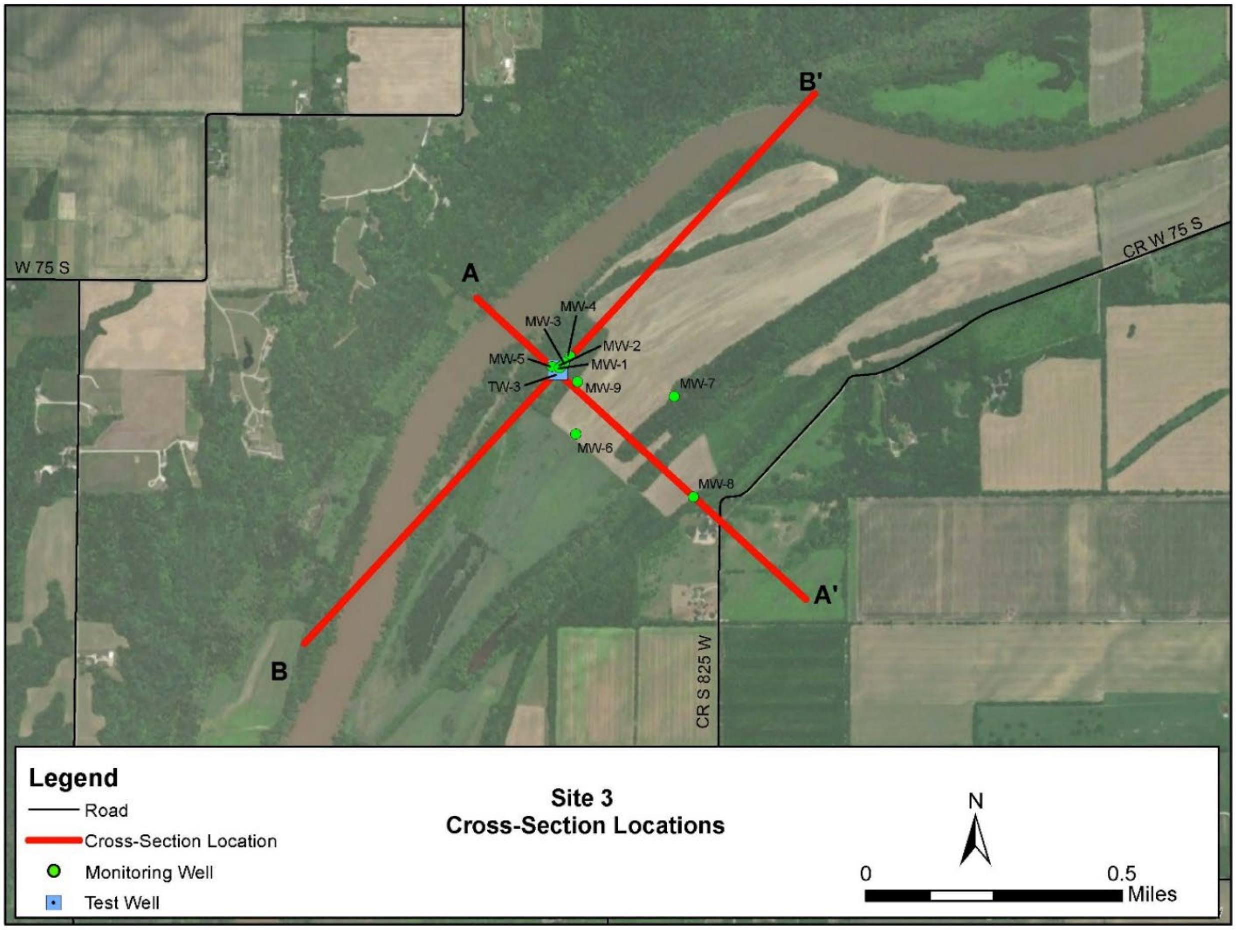


Figure 3. Location of borings drilled at Site 3. Also shown is the location of geologic cross-sections A-A' and B-B'.

4.0 SITE 3 AQUIFER TESTING

An aquifer test was conducted at Parcel 2 to determine the hydraulic properties of the water-bearing zone and the degree of hydraulic connection to the river. The test well was pumped for a standard length of 72 hours. The constant-rate test was performed by pumping the test well and continuously measuring the response in water levels in each monitoring well on Parcel 2. The aquifer test was conducted between December 15 and December 19, 2023. The primary objective of the testing was to determine the hydraulic properties of the water-bearing zone and the degree of hydraulic connection to the river.

4.1 Test Set-up

A 12-inch diameter test well (TW-3) was drilled and constructed as close to the river as practical on Parcel 2 (Figure 4). The test well was drilled with a mud rotary drill rig and constructed with 30 feet of hi-flow, stainless steel, 0.050-inch slotted screen manufactured by Alloy Machine Works, set at 63 to 93 feet bgs. An artificial gravel pack sized for the screen slot size was installed around the screen (GP#3, Southern Products and Silica Company). The test wells were developed using airlifting and pump and surge techniques. A construction log for the test well is included in Appendix A.

Each monitoring well was constructed with 2-inch PVC casing with 30 feet of 0.01-inch slot screen and equipped at the surface with a protective cover (Figure 4). Two shallow well points were also installed to act as piezometers in locations inaccessible to the sonic drill rig (Figure 4). The piezometers were constructed using 3-feet long, 1.25-inch diameter, stainless steel drive point well screens. The screens were attached to 1.25-inch diameter galvanized pipe and advanced into the ground using a gas-powered posthole hammer.

A stilling well (SW) was constructed to continuously track changes in the stage (water level) of the river adjacent to Parcel 2 (Figure 4).

The location and elevation of each measuring point was surveyed by American Structurepoint. The location and construction information for the test well, monitoring wells, and piezometers are presented in Table 1.

Table 1. Characteristics of measuring points at Site 3.

ID	Northing	Easting	Latitude	Longitude	Total Well Depth [FT]	Ground Elevation [FT]	TOC Elevation [FT]	TW-3 Distance [FT]
MW-1	1877295	2957630	40.402421°	-87.065812°	100	512.94	515.48	25
MW-2	1877313	2957646	40.402473°	-87.065753°	100	512.71	515.52	50
MW-3	1877350	2957679	40.402573°	-87.065634°	100	512.57	515.22	99
MW-4	1877421	2957741	40.402767°	-87.065412°	103	512.13	514.77	193
MW-5	1877311	2957555	40.402466°	-87.066078°	103	513.83	516.23	68
MW-6	1876616	2957801	40.400558°	-87.065199°	108	509.61	512.17	686
MW-7	1877001	2958816	40.401616°	-87.061553°	106	512.69	515.39	1234
MW-8	1875967	2959012	40.398776°	-87.060851°	119	515.26	517.76	1916
MW-9	1877152	2957815	40.402030°	-87.065146°	103	512.12	514.72	237
TW-1	1877276	2957613	40.402370°	-87.065871°	95	513.23	514.92	-
P-1	1877337	2957513	40.402537°	-87.066231°	25	510.04	513.83	117
P-2	1877414	2957387	40.402750°	-87.066683°	25	511.77	516.81	265

Notes: Nothing/easting projection in State Plane Indiana West (1302) NAD83 (CORS96)

TOC = top of casing; '-' = Not Applicable

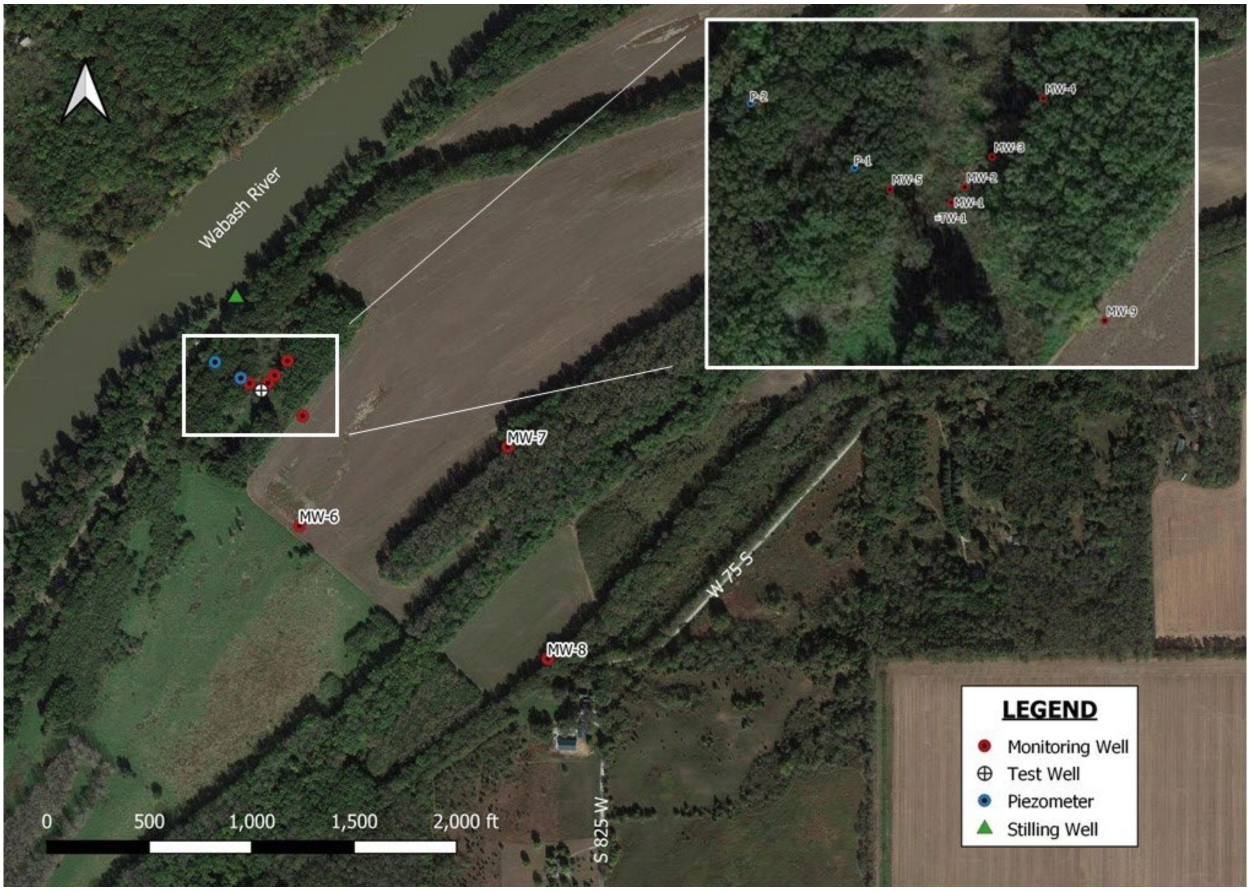


Figure 4. Layout of measuring points at Site 3.

The test well was equipped with a submersible pump with the intake set at 65 feet bgs. An 8-inch diameter temporary pipe was setup to discharge directly to the river. The pipe was equipped with an electronic flow meter to monitor the pumping rate. A modified step-drawdown test was completed at each test well to determine a pump rate that could be sustained for the duration of the constant-rate test.

During aquifer testing, water levels in the monitoring wells, piezometers, and stilling well were continuously monitored and recorded using remote pressure transducers designed to collect and store water level data at predetermined time intervals. Water levels were verified with manual measurements using an electric water-level indicator. Water-quality samples were collected from the test wells during pumping and submitted to an independent laboratory for analysis.

4.2 Aquifer Test

The constant-rate test was conducted between December 15 and December 19, 2023. The pumping phase started on 15th at 10:00 AM and was terminated on the 18th at 10:45 AM. The river stage was relatively stable in the week leading up to the test (Figure 5). The stage rose approximately one-third of a foot on the morning of the test and was falling as the test was commencing. The stage was stable for the first half of the test, rose approximately one-third of a foot on December 17th, and was falling again as active pumping was ending and the recovery phase was beginning on December 18, 2024 (Figure 5).

The target pumping rate for the test was set at 890 GPM. However, the pumping rate slowly decreased to approximately 860 GPM over the first two days of the test. On the morning December 17, approximately 2.1 days into the test, the discharge valve was adjusted to increase the pumping rate to approximately 890 GPM (Figure 6). The average observed pumping rate over the first 2.1 days of the test was approximately 880 GPM.

Water samples were collected from TW-3 at the end of pumping phase of the test. However, at the approximate pumping rate of 890 GPM there was insufficient back pressure in the discharge pipe to allow water to flow through the sample port installed near the wellhead. To accommodate collection of water-quality samples from the sample port, the discharge valve was again adjusted (Figure 6). Increasing the pumping rate to approximately 1100 GPM created enough back pressure for the sample bottles to be filled.

Drawdown observed in TW-3 after 72 hours of pumping was approximately 51.7 feet (Figure 6), indicating a specific capacity of 21.3 gpm/ft at the end of the test. The total volume of water pumped during the test based on the totalizer was approximately 3,871,100 gallons (11.88 acre-feet).

Water levels recorded in the measuring points responded accordingly to pumping and stage changes in the river (Figure 7). Drawdown in nearby monitoring wells at the end of the pumping phase ranged from 0.2 feet at MW-8 to 3.5 feet at MW-1. After the pumping phase of the test concluded, water levels in all the measuring points recovered to within a few tenths of a foot of the river level except MW-6 (Figure 7). The water level in MW-6 recovered to a level above the pre-test static level. This could be attributed to recharge at the land surface due to precipitation during the latter part of the test. MW-6 is in a low spot in field where runoff can collect.

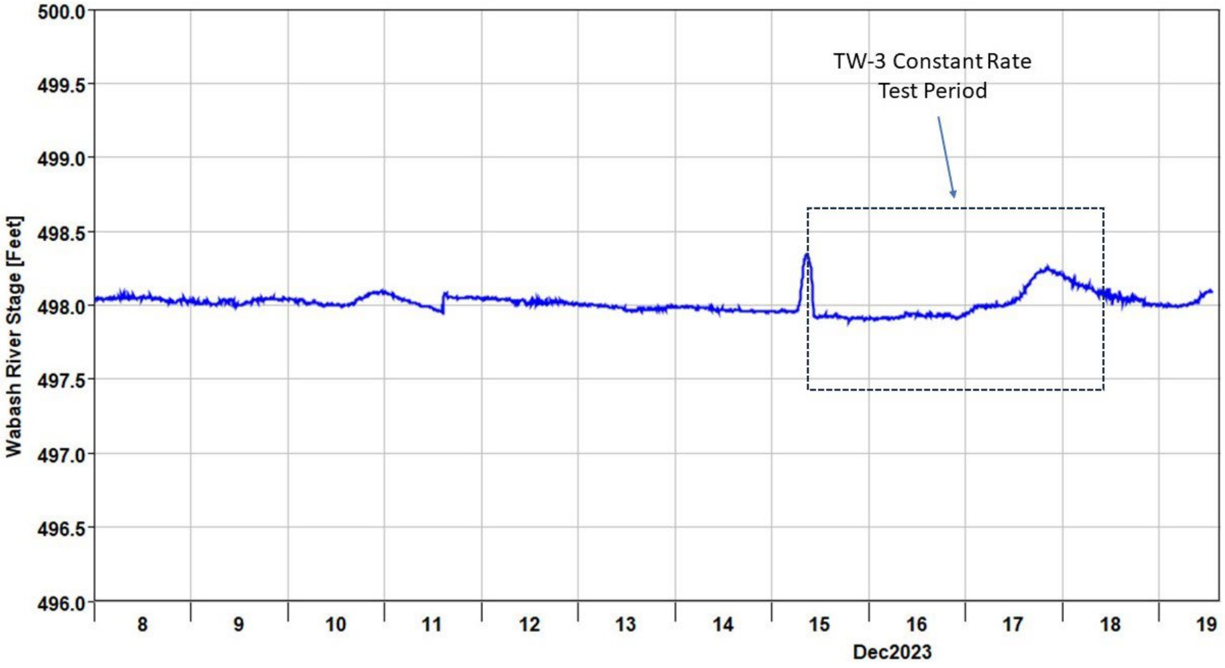


Figure 5. Wabash River stage recorded in stilling well prior to and during the testing period.

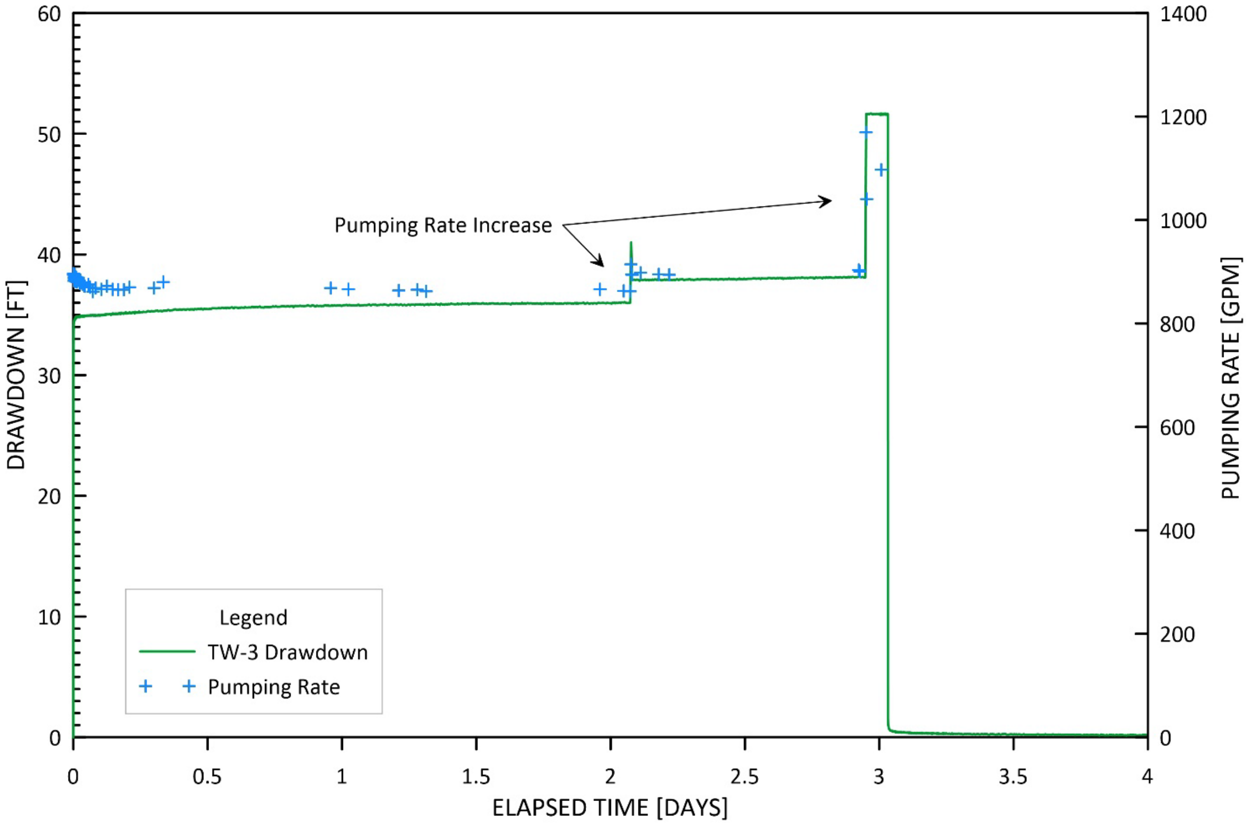


Figure 6. Observed drawdown and pumping rate at TW-3.

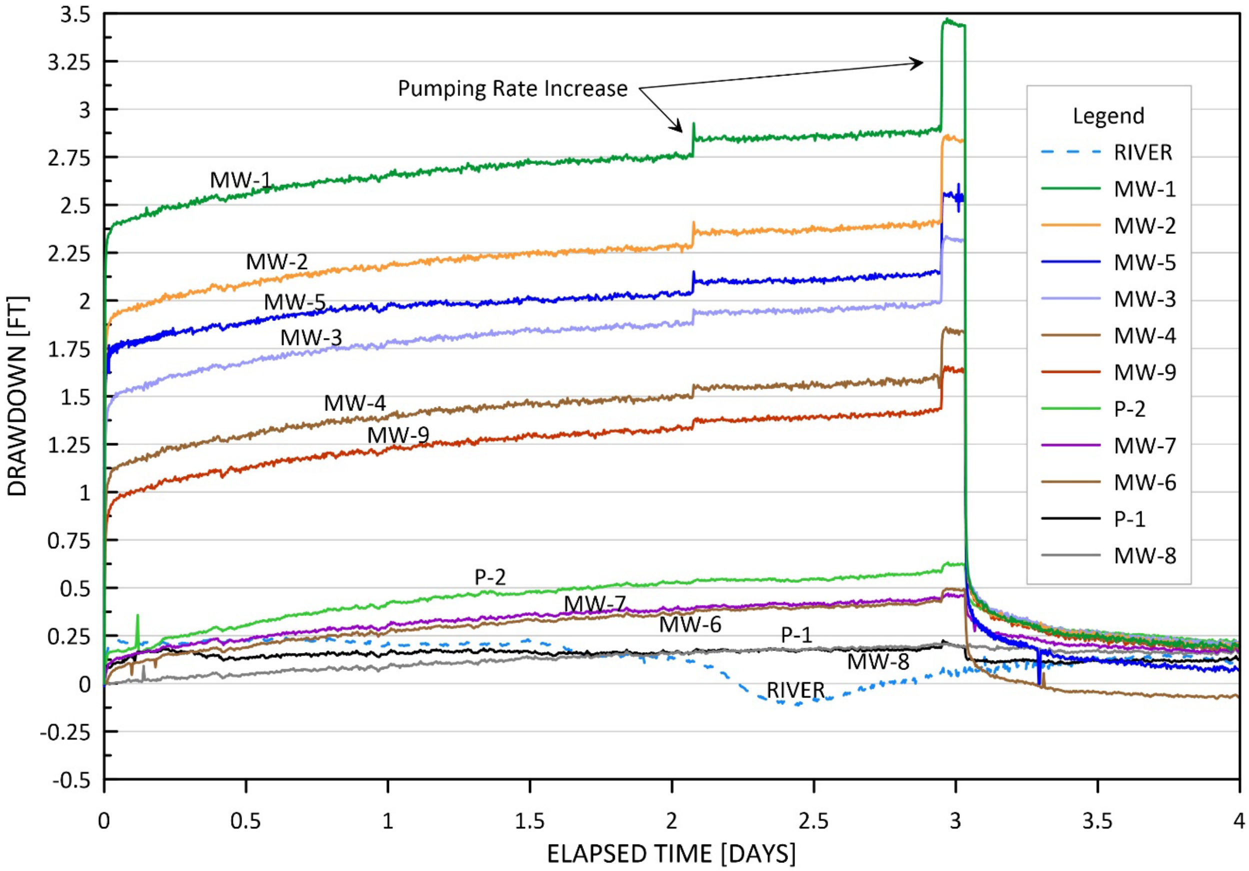


Figure 7: Drawdown results for TW-3 aquifer test.

5.0 AQUIFER TEST ANALYSIS

The aquifer test results from TW-3 were analyzed to estimate the hydraulic conductivity of the aquifer and the hydraulic resistance between the bed of the river and the aquifer. Results from the tests were incorporated into the predictive groundwater flow modeling analysis.

5.1 TTim Software

Specialized hydraulic software called TTim (version 0.5) was used to analyze the aquifer test results (Bakker, 2013; Bakker, 2023). The software, based on analytic elements, is designed for modeling transient, multi-layer flow and is better suited for analyzing RBF aquifer tests compared to traditional methods:

1. Flexibility in measuring point layout: TTim's approach eliminates the dependency on a predetermined design layout for monitoring wells. In contrast, traditional methods mandate that monitoring wells be precisely situated in lines perpendicular and parallel to the river, which can be restrictive or impractical in real-world scenarios, as was the case at TW-3.

2. Incorporation of river geometry: TTim empowers the user to explicitly integrate the river's actual geometry into their analysis. Traditional methods, on the other hand, often make the simplifying assumption that the river is a straight line within the section affecting an RBF system.

3. Dynamic river stage consideration: TTim enables the direct inclusion of changes in river stage in the analysis. In contrast, traditional methods necessitate data filtering based on an estimated or assumed loading efficiency for each measuring point, which can introduce needless uncertainty and complexity.

4. Hydraulic property integration: TTim's analytic element models facilitate the explicit derivation of the hydraulic property governing the connection between the river and the aquifer used in the predictive GFLOW model. This obviates the need for translating this parameter between models, as is common in traditional approaches.

In summary, TTim's use of analytic elements for RBF aquifer test analysis offers a flexible, accurate, and practical alternative to traditional methods, addressing limitations related to monitoring well layout, river geometry, river stage changes, and hydraulic property integration, ultimately leading to more robust results and a deeper understanding of the aquifer system.

5.2 Approach

The aquifer was modeled with TTim as a single, 90-foot thick layer of homogeneous, saturated material with a phreatic surface. The TTim model layout is shown in Figure 8. The river was represented by parallel sets of linesink strings as prescribed in Haitjema (2005). Observed river-stage changes during the test were incorporated as model input (Figure 6). Pumping-rate changes were also incorporated as model input (Figure 6).

The primary objective was to optimize the performance of each test model by matching the modeled and observed response to pumping and stage changes recorded at all nine monitoring wells. The matching was achieved by manual adjustment of three key parameters:

- the horizontal hydraulic conductivity of the aquifer (Kh),
- the riverbed resistance to vertical flow (c),
- and the specific yield (Sy).

This iterative process aimed to achieve the best-fit representation of the aquifer's behavior and responses to various conditions based on visual inspection and the root mean square error (RMSE). The RMSE is an indication of average delta between predicted values from the TTim model and the observed response at all the monitoring wells.

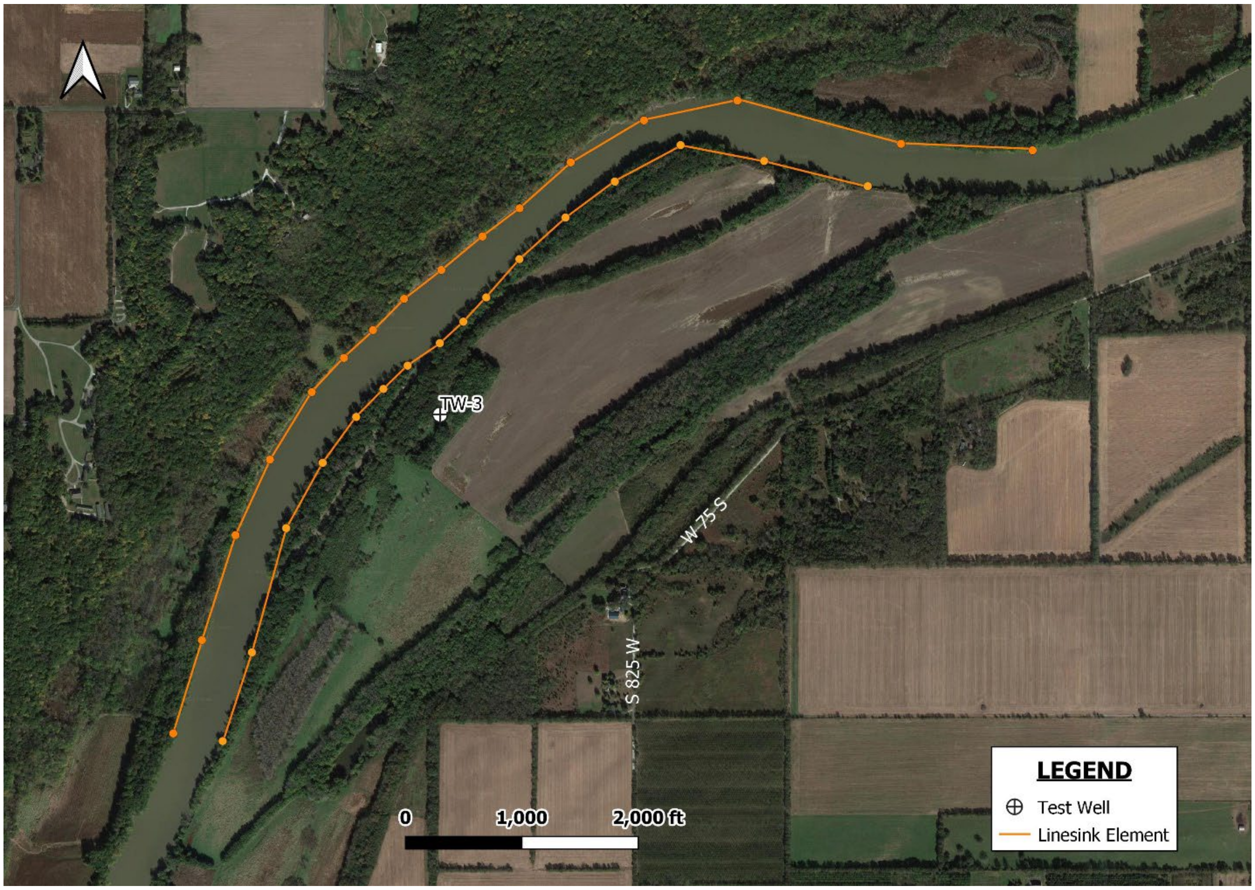


Figure 8. Layout of analytic elements used in TTim modeling analysis.

5.3 Results

Table 2 presents various best-fit parameter combinations resulting from the TTim analysis. Of the three key parameters, Kh and c are the parameters that will be incorporated into the predictive modeling analysis presented in Section 6. The storage term, Sy, is not applicable to steady-state modeling. The range of RMSE values (0.196-0.229 ft) represents approximately 6-7% of the observed range of drawdown, indicating a good fit between simulated and observed drawdowns.

The parameter combinations highlighted in green in Table 2 are the best-fit sets based on visual inspection of the results, where Kh=450-500 ft/day and c=3-5 days. Figure 9 shows simulated vs observed water levels where Kh=475 ft/day, c=4 days, and Sy=0.02. In general, combinations where Kh is 425 ft/day or lower and c is 2.0 days or lower, drawdown is overpredicted at the Riverside and Perpendicular-line (P-line) monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5). In addition, the simulated response to the increase in river stage after Day-2 of the test is over-represented in the riverside and P-line wells. These effects can be seen in Figure 10, which shows simulated vs observed water levels for the case where Kh=375 ft/day, c=0.05 days, and Sy=0.04. Similarly, parameter combinations where Kh is 525 ft/day or higher and c is 6.0 days or higher generally under-predict drawdown at the Riverside and P-line monitoring wells.

The results at MW-6 indicate that this location is an outlier. For all cases shown in Table 2, drawdown at MW-6 is overpredicted. The test results at MW-6 indicate that a much higher value Kh is needed to provide a good fit for this location compared to the other monitoring wells.

Results derived from traditional techniques to analyze RBF tests are in general agreement with the range of parameters derived from the TTim analysis.

Using the Cooper-Jacob method (Cooper and Jacob, 1946) with early time drawdown and recovery data observed at MW-3 and MW-5 results in a range of Kh=450-600 ft/day. Using the results from the P-line of wells (MW-1, MW-2, MW-3, and MW-4) and the method prescribed by Rorabough (1956) results in a range of Kh=450-540 ft/day and a line source distance (a-distance) of 800-1500 ft, which translates to a range of c=0.8-4.9 days.

The Kh values derived from the TW-3 test are very similar to the testing results from Parcel 1. The c values derived from the TW-3 test are slightly higher than results from Parcel 1. In general, the results are very similar, suggesting that the river-aquifer system exhibits homogeneity across this reach of the river. This consistency aligns with the conceptual aquifer model, reinforcing the validity and reliability of the model's representation of the system's behavior.

Table 2. TTim model results for various parameter combinations resulting in a good fit to observed data for TW-3 test.

Kh [ft/day]	c [days]	Sy -	RMSE [ft]
375	0.05	0.04	0.196
375	0.5	0.04	0.226
400	1.0	0.04	0.211
425	2.0	0.025	0.208
450	3.0	0.025	0.203
475	4.0	0.02	0.201
500	5.0	0.02	0.205
525	6.0	0.01	0.211
550	7.0	0.01	0.217
575	8.0	0.01	0.229

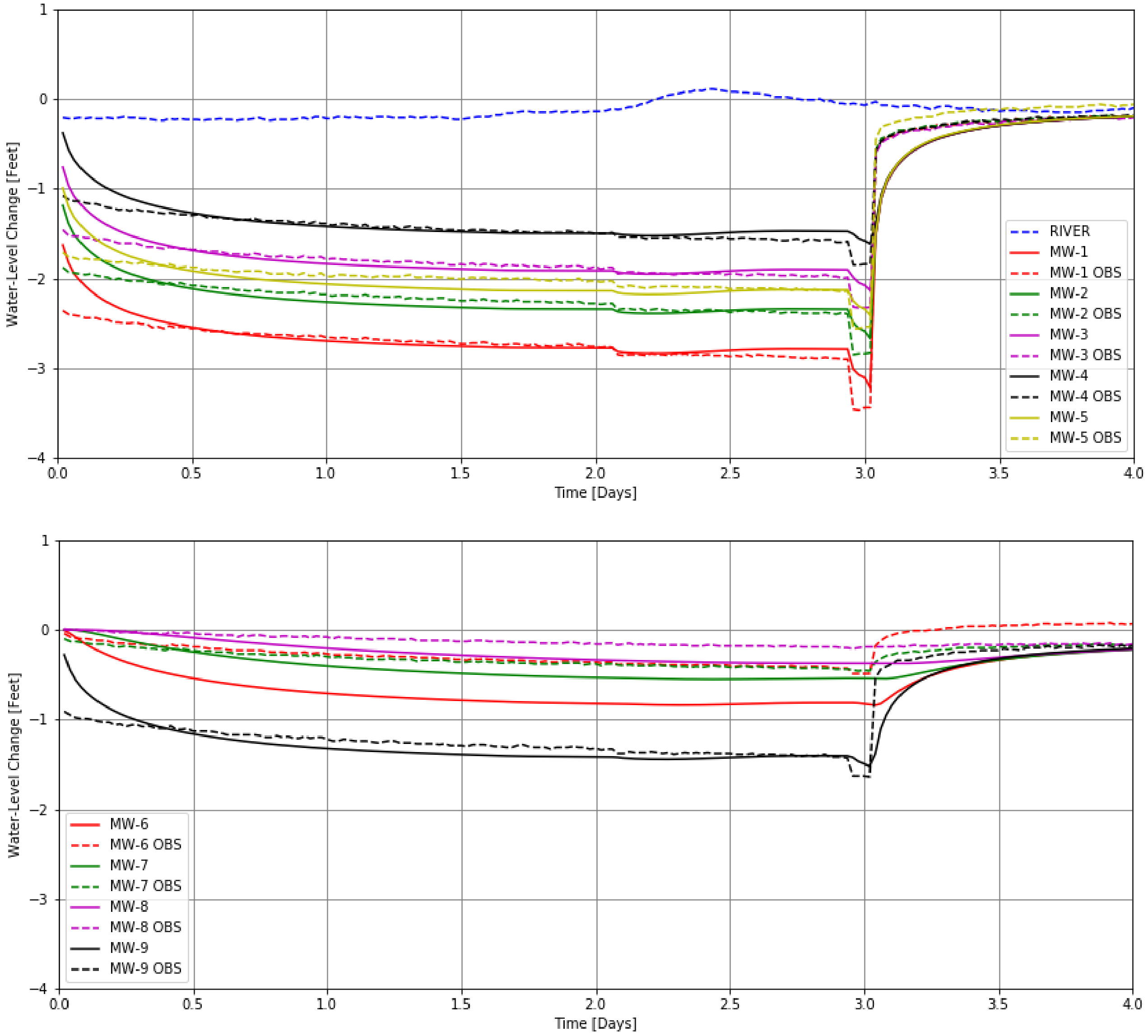
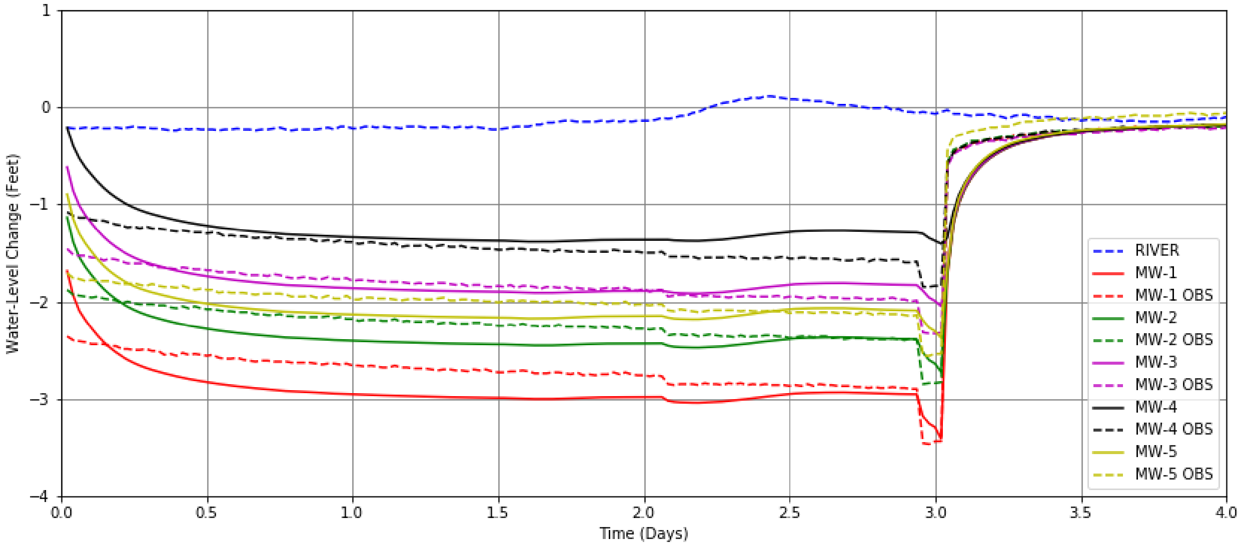


Figure 9. Simulated and observed water-level change for Riverside and P-line monitoring wells (*top*) and Landside monitoring wells (*bottom*) during TW-3 test, where Kh=475 ft/d, c=4.0 d, Sy=0.02.



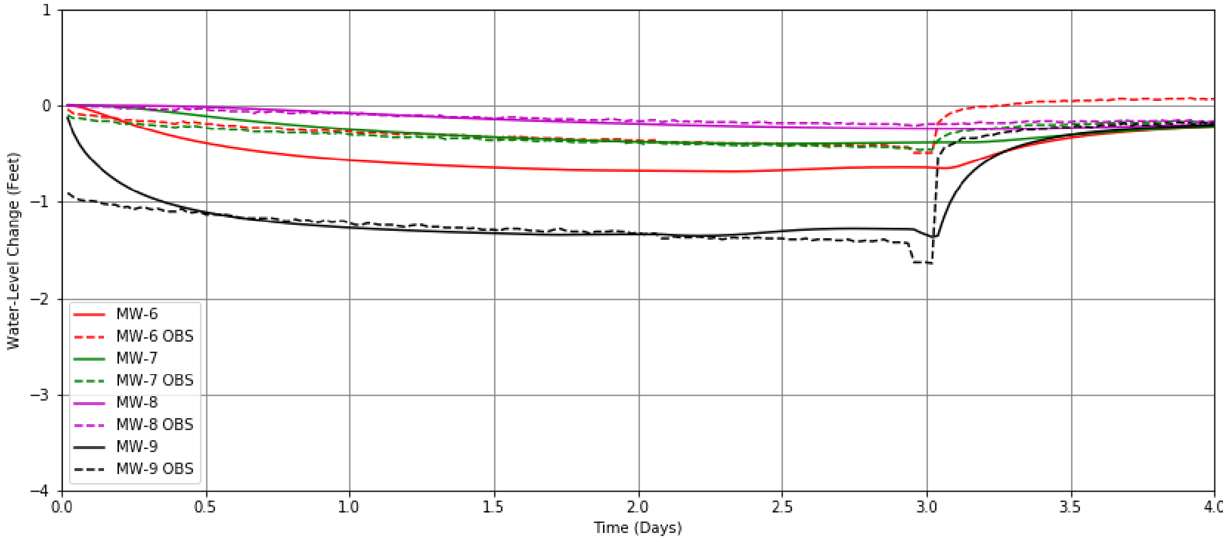


Figure 10. Simulated and observed water-level change for Riverside and P-line monitoring wells (top) and Landside monitoring wells (bottom) during TW-3 test, where Kh=375 ft/d, c=0.05 d, Sy=0.02.

6.0 PREDICTIVE MODELING ANALYSIS

Estimating the yield of a collector well requires knowledge of the hydraulic properties of the aquifer and river, regional groundwater flow conditions, and historic records of river stage and discharge. This information was obtained with high certainty by an extensive analysis of aquifer monitoring and testing data, as well as records of the daily stage and discharge of the Wabash River maintained by the USGS.

The properties of the collector well—which cannot be evaluated by field testing until the well is constructed—are as important as the aquifer and river properties in estimating the potential yield. These properties are greatly affected by construction methods and conditions encountered during construction, which may require design modifications to the well. These properties include the caisson depth and the elevation of the laterals (which can limit the drawdown in the caisson and can directly impact yield) and the length and alignment of the laterals which are often dictated by conditions encountered during construction. Finally, a skin resistance can form around the lateral screens caused both by hydraulically jacking pipes into the formation, and after inserting the screen, pulling the piping back out which causes the formation to collapse around the screen. These parameters related to the collector well are highly uncertain prior to well construction.

To deal with the uncertainty of the collector well properties, we used engineering judgement based on experience designing and constructing collector wells in similar settings, and by conservatively setting both well elevations and lateral lengths in the yield analysis. The skin resistance is based on post-construction well testing at hydrologically similar sites, followed by post-testing calibration of a yield model. This provides a range of potential lateral skin resistances that can be analyzed based on measured values at multiple sites. Note that these calibrated skin resistances include the effects of anisotropy that may be present at the collector well sites. Overall, during preliminary design, the objective was to provide a conservative, lower bound on the yield of each collector well design.

6.1 Approach

The previously developed regional GFLOW model was used to develop a collector well yield model. First, the model boundaries were refined locally based on the AEM survey (Abraham and other, 2023) and the 3D geologic model. Results from the pumping test were used to calibrate a steady-state model to match both observed static and pumping water levels in the aquifer, and drawdown at monitoring wells. This calibration was done to provide a final check on the results of the transient aquifer test analysis conducted with TTim software. In particular, the elevation of the groundwater relative to the river elevation provides additional information about the resistance of the streambed, not used in the transient analysis of drawdowns.

Then, a typical collector well design is represented in the model to assess potential yields. A range of collector well properties was investigated within the model including pumping levels in the caisson, seasonal water levels in the river, and the potential skin resistance along the laterals created by the collapse of the formation over the screens during construction.

Geometric parameters related to the aquifer and the river that are fixed in the model are summarized in Table 3 along with a description of the source of the data. The lateral extent of the model is defined by a combination of impermeable boundaries where the bedrock rises above the water table, and linesinks of specified discharge which provide the regional flow. Regional flow was calibrated based on matching the observed groundwater gradient across the site.

Table 3. Fixed geometric features specified in the yield model.

Feature	Units	Value	Source
Aquifer base elevation	ft, NAVD 88	410	Site borings
Aquifer top elevation	ft, NAVD 88	500	Site borings
Riverbed elevation	ft, NAVD 88	492	FIS river profile

6.2 Model Calibration with Aquifer Test Data

River stage and elevation, and groundwater levels at many monitoring wells at the site were monitored prior to, during, and after aquifer testing. A summary of the observed conditions prior to testing and conditions late in the aquifer testing are summarized in Table 4. These data were used as calibration points for the yield model. The model was calibrated to all three sets of observations (static, pumping, and drawdown) for the aquifer test.

Table 4. Calibration data set for static and pumping elevations (feet, NAVD88) and drawdown (feet) for Site 3.

	Static	Pumping	Drawdown
MW-1	502.36	499.56	2.80
MW-2	502.35	500.05	2.30
MW-3	502.37	500.47	1.90
MW-4	502.36	500.83	1.53
MW-5	--	500.17	--
MW-6	502.48	502.14	0.34
MW-7	502.59	502.18	0.41
MW-9	503.28	503.10	0.18
River	498.00	498.00	0.00

The best-fit parameters obtained by model calibration are presented in Table 5, with a calibrated value for hydraulic conductivity of 520 ft/day and a riverbed resistance of 10 days. Regional flow was estimated to be 80 to 200 ft^2/day; the value was evaluated by matching the observed static water levels across the parcel. These parameter values match closely the ranges obtained from the transient analysis of the test data. Design values of 500 ft/day conductivity and 10 days riverbed resistance were chosen to represent aquifer and river conditions in the collector well yield model.

Table 5. Calibrated values of hydraulic parameters for aquifer test 3.

Test	Property	Units	Calibrated Values
3	Aquifer hydraulic conductivity	ft/day	520
	Riverbed resistance	days	10
	Regional flow	ft^2/day	80 - 200

A cross plot of the observed and modeled water levels representing static and pumping conditions for the aquifer test are shown in Figure 11. Figure 12 shows a cross plot for the aquifer drawdown. The RMSE for the residuals in Figure 11 is 0.19 feet, which is 2.2% of the total observed range in water levels, indicating a good fit between observations and model results. The root mean square error of the drawdown residuals is 0.29 feet, which is 10% of the observed range of drawdowns. In general, the model over-predicts the drawdown in the aquifer indicating the calibrated parameters will provide a conservative estimate of the aquifer yield.

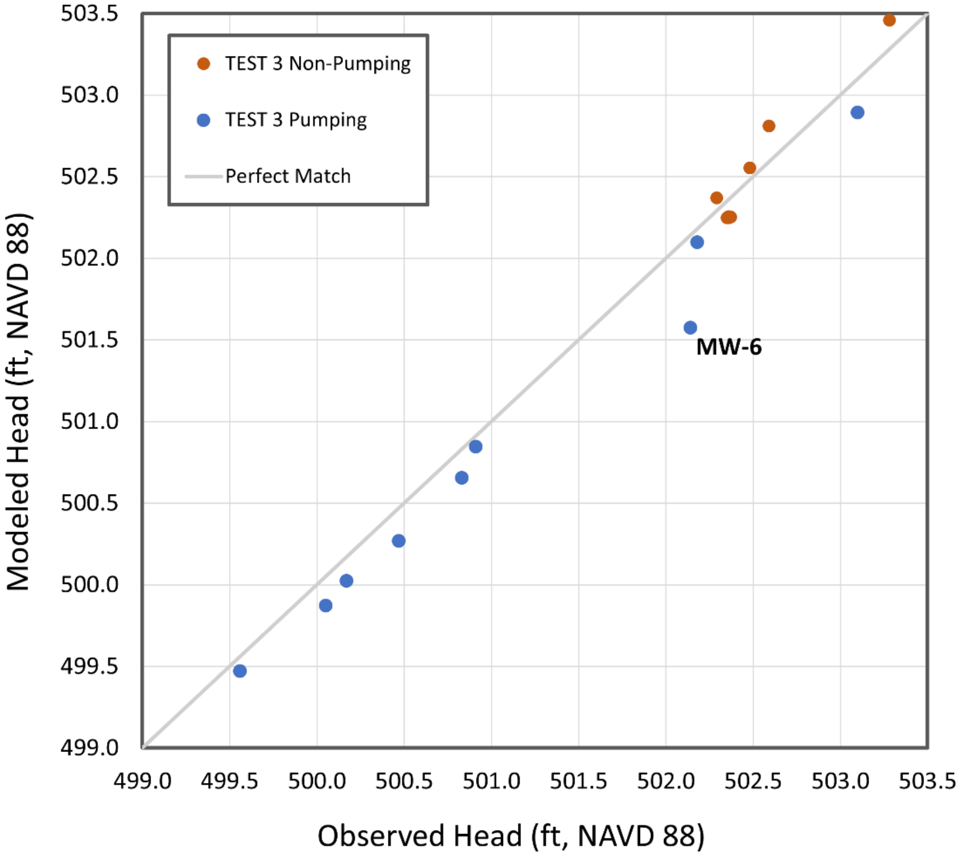


Figure 11. Cross plots of observed and modeled pumping and static water levels during TW-3 aquifer test. MW-6 is an outlier in both elevation and drawdown.

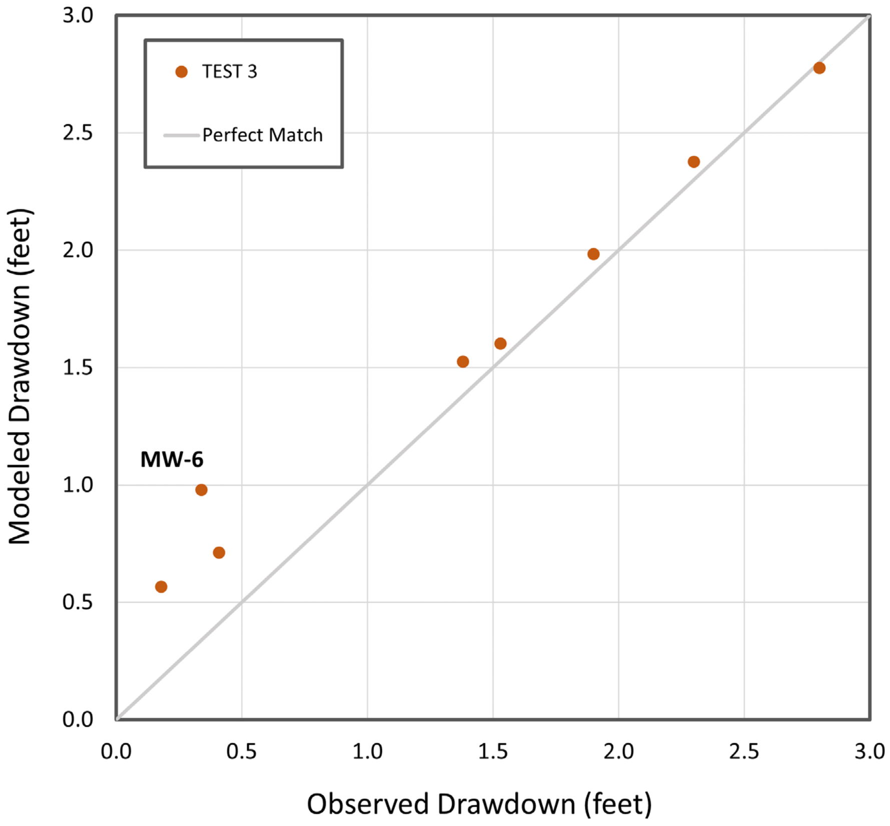


Figure 12. Cross plot of observed and modeled drawdown at monitoring wells for the TW-3 aquifer tests. MW-6 is an outlier in both elevation and drawdown.

6.3 Preliminary Collector Well Design and Model Parameters

A typical collector well design consisting of a 20-foot diameter caisson with 6 evenly spaced laterals, each with 10 feet of blank casing adjacent to the caisson and 200 feet of screen is represented in the model to assess potential yields. The lateral closest to the bank of the river was maintained at a minimum distance of 200 feet from the river.

Pertinent elevations are illustrated on Figure 13, including the centerline of laterals at 427 feet, and the minimum allowable water level in the caisson at an elevation of 442 feet. This provides a minimum of 15 feet of head over the laterals at maximum pumping rate, which is conservative, where collector wells often operate with as little as 5 feet of head on the laterals. This minimum water level allows for flexibility during construction if, for example, the caisson cannot be sunk to the full depth and the laterals elevations must be increased. Alternatively, it also allows for a second tier of laterals at centerline elevation of 434 feet if formation gradations require small screen openings resulting in high entry velocities.

The skin resistance of the laterals is specified to range from 0.01 days/foot to 0.02 days per foot. This range is based on post construction yield modeling of collector wells in similar geologic settings; the low value represents a typical average value for an individual lateral and the high value represents a low efficiency lateral for formations with hydraulic conductivity of 500 ft/day.

To establish a lower bound on collector well yield, the regional flow from the yield model was eliminated. That is, it is assumed that the river is the source of all groundwater discharging at the collector well. This is a conservative assumption for the purpose of estimating yield.

The design value for riverbed resistance is 10 days. The pumping test from which the design value was evaluated was conducted in the winter, during which an average water temperature in the Wabash River was recorded to be 40^o F. During summer months, river temperatures average 60^o F. Increased temperatures of water decrease its viscosity. To represent resistance during summer months, the resistance was decreased from 10 days to 7.3 days, based on the ratio of the kinematic viscosity of water at 40^o F to the kinematic viscosity at 60^o F.

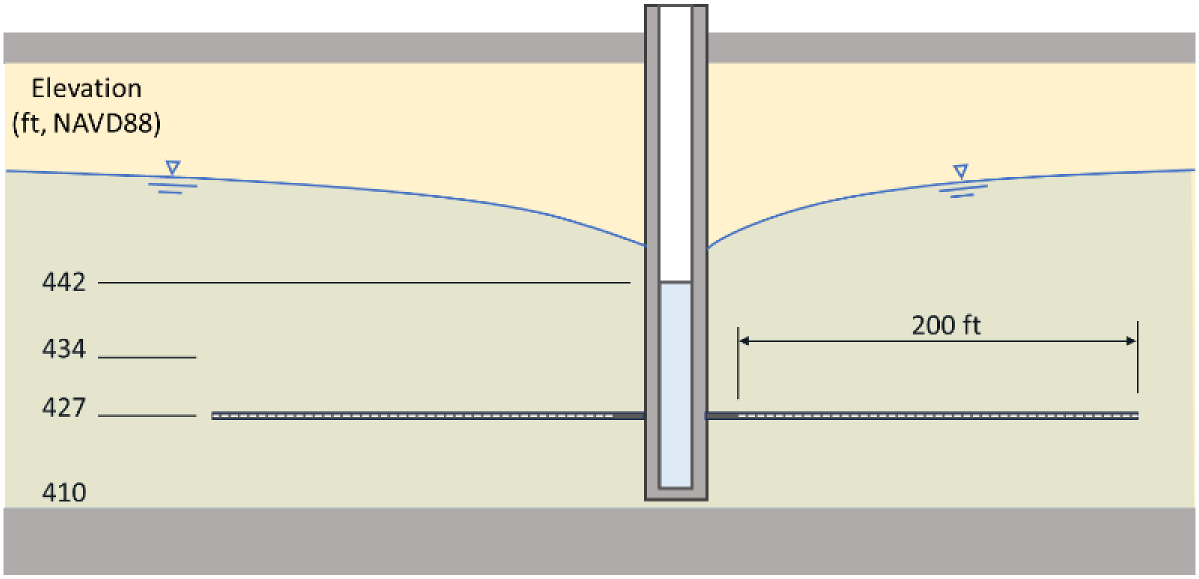


Figure 13. Conceptual design of the collector well showing the minimum allowable water level in the caisson.

6.4 Seasonal Variation in River Levels and Bed Resistance

Water levels in the Wabash River at the project site were monitored from November 14, 2023 to December 19, 2023 and tied to NAVD88 elevation. The water elevations in the river ranged from 498 feet to 499 feet during monitoring. Daily river stage and elevation records are maintained by the USGS upstream at Station 03335500, Wabash River at Lafayette, with records beginning in 2007. That data was correlated with the site data to produce a river elevation record at the project site for the period 2007 to current. The correlation is only valid for river stages encountered on site while monitoring. The results are used to produce an approximate low- flow elevation duration curve for the Wabash River at Parcel 2.

The results are presented in Figure 14, which includes both an annual curve and seasonal curves. A summary of seasonal river elevations used in the yield model is provided in Table 6.

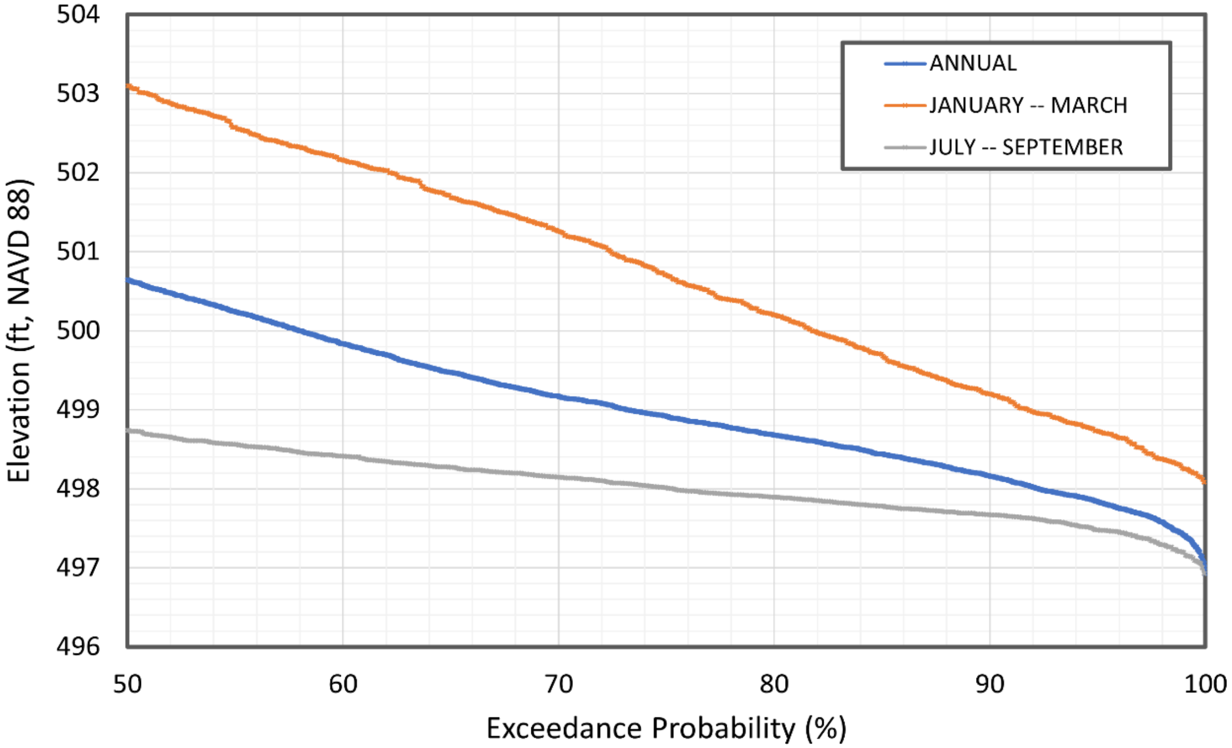


Figure 14. Approximate, low-flow elevation-duration curve for the Wabash River at the Test Site 3.

Table 6. Summary of seasonal river stages used in the yield scenarios.

Season	Condition	Elevation (ft, NAVD88)
Summer	Low Stage	497.0
	Median Stage	498.8
Winter	Low Stage	498.0
	Median Stage	503.0
Annual	Median Stage	500.6

6.5 Yield Scenarios and Results

Several scenarios were investigated to test the potential yield of one collector well on Parcel 2 under a range of conditions. The scenarios include differing river stages, and both average and high skin resistance values on the lateral screens. A summary of results is presented in Table 7.

The winter yields of collector wells are often lower than summer yields due to the increase in viscosity of cold water compared to warm water. The increased viscosity also increases the resistance of the riverbed and potentially decrease the hydraulic conductivity of the aquifer adjacent to the river. The potential reduction in yield depends on several factors, including the percentage of groundwater captured by the well that originates from the river with a travel time less than 3 months, versus the percent of water captured from regional flow that will have a higher ambient temperature than the river water. Based on observations of the winter operation of collector wells by the Kansas City BPU (personal communication with Jeff Henson, Black and Veatch), the winter yield predicted with the model were reduced by 30% to account for the cold-water conditions.

Table 7. Summary of scenarios and yield results.

			Summer		Winter*	
	Property	**Units**	Low Stage	Median Stage	Low Stage	Median Stage
River Properties	Elevation	ft, NAVD88	497.0	498.8	498.0	503.0
	Depth	feet	5	7	6	11
	Bed resistance	days	7.3	7.3	7.3	7.3
Aquifer Properties	Hydraulic conductivity	ft/day	500	500	500	500
	Regional flow	ft^2/day	0	0	0	0
Collector Well Properties	Caisson water level	ft, NAVD88	442	442	442	442
	Arm resistance/width	days/ft	0.02-0.01	0.02-0.01	0.02-0.01	0.02-0.01
	Yield, 1 well	**MGD**	**14-18**	**14-19**	**10-13***	**11-14***

***Note: Winter yields reduced by 30% to account for the increased viscosity of water at 32 degrees F.**

6.6 Analysis of Predictive Uncertainty

To assess the effects of parameter uncertainty on the collector well yield, the yield model was used with alternate realizations of hydraulic conductivity and streambed resistance identified during the transient pumping test analysis. The analysis used the model of summer low-flow conditions, streambed resistances adjusted for summer viscosity, and the range of lateral resistance as defined by the dimensionless relationship,

$$5 \leq ck/w \leq 10$$

where c/w is the resistance per width of the lateral, and k is the hydraulic conductivity of the aquifer. The alternate realizations of parameters are summarized in Table 8.

The results of the analysis are presented in Figure 15. The x-axis is the hydraulic conductivity, with the associated streambed resistance noted above the axis, and the y-axis is yield in million gallons per day. The lowest value of the hydraulic conductivity presented is 410 ft/day, which represents the best fit to the drawdown data when the river is in direct contact with the aquifer; this represents the lowest possible hydraulic conductivity of the aquifer. The upper value of 600 ft/day represents the limit where higher values can no longer be well calibrated to drawdown data.

A comparison of yields for the alternate realizations of parameters with the design yield of the collector wells shows that the upper bound of the design yield is conservative in all cases, except for the extreme lower bound of k=375 ft/day. The lower bound for the limiting case of direct contact of the streambed is lower than the design range by 2 MGD. Note that the alternate realizations of parameters are obtained by calibration to observed drawdown only; the river and groundwater elevations are not considered, and therefore the best-fit parameters presented earlier make use of additional information not considered in the alternate realizations. The water level conditions at Test Site 3 suggest a high streambed resistance of 7.3 days in the summer.

Table 8. Alternate realizations of parameters used in the predictive uncertainty analysis. Realization 1 represents the streambed in direct connection with the top of the aquifer.

Realization	Hydraulic Conductivity (ft/day)	Riverbed Resistance (days)	Summer Resistance (days)
1	375	0.05	0.05
2	400	1.0	0.73
2	450	3.0	2.2
3	500	5.0	3.7
4	550	7.0	5.1
5	600	10	7.3

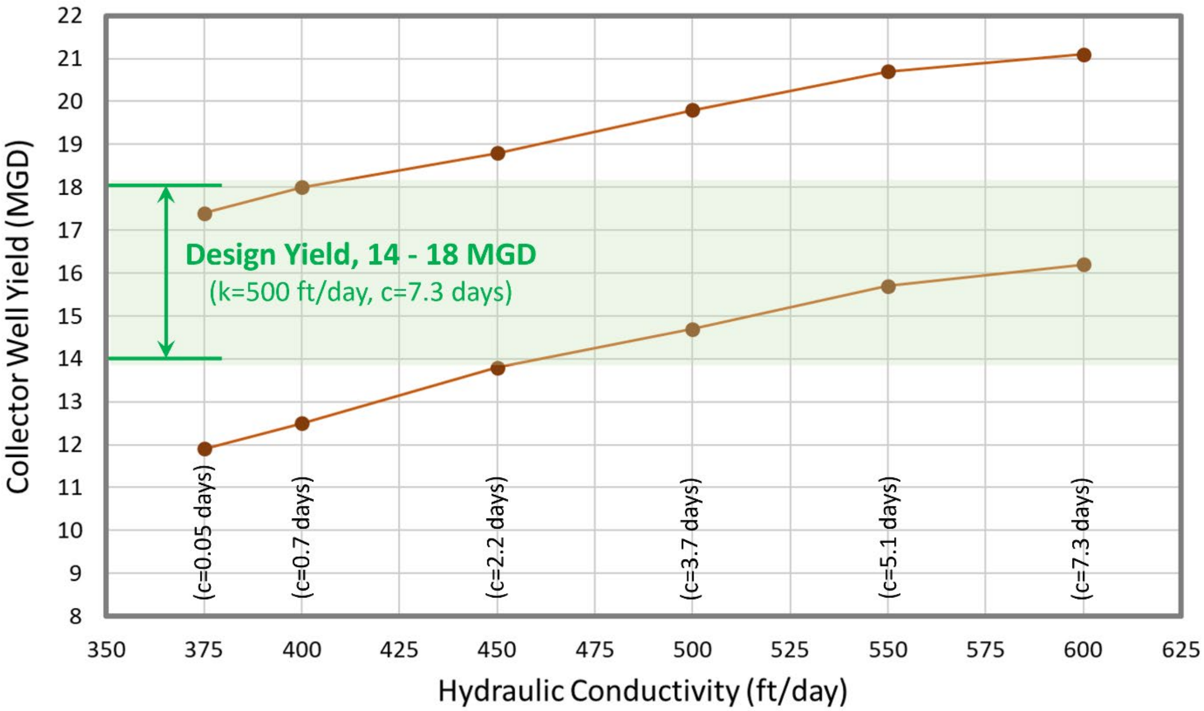


Figure 15. Results from the Predictive Uncertainty Analysis. The design yield range is highlighted in green. Yields based on alternate realizations of hydraulic conductivity and riverbed resistance are indicated by the brown lines.

6.7 Dewatering at Well

In general, dewatering should not exceed 50% of the static saturated thickness. A summary of the predicted aquifer dewatering under the critical summer low river stage and winter low river stage scenarios is presented in Table 9, for a minimum water elevation in the caisson of 442 feet NAVD 88; for the scenarios shown, the water elevation in the aquifer outside the caisson is dependent on the lateral resistance and in all cases is significantly higher than 442 feet. As summarized in the table the maximum aquifer dewatering is 44% of the static saturated thickness.

Table 9. Summary of aquifer dewatering for Summer and Winter Low Stage Scenarios.

	Units	Summer Low Stage		Winter Low Stage	
Lateral Resistance/Width	days/ft	0.01	0.02	0.01	0.02
River Elevation	ft, NAVD 88	497	497	498	498
Aquifer Base Elevation	ft, NAVD 88	410	410	410	410
Aquifer Saturated Thickness	feet	87	87	88	88
Min. Aquifer Elevation	ft, NAVD 88	458.5	470.5	458.8	471.0
Max. Aquifer Drawdown	feet	38.5	26.5	39.2	27.0
Aquifer Dewatering	%	44	30	44	31

7.0 WATER QUALITY

INTERA collected raw-water samples from TW-3 during the aquifer test. Samples were collected according to a sampling and analysis plan (SAP) developed by Black and Veatch (Black and Veatch, 2023). The objectives of the sampling effort were to:

1) characterize the groundwater component of the source water and inform assumptions related to treatment process strategies, and

2) identify any contamination that might be present near the proposed collector well locations.

The water samples were submitted to Eurofins Environmental Testing Laboratory for analysis of a broad suite of analytes, including the United States Environmental Protection Agency's (USEPA's) primary and secondary drinking-water contaminants and additional water-quality parameters. All analytes are provided in Table B-1 in Appendix B.

Also sampled and analyzed were analytes included in the USEPA Unregulated Contaminant Monitoring Rule (UCMR). The UCMR program is part of the Safe Drinking Water Act. It requires public water systems to monitor and test for the presence of certain unregulated contaminants in drinking water. Unregulated contaminants are substances that are not currently subject to regulatory standards, but the USEPA wants to gather data about their occurrence and potential health effects. The UCMR analytes that were tested include the UCMR 5 list of PFAS compounds as well as select compounds from UCMR 1-4.

7.1 Sampling Approach

Prior to sample collection, field parameters were monitored using a Horiba multi-sonde and a flow-through device. The unit was outfitted with sondes for measuring temperature, pH, specific conductance, turbidity, dissolved oxygen, and oxidation-reduction potential (ORP) (Table 10).

After the field parameters had stabilized, raw-water samples were collected from a spigot installed on the pump discharge piping at the test well. Water samples were collected from TW-3 on 12/18/23 at 70 hours into the test, just prior to the end of the pumping phase. All samples were packed in coolers of ice and delivered in person to the Eurofins Laboratory in South Bend, Indiana on the same day as sample collection.

7.2 Results

Water-quality results are summarized in two tables. Detections above respective reporting limits for inorganic analytes are summarized in Table 11. Detections above respective reporting limits for physical parameters, nutrients, organics, and microbes are summarized in Table 12. Where applicable, the USEPA maximum contaminant level (MCL) and secondary maximum contaminant level (SMCL) are shown. A complete lab report is included in Appendix B.

A piper plot, like the one shown in Figure 19, is a tri-linear diagram that summarizes and illustrates the major inorganic species in a water sample and can be used to compare different water samples and determine water type. The results for TW-1, TW-2, and TW-3 are shown on the diagram. Clustering of the data points on the plot indicates that the source water from the three test wells is similar in type and can be classified as calcium-bicarbonate type water, which is typical for groundwater in Indiana (Figure 17).

The testing results indicate that the water meets necessary criteria and is safe for use as a drinking water source. No analyte associated with the UCMR was detected in TW-3. No VOC, SVOC, or pesticide was detected above a respective reporting limit. No primary USEPA standard was exceeded.

The observed iron and manganese concentrations in TW-3 were above the respective SMCL, with total iron and manganese observed at 0.68 mg/L and 0.21 mg/L, respectively (Table 11). For both iron and manganese, the SMCL is set to minimize corrosion, staining, and undesirable taste and odor effects. Given the observed concentrations, treatment would be required for both iron and manganese. However, iron and manganese concentrations pumped by a new collector well would be expected to decrease over time as oxygenated river water is induced through the riverbed.

Table 10. Summary of field parameters observed prior to sample collection.

Parameter	Units	TW-3
Date	-	12/18/2023
Time	-	0905
Temperature	degrees C	12.53
pH	-	7.14
Specific Conductance	uS/cm	713
Turbidity	NTU	38.6
Oxygen, Dissolved	mg/L	0
Oxygen Reduction Potential	mV	-73

Notes: mg/L = milligrams per liter; uS/cm = Microsiemens per centimeter
mV = millivolts; NTU = Nephelometric Turbidity Unit; '-' = Not Applicable

Table 11. Summary of inorganic analytes detected above reporting limits.

Parameter	Units	RL	MCL	SMCL	TW-3
Inorganics, Major Metals					
Calcium	mg/L	0.10	-	-	100
Magnesium	mg/L	0.10	-	-	31
Potassium	mg/L	0.20	-	-	1.7
Sodium	mg/L	0.10	-	-	4.7
Inorganics, Major Non-Metals					
Alkalinity, Total	mg/L	1.0	-	-	280
Bromide	ug/L	10.0	-	-	42
Carbon Dioxide, Free	mg/L	0.1	-	-	22
Chloride	ug/L	2.0	-	-	15
Fluoride	mg/L	0.1	2	-	0.11
Oxygen, Dissolved	mg/L	1.00	-	-	5.4
Sulfate	mg/L	5.0	-	250	91
Inorganics, Minor Metals					
Aluminum	ug/L	2.0	-	50	9.6
Arsenic	ug/L	1.0	10	-	1.4
Barium	ug/L	2.0	2000	-	79
Chromium	ug/L	0.90	100	-	4.8
Iron, total	mg/L	0.010	-	0.3	0.68
Lithium	ug/L	2.0	-	-	3.5
Manganese	ug/L	2.0	-	50	210
Zinc	ug/L	5.0	-	5000	10
Inorganics, Minor Non-Metals					
Silica	mg/L	0.043	-	-	14

Notes: mg/L = milligrams per liter; RL = Reporting Limit; ug/L = micrograms per liter
MCL= Maximum Contaminant Level; SMCL = Secondary Maximum Contaminant Level
- = Not Applicable

Table 12. Summary of detections above reporting limits for physical parameters, nutrients, organics, radiochemical, and microbes.

Parameter/Analyte	Units	RL	MCL	SMCL	TW-3
Physical					
Color	Color Units	3.0	-	15	18
Langelier Index	LangSU	-	-	-	0.39
pH	SU	0.10	-	-	7.4
Specific Conductance	uS/cm	2.0	-	-	740
Total Dissolved Solids	mg/L	10.0	-	500	450
Turbidity	NTU	0.1	-	-	7.2
Hardness (CaCO3)	mg/L	0.7	-	-	380
Calcium hardness (CaCO3)	mg/L	0.3	-	-	250
Magnesium Hardness (CaCO3)	mg/L	0.4	-	-	130
Nutrients					
Ammonia, Nitrogen	mg/L	0.03	-	-	0.049
Nitrate (N)	mg/L	0.10	10	-	0.22
Organics, Other					
Ultraviolet Absorption, 254 nm	1/cm	0.009	-	-	0.013
Radiochemical					
Uranium	ug/L	1.0	30	-	1.1
Radon-226	pCi/L	-	5	-	0.560
Radon-222	pCi/L	-	-	-	126
Microbial					
Heterotrophic Plate Count	MPN/mL	2.0	-	-	43
Total Coliform	-	-	5%[1]	-	Present

Notes: mg/L = milligrams per liter; RL = Reporting Limit; '-' = Not Applicable

uS/cm = microsiemens per centimeter; NTU = Nephelometric turbidity units

Pci/l = Picocuries per Liter; SU = Standard Units

MCL= Maximum Contaminant Level; SMCL = Secondary Maximum Contaminant Level

[1] total percent positives within a month; MPN/mL = most probable number per milliliter

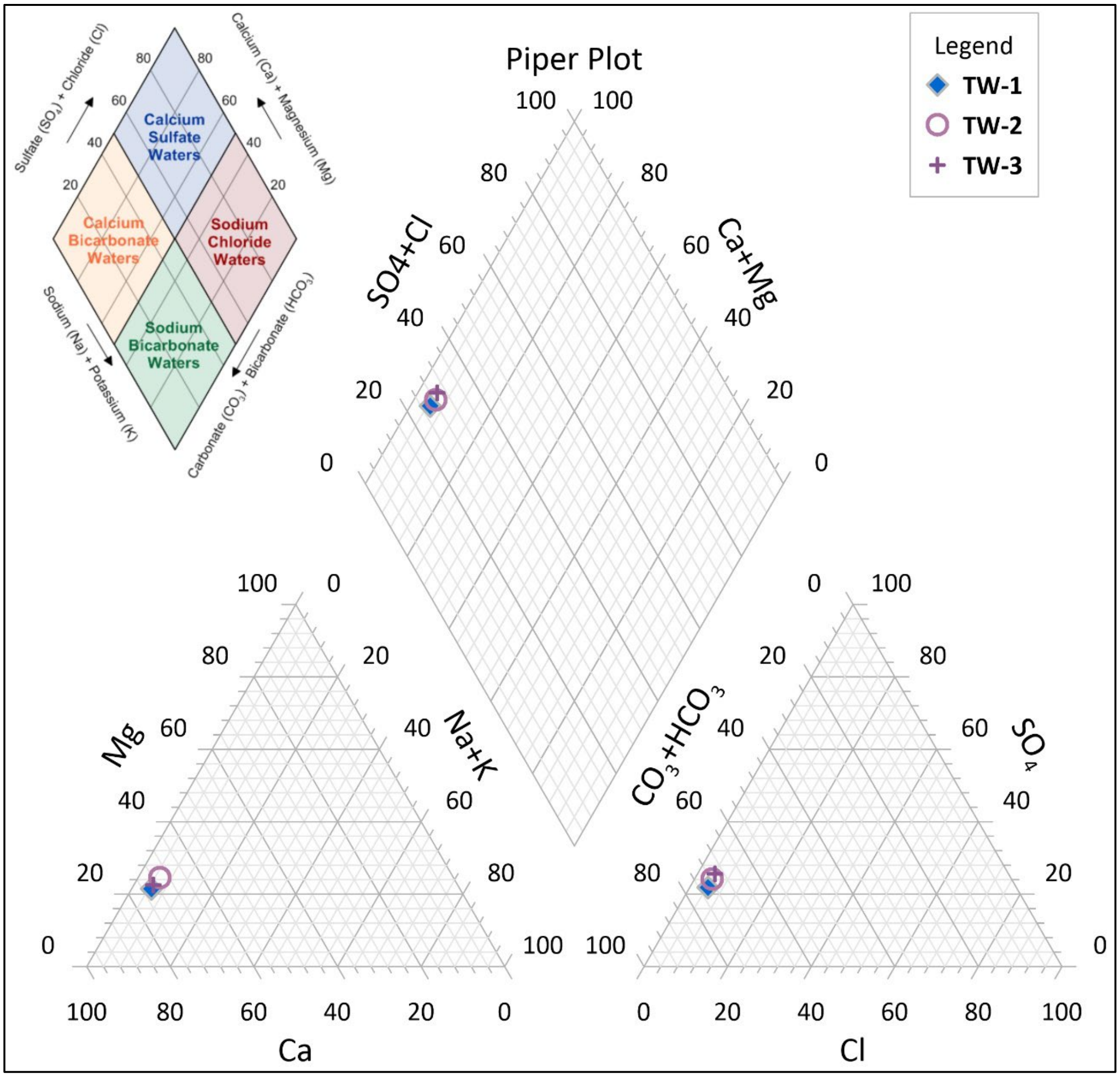


Figure 16. Piper plot of water-quality results from TW-1, TW-2, and TW-3.

8.0 CONCLUSIONS

The field program at Parcels 1 and 2 has provided valuable insights into the hydrogeological characteristics of Sites 1-3. Below we present conclusions for Site 3, a summary of combined yields for Sites 1-3, and a discussion of the additional steps needed to develop a design-level analysis at all three sites.

8.1 Site 3

The field program encompassed drilling sonic test borings, logging geologic sediments, installing monitoring wells and test production wells, conducting aquifer tests, and collecting water-quality samples. These efforts have provided essential data to evaluate potential source-water quality, estimate yields, and inform the conceptual well field design.

- Results of the test drilling show that the underlying stratigraphy at the site is consistent with the regional setting. The aquifer system in the area consists of large bodies of highly permeable unconsolidated sand and gravel which were deposited as glacial outwash or alluvial valley fill. These permeable sediments fill both the recent alluvial valleys as well as the ancient valleys eroded into the bedrock by pre-glacial drainage.

- The water-quality results indicate that the water meets necessary criteria and is safe for use as a drinking water source. No VOC, SVOC, or pesticide was detected above a respective reporting limit. No primary USEPA standard was exceeded.

- The aquifer test results were analyzed to estimate the hydraulic conductivity of the aquifer and the hydraulic resistance between the bed of the river and the aquifer. The results from Site 3 are very similar to Sites 1 and 2, suggesting that the river-aquifer system exhibits homogeneity across this reach of the river. Results from the testing were incorporated into a predictive groundwater flow model analysis.

- The objective of the modeling was to provide a conservative, lower bound on collector well yield. Based on the modeling scenarios, a conservative lower bound on the yield of a single collector well at Parcel 2 was set at 10 MGD.

- Higher yields are possible from Parcel 2, with the summer scenarios predicting a total of approximately 19 MGD from one collector well. This higher yield would be a seasonal phenomenon in the summer months when the river stage is at low levels and the river water is warm. Collector wells with capacity at or near 20 MGD would be the most prolific wells in all of Indiana.

8.2 Regional Effects of Pumping on Groundwater Levels

Figure 16 illustrates the simulated drawdown in groundwater levels due to combined pumping from the three sites. The drawdown contours are developed from the yield model of summer low river stage conditions with low lateral resistances, and therefore represents a worst-case scenario - the maximum drawdown corresponding to the largest possible pumping rates of the wells.

The simulated combined pumping rate of the three collector wells is 57 MGD. Locally, the simulated drawdown near the collector wells is as high as 20 ft at adjacent parcels. Simulated drawdown in the neighborhood south of Parcel 1 is 10-15 ft. On the terrace south of the collector wells where there are multiple agricultural wells, simulated drawdown is 5-10 ft.

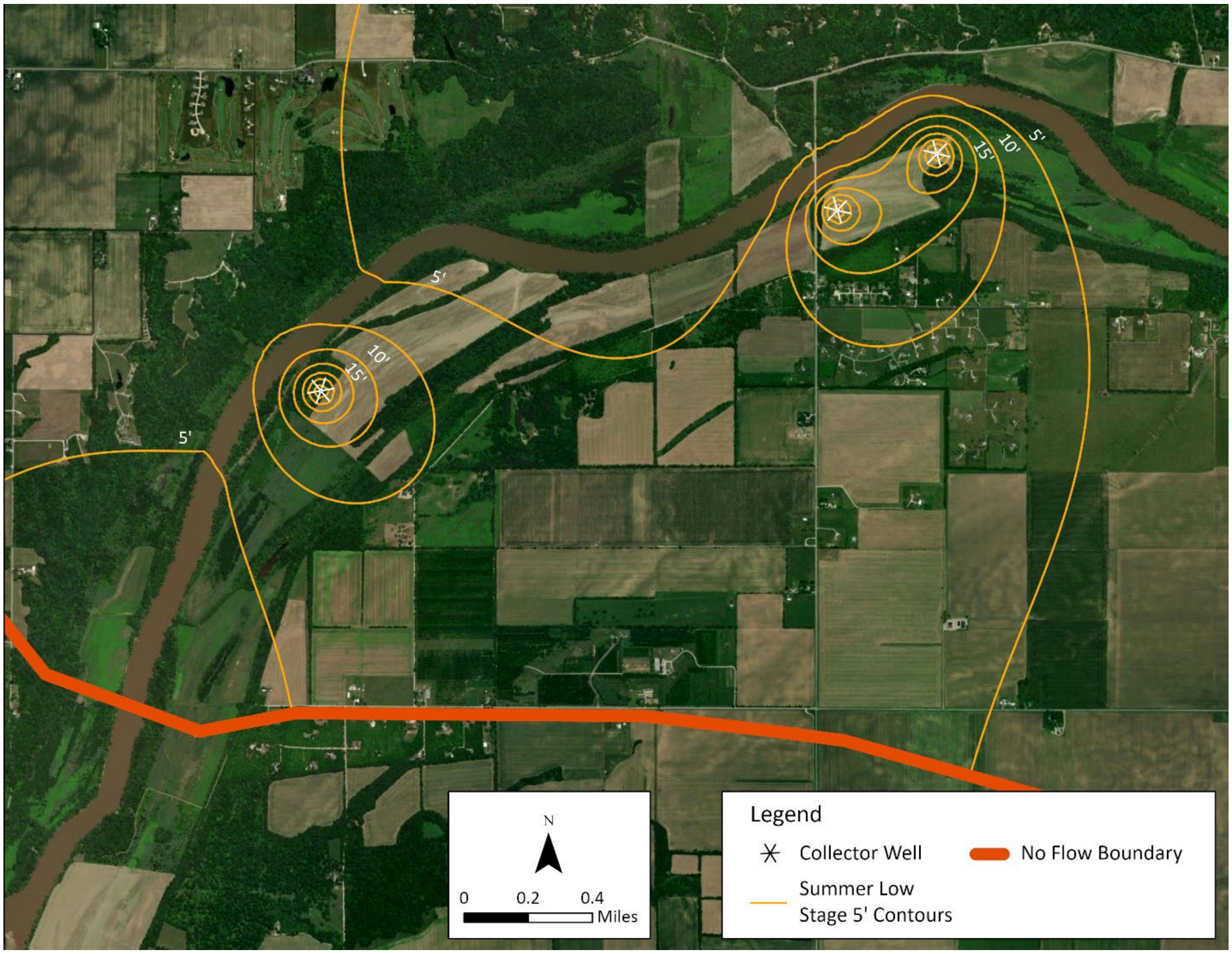


Figure 17. Simulated drawdown of three collector wells pumping at a maximum combined rate of 57 MGD at Parcels 1 and 2.

8.3 Yield Summary, Sites 1 - 3

Table 13 summarizes the design yields of individual collector wells constructed at each of the three sites, the total yield for Sites 1 and 2 operating, and the total yield with wells at all three sites operating. The simulated collector wells at Sites 1 and 2 are close enough together that there is some interference with both wells running, reducing the individual yields by about 10%. Site 3 is far enough away from the other sites to eliminate well interference.

Based on the modeling scenarios, a conservative lower bound on the combined yield of three collector wells pumping in total at Parcel 1 and 2 is 30 MGD. Higher yields are possible in the summer months when the river stage is at normal levels and the water is warm.

Table 13. Summary of Design Yields for the three test sites for Summer and Winter Low Stages.

	Units	Summer Low Stage	Winter* Low Stage
Lateral Resistance/Width	days/ft	0.02—0.01	0.02—0.01
Test Site 1, Individual Yield	MGD	15—21	11—15
Test Site 2, Individual Yield	MGD	16—22	11—15
Test Site 3, Individual Yield	MGD	14—18	10—13
Sites 1 and 2, Total Yield	MGD	29—39	20—27
Sites 1, 2 and 3, Total Yield	MGD	43—57	30—40

***Note: Winter yields reduced by 30% to account for the increased viscosity of water at 32 degrees °F.**

8.4 Additional Steps for Design-Level Analysis

A preliminary design of horizontal collector wells was presented and used as a basis for developing preliminary design yields. A more detailed conceptual design is necessary prior to final design and construction of the wells. The conceptual design includes the following considerations:

1. **Site-specific conditions and stratigraphy.** Additional design considerations can be addressed with a more in-depth modeling analysis that includes location and total depth of the caisson, lateral alignment, the total number of laterals, and lateral elevation. The caisson can be moved toward the river to increase yields, and the lateral alignment may be adjusted to either maximize yield or maintain separation distances from the river.
2. **Mechanical Capacity of the well screens and laterals.** Screen inlet velocities – which depend on screen size, alignment, and maximum design yield – must be evaluated and

limited to standard design capacities. If inlet velocities are too high for the preliminary design and yield, more feet of screen must be included. This can be accomplished by increasing individual lateral lengths or adding additional laterals in one or more tiers. Similarly, the maximum inline velocity within each lateral must be assessed and limited to standard design criteria.

3. **Allowable drawdown in the caisson.** Finally, the minimum water level in the caisson must be reassessed based on the results of items 1 and 2 above. A minimum of 5 feet of water in the caisson above the top of the laterals is typically required based on the construction technique used to install the laterals.

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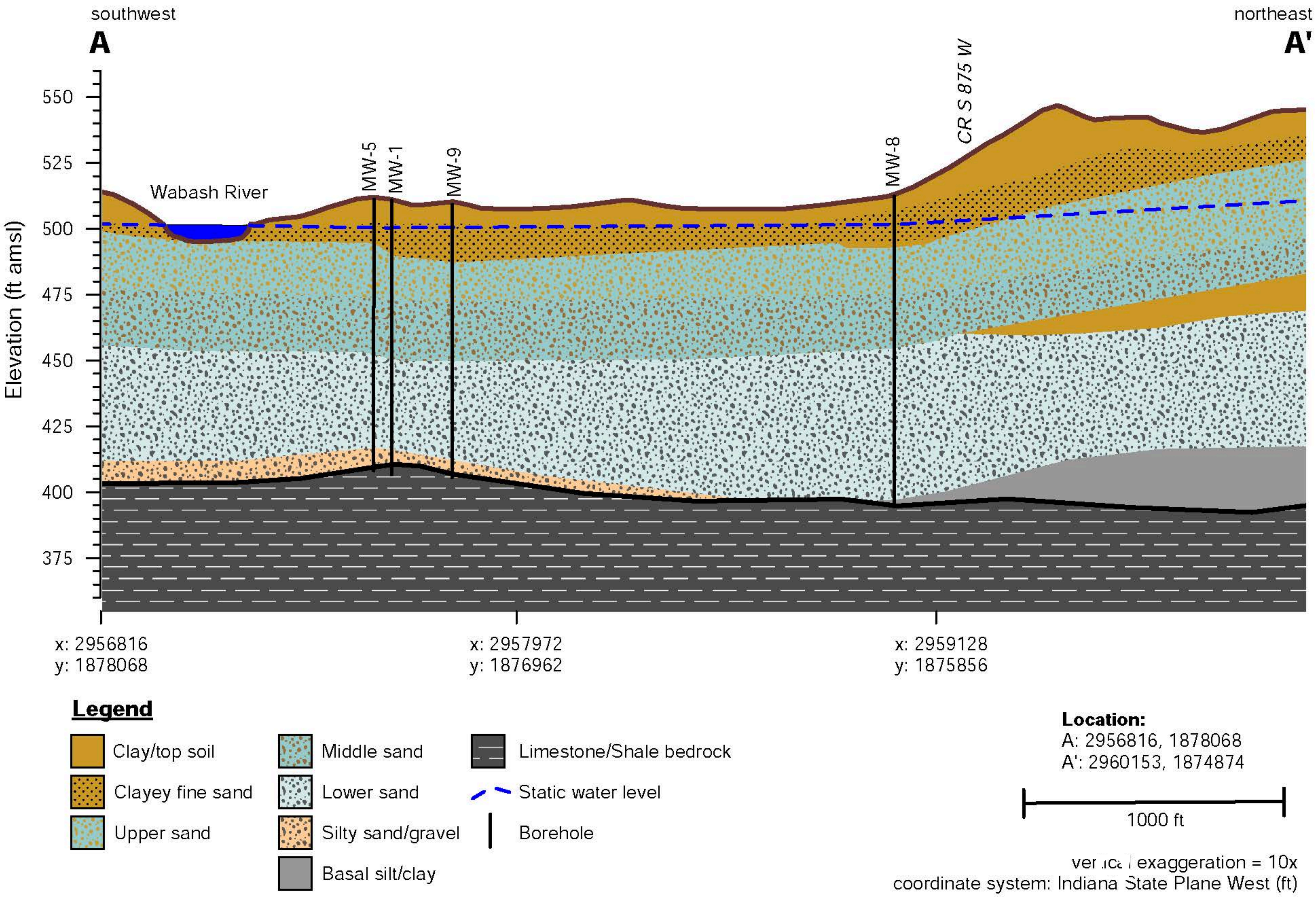
Exhibits



LEAP - REGIONAL
WATER SOLUTIONS

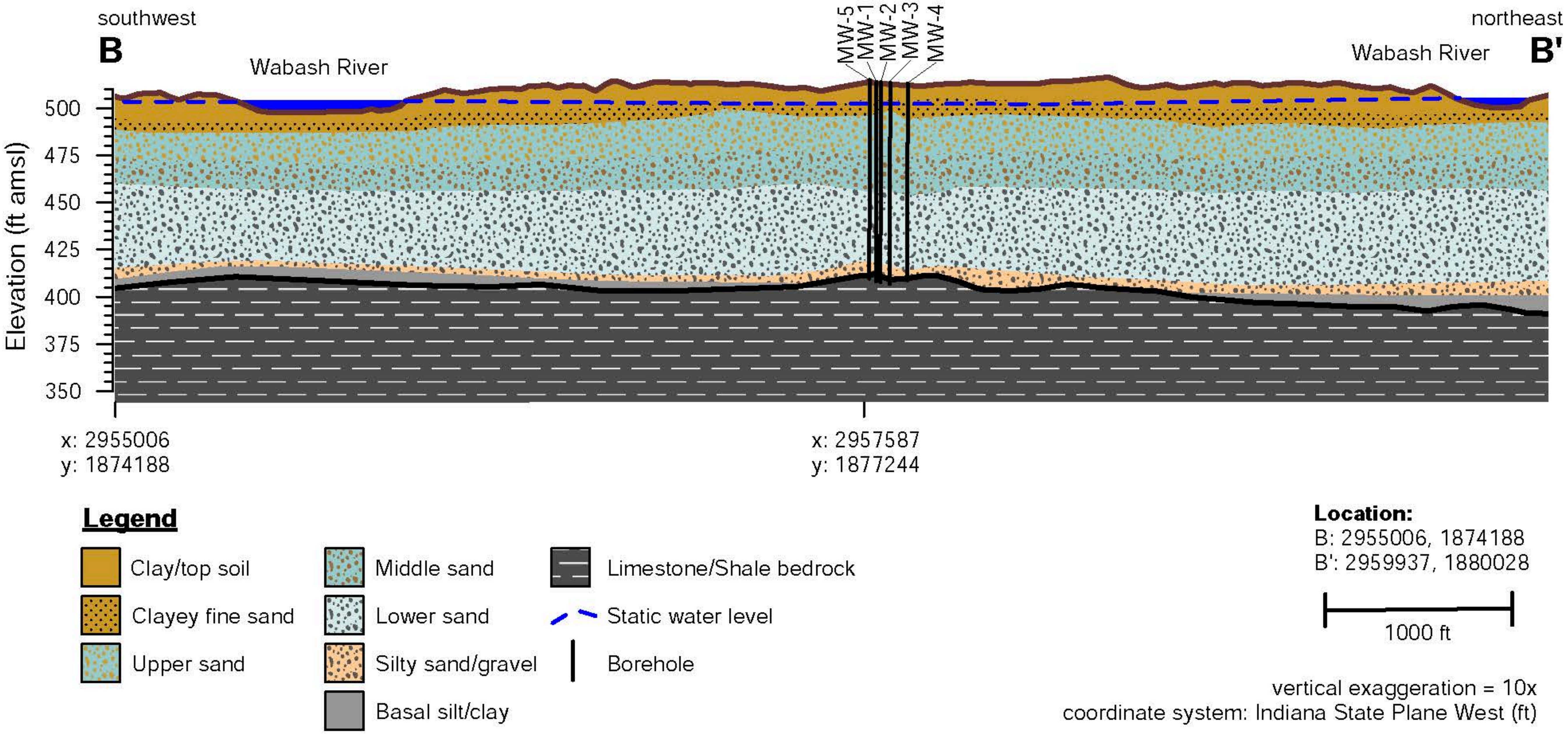
Geologic Cross Section A-A'
DRAFT- CONFIDENTIAL

INTERA

DATE: FEB 2024

B&V PROJECT
414595

EXHIBIT A



Location:
B: 2955006, 1874188
B': 2959937, 1880028

vertical exaggeration = 10x
coordinate system: Indiana State Plane West (ft)

LEAP - REGIONAL
WATER SOLUTIONS

Geologic CrossSection B-B'
DRAFT- CONFIDENTIAL

INTERA

DATE: FEB 2024

B&V PROJECT
414595

EXHIBIT B

Appendix A

Boring ID: MW-1

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Rieman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

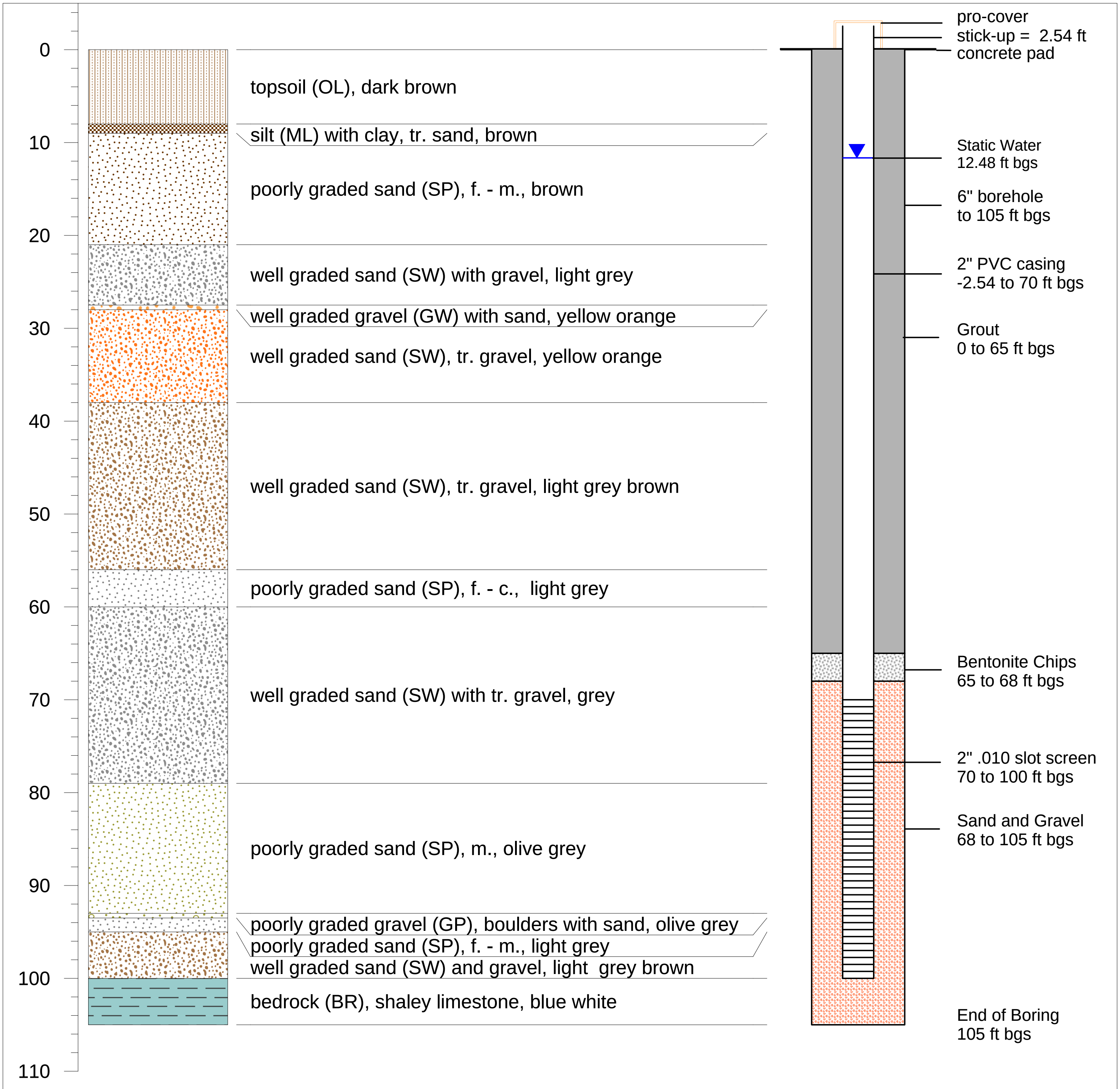
Elevation (TOC): 515.48 ft **Lat:** 40.402421°
Total Depth: 105 ft **Long:** -87.065812°

Date start: 10/25/2023

Date finish: 10/25/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



topsoil (OL), dark brown

silt (ML) with clay, tr. sand, brown

poorly graded sand (SP), f. - m., brown

well graded sand (SW) with gravel, light grey

well graded gravel (GW) with sand, yellow orange

well graded sand (SW), tr. gravel, yellow orange

well graded sand (SW), tr. gravel, light grey brown

poorly graded sand (SP), f. - c., light grey

well graded sand (SW) with tr. gravel, grey

poorly graded sand (SP), m., olive grey

poorly graded gravel (GP), boulders with sand, olive grey

poorly graded sand (SP), f. - m., light grey

well graded sand (SW) and gravel, light grey brown

bedrock (BR), shaley limestone, blue white

pro-cover
stick-up = 2.54 ft
concrete pad

Static Water
12.48 ft bgs

6" borehole
to 105 ft bgs

2" PVC casing
-2.54 to 70 ft bgs

Grout
0 to 65 ft bgs

Bentonite Chips
65 to 68 ft bgs

2" .010 slot screen
70 to 100 ft bgs

Sand and Gravel
68 to 105 ft bgs

End of Boring
105 ft bgs

TOC = top of casing
bgs = below ground surface

MW-1

Boring ID: MW-2

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Reiman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

Elevation (TOC): 515.52 ft
Total Depth: 105 ft

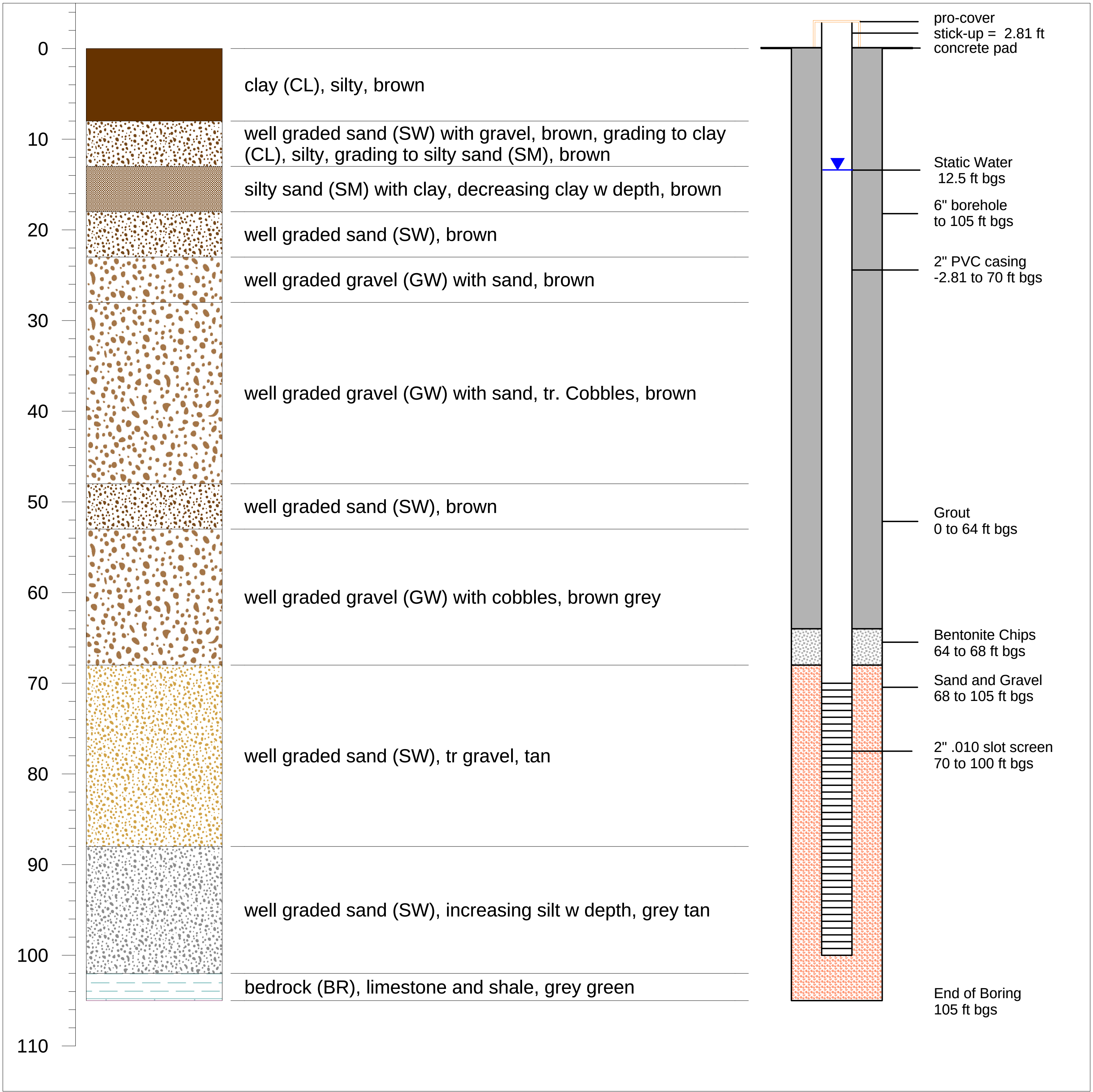
Lat: 40.402473°
Long: -87.065753°

Date start: 10/31/2023

Date finish: 10/31/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



clay (CL), silty, brown

well graded sand (SW) with gravel, brown, grading to clay (CL), silty, grading to silty sand (SM), brown

silty sand (SM) with clay, decreasing clay w depth, brown

well graded sand (SW), brown

well graded gravel (GW) with sand, brown

well graded gravel (GW) with sand, tr. Cobbles, brown

well graded sand (SW), brown

well graded gravel (GW) with cobbles, brown grey

well graded sand (SW), tr gravel, tan

well graded sand (SW), increasing silt w depth, grey tan

bedrock (BR), limestone and shale, grey green

TOC = top of casing
bgs = below ground surface

MW-2

Boring ID: MW-3

Location: Wabash Regional Wellfield
Site: 3

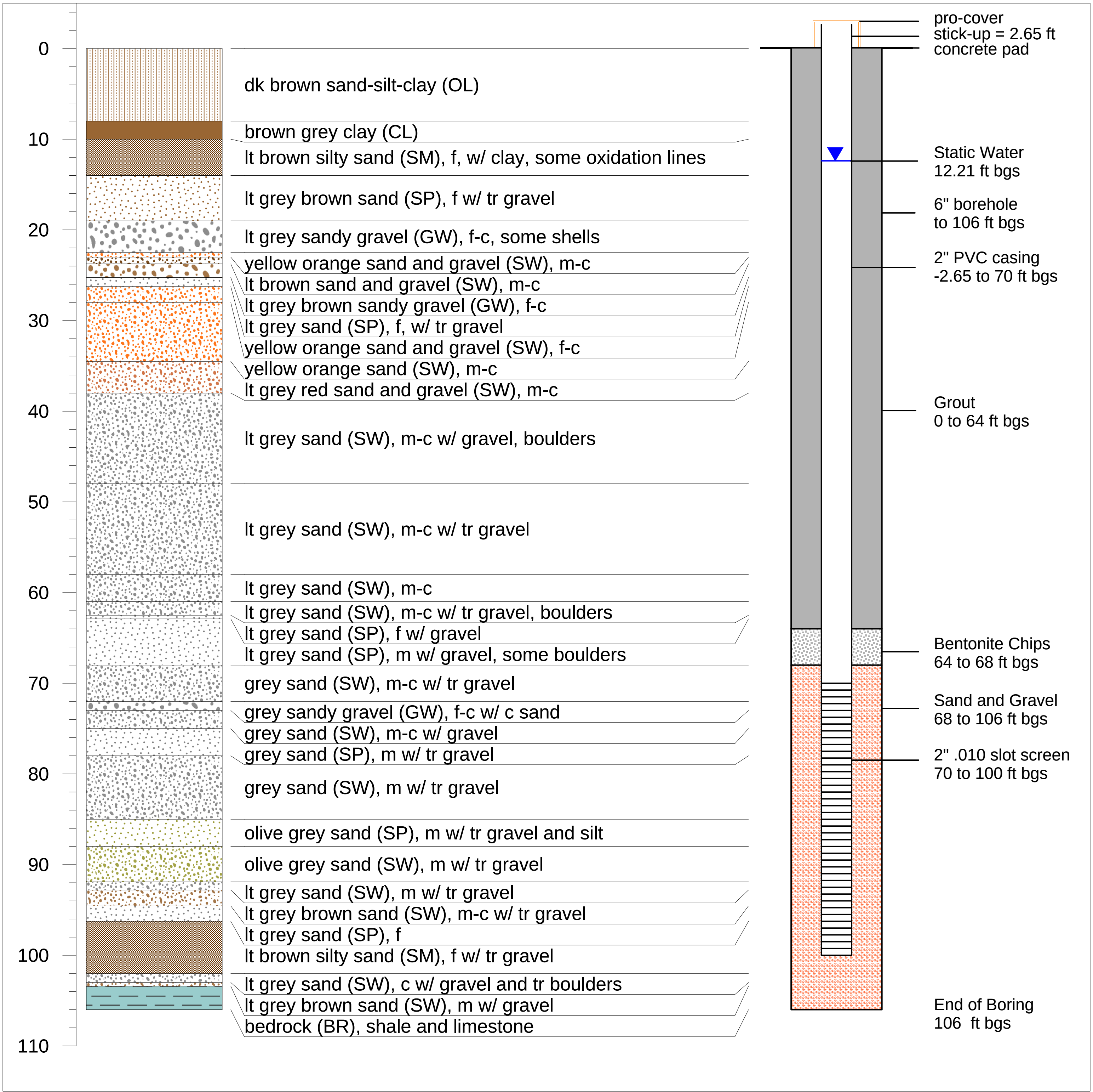
Logged by: INTERA
Drilled by: T Rieman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

Elevation (TOC): 515.22 ft
Lat: 40.402573°
Total Depth: 106 ft
Long: -87.065634°

Date start: 10/24/2023
Date finish: 10/25/2023
Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



dk brown sand-silt-clay (OL)
brown grey clay (CL)
lt brown silty sand (SM), f, w/ clay, some oxidation lines
lt grey brown sand (SP), f w/ tr gravel
lt grey sandy gravel (GW), f-c, some shells
yellow orange sand and gravel (SW), m-c
lt brown sand and gravel (SW), m-c
lt grey brown sandy gravel (GW), f-c
lt grey sand (SP), f, w/ tr gravel
yellow orange sand and gravel (SW), f-c
yellow orange sand (SW), m-c
lt grey red sand and gravel (SW), m-c
lt grey sand (SW), m-c w/ gravel, boulders
lt grey sand (SW), m-c w/ tr gravel
lt grey sand (SW), m-c
lt grey sand (SW), m-c w/ tr gravel, boulders
lt grey sand (SP), f w/ gravel
lt grey sand (SP), m w/ gravel, some boulders
grey sand (SW), m-c w/ tr gravel
grey sandy gravel (GW), f-c w/ c sand
grey sand (SW), m-c w/ gravel
grey sand (SP), m w/ tr gravel
grey sand (SW), m w/ tr gravel
olive grey sand (SP), m w/ tr gravel and silt
olive grey sand (SW), m w/ tr gravel
lt grey sand (SW), m w/ tr gravel
lt grey brown sand (SW), m-c w/ tr gravel
lt grey sand (SP), f
lt brown silty sand (SM), f w/ tr gravel
lt grey sand (SW), c w/ gravel and tr boulders
lt grey brown sand (SW), m w/ gravel
bedrock (BR), shale and limestone

pro-cover
stick-up = 2.65 ft
concrete pad

Static Water
12.21 ft bgs

6" borehole
to 106 ft bgs

2" PVC casing
-2.65 to 70 ft bgs

Grout
0 to 64 ft bgs

Bentonite Chips
64 to 68 ft bgs

Sand and Gravel
68 to 106 ft bgs

2" .010 slot screen
70 to 100 ft bgs

End of Boring
106 ft bgs

TOC = top of casing
bgs = below ground surface

INTERA

Boring ID: MW-4

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Rieman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

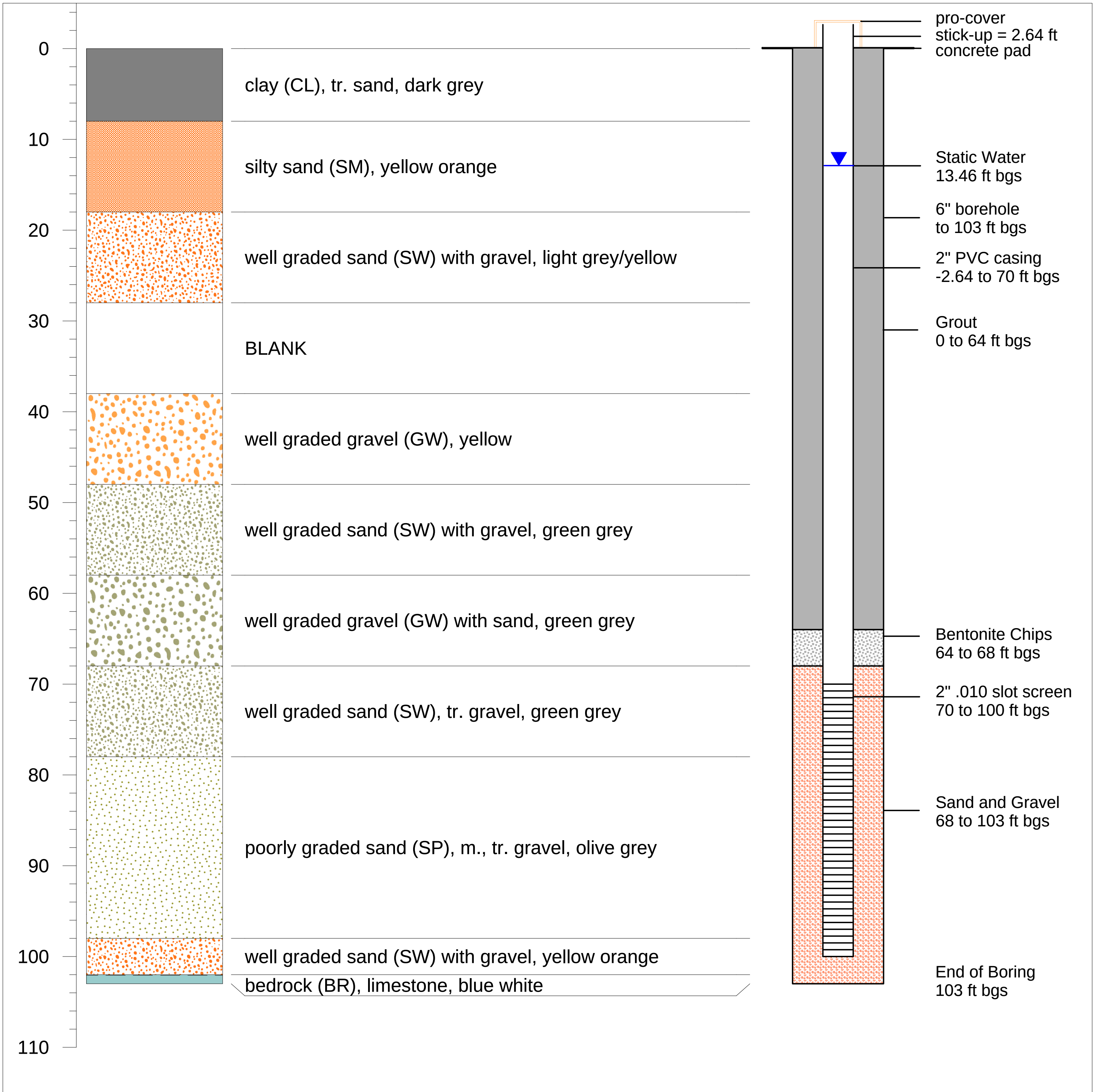
Elevation (TOC): 514.77 ft **Lat:** 40.402767°
Total Depth: 103 ft **Long:** -87.065412°

Date start: 10/26/2023

Date finish: 10/26/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



clay (CL), tr. sand, dark grey

silty sand (SM), yellow orange

well graded sand (SW) with gravel, light grey/yellow

BLANK

well graded gravel (GW), yellow

well graded sand (SW) with gravel, green grey

well graded gravel (GW) with sand, green grey

well graded sand (SW), tr. gravel, green grey

poorly graded sand (SP), m., tr. gravel, olive grey

well graded sand (SW) with gravel, yellow orange

bedrock (BR), limestone, blue white

pro-cover
stick-up = 2.64 ft
concrete pad

Static Water
13.46 ft bgs

6" borehole
to 103 ft bgs

2" PVC casing
-2.64 to 70 ft bgs

Grout
0 to 64 ft bgs

Bentonite Chips
64 to 68 ft bgs

2" .010 slot screen
70 to 100 ft bgs

Sand and Gravel
68 to 103 ft bgs

End of Boring
103 ft bgs

TOC = top of casing
bgs = below ground surface

MW-4

Boring ID: MW-5

Location: Wabash Regional Wellfield
Site: 3

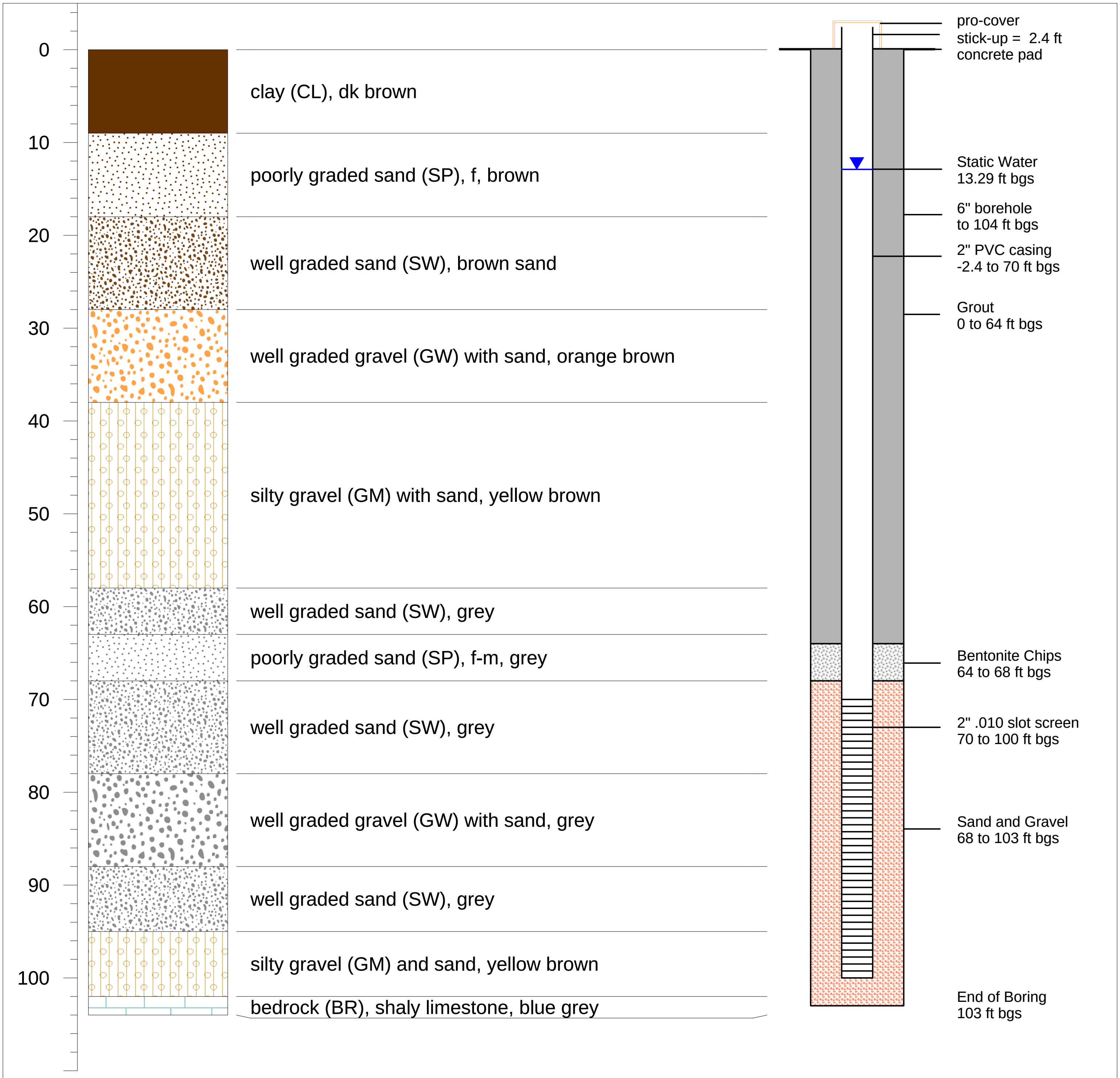
Logged by: INTERA
Drilled by: T Reiman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

Elevation (TOC): 516.23 ft
Lat: 40.402466°
Total Depth: 104 ft
Long: -87.066078°

Date start: 10/31/2023
Date finish: 10/31/2023
Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



clay (CL), dk brown

poorly graded sand (SP), f, brown

well graded sand (SW), brown sand

well graded gravel (GW) with sand, orange brown

silty gravel (GM) with sand, yellow brown

well graded sand (SW), grey

poorly graded sand (SP), f-m, grey

well graded sand (SW), grey

well graded gravel (GW) with sand, grey

well graded sand (SW), grey

silty gravel (GM) and sand, yellow brown

bedrock (BR), shaly limestone, blue grey

pro-cover
stick-up = 2.4 ft
concrete pad

Static Water
13.29 ft bgs

6" borehole
to 104 ft bgs

2" PVC casing
-2.4 to 70 ft bgs

Grout
0 to 64 ft bgs

Bentonite Chips
64 to 68 ft bgs

2" .010 slot screen
70 to 100 ft bgs

Sand and Gravel
68 to 103 ft bgs

End of Boring
103 ft bgs

TOC = top of casing
bgs = below ground surface

Boring ID: MW-6

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Rieman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

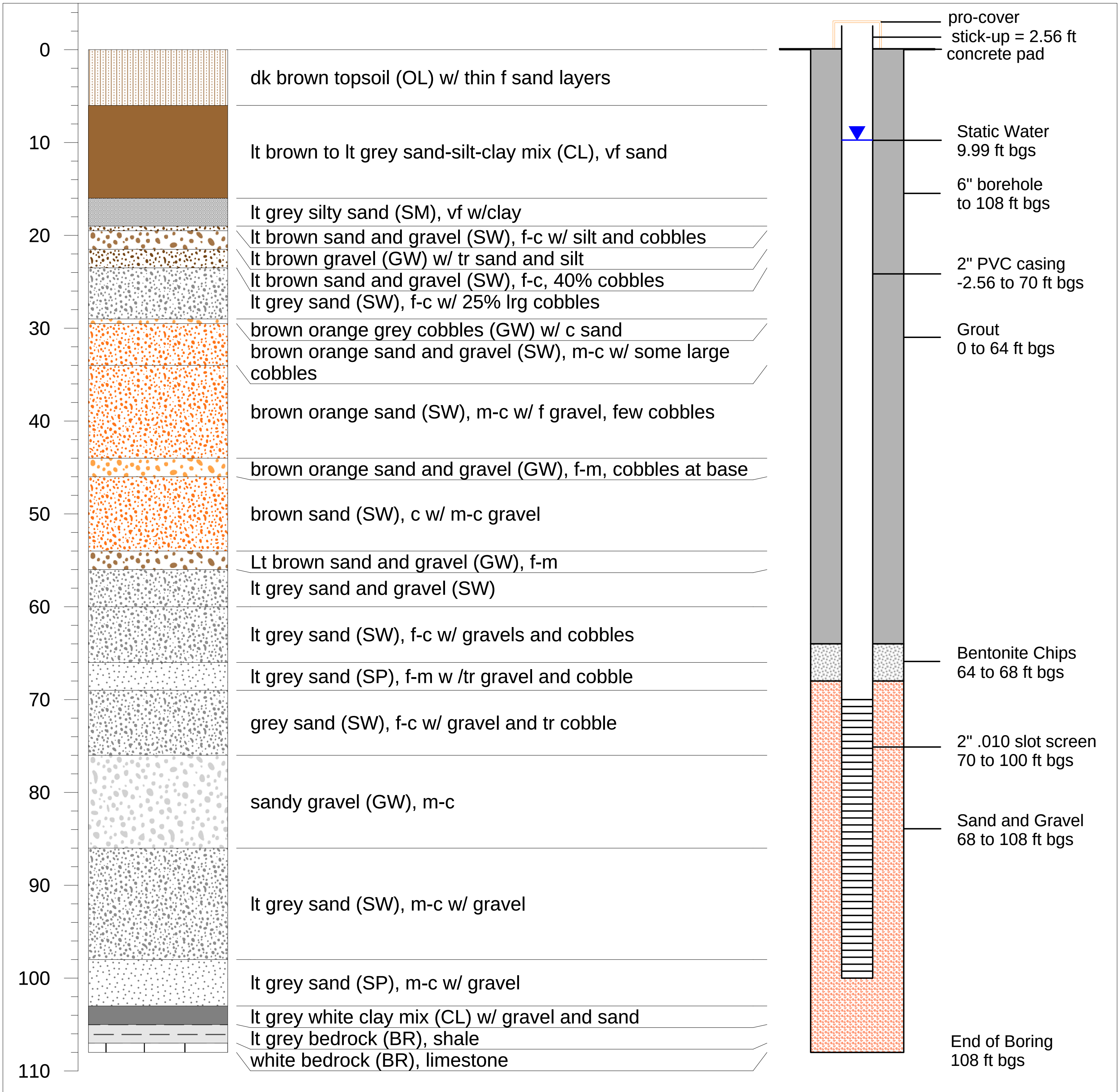
Elevation (TOC): 512.17 ft
Total Depth: 108 ft
Lat: 40.400558°
Long: -87.065199°

Date start: 10/24/2023

Date finish: 10/24/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



dk brown topsoil (OL) w/ thin f sand layers

lt brown to lt grey sand-silt-clay mix (CL), vf sand

lt grey silty sand (SM), vf w/clay

lt brown sand and gravel (SW), f-c w/ silt and cobbles

lt brown gravel (GW) w/ tr sand and silt

lt brown sand and gravel (SW), f-c, 40% cobbles

lt grey sand (SW), f-c w/ 25% lrg cobbles

brown orange grey cobbles (GW) w/ c sand

brown orange sand and gravel (SW), m-c w/ some large cobbles

brown orange sand (SW), m-c w/ f gravel, few cobbles

brown orange sand and gravel (GW), f-m, cobbles at base

brown sand (SW), c w/ m-c gravel

Lt brown sand and gravel (GW), f-m

lt grey sand and gravel (SW)

lt grey sand (SW), f-c w/ gravels and cobbles

lt grey sand (SP), f-m w /tr gravel and cobble

grey sand (SW), f-c w/ gravel and tr cobble

sandy gravel (GW), m-c

lt grey sand (SW), m-c w/ gravel

lt grey sand (SP), m-c w/ gravel

lt grey white clay mix (CL) w/ gravel and sand

lt grey bedrock (BR), shale

white bedrock (BR), limestone

TOC = top of casing
bgs = below ground surface

MW-6

INTERA

Boring ID: MW-7

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Reiman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

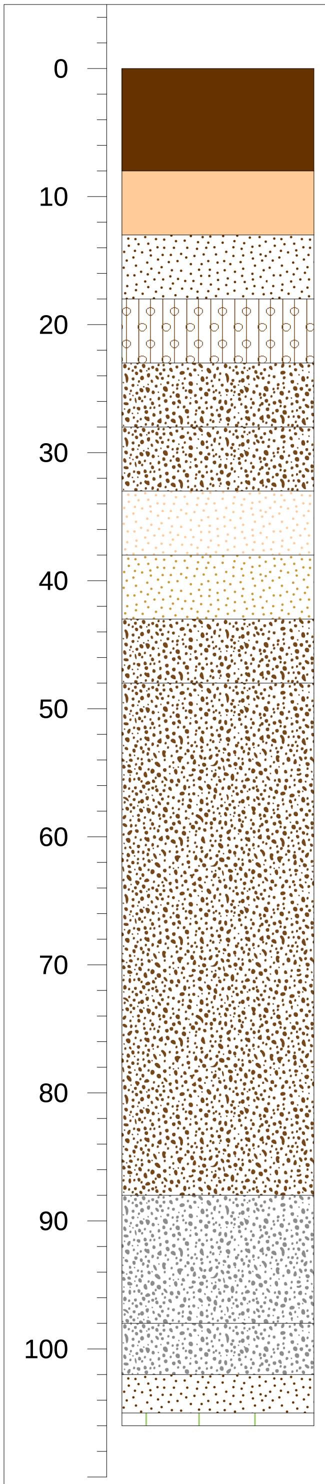
Elevation (TOC): 515.39 ft **Lat:** 40.401616°
Total Depth: 106 ft **Long:** -87.061553°

Date start: 11/01/2023

Date finish: 11/01/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



clay (CL) with silt, dk brown

clay (CL) with silt, tan

poorly graded sand (SP), m-c, brown

silty gravel (GM) with sand, brown

well graded sand (SW) with gravel, tr. cobbles, brown

well graded sand (SW), dk brown

poorly graded sand (SP), f, c, with gravel, tan

well graded sand (SW), yellow brown

well graded sand (SW) with gravel, brown

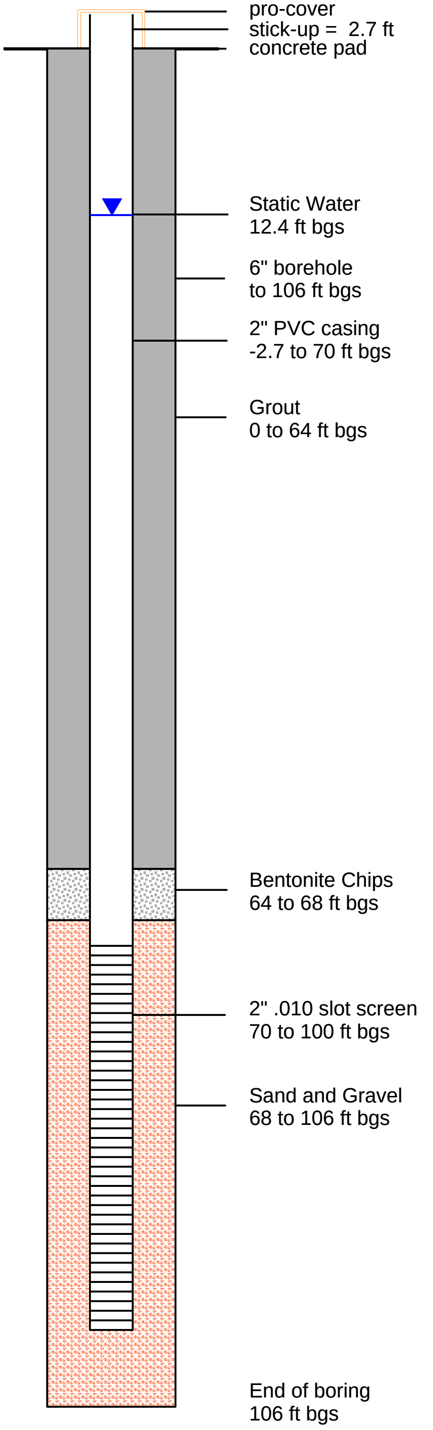
well graded sand (SW) with gravel, tr cobble, brown

well graded sand (SW) with tr gravel, brown grey

well graded sand (SW) with gravel, grey

poorly graded sand (SP), f, brown

bedrock (BR), shale and limestone, lt green



TOC = top of casing
bgs = below ground surface

MW-7

Boring ID: MW-8

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Rieman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

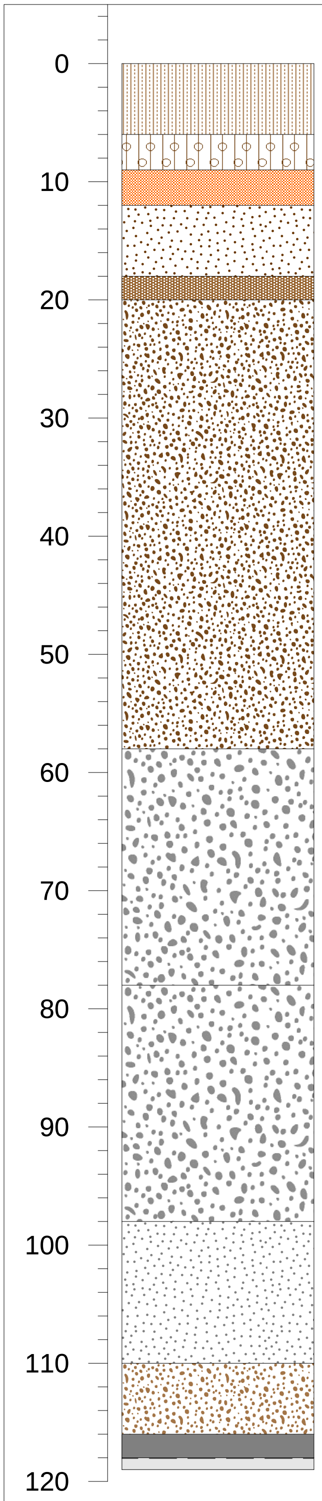
Elevation (TOC): 517.76 ft
Lat: 40.398776°
Total Depth: 119 ft
Long: -87.060851°

Date start: 10/20/2023

Date finish: 10/20/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



dk brown topsoil (OL), silt and clay w/ tr m sand

tan silty gravel (GM), f-c, w/ sand

brown orange silty sand (SM), m-c, w/ gravel

lt brown sand (SP), f-m

lt brown clayey sand (SC), f-c, w/ tr f gravel

lt brown sand (SW), f-c, w/ gravel, tr cobbles

lt grey sand and gravel (GW), f-c w/ cobbles, washout 58'-68'

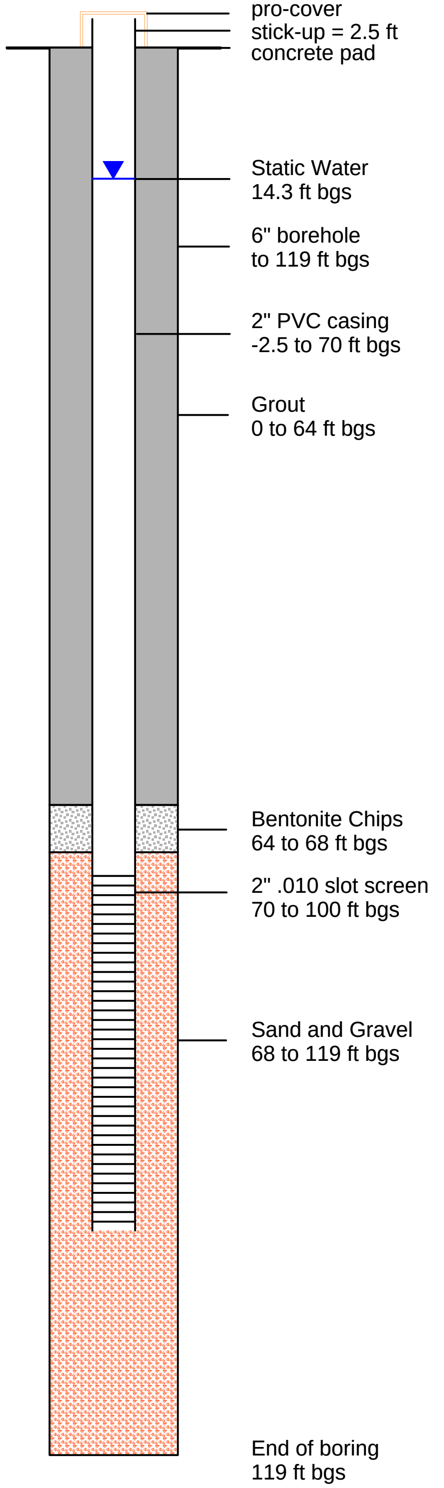
lt grey sand and gravel (GW), f-c w/ cobbles

lt grey sand (SP), vf-f subrounded w/ tr cobbles

lt grey brown sand (SW), f-c w/ gravel, tr cobbles

grey blue clay (CL) w/ silt, tr gravel

grey blue bedrock (BR), shale



TOC = top of casing
bgs = below ground surface

MW-8

INTERA

Boring ID: MW-9

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Reiman, CASCADE

Drilling Method: Sonic
Borehole diameter: 6"

Elevation (TOC): 514.72 ft
Total Depth: 103 ft

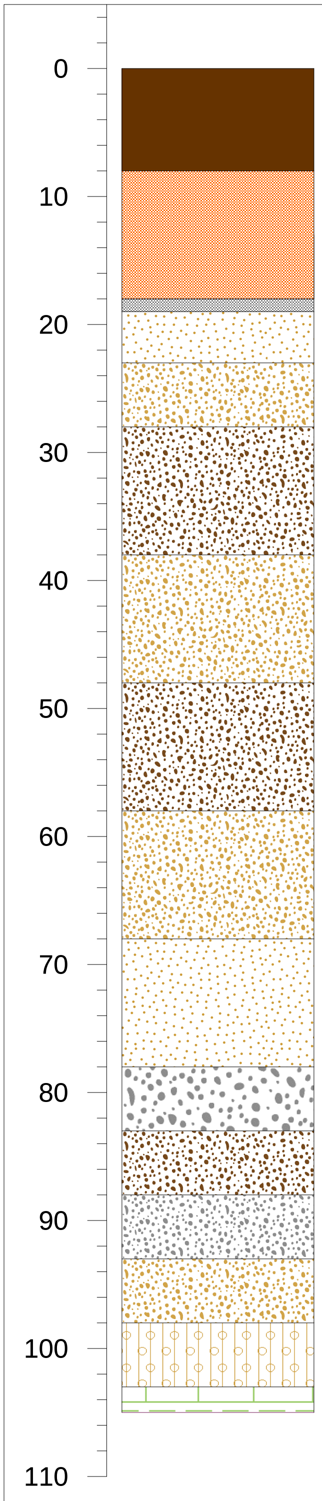
Lat: 40.402030°
Long: -87.065146°

Date start: 11/01/2023

Date finish: 11/01/2023

Date abandoned:

Depth (ft bgs) **Lithology** **Lithologic Description** **Well Construction**



clay (CL), dk brown

silty sand (SM), f, tr clay, yellow brown

silty sand (SM), f, more clay, grey

silty sand (SM), grey, grading to poorly graded sand (SP), f-m, yellow brown

poorly sorted sand (SP) f-m, yellow brown

well graded sand (SW) with gravel, yellow brown

well graded sand (SW), yellow brown, interem layers poorly graded sand (SP), f, brown

well graded sand (SW) with gravel, yellow brown to dk brown

well graded sand (SW) with gravel, brown

well graded sand (SW) with gravel, yellow brown to dk brown

poorly graded sand (SP), f-m, yellow brown

well graded gravel (GW) with sand, grey brown

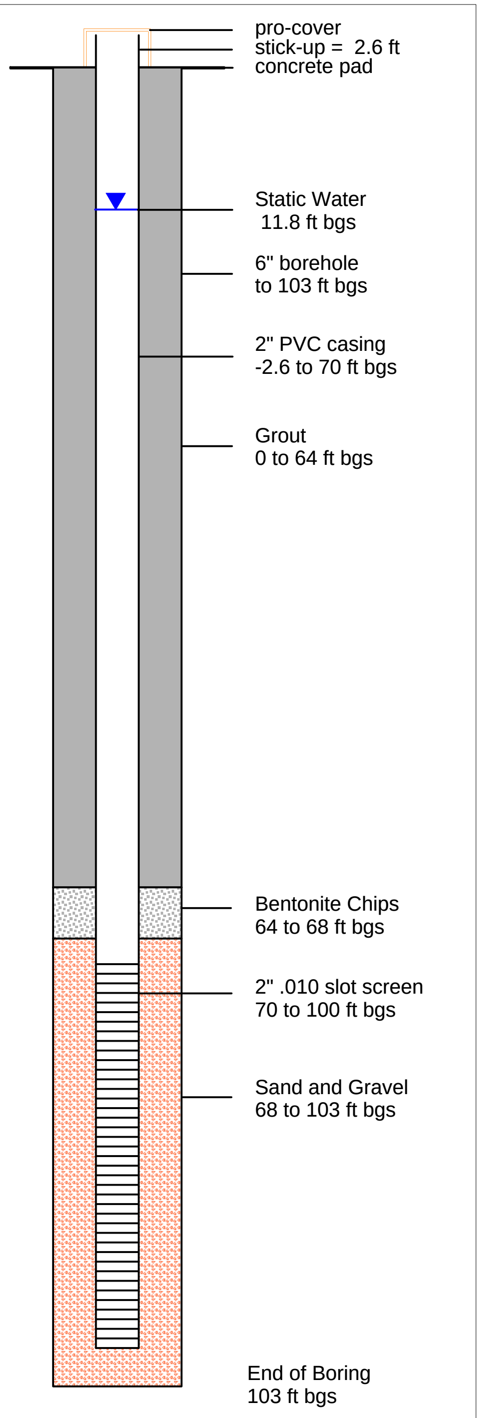
well graded sand (SW) with tr cobbles, brown

well graded sand (SW), grey brown

well graded sand (SW) with gravel, yellow brown

silty gravel (GM), yellow brown

bedrock (BR), shale and limestone, lt green



TOC = top of casing
bgs = below ground surface

INTERA

Boring ID: TW-3

Location: Wabash Regional Wellfield
Site: 3

Logged by: INTERA
Drilled by: T Reiman, CASCADE

Drilling Method: Mud Rotary
Borehole diameter: 17.25"

Elevation (TOC): 514.92
Total Depth: 98 ft

Lat: 40.402370°
Long: -87.065871°

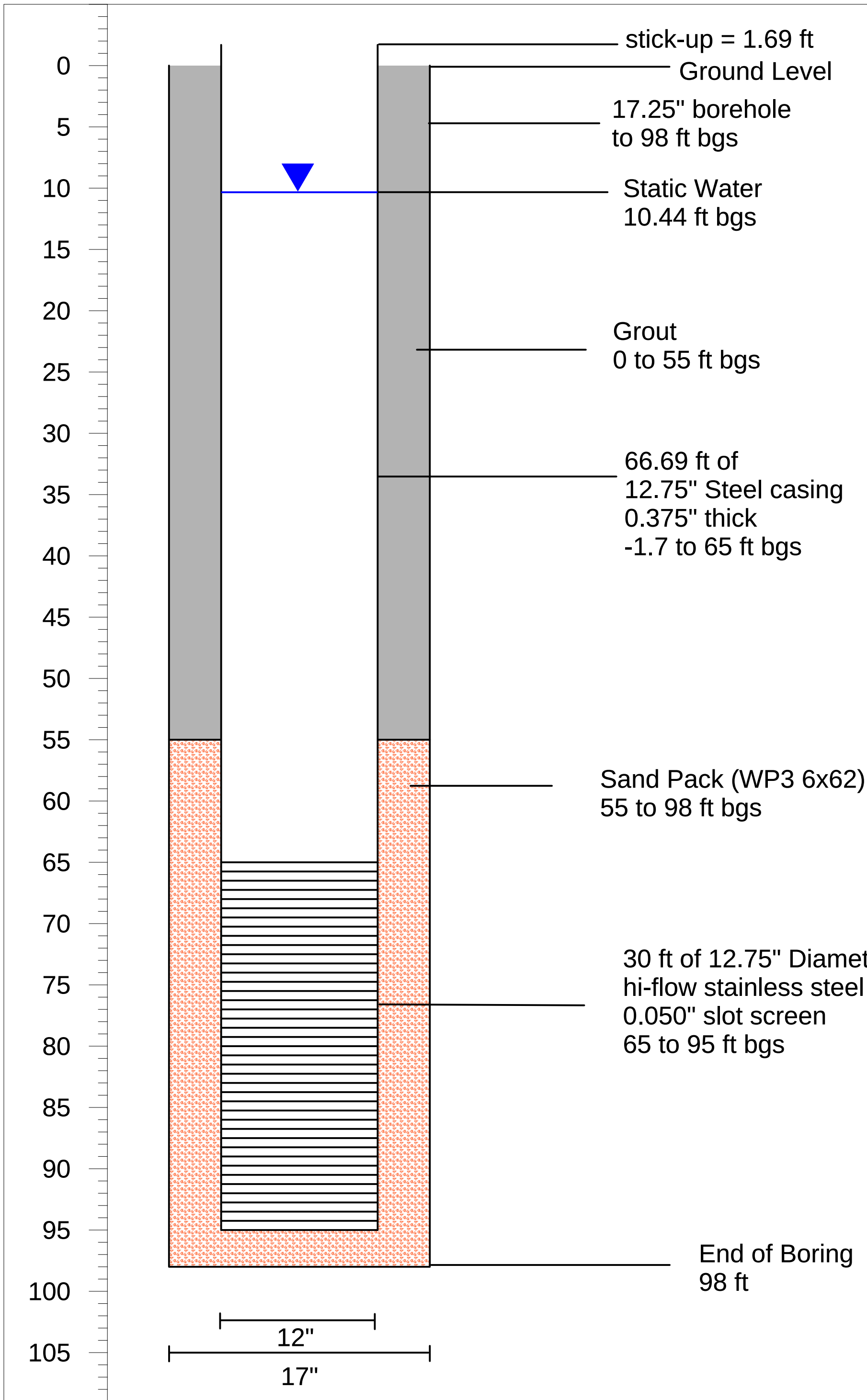
Date start: 11/02/2023

Date finish: 11/03/2023

Date abandoned:

Depth (ft bgs)

Well Construction



Overhead view of Burgett parcel and test well location. TW-3 is noted in yellow.

TOC = top of casing
bgs = below ground surface

Appendix B

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
Primary Standards Microorganisms				
SM 9223B	E. coli	-	-	-
SM 9215E	Heterotrophic plate count (HPC)	2	-	MPN/mL
SM 9260J	Legionella	1	-	CFU/100 mL
SM 9223B	Total coliforms	-	-	-
180.1	Turbidity	0.1	0.1	NTU
Primary Standards Disinfection Byproducts				
317	Bromate	1	0.04	ug/L
300.0	Chlorite	10.0	5.9	ug/L
552.2 THAA	Haloacetic Acids (Total)	2.0	1.5	ug/L
524.2	Trihalomethanes (Total)	0.5	0.24	ug/L
Primary Standards Disinfectants				
4500 Cl F Amine	Chloramines (as Cl2)	0.2	-	mg/L
4500 Cl G	Chlorine (as Cl2)	0.5	0.036	mg/L
4500 ClO2 D	Chlorine dioxide (as ClO2)	0.24	0.24	mg/L
Primary Standards Radionuclides				
SM 7110B	Alpha particles	-	2.1	pCi/L
SM 7110B	Beta particles and photon emitters	-	2.6	pCi/L
7500 Ra D	Radium 226 and Radium 228 (combined)	-	0.8	pCi/L
200.8	Uranium	1.0	0.16	ug/L
Primary Standards Inorganic Chemicals				
200.8	Antimony	1.0	0.08	ug/L
200.8	Arsenic	1.0	0.60	ug/L
100.2	Asbestos (fiber > 10 micrometers)	-	-	MFL
200.8	Barium	2.0	0.34	ug/L
200.8	Beryllium	0.3	0.09	ug/L
200.8	Cadmium	0.5	0.19	ug/L
200.8	Chromium (total)	0.9	0.43	ug/L
200.8	Copper	1.0	0.57	ug/L
335.4	Cyanide (as free cyanide)	0.005	0.0022	mg/L
SM 4500 F C	Fluoride	0.05	0.02	mg/L
200.8	Lead	0.5	0.13	ug/L
200.8	Mercury (inorganic)	0.1	0.05	ug/L
353.2	Nitrate (measured as Nitrogen)	0.1	0.0042	mg/L
353.2	Nitrite (measured as Nitrogen)	0.1	0.038	mg/L
200.8	Selenium	2.0	1.4	ug/L
200.8	Thallium	0.3	0.05	ug/L
Primary Standards Organic Chemicals				
L250	Acrylamide	0.1	0.021	ug/L
525.2	Alachlor	0.1	0.01	ug/L
525.2	Atrazine	0.1	0.01	ug/L
524.2	Benzene	0.5	0.2	ug/L
525.2	Benzo(a)pyrene (PAHs)	0.02	0.012	ug/L
531.2	Carbofuran	0.9	0.058	ug/L
524.2	Carbon tetrachloride	0.5	0.1	ug/L
505	Chlordane	0.1	0.04	ug/L

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
524.2	Chlorobenzene	0.5	0.2	ug/L
524.2	Chloroform	0.5	0.2	ug/L
548.1	2,4-D	5	2.2	ug/L
515.3	Dalapon	1	0.5	ug/L
504.1	1,2-Dibromo-3-chloropropane (DBCP)	0.01	0.006	ug/L
524.2	o-Dichlorobenzene	0.5	0.2	ug/L
524.2	p-Dichlorobenzene	0.5	0.2	ug/L
524.2	1,2-Dichloroethane	0.5	0.2	ug/L
524.2	1,1-Dichloroethylene	0.5	0.2	ug/L
524.2	cis-1,2-Dichloroethylene	0.5	0.2	ug/L
524.2	trans-1,2-Dichloroethylene	0.5	0.2	ug/L
524.2	Dichloromethane	0.5	0.1	ug/L
524.2	1,2-Dichloropropane	0.25	0.2	ug/L
525.2	Di(2-ethylhexyl) adipate	0.6	0.02	ug/L
525.2	Di(2-ethylhexyl) phthalate	0.6	0.02	ug/L
515.3	Dinoseb	0.1	0.1	ug/L
1613B	Dioxin (2,3,7,8-TCDD)	4	0.873	pg/L
549.2	Diquat	0.4	0.25	ug/L
548.1	Endothall	5	2.2	ug/L
525.2	Endrin	0.01	0.0099	ug/L
524.2	Epichlorohydrin	1	-	ug/L
524.2	Ethylbenzene	0.5	-	ug/L
504.1	Ethylene dibromide	0.01	0.005	ug/L
547	Glyphosate	6	4	ug/L
525.2	Heptachlor	0.01	0.0044	ug/L
525.2	Heptachlor epoxide	0.01	0.004	ug/L
525.2	Hexachlorobenzene	0.1	0.01	ug/L
525.2	Hexachlorocyclopentadiene	0.1	0.01	ug/L
525.2	Lindane	0.02	0.0084	ug/L
525.2	Methoxychlor	0.1	0.01	ug/L
531.2	Oxamyl (Vydate)	1	-	ug/L
505	Polychlorinated biphenyls (PCBs) (Total)	0.1	0.08	ug/L
515.3	Pentachlorophenol	0.04	0.02	ug/L
515.3	Picloram	0.1	0.1	ug/L
525.2	Simazine	0.07	0.03	ug/L
524.2	Styrene	0.5	0.2	ug/L
524.2	Tetrachloroethylene	0.5	0.2	ug/L
524.2	Toluene	0.5	0.2	ug/L
505	Toxaphene	0.5	0.06	ug/L
515.3	2,4,5-TP (Silvex)	0.1	0.08	ug/L
524.2	1,2,4-Trichlorobenzene	0.5	0.2	ug/L
524.2	1,1,1-Trichloroethane	0.5	0.2	ug/L
524.2	1,1,2-Trichloroethane	0.5	0.2	ug/L
524.2	Trichloroethylene	0.5	0.2	ug/L
524.2	Vinyl chloride	0.2	0.2	ug/L
524.2	Xylenes (total)	0.2	0.2	ug/L

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
Secondary Standard Analytes				
200.8	Aluminum	2.0	1.7	ug/L
300.0	Chloride	2.0	0.32	mg/L
SM 2120B	Color	3.0	3.0	Color Units
200.8	Copper	1.0	0.57	ug/L
SM 4500 F C	Fluoride	0.05	0.02	mg/L
200.7	Iron (total)	0.01	0.008	mg/L
200.7	Iron (dissolved)	0.01	0.008	mg/L
SM 2330B	Langelier Index	-	-	LangSU
200.8	Manganese (total)	2.0	0.66	ug/L
200.8	Manganese (dissolved)	2	0.66	ug/L
V210	Odor	2.0	-	ng/L
150.1	pH	0.1	-	SU
200.8	Silver	0.5	0.28	ug/L
300.0	Sulfate	5.0	0.72	mg/L
SM 2540C	Total Dissolved Solids	10.0	10.0	mg/L
200.8	Zinc	5.0	2.3	ug/L
Additional Parameters				
SM 2320B	Alkalinity	1.0	1.0	mg/L
350.1	Ammonia	0.03	0.046	mg/L
525.2	Benzo[a]pyrene	0.02	0.012	ug/L
524.2	Bromodichloromethane	0.5	0.1	ug/L
524.2	Bromoform	0.5	0.2	ug/L
200.7	Calcium	0.1	0.025	mg/L
SM 4500 CO2 B	Carbon Dioxide	0.1	0.1	mg/L
300.0	Chloride	2.0	0.32	mg/L
537.1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.0019	0.00045	ug/L
537.1	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.0019	0.00051	ug/L
SM 2510B	Conductivity (Specific Conductance)	2.0	2.0	uS/cm
524.2	Dibromochloromethane	0.5	0.1	ug/L
524.2	1,2-Dibromoethane (EDB)	0.2	0.005	ug/L
SM 4500 Cl F	Dichloramine	0.1	-	mg/L
524.2	1,1-Dichloroethane	0.5	0.1	ug/L
524.2	1,1-Dichloroethene	0.5	0.2	ug/L
524.2	1,2-Dichlorobenzene	0.5	0.2	ug/L
524.2	2,2-Dichloropropane	0.5	0.2	ug/L
524.2	cis-1,3-Dichloropropylene	0.5	0.2	ug/L
524.2	trans-1,3-Dichloropropylene	0.5	0.2	ug/L
525.2	Di(2-ethylhexyl)adipate	0.6	0.02	ug/L
525.2	Di (2-ethylhexyl)phthalate	0.6	0.1	ug/L
525.2	Di-n-octyl phthalate	2	0.02	ug/L
537.1	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	0.0019	0.0004	ug/L
SM 5310C	Dissolved Organic Carbon	0.5	0.2	mg/L
SM 4500 O G	Dissolved Oxygen	1.0	1.0	mg/L
SM 2340B	Hardness as calcium carbonate	0.66	0.66	mg/L
SM 2340B	Calcium hardness as calcium carbonate	0.25	0.25	mg/L

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
SM 2340B	Magnesium hardness as calcium carbonate	0.41	0.41	mg/L
537.1	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.0019	0.00053	ug/L
OSHA 100	Iron Reducing Bacteria	1	-	CFU/100 mL
200.8	Lithium	2	0.52	ug/L
200.7	Magnesium	0.1	0.0064	mg/L
SM 5540C	Methylene Blue Active Substances	0.1	-	mg/L
SM 4500 Cl F	Monochloramine	0.1	-	mg/L
SM 4500 Cl F	Nitrogen trichloride	0.2	-	mg/L
521.1	N-Nitrosodiphenylamine (NDPhA)	20	2	ng/L
521.1	N-Nitrosomorpholine (NMOR)	2	0.3	ng/L
521.1	N-Nitrosopiperidine (NPIP)	2	0.5	ng/L
521.1	N-Nitrosopyrrolidine (NPYR)	2	0.4	ng/L
521.1	N-Nitrosodi-n-butylamine (NDBA)	2	0.4	ng/L
521.1	N-Nitrosodi-n-propylamine (NDPA)	2	0.3	ng/L
521.1	N-Nitrosodiethylamine (NDEA)	2	0.3	ng/L
521.1	N-Nitrosomethylethylamine (NMEA)	2	0.2	ng/L
505	PCB-1016	0.08	0.079	ug/L
505	PCB-1221	0.1	0.05	ug/L
505	PCB-1232	0.1	0.07	ug/L
505	PCB-1242	0.1	0.05	ug/L
505	PCB-1248	0.1	0.08	ug/L
505	PCB-1254	0.1	0.07	ug/L
505	PCB-1260	0.1	0.04	ug/L
537.1	Perfluorooctanesulfonic acid (PFOS)	0.0019	0.00039	ug/L
537.1	Perfluoroundecanoic acid (PFUnA)	0.0019	0.00038	ug/L
537.1	Perfluorohexanoic acid (PFHxA)	0.0019	0.00042	ug/L
537.1	Perfluorododecanoic acid (PFDoA)	0.0019	0.00035	ug/L
537.1	Perfluorooctanoic acid (PFOA)	0.0019	0.00038	ug/L
537.1	Perfluorodecanoic acid (PFDA)	0.0019	0.00036	ug/L
537.1	Perfluorohexanesulfonic acid (PFHxS)	0.0019	0.00039	ug/L
537.1	Perfluorobutanesulfonic acid (PFBS)	0.0019	0.00042	ug/L
537.1	Perfluoroheptanoic acid (PFHpA)	0.0019	0.0004	ug/L
537.1	Perfluorononanoic acid (PFNA)	0.0019	0.00038	ug/L
537.1	Perfluorotetradecanoic acid (PFTeDA)	0.0019	0.00065	ug/L
SM 4500 P E	Phosphate, ortho	0.03	0.015	mg/L
SM 4500 P E	Orthohosphate as PO4	0.092	0.046	mg/L
200.7	Potassium	0.2	0.024	mg/L
SM7500_Rn_B	Ra-226	-	0.24	pCi/L
SM7500_Rn_D	Ra-228	-	0.8	pCi/L
SM7500_Rn_B	Radon 222	-	9.9	pCi/L
200.7	Silica	0.0428	0.02	mg/L
200.7	Sodium	0.1	0.048	mg/L
SM 4500 S2 D	Sulfide	0.05	0.038	mg/L
V210	Taste and Odor Compounds (MIB, Geosmin, TCA, IPMP, IBMP)	2.0	0.8	ng/L
524.2	1,1,2,2-Tetrachloroethane	0.5	0.2	ug/L

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
SM 2550B	Temperature	NA	-	Degrees C
524.2	Tetrachloroethene	0.5	0.2	ug/L
524.2	1,2,3-Trichlorobenzene	0.5	0.2	ug/L
524.2	1,2,4-Trimethylbenzene	0.5	0.2	ug/L
SM 2540C	Total Dissolved Solids (TDS)	10.0	10.0	mg/L
SM 2540D	Total Suspended Solids (TSS)	10.0	10.0	mg/L
180.1	Turbidity	0.1	0.1	NTU
524.2	o-Xylene	0.5	0.2	ug/L
524.2	m-Xylene & p-Xylene	0.5	0.5	ug/L
SM 5910B	Ultraviolet Absorption, 254 nm (UV 254)	0.009	0.0045	1/cm
USEPA Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) Analytes				
533	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	0.0019	0.00051	ug/L
533	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	0.0019	0.00045	ug/L
533	4,8-dioxa-3H-perfluorononanoic acid (ADONA)	0.0019	0.0004	ug/L
533	hexafluoropropylene oxide dimer acid (HFPO DA)	0.0019	0.00053	ug/L
533	nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.0019	0.00093	ug/L
533	perfluorobutanoic acid (PFBA)	0.0019	0.00052	ug/L
533	perfluorobutanesulfonic acid (PFBS)	0.0019	0.00042	ug/L
533	1H,1H, 2H, 2H-perfluorodecane sulfonic acid (8:2FTS)	0.0019	0.00057	ug/L
533	perfluorodecanoic acid (PFDA)	0.0019	0.0036	ug/L
533	perfluorododecanoic acid (PFDoA)	0.0019	0.00035	ug/L
533	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	0.0019	0.00045	ug/L
533	perfluoroheptanesulfonic acid (PFHpS)	0.0019	0.00044	ug/L
533	perfluoroheptanoic acid (PFHpA)	0.0019	0.0004	ug/L
533	1H,1H, 2H, 2H-perfluorohexane sulfonic acid (4:2FTS)	0.0019	0.00056	ug/L
533	perfluorohexanesulfonic acid (PFHxS)	0.0019	0.00039	ug/L
533	perfluorohexanoic acid (PFHxA)	0.0019	0.00042	ug/L
533	perfluoro-3-methoxypropanoic acid (PFMPA)	0.0019	0.00032	ug/L
533	perfluoro-4-methoxybutanoic acid (PFMBA)	0.0019	0.00035	ug/L
533	perfluorononanoic acid (PFNA)	0.0019	0.00038	ug/L
533	1H,1H, 2H, 2H-perfluorooctane sulfonic acid (6:2FTS)	0.0019	0.00068	ug/L
533	perfluorooctanesulfonic acid (PFOS)	0.0019	0.00039	ug/L
533	perfluorooctanoic acid (PFOA)	0.0019	0.00038	ug/L
533	perfluoropentanoic acid (PFPeA)	0.0019	0.00038	ug/L
533	perfluoropentanesulfonic acid (PFPeS)	0.0019	0.00039	ug/L
533	perfluoroundecanoic acid (PFUnA)	0.0019	0.00038	ug/L
537.1 UCMR5	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.0019	0.00051	ug/L
537.1 UCMR5	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.0019	0.00062	ug/L
537.1 UCMR5	perfluorotetradecanoic acid (PFTA)	0.0019	0.00065	ug/L
537.1 UCMR5	perfluorotridecanoic acid (PFTrDA)	0.0019	0.0006	ug/L
Additional Unregulated Contaminant Monitoring Rule Analytes				
	UCMR 1			
331.0	Perchlorate	0.05	0.012	ug/L

Table B-1. Groundwater Analytes.

Method	Analyte	RL	MDL	Units
524.2	Methyl-tert-butyl Ether (MTBE)	0.5	0.4	ug/L
	UCMR 2			
521.1	N-Nitrosodimethylamine (NDMA)	2.0	0.3	ng/L
	UCMR 3			
218.7	Hexavalent chromium	0.02	-	ug/L
331.0	Perchlorate	0.05	0.012	ug/L
522	1,4-Dioxane	0.07	0.032	ug/L

eurofins
Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Rhett Moore
INTERA Inc
101 West Kirkwood Avenue
Suite 134
Bloomington, Indiana 47404

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JOB DESCRIPTION

B&V Project 414595 Groundwater Analysis

JOB NUMBER

810-88243-1

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend IN 46617

See page two for job notes and contact information.

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Job Notes

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Authorization

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Authorized for release by
Caleb Hunsberger, Project Manager
Anthony.Hunsberger@et.eurofinsus.com
(574)233-4777

Table of Contents

Definitions/Glossary

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

GC/MS Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

LCMS

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: INTERA Inc
Job ID: 810-88243-1
Project: B&V Project 414595 Groundwater Analysis

Job ID: 810-88243-1 Eurofins Eaton Analytical South Bend

Job Narrative
810-88243-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/18/2023 2:00 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.0°C, 3.4°C and 4.0°C

Receipt Exceptions
The Volume of cube container for Method 1623 is 8.6 L which is below the required 9.5 L. Contact client to see how they would like to proceed.
TW-3 (810-88243-1), FB (810-88243-2) and LTB - 12/5/23 (810-88243-3)

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to Eurofins CEI Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

Methods Iron Oxidizing Bacteria EPA 9240B, Legionella - CDC Method: These methods were subcontracted to Scientific Methods, Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

GC/MS VOA
Method 524.2_Pres_PREC: The following sample was analyzed outside of analytical holding time due to lab error: TW-3 (810-88243-1). Results for epichlorohydrin may be impacted.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 521.1: Surrogate recovery @ 69% for the following samples were outside control limits (70-130%): TW-3 (810-88243-1), (810-88243-U-1-A MS) and (810-88243-U-1-B MSD). This is the re-analysis of the sample. Surrogate recovery was outside control limits in the original analysis. Aliquots of the sample were prepared as the matrix spike sample and matrix spike duplicate sample. Surrogate recovery was outside control limits in the original analyses of the MS/MSD and in their re-analyses (67% and 68%, respectively).

Method 521.1: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 810-83278 and analytical batch 810-84026 were outside control limits (70-130%) for the following analytes: N-Nitrosodiethylamine (NDEA) @ (64%/OK(71%)), N-Nitrosodi-n-butylamine (NDBA) @ (40%/46%), N-Nitrosodi-n-propylamine (NDPA) @ (53%/60%), N-Nitrosomethylethylamine (NMEA) @ (68%/67%), and N-Nitrosopiperidine (NPIP) @ (64%/OK(70%)). Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 525.2_PREC: The laboratory control sample (LCS) for preparation batch 810-83450 and analytical batch 810-83519, 525.2, recovered outside control limits for the following analytes: Prometryn @ 31.1% (Range 70-130%). These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. Affected samples: 810-88243-1

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Job ID: 810-88243-1 (Continued) Eurofins Eaton Analytical South Bend

Method 515.3_PREC: The matrix spike / matrix spike duplicate (810-88243-AK-1-E MS / 810-88243-AK-1-F MSD) recoveries for preparation batch 810-83585 and 810-83648 and analytical batch 810-83685 were outside control limits for Pentachlorophenol (39% / 36%). See QC Sample Results for detail. Sample matrix interference and is suspected because the associated CCV recovery is within acceptance limits.   Sample results for Pentachlorophenol may be low biased.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

LCMS
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PFAS
Method 537.1_DW_PREC: Surrogate recovery for the following 537.1 sample was outside control limits: TW-3 (810-88243-1). d5-NEtFOSAA recovery was 56%. Limit 70-130%. Re-extraction and re-analysis was performed and surrogate recovery was outside control limits. Results may be low biased.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Dioxin
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 5540C: The following sample(s) was analyzed outside of analytical holding time due to lab error. : TW-3 (810-88243-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Rad
Method SM7500_Rn_B: 810-88243-1 Opening and closing S.F.B's failed at 112% with control limits of 90-110. Current S.F.B's are past the 5 year expiration date which is why the S.F.B's are currently out of control limits. New S.F.B's are in the process of ingrowth. Sample results are unaffected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Biology
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample ID: TW-3
Lab Sample ID: 810-88243-1
Date Collected: 12/18/23 10:00
Matrix: Drinking Water
Date Received: 12/18/23 14:00

Method: EPA-DW 524.2 - Total Trihalomethanes

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Trihalomethanes, Total	<0.5000		0.5000		ug/L			12/20/23 20:12	1

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	<0.50		0.50		ug/L			12/22/23 17:24	1
1,1,1-Trichloroethane	<0.50		0.50		ug/L			12/20/23 20:12	1
Bromoform	<0.50		0.50		ug/L			12/22/23 17:24	1
1,1,2,2-Tetrachloroethane	<0.50		0.50		ug/L			12/20/23 20:12	1
Chloroform	<0.50		0.50		ug/L			12/22/23 17:24	1
1,1,2-Trichloroethane	<0.50		0.50		ug/L			12/20/23 20:12	1
Dibromochloromethane	<0.50		0.50		ug/L			12/22/23 17:24	1
1,1-Dichloroethane	<0.50		0.50		ug/L			12/20/23 20:12	1
Epichlorohydrin	<1.0	H	1.0		ug/L			01/12/24 16:36	1
1,1-Dichloroethene	<0.50		0.50		ug/L			12/20/23 20:12	1
Ethylbenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2,3-Trichlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2,4-Trichlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2,4-Trimethylbenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			12/20/23 20:12	1
1,2-Dibromoethane (EDB)	<0.20		0.20		ug/L			12/20/23 20:12	1
1,2-Dichlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2-Dichloroethane	<0.50		0.50		ug/L			12/20/23 20:12	1
1,2-Dichloropropane	<0.25		0.25		ug/L			12/20/23 20:12	1
o-Xylene	<0.50		0.50		ug/L			12/20/23 20:12	1
m-Xylene & p-Xylene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,3-Dichlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
1,4-Dichlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
2,2-Dichloropropane	<0.50		0.50		ug/L			12/20/23 20:12	1
Benzene	<0.50		0.50		ug/L			12/20/23 20:12	1
Carbon tetrachloride	<0.50		0.50		ug/L			12/20/23 20:12	1
Chlorobenzene	<0.50		0.50		ug/L			12/20/23 20:12	1
Methyl-tert-butyl Ether (MTBE)	<0.50		0.50		ug/L			12/20/23 20:12	1
Styrene	<0.50		0.50		ug/L			12/20/23 20:12	1
Tetrachloroethene	<0.50		0.50		ug/L			12/20/23 20:12	1
Toluene	<0.50		0.50		ug/L			12/20/23 20:12	1
Trichloroethylene	<0.50		0.50		ug/L			12/20/23 20:12	1
Vinyl chloride	<0.20		0.20		ug/L			12/20/23 20:12	1
cis-1,2-Dichloroethylene	<0.50		0.50		ug/L			12/20/23 20:12	1
cis-1,3-Dichloropropylene	<0.50		0.50		ug/L			12/20/23 20:12	1
trans-1,2-Dichloroethylene	<0.50		0.50		ug/L			12/20/23 20:12	1
trans-1,3-Dichloropropylene	<0.50		0.50		ug/L			12/20/23 20:12	1
Xylenes, Total	<0.50		0.50		ug/L			12/20/23 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*12/20/23 20:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*01/12/24 16:36*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/20/23 20:12*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*01/12/24 16:36*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/20/23 20:12*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*01/12/24 16:36*	*1*

Client Sample ID: TW-3

Lab Sample ID: 810-88243-1

Date Collected: 12/18/23 10:00

Matrix: Drinking Water

Date Received: 12/18/23 14:00

Method: EPA-DW 524.2 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichlorobenzene-d4 (Surr)	*96*		*70 - 130*		*12/20/23 20:12*	*1*
1,2-Dichlorobenzene-d4 (Surr)	*97*		*70 - 130*		*01/12/24 16:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 130*		*12/22/23 17:24*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*12/22/23 17:24*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*		*12/22/23 17:24*	*1*
1,2-Dichlorobenzene-d4 (Surr)	*102*		*70 - 130*		*12/22/23 17:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*12/20/23 20:12*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*12/20/23 20:12*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*12/20/23 20:12*	*1*
1,2-Dichlorobenzene-d4 (Surr)	*96*		*70 - 130*		*12/20/23 20:12*	*1*

Method: Lab SOP V210 - Taste and Odor Compounds (GC/MS/SIS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichloroanisole (TCA)	<2.0		2.0		ng/L			12/19/23 15:51	1
2-Methylisoborneol (MIB)	<2.0		2.0		ng/L			12/19/23 15:51	1
Isopropyl methoxy pyrazine (IPMP)	<2.0		2.0		ng/L			12/19/23 15:51	1
Isobutyl methoxy pyrazine (IBMP)	<2.0		2.0		ng/L			12/19/23 15:51	1
Geosmin	<2.0		2.0		ng/L			12/19/23 15:51	1

Method: EEA-Aglient 521.1 - Nitrosoamines (GC/MS/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodiphenylamine (NDPhA)	<20		20		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosomorpholine (NMOR)	<2.0		2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosopiperidine (NPIP)	<2.0	F1	2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosopyrrolidine (NPYR)	<2.0		2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosodi-n-butylamine (NDBA)	<2.0	F1	2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosodi-n-propylamine (NDPA)	<2.0	F1	2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosodiethylamine (NDEA)	<2.0	F1	2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosomethylethylamine (NMEA)	<2.0	F1	2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1
N-Nitrosodimethylamine (NDMA)	<2.0		2.0		ng/L		12/19/23 06:26	12/29/23 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
N-Nitrosodimethylamine-d6 (Surr)	*69*	*S1-*	*70 - 130*	*12/19/23 06:26*	*12/29/23 15:05*	*1*

Method: EPA 522 - 1,4 Dioxane (GC/MS SIM)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	<0.070		0.070		ug/L		12/21/23 07:44	12/22/23 01:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dioxane-d8 (Surr)	*71*		*70 - 130*	*12/21/23 07:44*	*12/22/23 01:01*	*1*

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.0099		0.0099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Di(2-ethylhexyl)adipate	<0.60		0.60		ug/L		12/20/23 08:41	12/21/23 01:49	1
Di (2-ethylhexyl)phthalate	<0.60		0.60		ug/L		12/20/23 08:41	12/21/23 01:49	1
Di-n-octyl phthalate	<2.0		2.0		ug/L		12/20/23 08:41	12/21/23 01:49	1
Hexachlorobenzene	<0.099		0.099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Simazine	<0.070		0.070		ug/L		12/20/23 08:41	12/21/23 01:49	1
Alachlor	<0.099		0.099		ug/L		12/20/23 08:41	12/21/23 01:49	1

Client Sample ID: TW-3 **Lab Sample ID: 810-88243-1**
Date Collected: 12/18/23 10:00 **Matrix: Drinking Water**
Date Received: 12/18/23 14:00

Method: EPA 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Atrazine	<0.099		0.099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Benzo[a]pyrene	<0.020		0.020		ug/L		12/20/23 08:41	12/21/23 01:49	1
gamma-BHC (Lindane)	<0.020		0.020		ug/L		12/20/23 08:41	12/21/23 01:49	1
Endrin	<0.0099		0.0099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Methoxychlor	<0.099		0.099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Heptachlor	<0.0099		0.0099		ug/L		12/20/23 08:41	12/21/23 01:49	1
Hexachlorocyclopentadiene	<0.099		0.099		ug/L		12/20/23 08:41	12/21/23 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Perylene-d12	*81*		*70 - 130*	*12/20/23 08:41*	*12/21/23 01:49*	*1*
Triphenylphosphate	*93*		*70 - 130*	*12/20/23 08:41*	*12/21/23 01:49*	*1*
2-Nitro-m-xylene	*103*		*70 - 130*	*12/20/23 08:41*	*12/21/23 01:49*	*1*

Method: EPA 548.1 - Endothall (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Endothall	<5.0		5.0		ug/L		12/20/23 08:57	12/22/23 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*70*		*70 - 130*	*12/20/23 08:57*	*12/22/23 17:11*	*1*

Method: EPA-DW2 504.1 - EDB, DBCP and 1,2,3-TCP (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	<0.010		0.010		ug/L		12/21/23 10:37	12/21/23 20:19	1
1,2-Dibromo-3-Chloropropane	<0.010		0.010		ug/L		12/21/23 10:37	12/21/23 20:19	1

Method: EPA 505 - Organochlorine Pesticides/PCBs (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.080		0.080		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1221	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1232	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1242	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1248	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1254	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
PCB-1260	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
Chlordane	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
Toxaphene	<0.50		0.50		ug/L		12/20/23 07:10	12/21/23 02:15	1
Total PCBs as DCB (Qualitative)	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
Polychlorinated biphenyls, Total	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1
Chlordane (n.o.s.)	<0.10		0.10		ug/L		12/20/23 07:10	12/21/23 02:15	1

Method: EPA 515.3 - Herbicides (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-TP (Silvex)	<0.10		0.10		ug/L		12/21/23 08:13	12/22/23 10:13	1
Dalapon	<1.0		1.0		ug/L		12/21/23 08:13	12/22/23 10:13	1
Dinoseb	<0.10		0.10		ug/L		12/21/23 08:13	12/22/23 10:13	1
Pentachlorophenol	<0.040	F1	0.040		ug/L		12/21/23 08:13	12/22/23 10:13	1
Picloram	<0.10		0.10		ug/L		12/21/23 08:13	12/22/23 10:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4-Dichlorophenylacetic acid	*84*		*70 - 130*	*12/21/23 08:13*	*12/22/23 10:13*	*1*

Client Sample Results

Client Sample ID: TW-3

Lab Sample ID: 810-88243-1

Date Collected: 12/18/23 10:00

Matrix: Drinking Water

Date Received: 12/18/23 14:00

Method: EPA 552.2 THAA - Total Haloacetic Acids (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Haloacetic Acids 5	<2.000		2.000		ug/L			12/23/23 08:53	1

Method: EPA 552.2 - Haloacetic Acids (HAAs) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dibromoacetic acid	<1.0		1.0		ug/L		12/22/23 08:10	12/23/23 08:53	1
Dichloroacetic acid	<1.0		1.0		ug/L		12/22/23 08:10	12/23/23 08:53	1
Monobromoacetic acid	<1.0		1.0		ug/L		12/22/23 08:10	12/23/23 08:53	1
Monochloroacetic acid	<2.0		2.0		ug/L		12/22/23 08:10	12/23/23 08:53	1
Trichloroacetic acid	<1.0		1.0		ug/L		12/22/23 08:10	12/23/23 08:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Bromopropionic acid (Surr)	*87*		*70 - 130*	*12/22/23 08:10*	*12/23/23 08:53*	*1*

Method: EPA 218.7 - Chromium, Hexavalent (Ion Chromatography)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	<0.020		0.020		ug/L			12/20/23 13:24	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		2.0		mg/L			12/22/23 21:04	1
Chlorite	<10		10		ug/L			12/20/23 00:42	1
Chlorate	<10		10		ug/L			12/20/23 00:42	1
Sulfate	**91**		5.0		mg/L			12/22/23 21:04	1
Bromide	**42**		10		ug/L			12/20/23 00:42	1

Method: EPA 317 - Bromate, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Bromate	<1.0		1.0		ug/L			12/27/23 23:56	1

Method: EPA 531.2 - Carbamate Pesticides (HPLC) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbofuran	<0.90		0.90		ug/L			12/20/23 01:03	1
Oxamyl	<1.0		1.0		ug/L			12/20/23 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromo-3,5-Dimethylphenyl-N-methylcarbamate	*96*		*70 - 130*		*12/20/23 01:03*	*1*

Method: EPA 547 - Glyphosate (DAI HPLC) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Glyphosate	<6.0		6.0		ug/L			12/22/23 17:27	1

Method: EPA 549.2 - Diquat and Paraquat (HPLC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diquat	<0.40		0.40		ug/L		12/20/23 07:19	12/21/23 18:02	1

Method: EPA 331.0 - Perchlorate (LC/MS/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	<0.050		0.050		ug/L			12/21/23 23:47	1

Client Sample ID: TW-3	**Lab Sample ID: 810-88243-1**

Date Collected: 12/18/23 10:00	**Matrix: Drinking Water**

Date Received: 12/18/23 14:00

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoropentanoic acid (PFPeA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorononanoic acid (PFNA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoropentanesulfonic acid (PFPeS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoro(4-methoxybutanoic acid)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1
Perfluoro-3,6-dioxaheptanoic acid	<1.9		1.9		ng/L		01/03/24 08:01	01/04/24 00:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*110*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C5 PFPeA	*116*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C5 PFHxA	*109*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C4 PFHpA	*114*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C8 PFOA	*112*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C9 PFNA	*115*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C6 PFDA	*100*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C7 PFUnA	*93*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C2 PFDoA	*90*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C3 HFPO-DA	*100*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C3 PFBS	*121*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C8 PFOS	*114*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C2-4:2-FTS	*140*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C2-6:2-FTS	*165*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*
13C2-8:2-FTS	*154*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*

Client Sample ID: TW-3
Lab Sample ID: 810-88243-1
Date Collected: 12/18/23 10:00
Matrix: Drinking Water
Date Received: 12/18/23 14:00

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 PFHxS	*119*		*50 - 200*	*01/03/24 08:01*	*01/04/24 00:58*	*1*

Method: EPA 537.1 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluoroundecanoic acid (PFUnA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorohexanoic acid (PFHxA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorododecanoic acid (PFDoA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorooctanoic acid (PFOA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorodecanoic acid (PFDA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorohexanesulfonic acid (PFHxS)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorobutanesulfonic acid (PFBS)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluoroheptanoic acid (PFHpA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorononanoic acid (PFNA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorotetradecanoic acid (PFTeDA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Perfluorotridecanoic acid (PFTrDA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<1.9		1.9		ng/L		12/21/23 07:39	12/21/23 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*99*		*70 - 130*	*12/21/23 07:39*	*12/21/23 21:47*	*1*
13C2 PFDA	*86*		*70 - 130*	*12/21/23 07:39*	*12/21/23 21:47*	*1*
13C3 HFPO-DA	*98*		*70 - 130*	*12/21/23 07:39*	*12/21/23 21:47*	*1*
d5-NEtFOSAA	*56*	*S1-*	*70 - 130*	*12/21/23 07:39*	*12/21/23 21:47*	*1*

Method: Lab SOP L520 - Acrylamide, Aniline, and Urethane (LC/ESI/MS/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Acrylamide	<0.10		0.10		ug/L			12/20/23 04:47	1

Method: EPA 1613B - Tetra Chlorinated Dioxin in Drinking Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	<3.9		3.9		pg/L		01/04/24 21:22	01/06/24 20:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*128*		*25 - 164*	*01/04/24 21:22*	*01/06/24 20:20*	*1*

Method: EPA 200.7 - Metals (ICP)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sodium	**4.7**		0.10		mg/L			12/22/23 15:50	1
Silica	**14**		0.043		mg/L			12/22/23 15:50	1
Potassium	**1.7**		0.20		mg/L			12/22/23 15:50	1
Magnesium	**31**		0.10		mg/L			12/22/23 15:50	1
Iron	**0.68**		0.010		mg/L			12/22/23 15:50	1

Client Sample Results

Client Sample ID: TW-3

Date Collected: 12/18/23 10:00
Date Received: 12/18/23 14:00

Lab Sample ID: 810-88243-1
Matrix: Drinking Water

Method: EPA 200.7 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**100**		0.10		mg/L			12/22/23 15:50	1

Method: EPA 200.7 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.010		0.010		mg/L			12/29/23 00:42	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**9.6**		2.0		ug/L			12/21/23 18:54	1
Lithium	**3.5**		2.0		ug/L			12/21/23 18:54	1
Uranium	**1.1**		1.0		ug/L			12/21/23 18:54	1
Antimony	<1.0		1.0		ug/L			12/21/23 18:54	1
Arsenic	**1.4**		1.0		ug/L			12/21/23 18:54	1
Barium	**79**		2.0		ug/L			12/21/23 18:54	1
Beryllium	<0.30		0.30		ug/L			12/21/23 18:54	1
Cadmium	<0.50		0.50		ug/L			12/21/23 18:54	1
Chromium	**4.8**		0.90		ug/L			12/21/23 18:54	1
Copper	<1.0		1.0		ug/L			12/21/23 18:54	1
Lead	<0.50		0.50		ug/L			12/21/23 18:54	1
Manganese	**210**		2.0		ug/L			12/21/23 18:54	1
Selenium	<2.0		2.0		ug/L			12/21/23 18:54	1
Silver	<0.50		0.50		ug/L			12/21/23 18:54	1
Thallium	<0.30		0.30		ug/L			12/21/23 18:54	1
Zinc	**10**		5.0		ug/L			12/21/23 18:54	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**210**		2.0		ug/L			12/28/23 10:57	1

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.10		0.10		ug/L		12/22/23 12:20	12/22/23 19:10	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**380**		0.66		mg/L			12/22/23 21:36	1
Calcium hardness as calcium carbonate	**250**		0.25		mg/L			12/22/23 21:36	1
Magnesium hardness as calcium carbonate	**130**		0.41		mg/L			12/22/23 21:36	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
pH (EPA 150.1)	**7.4**	**HF**	0.1		SU			12/19/23 10:18	1
Turbidity (EPA 180.1)	**7.2**		0.10		NTU			12/19/23 15:19	1
Cyanide, Total (EPA 335.4)	<0.0050		0.0050		mg/L		12/21/23 12:48	12/21/23 14:18	1
Ammonia (EPA 350.1)	**0.049**		0.030		mg/L			12/21/23 13:25	1
Nitrite as N (EPA 353.2)	<0.010		0.010		mg/L			12/19/23 14:34	1
Nitrate Nitrite as N (EPA 353.2)	**0.22**		0.10		mg/L			12/19/23 13:27	1
Monochloramine (SM 4500 Cl F Amine)	<0.10	HF	0.10		mg/L			12/19/23 14:21	1
Dichloramine (SM 4500 Cl F Amine)	<0.10	HF	0.10		mg/L			12/19/23 14:21	1

Client Sample Results

Client: INTERA Inc
Job ID: 810-88243-1
Project/Site: B&V Project 414595 Groundwater Analysis

Client Sample ID: TW-3
Lab Sample ID: 810-88243-1
Date Collected: 12/18/23 10:00
Matrix: Drinking Water
Date Received: 12/18/23 14:00

General Chemistry (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen trichloride (SM 4500 Cl F Amine)	<0.20	HF	0.20		mg/L			12/19/23 14:21	1
Chloramines, Total (SM 4500 Cl F Amine)	<0.20	HF	0.20		mg/L			12/19/23 14:21	1
Free Chlorine (SM 4500 Cl G)	<0.50	HF	0.50		mg/L			12/19/23 17:58	1
Chlorine dioxide, Residual (SM 4500 ClO2 D)	<0.24	HF	0.24		mg/L			12/18/23 15:24	1
Nitrate as N (SM Nitrate by calc)	**0.22**		0.10		mg/L			12/20/23 11:22	1
Color, Apparent (SM 2120B)	**18**		3.0		Color Units			12/19/23 16:57	1
Alkalinity, Total (SM 2320B)	**280**		1.0		mg/L			12/18/23 16:32	1
Langelier Index (SM 2330B)	**0.39**				LangSU			12/27/23 17:06	1
Specific Conductance (SM 2510B)	**740**		2.0		uS/cm			12/22/23 17:33	1
Total Dissolved Solids (SM 2540C)	**450**		10		mg/L			12/21/23 16:22	1
Total Suspended Solids (SM 2540D)	<10		10		mg/L			12/21/23 14:06	1
Temperature (SM 2550B)	**20**	**H**			Degrees C			12/19/23 13:06	1
Chlorine, Total Residual (SM 4500 Cl G)	<0.50	HF	0.50		mg/L			12/19/23 18:12	1
Carbon Dioxide, Free (SM 4500 CO2 B)	**22**		0.10		mg/L			12/28/23 14:46	1
Fluoride (SM 4500 F C)	**0.11**		0.050		mg/L			12/27/23 14:23	1
Oxygen, Dissolved (SM 4500 O G)	**5.4**	**HF**	1.0		mg/L			12/19/23 17:14	1
Phosphate, ortho (SM 4500 P E)	<0.030		0.030		mg/L			12/19/23 16:06	1
Orthophosphate as PO4 (SM 4500 P E)	<0.092		0.092		mg/L			12/19/23 16:06	1
Sulfide (SM 4500 S2 D)	<0.050		0.050		mg/L			12/20/23 10:07	1
Methylene Blue Active Substances (SM 5540C)	<0.10	H	0.10		mg/L			12/20/23 17:03	1
Ultraviolet Absorption, 254 nm (SM 5910B)	**0.013**		0.0090		1/cm			12/19/23 14:05	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon (SM 5310C)	<0.500		0.500		mg/L			12/20/23 17:19	1

Method: SM 7110B - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (σ+/-)	Total Uncert. (σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.840	U			2.08	pCi/L	12/19/23 13:44	01/01/24 14:29	1
Gross Beta	-1.39	U			2.55	pCi/L	12/19/23 13:44	12/29/23 11:08	1

Method: SM 7500 Ra D - Radium 226 Radium 228 Combined

Analyte	Result	Qualifier	Count Uncert. (σ+/-)	Total Uncert. (σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.560	U			0.800	pCi/L		01/02/24 14:45	1

Method: SM7500 Ra B - Radium-226

Analyte	Result	Qualifier	Count Uncert. (σ+/-)	Total Uncert. (σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Ra-226	**0.560**				0.240	pCi/L	12/20/23 13:28	01/02/24 14:45	1

Client Sample Results

Client Sample ID: TW-3
Date Collected: 12/18/23 10:00
Date Received: 12/18/23 14:00

Lab Sample ID: 810-88243-1
Matrix: Drinking Water

Method: SM7500 Ra D - Radium-228

Analyte	Result	Qualifier	Count Uncert. (σ+/-)	Total Uncert. (σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Ra-228	0.550	U			0.800	pCi/L	12/20/23 13:22	12/28/23 11:44	1

Method: SM7500_Rn_B - Radon

Analyte	Result	Qualifier	Count Uncert. (σ+/-)	Total Uncert. (σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radon 222	**126**	*****			9.90	pCi/L	12/19/23 16:47	12/19/23 23:05	1

Method: SM 9223B - Coliforms, Total, and E.Coli (Presence/Absence)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	ABSENT				NONE			12/18/23 15:08	1
Coliform, Total	**PRESENT**				NONE			12/18/23 15:08	1

Method: SM 9215E - Heterotrophic Plate Count

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Heterotrophic Plate Count	**43**		2.0		MPN/mL			12/18/23 15:24	1

Lab Chronicle

Client: INTERA Inc — Job ID: 810-88243-1

Project/Site: B&V Project 414595 Groundwater Analysis

Client Sample ID: TW-3 — **Lab Sample ID: 810-88243-1**

Date Collected: 12/18/23 10:00 — **Matrix: Drinking Water**

Date Received: 12/18/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	524.2		1	85527	CM	EA SB	01/12/24 16:36
Total/NA	Analysis	524.2		1	83771	DT	EA SB	12/22/23 17:24
Total/NA	Analysis	524.2		1	83441	CM	EA SB	12/20/23 20:12
Total/NA	Analysis	524.2		1	84033	T1J	EA SB	12/20/23 20:12
Total/NA	Analysis	V210		1	83346	CM	EA SB	12/19/23 15:51
Total/NA	Prep	521			83278	AC	EA SB	12/19/23 06:26
Total/NA	Analysis	521.1		1	84026	BC	EA SB	12/29/23 15:05
Total/NA	Prep	522			83581	HB	EA SB	12/21/23 07:44
Total/NA	Analysis	522		1	83674	TD	EA SB	12/22/23 01:01
Total/NA	Prep	525.2			83450	EB	EA SB	12/20/23 08:41
Total/NA	Analysis	525.2		1	83519	CG	EA SB	12/21/23 01:49
Total/NA	Prep	548.1			83451	KB	EA SB	12/20/23 08:57
Total/NA	Analysis	548.1		1	83772	CM	EA SB	12/22/23 17:11
Total/NA	Prep	504.1			83610	HB	EA SB	12/21/23 10:37 - 12/21/23 14:45 [1]
Total/NA	Analysis	504.1		1	83680	RS	EA SB	12/21/23 20:19
Total/NA	Prep	505			83433	AC	EA SB	12/20/23 07:10 - 12/20/23 13:36 [1]
Total/NA	Analysis	505		1	83506	JV	EA SB	12/21/23 02:15
Total/NA	Prep	515.3			83585	AM	EA SB	12/21/23 08:13
Total/NA	Cleanup	Aliquot			83648	AM	EA SB	12/21/23 13:20
Total/NA	Analysis	515.3		1	83685	CM	EA SB	12/22/23 10:13
Total/NA	Prep	552.2			83762	MR	EA SB	12/22/23 08:10
Total/NA	Analysis	552.2		1	83842	DT	EA SB	12/23/23 08:53
Total/NA	Analysis	552.2 THAA		1	84191	T1J	EA SB	12/23/23 08:53
Total/NA	Analysis	218.7		1	83489	KO	EA SB	12/20/23 13:24
Total/NA	Analysis	300.0		1	83804	NR	EA SB	12/22/23 21:04
Total/NA	Analysis	300.0		1	83359	KO	EA SB	12/20/23 00:42
Total/NA	Analysis	317		1	83977	NR	EA SB	12/27/23 23:56
Dissolved	Filtration	Filtration			83280	AM	EA SB	12/19/23 07:05
Dissolved	Analysis	531.2		1	83424	RS	EA SB	12/20/23 01:03
Dissolved	Filtration	Filtration			83748	AM	EA SB	12/22/23 05:14
Dissolved	Analysis	547		1	83778	RS	EA SB	12/22/23 17:27
Total/NA	Prep	549.2			83434	DB	EA SB	12/20/23 07:19
Total/NA	Analysis	549.2		1	83672	RS	EA SB	12/21/23 18:02
Total/NA	Analysis	331.0		1	83463	CM	EA SB	12/21/23 23:47
Total/NA	Prep	533			84476	MP	EA SB	01/03/24 08:01
Total/NA	Analysis	533		1	84579	KB	EA SB	01/04/24 00:58
Total/NA	Prep	537.1 DW			83579	AD	EA SB	12/21/23 07:39
Total/NA	Analysis	537.1		1	83671	MH	EA SB	12/21/23 21:47
Total/NA	Analysis	L520		1	83312	ST	EA SB	12/20/23 04:47
Total/NA	Prep	1613B			460476	SJ7Z	ELLE	01/04/24 21:22
Total/NA	Analysis	1613B		1	460904	DZ6A	ELLE	01/06/24 20:20
Dissolved	Filtration	Filtration			83983	CA	EA SB	12/27/23 15:15
Dissolved	Analysis	200.7		1	84173	AC	EA SB	12/29/23 00:42

Lab Chronicle

Client Sample ID: TW-3
Lab Sample ID: 810-88243-1

Date Collected: 12/18/23 10:00
Matrix: Drinking Water
Date Received: 12/18/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	200.7		1	83855	AC	EA SB	12/22/23 15:50
Dissolved	Filtration	Filtration			83983	CA	EA SB	12/27/23 15:15
Dissolved	Analysis	200.8		1	84067	CA	EA SB	12/28/23 10:57
Total/NA	Analysis	200.8		1	83719	NB	EA SB	12/21/23 18:54
Total/NA	Prep	245.1			83813	AC	EA SB	12/22/23 12:20
Total/NA	Analysis	245.1		1	83860	AC	EA SB	12/22/23 19:10
Total/NA	Analysis	SM 2340B		1	83863	AC	EA SB	12/22/23 21:36
Total/NA	Analysis	150.1		1	83311	AN	EA SB	12/19/23 10:18
Total/NA	Analysis	180.1		1	83373	GB	EA SB	12/19/23 15:19
Total/NA	Prep	Distill/CN			83628	KH	EA SB	12/21/23 12:48
Total/NA	Analysis	335.4		1	83669	KH	EA SB	12/21/23 14:18
Total/NA	Analysis	350.1		1	83658	KH	EA SB	12/21/23 13:25
Total/NA	Analysis	353.2		1	83466	AN	EA SB	12/19/23 13:27
Total/NA	Analysis	353.2		1	83368	AN	EA SB	12/19/23 14:34
Total/NA	Analysis	4500 Cl F Amine		1	83358	KH	EA SB	12/19/23 14:21
Total/NA	Analysis	4500 Cl G		1	83423	GB	EA SB	12/19/23 17:58
Total/NA	Analysis	4500 ClO2 D		1	83218	GB	EA SB	12/18/23 15:24
Total/NA	Analysis	Nitrate by calc		1	83478	KH	EA SB	12/20/23 11:22
Total/NA	Analysis	SM 2120B		1	83419	GB	EA SB	12/19/23 16:57
Total/NA	Analysis	SM 2320B		1	83228	KH	EA SB	12/18/23 16:32
Total/NA	Analysis	SM 2330B		1	84027	KH	EA SB	12/27/23 17:06
Total/NA	Analysis	SM 2510B		1	83852	GB	EA SB	12/22/23 17:33
Total/NA	Analysis	SM 2540C		1	83675	GB	EA SB	12/21/23 16:22
Total/NA	Analysis	SM 2540D		1	83655	KH	EA SB	12/21/23 14:06
Total/NA	Analysis	SM 2550B		1	83345	KH	EA SB	12/19/23 13:06
Total/NA	Analysis	SM 4500 Cl G		1	83425	GB	EA SB	12/19/23 18:12
Total/NA	Analysis	SM 4500 CO2 B		1	84121	KH	EA SB	12/28/23 14:46
Total/NA	Analysis	SM 4500 F C		1	84000	KH	EA SB	12/27/23 14:23
Total/NA	Analysis	SM 4500 O G		1	83700	AC	EA SB	12/19/23 17:14
Total/NA	Analysis	SM 4500 P E		1	83417	GB	EA SB	12/19/23 16:06
Total/NA	Analysis	SM 4500 S2 D		1	83458	KH	EA SB	12/20/23 10:07
Dissolved	Filtration	Filtration			83232	AC	EA SB	12/18/23 18:00
Dissolved	Analysis	SM 5310C		1	83626	AC	EA SB	12/20/23 17:19
Total/NA	Analysis	SM 5540C		1	68836	MH2L	EA POM	12/20/23 17:03
Total/NA	Analysis	SM 5910B		1	83363	KH	EA SB	12/19/23 14:05
Total/NA	Prep	RAD Prep			83352	SS	EA SB	12/19/23 13:44
Total/NA	Analysis	7110B		1	84303	SS	EA SB	01/01/24 14:29 - 01/02/24 00:29 [1]
Total/NA	Prep	RAD Prep			83352	SS	EA SB	12/19/23 13:44
Total/NA	Analysis	7110B		1	84282	SS	EA SB	12/29/23 11:08 - 12/29/23 15:08 [1]
Total/NA	Analysis	7500 Ra D		1	84114	SM	EA SB	01/02/24 14:45

Lab Chronicle

Client: INTERA Inc Job ID: 810-88243-1
Project/Site: B&V Project 414595 Groundwater Analysis

Client Sample ID: TW-3 **Lab Sample ID: 810-88243-1**
Date Collected: 12/18/23 10:00 **Matrix: Drinking Water**
Date Received: 12/18/23 14:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RAD Prep			83496	SS	EA SB	12/20/23 13:28
Total/NA	Analysis	SM7500 Ra B		1	84375	SM	EA SB	01/02/24 14:45 - 01/02/24 15:45 [1]
Total/NA	Prep	RAD Prep			83494	SS	EA SB	12/20/23 13:22
Total/NA	Analysis	SM7500 Ra D		1	84104	OO	EA SB	12/28/23 11:44 - 12/28/23 13:44 [1]
Total/NA	Prep	RAD Prep			83603	SM	EA SB	12/19/23 16:47
Total/NA	Analysis	SM7500_Rn_B		1	83638	SM	EA SB	12/19/23 23:05 - 12/19/23 23:05 [1]
Total/NA	Analysis	9223B		1	83157	GJ	EA SB	12/18/23 15:08 - 12/20/23 14:44 [1]
Total/NA	Analysis	SM 9215E		1	83210	GJ	EA SB	12/18/23 15:24 - 12/20/23 15:22 [1]

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

E CEI = E CEI, 730 SE Maynard Road, Cary, NC 27511

EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sci Method = Scientific Methods, Inc, 12441 Beckley St, Granger, IN 46530

Laboratory: Eurofins Eaton Analytical South Bend

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Indiana	State	C-71-01	12-31-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
150.1		Drinking Water	pH
180.1		Drinking Water	Turbidity
200.7		Drinking Water	Calcium
200.7		Drinking Water	Iron
200.7		Drinking Water	Magnesium
200.7		Drinking Water	Potassium
200.7		Drinking Water	Silica
200.7		Drinking Water	Sodium
200.8		Drinking Water	Aluminum
200.8		Drinking Water	Lithium
200.8		Drinking Water	Manganese
200.8		Drinking Water	Silver
200.8		Drinking Water	Zinc
218.7		Drinking Water	Chromium, hexavalent
300.0		Drinking Water	Bromide
300.0		Drinking Water	Chlorate
300.0		Drinking Water	Chloride
300.0		Drinking Water	Sulfate
331.0		Drinking Water	Perchlorate
350.1		Drinking Water	Ammonia
353.2		Drinking Water	Nitrate Nitrite as N
4500 Cl F Amine		Drinking Water	Chloramines, Total
4500 Cl F Amine		Drinking Water	Dichloramine
4500 Cl F Amine		Drinking Water	Monochloramine
4500 Cl F Amine		Drinking Water	Nitrogen trichloride
4500 Cl G		Drinking Water	Free Chlorine
4500 ClO2 D		Drinking Water	Chlorine dioxide, Residual
505	505	Drinking Water	Chlordane (n.o.s.)
505	505	Drinking Water	Polychlorinated biphenyls, Total
505	505	Drinking Water	Total PCBs as DCB (Qualitative)
521.1	521	Drinking Water	N-Nitrosodiethylamine (NDEA)
521.1	521	Drinking Water	N-Nitrosodimethylamine (NDMA)
521.1	521	Drinking Water	N-Nitrosodi-n-butylamine (NDBA)
521.1	521	Drinking Water	N-Nitrosodi-n-propylamine (NDPA)
521.1	521	Drinking Water	N-Nitrosodiphenylamine (NDPhA)
521.1	521	Drinking Water	N-Nitrosomethylethylamine (NMEA)
521.1	521	Drinking Water	N-Nitrosomorpholine (NMOR)
521.1	521	Drinking Water	N-Nitrosopiperidine (NPIP)
521.1	521	Drinking Water	N-Nitrosopyrrolidine (NPYR)
522	522	Drinking Water	1,4-Dioxane
524.2		Drinking Water	1,1,2,2-Tetrachloroethane
524.2		Drinking Water	1,1-Dichloroethane
524.2		Drinking Water	1,2,3-Trichlorobenzene
524.2		Drinking Water	1,2,4-Trimethylbenzene
524.2		Drinking Water	1,2-Dibromo-3-Chloropropane

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
524.2		Drinking Water	1,2-Dibromoethane (EDB)
524.2		Drinking Water	1,3-Dichlorobenzene
524.2		Drinking Water	2,2-Dichloropropane
524.2		Drinking Water	cis-1,3-Dichloropropylene
524.2		Drinking Water	Epichlorohydrin
524.2		Drinking Water	Methyl-tert-butyl Ether (MTBE)
524.2		Drinking Water	m-Xylene & p-Xylene
524.2		Drinking Water	o-Xylene
524.2		Drinking Water	trans-1,3-Dichloropropylene
525.2	525.2	Drinking Water	Di-n-octyl phthalate
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
533	533	Drinking Water	Perfluoro(4-methoxybutanoic acid)
533	533	Drinking Water	Perfluoro-3,6-dioxaheptanoic acid
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluorodecanoic acid (PFDA)
533	533	Drinking Water	Perfluorododecanoic acid (PFDoA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoroheptanoic acid (PFHpA)
533	533	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Drinking Water	Perfluorohexanoic acid (PFHxA)
533	533	Drinking Water	Perfluorononanoic acid (PFNA)
533	533	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
533	533	Drinking Water	Perfluorooctanoic acid (PFOA)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Drinking Water	Perfluoroundecanoic acid (PFUnA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
537.1	537.1 DW	Drinking Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1	537.1 DW	Drinking Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	537.1 DW	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
537.1	537.1 DW	Drinking Water	Perfluorodecanoic acid (PFDA)
537.1	537.1 DW	Drinking Water	Perfluorododecanoic acid (PFDoA)
537.1	537.1 DW	Drinking Water	Perfluoroheptanoic acid (PFHpA)
537.1	537.1 DW	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
537.1	537.1 DW	Drinking Water	Perfluorohexanoic acid (PFHxA)
537.1	537.1 DW	Drinking Water	Perfluorononanoic acid (PFNA)
537.1	537.1 DW	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
537.1	537.1 DW	Drinking Water	Perfluorooctanoic acid (PFOA)
537.1	537.1 DW	Drinking Water	Perfluorotetradecanoic acid (PFTeDA)
537.1	537.1 DW	Drinking Water	Perfluorotridecanoic acid (PFTrDA)
537.1	537.1 DW	Drinking Water	Perfluoroundecanoic acid (PFUnA)
7110B	RAD Prep	Drinking Water	Gross Alpha
7110B	RAD Prep	Drinking Water	Gross Beta
7500 Ra D		Drinking Water	Combined Radium 226 + 228
9223B		Drinking Water	Coliform, Total
9223B		Drinking Water	Escherichia coli
L520		Drinking Water	Acrylamide
SM 2120B		Drinking Water	Color, Apparent
SM 2320B		Drinking Water	Alkalinity, Total
SM 2330B		Drinking Water	Langelier Index
SM 2340B		Drinking Water	Calcium hardness as calcium carbonate
SM 2340B		Drinking Water	Hardness as calcium carbonate
SM 2340B		Drinking Water	Magnesium hardness as calcium carbonate
SM 2510B		Drinking Water	Specific Conductance
SM 2540C		Drinking Water	Total Dissolved Solids
SM 2540D		Drinking Water	Total Suspended Solids
SM 2550B		Drinking Water	Temperature
SM 4500 Cl G		Drinking Water	Chlorine, Total Residual
SM 4500 CO2 B		Drinking Water	Carbon Dioxide, Free
SM 4500 O G		Drinking Water	Oxygen, Dissolved
SM 4500 P E		Drinking Water	Orthophosphate as PO4
SM 4500 P E		Drinking Water	Phosphate, ortho
SM 4500 S2 D		Drinking Water	Sulfide
SM 5310C		Drinking Water	Dissolved Organic Carbon
SM 5910B		Drinking Water	Ultraviolet Absorption, 254 nm
SM 9215E		Drinking Water	Heterotrophic Plate Count
SM7500 Ra B	RAD Prep	Drinking Water	Ra-226
SM7500 Ra D	RAD Prep	Drinking Water	Ra-228
SM7500_Rn_B	RAD Prep	Drinking Water	Radon 222
V210		Drinking Water	2,4,6-Trichloroanisole (TCA)

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
V210		Drinking Water	2-Methylisoborneol (MIB)
V210		Drinking Water	Geosmin
V210		Drinking Water	Isobutyl methoxy pyrazine (IBMP)
V210		Drinking Water	Isopropyl methoxy pyrazine (IPMP)

Authority	Program	Identification Number	Expiration Date
Indiana (Micro)	State	M-76-07	12-31-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
150.1		Drinking Water	pH
180.1		Drinking Water	Turbidity
200.7		Drinking Water	Calcium
200.7		Drinking Water	Iron
200.7		Drinking Water	Magnesium
200.7		Drinking Water	Potassium
200.7		Drinking Water	Silica
200.7		Drinking Water	Sodium
200.8		Drinking Water	Aluminum
200.8		Drinking Water	Antimony
200.8		Drinking Water	Arsenic
200.8		Drinking Water	Barium
200.8		Drinking Water	Beryllium
200.8		Drinking Water	Cadmium
200.8		Drinking Water	Chromium
200.8		Drinking Water	Copper
200.8		Drinking Water	Lead
200.8		Drinking Water	Lithium
200.8		Drinking Water	Manganese
200.8		Drinking Water	Selenium
200.8		Drinking Water	Silver
200.8		Drinking Water	Thallium
200.8		Drinking Water	Uranium
200.8		Drinking Water	Zinc
218.7		Drinking Water	Chromium, hexavalent
245.1	245.1	Drinking Water	Mercury
300.0		Drinking Water	Bromide
300.0		Drinking Water	Chlorate
300.0		Drinking Water	Chloride
300.0		Drinking Water	Chlorite
300.0		Drinking Water	Sulfate
317		Drinking Water	Bromate
331.0		Drinking Water	Perchlorate
335.4	Distill/CN	Drinking Water	Cyanide, Total
350.1		Drinking Water	Ammonia
353.2		Drinking Water	Nitrate Nitrite as N
353.2		Drinking Water	Nitrite as N
4500 Cl F Amine		Drinking Water	Chloramines, Total

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
4500 Cl F Amine		Drinking Water	Dichloramine
4500 Cl F Amine		Drinking Water	Monochloramine
4500 Cl F Amine		Drinking Water	Nitrogen trichloride
4500 Cl G		Drinking Water	Free Chlorine
4500 ClO2 D		Drinking Water	Chlorine dioxide, Residual
504.1	504.1	Drinking Water	1,2-Dibromo-3-Chloropropane
504.1	504.1	Drinking Water	1,2-Dibromoethane (EDB)
505	505	Drinking Water	Chlordane
505	505	Drinking Water	Chlordane (n.o.s.)
505	505	Drinking Water	PCB-1016
505	505	Drinking Water	PCB-1221
505	505	Drinking Water	PCB-1232
505	505	Drinking Water	PCB-1242
505	505	Drinking Water	PCB-1248
505	505	Drinking Water	PCB-1254
505	505	Drinking Water	PCB-1260
505	505	Drinking Water	Polychlorinated biphenyls, Total
505	505	Drinking Water	Total PCBs as DCB (Qualitative)
505	505	Drinking Water	Toxaphene
515.3	515.3	Drinking Water	2,4,5-TP (Silvex)
515.3	515.3	Drinking Water	Dalapon
515.3	515.3	Drinking Water	Dinoseb
515.3	515.3	Drinking Water	Pentachlorophenol
515.3	515.3	Drinking Water	Picloram
521.1	521	Drinking Water	N-Nitrosodiethylamine (NDEA)
521.1	521	Drinking Water	N-Nitrosodimethylamine (NDMA)
521.1	521	Drinking Water	N-Nitrosodi-n-butylamine (NDBA)
521.1	521	Drinking Water	N-Nitrosodi-n-propylamine (NDPA)
521.1	521	Drinking Water	N-Nitrosodiphenylamine (NDPhA)
521.1	521	Drinking Water	N-Nitrosomethylethylamine (NMEA)
521.1	521	Drinking Water	N-Nitrosomorpholine (NMOR)
521.1	521	Drinking Water	N-Nitrosopiperidine (NPIP)
521.1	521	Drinking Water	N-Nitrosopyrrolidine (NPYR)
522	522	Drinking Water	1,4-Dioxane
524.2		Drinking Water	1,1,1-Trichloroethane
524.2		Drinking Water	1,1,2,2-Tetrachloroethane
524.2		Drinking Water	1,1,2-Trichloroethane
524.2		Drinking Water	1,1-Dichloroethane
524.2		Drinking Water	1,1-Dichloroethene
524.2		Drinking Water	1,2,3-Trichlorobenzene
524.2		Drinking Water	1,2,4-Trichlorobenzene
524.2		Drinking Water	1,2,4-Trimethylbenzene
524.2		Drinking Water	1,2-Dibromo-3-Chloropropane
524.2		Drinking Water	1,2-Dibromoethane (EDB)
524.2		Drinking Water	1,2-Dichlorobenzene
524.2		Drinking Water	1,2-Dichloroethane
524.2		Drinking Water	1,2-Dichloropropane

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
524.2		Drinking Water	1,3-Dichlorobenzene
524.2		Drinking Water	1,4-Dichlorobenzene
524.2		Drinking Water	2,2-Dichloropropane
524.2		Drinking Water	Benzene
524.2		Drinking Water	Bromodichloromethane
524.2		Drinking Water	Bromoform
524.2		Drinking Water	Carbon tetrachloride
524.2		Drinking Water	Chlorobenzene
524.2		Drinking Water	Chloroform
524.2		Drinking Water	cis-1,2-Dichloroethylene
524.2		Drinking Water	cis-1,3-Dichloropropylene
524.2		Drinking Water	Dibromochloromethane
524.2		Drinking Water	Epichlorohydrin
524.2		Drinking Water	Ethylbenzene
524.2		Drinking Water	Methyl-tert-butyl Ether (MTBE)
524.2		Drinking Water	m-Xylene & p-Xylene
524.2		Drinking Water	o-Xylene
524.2		Drinking Water	Styrene
524.2		Drinking Water	Tetrachloroethene
524.2		Drinking Water	Toluene
524.2		Drinking Water	trans-1,2-Dichloroethylene
524.2		Drinking Water	trans-1,3-Dichloropropylene
524.2		Drinking Water	Trichloroethylene
524.2		Drinking Water	Trihalomethanes, Total
524.2		Drinking Water	Vinyl chloride
524.2		Drinking Water	Xylenes, Total
525.2	525.2	Drinking Water	Alachlor
525.2	525.2	Drinking Water	Atrazine
525.2	525.2	Drinking Water	Benzo[a]pyrene
525.2	525.2	Drinking Water	Di (2-ethylhexyl)phthalate
525.2	525.2	Drinking Water	Di(2-ethylhexyl)adipate
525.2	525.2	Drinking Water	Di-n-octyl phthalate
525.2	525.2	Drinking Water	Endrin
525.2	525.2	Drinking Water	gamma-BHC (Lindane)
525.2	525.2	Drinking Water	Heptachlor
525.2	525.2	Drinking Water	Heptachlor epoxide
525.2	525.2	Drinking Water	Hexachlorobenzene
525.2	525.2	Drinking Water	Hexachlorocyclopentadiene
525.2	525.2	Drinking Water	Methoxychlor
525.2	525.2	Drinking Water	Simazine
531.2		Drinking Water	Carbofuran
531.2		Drinking Water	Oxamyl
533	533	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
533	533	Drinking Water	1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
533	533	Drinking Water	1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)
533	533	Drinking Water	1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)
533	533	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
533	533	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
533	533	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
533	533	Drinking Water	Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)
533	533	Drinking Water	Perfluoro(4-methoxybutanoic acid)
533	533	Drinking Water	Perfluoro-3,6-dioxaheptanoic acid
533	533	Drinking Water	Perfluoro-3-methoxypropanoic acid (PFMPA)
533	533	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
533	533	Drinking Water	Perfluorobutanoic acid (PFBA)
533	533	Drinking Water	Perfluorodecanoic acid (PFDA)
533	533	Drinking Water	Perfluorododecanoic acid (PFDoA)
533	533	Drinking Water	Perfluoroheptanesulfonic acid (PFHpS)
533	533	Drinking Water	Perfluoroheptanoic acid (PFHpA)
533	533	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
533	533	Drinking Water	Perfluorohexanoic acid (PFHxA)
533	533	Drinking Water	Perfluorononanoic acid (PFNA)
533	533	Drinking Water	Perfluorooctanesulfonic acid (PFOS)
533	533	Drinking Water	Perfluorooctanoic acid (PFOA)
533	533	Drinking Water	Perfluoropentanesulfonic acid (PFPeS)
533	533	Drinking Water	Perfluoropentanoic acid (PFPeA)
533	533	Drinking Water	Perfluoroundecanoic acid (PFUnA)
537.1	537.1 DW	Drinking Water	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
537.1	537.1 DW	Drinking Water	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)
537.1	537.1 DW	Drinking Water	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
537.1	537.1 DW	Drinking Water	Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)
537.1	537.1 DW	Drinking Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537.1	537.1 DW	Drinking Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	537.1 DW	Drinking Water	Perfluorobutanesulfonic acid (PFBS)
537.1	537.1 DW	Drinking Water	Perfluorodecanoic acid (PFDA)
537.1	537.1 DW	Drinking Water	Perfluorododecanoic acid (PFDoA)
537.1	537.1 DW	Drinking Water	Perfluoroheptanoic acid (PFHpA)
537.1	537.1 DW	Drinking Water	Perfluorohexanesulfonic acid (PFHxS)
537.1	537.1 DW	Drinking Water	Perfluorohexanoic acid (PFHxA)
537.1	537.1 DW	Drinking Water	Perfluorononanoic acid (PFNA)
537.1	537.1 DW	Drinking Water	Perfluorooctanesulfonic acid (PFOS)

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537.1	537.1 DW	Drinking Water	Perfluorooctanoic acid (PFOA)
537.1	537.1 DW	Drinking Water	Perfluorotetradecanoic acid (PFTeDA)
537.1	537.1 DW	Drinking Water	Perfluorotridecanoic acid (PFTrDA)
537.1	537.1 DW	Drinking Water	Perfluoroundecanoic acid (PFUnA)
547		Drinking Water	Glyphosate
548.1	548.1	Drinking Water	Endothall
549.2	549.2	Drinking Water	Diquat
552.2	552.2	Drinking Water	Dibromoacetic acid
552.2	552.2	Drinking Water	Dichloroacetic acid
552.2	552.2	Drinking Water	Monobromoacetic acid
552.2	552.2	Drinking Water	Monochloroacetic acid
552.2	552.2	Drinking Water	Trichloroacetic acid
552.2 THAA		Drinking Water	Total Haloacetic Acids 5
7110B	RAD Prep	Drinking Water	Gross Alpha
7110B	RAD Prep	Drinking Water	Gross Beta
7500 Ra D		Drinking Water	Combined Radium 226 + 228
L520		Drinking Water	Acrylamide
Nitrate by calc		Drinking Water	Nitrate as N
SM 2120B		Drinking Water	Color, Apparent
SM 2320B		Drinking Water	Alkalinity, Total
SM 2330B		Drinking Water	Langelier Index
SM 2340B		Drinking Water	Calcium hardness as calcium carbonate
SM 2340B		Drinking Water	Hardness as calcium carbonate
SM 2340B		Drinking Water	Magnesium hardness as calcium carbonate
SM 2510B		Drinking Water	Specific Conductance
SM 2540C		Drinking Water	Total Dissolved Solids
SM 2540D		Drinking Water	Total Suspended Solids
SM 2550B		Drinking Water	Temperature
SM 4500 Cl G		Drinking Water	Chlorine, Total Residual
SM 4500 CO2 B		Drinking Water	Carbon Dioxide, Free
SM 4500 F C		Drinking Water	Fluoride
SM 4500 O G		Drinking Water	Oxygen, Dissolved
SM 4500 P E		Drinking Water	Orthophosphate as PO4
SM 4500 P E		Drinking Water	Phosphate, ortho
SM 4500 S2 D		Drinking Water	Sulfide
SM 5310C		Drinking Water	Dissolved Organic Carbon
SM 5910B		Drinking Water	Ultraviolet Absorption, 254 nm
SM 9215E		Drinking Water	Heterotrophic Plate Count
SM7500 Ra B	RAD Prep	Drinking Water	Ra-226
SM7500 Ra D	RAD Prep	Drinking Water	Ra-228
SM7500_Rn_B	RAD Prep	Drinking Water	Radon 222
V210		Drinking Water	2,4,6-Trichloroanisole (TCA)
V210		Drinking Water	2-Methylisoborneol (MIB)
V210		Drinking Water	Geosmin
V210		Drinking Water	Isobutyl methoxy pyrazine (IBMP)
V210		Drinking Water	Isopropyl methoxy pyrazine (IPMP)

Laboratory: Eurofins Eaton Analytical South Bend (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date

Laboratory: Eurofins Eaton Analytical Pomona

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	ISO/IEC 17025	5890.01 & 5890.02	06-30-25
Alabama	State	41060	01-31-24
Arizona	State	AZ0833	02-27-24
Arkansas (DW)	State	CA00006	02-29-24
California	State	2813	12-20-23
Colorado	State	CA00006	01-31-24
Connecticut	State	PH-0107	03-31-24
Delaware (DW)	State	CA00006	02-29-24
Florida	NELAP	E871024	06-30-24
Georgia (DW)	State	947	01-31-24
Guam	State	23-004R	03-31-24
Hawaii	State	CA00006	01-31-24
Hawaii (Micro)	State	CA00006	01-31-24
Idaho (DW)	State	CA00006	01-31-24
Idaho (Micro)	State	CA00006	03-31-24
Illinois	NELAP	200033	03-17-24
Indiana	State	C-CA-01	06-18-25
Kansas	NELAP	E-10268	04-30-24
Kentucky (DW)	State	KY90107	12-31-23
Louisiana (DW)	State	LA008	12-31-23
Maine	State	CA00006A	03-08-24
Maryland	State	224	03-31-24
Massachusetts	State	M-CA006	06-30-24
MI - RadChem Recognition	State	9906	06-18-25
Michigan	State	9906	06-18-25
Mississippi	State	CA2813	06-18-25
Montana (DW)	State	CERT0035	01-01-24
Nebraska	State	NE-OS-21-13	01-31-24
Nevada	State	CA00006	07-31-24
New Hampshire	NELAP	2959	03-29-24
New Jersey	NELAP	CA008	06-30-24
New Mexico	State	CA00006	01-31-24
New York	NELAP	11320	04-01-24
North Carolina (DW)	State	06701	07-31-24
North Dakota	State	R-009	01-31-24
Northern Mariana Islands (DW)	State	CA00006	02-29-24
Ohio	State	87786	02-29-24
Oregon	NELAP	4034	01-29-24
Pennsylvania	NELAP	68-00565	10-31-24
Puerto Rico	State	CA00006	03-31-24
Rhode Island	State	LAO00381	12-31-23
South Dakota (DW)	State	CA11320	01-07-24
Tennessee	State	TN02839	01-31-24
Texas	NELAP	T104704230-23-21	09-30-24
USEPA UCMR 5	US Federal Programs	CA00006	12-31-25

Laboratory: Eurofins Eaton Analytical Pomona (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Utah	NELAP	CA00006	02-29-24
Vermont	State	VT-0114	12-28-24
Virginia	NELAP	460260	06-14-24
Washington	State	C838	03-13-24
Wyoming	State	8-TMS-L	06-18-25

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-24
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alabama	State	43200	01-31-24
Alaska	State	PA00009	06-30-24
Alaska (UST)	State	17-027	02-28-24
Arizona	State	AZ0780	03-12-24
Arkansas DEQ	State	88-00660	08-09-24
California	State	2792	01-31-24
Colorado	State	PA00009	06-30-24
Connecticut	State	PH-0746	06-30-25
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-24
Delaware (DW)	State	N/A	01-31-24
Florida	NELAP	E87997	06-30-24
Georgia (DW)	State	C048	01-31-24
Hawaii	State	N/A	01-31-24
Illinois	NELAP	200027	01-31-25
Iowa	State	361	03-01-24
Kansas	NELAP	E-10151	10-31-24
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	12-31-23 *
Louisiana (All)	NELAP	02055	06-30-24
Maine	State	2019012	03-12-25
Maryland	State	100	06-30-24
Massachusetts	State	M-PA009	01-15-24
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-24
Mississippi	State	023	01-31-25
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-25
Nebraska	State	NE-OS-32-17	01-31-24
New Hampshire	NELAP	2730	01-09-24
New Jersey	NELAP	PA011	06-30-24
New York	NELAP	10670	04-01-24
North Carolina (DW)	State	42705	07-31-24
North Carolina (WW/SW)	State	521	12-31-24
North Dakota	State	R-205	01-31-24
Oklahoma	NELAP	9804	08-31-24
Oregon	NELAP	PA200001	09-11-24
Pennsylvania	NELAP	36-00037	01-31-24
Quebec Ministry of Environment and Fight against Climate Change	PALA	507	09-16-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: INTERA Inc
Job ID: 810-88243-1
Project/Site: B&V Project 414595 Groundwater Analysis

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
South Carolina	State	89002	01-31-24
Tennessee	State	02838	01-31-24
Texas	NELAP	T104704194-23-46	08-31-24
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-24
Virginia	NELAP	460182	06-14-25
Washington	State	C457	04-11-24
West Virginia (DW)	State	9906 C	01-01-25
West Virginia DEP	State	055	07-31-24
Wyoming	State	8TMS-L	01-31-24
Wyoming (UST)	A2LA	0001.01	11-30-24

Method Summary

Client: INTERA Inc
Job ID: 810-88243-1
Project/Site: B&V Project 414595 Groundwater Analysis

Method	Method Description	Protocol	Laboratory
524.2	Total Trihalomethanes	EPA-DW	EA SB
524.2	Volatile Organic Compounds (GC/MS)	EPA-DW	EA SB
V210	Taste and Odor Compounds (GC/MS/SIS)	Lab SOP	EA SB
521.1	Nitrosoamines (GC/MS/MS)	EEA-Aglient	EA SB
522	1,4 Dioxane (GC/MS SIM)	EPA	EA SB
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	EA SB
548.1	Endothall (GC/MS)	EPA	EA SB
504.1	EDB, DBCP and 1,2,3-TCP (GC)	EPA-DW2	EA SB
505	Organochlorine Pesticides/PCBs (GC)	EPA	EA SB
515.3	Herbicides (GC)	EPA	EA SB
552.2	Haloacetic Acids (HAAs) (GC)	EPA	EA SB
552.2 THAA	Total Haloacetic Acids (GC)	EPA	EA SB
218.7	Chromium, Hexavalent (Ion Chromatography)	EPA	EA SB
300.0	Anions, Ion Chromatography	EPA	EA SB
317	Bromate, Ion Chromatography	EPA	EA SB
531.2	Carbamate Pesticides (HPLC)	EPA	EA SB
547	Glyphosate (DAI HPLC)	EPA	EA SB
549.2	Diquat and Paraquat (HPLC)	EPA	EA SB
331.0	Perchlorate (LC/MS/MS)	EPA	EA SB
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
537.1	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA SB
L520	Acrylamide, Aniline, and Urethane (LC/ESI/MS/MS)	Lab SOP	EA SB
1613B	Tetra Chlorinated Dioxin in Drinking Water	EPA	ELLE
200.7	Metals (ICP)	EPA	EA SB
200.8	Metals (ICP/MS)	EPA	EA SB
245.1	Mercury (CVAA)	EPA	EA SB
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EA SB
150.1	pH (Electrometric)	EPA	EA SB
180.1	Turbidity, Nephelometric	EPA	EA SB
335.4	Cyanide, Total	EPA	EA SB
350.1	Nitrogen, Ammonia	EPA	EA SB
353.2	Nitrogen, Nitrate-Nitrite	EPA	EA SB
4500 Cl F Amine	Chloramines	SM	EA SB
4500 Cl G	Chlorine, Free	SM	EA SB
4500 ClO2 D	Chlorine Dioxide	SM	EA SB
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	EA SB
SM 2120B	Color, Colorimetric	SM	EA SB
SM 2320B	Alkalinity	SM	EA SB
SM 2330B	Corrosivity, LSI Calculation	SM	EA SB
SM 2510B	Conductivity, Specific Conductance	SM	EA SB
SM 2540C	Solids, Total Dissolved (TDS)	SM	EA SB
SM 2540D	Solids, Total Suspended (TSS)	SM	EA SB
SM 2550B	Temperature	SM	EA SB
SM 4500 Cl G	Chlorine, Residual	SM	EA SB
SM 4500 CO2 B	Free Carbon Dioxide	SM	EA SB
SM 4500 F C	Fluoride	SM	EA SB
SM 4500 O G	Oxygen, Dissolved	SM	EA SB
SM 4500 P E	Orthophosphate	SM	EA SB
SM 4500 S2 D	Sulfide, Total	SM	EA SB
SM 5310C	TOC	SM	EA SB
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EA POM
SM 5910B	Organic Constituents, UV-Absorbing	SM	EA SB
7110B	Gross Alpha and Gross Beta Radioactivity	SM	EA SB

Method Summary

Client: INTERA Inc
Job ID: 810-88243-1
Project/Site: B&V Project 414595 Groundwater Analysis

Method	Method Description	Protocol	Laboratory
7500 Ra D	Radium 226 Radium 228 Combined	SM	EA SB
SM7500 Ra B	Radium-226	SM	EA SB
SM7500 Ra D	Radium-228	SM	EA SB
SM7500_Rn_B	Radon	SM	EA SB
9223B	Coliforms, Total, and E.Coli (Presence/Absence)	SM	EA SB
SM 9215E	Heterotrophic Plate Count	SM	EA SB
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	E CEI
OSHA 100	OSHA 100	OSHA	Sci Method
Subcontract	Legionella - CDC Method	None	Sci Method
1613B	Separatory Funnel (Liquid-Liquid) Extraction	EPA	ELLE
245.1	Preparation, Mercury	EPA	EA SB
504.1	Microextraction	EPA-DW	EA SB
505	Extraction, Organochlorine Pesticides/PCBs	EPA	EA SB
515.3	Extraction of Chlorinated Acids	EPA-DW	EA SB
521	Solid-Phase Extraction (SPE)	EPA	EA SB
522	Solid-Phase Extraction (SPE)	EPA	EA SB
525.2	Extraction of Semivolatile Compounds	EPA	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA SB
548.1	Extraction of Endothall	EPA-DW	EA SB
549.2	Extraction of Diquat and Paraquat	EPA	EA SB
552.2	Microextraction	EPA	EA SB
Aliquot	Preparation, Extract aliquot	None	EA SB
Distill/CN	Distillation, Cyanide	None	EA SB
Filtration	Filtration	None	EA SB
Filtration	Sample Filtration	None	EA SB
RAD Prep	Preparation, Radiologicals	None	EA SB
V210	Purge and Trap	Lab SOP	EA SB

Protocol References:

EEA-Aglient = EEA-Agilent
EPA = US Environmental Protection Agency
EPA-DW = "Methods For The Determination Of Organic Compounds In Drinking Water", EPA/600/4-88/039, December 1988 And Its Supplements.
EPA-DW2 = "Methods For The Determination of Organic Compounds in Drinking Water - Supplement III ",, EPA/600/R-95-131, August 1995
Lab SOP = Laboratory Standard Operating Procedure
None = None
OSHA = OSHA Analytical Methods Manual, Occupational Safety And Health Administration.
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

E CEI = E CEI, 730 SE Maynard Road, Cary, NC 27511
EA POM = Eurofins Eaton Analytical Pomona, 941 Corporate Center Drive, Pomona, CA 91768-2642, TEL (626)386-1100
EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300
Sci Method = Scientific Methods, Inc, 12441 Beckley St, Granger, IN 46530

Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
810-88243-1	TW-3	Drinking Water	12/18/23 10:00	12/18/23 14:00

SCIENTIFIC
METHODS

12441 Beckley Street • Granger, Indiana 46530
574.277.4078 [Phone] • www.scientificmethods.com

Laboratory Report

Client:
Caleb Hunsberger
Eurofins Eaton Analytical
110 S Hill Street
South Bend, IN 46617
574-233-4777
Anthony.Hunsberger@et.eurofinsus.com

Report no.: 34963

Sample Collection Date: 12/18/2023
Received Date: 12/19/2023
Sample Analysis Date: 12/21/2023

Samples Submitted: 1
Analytical Method: SM 9260J

Legionella by Membrane Filtration

Lab ID	Site Description	Sampling Time	Analysis Time	*Legionella* Species (cfu/100mL)	*Legionella pneumophila* (cfu/100mL)
34963	TW-3 (810-88243-1)	10:00	11:21	< 3.7	NA

Scientific Methods appreciates the opportunity to provide you with this analysis. Please feel free to contact us (574-277-4078) if you have any questions regarding this report.

Note: This report may not be reproduced, except in full, without written approval from Scientific Methods.

Ethan Ummel

Reviewed by: Ethan Ummel, Lab Technician — Date: January 3, 2024

Alicia Jones

Finalized by: Alicia Jones, Senior Analyst — Date: January 4, 2024

SCIENTIFIC
METHODS

12441 Beckley Street • Granger, Indiana 46530
574.277.4078 [Phone] • www.scientificmethods.com

Laboratory Report

Client: Caleb Hunsberger
Eurofins Eaton Analytical
110 South Hill Street
South Bend, IN 46617-2702
574-472-5527
anthony.hunsberger@et.eurofinsus.com

Report no.: 34965

Site Description: TW-3 (810-88243-1)
Sample Date and Time: 12/18/2023 10:00
Receive Date: 12/19/2023

Samples Submitted: 1

Microscopic Analysis - Iron Bacteria

Lab ID: 34965
Analysis Date and Time: 12/21/2023 16:32
Sample Volume Centrifuged (mL): 1000
Sample Volume Assayed (mL): 0.1036

Iron Bacteria	Total organisms per 100 mL of sample
Acidithiobacillus ferooxidans	7.28E+05

Scientific Methods appreciates the opportunity to provide you with this analysis. Please feel free to contact us (574-277-4078) if you have any questions regarding this report.

Note: This report may not be reproduced, except in full, without written approval from Scientific Methods.

Reviewed by: Alicia Jones
Alicia Jones, Senior Analyst

Date: December28, 2023

Finalized by: Rebecca Wong
Rebecca Wong, Director of Operations

Date: December 29, 2023

References and Definitions

References: Iron Bacteria,
Standard Methods 9240B, 18th Edition

Definitions:

MRL: Minimum Reporting Limit

< = "less than," It indicated the lowest reportable value by the proceedure used for analysis.

Iron bacteria are considered to be capable of metabolizing reduced iron present in their habitat and of depositing it in the form of hydrated ferric oxide, on or in their mucilaginous secretions. Usually, the amound of ferric hydroxide is very large in comparison with the enclosed cells.

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December 29, 2023

Eurofins Eaton Analytical
110 S. Hill Street
South Bend, IN 46617

CLIENT PROJECT: B&V Project 414595 Groundwater Analysis, 81006251, 810-88243-1
LAB CODE: W231462

Dear Customer:

Enclosed are asbestos analysis results for TEM drinking water samples received at our laboratory on December 20, 2023. The samples were analyzed for asbestos using transmission electron microscopy (TEM) per the US EPA 100.2 Method.

The current EPA regulatory limit for asbestos in drinking water is 7 million fibers per liter (MFL, > 10 µm in length). The analytical sensitivity for the EPA 100.2 method is 0.2 MFL.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,

Tianbao Bai

Tianbao Bai, Ph.D., CIH
Laboratory Director

eurofins | CEI

ASBESTOS ANALYTICAL REPORT
By: Transmission Electron Microscopy

Prepared for

Eurofins Eaton Analytical

CLIENT PROJECT:	B&V Project 414595 Groundwater Analysis, 81006251, 810-88243-1
LAB CODE:	W231462
TEST METHOD:	EPA 100.2
REPORT DATE:	12/29/23

730 SE Maynard Road • Cary, NC 27511 • 919.481.1413

eurofins | CEI

ASBESTOS IN DRINKING WATER ANALYSIS

By: TRANSMISSION ELECTRON MICROSCOPY

Client: Eurofins Eaton Analytical
110 S. Hill Street
South Bend, IN 46617

		Lab Code:	W231462
Time Collected:	10:00 AM	**Date Collected:**	12-18-23
Time Received:	9:30 AM	**Date Received:**	12-20-23
Time Filtered:	12:20 PM	**Date Filtered:**	12-20-23
Time Analyzed:	8:47 AM	**Date Analyzed:**	12-29-23
Avg Grid Opening Size:	0.0100 mm^2	**Date Reported:**	12-29-23

Project: B&V Project 414595 Groundwater Analysis, 81006251, 810-88243-1

TEM DRINKING WATER (EPA 100.2)

Client ID Lab ID	Sample Volume Filtered	Dilution Factor	Effective Filter Area (mm^2)	# Of Grid Openings Analyzed	Total Area of Filter Examined	Analytical Sensitivity (MFL)	Asbestos Type	>10 µm	Concentration (MFL)	Confidence Limit	
										Lower	Upper
TW - 3 (810 -88243-1) W5311	100	20	1060	10	0.1	2.12	None Detected	0	**<2.1**	0.0	<7.8

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.
Due to excessive particulate the analytical sensitivity of 0.2 MFL as required by the method was not reached.

1 2 3 4 5 6 7 8 9 10 11 12

1
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12

LEGEND:
MFL = million fibers per liter , > 10 um in length
NSD = no asbestos structures detected
ml = milliliter
CHRY = chrysotile
um = micrometer
CROC = crocidolite
mm = millimeter

METHOD: EPA 100.2

ANALYTICAL SENSITIVITY: 0.2 MFL

MAXIMUM CONTAMINANT LEVEL: 7 MFL

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of customer submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the customer. Samples were received in acceptable condition unless otherwise noted.

Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

Sample bottle was not provided by Eurofins CEI.
For the current states of certification please refer to the website: www.EurofinsUS.com/CEI

ANALYST: Kamila Reichert
Kamila Reichert

APPROVED BY: Tianbao Bai
Tianbao Bai, Ph.D., CIH
Laboratory Director

Eurofins Eaton Analytical South Bend

110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

810-88243 Chain of Custody

eurofins
Environment Testing

Client Information

Client Contact: Rhett Moore	Sampler: RCM	Lab PM: Hunsberger, Caleb	COC No: 810-33911-7894.1
	Phone: 812-219-6552	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	Page: Page 1 of 4
Company: INTERA Inc	PWSID:		Job #: BLKVC
Address: 101 West Kirkwood Avenue Suite 134	Due Date Requested:		
City: Bloomington	TAT Requested (days):		
State, Zip: IN, 47404	Compliance Project: Δ Yes Δ No		
Phone: 812-676-9984(Tel)	PO #: Purchase Order not required		
Email: RMoore@intera.com	WO #:		
Project Name: B&V Project 414595 Groundwater Analysis	Project #: 81006251		
Site:	SSOW#:		

Analysis Requested

Analysis	Preservation Code	Requested
Field Filtered Sample (Yes or No)		
Perform MS/MSD (Yes or No)		
200.7_SDWA, 200.8_SDWA, 245.1_SDWA	D	✓
200.7_SDWA - ICP-AES Metals Scan	N	✓
331.0_PREC - Perchlorate	N	✓
335.4 - Total Cyanide		✓
4500_F_C - Fluoride	N	✓
SM2330B - Langlier Index Calculation	N	✓
Nitrate_Calc - Nitrate as N by calculation	N	✓
180.1, 353.2, 4500_P_E_Ortho	N	✓
SUBCONTRACT - Asbestos 100.2	N	✓
300_OF_14D_B - ALL 300 B	L	✓
300_OF_28D_PREC - Chloride, Sulfate	N	✓
524.2_TTHM_Sum - Total Trihalomethanes - Summary	N	✓
524.2_Pres_PREC - Trihalomethanes	HA	✓
Total Number of containers		

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Special Instructions/Note:
			Preservation Code:		
TW-3	12/18/23	1000	G	Drinking Water	Initial Temp: 3.8
* FB (533 & 537.1)				Drinking Water	Corrected Temp: 4.0
LTB - 12/5/23 * KW 12/18/23				Drinking Water	IR Gun # 25WET
(per vial)				Drinking Water	
					Initial Temp: 3.2
pH verified <2 * 226/228; GROSS ALPHA/Beta					Corrected Temp: 3.4
200.8U, 200.7/200.8/245.1, 549 *					IR Gun # 25WET
	KW 12/18/23				
					Initial Temp: 2.8
					Corrected Temp: 3.0
					IR Gun # 25WET

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Rhett Moore	12/18/23 1400	INTERA			
			KB	12/18/2023 1400	EEA

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: Freshdraw

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins Environment Testing

Client Information	Sampler: RCM	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-33911-7894.2
Client Contact: Rhett Moore	Phone: 812-219-6552	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin:	Page: Page 2 of 4
Company: INTERA Inc	PWSID:	**Analysis Requested**		Job #: BkkVC

Address: 101 West Kirkwood Avenue Suite 134
City: Bloomington
State, Zip: IN, 47404
Phone: 812-676-9984(Tel)
Email: RMoore@intera.com
Project Name: B&V Project 414595 Groundwater Analysis
Site:

Due Date Requested:
TAT Requested (days):
Compliance Project: Δ Yes Δ No
PO #: Purchase Order not required
WO #:
Project #: 81006251
SSOW#:

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1623 - Cryptosporidium and Giardia ✓	9223B_PA_DW - Local Method ✓	9215E_DW - Heterotrophic Plate Count (HPC) ✓	SUBCONTRACT - Iron Oxidizing Bacteria EPA 9240B ✓	~~SUBCONTRACT - Virus 1618~~ ✓	SUBCONTRACT - Legionella - CDC Method ✓	552.2_PREC - Haloacetic Acids 5 ✓	552.2_THAA_SUM - Total Haloacetic Acids - Summary ✓	4500_Cl_F_ClrAm - Local Method ✓	2120B, 4500_CL_G, 4500_CL_G_FC, 4500_ClO2_D ✓	SM7110B, SM7500_Ra_B, SM7500_Ra_D ✓	SM7500_Ra_D_SUM - Radium 226 and 228 - Combined ✓	200.8_U - Uranium ✓	Total Number of containers	Special Instructions/Note:
				Preservation Code:	☒	☒	N	R	R	N	N	N	G	N	N	N	D	N	D	☒	
TW-3	12/18/23	1000	G	Drinking Wate																	
				Drinking Wate																	
				Drinking Wate																	
				Drinking Wate																	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Rhett Moore	Date/Time: 12/18/23 1400	Company: INTERA	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 12/18/2023 1400	Company: EEA

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: Freshdraw

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins Environment Testing

Client Information	Sampler: RCM	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-33911-7894.3
Client Contact: Rhett Moore	Phone: 812-219-6552	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin:	Page: Page 3 of 4
Company: INTERA Inc	PWSID:			Job #: BLKVC

Address: 101 West Kirkwood Avenue Suite 134	**Due Date Requested:**
City: Bloomington	**TAT Requested (days):**
State, Zip: IN, 47404	**Compliance Project:** Δ Yes Δ No
Phone: 812-676-9984(Tel)	PO #: Purchase Order not required
Email: RMoore@intera.com	WO #:
Project Name: B&V Project 414595 Groundwater Analysis	Project #: 81006251
Site:	SSOW#:

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	504.1_PREC, 505_PREC, 547_PREC ✓	515.3_PREC - Chlorinated Acids - Extended by 515.3 ✓	1613B_DW - 2,3,7,8-TCDD ✓	521.1 - Nitrosoamines ✓	522_PREC - 1,4-Dioxane ✓	525.2_PREC - 525.2 State Compounds ✓	548.1_PREC - Endothall ✓	549.2_PREC - Diquat ✓	2320B - Total Alkalinity Only ✓	SM2340B - Total Hardness as CaCO3 by Calculation ✓	2510B - Specific Conductance ✓	2540C_Calcd - Total Dissolved Solids (TDS) ✓	5310C - Dissolved Organic Carbon ✓	Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X	R	Q	N	R			R		N	N	N	N	N	X	
TW-3	12/18/23	1000	G	Drinking Water																	
				Drinking Water																	
				Drinking Water																	
				Drinking Water																	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

Relinquished by: Rhett Moore	Date/Time: 12/18/23 1400	Company: INTERA	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 12/18/2023 1400	Company: EEA

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins Environment Testing

Client Information	Sampler: RCM	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-33911-7894.4
Client Contact: Rhett Moore	Phone: 812-219-6552	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin:	Page: Page 4 of 4
Company: INTERA Inc	PWSID:			Job #: BLKVC

Address: 101 West Kirkwood Avenue Suite 134
City: Bloomington
State, Zip: IN, 47404
Phone: 812-676-9984(Tel)
Email: RMoore@intera.com
Project Name: B&V Project 414595 Groundwater Analysis
Site:

Due Date Requested:
TAT Requested (days):
Compliance Project: Δ Yes Δ No
PO #: Purchase Order not required
WO #:
Project #: 81006251
SSOW#:

Analysis Requested

Preservation Codes:
- A - HCL
- B - NaOH
- C - Zn Acetate
- D - Nitric Acid
- E - NaHSO4
- F - MeOH
- G - Amchlor
- H - Ascorbic Acid
- I - Ice
- J - DI Water
- K - EDTA
- L - EDA
- M - Hexane
- N - None
- O - AsNaO2
- P - Na2O4S
- Q - Na2SO3
- R - Na2S2O3
- S - H2SO4
- T - TSP Dodecahydrate
- U - Acetone
- V - MCAA
- W - pH 4-5
- Y - Trizma
- Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	5910B - UV Absorption, 254 nm ✓	SM4500NH3_D - Ammonia	SM4500_CO2_B - Local Method ✓	SM4500_O_G - Dissolved Oxygen ✓	SM4500_S2_D - Sulfide ✓	SM7500_Rn_B - Radon ✓	2540D - Total Suspended Solids (TSS) ✓	V210 - Taste and Odor Compounds ✓	537.1_DW_PREC - PFC18 ✓	533 - Local Method ✓	524.2_Pres_PREC - Phase I,II & V Regulated & Unregulated V ✓	504.1_PREC - Full List ✓	Total Number of containers	Special Instructions/Note:
			Preservation Code:		☒	☒	N	S	N	N	CB	N	N	Q	Y	N	HA	R	☒	
TW-3	12/10/23	1000	G	Drinking Wate																
				Drinking Wate																
				Drinking Wate																
				Drinking Wate																

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown* ☐ *Radiological*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by: Rhett C Moore	Date/Time: 12/18/23 1400	Company: INTERA	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time: 12/18/2023 1400	Company: EEA	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: Fresh draw

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend

110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins Environment Testing

Client Information

Client Contact: Rhett Moore
Sampler: RCM
Phone: 812-219-6552
Lab PM: Hunsberger, Caleb
E-Mail: Anthony.Hunsberger@et eurofinsus.com
Carrier Tracking No(s):
State of Origin:
COC No: 810-33621-10865 1
Page: Page 1 of 1
Company: INTERA Inc
PWSID:
Job #: BLKVC
Address: 101 West Kirkwood Avenue Suite 134
Due Date Requested:
City: Bloomington
TAT Requested (days):
State, Zip: IN, 47404
Compliance Project: ∆ Yes ∆ No
Phone: 812-676-9984(Tel)
PO #: Purchase Order not required
Email: RMoore@intera.com
WO #:
Project Name: B&V Project 414595 Groundwater Analysis
Project #: 81006251
Site:
SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	317 - Bromate by IC ✓	L520 - Acrylamide ✓	531.2_PREC_SC - (MOD) Local Method ✓	524.2_Pres_PREC - (MOD) Custom List ✓	200.8_SDWA - (MOD) Custom ✓	218.7 - Hexavalent Chromium (CrVI) ✓	150.1, SM2550B ✓	5540C - Local Method ✓						Total Number of containers	Special Instructions/Note:
			Preservation Code:		☒	☒	L	R		HA	N		N	N						☒	
TW-3	12/18/23	1000	G	Drinking Water																	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:
Date:
Time:
Method of Shipment:

Relinquished by: RhettC Moore	Date/Time: 12/18/23 1400	Company: INTERA	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by: NB	Date/Time: 12/18/2023 1400	Company: EEA

Custody Seals Intact: ∆ Yes ∆ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: Fresh draw

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-34861.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: Eurofins Eaton Analytical		Accreditations Required (See note): State - Indiana; State - Indiana (Micro)		Job #: 810-88243-1
Address: 941 Corporate Center Drive, ,	Due Date Requested: 1/9/2024	**Analysis Requested**		**Preservation Codes:**
City: Pomona	TAT Requested (days):			
State, Zip: CA, 91768-2642				
Phone: 626-386-1100(Tel)	PO #:			
Email:	WO #:			
Project Name: B&V Project 414595 Groundwater Analysis	Project #: 81006251			Other:
Site:	SSOW#:			

Preservation Codes:
- A - HCL
- B - NaOH
- C - Zn Acetate
- D - Nitric Acid
- E - NaHSO4
- F - MeOH
- G - Amchlor
- H - Ascorbic Acid
- I - Ice
- J - DI Water
- K - EDTA
- L - EDA
- M - Hexane
- N - None
- O - AsNaO2
- P - Na2O4S
- Q - Na2SO3
- R - Na2S2O3
- S - H2SO4
- T - TSP Dodecahydrate
- U - Acetone
- V - MCAA
- W - pH 4-5
- Y - Trizma
- Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	5540C													Total Number of containers	Special Instructions/Note:
				Preservation Code:																	
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Water			X													2	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 1

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 12/19/23 1600	Company EEA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

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Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving

Sampler:

Phone:

Lab PM: Hunsberger, Caleb

E-Mail: Anthony.Hunsberger@et.eurofinsus.com

Carrier Tracking No(s):

State of Origin: Indiana

COC No: 810-34862.1

Page: Page 1 of 1

Company: Eurofins Lancaster Laboratories Environm

Accreditations Required (See note): State - Indiana; State - Indiana (Micro)

Job #: 810-88243-1

Address: 2425 New Holland Pike, ,

Due Date Requested: 1/9/2024

City: Lancaster

TAT Requested (days):

State, Zip: PA, 17601

Phone: 717-656-2300(Tel)

PO #:

Email:

WO #:

Project Name: B&V Project 414595 Groundwater Analysis

Project #: 81006251

Site:

SSOW#:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B_DW/1613B_P_Sep 2,3,7,8-TCDD	Total Number of containers	Special Instructions/Note:
				Preservation Code:					
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Wate			X	2	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Primary Deliverable Rank: 1

Special Instructions/QC Requirements:

Empty Kit Relinquished by:

Date:

Time:

Method of Shipment:

Relinquished by: Penny Pehling Wright	Date/Time: 12/19/23 1600	Company EEA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

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Eurofins Eaton Analytical South Bend

110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-34865.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1

Company: Eurofins CEI Inc

Accreditations Required (See note): State - Indiana; State - Indiana (Micro)

Job #: 810-88243-1

Address: 730 SE Maynard Road, ,

Due Date Requested: 1/9/2024

City: Cary

TAT Requested (days):

State, Zip: NC, 27511

Phone:

PO #:

Email:

WO #:

Project Name: B&V Project 414595 Groundwater Analysis

Project #: 81006251

Site:

SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:		☒	☒		☒	
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Wate			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification

Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ________ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Primary Deliverable Rank: 1

Special Instructions/QC Requirements:

Empty Kit Relinquished by:

Date:

Time:

Method of Shipment:

Relinquished by: Penny Pehling Wright	Date/Time: 12/19/23 1600	Company EEA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact:
Δ Yes Δ No

Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

W231462

Chain of Custody Record

WS311 ①

eurofins | Environment Testing

7068 1978 1414

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-34865.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: Eurofins CEI Inc		Accreditations Required (See note): State - Indiana; State - Indiana (Micro)		Job #: 810-88243-1
Address: 730 SE Maynard Road, ,	**Due Date Requested:** 1/9/2024	**Analysis Requested**		**Preservation Codes:**
City: Cary	**TAT Requested (days):**			
State, Zip: NC, 27511				
Phone:	PO #:			
Email:	WO #:			
Project Name: B&V Project 414595 Groundwater Analysis	Project #: 81006251			
Site:	SSOW#:			**Other:**

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA

M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Wate			X	1	1.8°c

eurofins | Accept Samples
SN 12/20/23 10:20

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification *Unconfirmed*	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Penny Pehling Wright	Date/Time: 12/19/23 1600	Company: EEA	Received by: SN	Date/Time: 12/20 9:30	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)

Sampler:
Lab PM: Hunsberger, Caleb
Carrier Tracking No(s).
COC No: 810-34861.1

Client Contact: Shipping/Receiving
Phone.
E-Mail: Anthony.Hunsberger@et.eurofinsus.com
State of Origin: Indiana
Page: Page 1 of 1

Company: Eurofins Eaton Analytical
Accreditations Required (See note): State - Indiana; State - Indiana (Micro)
Job #: 810-88243-1

Address: 941 Corporate Center Drive, ,
Due Date Requested: 1/9/2024
City: Pomona
TAT Requested (days):
State, Zip: CA, 91768-2642
Phone: 626-386-1100(Tel)
PO #:
Email:
WO #:
Project Name: B&V Project 414595 Groundwater Analysis
Project #: 81006251
Site:
SSOW#:

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	5540C	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Wate			X	2	

Note. Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*

Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 1
Special Instructions/QC Requirements:

Empty Kit Relinquished by:
Date:
Time:
Method of Shipment: FedX · 7065 1978 1447

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Penny Pehling Wright	12/19/23 1600	EEA		12/20/23 1030	EEAP
Relinquished by:	Date/Time.	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time.	Company	Received by:	Date/Time.	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: (7524) 1.9-0.2=1.7 ice · frozen

Ver: 06/08/2021

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend, IN 46617
Phone: 574-233-4777 Fax: 574-233-8207

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hunsberger, Caleb	Carrier Tracking No(s):	COC No: 810-34862.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Anthony.Hunsberger@et.eurofinsus.com	State of Origin: Indiana	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accreditations Required (See note): State - Indiana; State - Indiana (Micro)		Job #: 810-88243-1
Address: 2425 New Holland Pike, ,	Due Date Requested: 1/9/2024	**Analysis Requested**		**Preservation Codes:**
City: Lancaster	TAT Requested (days):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO #:			
Email:	WO #:			
Project Name: B&V Project 414595 Groundwater Analysis	Project #: 81006251			
Site:	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B_DW/1613B_P_Sep 2,3,7,8-TCDD	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
TW-3 (810-88243-1)	12/18/23	10:00 Eastern		Drinking Wate			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Eaton Analytical, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Eaton Analytical, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Eaton Analytical, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Eaton Analytical, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ______ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)
Primary Deliverable Rank: 1

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Penny Pehling Wright	Date/Time: 12/19/23 1600	Company: EEA	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 12/20/23 1100	Company: ELLE

Custody Seals Intact: Δ [✓ Yes] Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: Raw 0.6 - COR 0.5

Ver: 06/08/2021

mB

Login Sample Receipt Checklist

Client: INTERA Inc

Job Number: 810-88243-1

Login Number: 88243

List Source: Eurofins Eaton Analytical South Bend

List Number: 1

Creator: Williams, Kameron

Question	**Answer**	**Comment**
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: INTERA Inc

Job Number: 810-88243-1

Login Number: 88243
List Number: 3
Creator: Sanchez Velasquez, Gustavo

List Source: Eurofins Eaton Analytical Pomona
List Creation: 12/20/23 02:23 PM

Question	**Answer**	**Comment**
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Samples received past hold time.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

Login Sample Receipt Checklist

Client: INTERA Inc

Job Number: 810-88243-1

Login Number: 88243
List Number: 2
Creator: Ballard, Megan

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 12/20/23 02:09 PM

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	