Luminant

Illinois Power Generating Company
1500 Eastport Plaza Drive
Collinsville, IL 62234

June 12, 2024

Illinois Environmental Protection Agency
DWPC – Permits MC #15
Attn: Part 845 Coal Combustion Residual Rule Submittal
1021 N. Grand Avenue East
Springfield, IL 62794-9276

Re: Illinois Power Generating Company - Coffeen Power Plant GMF Recycle Pond (ID No. W1350150004-04)

Illinois Power Generating Company (IPGC) is hereby submitting this assessment of groundwater corrective measures for Coffeen Power Plant GMF Recycle Pond to satisfy the following provisions:

- 35 I.A.C. 845.660 (Assessment of Corrective Measures), and
- 35 I.A.C. 845.650(d) (Characterization of Nature and Extent)

Pursuant to 35 I.A.C. § 845.650I, an Alternative Source Demonstration (ASD) was submitted to Illinois Environmental Protection Agency (IEPA) on May 7, 2024 for the exceedance of the arsenic groundwater protection standard detected at monitoring well G275D during the Quarter 4, 2023 sampling event. The IEPA provided a written response on June 5, 2024 that did not concur with the ASD. IPGC's decision to appeal the ASD denial is pending based on further review.

Along with this letter, these plans will be posted to Luminant's publicly accessible internet site: www.luminant.com/ccr/illinois-ccr/.

If you have any questions regarding this submittal, please contact Phil Morris at 618-343-7799 or phil.morris@vistracorp.com.

Sincerely,

Dianna Tickner

Dianna Tickner, PE, PMP
Senior Director, Demolition and Decommission

Enclosure

Intended for
Illinois Power Generating Company

Date
June 12, 2024

Project No.
1940103584-002

35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT

GMF RECYCLE POND

COFFEEN POWER PLANT

COFFEEN, ILLINOIS

IEPA ID: W135015004-04

RAMBOLL Bright ideas. Sustainable change.

35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT COFFEEN POWER PLANT GMF RECYCLE POND

Project name	**Coffeen Power Plant GMF Recycle Pond**
Project no.	**1940103584-002**
Recipient	**Illinois Power Generating Company**
Document type	**35 I.A.C. § 845 Corrective Measures Assessment**
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ATTACHMENTS

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ACRONYMS AND ABBREVIATIONS

35 I.A.C.	Title 35 of the Illinois Administrative Code
AP1	Ash Pond No. 1
AP2	Ash Pond No. 2
ASD	alternative source demonstration
CAAA	Corrective Action Alternatives Analysis
CAP	Corrective Action Plan
CCR	coal combustion residuals
CMA	Corrective Measures Assessment
cm/s	centimeters per second
CPP	Coffeen Power Plant
CSM	conceptual site model
DA	deep aquifer
DCU	deep confining unit
EPRI	Electric Power Research Institute
E001	Event 1; quarter 2, 2023
E002	Event 2; quarter 3, 2023
E003	Event 3; quarter 4, 2023
GMF	Gypsum Management Facility
GMF GSP	GMF Gypsum Stack Pond
GMF RP	GMF Recycle Pond
GMP	Groundwater Monitoring Plan
GWPS	groundwater protection standard(s)
HCR	Hydrogeologic Site Characterization Report
HDPE	high-density polyethylene
ID	identification
IEPA	Illinois Environmental Protection Agency
IPCB	Illinois Pollution Control Board
IPGC	Illinois Power Generating Company
ITRC	National Research Council, Interstate Technology & Regulatory Council
IX	ion exchange
LCU	lower confining unit
NID	National Inventory of Dams
No.	number
NPDES	National Pollutant Discharge Elimination System
NRT/OBG	Natural Resource Technology, an OBG Company
PMP	potential migration pathway
PRB	Permeable Reactive Barrier
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SI	surface impoundment
Site	Coffeen Power Plant
TDS	total dissolved solids
UA	uppermost aquifer

UCU	upper confining unit
USEPA	United States Environmental Protection Agency
ZVI	zero-valent iron

1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) has developed this assessment of groundwater corrective measures on behalf of Illinois Power Generating Company (IPGC) to assist in the compliance with the requirements of Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845 Standards for the Disposal of Coal Combustion Residuals in Surface Impoundments. This assessment applies specifically to the coal combustion residuals (CCR) unit referred to as the Gypsum Management Facility (GMF) Recycle Pond (GMF RP) at the Coffeen Power Plant (CPP), also referred to as CCR unit identification (ID) number (No.) 104, Illinois Environmental Protection Agency (IEPA) ID No. W1350150004-04, and National Inventory of Dams (NID) No. IL50578. This report addresses content requirements specific to 35 I.A.C. § 845.660 (Assessment of Corrective Measures) for exceedances of sulfate, total dissolved solids (TDS), and arsenic at the GMF RP.

1.1 Source Control and Residual Plume Management

IPGC intends to initiate significant source control and residual plume management efforts as part of the GMF RP closure, as documented in the Construction Permit Application that was submitted to IEPA in July of 2022 (IPGC, 2022). The GMF RP will be closed by removal.

The source control will include removal of ponded water, followed by dewatering the CCR and excavating approximately 51,000 cubic yards of CCR and disposing in the on-site CCR landfill. The geomembrane liner system will be removed and disposed. Up to 1 foot of subsoil beneath the geomembrane may also be removed and disposed of in the on-site CCR landfill if CCR is visually observed during liner removal. To prevent impoundment of water in the GMF RP footprint after CCR removal, existing earthen embankments will be removed on the eastern side of the GMF RP and a channel will be excavated to allow stormwater to flow into the existing drainage to the east. The final ground surface will be sloped to drain towards the new channel to allow post-closure, non-contact stormwater to gravity flow into the existing drainage. The proposed source control is predicted to allow the groundwater protection standards (GWPS) to be achieved within approximately 5 years after the completion of closure (Ramboll, 2022). These source control activities will serve as the primary groundwater corrective measure at the GMF RP. The potentially feasible corrective measures presented herein are intended to be supplementary to the primary source control and are intended to serve as management measures to address any residual plumes that remain after completion of source control.

Attachment A includes summary figures from the Construction Permit Application that show the proposed final source control and primary corrective action.

1.2 Adaptive Site Management

Adaptive site management strategies will be employed as an integral part of ongoing corrective action at the GMF RP. The adaptive site management approach will allow timely incorporation of new site information over the closure and post-closure life cycle of the GMF RP to ensure the achievement of the GWPS. The adaptive site management approach is proposed to expedite progress toward meeting the GWPS while acknowledging uncertainties, such as the persistence of current groundwater flow directions and flux quantities and potential related changes in geochemical conditions. A structured decision-making process and explicitly planned iterations between the implemented corrective measures and monitoring results will ensure that

remediation is occurring. System performance and the condition of the residual plume will be monitored as the corrective measure(s) selected through the 35 I.A.C. § 845.710 Corrective Action Plan (CAP) process are implemented to supplement the source control measures described above. If the groundwater concentrations do not decrease consistent with the modeling prediction, the adaptive site management approach will facilitate timely modifications or enhancements to the corrective measure(s), as needed in accordance with 35 I.A.C. § 845.680(b). This approach will be employed in response to new site information and/or the performance of the selected corrective measure(s).

The planned adaptive site management strategies are generally consistent with National Research Council, Interstate Technology & Regulatory Council (ITRC) and United States Environmental Protection Agency (USEPA) methodologies developed to address sites with long remediation times and high levels of uncertainty regarding the remedial actions necessary to achieve final and protective remediation goals (USEPA, 2022). The elements of the proposed adaptive site management strategy at the GMF RP will be responsive to the changing conditions associated with pond closure and performance of the selected corrective measure(s) and will include the following:

1. Implementing the groundwater corrective measure(s) selected as part of the CAP for the current conditions at the GMF RP. The selected corrective measures may include a combination of the technologies presented in this Corrective Measures Assessment (CMA).

2. Establishing both the absolute remedial objective and functional (interim) goals to monitor progress toward the remedial objective. Achieving the GWPS for 35 I.A.C. § 845.600 constituents at the downgradient waste boundary is the remedial objective for the GMF RP. Specific functional goals will be developed as part of the CAP process. The functional goals will be measurable thresholds for future action and may include short-term or technology-specific objectives and triggers. Functional goals may vary for different locations, CCR constituents or other site-specific considerations (ITRC, 2017) and will serve as benchmarks for comparison to ongoing groundwater monitoring at the GMF RP.

3. Ongoing groundwater monitoring at the GMF RP will continue throughout the implementation of source control and residual plume management activities. Post-closure monitoring will continue for a period of at least 30 years, in accordance I.A.C. § 845.780(c). A comprehensive groundwater monitoring plan (GMP) will be developed as part of the CAP process in accordance with 35 I.A.C. § 845.670 and 35 I.A.C. § 845.220(c)(4). The GMP will include the functional goals and proposed action levels.

4. Groundwater monitoring information will be used to guide decisions regarding whether progress toward the remedial goal is advancing as expected and/or whether additional actions may be needed to achieve the remedial objective, in conjunction with IEPA, as required by 35 I.A.C. § 845.680(b).

2. SITE INFORMATION

The CPP is located in Montgomery County, in central Illinois, approximately two miles south of the city of Coffeen and about eight miles southeast of the city of Hillsboro, Illinois. The GMF RP is located between two lobes of Coffeen Lake (the western lobe is identified as "Coffeen Lake" and the upper reaches of the eastern lobe are fed by a stream labeled as "Unnamed Tributary" on **Figures 2-1 and 2-2**), to the west, east, and south, and is bordered by agricultural land to the north. **Figure 2-2** is a site map showing the location of Ash Pond No. 1 (AP1), Ash Pond No. 2 (AP2), the GMF Gypsum Stack Pond (GMF GSP), the GMF RP (35 I.A.C. § 845 regulated CCR Unit and subject of this CMA), and the Landfill. The GMF RP area will hereinafter be referred to as the Site.

The 17-acre GMF RP received blowdown from the air emission scrubbers and was put into operation in 2010. Construction of the GMF RP was in accordance with Water Pollution Control Permit 2008-EA-4661 and features a composite 60-mil high-density polyethylene (HDPE) liner with 3 feet of recompacted soil with a hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s), with internal piping and drains to collect contact water. Construction of the unit required installation of a groundwater underdrain system to reduced inward pressure on the liner prior to placement of CCR. The GMF RP underdrain is a passive, gravity drained system. IPGC ceased receipt of waste to the GMF RP prior to April 11, 2021.

2.1 Conceptual Site Model

Significant site investigation has been completed at the CPP to characterize the geology, hydrogeology, and groundwater quality. Based on extensive investigation and monitoring, the GMF RP has been well characterized and detailed in the Hydrogeologic Site Characterization Report (HCR; Ramboll, 2021), which was prepared to comply with the requirements specified in 35 I.A.C. § 845.620 and expands upon the Hydrogeologic Monitoring Plan (Natural Resource Technology/O'Brien & Gere Engineers, Inc. [NRT/OBG], 2017). The conceptual site model (CSM) is presented below.

In addition to the CCR present at the GMF RP, there are five principal layers of unlithified material present above the bedrock, which are categorized into hydrostratigraphic units below (from surface downward) based on stratigraphic relationships and common hydrogeologic characteristics.

- **Upper Confining Unit (UCU):** Composed of the Roxana and Peoria Silts (Loess Unit) and the upper clayey portion of the Hagarstown member which are classified as silts to clayey silts and gravelly clay below the surficial soil. Construction of the GMF RP required the excavation and removal of this layer within the unit footprint and the UCU has been eroded east of the GMF RP, near the Unnamed Tributary.
- **Uppermost Aquifer:** The uppermost aquifer (UA) is the Hagarstown Member which is classified as primarily sandy to gravelly silts and clays with thin beds of sands. Similar to the Loess Unit and upper Hagarstown, the lower Hagarstown Member was excavated to facilitate construction of the GMF RP and the lower Hagarstown is also absent in some locations near the Unnamed Tributary. Hydraulic conductivities near the GMF RP ranged from 7.8×10^{-4} to 1.7×10^{-3} cm/s (geometric mean of 1.2×10^{-3} cm/s).

- **Lower Confining Unit (LCU):** Comprised of the Vandalia Member, Mulberry Grove Member, and Smithboro Member. These units include a sandy to silty till with thin, discontinuous sand lenses, a discontinuous and limited extent sandy silt which has infilled prior erosional features, and silty to clayey diamicton, respectively. The Vandalia Member typically ranged in thickness from 11.7 feet in the northern portion of the CPP, to 31.0 feet between the GMF GSP and the GMF RP; the Mulberry Grove Member is represented by pockets (generally less than 2 feet thick); and the Smithboro Member ranges in thickness from 6.7 to 21.2 feet northwest of the landfill. This LCU has been identified as a potential migration pathway (PMP) because downward vertical gradients indicate that there is the potential for impacts to migrate within this unit. Hydraulic conductivities in the vicinity of the GMF RP ranged from 2.7×10^{-4} to 4.5×10^{-3} cm/s (geometric mean of 1.2×10^{-3} cm/s). The elevated hydraulic conductivity values are likely not representative of the primary LCU lithology, but instead reflect the isolated and discontinuous sandy lenses in which the wells are screened.
- **Deep Aquifer (DA):** Sand and sandy silt/clay units of the Yarmouth Soil, which include accretionary deposits of fine sediment and organic materials, typically less than five feet thick and discontinuous across the CPP. Where present, the DA has been identified as a PMP due to presence of downward gradients in the overlying LCU and the relatively greater hydraulic conductivities measured in the DA. Field hydraulic conductivity testing was not performed on DA monitoring well G275D, located near the GMF GSP, however, historical hydraulic conductivity in the ranged from 1.3×10^{-4} to 1.7×10^{-3} cm/s (geometric mean of 4.4×10^{-4} cm/s).
- **Deep Confining Unit (DCU):** Comprised of the Banner Formation, generally consists of clays, silts, and sands. The Lierle Clay Member is the upper layer of the Banner Formation which was encountered at the CPP. No monitoring wells are screened only within the DCU, and no field hydraulic conductivity tests were conducted for the DCU.

Groundwater elevations at CPP, including within the UA, are primarily controlled by surface topography, geologic unit topography, and water levels within Coffeen Lake and the Unnamed Tributary. Groundwater flows east to southeast across the GMF RP toward the Unnamed Tributary. Based on the elevations of the tributary and groundwater elevations measured east of the tributary, the tributary is a hydraulic barrier and prevents groundwater migration east of the Unnamed Tributary. Although elevations vary seasonally, the groundwater flow direction in the UA is consistent and likely controlled by the proximity and hydraulic connection to Coffeen Lake (**Figure 2-3**). Phreatic surfaces or water elevations within the SIs are generally consistent and have not been observed to fluctuate with groundwater elevations indicating limited hydraulic connection with the SIs. Groundwater elevations and contours for the quarter 2 groundwater monitoring event (Event 1 [E001]) are presented in **Figure 2-3**.

2.2 Groundwater Quality

Groundwater monitoring in accordance with the proposed GMP and sampling methodologies provided in the construction permit application for the GMF RP began in the second quarter of 2023. The 35 I.A.C § 845 groundwater monitoring system is displayed on **Figure 2-4** and consists of nine wells screened in the UA (two background and seven compliance), two compliance wells screened in the LCU, one compliance well screened in the DA, one temporary water level only well, and one temporary water level only surface water staff gage. The groundwater samples collected from the 12 wells are used to monitor and evaluate groundwater quality and demonstrate compliance with the groundwater quality standards listed in 35 I.A.C. §

845.600(a). The proposed monitoring wells yield groundwater samples that represent the quality of downgradient groundwater at the CCR boundary (as required in 35 I.A.C. § 845.630(a)(2)).

The E001 groundwater monitoring event was completed on June 8, 2023. In accordance with 35 I.A.C. § 845.610(b)(3)(C), statistically derived values were compared with the GWPSs summarized in 35 I.A.C. § 845.600 to determine exceedances of the GWPS. The statistical determination identified the following GWPS exceedances at compliance groundwater monitoring wells (Ramboll, 2023):

- Sulfate in UA well G273 and LCU well G285
- TDS in LCU well G285

Subsequent compliance sampling events for Quarter 3 and Quarter 4 2023 (Event 2 [E002] and Event 3 [E003]) were completed in August and November 2023 and groundwater samples were evaluated for exceedances of the GWPS as described in 35 I.A.C. § 845.600 (Ramboll, 2024a; Ramboll, 2024b). The following additional exceedance was identified during the E003 monitoring event:

- TDS in UA well G279
- Arsenic DA well G275D

Pursuant to 35 I.A.C. § 845.650(e), an alternative source demonstration (ASD) was prepared and submitted to IEPA that presented evidence demonstrating that a source other than the GMF RP was the cause of the arsenic GWPS exceedances in DA well G275D (Geosyntec Consultants, Inc., 2024). No response has been received from IEPA at the time of this CMA submission, therefore the CMA will address the identified GWPS exceedances summarized above. The arsenic GWPS exceedance in the DA is addressed in this CMA; however, the time to attain GWPS will require further evaluation if the ASD is not approved by IEPA.

3. CORRECTIVE MEASURES ASSESSMENT METHODOLOGY

This section describes the CMA methodology initiated in response to the identification of exceedances of the GWPSs for 35 I.A.C. § 845.600 constituents at the downgradient waste boundary of the GMF RP during the E001 groundwater monitoring (Ramboll, 2023). The CMA was initiated on January 14, 2024, within 90 days after the detection of exceedance(s) of GWPS. Under 35 I.A.C. § 845, owners and operators of existing CCR surface impoundments (SI) must initiate the assessment of corrective measures in accordance with 35 I.A.C. § 845.660 if one or more constituents are detected, and confirmed by an immediate resample, to be in exceedance of a GWPS in 35 I.A.C. § 845.600, and the owner or operator has not demonstrated that: a source other than the CCR SI caused the exceedance, or; that the exceedance of the GWPS resulted from error in sampling, analysis, statistical evaluation, natural variation in groundwater quality or a change in the potentiometric surface and groundwater flow direction (an ASD).

The CMA is the first step in developing a long-term CAP to address the GWPS exceedances at CCR SIs. The process provides a systematic, rational method for evaluating potential corrective measures by first identifying potentially viable technologies and assessing them using qualitative information to eliminate from consideration infeasible or otherwise unacceptable remedial technologies (*i.e.,* the 35 I.A.C. § 845.660 CMA). The remaining technologies will be evaluated individually, or assembled into combined alternatives, and further evaluated under the CAP process per 35 I.A.C. § 845.670.

This CMA identified applicable corrective measure technologies and evaluated them for viability, given the site-specific conditions and considerations at the GMF RP, by addressing the following 35 I.A.C § 845.660 evaluation criteria:

- Performance, reliability, ease of implementation and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
- Time required to begin and complete the CAP; and
- Institutional requirements, such as State or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the CAP.

The evaluation included qualitative and/or semi-quantitative screening of the potential corrective measures (technologies) relative to their general performance, reliability, and ease of implementation characteristics and their potential impacts, timeframes, and institutional requirements to assess the viability of each technology to address the GWPS exceedances at the GMF RP. This approach provided a reasoned set of corrective measures that could be used, either individually or in combination, to supplement the primary source control measures described in **Section 1.1**. This set of corrective measures will be further evaluated in the Corrective Action Alternatives Assessment (CAAA).

4. DESCRIPTION OF POTENTIAL CORRECTIVE MEASURE TECHNOLOGIES

The potential groundwater corrective measures summarized below are applicable to the GMF RP and were included in the CMA development and analysis. Site-specific considerations provided in **Section 2** were used to evaluate potential groundwater corrective measures. Each of the corrective measures evaluated may be capable of satisfying the requirements and objectives, listed in **Section 3**, to varying degrees of effectiveness. The corrective measure review process was intended to yield a set of applicable corrective measures that could be used to supplement the primary corrective action, which will be the source control activities described in **Section 1.1** (source removal of CCR and disposal in the on-site CCR landfill). The source control is expected to reduce downgradient concentrations in the UA to less than the GWPS via naturally occurring physical and chemical processes in approximately 5 years. Ongoing monitoring will be an integral part of all corrective measures to verify and document the remedial process. The corrective measures ultimately advanced to the CAAA and selected in the CAP will be used to enhance the effectiveness of the source control and may be used independently or combined into specific remedial alternatives to leverage the advantages of multiple corrective measures to attain GWPSs.

Source control measures will be initiated for the GMF RP, as described in **Section 1.1**; all of the evaluated additional corrective measure technologies are proposed to be supplemental and complementary to source control activities. The following potential corrective measures, commonly used to mitigate groundwater impacts, were considered as a part of the CMA process:

- Source Control with Groundwater Polishing;
- Source Control with Groundwater Extraction (groundwater pumping wells or collection trenches);
- Source Control with a Cutoff Wall; and
- Source Control with In-Situ Chemical Treatment.

4.1 Source Control with Groundwater Polishing

Both federal and state regulators have long recognized that natural geochemical processes can be an acceptable component of a remedial action when it can achieve remedial action objectives in a reasonable timeframe. In 1999, USEPA published a final policy directive (USEPA, 1999) for groundwater remediation and described the process as follows:

> *"The reliance on natural attenuation processes (within the context of a carefully controlled and monitored site cleanup approach) to achieve site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods. The 'natural attenuation processes' that are at work in such a remediation approach include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in-situ processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants."*

The USEPA has stated that source control is the most effective means of ensuring the timely attainment of remediation objectives (USEPA, 1999). Natural geochemical processes may be appropriate as a "finishing step" after effective source control implementation (*i.e.*, groundwater polishing), to reduce the residual mass remaining in the groundwater after closure, if there are no risks to receptors and/or the contaminant plume is not expanding. Thus, groundwater polishing would be used in conjunction with the significant planned source control effort at the site, which will consist of a hybrid consolidate-and-cap approach with a final cover system described in **Section 1.1**.

In 2015, USEPA addressed remediation of inorganic compounds in groundwater and noted that the use of natural geochemical processes to address inorganic contaminants: (1) is not intended to constitute a treatment process for inorganic contaminants; (2) when appropriately implemented, can help to restore an aquifer to beneficial uses by immobilizing contaminants onto aquifer solids and providing the primary means for attenuation of contaminants in groundwater; and (3) is not intended to be a "do nothing" response (USEPA, 2015b). Rather, documenting the applicability of natural geochemical processes for groundwater remediation should be thoroughly and adequately supported with site-specific characterization data and analysis (USEPA, 1999; USEPA, 2007; USEPA, 2015b):

Both physical and chemical processes can contribute to the reduction of the small amount of residual mass remaining after closure of the GMF RP, and the toxicity, mobility, volume, or concentration of contaminants in groundwater. Physical processes applicable to CCR constituents in groundwater include dilution, dispersion, and flushing. Chemical processes applicable to CCR constituents in groundwater include precipitation and coprecipitation (*e.g.,* incorporation into sulfide minerals), sorption (*e.g.,* to iron, manganese, aluminum; to other metal oxides or oxyhydroxides; or to sulfide minerals or organic matter), and ion exchange (IX).

All inorganic compounds are subject to physical processes and under typical environmental conditions, physical mechanisms most often exert the dominant control on the CCR constituents of interest, such as sulfate and chloride, and lithium to a more variable degree. Chemical mechanisms are also likely to be active, though not often dominant, such as adsorption, IX, and organic complexation. In combination with source control, these natural controls can provide an effective means to polish residual loading and achieve the GWPS in a reasonable timeframe. Additional data collection and analysis may be required to support the USEPA's evaluation framework (USEPA, 2015b) and obtain regulatory approval.

4.2 Source Control with Groundwater Extraction

Groundwater extraction is one of the most widely used groundwater corrective technologies and has a long history of performance. This corrective measure includes installation of one or more groundwater pumping wells or trenches to control and extract impacted groundwater. Groundwater extraction captures and contains impacted groundwater and can limit plume expansion and/or off-site migration. Construction of a groundwater extraction system typically includes, but is not limited to, the following primary components:

- Designing and constructing a groundwater extraction system consisting of one or more extraction wells and operating at a rate to allow capture of CCR impacted groundwater within the UA.

- Management of extracted groundwater, which may include modification to the existing NPDES permit.
- Ongoing inspection and maintenance of the groundwater extraction system.

Remediation of inorganics by groundwater extraction can be effective, but systems do not always perform as expected. A combination of factors, including geologic heterogeneities, difficulty in flushing low-permeability zones, and rates of contaminant desorption from aquifer solids can limit effectiveness. Groundwater extraction systems require ongoing operation and maintenance to address issues such as iron bacteria and well fouling and to ensure optimal performance. The extracted groundwater must be managed, either by ex-situ treatment or disposal.

4.3 Source Control with a Cutoff Wall

Since the late 1970s and early 1980s, vertical cutoff walls have been used to control and/or isolate impacted groundwater. Low-permeability cutoff walls can be used to prevent horizontal off-site migration of potentially impacted groundwater. Cutoff walls act as barriers to lateral transport of impacted groundwater and can isolate soils that have been impacted by CCR to prevent contact with unimpacted groundwater. Cutoff walls are often used in conjunction with an interior pumping system to establish an inward gradient within the cutoff wall. The gradient imparted by the pumping system maintains an inward flow through the wall, keeping it from acting as a groundwater dam and controlling potential end-around or breakout flow of contaminated groundwater. Constructing the cutoff wall such that it intersects a low-permeability material at its base, referred to as "keying", greatly increases its effectiveness.

A commonly used cutoff wall construction technology is the slurry trench method, which consists of excavating a trench and backfilling it with a soil-bentonite mixture, often created with the excavated soils, or, for deeper walls, a cement-bentonite mixture that is produced at an onsite batch plant. The trench is temporarily supported with bentonite slurry pumped into the trench during excavation (D'Appolonia & Ryan, 1979). Cutoff wall excavation uses conventional hydraulic excavators, hydraulic excavators equipped with specialized booms to extend their reach (*i.e.,* long-stick excavators), clamshells, or more specialized equipment such as hydromills or secant-pile drill rigs, depending upon trench depth, material excavated, and type of material that the wall is keyed into.

Cutoff walls are a widely accepted technology for containing impacted groundwater. Combining groundwater polishing with a limited cutoff wall and groundwater extraction in specific areas may provide advantages over independent use of these potential corrective technologies. Cutoff walls can be used in combination with groundwater extraction or as part of a PRB system (as the "funnel" in a funnel-and-gate system; **Section 4.4**).

4.4 Source Control with In-Situ Chemical Treatment

The use of in-situ treatment, either by injection or PRBs is a widely used technology for treating impacted groundwater. However, in-situ treatment techniques for sulfate (and TDS) are not well established, therefore performance is unknown.

Chemical treatment could consist of injection of reactive materials into the subsurface to treat contaminants at specific, targeted locations. Alternately, treatment could be accomplished via PRB, where reactive materials are placed in the subsurface at locations designed to direct the contaminant plume along a flow path through the reactive media. In either system, the

contaminants are transformed or otherwise rendered into environmentally acceptable forms to attain remediation concentration goals downgradient of the barrier (Electric Power Research Institute [EPRI], 2006).

As groundwater passes through the PRB under natural gradients, dissolved constituents in the groundwater react with the media and are transformed or immobilized. A variety of media have been used or proposed for use in PRBs. Zero-valent iron (ZVI) has been shown to effectively immobilize some CCR constituents, including arsenic, chromium, cobalt, molybdenum, selenium, and sulfate. Use of a combination media consisting of ZVI and a boron-selective IX resin to treat boron has been documented in a pilot-scale test (EPRI, 2006).

System configurations include continuous PRBs, in which the reactive media extends across the entire path of the contaminant plume; and funnel-and-gate systems, where low-permeability barriers are installed to control groundwater flow through a permeable gate containing the reactive media. Continuous PRBs intersect the entire contaminant plume and do not materially impact the groundwater flow system. Design may or may not include keying the PRB into a low-permeability unit at depth. Funnel-and-gate systems utilize a system of barriers to groundwater flow (funnels) to direct the contaminant plume through the reactive gate. The barriers, typically some form of cutoff wall, are keyed into a low-permeability unit at depth to prevent short circuiting of the plume. Funnel-and-gate design must consider the residence time to allow chemical reactions to occur. Directing the contaminant plume through the reactive gate can significantly increase the flow velocity, thus reducing residence time.

Design of in-situ treatment systems requires rigorous site investigation to characterize the site hydrogeology and to delineate the contaminant plume. A thorough understanding of the geochemical and redox characteristics of the plume is critical to assess the feasibility of the process and select appropriate reactive media. Laboratory studies, including batch studies and column studies using samples of site groundwater, are needed to determine the effectiveness of the selected reactive media at the site (EPRI, 2006). The main considerations in selecting reactive media are as follows (Gavaskar et al., 1998; cited by EPRI, 2006):

- Reactivity – The media should be of adequate reactivity to immobilize a contaminant within the residence time of the design.
- Hydraulic performance – The media should provide adequate flow through the PRB, meaning a greater particle size than the surrounding aquifer materials. Alternatively, gravel beds have been placed in front of barriers to direct flow through the barrier.
- Stability – The media should remain reactive for an amount of time that makes its use economically advantageous over other technologies.
- Environmentally compatible by-products – Any by-products of media reaction should be environmentally acceptable. For example, iron released by ZVI corrosion should not occur at levels exceeding regulatory acceptance levels.
- Availability and price – The media should be easy to obtain in large quantities at a price that does not negate the economic feasibility of using a PRB.

5. ASSESSMENT OF CORRECTIVE MEASURE TECHNOLOGIES

This CMA was initiated to address exceedances of the 35 I.A.C. § 845.600 GWPS for sulfate, TDS, and arsenic at the downgradient waste boundary of the GMF RP identified during the E001 groundwater monitoring event (**Section 2.2**).

5.1 Requirements

The potential groundwater corrective technologies described in the previous section were evaluated relative to the requirements presented in **Section 3** and reiterated below:

- Performance, reliability, ease of implementation and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination:
- Time required to begin and complete the CAP; and
- Institutional requirements, such as State or local permit requirement or other environmental or public health requirements that may substantially affect implementation of the CAP.

Table 5-1 presents the qualitative CMA evaluation of each corrective technology relative to these requirements, as well as their ability to address the sulfate, TDS, and arsenic GWPS exceedances. The following sections provide a summary of these evaluations and a discussion of the potential groundwater corrective measure technologies that may be viable, either independently or in combination, to address GWPS exceedances. This section also provides a summary of corrective measure technologies that have been retained and advanced for evaluation as part of the 35 I.A.C. § 845.670 CAAA process for selecting the final remedy for the GMF RP.

5.2 Groundwater Corrective Technology Assessment

Source control, consisting of closure-by-removal, will be the primary groundwater corrective measure for the GMF RP. Closure is expected to be completed by November 2026 and each of the potential groundwater corrective measure technologies would supplement the positive impact of the closure activities. The following sections evaluate groundwater corrective measure technologies that, when combined with site closure, may be viable to address the sulfate, TDS, and arsenic GWPS exceedances. Technologies that are not viable for addressing the GWPS exceedances at the GMF RP will be eliminated from further evaluation and viable technologies will be advanced for further evaluation as part of the 35 I.A.C. § 845.600 CAAA process.

5.2.1 Source Control with Groundwater Polishing

Source control corrective measures (**Section 1.1**) will eliminate the mass loading to the groundwater system and the groundwater polishing process could decrease the timeframe for attainment of GWPS in the UA, as discussed below.

Groundwater polishing by natural geochemical processes is a widely accepted component of groundwater remediation and is routinely approved by the IEPA when paired with source control. The performance of groundwater polishing as a groundwater corrective measure varies based on site-specific conditions and additional data collection may be needed to support the design and

regulatory approval. Site conditions are favorable for physical degradation; the geochemical processes require further evaluation.

Naturally occurring geochemical processes are ongoing at the GMF RP and will continue to affect groundwater constituent concentrations during and after GMF RP closure. Ongoing monitoring of groundwater conditions is needed to better understand the mechanisms and efficacy of the groundwater polishing process and to confirm the effectiveness over time. Thus, additional groundwater sample collection and analyses would be required to characterize potential mechanisms, as discussed above, and to provide long term monitoring of the remedial progress. The reliability of groundwater polishing as a groundwater corrective measure is high because operation and maintenance requirements are limited. However, the reliability can also vary based on site-specific hydrogeologic and geochemical conditions.

Following characterization and approval of the CAP, monitoring of the groundwater polishing processes and comparison to functional goals established to monitor progress toward the remedial objective could begin prior to, or concurrently with, site closure activities.

No potential safety impacts or exposure to human health or environmental receptors are expected to result from the groundwater polishing processes. Timeframes to achieve GWPS are dependent on site-specific conditions but are expected to be relatively short based on the groundwater modeling. Selecting groundwater polishing as a corrective measure for the GMF RP will require approval of the closure and CAP permits by the IEPA.

Monitoring the groundwater polishing to track progress toward achievement of the GWPS, in conjunction with source control at the GMF RP, would require maintenance and monitoring of the groundwater monitoring system to confirm source control and verify the effectiveness in reducing groundwater concentrations to levels below the GWPS. System design could begin immediately after approval of the CAP permit. Additional investigations to characterize site conditions and installation of the final monitoring system could be performed concurrently with the source control (unit closure) activities, which are currently expected to be completed in 2026.

Groundwater polishing processes will continue before and after source control implementation and may be a viable corrective measure for the sulfate, TDS and arsenic exceedances at the GMF RP. Therefore, these processes are being advanced to the CAAA for further evaluation.

5.2.2 Source Control with Groundwater Extraction

Source control will eliminate the mass loading to the groundwater system and implementing a groundwater extraction system may reduce the time required to attain the GWPS. However, attainment of the GWPS may be similar to the approximately 5 years predicted by the groundwater modeling.

Groundwater extraction is a widely accepted corrective measure with a long track record of performance and reliability. It is routinely approved by the IEPA. For a corrective measure using groundwater extraction to effectively control off-site flow and/or to remove potentially contaminated groundwater, horizontal and vertical capture zone(s) must be created. However, the heterogeneous, varied natures of the UA, LCU and DA may result in variable performance of pumping wells.

Extracted groundwater would require management, possibly including treatment, which may require specialized equipment and/or contractors. There could be some impacts associated with constructing and operating a groundwater extraction system, including altering of the groundwater flow system and some limited exposure to extracted groundwater.

Additional data collection and analyses would be required to design an extraction system. Time of implementation is approximately 3 to 4 years after approval of the CAP permit, including characterization, design, permitting, and construction. Timeframes to achieve GWPS are dependent on site-specific conditions. An extraction system may not reduce the time to attain GWPS in the UA or LCU, relative to the post-closure timeframe predicted by the groundwater model for groundwater polishing, due to the low permeability UCU and the implementation timeframe for groundwater extraction. Time to attain GWPS for arsenic in the DA would require further evaluation if the ASD is not accepted by IEPA. Implementing a groundwater extraction system at the GMF RP would require IEPA approval of the CAP permit, and extracted groundwater could likely be discharged under the existing NPDES permit.

Groundwater extraction could be a viable corrective measure for the sulfate, TDS, and arsenic exceedances at the GMF RP. Implementation of groundwater extraction may require combining an extraction system with a cutoff wall to provide directional control of groundwater flow. Therefore, groundwater extraction is being advanced to the CAAA for further evaluation.

5.2.3 Source Control with Groundwater Cutoff Wall

Source control will reduce the mass loading to the groundwater system and implementing groundwater corrective measures may reduce the time required to attain the GWPS. A cutoff wall could be used in combination with a groundwater extraction system in the UA to reduce the water management and treatment requirements for an extraction system.

Groundwater cutoff walls are a widely accepted corrective measure used to control and/or isolate impacted groundwater and are routinely approved by the IEPA. Cutoff walls have a long history of reliable performance as hydraulic barriers, provided they are properly designed and constructed. However, if not coupled with a groundwater extraction system, a cutoff wall will provide directional groundwater control only and may result in redistribution of contaminants and potentially GWPS exceedances at new locations.

Cutoff walls are designed to act as hydraulic barriers; as a result, cutoff walls inherently alter the existing groundwater flow system. Changes to the existing groundwater flow system may need to be controlled to maximize the effectiveness of the remedy by, for example, combining a cutoff wall with groundwater extraction to control build-up of hydraulic head upgradient and around the cutoff walls. The effectiveness of a cutoff wall as a hydraulic barrier also relies on the contrast between the hydraulic conductivity of the aquifer and the cutoff wall. The most effective barriers have hydraulic conductivity values that are several orders of magnitude lower than the geologic materials they are in contact with. The variable natures and low permeability of the LCU and DA would limit the performance of a cutoff wall, which would typically be designed with hydraulic conductivity of 1×10^{-7} cm/s.

Constructing a cutoff wall could alter the flow system, redirecting contaminants to areas where they are not currently present. Specialized construction contractor(s) may be required, depending upon the construction method, which could delay implementation.

Additional data collection and analyses would be required to design a cutoff wall. Construction could be completed within 1 to 2 years. Time of implementation is approximately 4 to 5 years, including characterization, design, permitting and construction. Construction could possibly be accelerated by combining with site closure activities. To attain GWPS, cutoff walls require a separate groundwater corrective measure to operate in concert with the cutoff wall(s). Cutoff walls are commonly coupled with groundwater polishing and/or groundwater extraction as groundwater corrective measures. The time to attain GWPS is dependent on the selected groundwater corrective measure or measures that are coupled with the cutoff walls. Time to attain GWPS for arsenic in the DA would require further evaluation if the ASD is not accepted by IEPA.

A cutoff wall at the GMF RP would require IEPA approval of the CAP permit. Construction of a cutoff wall may also require an evaluation and/or permits related to wetlands if they are determined to be present in the area of the proposed remedy.

A cutoff wall alone would not be a viable corrective measure for the sulfate, TDS, and arsenic exceedances at the GMF RP. Site conditions, including the relatively shallow and thin UA, do not suggest that a cutoff wall would provide a significant benefit to an extraction system or enhance the time required to meet GWPS. Therefore, the cutoff wall is not being advanced to the CAAA for further evaluation.

5.2.4 Source Control with In-Situ Chemical Treatment

Source control will reduce the mass loading to the groundwater system and implementing additional groundwater corrective measures may reduce the time required to attain the GWPS in the UA. Use of in-situ treatment, either through targeted injection of reactive media or in PRB systems, to transform contaminants into environmentally acceptable forms to attain the GWPS was considered.

In-situ treatment using ion exchange (IX) to address sulfate (and TDS) exceedances in groundwater is not an established or widely accepted groundwater corrective measure; therefore, its performance and reliability are unknown. Regulatory acceptance of this innovative approach to achieving the GWPS is uncertain.

In-situ treatment presents design and construction challenges due to the heterogeneous, discontinuous nature of the UA, LCU and DA. Depending upon the location of the PRB system, construction may affect existing berms at the GMF RP and periodic change-outs of IX resin media may be required.

No potential safety impacts or exposure to human health or environmental receptors are expected to result from a PRB.

Additional data collection and analyses would be required to design an in-situ treatment system and bench scale and/or pilot scale testing may be required to demonstrate performance and reliability. Time of implementation is approximately 4 to 6 years after approval of the CAP permit, including characterization, design, permitting, and construction. Timeframes to achieve GWPS are dependent on demonstrations of performance and reliability and on ultimate regulatory acceptance. It is not known whether in-situ treatment would reduce the time to attain GWPS in the UA relative to the post-closure timeframe predicted by the groundwater modeling.

Due to the uncertain performance, reliability and potential for regulatory acceptance, in-situ chemical treatment is not a viable corrective measure for the sulfate, TDS, and arsenic exceedances at the GMF RP and is not being advanced to the CAAA for further evaluation.

5.3 Technologies Advanced to CAAA

Based on the evaluations presented above, the following potential corrective technologies are being advanced to the CAAA, individually or in combination, for more detailed evaluations:

- Source control with groundwater polishing; and
- Source control and with groundwater extraction.

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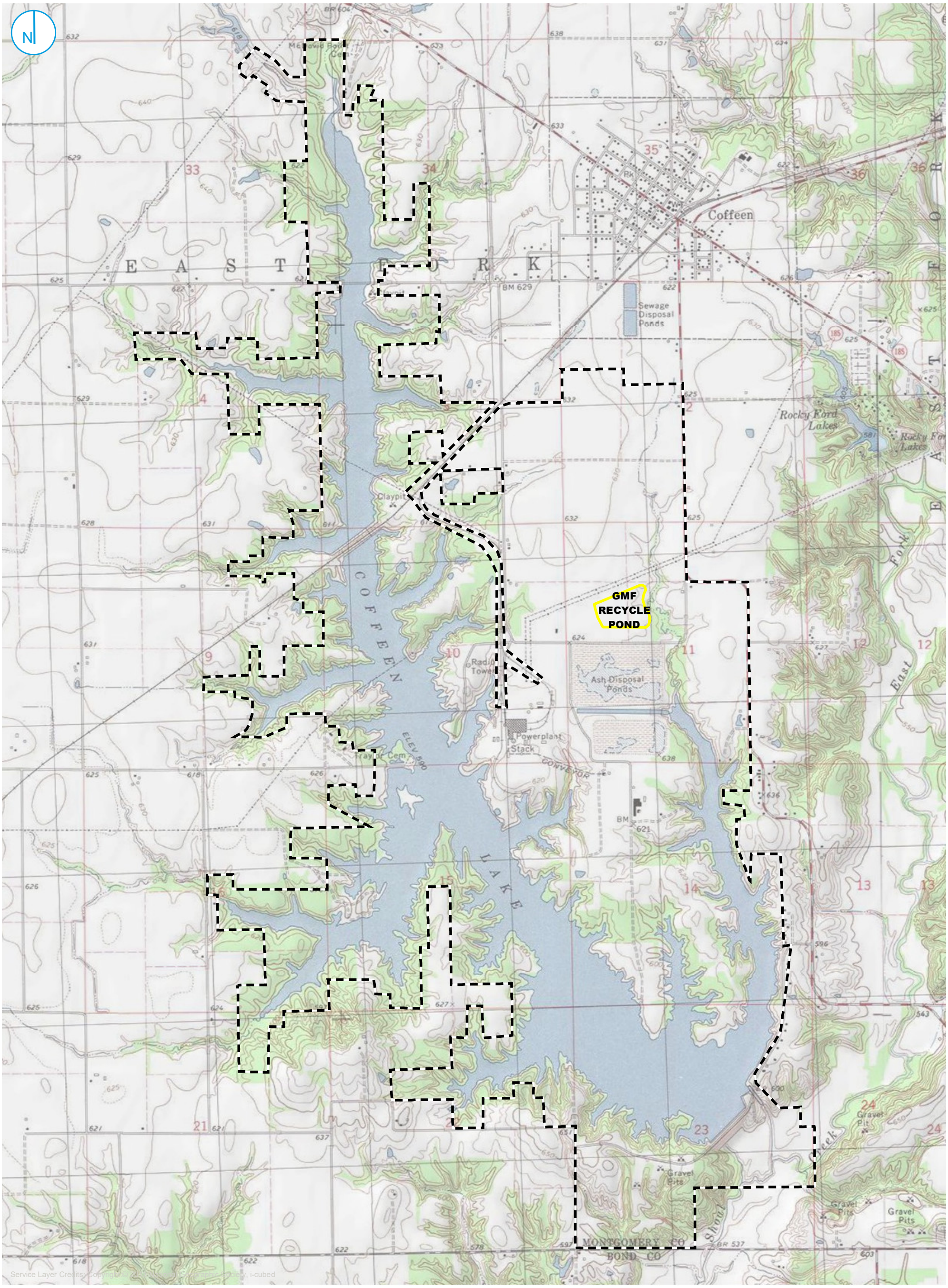
TABLES

TABLE 5-1. DRAFT CORRECTIVE MEASURE ASSESSMENT MATRIX
GMF RECYCLE POND
COFEEN POWER PLANT
COFFEEN, ILLINOIS

Remedy	Evaluation Factors						
	Performance	**Reliability**	**Ease of Implementation**	**Potential Impacts of Remedy (safety impacts, cross-media impacts, control of exposure to any residual contamination)**	**Time Required to Begin and Implement Remedy[1]**	**Time to Attain Groundwater Protection Standards**	**Institutional Requirements (state/local permit requirements, environmental/public health requirements that affect implementation of remedy)**
Source Control with Groundwater Polishing	Performs best paired with source control (closure-by-removal), which is expected to be completed prior to 2026. Site conditions are favorable for physical degradation of sulfate (and TDS) and arsenic, while geochemical degradation may be limited under normal aquifer conditions.	Ongoing analysis will evaluate whether geochemical mechanisms have low reversibility, the aquifer has sufficient capacity, and the hydrogeology is favorable for sulfate (and TDS) and arsenic dilution/dispersion.	Long-term monitoring would be required. Implementing would not require extensive specialized equipment or contractors	None identified.	Approximately 90 days after CAP permit approval.	Less than the 5 years post-closure predicted by the groundwater model.	IEPA approval of the closure and CAP permits is required.
Source Control with Groundwater Extraction	Widely accepted, routinely approved technology; variable performance anticipated due to the heterogeneous, varied nature of uppermost aquifer.	Reliable if properly designed, constructed and maintained. However, the heterogeneous, varied nature of uppermost aquifer may present reliability challenges for pumping wells.	Design challenges due to heterogenous, varied nature of uppermost aquifer. Specialized contractors may be needed for construction of the groundwater extraction system. The extraction system would require ongoing routine operation and maintenance activities and extracted groundwater would require management, possibly including treatment, which may also require specialized equipment/contractors and higher maintenance costs.	Alters groundwater flow system and there is the some limited potential for contact exposure to extracted groundwater.	Design, permitting and construction is expected to take 3 to 4 years after CAP permit approval.	Dependent on site-specific conditions not yet fully characterized. May be similar to the 5 years predicted by the groundwater model due to the low permeability Upper Confining Unit.	IEPA approval of the closure and CAP permits is required. Extracted groundwater could likely be discharged under the NPDES permit.
Source Control with Groundwater Cutoff Wall	Widely accepted and routinely approved technology with good performance if properly designed and constructed. If not combined with groundwater extraction, a cutoff wall will provide directional control only, thus redirecting flow to other areas where GWPS may be exceeded.	Reliable for groundwater directional control if properly designed and constructed.	Widely used, established technology. May require specialized contractors depending upon the construction/implementation method.	Alters groundwater flow system but does not provide any treatment. Can result in unintended consequences resulting from redirecting contaminants to areas where they are not currently present.	Design, permitting and construction is expected to take 4 to 5 years after CAP approval. Implementation could be accelerated by combining with closure construction activities.	Provides groundwater directional control only. Combination with other groundwater corrective measure(s), such as groundwater extraction or permeable reactive barrier, may not significantly improve attainment of the GWPS due to the low permeability Upper Confining Unit.	IEPA approval of the closure and CAP permits is required.
Source Control with In-Situ Chemical Treatment	In-situ treatment using IX resins not well established for sulfate, TDS or arsenic, therefore performance is unknown.	Unknown reliability for sulfate, TDS or arsenic.	Design challenges related to reactive material delivery and due to heterogenous, discontinuous nature of uppermost aquifer. Could require periodic change-outs of resin media.	None identified.	May require bench scale and/or pilot scale testing as part of design. Design, permitting and construction is expected to take 4 to 6 years after CAP approval.	There is uncertainty regarding whether a in-situ treatment would reduce sulfate, arsenic and TDS concentrations to achieve the GWPS. Dependent on conditions specific to the reactive media used and the site. Treatment technology is not well understood.	IEPA approval of the CAP permit is required. IEPA approval of this innovative and relatively unproved solution may be challenging.

Notes:
[1] Time required to begin and implement remedy includes design, permitting, and construction.
CAP - Corrective Action Plan
GWPS - Groundwater Protection Standard
IEPA - Illinois Environmental Protection Agency
IX - Ion Exchange
NPDES - National Pollutant Discharge Elimination System
TDS - Total Dissolved Solids

FIGURES



REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY

0 1,000 2,000 Feet

SITE LOCATION MAP

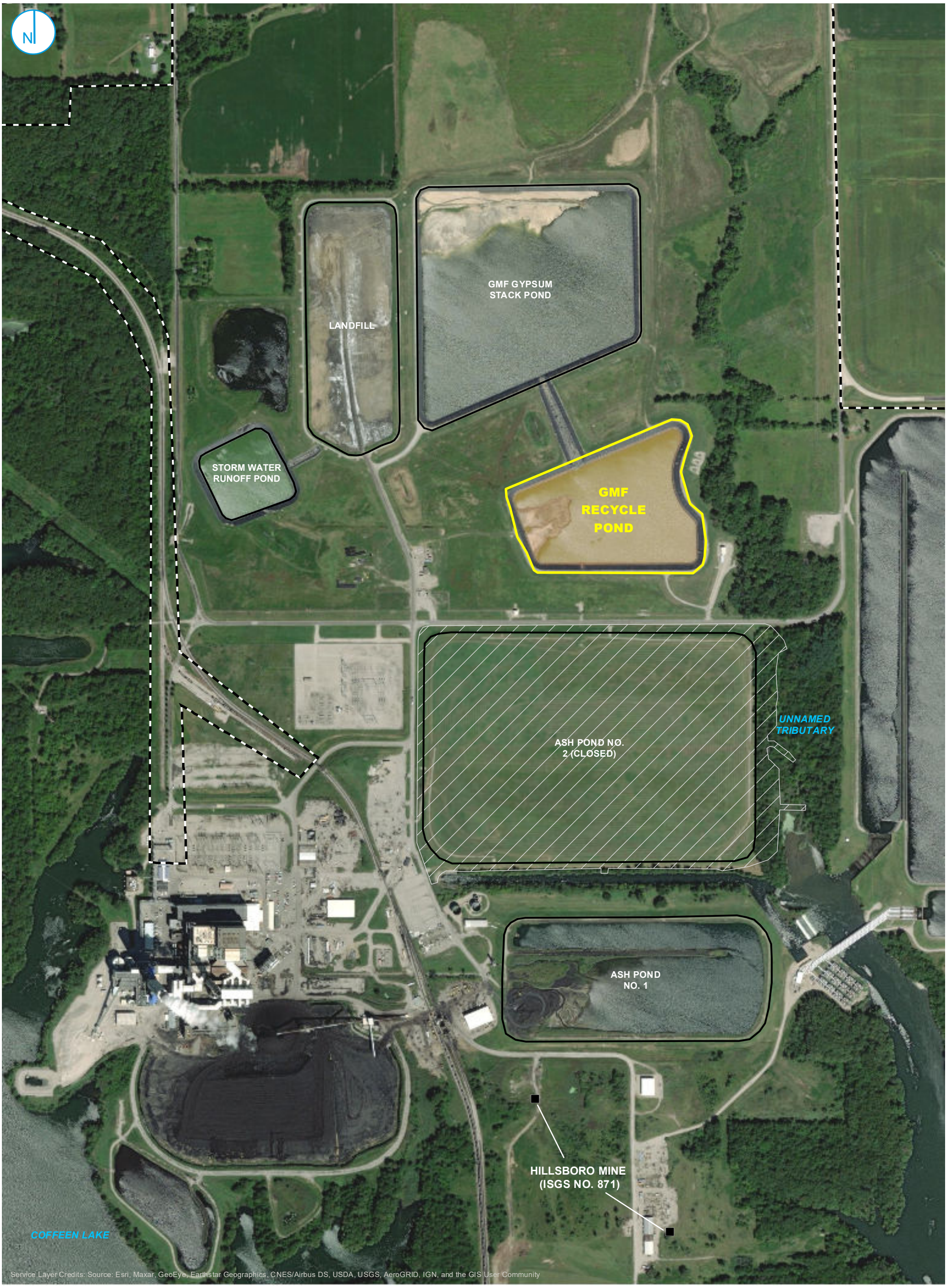
35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

PROJECT: 169000XXXX | DATED: 10/15/2021 | DESIGNER: HOTCALD

Y:\Mapping\Projects\22\2285\MXD\845_Operating_Permit\Coffeen\GMF_RP\GMP\Figure 1-2_Site Map RP.mxd



- COAL MINE SHAFT
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

0 275 550 Feet

SITE MAP

35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- SOURCE SAMPLE LOCATION
- LEACHATE WELL
- STAFF GAGE; RIVER
- STAFF GAGE, CCR UNIT

- GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- PROPERTY BOUNDARY

0 325 650 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP APRIL 30, 2023

35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT GMF RECYCLE POND

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

BACKGROUND WELL
COMPLIANCE WELL
SOURCE SAMPLE LOCATION
STAFF GAGE

REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 150 300 Feet

MONITORING WELL LOCATION MAP

35 I.A.C. § 845 CORRECTIVE MEASURES ASSESSMENT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-4

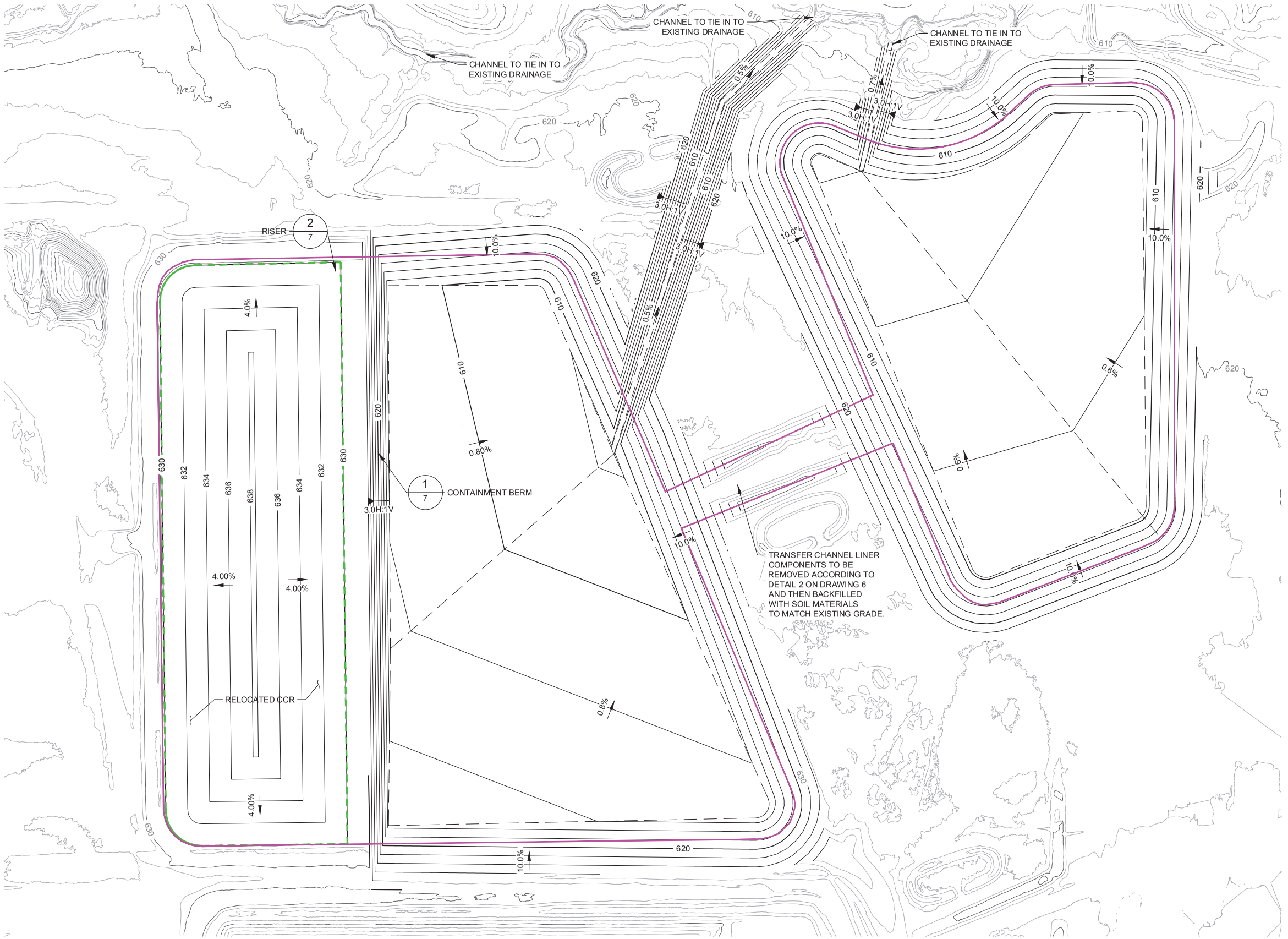
RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\2285\MXD\845_Operating_Permit\Coffeen\GMF_RP\GMP\Figure 2-1_Proposed Monitoring Well Network.mxd
PROJECT: 1690000XXXX | DATED: 10/15/2021 | DESIGNER: STOLZSD

ATTACHMENTS

ATTACHMENT A
Selected Construction Permit Application Plans



LEGEND

- 600 — GMF CLOSURE IN PLACE GRADES (SEE NOTES 1, 2, AND 3)
- 600 — EXISTING GROUND CONTOURS (SEE NOTE 4)
- LIMIT OF RELOCATED CCR WASTE
- LIMITS OF LINER SYSTEM (SEE NOTE 5)

NOTE(S)

1. THE CLOSURE-IN-PLACE CONCEPT FOR THE GYPSUM MANAGEMENT FACILITY (GMF) GYPSUM STACK POND (GSP) INVOLVES REMOVAL OF PONDED WATER, CONSTRUCTION OF A STRUCTURAL BERM (WITH COMPOSITE LINER ON THE UPSTREAM SLOPE), REMOVAL AND RELOCATION OF GYPSUM AND 1 FT (MAX.) OF CLAY LINER SOUTH OF THE BERM TO WITHIN THE CONSOLIDATED FOOTPRINT, PLACEMENT OF SOIL COVER ON GSP FLOOR SOUTH OF THE BERM FOR DRAINAGE, REMOVAL OF PERIMETER EMBANKMENT SOUTH OF RELOCATED WASTE, AND FINAL COVER CONSTRUCTION. EXISTING LINER COMPONENTS TO BE REMOVED SOUTH OF THE BERM ARE SPECIFIED IN DETAIL 1 ON DRAWING 7.
2. THE GMF RECYCLE POND CLOSURE WILL BE BY REMOVAL.
3. GMF GSP CLOSURE IN PLACE GRADES INCLUDE RELOCATED CCR WASTE, WASTE CONTAINMENT BERM, SOIL FILL FOR DRAINAGE ON GSP FLOOR, AND EXCAVATION GRADING FOR REMOVAL OF GSP PERIMETER EMBANKMENT SOUTH OF THE CONTAINMENT BERM. GMF RECYCLE POND GRADES ARE SOIL FILL FOR DRAINAGE ON RECYCLE POND FLOOR AND EXCAVATION GRADING FOR REMOVAL OF RECYCLE POND PERIMETER EMBANKMENT.
4. EXISTING CONTOURS ARE A COMPOSITE OF AN AERIAL SURVEY COMPLETED BY DRAGONFLY AEROSOLUTIONS DATED 12/3/2020, TOPOGRAPHIC/BATHYMETRIC SURVEYS COMPLETED BY INGENAE DATED 12/3/2020 & 12/4/2020.
5. LIMITS OF THE LINER SYSTEM ARE APPROXIMATE BASED ON GYPSUM MANAGEMENT FACILITY (GMF) GYPSUM STACK POND (GSP) AND RECYCLE POND (RP) BASE GRADES DEVELOPED FROM CONSTRUCTION RECORD DRAWINGS DATED 1/5/2011.

0 120 240
1" = 120' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
A	2022-07-28	ISSUED FOR PERMIT APPLICATION	DVS	AGD	MWD	MNH

SEAL

LICENSED PROFESSIONAL ENGINEER
MARK N. HADDOCK
062-058223
7/28/22
STATE OF ILLINOIS

CLIENT
ILLINOIS POWER RESOURCES GENERATING, LLC
COFFEEN POWER PLANT

CONSULTANT
GOLDER
701 EMERSON ROAD, SUITE 250
CREVE COEUR, MO 63141
UNITED STATES
(313) 984 8800

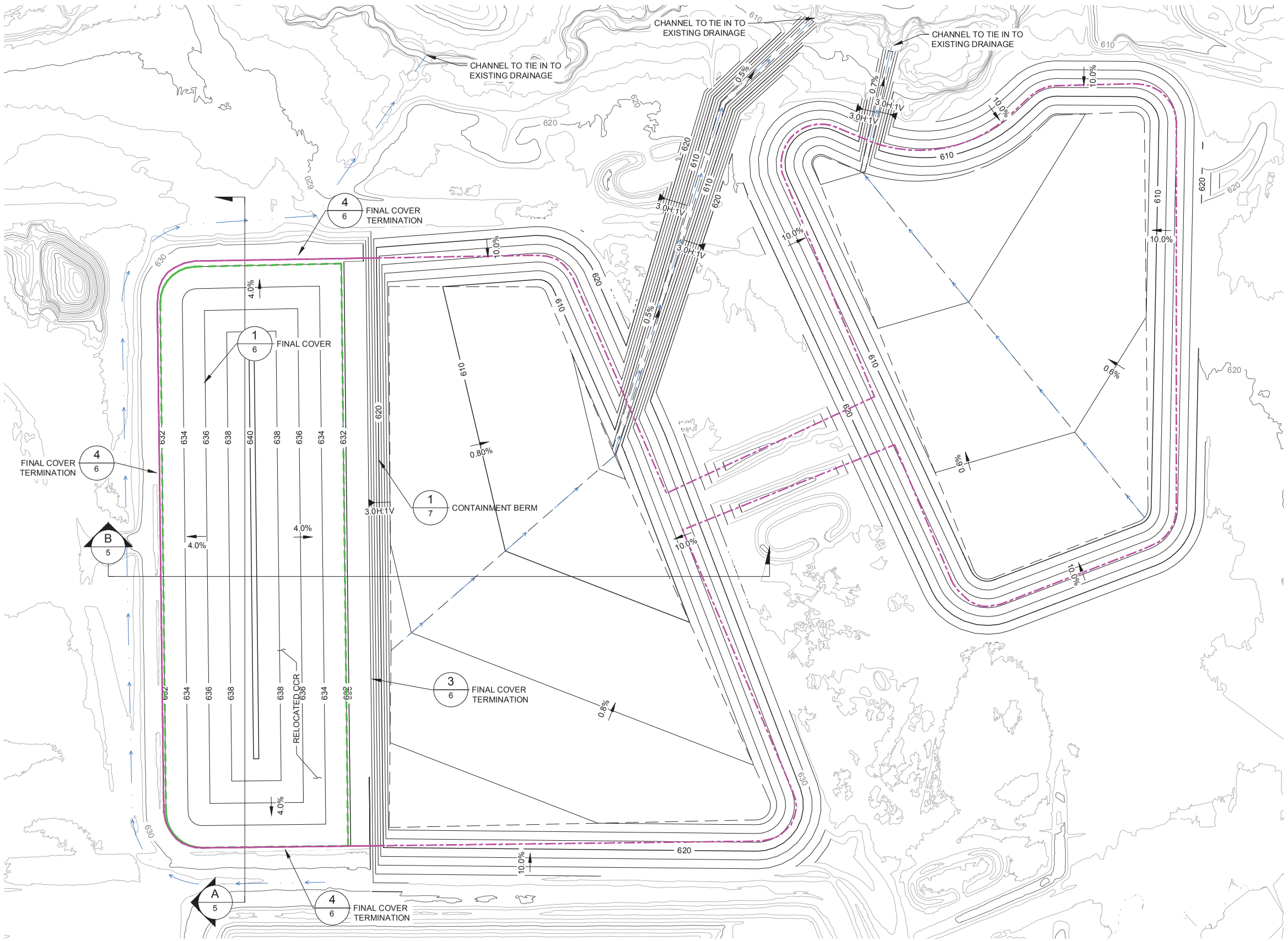
PROJECT
GYPSUM MANAGEMENT FACILITY
CONSTRUCTION PERMIT APPLICATION

TITLE
GYPSUM REGRADING AND CONTAINMENT PLAN

PROJECT NO. 21465046 | REV. A | DRAWING 3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

Path: \\golder.gds\complexdata\office\Denver\acarl\VISTRA\Coffeen\99_PROJECTS\21465046\Proj\DocNo_DocDescs\02_PRODUCTION\DWG\B_Permit Application\ | File Name: 21465046B003.dwg | Last Edited By: dvsmith Date: 2022-07-11 Time:9:00:17 AM | Printed By: DVSmith Date: 2022-07-11 Time:9:01:15 AM



LEGEND

- 600 — GMF CLOSURE IN PLACE GRADES (SEE NOTES 1 AND 2)
- 600 — EXISTING GROUND CONTOURS (SEE NOTE 4)
- LIMIT OF RELOCATED CCR WASTE
- PROPOSED STORM WATER FLOW PATH
- EXISTING LINER TO REMAIN IN PLACE (SEE NOTE 5)
- EXISTING LINER TO BE REMOVED (SEE NOTE 5)

NOTE(S)

1. THE CLOSURE-IN-PLACE CONCEPT FOR THE GYPSUM MANAGEMENT FACILITY (GMF) GYPSUM STACK POND (GSP) INVOLVES REMOVAL OF PONDED WATER, CONSTRUCTION OF A STRUCTURAL BERM (WITH COMPOSITE LINER ON THE UPSTREAM SLOPE), REMOVAL AND RELOCATION OF GYPSUM AND 1 FT (MAX.) OF CLAY LINER SOUTH OF THE BERM TO WITHIN THE CONSOLIDATED FOOTPRINT, PLACEMENT OF SOIL COVER ON GSP FLOOR SOUTH OF THE BERM FOR DRAINAGE, REMOVAL OF PERIMETER EMBANKMENT SOUTH OF RELOCATED WASTE, AND FINAL COVER CONSTRUCTION. EXISTING LINER COMPONENTS TO BE REMOVED SOUTH OF THE BERM ARE SPECIFIED IN DETAIL 1 ON DRAWING 7.
2. THE GMF RECYCLE POND CLOSURE WILL BE BY REMOVAL.
3. GMF GSP CLOSURE IN PLACE GRADES INCLUDE RELOCATED CCR WASTE, WASTE CONTAINMENT BERM, SOIL FILL FOR DRAINAGE ON GSP FLOOR, AND EXCAVATION GRADING FOR REMOVAL OF GSP PERIMETER EMBANKMENT SOUTH OF THE CONTAINMENT BERM. GMF RECYCLE POND GRADES ARE SOIL FILL FOR DRAINAGE ON RECYCLE POND FLOOR AND EXCAVATION GRADING FOR REMOVAL OF RECYCLE POND PERIMETER EMBANKMENT.
4. EXISTING CONTOURS ARE A COMPOSITE OF AN AERIAL SURVEY COMPLETED BY DRAGONFLY AEROSOLUTIONS DATED 12/3/2020, TOPOGRAPHIC/BATHYMETRIC SURVEYS COMPLETED BY INGENAE DATED 12/3/2020 & 12/4/2020.
5. THE PROPOSED STORMWATER DRAINAGE CONCEPT IS TO SHED WATER INTO EXISTING DRAINAGE CHANNEL EAST OF THE FACILITY. STORMWATER COLLECTED WITHIN THE GMF GSP AND RECYCLE POND WILL BE DIRECTED INTO AN OPEN CHANNEL THAT BREACHES CONSTRUCTED BERMS TO CONNECT TO THE EXISTING DRAINAGE.
6. LIMITS OF THE LINER SYSTEM ARE APPROXIMATE BASED ON GYPSUM MANAGEMENT FACILITY (GMF) BASE GRADES DEVELOPED FROM CONSTRUCTION RECORD DRAWINGS DATED 1/5/2011.

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1" = 120' FEET

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PROJECT
GYPSUM MANAGEMENT FACILITY
CONSTRUCTION PERMIT APPLICATION

TITLE
FINAL COVER AND STORMWATER PLAN

PROJECT NO.	REV.	DRAWING
21465046	A	4

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Intended for
Illinois Power Generating Company
134 CIPS Lane
Coffeen, IL 62017
Montgomery County

Date
June 12, 2024

Project No.
1940103584-002

NATURE AND EXTENT REPORT

COFFEEN POWER PLANT, GMF RECYCLE POND, IEPA ID NO. W1350150004-04

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NATURE AND EXTENT REPORT
COFFEEN POWER PLANT, GMF RECYCLE POND, IEPA ID NO. W1350150004-04

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APPENDICES

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ACRONYMS AND ABBREVIATIONS

35 I.A.C.	Title 35 of the Illinois Administrative Code
40 C.F.R.	Title 40 of the Code of Federal Regulations
AP1	Ash Pond No. 1
AP2	Ash Pond No. 2
ASD	Alternative Source Demonstration
bgs	below ground surface
CCR	coal combustion residuals
cm/s	centimeters per second
CPP	Coffeen Power Plant
CSM	conceptual site model
DA	deep aquifer
E001	Event 1
E002	Event 2
E003	Event 3
ft/ft	feet per foot
GCSM	geochemical conceptual site model
GMF	Gypsum Management Facility
GSP	Gypsum Stack Pond
GWPS	groundwater protection standard
HCR	Hydrogeologic Site Characterization Report
HDPE	high-density polyethylene
IEPA	Illinois Environmental Protection Agency
IPGC	Illinois Power Generating Company
LCL	lower confidence limit
LCU	lower confining unit
LF	Landfill
mg/L	milligrams per liter
NAVD88	North American Vertical Datum of 1988
No.	number
PMP	potential migration pathway
Ramboll	Ramboll Americas Engineering Solutions, Inc.
RP	Recycle Pond
SI	surface impoundment
TDS	total dissolved solids
UA	uppermost aquifer
UCU	upper confining unit
USGS	United States Geological Survey
WPCP	Water Pollution Control Permit

EXECUTIVE SUMMARY

Groundwater samples collected at the Coffeen Power Plant (CPP) Gypsum Management Facility (GMF) Recycle Pond (RP) during June 2023 for the Quarter 2, 2023 compliance sampling event (Event 1 [E001]) were evaluated for exceedances of the groundwater protection standards (GWPS) described in Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.600. Statistical exceedances were identified in the following hydrostratigraphic units and wells:

- Detected Uppermost aquifer (UA) Exceedances:
  - Sulfate at G273
- Detected Lower Confining Unit (LCU) Exceedances:
  - Sulfate at G285
  - Total dissolved solids (TDS) at G285

As a result of the identified E001 exceedances, a Corrective Measures Assessment was initiated on January 14, 2024 in accordance with 35 I.A.C. § 845.660 and submitted on June 12, 2024 [1]. The subsequent compliance sampling events for the Quarter 3 and Quarter 4, 2023 sampling events (Event 2 [E002] and Event 3 [E003]) were completed in August and December 2023 and groundwater samples were evaluated for exceedances of the GWPS as described in 35 I.A.C. § 845.600. Exceedances identified during the E002 event were consistent with those listed above. In addition to the exceedances listed above, the following statistical exceedances were identified in the following hydrostratigraphic units and wells during the E003 Event:

- Detected UA Exceedance:
  - TDS at G279
- Detected Deep Aquifer (DA) Exceedance:
  - Arsenic at G275D

Pursuant to 35 I.A.C. § 845.650I, an Alternative Source Demonstration (ASD) was submitted to Illinois Environmental Protection Agency (IEPA) on May 7, 2024 that presented evidence demonstrating that a source other than the GMF RP was the cause of the arsenic exceedance at DA monitoring well G275D [2]. Concurrence from the IEPA is pending, and the extent of arsenic is not discussed in this report.

As required by 35 I.A.C. § 845.650(d)(1), this report characterizes the nature and extent of sulfate and TDS and relevant site conditions to determine how they may affect the corrective measures ultimately selected for the GMF RP and documents the additional measures taken in accordance with 35 I.A.C. § 845.650(d).

Statistical exceedances of sulfate greater than the GWPS were encountered within the UA only at G273. The lateral extents of sulfate exceedances are defined to the east by monitoring well G275, to the west by monitoring well G271, and to the north by background monitoring wells G270 and G280. Statistical exceedances of TDS greater than the GWPS were encountered within the UA only at G279. The lateral extents of TDS exceedances are defined to the south by G277, to the west by background monitoring well G280, and to the east by monitoring well G284

(located east of the Unnamed Tributary). Vertically, the extents of sulfate and TDS greater than the GWPS is limited by the presence of low permeability tills [2].

Statistical exceedances of sulfate and TDS greater than the GWPS encountered in the LCU at monitoring well G285 are defined to the south by G283, but wells screened within the LCU are not present to the east of this location. The extent of elevated sulfate (and TDS) is limited by the lower hydraulic conductivity observed in the materials of the LCU and limited continuity of sand lenses, in addition to flow directions which are expected to be primarily toward the Unnamed Tributary based on elevations measured in SG-04. The Unnamed Tributary appears to be a local receiving body for groundwater and likely prevents or reduces groundwater migration east of the Unnamed Tributary. However, the presence of statistical exceedances of sulfate and TDS greater than the GWPS in LCU compliance well G285 indicates that migration may occur (potentially when water elevations in the Unnamed Tributary are high) and allow transport of sulfate and TDS in groundwater a short distance east of the Unnamed Tributary.

Conditions within UA groundwater are predicted to favor amorphous iron oxide stability at most locations, which indicates that a portion of the sulfate concentrations in the groundwater system may be attenuated via surface complexation reactions. However, batch attenuation testing results indicate that chemical attenuation of sulfate, and therefore TDS, downgradient of the GMF RP could be minimal. Chemical attenuation of sulfate in the LCU and DA is also anticipated to be limited, as amorphous iron oxides are predicted to be less stable in the LCU, with the potential for dissolution and precipitation reactions with other iron-bearing species such as siderite.

1. INTRODUCTION

35 I.A.C. § 845.650(d)(1) requires the owner or operator of a coal combustion residuals (CCR) surface impoundment (SI) to characterize the nature and extent of a release and relevant site conditions that may affect the remedy ultimately selected for a CCR SI if any constituent regulated under 35 I.A.C. § 845 is found to exceed the GWPS. This report documents the nature and extent of constituents with detected statistical exceedances of the GWPS that are attributable to the CPP GMF RP.

The groundwater data and analysis in this report includes results from historical sampling (initiated in 2015) through E003, which was completed on December 7, 2023. Results of the E001, E002, and E003 events were submitted and placed in the facility's operating record by October 16, 2023; January 20, 2024; and March 10, 2024, respectively, as required by 35 I.A.C. § 845.800(d)(15), within 60 days of receiving final laboratory analytical data [3, 4, 5]. The statistical determination presented in the report identified the following exceedances of the GWPS at compliance groundwater wells in the following hydrostratigraphic units:

- Detected UA Exceedances:
  - Sulfate at G273
  - TDS at G279
- Detected LCU Exceedances:
  - Sulfate at G285
  - TDS at G285
- Detected DA Exceedances:
  - Arsenic at G275D

Pursuant to 35 I.A.C. § 845.650I, an ASD was submitted to IEPA on May 7, 2024 [2] that presented evidence demonstrating that a source other than the GMF RP was the cause of the arsenic exceedance at DA monitoring well G275D. Concurrence from the IEPA is pending, and the extent of arsenic is not discussed in this report. If IEPA does not concur, additional activities will be required to understand distribution and mechanisms controlling the occurrence of arsenic in the DA. This Nature and Extent Report discusses in detail the extent of the sulfate and TDS statistical exceedances as well as a geochemical conceptual site model (GCSM) describing the nature of these exceedances.

2. UNIT BACKGROUND

2.1 Site Location and Description

The CPP is located in Montgomery County in central Illinois, approximately two miles south of the City of Coffeen and about eight miles southeast of the City of Hillsboro (**Figure 2-1**). The CPP was a coal-fired power plant with five CCR units present: GMF RP (35 I.A.C. § 845 regulated CCR Unit and subject of this report), Ash Pond Number (No.) 1 (AP1), Ash Pond No. 2 (AP2), GMF Gypsum Stack Pond (GSP), and Landfill (LF). The GMF RP is located in Section 11, Township 7 North and Range 3 West. The GMF RP is located northeast of the CPP and situated in a predominantly agricultural area (**Figure 2-2**). The GMF RP is located between two lobes of Coffeen Lake (the western lobe is identified as "Coffeen Lake" and the upper reaches of the eastern lobe are fed by a stream labeled as "Unnamed Tributary" on **Figures 2-1** and **2-2**), which surround the SI to the west, east, and south. The GMF RP is bordered by other CCR units and agricultural land to the north. The GMF GSP is located north and immediately adjacent to the GMF RP; therefore, the geology and hydrogeology are similar and results from the 35 I.A.C. § 845 investigations from both units are included and discussed in this report, and in the Nature and Extent report prepared for the GMF GSP. The combined area including the GMF RP and GMF GSP will hereinafter be referred to as the site and data from both units will be utilized in portions of **Sections 2.3** and **2.5**.

2.2 Description of CCR Unit

The CPP was a coal-fired electrical generating plant that began operation in 1964. The plant initially burned bituminous coal from Illinois and CCR from the coal fired units was disposed of in AP1. AP2 was utilized for CCR disposal beginning in the early 1970's and AP1 was reconstructed in 1978. Both of these units were used until the mid-1980's, beginning in 2010 CCR material was placed in the LF and GMF Units.

- **GMF RP:** The 17-acre GMF RP received blowdown from the air emission scrubbers and was put into operation in 2010. Construction of the GMF RP was in accordance with Water Pollution Control Permit (WPCP) 2008-EA-4661 and features a composite 60-mil high-density polyethylene (HDPE) liner with 3 feet of recompacted soil with a hydraulic conductivity of 1 x 10^{-7} centimeters per second (cm/s) with internal piping and drains to collect contact water. Construction of the unit required excavation to an elevation of approximately 601 feet[1] and installation of a groundwater underdrain system to eliminate inward pressure on the liner prior to placement of CCR. The GMF RP underdrain is a passive, gravity drained system. Illinois Power Generating Company (IPGC) ceased placement of waste in the GMF RP prior to April 11, 2021. Review of historical aerial imagery of the GMF RP (observations summarized in **Figure 2-3**) illustrate the extent of CCR deposition through time as well as potential CCR variability (based on observed differences in color). Proposed geotechnical and geochemical sample locations for CCR materials could not be safely accessed during the 2021 investigation. X201 collects representative source water from the southeast corner of the GMF RP **(Figure 2-4**) (Hydrogeologic Site Characterization Report [HCR] [6]). The unit contains gypsum scrubber waste and the base of CCR at the GMF RP is shown in **Figure 2-5**.

  Water that may come into contact with CCR within the footprint of the GMF RP becomes CCR source water. CCR source water samples are collected from the southeast corner of the GMF

[1] All elevations in this report are referenced to North American Vertical Datum of 1988 (NAVD88) unless otherwise noted.

RP (X201). Results from the source water samples are used to provide information for groundwater transport modeling[2].

- **GMF GSP:** The 37-acre GMF GSP received blowdown from the air emission scrubbers and was put into operation in 2010. Construction of the GMF GSP was in accordance with WPCP 2008-EA-4661 and features a composite 60-mil HDPE liner with 3 feet of recompacted soil with a hydraulic conductivity of 1×10^{-7} cm/s with internal piping and drains to collect contact water. Construction of the unit required excavation to an elevation of approximately 603 feet and installation of a groundwater underdrain system to eliminate inward pressure on the liner prior to placement of CCR. The GMF GSP underdrain was actively pumped during construction but is no longer used. IPGC ceased placement of waste in the GMF GSP prior to April 11, 2021.
- **AP1:** This SI (also known as the Bottom Ash/Recycle Pond) is a reclaimed ash pond that was reconstructed utilizing the existing earthen berms with reinforcement, as provided by the WPCP 1978-EA-389 issued by the IEPA on May 26, 1978. AP1 (existing unlined SI) covers an area of approximately 23 acres, has berms up to 41 feet above the surrounding land surface, and a volume of 300 acre-feet. It primarily received bottom ash and low volume wastes from floor drains in the main power block building. Several years ago, air heater wash and boiler chemical cleaning wastes were directed to AP1, but this practice was discontinued. The bottom ash was periodically removed for beneficial uses by a third-party contractor. Sluicing of waste to AP1 ceased prior to November 4, 2019.
- **AP2:** AP2 is a closed (IEPA-approved) SI with a surface area of approximately 60 acres and berms 47 feet higher than the surrounding land surface. AP2 was originally removed from service and capped in the mid 1980's. A clay and soil cap was placed on the surface of the pond with contouring and drainage provided to direct storm water to four engineered revetment down drain structures. Prior to capping, this pond was identified as Outfall 004 in the facility National Pollutant Discharge Elimination System operating permit, IL0000108. Additional closure activities include the construction of a geomembrane cover system that began in July 2019 and was completed on November 17, 2020. Construction was completed in accordance with the Closure and Post Closure Care Plan approved by the IEPA on January 30, 2018.
- **LF:** Fly ash was managed in a permitted composite lined landfill constructed in 2010. The LF has an active groundwater underdrain system that is currently being operated. Additionally, the ash landfill leachate collection system is restricted by rule to no more than one foot of leachate on the composite liner. An IEPA groundwater monitoring program is in effect for the GMF (under Bureau of Water) and Ash Landfill (under Bureau of Land).

2.3 Geology and Hydrogeology

Significant site investigation has been completed at the CPP to characterize the geology, hydrogeology, and groundwater quality. Based on extensive investigation and monitoring, the GMF RP has been well characterized and detailed in the HCR [6].

[2] Per Federal Register 80 (21302), which promulgated the final 40 C.F.R. § 257 rule, porewater concentrations should be used to characterize potential leaching from impoundments. As discussed further in USEPA's risk assessment of CCR surface impoundments (USEPA 2014), porewater is "collected from the interstitial water between waste particles in surface impoundments as it occurs in the field," and concentrations within the porewater are "the most representative data available for impoundments because these data are field-measured concentrations of leachate." Therefore, X201 collects representative CCR source water from the southeast corner of the GMF RP.

2.3.1 Hydrostratigraphic Units

In addition to the CCR, five hydrostratigraphic units have been identified at the CPP based on stratigraphic relationships and common hydrogeologic characteristics, and are summarized as follows:

- **Upper Confining Unit (UCU)**: Consists of the Loess Unit and the upper clayey portion of the Hagarstown Member which has generally lower vertical permeability and generally greater than 60 percent fines. This Unit was encountered across most of the CPP, with the exception of the eastern edges of the SIs near the Unnamed Tributary where the unit was eroded following deposition or locations where it has been excavated for construction.
- **Uppermost Aquifer (UA):** This unit consists primarily of sand and sandy silts and clays at the base of the Hagarstown Member and, in some locations, the uppermost weathered sandy clay portion of the Vandalia Member. This unit is absent in several locations due to weathering and in others due to excavation during construction of the CCR Unit. The hydraulic characteristics of the Hagarstown Member are variable due to the different material compositions, but generally indicate the unit has a moderate hydraulic conductivity.
- **Lower Confining Unit (LCU):** This unit is composed of the sandy clay till of the Vandalia Member, the silt of the Mulberry Grove Formation, and the compacted clay till of the Smithboro Member. The unit underlies the UA and was encountered in all boring locations on the CPP. Results from laboratory tests completed for vertical hydraulic conductivity indicate the Vandalia Member has a very low vertical hydraulic conductivity.
- **Deep Aquifer (DA)**: This unit consists primarily of sandy silt and sands of the Yarmouth Soil, which are thin (less than 5 feet) and discontinuous across the CPP.
- **Deep Confining Unit (DCU)**: This unit underlies the DA and is composed of the Banner Formation, of which the thick Lierle Clay is the first encountered unit. No boring penetrated the full thickness of this formation.

2.3.2 Uppermost Aquifer

The UA has been identified as the base of the Hagarstown Member and, in some locations, the uppermost weathered sandy clay portion of the Vandalia Member. This unit is continuous across the site, but hydraulic characteristics are variable as a result of the unit composition. The UA is absent in several locations due to weathering and in other locations due to excavation during construction of the CCR Unit. The UA exhibits a moderate hydraulic conductivity and is the most likely unit to indicate potential impacts from the GMF RP. Based on the geologic information, the top of UA occurs at an elevation of 606 to 609 feet near the GMF RP (**Figure 2-6**) and was removed below the footprint of the unit (**Figure 2-7**). The base of the UA and the material on which the GMF RP liner was placed is the top of the LCU, which contains the low permeability Vandalia Member, Mulberry Grove Member, and Smithboro Till.

2.3.3 Potential Migration Pathways

Potential migration pathways (PMPs) were interpreted using the lithologic composition and hydrogeologic properties (hydraulic conductivity, hydraulic position with respect to the unit) of the screened materials. In addition to the physical properties, the analytical results from the baseline groundwater monitoring performed in wells screened in the confining units and DA were used to identify PMPs. The UA is the first occurrence of groundwater and therefore the PMPs

identified are in geologic units located below the UA. Monitoring wells G283 and G285 are considered LCU PMP monitoring well locations and monitor the potential migration of impacts through the LCU where the UA is absent. Monitoring well G285 additionally monitors the potential for off-site impacts due to the direction of groundwater flow locally coming from the east to the west, towards the Unnamed Tributary. Monitoring well G275D is considered a DA PMP monitoring location and monitors the potential for migration of impacts from the GMF RP through the UA and LCU.

2.3.4 Regional Bedrock Geology

Bedrock has not been investigated at the site due to the depth to bedrock and presence of two low permeability confining units underlying the UA and above the bedrock, and the intermittent coal beds found within the bedrock. There are no known monitoring wells or production wells screened within the bedrock at CPP. Bedrock has not been encountered at any borings on-site. A literature review was completed to supplement the site geology.

Detailed descriptions of the Pennsylvanian strata of Illinois were published by Willman et al. [7] and Kolata [8]. The Bond Formation includes all strata from the base of the Shoal Creek Limestone Member or the LaSalle Limestone Member to the top of the Millersville Limestone Member or the Livingstone Limestone Member. It is overlain by the Mattoon Formation and underlain by the Modesto Formation. It varies from less than 150 feet thick in eastern Illinois to over 300 feet thick in southeastern Illinois, averaging about 250 feet. The Bond Formation is characterized by a high percentage of limestone and calcareous clays and shales. The Bond and Modesto Formations of the McLeansboro Group also contain multiple thin (typically less than 2 feet) intermittent coal beds. The upper formation of the Kewanee Group is the Carbondale Formation which contains multiple coal beds, including the Herrin (No. 6) Coal, of varying thicknesses (up to 7 feet) [9]. It is bound by thick limestone members (up to 50 feet), the thickest and purest limestones in the Pennsylvanian System of Illinois. Gray shales constitute the greatest part of the formation, although thick channel sandstones are developed locally.

Two mines were operated historically in the vicinity of the site. The Hillsboro Mine located east/southeast of the GSP was operated by the Truax-Traer Coal Company from 1964-1970 and by the Consolidation Coal Company from 1971 through 1983. The mine targeted the Herrin Coal at a depth of 500 to 510 feet below ground surface (bgs), and geological reports included roof problems and slight floor heaving. The Clover Leaf No. 4 Mine located north of the GSP was operated by the Clover Leaf Coal Mining company and the Coffeen Coal Mining Company from 1906 through 1924. The mine targeted the Herrin Coal at a depth of 510 to 544 feet bgs. Geologic reports indicate a massive black shale roof, and unmined areas which could be related to water-bearing sandstones above the roof [10].

2.3.5 Water Table Elevation and Groundwater Flow Direction

A transducer was installed at X201 during the 2021 investigation to monitor pond water levels in the GMF RP. Phreatic surface elevations in the GMF RP showed minimal variation, with elevations from approximately 617 to 619 feet (**Table 2-1**). As indicated in **Section 2.3.2**, the UA was removed below the footprint of the GMF RP (**Figure 2-7**) and the IEPA-approved GMF RP composite liner system exceeds the design criteria for a composite liner for new CCR landfills established by Title 40 of the Code of Federal Regulations (40 C.F.R.) § 257.70(b). The material on which the GMF RP liner was placed is the top of the LCU, which is comprised of the low permeability Vandalia Member, Mulberry Grove Member, and Smithboro Till.

Overall groundwater flow within the UA is divided towards the two lobes of Coffeen Lake. The groundwater divide runs approximately through the center of the CPP, with groundwater east of the divide flowing east to southeast towards the Unnamed Tributary or the eastern lobe of Coffeen Lake and groundwater west of the divide flowing west to southwest towards the western lobe of Coffeen Lake. Groundwater flows southeast across the GMF RP (**Figure 2-8** and **Table 2-1**) toward the Unnamed Tributary. Based on the elevations of the tributary and groundwater elevations measured east of the tributary (**Appendix A** and **Table 2-1**), the Unnamed Tributary may be a local groundwater receiving body and prevent or reduce groundwater migration east of the Unnamed Tributary. During 2023, groundwater elevations in the UA in the vicinity of the GMF RP ranged from approximately 603 to 624 feet (**Figure 2-8** and **Table 2-1**). Although elevations vary seasonally, the groundwater flow direction in the UA is consistent and likely controlled by the proximity and hydraulic connection to both the eastern and western lobes of Coffeen Lake.

LCU (PMP) groundwater elevations are slightly lower than those in the UA and exhibit similar variability in seasonal groundwater elevation as the UA. Groundwater elevation within the LCU ranged from about 590 to 623 feet in 2023 (**Figure 2-8** and **Appendix A**). Monitoring wells G283 and G285 were screened across the LCU closest to the GMF RP, where the UA was eroded. Groundwater elevations in G283 and G285 ranged from about 602 to 610 feet during 2023 (**Table 2-1**).

DA (PMP) groundwater elevations are generally lower than those in the UA and LCU (PMP) and ranged from approximately 576 to 618 feet in 2023 (**Figure 2-8** and **Table 2-1**). Monitoring well G275D is nearest the GMF RP and typically had groundwater elevations ranging from about 576 to 589 feet during 2023. A groundwater contour map was generated for the DA for the E002 event and groundwater flow within the DA generally follows subsurface topography for the unit (**Figure 2-9**).

No monitoring wells were installed in the UCU during 2021 investigation activities and no wells have historically been installed across solely the UCU because it is not present or is unsaturated where present at the CPP. Groundwater elevations within the DCU and bedrock unit are unknown because no wells are screened within these low hydraulic conductivity units.

2.3.5.1 Vertical Hydraulic Gradients

Vertical hydraulic gradients were calculated using available groundwater elevation data from February 2017 to November 2023 at nested well locations within the UA, LCU (upper and lower), and DA. Vertical hydraulic gradients for the GMF RP are presented in **Table 2-2** and well locations are shown on **Figure 2-8**. Vertical hydraulic gradients for other nested well locations at the CPP, discussed below, are presented in **Appendix B**. The results of the vertical hydraulic gradient calculations between hydrostratigraphic units are summarized below:

- UA to Upper LCU (Vandalia Member):
  - Vertical gradients at well nest G405/T408, located north of AP2, vary between upward and downward with an average (downward) vertical gradient of 0.02 feet per foot (ft/ft).
  - Vertical gradients at well nest G406/T409, located south of AP2/northwest of AP1, vary between upward and downward with an average (upward) vertical gradient of -0.06 ft/ft. Since 2021, the vertical gradient observed at this well nest has been consistently upward, with the exception of August 2022.

- UA to Lower LCU (Smithboro Member)
  - Well nest G307/G307D, located south of AP1, has consistently downward vertical gradients with an average vertical gradient of 0.13 ft/ft.
  - In well nest G311/G311D gradients are consistently strongly downward, with an average vertical gradient of 0.71 ft/ft.
- Upper LCU (Vandalia Member) to Lower LCU (Smithboro Member)
  - Well nest T408/G45D, located north of AP2, has consistently downward vertical gradients with an average vertical gradient of 0.98 ft/ft. Beginning in 2020, vertical gradients observed at this well nest have become less strongly downward.
  - Vertical gradients at well nest G406/T409, located south of AP2 / northwest of AP1, are consistently downward, with the exception of August 2022, with an average vertical gradient of 0.64 ft/ft. Beginning in 2020, vertical gradients observed at this well nest have become less strongly downward.
- UA to DA
  - Well nest G275/G275D, located near the southeast corner of the GMF RP, has consistently downward gradients, with an average vertical gradient of 0.71 ft/ft. Vertical gradients observed at this well nest have generally decreased in downward strength since observation began in 2021.
  - Well nest G206/G206D, located near the southwest corner of the GMF GSP, has consistently downward gradients, with an average vertical gradient of 0.72 ft/ft. Vertical gradients observed at this well nest have generally decreased in downward strength since observation began in 2021.
- LCU to DA
  - Vertical gradients at well nest G314/G314D, located east of AP1, are consistently downward, with an average vertical gradient of 0.69 ft/ft. Beginning in 2022, vertical gradients observed at this well nest have become progressively less strongly downward and the vertical gradient was observed to be upward (-0.01 ft/ft) during December 2023.

Vertical hydraulic gradients indicate there is consistently downward migration of groundwater in most areas of the CPP, with the exception being northwest of AP1, where consistent upward gradients were measured between the UA and upper LCU. However, overall, there has been a decrease in magnitude of downward gradients since approximately 2020, which is likely a result of plant shutdown and placement of a geomembrane on AP2.

2.3.5.2 Impact of Surface Water Bodies on Groundwater Flow

Surface water elevations were measured from various locations along the Unnamed Tributary from March 2021 to December 2023 (**Figure 2-8**). Elevations at SG-04 (near CIPS Trail and determined to be destroyed in October 2023) ranged from 591.94 to 593.38 feet. Surface water elevations near the former discharge flume located between AP1 and AP2 were measured at SG-02 and ranged from 598.34 to 598.75 feet. Surface water elevations from Coffeen Lake at SG-03 (near the outfall east of AP1) ranged from 585.09 to 589.97 feet.

Groundwater contour maps prepared from elevation data measured in monitoring wells indicate groundwater elevations are variable, but flow directions are generally consistent in the UA.

Groundwater near the GMF RP may periodically flow into the Unnamed Tributary to the east, which flows south into the eastern lobe of Coffeen Lake. The Unnamed Tributary is a local groundwater receiving body that may prevent or reduce groundwater migration east of the Unnamed Tributary.

Construction of the LF, GMF GSP, and GMF RP required removal of the Hagarstown Member, in effect removing the aquifer beneath the footprint of these units [11]. It is uncertain whether these constructed units significantly limit lateral groundwater flow, either by creating no flow zones or by capturing groundwater via their dewatering [12].

2.3.6 Hydraulic Conductivities

2.3.6.1 Field Hydraulic Conductivities

Field hydraulic conductivity tests were performed by Hanson in 2021 as part of characterization efforts to complete 35 I.A.C. § 845 requirements. Individual field hydraulic conductivity test results conducted at the GMF RP are summarized in **Table 2-3** [6] and historical results are included in **Appendix C** [12], and tested well locations are included on **Figure 2-8**. The results of the tests are summarized as follows:

- **UA:** Hydraulic conductivities near the GMF RP ranged from 7.8×10^{-4} to 1.7×10^{-3} cm/s. Tests had a geometric mean value of 1.2×10^{-3} cm/s. This is generally consistent with, although higher than, tests conducted prior to 2017 as part of CCR Rule characterization efforts that indicated hydraulic conductivities varied from 1.7×10^{-5} to 2.1×10^{-3} cm/s with a geometric mean of 2.9×10^{-4} cm/s.
- **LCU:** Hydraulic conductivities near the GMF RP ranged from 2.7×10^{-4} to 4.5×10^{-3} cm/s. Tests had a geometric mean of 1.2×10^{-3} cm/s. Monitoring wells with the highest hydraulic conductivities were located near the GMF RP and wells with the lowest hydraulic conductivities were located near AP1. Prior to 2017, field hydraulic conductivity tests completed in the LCU for monitoring well and temporary piezometers (G45D, G46D, T408, and T409) indicate horizontal conductivities from 4.0×10^{-8} and 3.4×10^{-5}. The elevated hydraulic conductivity values (10^{-4} to 10^{-3} cm/s) in wells near the GMF RP relative to other areas of the CPP are likely not representative of the primary LCU lithology, but instead reflect the isolated and discontinuous sandy lenses in which the wells are screened.
- **DA:** Geometric mean hydraulic conductivity at DA well G314D, near AP1, was 8.7×10^{-5} cm/s and was slightly lower than tests completed in the northern portion of the CPP in 2009 that resulted in hydraulic conductivity values ranging from 1.3×10^{-4} to 1.7×10^{-3} cm/s, with a geometric mean of 4.4×10^{-4} cm/s. Field hydraulic conductivity testing was not performed on DA monitoring well G275D, located near the GMF RP.
- No monitoring wells are screened only within the DCU, and no field hydraulic conductivity tests have been conducted for the DCU.

2.3.6.2 Laboratory Hydraulic Conductivities

Falling head permeability tests (ASTM D5084 Method F) were performed in the laboratory on samples collected during the 2021 investigations [6] and historically [12]. The 2021 results are

summarized in **Table 2-4** and historical results are provided in **Appendix C**; all results are discussed below.

- **CCR:** No geotechnical samples of CCR were collected from within the GMF RP.
- **UCU:**
  - The 2021 sitewide geometric mean of vertical hydraulic conductivities of three samples collected from the UCU is 2.5 x 10^{-8} cm/s, which is consistent with historically reported values. No laboratory vertical hydraulic conductivity tests were completed on UCU materials near the GMF RP.
  - Geotechnical tests conducted prior to 2017 indicated UCU vertical hydraulic conductivity values ranging from 1.3 x 10^{-8} to 5.0 x 10^{-7} cm/s, with a geometric mean of 1.0 x 10^{-7} cm/s.
- **UA:** One geotechnical sample of UA material was collected from G275D, near the GMF RP, with a vertical hydraulic conductivity of 1.6 x 10^{-4} cm/s.
- **LCU:**
  - The 2021 sitewide geometric mean of vertical hydraulic conductivities of three samples collected from the LCU is 1.8 x 10^{-7} cm/s. Vertical hydraulic conductivities from 2021 are consistent with those observed historically. No LCU samples collected near the GMF RP were analyzed for vertical hydraulic conductivity.
  - Intermittently present within the LCU is the Mulberry Grove Member. Historical vertical hydraulic conductivities of the Mulberry Grove Member were measured as 1.6 x 10^{-6} and 1.9 x 10^{-6} cm/s.
  - Historical laboratory tests reported LCU vertical hydraulic conductivity values ranging from 6.8 x 10^{-9} to 4.5 x 10^{-6} cm/s, with a geometric mean of 3.0 x 10^{-8} cm/s.
- **DA:** No laboratory vertical hydraulic conductivity tests were completed during 2021 on DA materials.
- **DCU:** No laboratory vertical hydraulic conductivity tests were completed during 2021 on DCU materials. Historical vertical hydraulic conductivity tests were performed on samples collected north and west of the GMF GSP. Vertical hydraulic conductivities of 6.8 x 10-9 and 4.5 x 10-6 cm/s were reported.
- **Bedrock**: No bedrock samples were analyzed for vertical hydraulic conductivity.

2.4 Groundwater Monitoring

The monitoring system for the GMF RP is shown on **Figure 2-2** and consists of two background monitoring wells (G270 and G280), ten compliance monitoring wells (G271, G273, G275, G275D, G276, G277, G279, G283, G284, and G285), one temporary water level only surface water staff gage (SG-04, which was destroyed in October 2023), and one water level only location (X201) primarily used to monitor water levels within the SI and can be used to characterize source water within the SI [13]. The monitoring wells are screened within the UA (G270, G271, G273, G275, G275D, G276, G277, G279, G280, and G284), LCU (G283 and G285), and DA (G275D) along the perimeter of the GMF RP. Source samples are collected from the X201 at the southeast corner of the GMF RP (**Figure 2-2**).

2.5 Hydrogeologic Conceptual Site Model

The HCR [6] and information provided above forms the foundation of the GMF RP hydrogeological setting. The GMF RP and GMF GSP overlie a potential recharge area for the underlying transmissive geologic media, which are composed of unlithified deposits. Recharge migrates downward into and through the UCU into the UA.

Groundwater flow in the UA at the CPP is divided towards the two lobes of Coffeen Lake. The loess of the UCU and sands of the UA are hydraulically connected. Groundwater flow in the silts and clays of the UCU and LCU is expected to be primarily vertical. The majority of horizontal groundwater migration is expected to be within the lower Hagarstown member (*i.e.*, UA). The geologic conceptual model for the site used for the groundwater modeling [14] consists of the following layers:

- Hagarstown Loess Unit (*i.e.*, UCU) – Loess Unit and the upper clayey portion of the Hagarstown Member.
- Hagarstown Member (*i.e.*, UA) – sand and sandy silts and clays at the base of the Hagarstown Member and, in some locations, the uppermost weathered sandy clay portion of the Vandalia Member.
- Vandalia Member/Mulberry Grove Member (*i.e.*, LCU) – unweathered sandy clay till and discontinuous silts.
- Smithboro Till (*i.e.*, LCU) – compacted clay till of the Smithboro Member.
- The Yarmouth Soil (*i.e.*, DA) and Lierle Clay (*i.e.*, DCU) were not included in the model, for consistency with the original model [15].

The United States Geological Survey (USGS) National Map places the CPP within the East Fork Shoal Creek watershed subbasin (Hydrologic Unit Code 071402030303). The CPP conceptual site model (CSM) extent is bounded by a hydrological catchment (watershed) divide to the east based on watershed data from USGS. Along the north, south, and east, the model boundary was placed along known waterbodies as much as possible. As such, it is assumed groundwater inflow from adjacent watersheds is negligible through both the UA and LCU. The Coffeen Lake water levels are managed at an average elevation of 591.0 feet. Coffeen Lake and Unnamed Tributary are the receiving surface water bodies in the area encompassed by the CSM.

Precipitation infiltrates and recharges the groundwater table throughout the site and upgradient of the site. Groundwater in the UCU migrates downward into the sandy material of the lower Hagarstown Formation or weathered Vandalia Till, which is considered the UA. Water that percolates downward from layers overlying the UA is most likely to travel laterally from the site within the UA due to the relatively high permeability (as compared to the underlying LCU) and horizontal gradients present within the UA as described above. During construction of the LF, GMF GSP, and the GMF RP, the Loess Unit and portions of the Hagarstown Member (including the UA) were excavated, therefore CCR within the lined GMF RP does not overlie the UA, but rather the LCU, which is separated from the base of CCR in the GMF RP by a composite liner system that exceeds the design criteria for a composite liner for new CCR landfills established by 40 C.F.R. § 257.70(b). Groundwater and surface water elevations indicate groundwater flows towards Coffeen Lake, which is a local receiving body for the UA. Further downward migration is also limited by the relatively thick and low permeability LCU.

Based on the geology and hydrogeology, monitoring wells at the GMF RP can be separated into three distinct groupings that exhibit similar geologic and hydraulic characteristics. Compliance monitoring well groupings are summarized as follows:

- UA wells: shallow wells (generally less than 20 feet bgs) screened in moderate permeability materials (generally about 10^{-3} cm/s) including G270, G271, G273, G275, G277, G280, and G284. UA monitoring wells G276 and G279 are screened slightly deeper than the other UA wells (approximately 30 feet bgs) because they are located on top of the berm.
- LCU wells: shallow wells (generally 20 to 25 feet bgs) east of the GMF RP installed where the UCU and UA have been eroded (G283 and G285). LCU wells are screened in moderate permeability (generally about 10^{-4} cm/s) sand lenses within the low permeability till.
- DA wells: deep well (approximately 60 feet bgs) screened in low to moderate permeability materials (generally about 10^{-5} cm/s) located southwest of the GMF RP (G275D).

3. OCCURRENCE AND DISTRIBUTION OF GROUNDWATER EXCEEDANCES (EXTENT)

Results from groundwater samples collected from the GMF RP during E001, E002, and E003 were received on August 17, 2023; November 21, 2023; and January 10, 2024, respectively. In accordance with 35 I.A.C. § 845.610(b)(3)(C), comparison of statistically derived values with the GWPSs described in 35 I.A.C. § 845.600 to determine statistical exceedances of the GWPS was completed [3, 4, 5]. Exceedances for which an ASD was not completed include the following parameters and wells by hydrostratigraphic unit:

- UA (**Figure 3-1**)
  - Sulfate at G273
  - TDS at G279
- LCU (**Figure 3-2**)
  - Sulfate at G285
  - TDS at G285

The extents of exceedances discussed below were defined using existing monitoring wells, including wells present on-site (**Table 3-1**) that may not be included in the 35 I.A.C. § 845 monitoring program.

3.1 Additional Investigation to Define Nature and Extent

Following initial sampling in 2021, potential statistical exceedances of the GWPS were identified for the parameters and locations identified above [16, 17, 18]. Solids samples were collected to characterize the geochemical properties and potential effect on geochemistry of the groundwater system for use in ASDs and evaluation of potential remedies. Soil borings were advanced adjacent to G270, G275D, G284, and G288 near the RP, and G200 and G215 which are adjacent to the GSP but are representative of conditions within the same HSUs. Solids samples were collected and analyzed for the following (not all analyses completed for each sample):

- EPA 6020A for Total Metals;
- Bulk Mineralogy by Reitveld x-ray diffraction Analysis;
- Cation Exchange Capacity Analysis;
- Total Organic Carbon Analysis; and,
- Sulfur contents.

3.2 Extent in the Uppermost Aquifer

Groundwater samples are evaluated quarterly and statistical exceedances are identified following comparison of lower confidence limits (LCLs) to the GWPSs described in 35 I.A.C. § 845.600. The LCLs vary as the dataset is updated to include additional quarterly events (**Table 3-2**). The discussion below includes ranges of concentrations measured in wells with statistical exceedances, because there is no single value for LCLs.

3.2.1 Sulfate

Statistical exceedances of sulfate in the UA are located only in monitoring well G273, south of the GMF RP. Concentrations of sulfate in G273 range from 333 to 940 milligrams per liter (mg/L) (**Table 3-3**). Sulfate statistical exceedances are defined laterally within the UA by monitoring wells G271 to the west and G275 to the east (**Figure 3-1)**. The lateral extent of downgradient sulfate statistical exceedances are additionally constrained to the east by the Unnamed Tributary which appears to be a local groundwater receiving body that may prevent or reduce groundwater migration east of the Unnamed Tributary.

Downward migration of sulfate in the UA is inhibited by the underlying Vandalia Till, Mulberry Grove Member, and Smithboro Till which are, on average, greater than 15 feet thick at the site. Vertical hydraulic conductivity tests completed on samples of the LCU beneath the UA at the CPP indicate hydraulic conductivities from 5.5×10^{-8} to 3.7×10^{-7} cm/s. This is very low relative to the horizontal hydraulic conductivity measured within the UA (geometric mean of 1.4×10^{-3} cm/s). The significant contrast in permeability (greater than two orders of magnitude) indicates groundwater will preferentially migrate horizontally toward the Unnamed Tributary and the elevated sulfate concentrations will not extend into the underlying hydrostratigraphic units where the UA is present. The extent of sulfate GWPS statistical exceedances are additionally vertically defined by DA monitoring well G275D.

3.2.2 Total Dissolved Solids

TDS results indicate the mass of dissolved material in groundwater and is a representation of multiple constituents present in the groundwater. Typically, major ions (such as sulfate) represent the primary contributors to TDS. Concentrations of TDS in UA wells G279 range from 560 to 6,260 mg/L (**Table 3-3**). TDS statistical exceedances are defined laterally within the UA to the west, upgradient, by background monitoring well G280, to the south by well G277, and to the east by G286 (historical samples indicate TDS concentrations less than 400 mg/L) (**Figures 2-2** and **3-1**). The extent of downgradient TDS statistical exceedances are additionally constrained to the east by the Unnamed Tributary as a local groundwater receiving body that may prevent or reduce groundwater migration east of the Unnamed Tributary.

Downward migration of TDS in the UA is inhibited by the underlying Vandalia Till, Mulberry Grove Member, and Smithboro Till which are, on average, greater than 15 feet thick at the site. Vertical hydraulic conductivity tests completed on samples of the LCU beneath the UA indicate hydraulic conductivities from 5.5×10^{-8} to 3.7×10^{-7} cm/s. This is very low relative to the horizontal hydraulic conductivity measured within the UA (geometric mean of 2.0×10^{-3} cm/s). The significant contrast in permeability (greater than two orders of magnitude) indicates groundwater will preferentially migrate horizontally toward the Unnamed Tributary. In locations where the UA is not present, vertical migration may occur (*i.e.,* G285) but the extent is limited due to the low hydraulic conductivity.

3.3 Extents in the Lower Confining Unit/Potential Migration Pathway

3.3.1 Sulfate

Statistical exceedances of sulfate in the LCU are located only in monitoring well G285, east of the GMF RP and Unnamed Tributary. Concentrations of sulfate in G285, which has had GWPS (400 mg/L) statistical exceedances, ranged from 490 to 780 mg/L (**Table 3-3**). Sulfate exceedances are defined within the LCU to the south by monitoring well G283 (**Figure 3-2)**. The lateral extent

of sulfate statistical exceedances at G285 are not expected to extend a significant distance to the north or east due to observed groundwater flow directions toward the unnamed tributary and not expected to extend a significant distance to the east due to the absence of continuous sandy transmissive zones in the LCU materials.

Downward migration of sulfate in the LCU is limited due to the low hydraulic conductivities which range from 5.5×10^{-8} to 3.7×10^{-7} cm/s. There are no monitoring wells screened within the DA adjacent to G285, however, DA monitoring well G275D, located closer to the GMF RP, does not exhibit a sulfate statistical exceedance (**Figure 2-9**).

3.3.2 Total Dissolved Solids

TDS results indicate the mass of dissolved material in groundwater and is a representation of multiple constituents present in the groundwater. Typically, major ions (such as sulfate) represent the primary contributors to TDS. TDS statistical exceedances in the UA are coincident with the sulfate statistical exceedances at G285. Concentrations of TDS at G285 range from 1,400 to 1,700 mg/L (**Table 3-3**). Similar to sulfate, TDS statistical exceedances are defined within the LCU to the south by monitoring well G283 (**Figure 3-2)**. The lateral extent of TDS statistical exceedances at G285 are not expected to extend a significant distance to the north due to observed groundwater flow directions and not expected to extend a significant distance to the east due to the absence of continuous sandy transmissive zones in the LCU materials. There is no monitoring well east of G285 in the LCU to define the eastern extent of TDS in the LCU.

Similar to sulfate, downward migration of TDS in the LCU is limited due to the low hydraulic conductivities from 5.5×10^{-8} to 3.7×10^{-7} cm/s. There are no monitoring wells screened within the DA adjacent to G285, however, DA monitoring well G275D does not exhibit a statistical TDS exceedance (**Figure 2-9**).

4. GEOCHEMICAL CONCEPTUAL SITE MODEL (NATURE)

A GCSM was developed to describe the conditions of the groundwater in the vicinity of CPP GMF RP and is summarized here (full analysis presented in **Appendix D**). The GCSM describes the geochemical processes that contribute to the mobilization, distribution, and attenuation of chemicals in the environment. Only parameters that have exceeded the GWPS in GMF RP groundwater and will be addressed in the Corrective Action Plan are included in the GCSM. As discussed in previous sections, the statistical exceedances observed at GMF RP include sulfate and TDS.

CCR materials are the primary source of constituent loading to the CCR porewater, which is considered to represent the mobile phase constituents capable of migrating into the underlying materials and potentially downgradient in groundwater. The presence of CCR porewater is relatively minor in the GMF RP due to the limited presence of solid CCR, and porewater samples could not be collected. As an alternative, GMF RP surface water was collected from location X201 to represent CCR source water. The CCR source water is therefore representative of the mobile phase constituents capable of migrating into the underlying materials and potentially downgradient in groundwater. The GMF RP CCR source water is therefore the primary indicator of the sulfate concentration available to potentially migrate to the groundwater and is considered as the primary source term for environmental investigation and fate and transport modeling. The observed sulfate statistical exceedances were identified in groundwater to the east of the GMF RP, where the groundwater signature is generally consistent with influence from the CCR source water. TDS is a measure of inorganic and organic substances in solution. TDS trends are generally consistent with those of sulfate in the GMF RP groundwater system.

Conditions within UA groundwater are predicted to favor amorphous iron oxide stability at most locations, which indicates that a portion of the sulfate in the groundwater system may be attenuated via surface complexation reactions. Attenuation of the constituents contributing to TDS, such as sulfate, will reduce TDS concentrations as well. However, amorphous iron oxides are predicted to be less stable in the LCU, with the potential for dissolution and precipitation reactions with other iron-bearing species such as siderite. Crystalline iron oxides were not identified in the mineralogical analysis. In addition, batch attenuation testing with solids from the site could not determine a partitioning coefficient for sulfate. These results indicate that chemical attenuation of sulfate, and therefore TDS, downgradient of the GMF RP could be minimal.

5. COMBINED GEOCHEMICAL AND HYDROGEOLOGIC CONCEPTUAL SITE MODELS

5.1 Sulfate and TDS Conceptual Site Model

The CSM describing current conditions at the GMF RP combining the hydrogeologic and geochemical CSMs for sulfate and TDS is as follows. Water contained in the GMF RP is hydraulically separated from the underlying unlithified glacial deposits by a 60-mil HDPE liner that was installed during construction of the GSP in 2010. In addition, the UA was removed from beneath the footprint of the GMF RP during its construction. Based on groundwater elevations measured at wells screened in the UA adjacent to the GMF RP and surface water elevations of the Unnamed Tributary, groundwater flow in the UA is in the direction of the Unnamed Tributary both from the west and east sides. The observed flow directions and potentiometric surfaces drawn from site monitoring wells indicate flow toward the unnamed Tributary; however, the presence of statistical GWPS exceedances of sulfate and TDS in LCU compliance well G285 indicates that there is potential transport of sulfate and TDS in groundwater to the east of the Unnamed Tributary. Additional investigation data is being collected from monitoring wells G219 and G220 that were installed in 2024 downgradient of the GMF GSP and to the west and east of the Unnamed Tributary, respectively. Findings from the installation and sampling of these additional wells will provide additional hydrogeologic information that may further inform the nature and extent of GWPS exceedances in G285.

Although the RP is a lined unit, the presence of sulfate exceedances at G273 and G285, and TDS exceedances at G279 and G285 on the eastern boundary and downgradient suggests that leakage from the RP may be causing elevated sulfate (and TDS) concentrations in this area. The CCR and the liner of the RP will be removed during closure which will provide source control in the future. Conditions within UA groundwater are predicted to favor amorphous iron oxide stability at most locations with less stability in the LCU, which indicates that a portion of the sulfate concentrations in the groundwater system may be attenuated via surface complexation reactions at higher rates in the UA compared to LCU. Attenuation of the constituents contributing to TDS, such as sulfate, will reduce TDS concentrations as well. However, batch attenuation testing results indicate that chemical attenuation of sulfate, and therefore TDS, downgradient of the GMF RP could be minimal.

6. CONCLUSIONS AND FUTURE ACTIVITIES

In accordance with 35 I.A.C. § 845.650(d)(1), the nature and extent of statistical GWPS exceedances of sulfate, and TDS have been described in sufficient detail to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the GMF RP.

The lateral extents of statistical exceedances in the UA are illustrated in **Figure 3-1**. As discussed in **Sections 3.2.1** and **3.2.2**, sulfate and TDS exceedances are defined laterally by monitoring wells and the downgradient extents are constrained by the Unnamed Tributary as a local groundwater receiving body that may prevent or reduce groundwater migration east of the Unnamed Tributary as well as observed flow directions. Sulfate and TDS exceedances are not expected to extend a significant distance to the north or west due to observed groundwater flow direction within the UA around the GMF RP. Sulfate and TDS exceedances are constrained vertically by the underlying Vandalia Till.

The lateral extents of exceedances in the LCU are illustrated in **Figure 3-2**. As discussed in **Sections 3.3.1** and **3.3.2**, sulfate and TDS exceedances are defined to the south by monitoring well G283. The lateral extent of sulfate (and TDS) exceedances at G285 are not expected to extend a significant distance to the north due to observed groundwater flow directions and are not expected to extend a significant distance to the east due the low hydraulic conductivity material, absence of continuous sandy transmissive zones in the LCU materials, and the presence of the Unnamed Tributary which is a local groundwater receiving body that likely prevents or reduces groundwater migration east of the Unnamed Tributary.

Sulfate was selected for modeling source control presented in the Final Closure Plan and was identified as a surrogate for TDS, as described in the Groundwater Modeling Report [19]. For modeling purposes, it was assumed that sulfate would not significantly sorb or chemically react with aquifer solids (soil adsorption coefficient [Kd] was set to 0 milliliters per gram), which is a conservative estimate for predicting contaminant transport times in the model. The GCSM results indicate sulfate attenuation downgradient is expected to be minimal. Additional geochemical modeling will be completed to evaluate how sorption to solid phases may affect sulfate mobility and therefore the time for sulfate (and TDS) to reach the GWPS.

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[17] Ramboll, "35 I.A.C. § 845.610(b)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 3, Ash Pond No. 1, CoffeenPower Plant, Coffeen, Illinois," January 20, 2024.

[18] Ramboll, "35 I.A.C. § 845.610(b)(3)(D) Groundwater Monitoring Data and Detected Exceedances, 2023 Quarter 4, Ash Pond No. 1, CoffeenPower Plant, Coffeen, Illinois," March 10, 2024.

[19] Ramboll Americas Engineering Solutions, Inc., "Groundwater Monitoring Report, Newton Power Plant, Primary Ash Pond, Newton, Illinois. Illinois Power Generating Company.," July 28, 2022.

TABLES

Table 2-1. Summary of Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G270	Background	05/30/2023	5.06	620.79
G271	Compliance	05/30/2023	9.28	616.28
G273	Compliance	05/30/2023	10.41	612.60
G275	Compliance	05/30/2023	13.38	604.88
G275D	Compliance	06/08/2023	[41.89]	[578.42]
G276	Compliance	05/30/2023	26.60	605.39
G277	Compliance	05/30/2023	18.21	604.87
G279	Compliance	05/30/2023	22.73	609.31
G280	Background	05/30/2023	3.96	621.38
G283	Compliance	05/30/2023	5.60	605.14
G284	Compliance	05/30/2023	12.43	605.98
G285	Compliance	05/30/2023	6.71	606.80
X201	Water Level	05/30/2023	38.15	580.32
SG-04	Water Level	05/30/2023	6.41	593.11

Notes:
Only wells with groundwater elevations measured are included.
BMP = below measuring point
Bracketing [ ] indicates that the measurement was obtained outside of the 24-hour period from initiation of depth to groundwater measurements.
NAVD88 = North American Vertical Datum of 1988

Table 2-1. Summary of Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G270	Background	08/14/2023	[8.52]	[617.34]
G271	Compliance	08/08/2023	11.20	614.37
G273	Compliance	08/08/2023	11.56	611.46
G275	Compliance	08/08/2023	Dry	
G275D	Compliance	08/08/2023	31.27	589.04
G276	Compliance	08/08/2023	27.75	604.25
G277	Compliance	08/08/2023	19.76	603.32
G279	Compliance	08/08/2023	23.69	608.35
G280	Background	08/08/2023	5.80	619.55
G283	Compliance	08/15/2023	[7.45]	[603.30]
G284	Compliance	08/15/2023	[12.28]	[606.14]
G285	Compliance	08/08/2023	8.25	605.26
X201	Water Level	08/08/2023	37.76	580.71

Notes:
Only wells with groundwater elevations measured are included.
BMP = below measuring point
Bracketing [ ] indicates that the measurement was obtained outside of the 24-hour period from initiation of depth to groundwater measurements.
NAVD88 = North American Vertical Datum of 1988

Table 2-1. Summary of Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G270	Background	11/13/2023	10.90	614.96
G271	Compliance	11/13/2023	13.00	612.57
G273	Compliance	11/13/2023	12.71	610.31
G275	Compliance	11/13/2023	Dry	
G275D	Compliance	11/13/2023	Not Measured	
G276	Compliance	11/13/2023	28.59	603.41
G277	Compliance	11/13/2023	Dry	
G279	Compliance	11/13/2023	23.39	608.65
G280	Background	11/13/2023	8.91	616.44
G283	Compliance	11/13/2023	7.22	603.53
G284	Compliance	11/13/2023	Dry	
G285	Compliance	11/13/2023	9.38	604.14
X201	Water Level	11/13/2023	34.00	584.47
SG-04	Water Level	11/13/2023	Not Measured	

Notes:
Only wells with groundwater elevations measured are included.
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988

Table 2-2. Vertical Hydraulic Gradients

Nature and Extent Report

GMF Recycle Pond

Coffeen Power Plant

Coffeen, IL

Date	G405 Groundwater Elevation (ft NAVD88)	T408 Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	LCU (upper)				
2/4/2017	618.47	619.46	-0.99	12.00	-0.08	up
5/13/2017	618.74	619.00	-0.26	12.00	-0.02	up
7/8/2017	618.54	619.12	-0.58	12.00	-0.05	up
10/21/2017	614.47	614.81	-0.34	12.00	-0.03	up
5/8/2018	618.94	615.82	3.12	12.00	0.26	down
8/2/2018	617.55	614.45	3.10	12.00	0.26	down
10/23/2018	616.40	616.30	0.10	12.00	0.01	down
1/15/2019	616.81	617.01	-0.20	12.00	-0.02	up
8/5/2019	617.72	617.15	0.57	12.00	0.05	down
1/20/2020	619.28	619.13	0.15	12.00	0.01	down
8/10/2020	617.62	617.38	0.24	12.00	0.02	down
1/20/2021	617.12	616.85	0.27	12.00	0.02	down
4/20/2021	617.13	616.65	0.48	12.00	0.04	down
7/26/2021	617.37	617.21	0.16	12.00	0.01	down
8/16/2021	617.28	617.22	0.06	12.00	0.005	down
10/25/2021	618.12	615.50	2.62	12.00	0.218	down
2/7/2022	617.28	616.88	0.40	12.00	0.033	down
5/9/2022	617.91	617.78	0.13	12.00	0.011	down
8/23/2022	616.85	616.99	-0.14	12.00	-0.012	up
2/13/2023	617.50	617.16	0.34	12.00	0.028	down
5/30/2023	616.79	616.66	0.13	12.00	0.011	down
8/8/2023	616.78	616.62	0.16	12.00	0.013	down
10/24/2023	615.79	615.97	-0.18	12.00	-0.015	up
11/13/2023	615.90	616.06	-0.16	12.00	-0.013	up
			Middle of screen elevation G405D			610.0
			Middle of screen elevation T408			598.0

RAMBOLL

Table 2-2. Vertical Hydraulic Gradients
Nature and Extent Report
GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

Date	G275 Groundwater Elevation (ft NAVD88)	G275D Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	DA (PMP)				
4/20/21-4/21/20	605.00	568.33	36.67	42.14	0.87	down
7/12/21-7/13/21	605.63	570.43	35.20	42.77	0.82	down
7/26/2021	605.05	570.35	34.70	42.18	0.82	down
8/16/2021	605.09	571.48	33.61	42.23	0.80	down
10/25/2021	605.17	578.52	26.65	42.30	0.63	down
2/7/2022	605.10	580.46	24.64	42.24	0.58	down
5/9/2022	605.67	581.11	24.56	42.80	0.57	down
2/13/2023	605.24	580.82	24.42	42.38	0.58	down
			Middle of screen elevation G275			605.7
			Middle of screen elevation G275D			562.9

Table 2-2. Vertical Hydraulic Gradients
Nature and Extent Report
GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

Date	T408 Groundwater Elevation (ft NAVD88)	G45D Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	LCU (upper)	LCU (lower)				
2/4/2017	619.46	587.71	31.75	13.78	2.30	down
5/13/2017	619.00	586.19	32.81	13.78	2.38	down
7/8/2017	619.12	586.29	32.83	13.78	2.38	down
10/21/2017	614.81	584.69	30.12	13.78	2.19	down
5/8/2018	615.82	587.56	28.26	13.78	2.05	down
8/2/2018	614.45	585.81	28.64	13.78	2.08	down
10/23/2018	616.30	584.60	31.70	13.78	2.30	down
1/15/2019	617.01	586.96	30.05	13.78	2.18	down
8/5/2019	617.15	588.04	29.11	13.78	2.11	down
8/10/2020	617.38	614.21	3.17	13.78	0.23	down
1/20/2021	616.85	614.60	2.25	13.78	0.16	down
4/20/2021	616.65	614.32	2.33	13.78	0.17	down
7/26/2021	617.21	613.58	3.63	13.78	0.26	down
8/16/2021	617.22	613.83	3.39	13.78	0.25	down
10/25/2021	615.50	614.51	0.99	13.78	0.07	down
2/7/2022	616.88	615.01	1.87	13.78	0.14	down
5/9/2022	617.78	614.95	2.83	13.78	0.21	down
8/23/2022	616.99	614.58	2.41	13.78	0.17	down
2/13/2023	617.16	614.69	2.47	13.78	0.18	down
5/30/2023	616.66	613.99	2.67	13.78	0.19	down
8/8/2023	616.62	613.47	3.15	13.78	0.23	down
10/24/2023	615.97	613.40	2.57	13.78	0.19	down
11/13/2023	616.06	613.55	2.51	13.78	0.18	down
			Middle of screen elevation T408			598.0
			Middle of screen elevation G45D			584.2

[O: KLT 6/4/21, C:YMD 6/7/21][U:KLT 8/25/21, C:EDP 8/31/21]
[KLT 5/3/24, C: 5/7/24]

Notes:
[1] Distance change was calculated using the midpoint of the piezometer screen and water table surface. If the water table surface was above the top of the monitoring well screen, then distance change was calculated using the midpoint of both screens.
[2] Vertical gradients between ±0.0015 are considered flat, and typically have less than 0.02 foot difference in groundwater elevation between wells.
-- = no data collected on date / no vertical gradient calculated
DA = deep aquifer
dh = head change
dl = distance change
ft = foot/feet
LCU (lower) = lower confining unit (Smithboro)
LCU (upper) = lower confining unit (Vandalia)
NAVD88 = North American Vertical Datum of 1988
PMP = potential migration pathway
UA = uppermost aquifer

Table 2-3. Field Hydraulic Conductivities
Nature and Extent Report
GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

Well ID	Gradient Position	Bottom of Screen Elevation (ft NAVD88)	Screen Length [1] (ft)	Field Identified Screened Material	Slug Type	Analysis Method	Falling Head (Slug In) Hydraulic Conductivity (cm/s)	Rising Head (Slug Out) Hydraulic Conductivity (cm/s)	Minimum Hydraulic Conductivity (cm/s)	Maximum Hydraulic Conductivity (cm/s)	Hydraulic Conductivity Geometric Mean (cm/s)
Uppermost Aquifer											
G272	D	606.74	4.87	SP to ML, (CL)s	solid	Kansas Geological Survey	1.7E-03	- -	7.8E-04	1.7E-03	1.1E-03
G284	D	602.48	4.77	ML	solid	Kansas Geological Survey	1.2E-03	7.8E-04			
G286	D	601.81	4.79	SP, ML, CL	solid	Kansas Geological Survey	1.2E-03	- -			
G287	D	604.09	4.82	SP, ML, CL	solid	Kansas Geological Survey	1.1E-03	1.1E-03			
Lower Confining Unit (PMP)											
G283	D	590.13	9.78	SP, ML	solid	Kansas Geological Survey	4.2E-03	4.5E-03	2.7E-04	4.5E-03	1.2E-03
G285	D	587.09	9.77	CL	solid	Bouwer-Rice	2.7E-04	4.3E-04			

[O: KLT, C:EDP 8/31/21]

Notes:
1. All wells are constructed from 2 inch PVC with 0.01 inch slotted screens.
- - = Test not analyzed/performed
cm/s = centimeters per second
D = downgradient
ft = foot/feet
NAVD88 = North American Vertical Datum of 1988
PVC = polyvinyl chloride
PMP = potential migration pathway

USCS = Unified Soil Classification System
CL = Lean Clay
(CL)s = Lean Clay with Sand
ML = Silt
SP = Poorly-Graded Sand

Table 2-4. Geotechnical Data Summary
Nature and Extent Report
GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

Sample ID	Field Location ID	Top of Sample (ft bgs)	Bottom of Sample (ft bgs)	Moisture Content (%)	Dry Density (pcf)	Specific Gravity	Calculated Porosity [1] (%)	Vertical Hydraulic Conductivity (cm/s)	LL	PL	PI	USCS	Gravel (%)	Sand (%)	Fines (%)
Loess Unit															
G275D/Comp 1	G275D	4	9.5	18.3	110.8	2.66	33.2	--	33	16	17	CL	0	37	63
G284/Comp 1	G284	4	9.9	15.5	110.4	2.56	30.9	--	30	14	16	CL	0	45	55
G288/Comp 1	G288	3.3	6	20.2	104.6	2.55	34.3	--	40	19	21	CL	0	30	70
G288/Comp 2	G288	6	11.2	16.4	111.6	2.54	29.6	--	27	14	15	CL	0	44	56
Hagarstown Member															
G275D/Comp 2	G275D	9.5	10.9	20.4	102.5	2.57	36.1	--	32	17	15	CL	0	47	53
G275D, ST7	G275D	12	14	15.8	115.9	--	--	1.6E-04	--	--	--	SC	--	--	--
G284/Comp 2	G284	10	14	12.7	122.2	2.63	25.5	--	18	12	6	SM	0	58	42
G288/Comp 3	G288	11.2	12	15.7	112.0	2.56	29.9	--	16	11	5	ML	0	55	55
Vandalia Member															
G275D/Comp 3	G275D	16	46	13.2	121.6	2.64	26.2	--	39	15	24	CL	0	23	77
Smithboro Member															
G275D/Comp 4	G275D	46	52	13.3	122.0	2.64	25.9	--	30	15	15	CL	0	31	69
Yarmouth Soil															
G275D/Comp 5	G275D	52	54	10.2	--	2.59	--	--	NP	NP	NP	SP-SM	0	90	10
Lierle Clay															
G275D/Comp 6	G275D	54	64	20.6	106.3	2.66	36.0	--	39	16	23	CL	0	17	83

[O:KLT, QC: FPO][U: FPO, QC:KLT 8/9/21][U:KLT 8/13/21, C:EDP 8/30/21]

Notes:
[1] Porosity calculated as relationship of bulk density (p_b) to particle density (p_d) (n = 100[1- (p_b/p_d)])
-- = not analyzed
% = Percent
bgs = below ground surface
cm/s = centimeters per second
ft = foot/feet
GMF = Gypsum Management Facility
LL = Liquid limit
NP = Non Plastic
pcf = pounds per cubic foot
PI = Plasticity Index
PL = Plastic Limit

USCS = Unified Soil Classification System
CL = Lean Clay
ML = Silt
SC = Clayey Sand
SM = Silty Sand
SP-SM = Poorly Graded-Sand with silt

Table 3-1. Monitoring Well Construction Details
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Location	HSU	Date Constructed	Top of PVC Elevation (ft)	Measuring Point Elevation (ft)	Measuring Point Description	Ground Elevation (ft)	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Screen Top Elevation (ft)	Screen Bottom Elevation (ft)	Well Depth (ft bgs)	Bottom of Boring Elevation (ft)	Screen Length (ft)	Screen Diameter (inches)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
G270	UA	2008-02-26	--	625.43	Top of Disk	623.73	13.13	17.92	610.60	605.81	18.27	605.50	4.8	2	39.0665638	-89.3974031
G271	UA	2009-09-10	--	625.34	Top of Disk	622.89	9.96	14.31	612.93	608.58	14.79	606.90	4.4	2	39.0650072	-89.3955874
G272	UA	2009-09-10	--	623.51	Top of Disk	620.72	9.11	13.98	611.61	606.74	14.32	606.40	4.9	2	39.0649894	-89.3947851
G273	UA	2009-09-10	--	622.66	Top of Disk	620.17	9.08	14.56	611.09	605.61	15.1	604.20	5.5	2	39.0649852	-89.3939733
G274	UA	2009-09-16	--	623.79	Top of Disk	621.67	12.9	17.67	608.77	604.00	18.06	603.60	4.8	2	39.064991	-89.393198
G275	UA	2009-09-16	--	618.26	Top of Disk	616.14	8.22	12.62	607.92	603.52	13.19	603.00	4.4	2	39.0651507	-89.3925614
G275D	DA	2021-01-14	620.31	620.23	Top of PVC	617.52	49.76	59.55	567.76	557.97	59.89	517.80	9.8	2	39.065121	-89.392595
G276	UA	2009-09-16	--	631.51	Top of Disk	629.14	22.41	27.22	606.73	601.92	27.65	601.10	4.8	2	39.0655345	-89.3926172
G277	UA	2009-09-14	--	623.08	Top of Disk	620.79	14.29	18.77	606.50	602.02	19.24	600.80	4.5	2	39.0659274	-89.3925718
G279	UA	2009-09-10	--	632.04	Top of Disk	629.19	22.4	26.79	606.79	602.40	27.3	601.20	4.4	2	39.0671555	-89.3929983
G280	UA	2008-02-26	625.35	625.26	Top of Riser	623.11	12.79	17.63	610.32	605.48	17.98	605.10	4.8	2	39.0672155	-89.3949916
G283	LCU	2021-01-14	610.75	610.75	Top of PVC	608.30	8.39	18.17	599.91	590.13	18.36	589.90	9.8	2	39.064645	-89.392119
G284	UA	2021-02-03	618.42	618.42	Top of PVC	615.33	8.08	12.85	607.25	602.48	13.23	601.30	4.8	2	39.065487	-89.390631
G285	LCU	2021-01-25	613.52	613.52	Top of PVC	610.54	13.68	23.45	596.86	587.09	23.83	584.50	9.8	2	39.066513	-89.391474
G286	UA	2021-01-18	613.13	613.30	Top of PVC	609.97	3.37	8.16	606.60	601.81	8.5	600.00	4.8	2	39.067277	-89.391883
G287	UA	2021-01-20	617.45	617.45	Top of PVC	614.34	5.43	10.25	608.91	604.09	10.59	602.50	4.8	2	39.068297	-89.392388
G288	UA	2021-01-19	620.07	620.07	Top of PVC	617.08	7.59	12.26	609.49	604.82	12.75	603.10	4.7	2	39.067834	-89.390082
MW20S	UA	2007-05-01	622.90	622.86	Top of PVC	620.26	8.41	13.22	611.85	607.04	13.67	604.30	4.8	2	39.0649676	-89.3943221

Notes:
All elevation data are presented relative to the North American Vertical Datum of 1988 (NAVD88), GEOID 12A
-- = not measured/recorded
bgs = below ground surface
DA = Deep Aquifer
ft = foot or feet
HSU = Hydrostratigraphic Unit
LCU = Lower Confining Unit
PVC = polyvinyl chloride
UA = Uppermost Aquifer

Table 3-2. Exceedance Parameter Statistical Results
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Location	Parameter	Unit	Groundwater Protection Standard	2023 Q2 LCL	2023 Q3 LCL	2023 Q4 LCL
G275D	Arsenic, total	mg/L	0.010	0.00205	0.00218	0.0144
G273	Sulfate, total	mg/L	400	410	410	400
G285	Sulfate, total	mg/L	400	535	541	571
G279	Total Dissolved Solids	mg/L	1,200	1,080	--	2,400
G285	Total Dissolved Solids	mg/L	1,200	1,430	1,450	1,460

Notes:
-- = data not available (well reported dry during compliance sampling event)
LCL = Lower Confidence Level
mg/L = milligrams per liter

Table 3-3. Summary of Groundwater Data
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

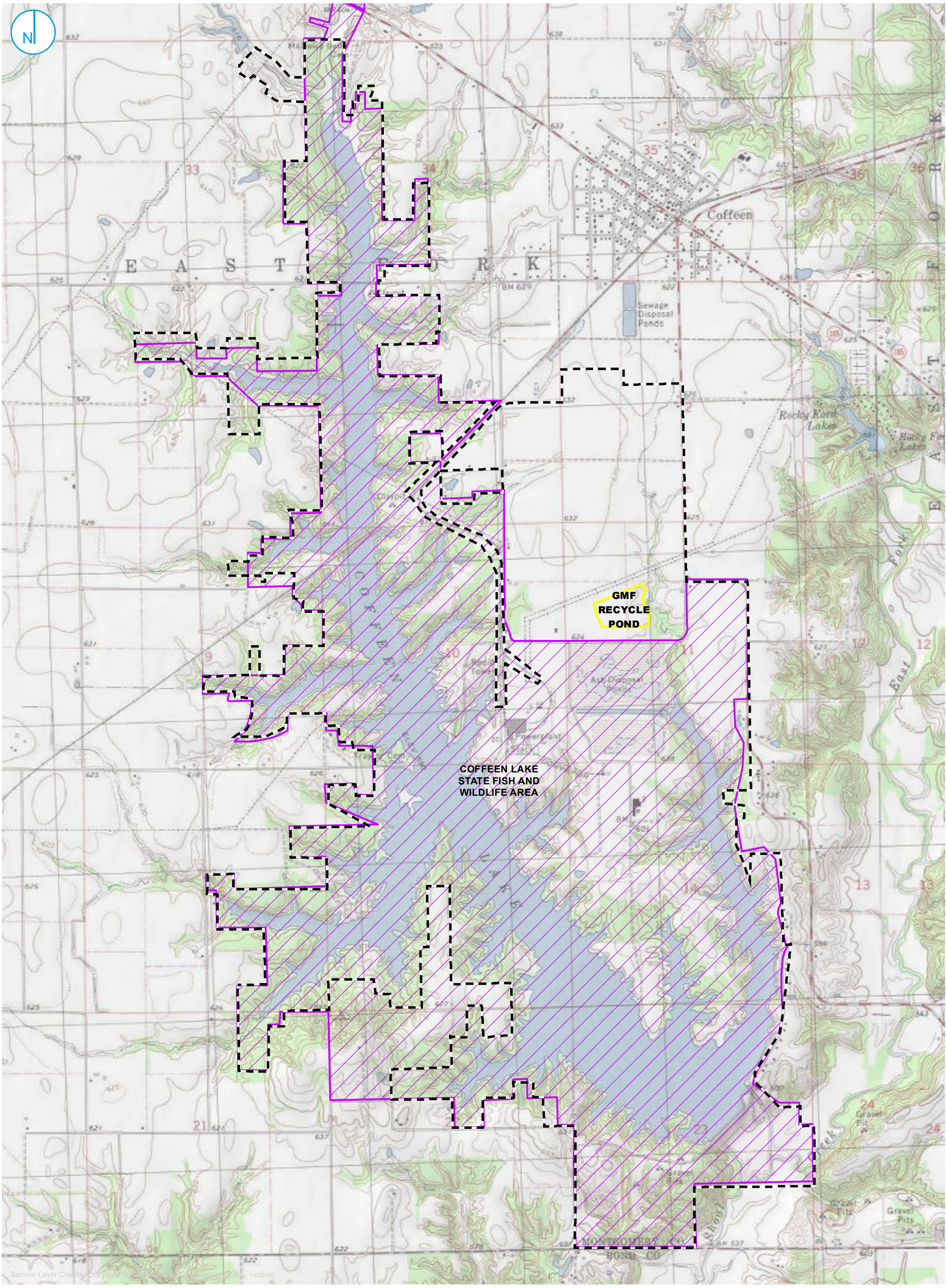
HSU	Location	Parameter	Unit	Sample Count	Non-Detect Result Count	Percent Non-Detect Results	First Sample	Last Sample	Minimum	Median	Mean	Maximum
DA	G275D	Arsenic, total	mg/L	8	0	0	03/30/2021	12/07/2023	0.00330	0.00910	0.0116	0.0237
DA	G275D	Sulfate, total	mg/L	8	0	0	03/30/2021	12/07/2023	99.0	225	197	270
DA	G275D	Total Dissolved Solids	mg/L	8	0	0	03/30/2021	12/07/2023	840	990	974	1,100
LCU	G283	Arsenic, total	mg/L	11	5	45	03/31/2021	11/20/2023	<0.0004	0.00100	0.000982	0.00160
LCU	G283	Sulfate, total	mg/L	11	0	0	03/31/2021	11/20/2023	230	250	246	270
LCU	G283	Total Dissolved Solids	mg/L	11	0	0	03/31/2021	11/20/2023	770	820	830	930
LCU	G285	Arsenic, total	mg/L	11	5	45	03/30/2021	11/20/2023	<0.0004	0.00100	0.000952	0.00140
LCU	G285	Sulfate, total	mg/L	11	0	0	03/30/2021	11/20/2023	490	580	590	708
LCU	G285	Total Dissolved Solids	mg/L	11	0	0	03/30/2021	11/20/2023	1,400	1,500	1,545	1,700
UA	G270	Arsenic, total	mg/L	38	35	92	01/20/2015	11/17/2023	<0.0004	0.00100	0.000941	0.00110
UA	G270	Sulfate, total	mg/L	39	0	0	01/20/2015	11/17/2023	48.0	54.0	62.4	140
UA	G270	Total Dissolved Solids	mg/L	39	0	0	01/20/2015	11/17/2023	340	420	436	570
UA	G271	Arsenic, total	mg/L	31	27	87	01/21/2015	11/17/2023	0.000500	0.00100	0.000976	0.00200
UA	G271	Sulfate, total	mg/L	32	0	0	01/21/2015	11/17/2023	170	375	371	610
UA	G271	Total Dissolved Solids	mg/L	32	0	0	01/21/2015	11/17/2023	594	870	869	1,100
UA	G272	Arsenic, total	mg/L	17	17	100	01/21/2015	11/17/2023	<0.0004	<0.001	<0.001	<0.001
UA	G272	Sulfate, total	mg/L	17	0	0	01/21/2015	11/17/2023	270	370	369	470
UA	G272	Total Dissolved Solids	mg/L	17	0	0	01/21/2015	11/17/2023	660	880	867	1,100
UA	G273	Arsenic, total	mg/L	31	25	81	01/21/2015	11/17/2023	0.000400	0.00100	0.00107	0.00450
UA	G273	Sulfate, total	mg/L	32	0	0	01/21/2015	11/17/2023	333	440	469	940
UA	G273	Total Dissolved Solids	mg/L	32	0	0	01/21/2015	11/17/2023	820	1,050	1,042	1,300
UA	G274	Arsenic, total	mg/L	17	10	59	01/21/2015	11/17/2023	0.000500	0.00100	0.00102	0.00170
UA	G274	Sulfate, total	mg/L	17	0	0	01/21/2015	11/17/2023	150	286	267	390
UA	G274	Total Dissolved Solids	mg/L	17	0	0	01/21/2015	11/17/2023	490	770	711	890
UA	G275	Arsenic, total	mg/L	12	9	75	01/21/2015	06/08/2023	<0.00069	0.00100	0.00125	0.00430
UA	G275	Sulfate, total	mg/L	12	0	0	01/21/2015	06/08/2023	320	540	563	940
UA	G275	Total Dissolved Solids	mg/L	12	0	0	01/21/2015	06/08/2023	790	1,100	1,184	1,500
UA	G276	Arsenic, total	mg/L	30	27	90	01/21/2015	11/17/2023	<0.0004	0.00100	0.00107	0.00570
UA	G276	Sulfate, total	mg/L	31	0	0	01/21/2015	11/17/2023	180	250	319	2,610
UA	G276	Total Dissolved Solids	mg/L	31	0	0	01/21/2015	11/17/2023	660	820	938	4,260
UA	G277	Arsenic, total	mg/L	10	5	50	10/14/2020	06/01/2023	<0.00069	0.00100	0.000938	0.00130
UA	G277	Sulfate, total	mg/L	10	0	0	10/14/2020	06/01/2023	67.0	470	416	610
UA	G277	Total Dissolved Solids	mg/L	10	0	0	10/14/2020	06/01/2023	480	1,250	1,197	1,600
UA	G279	Arsenic, total	mg/L	31	23	74	01/21/2015	11/17/2023	<0.00069	0.00100	0.00113	0.00300
UA	G279	Sulfate, total	mg/L	32	0	0	01/21/2015	11/17/2023	110	590	855	3,390
UA	G279	Total Dissolved Solids	mg/L	32	0	0	01/21/2015	11/17/2023	560	1,350	1,942	6,260
UA	G280	Arsenic, total	mg/L	39	30	77	01/21/2015	11/20/2023	<0.0004	0.00100	0.00125	0.00660
UA	G280	Sulfate, total	mg/L	40	0	0	01/21/2015	11/20/2023	43.0	82.0	100	910
UA	G280	Total Dissolved Solids	mg/L	40	0	0	01/21/2015	11/20/2023	350	460	476	1,100
UA	G284	Arsenic, total	mg/L	10	9	90	03/30/2021	08/15/2023	<0.0004	0.00100	0.000940	<0.00022
UA	G284	Sulfate, total	mg/L	10	0	0	03/30/2021	08/15/2023	60.0	68.0	80.1	174
UA	G284	Total Dissolved Solids	mg/L	10	0	0	03/30/2021	08/15/2023	410	490	500	656
UA	G286	Arsenic, total	mg/L	8	8	100	03/31/2021	07/27/2021	<0.00022	<0.00022	<0.00022	<0.00022
UA	G286	Sulfate, total	mg/L	8	0	0	03/31/2021	07/27/2021	11.0	13.5	13.5	16.0

Table 3-3. Summary of Groundwater Data
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

HSU	Location	Parameter	Unit	Sample Count	Non-Detect Result Count	Percent Non-Detect Results	First Sample	Last Sample	Minimum	Median	Mean	Maximum
UA	G286	Total Dissolved Solids	mg/L	8	0	0	03/31/2021	07/27/2021	230	300	300	370
UA	G287	Arsenic, total	mg/L	8	8	100	03/29/2021	07/27/2021	<0.00022	<0.00022	<0.00022	<0.00022
UA	G287	Sulfate, total	mg/L	8	0	0	03/29/2021	07/27/2021	41.0	43.5	44.4	50.0
UA	G287	Total Dissolved Solids	mg/L	8	0	0	03/29/2021	07/27/2021	350	445	436	490
UA	G288	Arsenic, total	mg/L	8	0	0	03/30/2021	07/27/2021	0.00110	0.00375	0.00348	0.00560
UA	G288	Sulfate, total	mg/L	8	0	0	03/30/2021	07/27/2021	29.0	42.0	200	770
UA	G288	Total Dissolved Solids	mg/L	8	0	0	03/30/2021	07/27/2021	310	370	490	1,400
UA	MW20S	Arsenic, total	mg/L	1	0	0	10/07/2015	10/07/2015	0.00490	0.00490	0.00490	0.00490
UA	MW20S	Sulfate, total	mg/L	1	0	0	10/07/2015	10/07/2015	89.0	89.0	89.0	89.0
UA	MW20S	Total Dissolved Solids	mg/L	1	0	0	10/07/2015	10/07/2015	460	460	460	460

Notes:
< = less than the method detection limit
DA = Deep Aquifer
HSU = Hydrostratigraphic Unit
LCU = Lower Confining Unit
UA = Uppermost Aquifer

FIGURES



PART 845 REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY
COFFEEN LAKE STATE FISH AND WILDLIFE AREA

0 1,000 2,000 Feet

SITE LOCATION MAP

FIGURE 2-1

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 6/4/2024 | DESIGNER: GALARNMC

Y:\Mapping\Projects\22\2285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 2-2. Monitoring Well Location Map.mxd

- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- CCR SOURCEWATER SAMPLE
- STAFF GAGE, RIVER
- COAL MINE SHAFT
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

0 275 550 Feet

NOTE:
STAFF GAGE SG-04 WAS IDENTIFIED AS DESTROYED DURING OCTOBER 2023.

MONITORING WELL LOCATION MAP

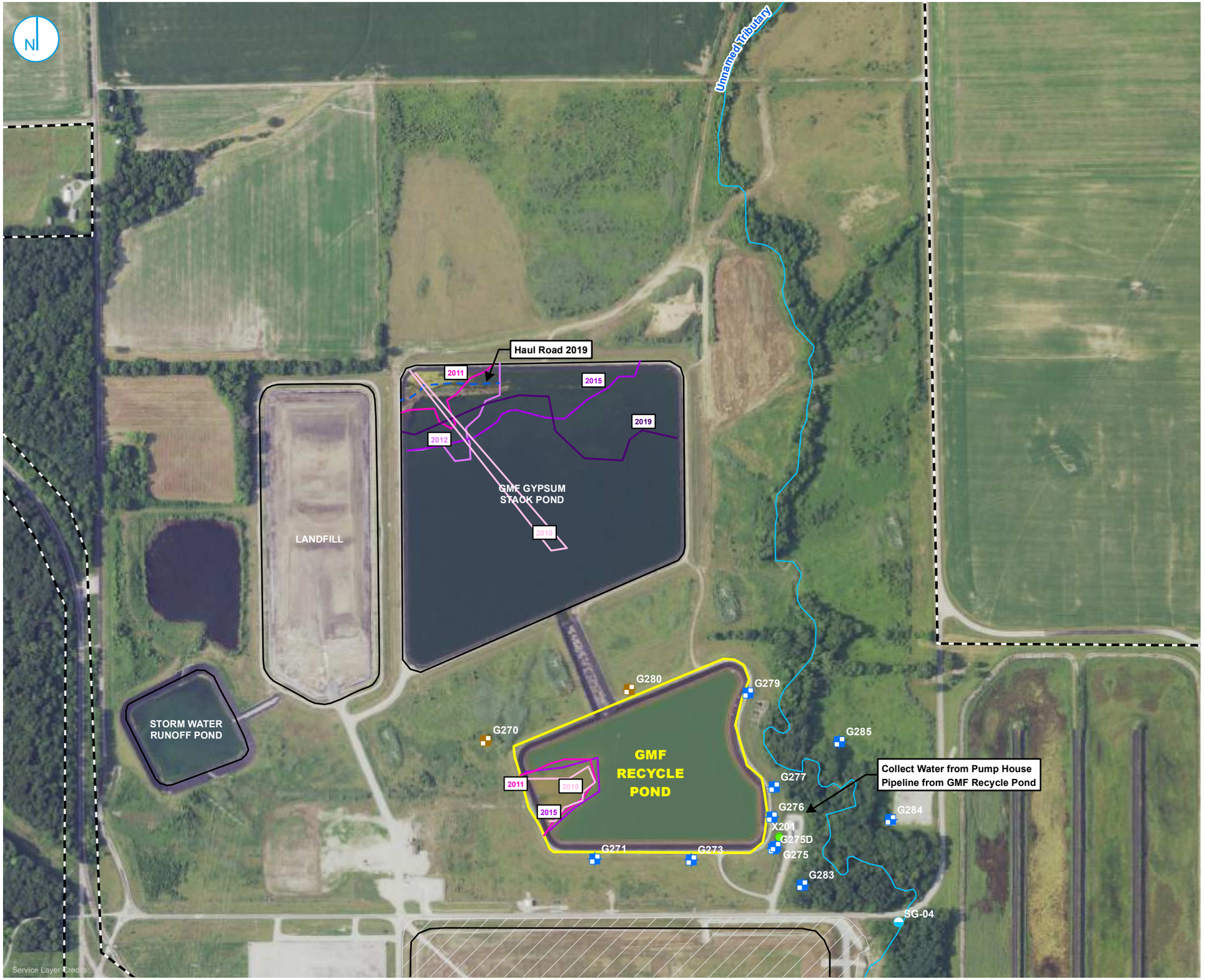
NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\2285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 2-3. CCR Observations.mxd



- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- STAFF GAGE, RIVER
- CCR SOURCEWATER SAMPLE
- APPROXIMATE LIMITS OF ASH BASED ON 2010 AERIAL
- APPROXIMATE LIMITS OF ASH BASED ON 2011 AERIAL
- APPROXIMATE LIMITS OF ASH BASED ON 2012 AERIAL
- APPROXIMATE LIMITS OF ASH BASED ON 2015 AERIAL
- APPROXIMATE LIMITS OF ASH BASED ON 2019 AERIAL
- HAUL ROAD 2019
- SURFACE WATER FEATURE
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

NOTE:
STAFF GAGE SG-04 WAS IDENTIFIED AS DESTROYED DURING OCTOBER 2023.

0 225 450
Feet

CCR OBSERVATIONS

NATURE AND EXTENT REPORT
GMF RECYCLE POND

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 5/10/2024 | DESIGNER: GALARNMC

CCR SOURCEWATER SAMPLE

628-FT ELEVATION CONTOUR (NAVD88)

ELEVATION BELOW 628

REGULATED UNIT (SUBJECT UNIT)

PROPERTY BOUNDARY

0 75 150 Feet

CCR ACCESS SUMMARY

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

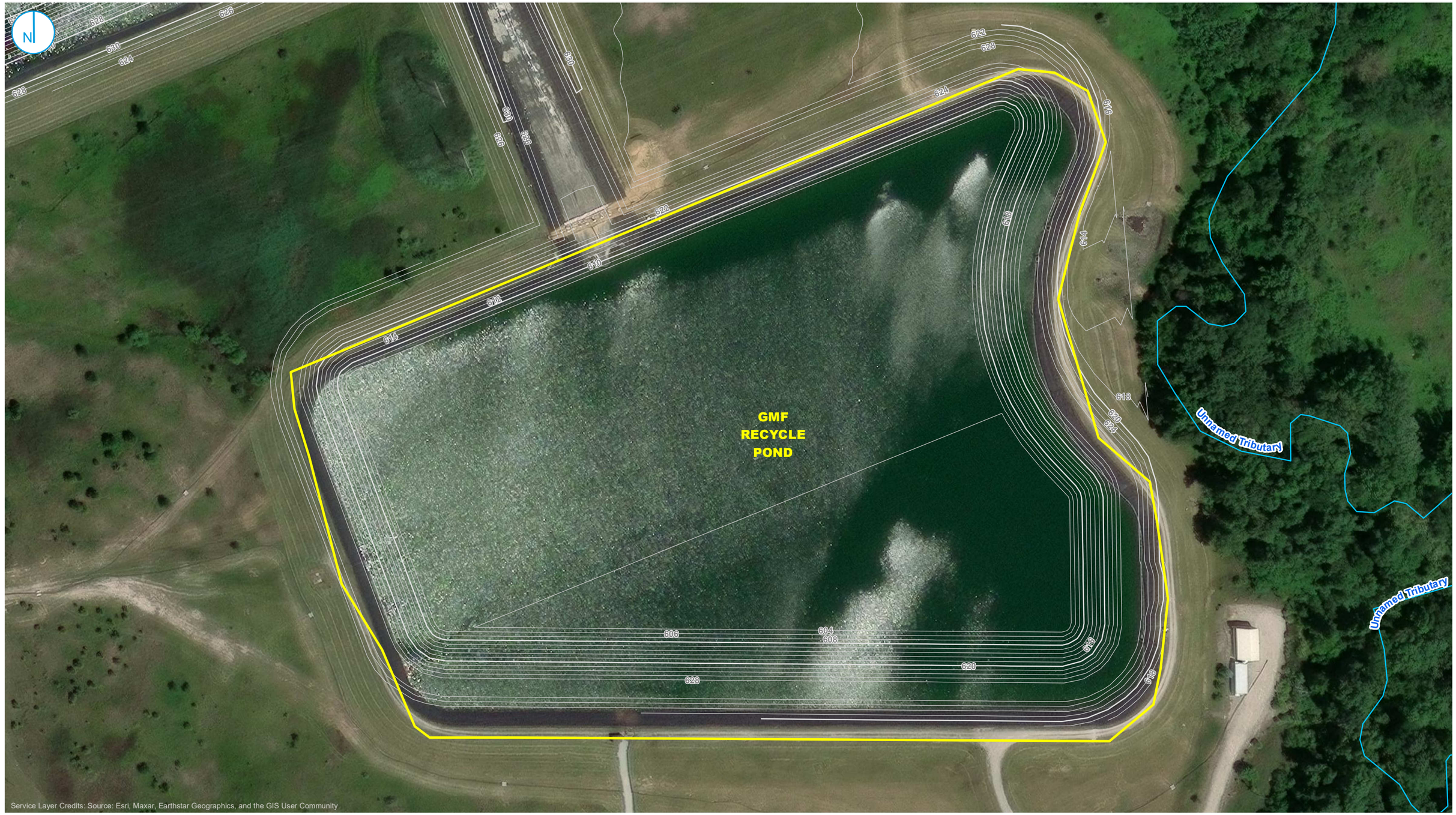
FIGURE 2-4

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\222285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 2-4. CCR Access Summary.mxd

PROJECT: 169000XXXX | DATED: 5/10/2024 | DESIGNER: GALARNMC



Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

10-FT BOTTOM OF ASH ELEVATION CONTOUR (NAVD88)
2-FT BOTTOM OF ASH ELEVATION CONTOUR (NAVD88)
SURFACE WATER FEATURE
REGULATED UNIT (SUBJECT UNIT)

0 75 150 Feet

BASE OF CCR

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

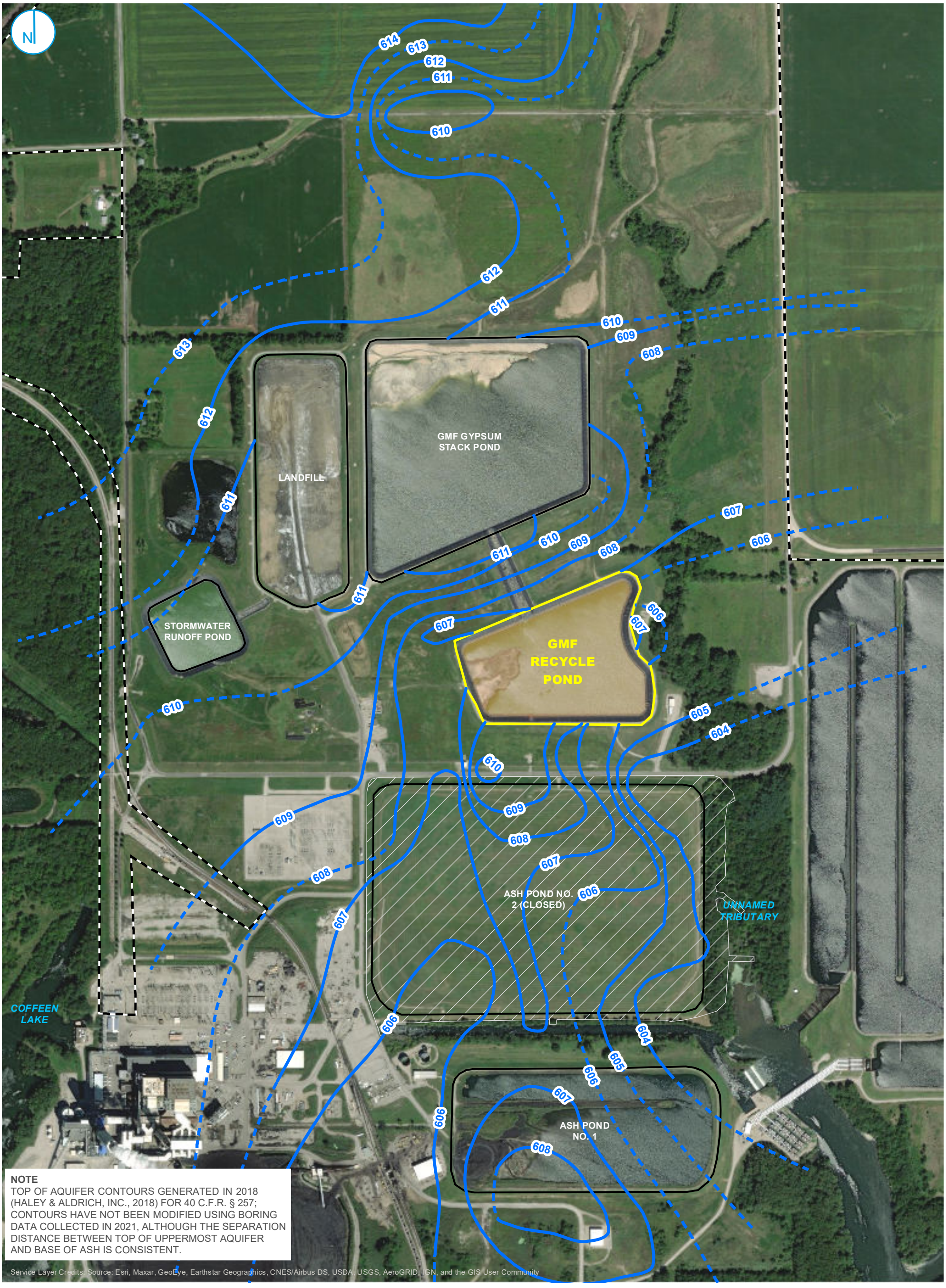
FIGURE 2-5

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 1690000XXXX | DATED: 5/10/2024 | DESIGNER: GALARNMC

Y:\Mapping\Projects\2212285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 2-5. Base of CCR.mxd



HAGARSTOWN MEMBER ELEVATION CONTOUR (1-FT INTERVAL, NAVD88)
INFERRED HAGARSTOWN MEMBER ELEVATION CONTOUR
PART 845 REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 275 550
Feet

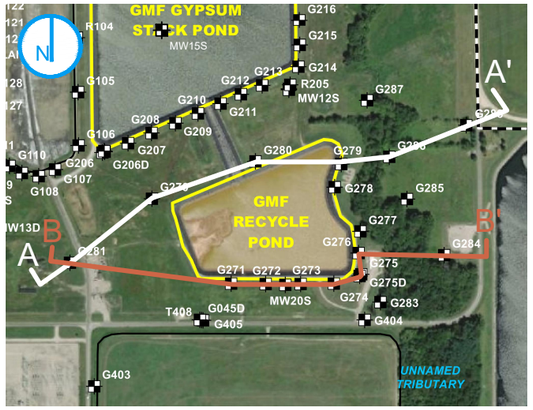
TOP OF UPPERMOST AQUIFER

FIGURE 2-6

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

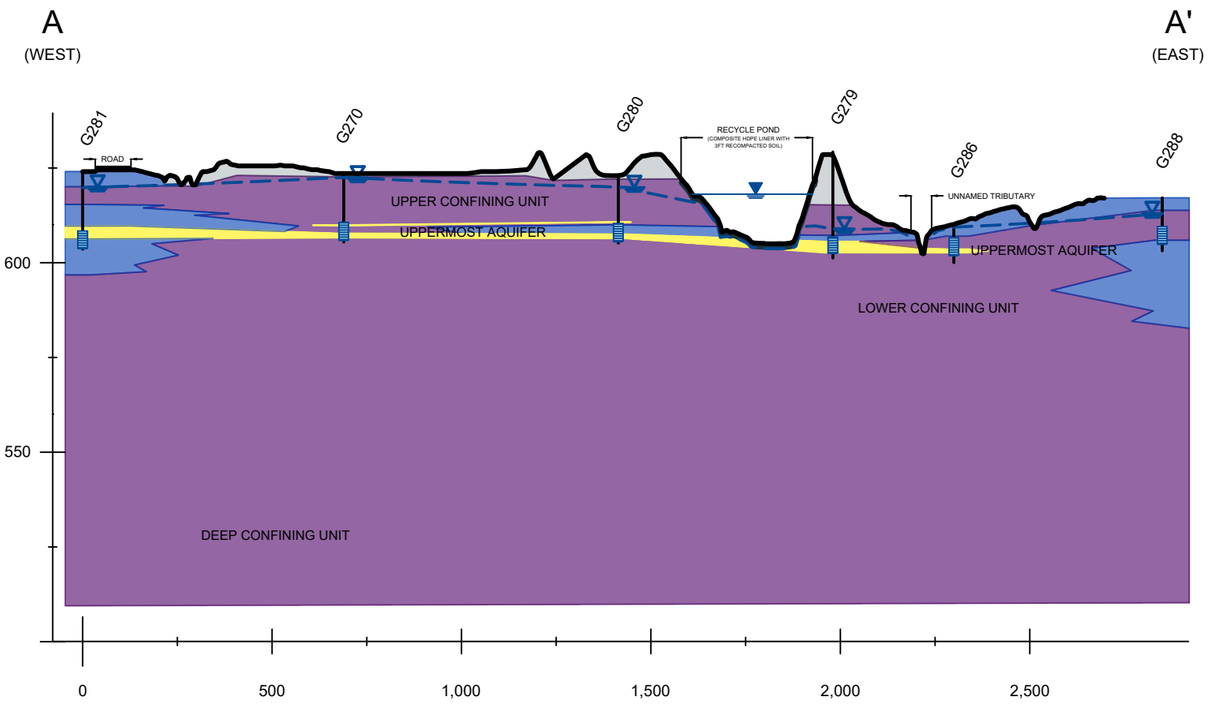
RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

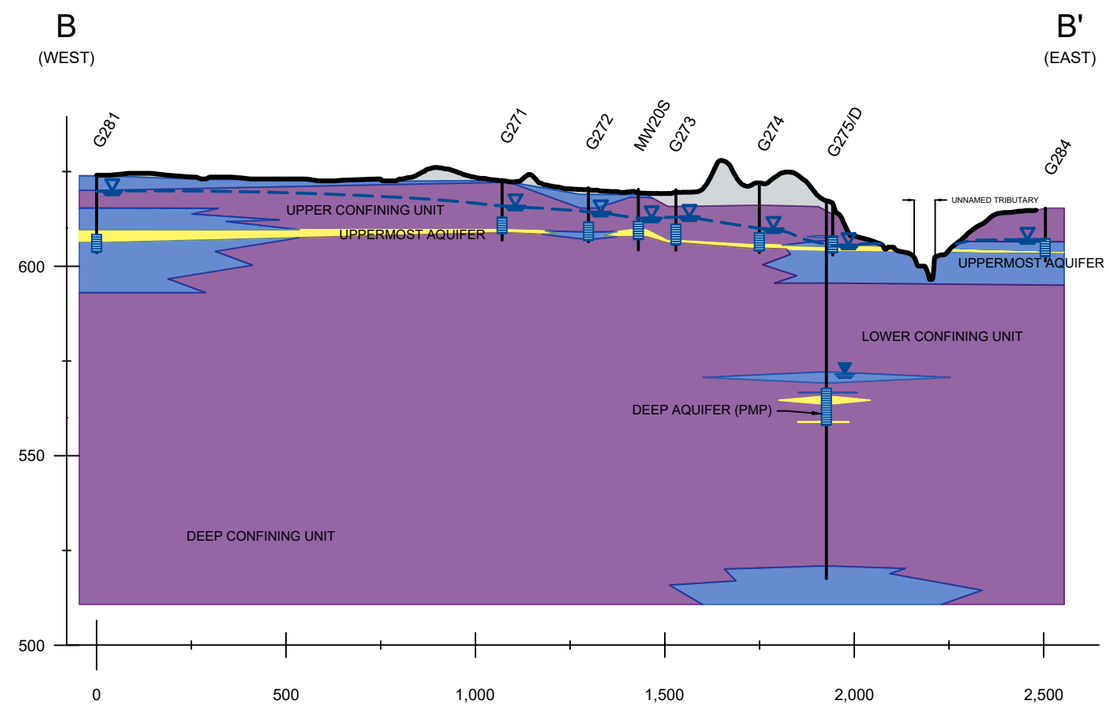
RAMBOLL



NOTES

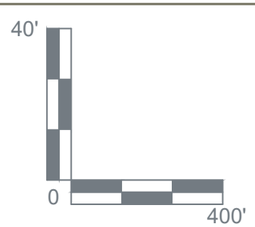
1. This profile was developed by interpolation between widely spaced boreholes. Only at the borehole location should it be considered as an approximately accurate representation and then only to the degree implied by the notes on the borehole logs.
2. Scale is approximate.
3. Vertical scale is exaggerated 10X.
4. Groundwater elevations measured on July 26, 2021.





LEGEND

- FILL
- CLAY (CL/CH)
- SILT (ML)
- SAND (SP/SM/SW)
- WELL SCREEN INTERVAL
- UPPERMOST AQUIFER POTENTIOMETRIC SURFACE
- UPPERMOST AQUIFER GROUNDWATER ELEVATION
- BEDROCK GROUNDWATER / OTHER GROUNDWATER / SURFACE WATER ELEVATION(S)
- SURFACE WATER



GEOLOGIC CROSS SECTIONS
A-A' & B-B'

NATURE AND EXTENT EPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-7

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

\\ramboll.com\data\Chicago\GIS\LiDay\AWMR\Permitting\Projects\Coffeen\Hydrogeo Report\Figures\EVS\Working Files\CAD\Cross Sections\Coffeen-GMF-RP-Cross Sections.dwg
Last Updated by vistra\Desktop at 6/6/2022 10:06:55 AM
Project Location: C:\Users\vistra\Desktop\Coffeen GWDeliverables\Part 845 Operating Permits\Sites\Coffeen\Hydrogeo Report\Figures\EVS\Working Files\CAD\Cross Sections\Coffeen-GMF-RP-Cross Sections.dwg

COMPLIANCE MONITORING WELL
BACKGROUND MONITORING WELL
PORE WATER WELL
LEACHATE WELL
MONITORING WELL
STAFF GAGE, CCR UNIT
STAFF GAGE, RIVER

GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 325 650 Feet

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

UPPERMOST AQUIFER POTENTIOMETRIC SURFACE MAP MAY 30, 2023 (E001)

NATURE AND EXTENT REPORT
GMF RECYCLE POND

COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 2-8

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

MONITORING WELL
GROUNDWATER ELEVATION CONTOUR (2-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
REGULATED UNIT (SUBJECT UNIT)
SITE FEATURE
LIMITS OF FINAL COVER
PROPERTY BOUNDARY

0 325 650
Feet

DEEP AQUIFER POTENTIOMETRIC SURFACE MAP AUGUST 8, 2023 (E002)

FIGURE 2-9

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 5/10/2024 | DESIGNER: GALARNMC

Y:\Mapping\Projects\22\2285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 3-1. COF 104 GWPS UA.mxd

TOTAL SULFATE EXCEEDANCE

TOTAL DISSOLVED SOLIDS EXCEEDANCE

COMPLIANCE WELL WITHOUT EXCEEDANCE

REGULATED UNIT (SUBJECT UNIT)

SITE FEATURE

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

0 275 550 Feet

GWPS EXCEEDANCE MAP UPPERMOST AQUIFER

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 3-1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

PROJECT: 169000XXXX | DATED: 5/10/2024 | DESIGNER: GALARNMC

Y:\Mapping\Projects\22\2285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 3-2. COF 104 GWPS LCU.mxd

TOTAL SULFATE EXCEEDANCE

TOTAL DISSOLVED SOLIDS EXCEEDANCE

COMPLIANCE WELL WITHOUT EXCEEDANCE

REGULATED UNIT (SUBJECT UNIT)

SITE FEATURE

LIMITS OF FINAL COVER

PROPERTY BOUNDARY

0 275 550 Feet

GWPS EXCEEDANCE MAP LOWER CONFINING UNIT

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

FIGURE 3-2

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDICES

APPENDIX A
Site-Wide Groundwater Elevations

Appendix A. Site-Wide Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G045D	Water Level	LCU	02/13/2023	9.12	614.69
G045D	Water Level	LCU	05/30/2023	9.82	613.99
G045D	Water Level	LCU	08/08/2023	10.34	613.47
G045D	Water Level	LCU	10/24/2023	10.41	613.40
G045D	Water Level	LCU	11/13/2023	10.26	613.55
G046D	Water Level	LCU	02/13/2023	14.85	610.39
G046D	Water Level	LCU	05/30/2023	14.54	610.70
G046D	Water Level	LCU	08/08/2023	15.10	610.14
G046D	Water Level	LCU	10/24/2023	15.59	609.65
G046D	Water Level	LCU	11/13/2023	15.54	609.70
G1001	Water Level	LCU	02/13/2023	6.12	591.49
G1001	Water Level	LCU	03/30/2023	6.09	591.51
G1001	Water Level	LCU	04/30/2023	6.53	591.07
G1001	Water Level	LCU	05/30/2023	6.61	590.99
G1001	Water Level	LCU	08/08/2023	6.32	591.29
G1001	Water Level	LCU	09/25/2023	6.14	591.46
G1001	Water Level	LCU	10/24/2023	6.20	591.41
G1001	Water Level	LCU	11/13/2023	6.49	591.12
G1001	Water Level	LCU	12/18/2023	5.88	591.73
G1003	Water Level	LCU	02/13/2023	Dry	Dry
G1003	Water Level	LCU	05/30/2023	Dry	Dry
G1003	Water Level	LCU	08/08/2023	Dry	Dry
G1003	Water Level	LCU	10/24/2023	Dry	Dry
G1003	Water Level	LCU	11/13/2023	Dry	Dry
G101	Water Level	UA	02/13/2023	4.71	622.89
G101	Water Level	UA	05/30/2023	6.53	621.07
G101	Water Level	UA	08/08/2023	11.16	616.44
G101	Water Level	UA	10/25/2023	14.15	613.45
G101	Water Level	UA	11/13/2023	13.95	613.65
G102	Water Level	UA	02/13/2023	4.80	624.24
G102	Water Level	UA	08/08/2023	10.34	618.70
G102	Water Level	UA	10/24/2023	12.60	616.44
G102	Water Level	UA	11/13/2023	12.84	616.20
G102	Water Level	UA	12/18/2023	12.82	616.22

Appendix A. Site-Wide Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G103	Water Level	UA	02/13/2023	9.59	624.21
G103	Water Level	UA	03/30/2023	7.94	625.85
G103	Water Level	UA	04/30/2023	9.58	624.21
G103	Water Level	UA	05/30/2023	10.49	623.31
G103	Water Level	UA	06/08/2023	11.00	622.80
G103	Water Level	UA	07/08/2023	12.05	621.74
G103	Water Level	UA	08/08/2023	13.53	620.27
G103	Water Level	UA	09/25/2023	14.74	619.06
G103	Water Level	UA	10/25/2023	15.66	618.14
G103	Water Level	UA	11/13/2023	16.00	617.80
G103	Water Level	UA	12/18/2023	16.24	617.56
G105	Water Level	UA	02/13/2023	8.24	623.84
G105	Water Level	UA	08/08/2023	10.84	621.24
G105	Water Level	UA	09/25/2023	15.74	616.34
G105	Water Level	UA	10/25/2023	12.90	619.18
G105	Water Level	UA	11/13/2023	13.46	618.62
G105	Water Level	UA	12/18/2023	13.63	618.45
G106	Water Level	UA	02/13/2023	8.44	622.71
G106	Water Level	UA	03/30/2023	7.82	623.32
G106	Water Level	UA	04/30/2023	9.16	621.98
G106	Water Level	UA	05/30/2023	9.81	621.33
G106	Water Level	UA	06/08/2023	10.39	620.76
G106	Water Level	UA	07/08/2023	10.50	620.65
G106	Water Level	UA	08/08/2023	12.17	618.98
G106	Water Level	UA	09/25/2023	12.97	618.18
G106	Water Level	UA	10/25/2023	14.01	617.14
G106	Water Level	UA	11/13/2023	14.21	616.94
G106	Water Level	UA	12/18/2023	13.87	617.28
G107	Water Level	UA	02/13/2023	9.07	621.15
G107	Water Level	UA	05/30/2023	10.85	619.37
G107	Water Level	UA	08/08/2023	12.76	617.46
G107	Water Level	UA	10/25/2023	14.31	615.91
G107	Water Level	UA	11/13/2023	14.40	615.82
G108	Water Level	UA	02/13/2023	9.67	620.55

Appendix A. Site-Wide Groundwater Elevations
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G108	Water Level	UA	05/30/2023	11.65	618.57
G108	Water Level	UA	08/08/2023	13.24	616.98
G108	Water Level	UA	10/25/2023	14.89	615.33
G108	Water Level	UA	11/13/2023	14.96	615.26
G109	Water Level	UA	02/13/2023	9.81	619.95
G109	Water Level	UA	05/30/2023	11.89	617.87
G109	Water Level	UA	08/08/2023	13.64	616.12
G109	Water Level	UA	10/25/2023	14.89	614.87
G109	Water Level	UA	11/13/2023	15.09	614.67
G110	Water Level	UA	02/13/2023	10.80	618.85
G110	Water Level	UA	05/30/2023	12.70	616.95
G110	Water Level	UA	08/08/2023	14.16	615.49
G110	Water Level	UA	10/25/2023	15.31	614.34
G110	Water Level	UA	11/13/2023	15.43	614.22
G111	Water Level	UA	02/13/2023	12.91	616.99
G111	Water Level	UA	05/30/2023	13.70	616.20
G111	Water Level	UA	08/08/2023	14.95	614.95
G111	Water Level	UA	10/25/2023	16.00	613.90
G111	Water Level	UA	11/13/2023	16.09	613.81
G119	Water Level	UA	02/13/2023	14.64	616.91
G119	Water Level	UA	05/30/2023	15.08	616.47
G119	Water Level	UA	08/08/2023	15.65	615.90
G119	Water Level	UA	10/25/2023	16.40	615.15
G119	Water Level	UA	11/13/2023	16.25	615.30
G120	Water Level	UA	02/13/2023	14.43	617.44
G120	Water Level	UA	05/30/2023	14.86	617.01
G120	Water Level	UA	08/08/2023	16.31	615.56
G120	Water Level	UA	10/25/2023	17.18	614.69
G120	Water Level	UA	11/13/2023	17.08	614.79
G121	Water Level	UA	02/13/2023	14.72	618.11
G121	Water Level	UA	05/30/2023	15.38	617.45
G121	Water Level	UA	08/08/2023	18.40	614.43
G121	Water Level	UA	10/25/2023	19.45	613.38
G121	Water Level	UA	11/13/2023	18.96	613.87

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G122	Water Level	UA	02/13/2023	13.89	618.80
G122	Water Level	UA	05/30/2023	14.00	618.69
G122	Water Level	UA	08/08/2023	19.54	613.15
G122	Water Level	UA	10/25/2023	21.21	611.48
G122	Water Level	UA	11/13/2023	20.40	612.29
G123	Water Level	UA	02/13/2023	11.80	621.16
G123	Water Level	UA	05/30/2023	12.68	620.28
G123	Water Level	UA	08/08/2023	18.57	614.39
G123	Water Level	UA	10/25/2023	20.09	612.87
G123	Water Level	UA	11/13/2023	19.94	613.02
G124	Water Level	UA	02/13/2023	12.14	621.25
G124	Water Level	UA	05/30/2023	13.43	619.96
G124	Water Level	UA	08/08/2023	18.49	614.90
G124	Water Level	UA	10/25/2023	21.05	612.34
G124	Water Level	UA	11/13/2023	Dry	Dry
G125	Water Level	UA	02/13/2023	11.99	621.52
G125	Water Level	UA	05/30/2023	13.54	619.97
G125	Water Level	UA	08/08/2023	18.53	614.98
G125	Water Level	UA	10/25/2023	21.21	612.30
G125	Water Level	UA	11/13/2023	Dry	Dry
G126	Water Level	UA	02/13/2023	8.92	616.47
G126	Water Level	UA	05/30/2023	10.04	615.35
G126	Water Level	UA	08/08/2023	10.93	614.46
G126	Water Level	UA	10/25/2023	11.85	613.54
G126	Water Level	UA	11/13/2023	11.91	613.48
G151	Water Level	UA	02/13/2023	10.88	615.05
G151	Water Level	UA	05/30/2023	11.58	614.35
G151	Water Level	UA	08/08/2023	12.22	613.71
G151	Water Level	UA	10/25/2023	12.99	612.94
G151	Water Level	UA	11/13/2023	12.97	612.96
G152	Water Level	UA	02/13/2023	10.25	616.27
G152	Water Level	UA	05/30/2023	11.11	615.41
G152	Water Level	UA	08/08/2023	12.40	614.12
G152	Water Level	UA	10/25/2023	13.42	613.10

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G152	Water Level	UA	11/13/2023	13.07	613.45
G153	Water Level	UA	02/13/2023	12.24	614.16
G153	Water Level	UA	05/30/2023	11.40	615.00
G153	Water Level	UA	08/08/2023	13.08	613.32
G153	Water Level	UA	10/25/2023	14.81	611.59
G153	Water Level	UA	11/13/2023	14.90	611.50
G154	Water Level	UA	02/13/2023	10.91	615.44
G154	Water Level	UA	05/30/2023	13.15	613.20
G154	Water Level	UA	08/08/2023	14.60	611.75
G154	Water Level	UA	10/25/2023	15.90	610.45
G154	Water Level	UA	11/13/2023	15.76	610.59
G155	Water Level	UA	02/13/2023	11.56	614.30
G155	Water Level	UA	05/30/2023	12.44	613.42
G155	Water Level	UA	08/08/2023	13.21	612.65
G155	Water Level	UA	10/25/2023	14.01	611.85
G155	Water Level	UA	11/13/2023	13.92	611.94
G200	Water Level	UA	02/13/2023	2.91	623.03
G200	Water Level	UA	03/30/2023	3.01	622.92
G200	Water Level	UA	04/30/2023	4.51	621.42
G200	Water Level	UA	05/30/2023	5.89	620.04
G200	Water Level	UA	06/08/2023	6.44	619.49
G200	Water Level	UA	08/08/2023	9.21	616.73
G200	Water Level	UA	09/25/2023	10.61	615.33
G200	Water Level	UA	10/25/2023	11.51	614.43
G200	Water Level	UA	11/13/2023	11.88	614.06
G200	Water Level	UA	12/18/2023	11.48	614.46
G206	Water Level	UA	02/13/2023	9.20	623.62
G206	Water Level	UA	03/30/2023	9.12	623.69
G206	Water Level	UA	04/30/2023	10.27	622.54
G206	Water Level	UA	05/30/2023	11.17	621.64
G206	Water Level	UA	07/08/2023	12.13	620.69
G206	Water Level	UA	08/08/2023	13.89	618.93
G206	Water Level	UA	09/25/2023	14.74	618.08
G206	Water Level	UA	10/25/2023	15.71	617.11

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G206	Water Level	UA	11/13/2023	16.16	616.66
G206	Water Level	UA	12/18/2023	15.85	616.97
G206D	Water Level	DA	02/13/2023	9.92	624.22
G206D	Water Level	DA	02/16/2023	[29.69]	[604.16]
G206D	Water Level	DA	03/30/2023	32.14	601.99
G206D	Water Level	DA	04/30/2023	30.53	603.60
G206D	Water Level	DA	05/30/2023	30.22	603.91
G206D	Water Level	DA	07/08/2023	30.10	604.04
G206D	Water Level	DA	08/08/2023	30.04	604.10
G206D	Water Level	DA	09/25/2023	30.08	604.06
G206D	Water Level	DA	10/25/2023	30.34	603.80
G206D	Water Level	DA	11/13/2023	30.40	603.74
G206D	Water Level	DA	12/18/2023	30.32	603.82
G207	Water Level	UA	02/13/2023	10.25	622.96
G207	Water Level	UA	03/30/2023	9.67	623.53
G207	Water Level	UA	04/30/2023	10.55	622.65
G207	Water Level	UA	05/30/2023	11.47	621.73
G207	Water Level	UA	07/08/2023	12.45	620.76
G207	Water Level	UA	08/08/2023	14.20	619.01
G207	Water Level	UA	09/25/2023	15.27	617.94
G207	Water Level	UA	10/25/2023	16.24	616.97
G207	Water Level	UA	11/13/2023	16.67	616.54
G207	Water Level	UA	12/18/2023	16.31	616.90
G208	Water Level	UA	02/13/2023	10.28	622.88
G208	Water Level	UA	03/30/2023	9.65	623.50
G208	Water Level	UA	04/30/2023	10.30	622.85
G208	Water Level	UA	05/30/2023	11.10	622.05
G208	Water Level	UA	06/08/2023	12.38	620.78
G208	Water Level	UA	07/08/2023	12.32	620.83
G208	Water Level	UA	08/08/2023	14.08	619.08
G208	Water Level	UA	09/25/2023	15.31	617.84
G208	Water Level	UA	10/25/2023	16.25	616.91
G208	Water Level	UA	11/13/2023	16.66	616.50
G208	Water Level	UA	12/18/2023	16.24	616.92

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G209	Water Level	UA	02/13/2023	10.01	622.90
G209	Water Level	UA	03/30/2023	9.63	623.27
G209	Water Level	UA	04/30/2023	10.25	622.65
G209	Water Level	UA	05/30/2023	11.07	621.83
G209	Water Level	UA	07/08/2023	11.82	621.08
G209	Water Level	UA	08/08/2023	13.79	619.12
G209	Water Level	UA	09/25/2023	14.78	618.13
G209	Water Level	UA	10/25/2023	15.60	617.31
G209	Water Level	UA	11/13/2023	16.24	616.67
G209	Water Level	UA	12/18/2023	16.04	616.87
G210	Water Level	UA	02/13/2023	10.49	622.50
G210	Water Level	UA	03/30/2023	9.73	623.25
G210	Water Level	UA	04/30/2023	10.36	622.62
G210	Water Level	UA	05/30/2023	11.09	621.89
G210	Water Level	UA	06/08/2023	11.76	621.23
G210	Water Level	UA	07/08/2023	12.29	620.70
G210	Water Level	UA	08/08/2023	13.75	619.24
G210	Water Level	UA	09/25/2023	14.67	618.32
G210	Water Level	UA	10/25/2023	15.52	617.47
G210	Water Level	UA	11/13/2023	15.82	617.17
G210	Water Level	UA	12/18/2023	15.99	617.00
G211	Water Level	UA	02/13/2023	9.90	622.74
G211	Water Level	UA	03/30/2023	9.18	623.45
G211	Water Level	UA	04/30/2023	9.99	622.64
G211	Water Level	UA	05/30/2023	10.54	622.09
G211	Water Level	UA	06/08/2023	11.76	620.88
G211	Water Level	UA	07/08/2023	12.43	620.21
G211	Water Level	UA	08/08/2023	13.44	619.20
G211	Water Level	UA	09/25/2023	14.74	617.90
G211	Water Level	UA	10/25/2023	15.15	617.49
G211	Water Level	UA	11/13/2023	15.61	617.03
G211	Water Level	UA	12/18/2023	15.93	616.71
G212	Water Level	UA	02/13/2023	10.38	622.51
G212	Water Level	UA	03/30/2023	9.77	623.11

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G212	Water Level	UA	04/30/2023	10.89	621.99
G212	Water Level	UA	05/30/2023	11.64	621.24
G212	Water Level	UA	06/08/2023	12.80	620.08
G212	Water Level	UA	07/08/2023	13.48	619.41
G212	Water Level	UA	08/08/2023	14.61	618.28
G212	Water Level	UA	09/25/2023	15.97	616.92
G212	Water Level	UA	10/25/2023	16.46	616.43
G212	Water Level	UA	11/13/2023	16.92	615.97
G212	Water Level	UA	12/18/2023	17.00	615.89
G213	Water Level	UA	02/13/2023	10.83	621.98
G213	Water Level	UA	03/30/2023	10.15	622.65
G213	Water Level	UA	04/30/2023	11.04	621.76
G213	Water Level	UA	05/30/2023	11.96	620.84
G213	Water Level	UA	06/08/2023	12.80	620.00
G213	Water Level	UA	07/08/2023	13.50	619.31
G213	Water Level	UA	08/08/2023	15.05	617.76
G213	Water Level	UA	09/25/2023	15.90	616.91
G213	Water Level	UA	10/25/2023	16.81	616.00
G213	Water Level	UA	11/13/2023	17.41	615.40
G213	Water Level	UA	12/18/2023	17.34	615.47
G214	Water Level	UA	02/13/2023	14.53	618.32
G214	Water Level	UA	03/30/2023	13.04	619.80
G214	Water Level	UA	04/30/2023	13.98	618.86
G214	Water Level	UA	05/30/2023	14.73	618.11
G214	Water Level	UA	06/08/2023	15.56	617.29
G214	Water Level	UA	07/08/2023	16.44	616.41
G214	Water Level	UA	08/08/2023	17.64	615.21
G214	Water Level	UA	09/25/2023	18.42	614.43
G214	Water Level	UA	10/25/2023	19.14	613.71
G214	Water Level	UA	11/13/2023	19.35	613.50
G214	Water Level	UA	12/18/2023	19.23	613.62
G215	Water Level	UA	02/13/2023	14.38	618.68
G215	Water Level	UA	03/30/2023	13.16	619.89
G215	Water Level	UA	04/30/2023	14.03	619.02

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G215	Water Level	UA	05/30/2023	14.76	618.29
G215	Water Level	UA	06/08/2023	15.46	617.59
G215	Water Level	UA	07/08/2023	16.06	616.99
G215	Water Level	UA	08/08/2023	17.22	615.84
G215	Water Level	UA	09/25/2023	18.06	614.99
G215	Water Level	UA	10/25/2023	18.41	614.65
G215	Water Level	UA	11/13/2023	19.03	614.03
G215	Water Level	UA	12/18/2023	18.75	614.31
G216	Water Level	UA	02/13/2023	13.54	619.22
G216	Water Level	UA	03/30/2023	12.27	620.48
G216	Water Level	UA	04/30/2023	12.94	619.81
G216	Water Level	UA	05/30/2023	13.63	619.12
G216	Water Level	UA	06/08/2023	14.99	617.77
G216	Water Level	UA	07/08/2023	15.42	617.33
G216	Water Level	UA	08/08/2023	16.51	616.25
G216	Water Level	UA	09/25/2023	17.38	615.38
G216	Water Level	UA	10/25/2023	17.86	614.90
G216	Water Level	UA	11/13/2023	18.21	614.55
G216	Water Level	UA	12/18/2023	18.00	614.76
G217	Water Level	UA	02/13/2023	14.72	618.38
G217	Water Level	UA	08/08/2023	18.29	614.81
G217	Water Level	UA	10/25/2023	19.51	613.59
G217	Water Level	UA	11/13/2023	19.68	613.42
G217	Water Level	UA	12/18/2023	19.33	613.77
G218	Water Level	UA	02/13/2023	13.71	619.40
G218	Water Level	UA	03/30/2023	12.50	620.60
G218	Water Level	UA	04/30/2023	12.98	620.12
G218	Water Level	UA	05/30/2023	13.72	619.38
G218	Water Level	UA	06/08/2023	15.11	618.00
G218	Water Level	UA	07/08/2023	15.80	617.31
G218	Water Level	UA	08/08/2023	16.98	616.13
G218	Water Level	UA	09/25/2023	17.95	615.16
G218	Water Level	UA	10/25/2023	18.48	614.63
G218	Water Level	UA	11/13/2023	18.67	614.44

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G218	Water Level	UA	12/18/2023	18.38	614.73
G270	Water Level	UA	02/13/2023	2.53	623.33
G270	Water Level	UA	03/30/2023	2.41	623.44
G270	Water Level	UA	04/30/2023	2.83	623.02
G270	Water Level	UA	05/30/2023	5.06	620.79
G270	Water Level	UA	08/14/2023	[8.52]	[617.34]
G270	Water Level	UA	10/25/2023	10.92	614.94
G270	Water Level	UA	11/13/2023	10.90	614.96
G270	Water Level	UA	12/18/2023	9.84	616.02
G271	Water Level	UA	02/13/2023	8.93	616.64
G271	Water Level	UA	03/30/2023	7.12	618.44
G271	Water Level	UA	04/30/2023	8.97	616.59
G271	Water Level	UA	05/30/2023	9.28	616.28
G271	Water Level	UA	06/08/2023	9.57	615.99
G271	Water Level	UA	07/08/2023	9.83	615.73
G271	Water Level	UA	08/08/2023	11.20	614.37
G271	Water Level	UA	09/25/2023	12.44	613.13
G271	Water Level	UA	10/25/2023	12.95	612.62
G271	Water Level	UA	11/13/2023	13.00	612.57
G271	Water Level	UA	12/18/2023	12.79	612.78
G272	Water Level	UA	02/13/2023	8.55	615.26
G272	Water Level	UA	03/30/2023	6.96	616.84
G272	Water Level	UA	04/30/2023	9.20	614.60
G272	Water Level	UA	05/30/2023	9.48	614.32
G272	Water Level	UA	08/08/2023	10.55	613.26
G272	Water Level	UA	09/25/2023	11.63	612.18
G272	Water Level	UA	10/25/2023	12.03	611.78
G272	Water Level	UA	11/13/2023	12.01	611.80
G272	Water Level	UA	12/18/2023	11.81	612.00
G273	Water Level	UA	02/13/2023	8.95	614.07
G273	Water Level	UA	03/30/2023	7.80	615.21
G273	Water Level	UA	04/30/2023	10.09	612.92
G273	Water Level	UA	05/30/2023	10.41	612.60
G273	Water Level	UA	08/08/2023	11.56	611.46

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G273	Water Level	UA	09/25/2023	12.39	610.63
G273	Water Level	UA	10/25/2023	12.78	610.24
G273	Water Level	UA	11/13/2023	12.71	610.31
G273	Water Level	UA	12/18/2023	12.40	610.62
G274	Water Level	UA	02/13/2023	13.22	610.82
G274	Water Level	UA	03/30/2023	11.96	612.07
G274	Water Level	UA	04/30/2023	13.85	610.18
G274	Water Level	UA	05/30/2023	14.16	609.87
G274	Water Level	UA	06/08/2023	14.41	609.63
G274	Water Level	UA	07/08/2023	14.33	609.70
G274	Water Level	UA	08/08/2023	14.99	609.05
G274	Water Level	UA	09/25/2023	15.46	608.57
G274	Water Level	UA	10/25/2023	Dry	Dry
G274	Water Level	UA	11/13/2023	15.77	608.27
G274	Water Level	UA	12/18/2023	15.53	608.51
G275	Water Level	UA	02/13/2023	13.02	605.24
G275	Water Level	UA	05/30/2023	13.38	604.88
G275	Water Level	UA	08/08/2023	Dry	Dry
G275	Water Level	UA	11/13/2023	Dry	Dry
G275D	Water Level	DA	02/13/2023	39.49	580.82
G275D	Water Level	DA	08/08/2023	31.27	589.04
G275D	Water Level	DA	09/25/2023	42.29	578.02
G275D	Water Level	DA	10/25/2023	39.74	580.57
G275D	Water Level	DA	12/18/2023	43.46	576.85
G276	Water Level	UA	02/13/2023	27.37	604.63
G276	Water Level	UA	03/30/2023	25.78	606.21
G276	Water Level	UA	04/30/2023	26.04	605.95
G276	Water Level	UA	05/30/2023	26.60	605.39
G276	Water Level	UA	06/08/2023	26.84	605.16
G276	Water Level	UA	07/08/2023	27.27	604.73
G276	Water Level	UA	08/08/2023	27.75	604.25
G276	Water Level	UA	10/25/2023	28.49	603.51
G276	Water Level	UA	11/13/2023	28.59	603.41
G276	Water Level	UA	12/18/2023	28.71	603.29

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G277	Water Level	UA	02/13/2023	19.67	603.41
G277	Water Level	UA	05/30/2023	18.21	604.87
G277	Water Level	UA	08/08/2023	19.76	603.32
G277	Water Level	UA	11/13/2023	Dry	Dry
G278	Water Level	UA	02/13/2023	19.95	611.22
G278	Water Level	UA	05/30/2023	21.75	609.42
G278	Water Level	UA	08/08/2023	20.98	610.19
G278	Water Level	UA	10/25/2023	23.48	607.69
G278	Water Level	UA	11/13/2023	24.23	606.94
G279	Water Level	UA	02/13/2023	20.83	611.21
G279	Water Level	UA	05/30/2023	22.73	609.31
G279	Water Level	UA	08/08/2023	23.69	608.35
G279	Water Level	UA	10/25/2023	24.56	607.48
G279	Water Level	UA	11/13/2023	23.39	608.65
G280	Water Level	UA	02/13/2023	3.01	622.34
G280	Water Level	UA	03/30/2023	2.74	622.60
G280	Water Level	UA	04/30/2023	3.52	621.82
G280	Water Level	UA	05/30/2023	3.96	621.38
G280	Water Level	UA	08/08/2023	5.80	619.55
G280	Water Level	UA	09/25/2023	7.42	617.92
G280	Water Level	UA	10/25/2023	8.56	616.79
G280	Water Level	UA	11/13/2023	8.91	616.44
G280	Water Level	UA	12/18/2023	9.04	616.31
G281	Water Level	UA	02/13/2023	4.63	621.73
G281	Water Level	UA	03/30/2023	3.94	622.41
G281	Water Level	UA	04/30/2023	6.44	619.91
G281	Water Level	UA	05/30/2023	6.64	619.71
G281	Water Level	UA	08/08/2023	6.39	619.97
G281	Water Level	UA	10/24/2023	8.64	617.72
G281	Water Level	UA	11/13/2023	8.59	617.77
G281	Water Level	UA	12/18/2023	6.83	619.53
G283	Water Level	LCU	02/13/2023	4.61	606.14
G283	Water Level	LCU	03/30/2023	3.55	607.19
G283	Water Level	LCU	04/30/2023	4.71	606.03

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G283	Water Level	LCU	05/30/2023	5.60	605.14
G283	Water Level	LCU	08/14/2023	[7.45]	[603.30]
G283	Water Level	LCU	10/24/2023	7.79	602.96
G283	Water Level	LCU	11/13/2023	7.22	603.53
G283	Water Level	LCU	12/18/2023	6.49	604.26
G284	Water Level	UA	02/13/2023	9.72	608.70
G284	Water Level	UA	03/30/2023	8.65	609.76
G284	Water Level	UA	04/30/2023	11.62	606.79
G284	Water Level	UA	05/30/2023	12.43	605.98
G284	Water Level	UA	08/14/2023	[12.28]	[606.14]
G284	Water Level	UA	10/24/2023	Dry	Dry
G284	Water Level	UA	11/13/2023	Dry	Dry
G284	Water Level	UA	12/18/2023	12.91	605.51
G285	Water Level	LCU	02/13/2023	6.12	607.40
G285	Water Level	LCU	03/30/2023	4.18	609.33
G285	Water Level	LCU	04/30/2023	5.80	607.71
G285	Water Level	LCU	05/30/2023	6.71	606.80
G285	Water Level	LCU	07/08/2023	8.14	605.37
G285	Water Level	LCU	08/08/2023	8.25	605.26
G285	Water Level	LCU	08/14/2023	[8.44]	[605.08]
G285	Water Level	LCU	09/25/2023	8.47	605.05
G285	Water Level	LCU	10/24/2023	8.96	604.56
G285	Water Level	LCU	11/13/2023	9.38	604.14
G285	Water Level	LCU	12/18/2023	8.03	605.49
G286	Water Level	UA	02/13/2023	6.18	606.95
G286	Water Level	UA	08/10/2023	[Dry]	[Dry]
G286	Water Level	UA	10/24/2023	Dry	Dry
G286	Water Level	UA	11/13/2023	Dry	Dry
G286	Water Level	UA	12/18/2023	Dry	Dry
G287	Water Level	UA	02/13/2023	5.75	611.70
G288	Water Level	UA	02/13/2023	9.78	610.29
G288	Water Level	UA	03/30/2023	4.70	615.37
G288	Water Level	UA	04/30/2023	6.66	613.41
G288	Water Level	UA	05/30/2023	7.40	612.67

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G288	Water Level	UA	06/08/2023	8.05	612.02
G288	Water Level	UA	07/08/2023	7.65	612.42
G288	Water Level	UA	08/08/2023	8.62	611.45
G288	Water Level	UA	08/11/2023	[8.70]	[611.37]
G288	Water Level	UA	09/25/2023	9.57	610.50
G288	Water Level	UA	10/24/2023	9.95	610.12
G288	Water Level	UA	11/13/2023	9.84	610.23
G288	Water Level	UA	12/18/2023	8.56	611.51
G301	Water Level	UA	02/13/2023	5.30	617.35
G301	Water Level	UA	06/08/2023	7.70	614.94
G301	Water Level	UA	07/08/2023	7.82	614.82
G301	Water Level	UA	08/08/2023	8.11	614.54
G301	Water Level	UA	10/24/2023	8.51	614.14
G301	Water Level	UA	11/13/2023	8.43	614.22
G301	Water Level	UA	12/18/2023	8.00	614.65
G302	Water Level	UA	02/13/2023	7.16	612.88
G302	Water Level	UA	03/30/2023	4.68	615.35
G302	Water Level	UA	04/30/2023	9.10	610.93
G302	Water Level	UA	05/30/2023	11.04	608.99
G302	Water Level	UA	06/08/2023	11.57	608.46
G302	Water Level	UA	07/08/2023	12.07	607.96
G302	Water Level	UA	08/08/2023	12.68	607.36
G302	Water Level	UA	09/25/2023	13.12	606.92
G302	Water Level	UA	11/13/2023	13.16	606.88
G302	Water Level	UA	12/18/2023	12.47	607.57
G303	Water Level	UA	02/13/2023	4.20	617.82
G303	Water Level	UA	03/30/2023	3.62	618.39
G303	Water Level	UA	04/30/2023	4.62	617.39
G303	Water Level	UA	05/30/2023	5.92	616.09
G303	Water Level	UA	08/08/2023	8.40	613.62
G303	Water Level	UA	09/25/2023	9.18	612.83
G303	Water Level	UA	10/24/2023	9.71	612.31
G303	Water Level	UA	11/13/2023	9.32	612.70
G303	Water Level	UA	12/18/2023	8.22	613.80

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G305	Water Level	UA	02/13/2023	6.08	619.59
G305	Water Level	UA	03/30/2023	5.81	619.85
G305	Water Level	UA	04/30/2023	6.59	619.07
G305	Water Level	UA	05/30/2023	7.63	618.03
G305	Water Level	UA	06/08/2023	8.35	617.31
G305	Water Level	UA	07/08/2023	8.23	617.43
G305	Water Level	UA	08/08/2023	9.19	616.48
G305	Water Level	UA	10/24/2023	9.95	615.72
G305	Water Level	UA	11/13/2023	8.50	617.17
G305	Water Level	UA	12/18/2023	8.24	617.43
G306	Water Level	UA	02/13/2023	5.80	620.11
G306	Water Level	UA	03/30/2023	5.41	620.49
G306	Water Level	UA	04/30/2023	6.64	619.26
G306	Water Level	UA	05/30/2023	8.13	617.77
G306	Water Level	UA	06/08/2023	9.18	616.72
G306	Water Level	UA	07/08/2023	8.60	617.30
G306	Water Level	UA	08/08/2023	9.70	616.21
G306	Water Level	UA	10/24/2023	10.81	615.10
G306	Water Level	UA	11/13/2023	10.13	615.78
G306	Water Level	UA	12/18/2023	7.56	618.35
G307	Water Level	UA	02/13/2023	Above Top of Casing	Above Top of Casing
G307	Water Level	UA	08/08/2023	0.70	623.90
G307	Water Level	UA	11/13/2023	1.96	622.64
G307D	Water Level	LCU	02/13/2023	2.75	622.13
G307D	Water Level	LCU	03/30/2023	2.32	622.55
G307D	Water Level	LCU	04/30/2023	2.41	622.46
G307D	Water Level	LCU	05/30/2023	2.48	622.39
G307D	Water Level	LCU	08/08/2023	7.89	616.99
G307D	Water Level	LCU	10/24/2023	11.33	613.55
G307D	Water Level	LCU	11/13/2023	12.36	612.52
G307D	Water Level	LCU	12/18/2023	7.55	617.33
G308	Water Level	UA	02/13/2023	3.88	620.71
G308	Water Level	UA	03/30/2023	3.79	620.79
G308	Water Level	UA	04/30/2023	4.84	619.74

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G308	Water Level	UA	05/30/2023	5.56	619.02
G308	Water Level	UA	06/08/2023	5.93	618.66
G308	Water Level	UA	07/08/2023	5.37	619.22
G308	Water Level	UA	08/08/2023	5.09	619.50
G308	Water Level	UA	09/25/2023	6.16	618.42
G308	Water Level	UA	10/24/2023	6.19	618.40
G308	Water Level	UA	11/13/2023	6.00	618.59
G308	Water Level	UA	12/18/2023	4.71	619.88
G309	Water Level	UA	02/13/2023	9.64	616.24
G309	Water Level	UA	08/08/2023	8.04	617.84
G309	Water Level	UA	09/25/2023	8.24	617.64
G309	Water Level	UA	10/24/2023	8.69	617.19
G309	Water Level	UA	11/13/2023	8.32	617.56
G309	Water Level	UA	12/18/2023	7.60	618.28
G310	Water Level	UA	02/13/2023	7.09	615.78
G310	Water Level	UA	03/30/2023	6.42	616.44
G310	Water Level	UA	04/30/2023	8.94	613.92
G310	Water Level	UA	05/30/2023	9.57	613.29
G310	Water Level	UA	06/08/2023	9.96	612.90
G310	Water Level	UA	08/08/2023	10.30	612.57
G310	Water Level	UA	09/25/2023	10.73	612.14
G310	Water Level	UA	10/24/2023	10.82	612.05
G310	Water Level	UA	11/13/2023	10.56	612.31
G310	Water Level	UA	12/18/2023	9.95	612.92
G311	Water Level	UA	05/30/2023	8.26	612.78
G311	Water Level	UA	08/08/2023	9.08	611.96
G311	Water Level	UA	10/24/2023	9.29	611.75
G311	Water Level	UA	11/13/2023	9.38	611.66
G311D	Water Level	LCU	02/13/2023	23.66	597.58
G311D	Water Level	LCU	05/30/2023	23.26	597.98
G311D	Water Level	LCU	08/08/2023	23.52	597.72
G311D	Water Level	LCU	10/24/2023	23.51	597.73
G311D	Water Level	LCU	11/13/2023	24.15	597.09
G312	Water Level	UA	03/30/2023	8.28	611.49

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G312	Water Level	UA	04/30/2023	10.81	608.96
G312	Water Level	UA	05/30/2023	12.42	607.35
G312	Water Level	UA	06/08/2023	12.87	606.91
G312	Water Level	UA	07/08/2023	13.42	606.36
G312	Water Level	UA	08/08/2023	14.00	605.78
G312	Water Level	UA	10/24/2023	Dry	Dry
G312	Water Level	UA	11/13/2023	Dry	Dry
G312	Water Level	UA	12/18/2023	14.45	605.33
G313	Water Level	UA	02/13/2023	3.24	611.06
G313	Water Level	UA	08/08/2023	3.01	611.29
G313	Water Level	UA	10/24/2023	3.08	611.22
G313	Water Level	UA	11/13/2023	3.36	610.94
G313	Water Level	UA	12/18/2023	3.48	610.82
G314	Water Level	LCU	02/13/2023	6.14	607.74
G314	Water Level	LCU	03/30/2023	8.96	604.91
G314	Water Level	LCU	04/30/2023	5.53	608.34
G314	Water Level	LCU	05/30/2023	4.81	609.06
G314	Water Level	LCU	06/08/2023	9.43	604.44
G314	Water Level	LCU	07/08/2023	5.67	608.20
G314	Water Level	LCU	08/08/2023	4.88	609.00
G314	Water Level	LCU	09/25/2023	4.96	608.92
G314	Water Level	LCU	10/24/2023	5.30	608.58
G314	Water Level	LCU	11/13/2023	5.67	608.21
G314	Water Level	LCU	12/18/2023	7.39	606.49
G314D	Water Level	DA	02/13/2023	16.40	597.30
G314D	Water Level	DA	03/30/2023	9.98	603.71
G314D	Water Level	DA	04/30/2023	7.48	606.21
G314D	Water Level	DA	05/30/2023	6.69	607.00
G314D	Water Level	DA	06/08/2023	11.80	601.90
G314D	Water Level	DA	07/08/2023	7.25	606.45
G314D	Water Level	DA	08/08/2023	7.78	605.92
G314D	Water Level	DA	09/25/2023	8.50	605.20
G314D	Water Level	DA	10/24/2023	8.56	605.14
G314D	Water Level	DA	11/13/2023	7.97	605.73

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G314D	Water Level	DA	12/18/2023	7.04	606.66
G315	Water Level	UA	02/13/2023	2.08	621.44
G315	Water Level	UA	08/08/2023	3.50	620.02
G315	Water Level	UA	10/24/2023	4.04	619.48
G315	Water Level	UA	11/13/2023	4.11	619.41
G315	Water Level	UA	12/18/2023	2.55	620.97
G316	Water Level	LCU	02/13/2023	11.53	591.06
G316	Water Level	LCU	05/30/2023	12.28	590.31
G316	Water Level	LCU	08/08/2023	11.70	590.89
G316	Water Level	LCU	10/24/2023	12.54	590.05
G316	Water Level	LCU	11/13/2023	12.46	590.13
G317	Water Level	UA	02/13/2023	34.52	607.41
G317	Water Level	UA	08/08/2023	Dry	Dry
G317	Water Level	UA	09/25/2023	37.42	604.51
G317	Water Level	UA	10/24/2023	Dry	Dry
G317	Water Level	UA	11/13/2023	Dry	Dry
G317	Water Level	UA	12/18/2023	38.02	603.91
G401	Water Level	UA	02/13/2023	21.17	604.40
G401	Water Level	UA	05/30/2023	21.72	603.85
G401	Water Level	UA	08/08/2023	21.75	603.82
G401	Water Level	UA	10/24/2023	21.66	603.91
G401	Water Level	UA	11/13/2023	13.63	611.94
G402	Water Level	UA	02/13/2023	8.83	604.54
G402	Water Level	UA	03/30/2023	8.23	605.13
G402	Water Level	UA	04/30/2023	9.59	603.77
G402	Water Level	UA	05/30/2023	10.56	602.80
G402	Water Level	UA	06/08/2023	10.94	602.43
G402	Water Level	UA	07/08/2023	11.08	602.29
G402	Water Level	UA	08/08/2023	11.65	601.72
G402	Water Level	UA	10/24/2023	12.01	601.36
G402	Water Level	UA	11/13/2023	11.71	601.66
G402	Water Level	UA	12/18/2023	11.48	601.89
G403	Water Level	UA	02/13/2023	6.05	620.42
G403	Water Level	UA	03/30/2023	5.81	620.65

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G403	Water Level	UA	04/30/2023	7.09	619.37
G403	Water Level	UA	05/30/2023	8.13	618.33
G403	Water Level	UA	06/08/2023	8.74	617.73
G403	Water Level	UA	07/08/2023	7.21	619.26
G403	Water Level	UA	08/08/2023	7.45	619.02
G403	Water Level	UA	09/25/2023	8.82	617.64
G403	Water Level	UA	10/24/2023	8.62	617.85
G403	Water Level	UA	11/13/2023	8.27	618.20
G403	Water Level	UA	12/18/2023	6.64	619.83
G404	Water Level	UA	02/13/2023	3.46	612.21
G404	Water Level	UA	03/30/2023	3.24	612.42
G404	Water Level	UA	04/30/2023	4.64	611.02
G404	Water Level	UA	05/30/2023	5.42	610.24
G404	Water Level	UA	08/14/2023	[5.62]	[610.05]
G404	Water Level	UA	10/24/2023	7.09	608.58
G404	Water Level	UA	11/13/2023	6.48	609.19
G404	Water Level	UA	12/18/2023	4.70	610.97
G405	Water Level	UA	02/13/2023	6.13	617.50
G405	Water Level	UA	03/30/2023	5.87	617.75
G405	Water Level	UA	04/30/2023	6.53	617.09
G405	Water Level	UA	05/30/2023	6.83	616.79
G405	Water Level	UA	06/08/2023	7.08	616.55
G405	Water Level	UA	07/08/2023	6.59	617.04
G405	Water Level	UA	08/08/2023	6.85	616.78
G405	Water Level	UA	09/25/2023	7.59	616.04
G405	Water Level	UA	10/24/2023	7.84	615.79
G405	Water Level	UA	11/13/2023	7.73	615.90
G405	Water Level	UA	12/18/2023	6.55	617.08
G406	Water Level	UA	02/13/2023	11.25	614.11
G406	Water Level	UA	03/30/2023	9.94	615.41
G406	Water Level	UA	04/30/2023	12.48	612.87
G406	Water Level	UA	05/30/2023	13.06	612.29
G406	Water Level	UA	06/08/2023	13.75	611.61
G406	Water Level	UA	07/08/2023	11.92	613.44

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G406	Water Level	UA	08/08/2023	11.49	613.87
G406	Water Level	UA	09/25/2023	13.95	611.41
G406	Water Level	UA	10/24/2023	14.08	611.28
G406	Water Level	UA	11/13/2023	13.83	611.53
G406	Water Level	UA	12/18/2023	12.03	613.33
G407	Water Level	UA	02/13/2023	5.60	615.72
G407	Water Level	UA	03/30/2023	5.49	615.82
G407	Water Level	UA	04/30/2023	6.91	614.40
G407	Water Level	UA	05/30/2023	7.35	613.96
G407	Water Level	UA	06/08/2023	8.75	612.57
G407	Water Level	UA	07/08/2023	8.22	613.10
G407	Water Level	UA	08/08/2023	8.79	612.53
G407	Water Level	UA	10/24/2023	8.39	612.93
G407	Water Level	UA	11/13/2023	8.31	613.01
G407	Water Level	UA	12/18/2023	6.76	614.56
G410	Water Level	UA	02/13/2023	7.44	612.35
G410	Water Level	UA	05/30/2023	8.99	610.80
G410	Water Level	UA	08/08/2023	9.66	610.13
G410	Water Level	UA	10/24/2023	10.88	608.91
G410	Water Level	UA	11/13/2023	10.68	609.11
G411	Water Level	UA	02/13/2023	6.15	617.10
G411	Water Level	UA	05/30/2023	8.52	614.73
G411	Water Level	UA	08/08/2023	8.69	614.56
G411	Water Level	UA	10/24/2023	11.33	611.92
G411	Water Level	UA	11/13/2023	11.20	612.05
MW03D	Water Level	DA	02/13/2023	30.75	598.26
MW03D	Water Level	DA	03/30/2023	30.43	598.57
MW03D	Water Level	DA	04/30/2023	30.00	599.01
MW03D	Water Level	DA	05/30/2023	30.11	598.90
MW03D	Water Level	DA	06/08/2023	30.17	598.83
MW03D	Water Level	DA	07/08/2023	30.39	598.62
MW03D	Water Level	DA	08/08/2023	30.65	598.36
MW03D	Water Level	DA	09/25/2023	29.29	599.72
MW03D	Water Level	DA	10/25/2023	29.64	599.37

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MW03D	Water Level	DA	11/13/2023	32.01	597.00
MW03D	Water Level	DA	12/18/2023	32.08	596.93
MW04S	Water Level	UA	02/13/2023	4.30	621.59
MW04S	Water Level	UA	05/30/2023	6.63	619.26
MW04S	Water Level	UA	08/08/2023	9.80	616.09
MW04S	Water Level	UA	11/13/2023	12.20	613.69
MW05S	Water Level	UA	02/13/2023	5.22	620.73
MW05S	Water Level	UA	05/30/2023	7.25	618.70
MW05S	Water Level	UA	08/08/2023	9.35	616.60
MW05D	Water Level	DA	02/13/2023	19.65	606.26
MW05D	Water Level	DA	05/30/2023	18.29	607.62
MW05D	Water Level	DA	08/08/2023	21.12	604.79
MW06S	Water Level	UA	02/13/2023	4.51	621.64
MW06S	Water Level	UA	05/30/2023	6.45	619.70
MW06S	Water Level	UA	08/08/2023	8.72	617.43
MW06S	Water Level	UA	10/24/2023	9.94	616.21
MW06S	Water Level	UA	11/13/2023	8.91	617.24
MW07S	Water Level	UA	02/13/2023	3.15	624.45
MW07S	Water Level	UA	05/30/2023	5.23	622.37
MW07S	Water Level	UA	08/08/2023	7.79	619.81
MW07S	Water Level	UA	10/24/2023	9.37	618.23
MW07S	Water Level	UA	11/13/2023	8.48	619.12
MW09S	Water Level	UA	02/13/2023	3.14	624.48
MW09S	Water Level	UA	05/30/2023	5.45	622.17
MW09S	Water Level	UA	08/08/2023	8.11	619.51
MW09D	Water Level	LCU	05/30/2023	13.91	613.70
MW09D	Water Level	LCU	08/08/2023	14.73	612.88
MW10S	Water Level	UA	05/30/2023	5.44	619.01
MW10S	Water Level	UA	08/08/2023	8.67	615.78
MW10D	Water Level	LCU	02/14/2023	3.41	621.06
MW10D	Water Level	LCU	05/30/2023	15.73	608.74
MW10D	Water Level	LCU	08/08/2023	18.69	605.78
MW11S	Water Level	UA	02/14/2023	3.78	621.49
MW11S	Water Level	UA	08/08/2023	8.00	617.27

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
MW11D	Water Level	LCU	02/14/2023	4.73	620.79
MW11D	Water Level	LCU	03/30/2023	3.97	621.55
MW11D	Water Level	LCU	04/30/2023	4.00	621.51
MW11D	Water Level	LCU	05/30/2023	4.76	620.75
MW11D	Water Level	LCU	06/08/2023	6.52	618.99
MW11D	Water Level	LCU	07/08/2023	7.38	618.14
MW11D	Water Level	LCU	08/08/2023	8.57	616.95
MW12S	Water Level	UA	02/14/2023	5.30	620.01
MW12S	Water Level	UA	05/30/2023	7.36	617.95
MW12S	Water Level	UA	08/08/2023	10.87	614.44
MW12S	Water Level	UA	10/25/2023	12.51	612.80
MW12S	Water Level	UA	11/13/2023	12.80	612.51
MW12D	Water Level	DA	02/14/2023	13.63	611.58
MW12D	Water Level	DA	03/30/2023	13.17	612.04
MW12D	Water Level	DA	04/30/2023	12.69	612.52
MW12D	Water Level	DA	05/30/2023	12.71	612.50
MW12D	Water Level	DA	06/08/2023	12.80	612.41
MW12D	Water Level	DA	07/08/2023	13.31	611.90
MW12D	Water Level	DA	08/08/2023	13.93	611.28
MW12D	Water Level	DA	09/25/2023	14.86	610.35
MW12D	Water Level	DA	10/25/2023	15.32	609.89
MW12D	Water Level	DA	11/13/2023	15.64	609.57
MW12D	Water Level	DA	12/18/2023	16.00	609.21
MW13S	Water Level	UA	02/13/2023	8.55	617.41
MW13S	Water Level	UA	05/30/2023	10.19	615.77
MW13S	Water Level	UA	08/08/2023	11.34	614.62
MW13S	Water Level	UA	10/25/2023	12.79	613.17
MW13S	Water Level	UA	11/13/2023	12.33	613.63
MW13D	Water Level	DA	02/13/2023	1.20	624.66
MW13D	Water Level	DA	05/30/2023	13.52	612.34
MW13D	Water Level	DA	08/08/2023	12.86	613.00
MW13D	Water Level	DA	10/25/2023	12.75	613.11
MW13D	Water Level	DA	11/13/2023	12.45	613.41
MW16S	Water Level	UA	02/14/2023	6.61	622.86

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
MW16S	Water Level	UA	03/30/2023	3.70	625.77
MW16S	Water Level	UA	04/30/2023	5.10	624.37
MW16S	Water Level	UA	05/30/2023	6.89	622.57
MW16S	Water Level	UA	06/08/2023	8.31	621.16
MW16S	Water Level	UA	07/08/2023	9.95	619.52
MW16S	Water Level	UA	08/08/2023	11.63	617.84
MW16D	Water Level	DA	02/14/2023	14.63	614.75
MW16D	Water Level	DA	03/30/2023	13.05	616.33
MW16D	Water Level	DA	04/30/2023	12.09	617.29
MW16D	Water Level	DA	05/30/2023	11.83	617.55
MW16D	Water Level	DA	06/08/2023	11.85	617.53
MW16D	Water Level	DA	07/08/2023	12.34	617.04
MW16D	Water Level	DA	08/08/2023	12.97	616.41
MW17S	Water Level	UA	05/30/2023	6.91	623.65
MW17S	Water Level	UA	08/08/2023	10.81	619.75
MW17D	Water Level	DA	02/14/2023	19.92	610.37
MW17D	Water Level	DA	05/30/2023	13.33	616.96
MW17D	Water Level	DA	08/08/2023	14.58	615.71
MW20S	Water Level	UA	02/13/2023	8.21	614.69
MW20S	Water Level	UA	03/30/2023	6.59	616.31
MW20S	Water Level	UA	04/30/2023	8.97	613.93
MW20S	Water Level	UA	05/30/2023	9.28	613.61
MW20S	Water Level	UA	06/08/2023	9.56	613.33
MW20S	Water Level	UA	07/08/2023	9.63	613.26
MW20S	Water Level	UA	08/08/2023	10.60	612.30
MW20S	Water Level	UA	09/25/2023	11.53	611.37
MW20S	Water Level	UA	10/25/2023	11.74	611.16
MW20S	Water Level	UA	11/13/2023	11.96	610.94
MW20S	Water Level	UA	12/18/2023	11.60	611.30
R104	Water Level	UA	02/14/2023	7.44	625.40
R104	Water Level	UA	03/30/2023	6.14	626.69
R104	Water Level	UA	04/30/2023	7.47	625.36
R104	Water Level	UA	05/30/2023	8.02	624.81
R104	Water Level	UA	06/08/2023	8.41	624.43

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R104	Water Level	UA	07/08/2023	8.92	623.92
R104	Water Level	UA	08/08/2023	10.45	622.39
R104	Water Level	UA	09/25/2023	11.50	621.34
R104	Water Level	UA	10/25/2023	12.52	620.32
R104	Water Level	UA	11/13/2023	12.91	619.93
R104	Water Level	UA	12/18/2023	12.81	620.03
R201	Water Level	UA	02/14/2023	2.80	623.54
R201	Water Level	UA	03/30/2023	2.56	623.77
R201	Water Level	UA	04/30/2023	3.95	622.38
R201	Water Level	UA	05/30/2023	5.31	621.02
R201	Water Level	UA	06/08/2023	6.13	620.21
R201	Water Level	UA	07/08/2023	6.75	619.59
R201	Water Level	UA	08/08/2023	11.61	614.73
R201	Water Level	UA	09/25/2023	10.12	616.22
R201	Water Level	UA	10/24/2023	11.20	615.14
R201	Water Level	UA	11/13/2023	11.73	614.61
R201	Water Level	UA	12/18/2023	11.37	614.97
R205	Water Level	UA	02/13/2023	7.49	617.03
R205	Water Level	UA	08/08/2023	9.69	614.83
R205	Water Level	UA	10/25/2023	11.16	613.36
R205	Water Level	UA	11/13/2023	11.48	613.04
R205	Water Level	UA	12/18/2023	11.16	613.36
T127	Water Level	UA	02/13/2023	14.15	616.81
T127	Water Level	UA	05/30/2023	14.56	616.40
T127	Water Level	UA	08/08/2023	15.20	615.76
T127	Water Level	UA	10/25/2023	15.99	614.97
T127	Water Level	UA	11/13/2023	15.95	615.01
T128	Water Level	UA	02/13/2023	13.97	616.96
T128	Water Level	UA	05/30/2023	14.26	616.67
T128	Water Level	UA	08/08/2023	14.80	616.13
T128	Water Level	UA	10/25/2023	15.54	615.39
T128	Water Level	UA	11/13/2023	15.50	615.43
T202	Water Level	UA	02/13/2023	5.04	623.59
T202	Water Level	UA	05/30/2023	5.80	622.83

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
T202	Water Level	UA	08/08/2023	9.23	619.40
T202	Water Level	UA	10/24/2023	11.02	617.61
T202	Water Level	UA	11/13/2023	11.66	616.97
T408	Water Level	LCU	02/13/2023	6.92	617.16
T408	Water Level	LCU	05/30/2023	7.42	616.66
T408	Water Level	LCU	08/08/2023	7.46	616.62
T408	Water Level	LCU	10/24/2023	8.11	615.97
T408	Water Level	LCU	11/13/2023	8.02	616.06
T409	Water Level	LCU	02/13/2023	9.36	615.65
T409	Water Level	LCU	05/30/2023	11.27	613.74
T409	Water Level	LCU	08/08/2023	9.99	615.02
T409	Water Level	LCU	10/24/2023	12.46	612.55
T409	Water Level	LCU	11/13/2023	12.00	613.01
TA31	Water Level	UA	02/13/2023	5.00	621.55
TA31	Water Level	UA	05/30/2023	7.06	619.49
TA31	Water Level	UA	08/08/2023	11.98	614.57
TA31	Water Level	UA	10/24/2023	14.65	611.90
TA31	Water Level	UA	11/13/2023	14.31	612.24
TA33	Water Level	UA	02/13/2023	8.04	617.23
TA33	Water Level	UA	05/30/2023	8.42	616.85
TA33	Water Level	UA	08/08/2023	12.10	613.17
TA33	Water Level	UA	10/24/2023	13.86	611.41
TA33	Water Level	UA	11/13/2023	13.98	611.29
TA34	Water Level	UA	02/13/2023	8.03	618.49
TA34	Water Level	UA	05/30/2023	9.48	617.04
TA34	Water Level	UA	08/08/2023	18.31	608.21
TA34	Water Level	UA	10/24/2023	12.98	613.54
TA34	Water Level	UA	11/13/2023	12.60	613.92
TR32	Water Level	UA	02/13/2023	6.11	615.57
TR32	Water Level	UA	05/30/2023	6.18	615.50
TR32	Water Level	UA	10/24/2023	9.02	612.66
TR32	Water Level	UA	11/13/2023	9.67	612.01
X201	Water Level	S	02/14/2023	--	614.71
X201	Water Level	S	03/30/2023	--	614.53

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
X201	Water Level	S	04/30/2023	--	614.69
X201	Water Level	S	05/30/2023	--	614.93
X201	Water Level	S	08/08/2023	--	615.31
X201	Water Level	S	11/13/2023	[34.00]	[584.47]
X201	Water Level	S	12/12/2023	--	617.10
XPW01	Water Level	CCR	02/13/2023	4.51	630.06
XPW01	Water Level	CCR	03/30/2023	3.99	630.57
XPW01	Water Level	CCR	04/30/2023	4.24	630.32
XPW01	Water Level	CCR	05/30/2023	4.56	630.00
XPW01	Water Level	CCR	08/08/2023	5.29	629.28
XPW01	Water Level	CCR	10/24/2023	6.03	628.54
XPW01	Water Level	CCR	11/13/2023	6.32	628.25
XPW01	Water Level	CCR	12/18/2023	6.11	628.46
XPW02	Water Level	CCR	02/13/2023	9.38	630.31
XPW02	Water Level	CCR	03/30/2023	8.87	630.81
XPW02	Water Level	CCR	04/30/2023	9.11	630.57
XPW02	Water Level	CCR	05/30/2023	9.40	630.28
XPW02	Water Level	CCR	08/08/2023	10.30	629.39
XPW02	Water Level	CCR	09/25/2023	10.71	628.98
XPW02	Water Level	CCR	10/24/2023	10.93	628.76
XPW02	Water Level	CCR	11/13/2023	11.12	628.57
XPW02	Water Level	CCR	12/18/2023	11.02	628.67
NE Riser	Water Level	S	02/14/2023	--	625.24
XSG-01	Water Level	CCR	02/13/2023	5.40	630.12
XSG-01	Water Level	CCR	05/30/2023	5.45	630.07
XSG-01	Water Level	CCR	08/08/2023	6.25	629.27
XSG-01	Water Level	CCR	10/24/2023	7.02	628.50
XSG-01	Water Level	CCR	11/13/2023	10.38	625.14
XSG-01	Water Level	CCR	12/18/2023	7.04	628.48
SG-02	Water Level	SW	02/13/2023	7.25	598.62
SG-02	Water Level	SW	05/30/2023	7.47	598.40
SG-02	Water Level	SW	10/24/2023	7.49	598.38
SG-02	Water Level	SW	11/13/2023	7.36	598.51
SG-02	Water Level	SW	12/18/2023	7.31	598.56

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
SG-03	Water Level	SW	02/13/2023	9.55	585.39
SG-03	Water Level	SW	05/30/2023	9.85	585.09
SG-03	Water Level	SW	08/08/2023	9.65	585.29
SG-03	Water Level	SW	10/24/2023	8.96	585.98
SG-03	Water Level	SW	11/13/2023	9.71	585.23
SG-03	Water Level	SW	12/18/2023	8.92	586.02
SG-04	Water Level	SW	02/13/2023	6.27	593.25
SG-04	Water Level	SW	05/30/2023	6.41	593.11

Notes:
Bracketing [] indicates that the measurement was obtained outside of the 24-hour period from initiaion of depth to groundwater measurements.
BMP = below measuring point
CCR = coal combustion residuals
DA = deep aquifer
LCU = lower confining unit
NAVD88 = North American Vertical Datum of 1988
S = source
SW = surface water

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Well ID	Well Type	Monitored Unit	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
SG-04	Water Level	SW	05/30/2023	6.41	593.11

Notes:
Bracketing [] indicates that the measurement was obtained outside of the 24-hour period from initiaion of depth to groundwater r
BMP = below measuring point
CCR = coal combustion residuals
DA = deep aquifer
LCU = lower confining unit
NAVD88 = North American Vertical Datum of 1988
S = source
SW = surface water
UA = uppermost aquifer

APPENDIX B
Supplemental Vertical Hydraulic Gradients

Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

Ash Pond No. 1

Coffeen, IL

Date	G405 Groundwater Elevation (ft NAVD88)	T408 Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	LCU (upper)				
2/4/2017	618.47	619.46	-0.99	12.00	-0.08	up
5/13/2017	618.74	619.00	-0.26	12.00	-0.02	up
7/8/2017	618.54	619.12	-0.58	12.00	-0.05	up
10/21/2017	614.47	614.81	-0.34	12.00	-0.03	up
5/8/2018	618.94	615.82	3.12	12.00	0.26	down
8/2/2018	617.55	614.45	3.10	12.00	0.26	down
10/23/2018	616.40	616.30	0.10	12.00	0.01	down
1/15/2019	616.81	617.01	-0.20	12.00	-0.02	up
8/5/2019	617.72	617.15	0.57	12.00	0.05	down
1/20/2020	619.28	619.13	0.15	12.00	0.01	down
8/10/2020	617.62	617.38	0.24	12.00	0.02	down
1/20/2021	617.12	616.85	0.27	12.00	0.02	down
4/20/2021	617.13	616.65	0.48	12.00	0.04	down
7/26/2021	617.37	617.21	0.16	12.00	0.01	down
8/16/2021	617.28	617.22	0.06	12.00	0.00	down
10/25/2021	618.12	615.50	2.62	12.00	0.22	down
2/7/2022	617.28	616.88	0.40	12.00	0.03	down
5/9/2022	617.91	617.78	0.13	12.00	0.01	down
8/23/2022	616.85	616.99	-0.14	12.00	-0.01	up
2/13/2023	617.50	617.16	0.34	12.00	0.03	down
5/30/2023	616.79	616.66	0.13	12.00	0.01	down
8/8/2023	616.78	616.62	0.16	12.00	0.01	down
10/24/2023	615.79	615.97	-0.18	12.00	-0.02	up
11/13/2023	615.90	616.06	-0.16	12.00	-0.01	up
			Middle of screen elevation G405D			610.0
			Middle of screen elevation T408			598.0

Appendix B. Supplemental Vertical Hydraulic Gradients

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Ash Pond No. 1

Coffeen, IL

Date	G406 Groundwater Elevation (ft NAVD88)	T409 Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	LCU (upper)				
2/4/2017	617.52	615.93	1.59	8.23	0.19	down
5/13/2017	616.20	616.75	-0.55	8.23	-0.07	up
7/8/2017	616.29	617.05	-0.76	8.23	-0.09	up
10/21/2017	611.27	612.16	-0.89	8.23	-0.11	up
5/8/2018	615.47	616.02	-0.55	8.23	-0.07	up
8/2/2018	615.75	615.25	0.50	8.23	0.06	down
10/23/2018	614.11	613.96	0.15	8.23	0.02	down
1/15/2019	615.36	614.78	0.58	8.23	0.07	down
8/5/2019	616.50	615.10	1.40	8.23	0.17	down
1/20/2020	617.48	617.16	0.32	8.23	0.04	down
8/10/2020	615.54	615.43	0.11	8.23	0.01	down
1/20/2021	612.97	614.41	-1.44	8.23	-0.17	up
4/20/2021	613.78	615.33	-1.55	8.23	-0.19	up
7/26/2021	614.20	615.72	-1.52	8.23	-0.18	up
8/16/2021	613.82	615.42	-1.60	8.23	-0.19	up
10/25/2021	614.93	616.43	-1.50	8.23	-0.18	up
2/7/2022	613.55	614.97	-1.42	8.23	-0.17	up
5/9/2022	615.36	616.81	-1.45	8.23	-0.18	up
8/23/2022	613.47	610.73	2.74	8.23	0.33	down
2/13/2023	614.11	615.65	-1.54	8.23	-0.19	up
5/30/2023	612.29	613.74	-1.45	8.23	-0.18	up
8/8/2023	613.87	615.02	-1.15	8.23	-0.14	up
10/24/2023	611.28	612.55	-1.27	8.23	-0.15	up
11/13/2023	611.53	613.01	-1.48	8.23	-0.18	up
			Middle of screen elevation G406			605.9
			Middle of screen elevation T409			597.7

Appendix B. Supplemental Vertical Hydraulic Gradients
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Coffeen, IL

Date	T408 Groundwater Elevation (ft NAVD88) LCU (upper)	G45D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
2/4/2017	619.46	587.71	31.75	13.78	2.30	down
5/13/2017	619.00	586.19	32.81	13.78	2.38	down
7/8/2017	619.12	586.29	32.83	13.78	2.38	down
10/21/2017	614.81	584.69	30.12	13.78	2.19	down
5/8/2018	615.82	587.56	28.26	13.78	2.05	down
8/2/2018	614.45	585.81	28.64	13.78	2.08	down
10/23/2018	616.30	584.60	31.70	13.78	2.30	down
1/15/2019	617.01	586.96	30.05	13.78	2.18	down
8/5/2019	617.15	588.04	29.11	13.78	2.11	down
8/10/2020	617.38	614.21	3.17	13.78	0.23	down
1/20/2021	616.85	614.60	2.25	13.78	0.16	down
4/20/2021	616.65	614.32	2.33	13.78	0.17	down
7/26/2021	617.21	613.58	3.63	13.78	0.26	down
8/16/2021	617.22	613.83	3.39	13.78	0.25	down
10/25/2021	615.50	614.51	0.99	13.78	0.07	down
2/7/2022	616.88	615.01	1.87	13.78	0.14	down
5/9/2022	617.78	614.95	2.83	13.78	0.21	down
8/23/2022	616.99	614.58	2.41	13.78	0.17	down
2/13/2023	617.16	614.69	2.47	13.78	0.18	down
5/30/2023	616.66	613.99	2.67	13.78	0.19	down
8/8/2023	616.62	613.47	3.15	13.78	0.23	down
10/24/2023	615.97	613.40	2.57	13.78	0.19	down
11/13/2023	616.06	613.55	2.51	13.78	0.18	down
			Middle of screen elevation T408			598.0
			Middle of screen elevation G45D			584.2

Appendix B. Supplemental Vertical Hydraulic Gradients
Nature and Extent Report
Coffeen Power Plant
Ash Pond No. 1
Coffeen, IL

Date	T409 Groundwater Elevation (ft NAVD88) LCU (upper)	G46D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
2/4/2017	615.93	586.06	29.87	22.19	1.35	down
5/13/2017	616.75	584.87	31.88	22.19	1.44	down
7/8/2017	617.05	585.22	31.83	22.19	1.43	down
5/8/2018	616.02	585.86	30.16	22.19	1.36	down
8/2/2018	615.25	583.95	31.30	22.19	1.41	down
10/23/2018	613.96	582.05	31.91	22.19	1.44	down
1/15/2019	614.78	583.17	31.61	22.19	1.42	down
8/5/2019	615.10	583.68	31.42	22.19	1.42	down
8/10/2020	615.43	609.00	6.43	22.19	0.29	down
1/20/2021	614.41	610.49	3.92	22.19	0.18	down
4/20/2021	615.33	611.06	4.27	22.19	0.19	down
7/26/2021	615.72	607.21	8.51	22.19	0.38	down
8/16/2021	615.42	608.17	7.25	22.19	0.33	down
10/25/2021	616.43	609.87	6.56	22.19	0.30	down
2/7/2022	614.97	610.71	4.26	22.19	0.19	down
5/9/2022	616.81	611.34	5.47	22.19	0.25	down
8/23/2022	610.73	615.13	-4.40	22.19	-0.20	up
2/13/2023	615.65	610.39	5.26	22.19	0.24	down
5/30/2023	613.74	610.70	3.04	22.19	0.14	down
8/8/2023	615.02	610.14	4.88	22.19	0.22	down
10/24/2023	612.55	609.65	2.90	22.19	0.13	down
11/13/2023	613.01	609.70	3.31	22.19	0.15	down
			Middle of screen elevation T409			597.7
			Middle of screen elevation G46D			575.5

Appendix B. Supplemental Vertical Hydraulic Gradients
Nature and Extent Report
Coffeen Power Plant
Ash Pond No. 1
Coffeen, IL

Date	G307 Groundwater Elevation (ft NAVD88) UA	G307D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
4/20/2021	624.50	622.48	2.02	38.06	0.05	down
5/17/2021	624.45	622.44	2.01	38.06	0.05	down
7/12/2021	624.45	622.59	1.86	38.06	0.05	down
8/16/2021	624.46	621.49	2.97	38.06	0.08	down
2/7/2022	624.60	622.32	2.28	38.06	0.06	down
5/9/2022	624.60	616.31	8.29	38.06	0.22	down
8/23/2022	624.60	615.09	9.51	38.06	0.25	down
2/13/2023	624.60	622.13	2.47	38.06	0.06	down
8/8/2023	623.90	616.99	6.91	38.06	0.18	down
11/13/2023	622.64	612.52	10.12	38.06	0.27	down
			Middle of screen elevation G307			606.7
			Middle of screen elevation G307D			568.6

Date	G311 Groundwater Elevation (ft NAVD88) UA	G311D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
3/29/2021	616.54	575.42	41.12	43.41	0.95	down
4/22/2021	613.68	575.74	37.94	43.41	0.87	down
5/3/2021	614.01	573.09	40.92	43.41	0.94	down
5/17/2021	613.86	572.40	41.46	43.41	0.96	down
6/9/2021	613.13	573.85	39.28	43.41	0.90	down
6/15/2021	612.78	575.25	37.53	43.41	0.86	down
6/23/2021	612.45	571.74	40.71	43.41	0.94	down
7/12/2021	613.75	571.63	42.12	43.41	0.97	down
7/26/2021	613.05	569.74	43.31	43.41	1.00	down
8/16/2021	613.30	570.34	42.96	43.41	0.99	down
10/25/2021	615.13	583.70	31.43	43.41	0.72	down
2/7/2022	614.28	593.14	21.14	43.41	0.49	down
5/9/2022	615.74	596.43	19.31	43.41	0.44	down
8/23/2022	613.19	597.46	15.73	43.41	0.36	down
5/30/2023	612.78	597.98	14.80	43.41	0.34	down
8/8/2023	611.96	597.72	14.24	43.41	0.33	down
10/24/2023	611.75	597.73	14.02	43.41	0.32	down
11/13/2023	611.66	597.09	14.57	43.41	0.34	down
			Middle of screen elevation G311			606.7
			Middle of screen elevation G311D			563.3

Appendix B. Supplemental Vertical Hydraulic Gradients
Nature and Extent Report
Coffeen Power Plant
Ash Pond No. 1
Coffeen, IL

Date	G314 Groundwater Elevation (ft NAVD88) LCU (upper)	G314D Groundwater Elevation (ft NAVD88) DA (PMP)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
3/29/2021	596.40	572.75	23.65	29.76	0.79	down
4/20/2021	603.16	571.76	31.40	27.40	1.15	down
5/3/2021	604.66	568.77	35.89	27.40	1.31	down
5/17/2021	605.61	566.84	38.77	27.40	1.42	down
6/9/2021	607.54	567.45	40.09	27.40	1.46	down
6/14/2021	608.16	568.60	39.56	27.40	1.44	down
6/23/2021	605.19	566.77	38.42	27.40	1.40	down
7/12/2021	605.32	566.88	38.44	27.40	1.40	down
7/26/2021	606.66	566.65	40.01	27.40	1.46	down
8/16/2021	608.60	567.28	41.32	27.40	1.51	down
10/25/2021	610.36	581.05	29.31	27.40	1.07	down
2/7/2022	607.85	590.46	17.39	27.40	0.63	down
5/9/2022	609.11	594.81	14.30	27.40	0.52	down
8/23/2022	610.58	595.70	14.88	27.40	0.54	down
2/13/2023	607.74	597.30	10.44	27.40	0.38	down
3/30/2023	604.91	603.71	1.20	27.40	0.04	down
4/30/2023	608.34	606.21	2.13	27.40	0.08	down
5/30/2023	609.06	607.00	2.06	27.40	0.08	down
6/8/2023	604.44	601.90	2.54	27.40	0.09	down
7/8/2023	608.20	606.45	1.75	27.40	0.06	down
8/8/2023	609.00	605.92	3.08	27.40	0.11	down
9/25/2023	608.92	605.20	3.72	27.40	0.14	down
10/24/2023	608.58	605.14	3.44	27.40	0.13	down
11/13/2023	608.21	605.73	2.48	27.40	0.09	down
12/18/2023	606.49	606.66	-0.17	27.40	-0.01	up
			Middle of screen elevation G314			594.0
			Middle of screen elevation G314D			566.6

[O: KLT 6/4/21, C:YMD 6/7/21; U:KLT 8/25/21, C:EDP 8/31/21]
[KLT 5/3/24, C: SSW 5/7/24]

Notes:
[1] Distance change was calculated using the midpoint of the piezometer screen and water table surface. If the water table surface was above the top of the monitoring well screen, then distance change was calculated using the midpoint of both screens.
[2] Vertical gradients between ±0.0015 are considered flat, and typically have less than 0.02 foot difference in groundwater elevation between wells.
- - = no data collected on date / no vertical gradient calculated
DA = deep aquifer
dh = head change
dl = distance change
ft = foot/feet
LCU (lower) = lower confining unit (Smithboro)
LCU (upper) = lower confining unit (Vandalia)
NAVD88 = North American Vertical Datum of 1988
PMP = potential migration pathway
UA = uppermost aquifer

Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

Ash Pond No. 2

Coffeen, IL

Date	G405 Groundwater Elevation (ft NAVD88)	T408 Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	LCU (upper)				
2/4/2017	618.47	619.46	-0.99	12.00	-0.08	up
5/13/2017	618.74	619.00	-0.26	12.00	-0.02	up
7/8/2017	618.54	619.12	-0.58	12.00	-0.05	up
10/21/2017	614.47	614.81	-0.34	12.00	-0.03	up
5/8/2018	618.94	615.82	3.12	12.00	0.26	down
8/2/2018	617.55	614.45	3.10	12.00	0.26	down
10/23/2018	616.40	616.30	0.10	12.00	0.01	down
1/15/2019	616.81	617.01	-0.20	12.00	-0.02	up
8/5/2019	617.72	617.15	0.57	12.00	0.05	down
1/20/2020	619.28	619.13	0.15	12.00	0.01	down
8/10/2020	617.62	617.38	0.24	12.00	0.02	down
1/20/2021	617.12	616.85	0.27	12.00	0.02	down
4/20/2021	617.13	616.65	0.48	12.00	0.04	down
7/26/2021	617.37	617.21	0.16	12.00	0.01	down
8/16/2021	617.28	617.22	0.06	12.00	0.00	down
10/25/2021	618.12	615.50	2.62	12.00	0.22	down
2/7/2022	617.28	616.88	0.40	12.00	0.03	down
5/9/2022	617.91	617.78	0.13	12.00	0.01	down
8/23/2022	616.85	616.99	-0.14	12.00	-0.01	up
2/13/2023	617.50	617.16	0.34	12.00	0.03	down
5/30/2023	616.79	616.66	0.13	12.00	0.01	down
8/8/2023	616.78	616.62	0.16	12.00	0.01	down
10/24/2023	615.79	615.97	-0.18	12.00	-0.02	up
11/13/2023	615.90	616.06	-0.16	12.00	-0.01	up
			Middle of screen elevation G405D			610.0
			Middle of screen elevation T408			598.0

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Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

Ash Pond No. 2

Coffeen, IL

Date	G406 Groundwater Elevation (ft NAVD88)	T409 Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	LCU (upper)				
2/4/2017	617.52	615.93	1.59	8.23	0.19	down
5/13/2017	616.20	616.75	-0.55	8.23	-0.07	up
7/8/2017	616.29	617.05	-0.76	8.23	-0.09	up
10/21/2017	611.27	612.16	-0.89	8.23	-0.11	up
5/8/2018	615.47	616.02	-0.55	8.23	-0.07	up
8/2/2018	615.75	615.25	0.50	8.23	0.06	down
10/23/2018	614.11	613.96	0.15	8.23	0.02	down
1/15/2019	615.36	614.78	0.58	8.23	0.07	down
8/5/2019	616.50	615.10	1.40	8.23	0.17	down
1/20/2020	617.48	617.16	0.32	8.23	0.04	down
8/10/2020	615.54	615.43	0.11	8.23	0.01	down
1/20/2021	612.97	614.41	-1.44	8.23	-0.17	up
4/20/2021	613.78	615.33	-1.55	8.23	-0.19	up
7/26/2021	614.20	615.72	-1.52	8.23	-0.18	up
8/16/2021	613.82	615.42	-1.60	8.23	-0.19	up
10/25/2021	614.93	616.43	-1.50	8.23	-0.18	up
2/7/2022	613.55	614.97	-1.42	8.23	-0.17	up
5/9/2022	615.36	616.81	-1.45	8.23	-0.18	up
8/23/2022	613.47	610.73	2.74	8.23	0.33	down
2/13/2023	614.11	615.65	-1.54	8.23	-0.19	up
5/30/2023	612.29	613.74	-1.45	8.23	-0.18	up
8/8/2023	613.87	615.02	-1.15	8.23	-0.14	up
10/24/2023	611.28	612.55	-1.27	8.23	-0.15	up
11/13/2023	611.53	613.01	-1.48	8.23	-0.18	up
			Middle of screen elevation G406			605.9
			Middle of screen elevation T409			597.7

Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

Ash Pond No. 2

Coffeen, IL

Date	T408 Groundwater Elevation (ft NAVD88) LCU (upper)	G45D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
2/4/2017	619.46	587.71	31.75	13.78	2.30	down
5/13/2017	619.00	586.19	32.81	13.78	2.38	down
7/8/2017	619.12	586.29	32.83	13.78	2.38	down
10/21/2017	614.81	584.69	30.12	13.78	2.19	down
5/8/2018	615.82	587.56	28.26	13.78	2.05	down
8/2/2018	614.45	585.81	28.64	13.78	2.08	down
10/23/2018	616.30	584.60	31.70	13.78	2.30	down
1/15/2019	617.01	586.96	30.05	13.78	2.18	down
8/5/2019	617.15	588.04	29.11	13.78	2.11	down
8/10/2020	617.38	614.21	3.17	13.78	0.23	down
1/20/2021	616.85	614.60	2.25	13.78	0.16	down
4/20/2021	616.65	614.32	2.33	13.78	0.17	down
7/26/2021	617.21	613.58	3.63	13.78	0.26	down
8/16/2021	617.22	613.83	3.39	13.78	0.25	down
10/25/2021	615.50	614.51	0.99	13.78	0.07	down
2/7/2022	616.88	615.01	1.87	13.78	0.14	down
5/9/2022	617.78	614.95	2.83	13.78	0.21	down
8/23/2022	616.99	614.58	2.41	13.78	0.17	down
2/13/2023	617.16	614.69	2.47	13.78	0.18	down
5/30/2023	616.66	613.99	2.67	13.78	0.19	down
8/8/2023	616.62	613.47	3.15	13.78	0.23	down
10/24/2023	615.97	613.40	2.57	13.78	0.19	down
11/13/2023	616.06	613.55	2.51	13.78	0.18	down
			Middle of screen elevation T408			598.0
			Middle of screen elevation G45D			584.2

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Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

Ash Pond No. 2

Coffeen, IL

Date	T409 Groundwater Elevation (ft NAVD88) LCU (upper)	G46D Groundwater Elevation (ft NAVD88) LCU (lower)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
2/4/2017	615.93	586.06	29.87	22.19	1.35	down
5/13/2017	616.75	584.87	31.88	22.19	1.44	down
7/8/2017	617.05	585.22	31.83	22.19	1.43	down
5/8/2018	616.02	585.86	30.16	22.19	1.36	down
8/2/2018	615.25	583.95	31.30	22.19	1.41	down
10/23/2018	613.96	582.05	31.91	22.19	1.44	down
1/15/2019	614.78	583.17	31.61	22.19	1.42	down
8/5/2019	615.10	583.68	31.42	22.19	1.42	down
8/10/2020	615.43	609.00	6.43	22.19	0.29	down
1/20/2021	614.41	610.49	3.92	22.19	0.18	down
4/20/2021	615.33	611.06	4.27	22.19	0.19	down
7/26/2021	615.72	607.21	8.51	22.19	0.38	down
8/16/2021	615.42	608.17	7.25	22.19	0.33	down
10/25/2021	616.43	609.87	6.56	22.19	0.30	down
2/7/2022	614.97	610.71	4.26	22.19	0.19	down
5/9/2022	616.81	611.34	5.47	22.19	0.25	down
8/23/2022	610.73	615.13	-4.40	22.19	-0.20	up
2/13/2023	615.65	610.39	5.26	22.19	0.24	down
5/30/2023	613.74	610.70	3.04	22.19	0.14	down
8/8/2023	615.02	610.14	4.88	22.19	0.22	down
10/24/2023	612.55	609.65	2.90	22.19	0.13	down
11/13/2023	613.01	609.70	3.31	22.19	0.15	down
			Middle of screen elevation T409			597.7
			Middle of screen elevation G46D			575.5

[O: KLT 6/4/21, C:YMD 6/7/21; U:KLT 8/25/21, C:EDP 8/31/21]
[KLT 5/3/24, C: 5/7/24]

Notes:

[1] Distance change was calculated using the midpoint of the piezometer screen and water table surface. If the water table surface was above the top of the monitoring well screen, then distance change was calculated using the midpoint of both screens.

[2] Vertical gradients between ±0.0015 are considered flat, and typically have less than 0.02 foot difference in groundwater elevation between wells.

- - = no data collected on date / no vertical gradient calculated
DA = deep aquifer
dh = head change
dl = distance change
ft = foot/feet
LCU (lower) = lower confining unit (Smithboro)
LCU (upper) = lower confining unit (Vandalia)
NAVD88 = North American Vertical Datum of 1988
PMP = potential migration pathway
UA = uppermost aquifer

Appendix B. Supplemental Vertical Hydraulic Gradients

Nature and Extent Report

Coffeen Power Plant

GMF Gypsum Stack Pond

Coffeen, IL

Date	G206 Groundwater Elevation (ft NAVD88)	G206D Groundwater Elevation (ft NAVD88)	Head Change (ft)	Distance Change [1] (ft)	Vertical Hydraulic Gradient [2] (dh/dl)	
	UA	DA (PMP)				
4/20/2021	622.07	585.96	36.11	33.51	1.08	down
5/3/2021	622.60	587.42	35.18	33.51	1.05	down
5/17/2021	622.31	587.81	34.50	33.51	1.03	down
6/9/2021	621.71	584.19	37.52	33.51	1.12	down
6/23/2021	620.54	589.66	30.88	33.51	0.92	down
7/12/2021	622.39	590.72	31.67	33.51	0.95	down
7/26/2021	622.00	591.14	30.86	33.51	0.92	down
8/16/2021	622.08	592.00	30.08	33.51	0.90	down
10/25/2021	622.94	595.04	27.90	33.51	0.83	down
2/7/2022	622.37	598.22	24.15	33.51	0.72	down
5/9/2022	623.70	601.30	22.40	33.51	0.67	down
8/23/2022	621.61	602.86	18.75	33.51	0.56	down
3/30/2023	623.69	601.99	21.70	33.51	0.65	down
4/30/2023	622.54	603.60	18.94	33.51	0.57	down
5/30/2023	621.64	603.91	17.73	33.51	0.53	down
7/8/2023	620.69	604.04	16.65	33.51	0.50	down
8/8/2023	618.93	604.10	14.83	33.51	0.44	down
9/25/2023	618.08	604.06	14.02	33.51	0.42	down
10/25/2023	617.11	603.80	13.31	33.51	0.40	down
11/13/2023	616.66	603.74	12.92	33.51	0.39	down
12/18/2023	616.97	603.82	13.15	33.51	0.39	down
			Middle of screen elevation G206			610.8
			Middle of screen elevation G206D			577.3

[O: KLT 6/4/21, C:YMD 6/7/21][U:KLT 8/25/21, C:EDP 8/31/21]
[KLT 5/3/24, C: SSW 5/7/24]

Notes:

[1] Distance change was calculated using the midpoint of the piezometer screen and water table surface. If the water table surface was above the top of the monitoring well screen, then distance change was calculated using the midpoint of both screens.

[2] Vertical gradients between ±0.0015 are considered flat, and typically have less than 0.02 foot difference in groundwater elevation between wells.

-- = no data collected on date / no vertical gradient calculated
DA = deep aquifer
dh = head change
dl = distance change
ft = foot/feet
NAVD88 = North American Vertical Datum of 1988
PMP = potential migration pathway
UA = uppermost aquifer

APPENDIX C
Historical Field and Laboratory Hydraulic Conductivities

Appendix C. Historical Field and Laboratory Hydraulic Conductivities

Nature and Extent Report

GMF Recycle Pond

Coffeen Power Plant

Coffeen, IL

Well ID	Unit	Method (fh)	Method (rh)	K (fh)	K (rh)	Well Geometric Mean	Approximate Screened Elevation (ft)	Interpreted Unit
Upper-most Aquifer								
R104	**Landfill**	KGS	B-R	7.0E-05	2.8E-04	1.4E-04	614.4-609.7	Hagarstown Beds
G105		KGS	KGS	1.5E-04	5.7E-05	9.2E-05	613.2-608.4	
G106		B-R	B-R	4.0E-05	7.4E-04	1.7E-04	614.0-609.4	
G107		KGS	KGS	6.3E-05	8.9E-05	7.5E-05	613.9-609.3	
G110		KGS	KGS	4.7E-05	2.0E-05	3.1E-05	612.0-607.4	
G119		KGS	KGS	8.6E-05	8.2E-05	8.4E-05	611.6-607	
G120		low water elevation; no test conducted					614.2-609.7	
G125		KGS	KGS	4.8E-05	4.1E-05	4.4E-05	613.7-609.1	
T127		KGS	KGS	1.2E-03	1.7E-05	1.4E-04	610.5-606	
			Unit Geometric Mean			8.5E-05		
T202	**Gypsum Pond**	KGS	KGS	4.5E-04	5.5E-04	5.0E-04	614.0-609.6	Hagarstown Beds
G206		B-R	KGS	3.0E-04	1.6E-04	2.2E-04	613.0-608.6	
G208		KGS	KGS	6.0E-05	2.1E-05	3.5E-05	613.0-608.5	
G209		KGS	KGS	2.0E-04	1.6E-04	1.8E-04	612.8-608.3	
G210		KGS	KGS	5.0E-04	4.8E-04	4.9E-04	611.1-606.6	
G212		KGS	KGS	1.3E-04	1.8E-04	1.5E-04	613.9-609.3	
G215		KGS	KGS	5.0E-04	3.5E-04	4.2E-04	611.1-606.7	
G218		KGS	KGS	4.1E-04	4.1E-04	4.1E-04	610.3-605.9	
			Unit Geometric Mean			2.3E-04		
G270	**Recycle Pond**	KGS	KGS	5.5E-04	4.8E-04	5.1E-04	609.8-605.0	Hagarstown Beds
G271		KGS	KGS	1.6E-04	1.1E-03	4.2E-04	612.9-608.6	
G273		KGS	KGS	1.0E-03	8.3E-04	9.1E-04	611.1-605.6	
G276		low water					606.7-601.9	Hagarstown Beds, v. thin
G279		KGS	KGS	1.7E-03	1.5E-03	1.6E-03	606.8-602.4	Hagarstown Beds
G280		KGS	KGS	1.3E-03	1.3E-03	1.3E-03	610.2-605.3	
G281		KGS	KGS	2.1E-03	8.9E-04	1.4E-03	608.3-603.7	
			Unit Geometric Mean			9.0E-04		
G301	**Ash Pond 1**	KGS	KGS	2.7E-04	5.0E-04	3.7E-04	609-604.3	Upper Vandalia Till
G302		KGS	KGS	4.9E-04	6.3E-04	5.6E-04	604.7-600.1	
G303		KGS	KGS	5.6E-05	3.1E-05	4.2E-05	609.1-599.1	Hagarstown/Vandalia Till Contact
G304		KGS	KGS	8.9E-04	1.0E-03	9.4E-04	613.5-603.5	Hagarstown Beds
			Unit Geometric Mean			3.0E-04		
G401	**Ash Pond 2**	B-R	B-R	1.8E-04	2.8E-04	2.2E-04	608.7-603.7	Hagarstown Beds
G402		KGS	KGS	4.5E-04	1.9E-04	2.9E-04	600.6-590.6	Upper Vandalia Till
G403		KGS	KGS	4.3E-05	7.2E-05	5.6E-05	610.7-606.0	Hagarstown Beds, v. thin
G404		KGS	KGS	4.2E-04	3.8E-04	4.0E-04	606.7-601.9	Hagarstown Beds
G405		KGS	KGS	9.8E-04	9.7E-04	9.7E-04	611.9-607.1	
			Unit Geometric Mean			2.7E-04		
G153	**SW Pond**	KGS	KGS	2.5E-04	5.4E-04	3.7E-04	607.5-603.0	Hagarstown Beds
			Unit Geometric Mean			3.7E-04		
MW03S	**2009 Hydrogeo. Invest.**	B-R	B-R	6.0E-04	1.1E-03	8.1E-04	613.7-608.6	Hagarstown Beds
MW04S		B-R	B-R	1.3E-03	8.0E-04	1.0E-03	612.6-607.6	
MW10S		B-R	B-R	8.0E-04	8.0E-04	8.0E-04	610.9-604.9	
MW13S		B-R	B-R	1.0E-03	2.0E-04	4.5E-04	611.3-606.1	
MW14S		B-R	B-R	1.0E-03	5.0E-04	7.1E-04	612.4-607.2	
MW15S		B-R	B-R	1.5E-04	8.1E-05	1.1E-04	609.3-604.2	
MW16S		B-R	B-R	6.0E-04	4.5E-04	5.2E-04	611.5-606.3	
MW17S		B-R	B-R	5.8E-04	5.5E-04	5.6E-04	613.1-603	
			Unit Geometric Mean			5.4E-04		

Lower Confining Unit (Vandalia and Smithboro Till)								
T408	**Ash Pond 2**	KGS	KGS	2.15E-06	7.50E-08	9.02E-07	600.4-595.2	Vandalia Till
T409		KGS	KGS	3.6E-05	3.20E-05	3.41E-05	600.1-594.9	Vandalia Till (sand seam)
G405D		KGS	KGS			4.90E-07	589.1-579	Smithboro Till
G406D		KGS	KGS			4.00E-08	580.3-570.3	
			Unit Geometric Mean			5.55E-06		

Notes:

fh = Falling head test

rh = Rising head test

Hydraulic Conductivity tests analyzed using Aqtesolv® Pro version 4.50 (HydroSOLVE, Inc.)

Test Methods

B-R Bouwer and Rice, 1976. "A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifer with Completely or Partially Penetrating Wells", Water Resources Research v.12, no. 3. American Geophysical Union, Washington, DC. pp. 423-428.

KGS Hyder, Z., J.J. Butler, C.D. McElwee, and W. Liu, 1974. "Slug tests in partially penetrating wells", Water Resources Research, v. 30, no. 11. American Geophysical Union, Washington, DC. pp. 2945-2957.

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Appendix C. Historical Field and Laboratory Hydraulic Conductivities
Nature and Extent Report
GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

Laboratory Tests			
Well/ Soil Boring ID	**Approximate Sample Elevation (ft)**	**Hydraulic Conductivity (cm/sec)**	**Interpreted Unit**
COF-B001	613.0	1.3E-08	Loess - Upper Confining Unit
COF-B003	606.5	2.2E-07	
COF-B004	610.5	5.0E-07	
COF-B007	615.0	7.0E-08	
	Geometric Mean	**1.0E-07**	
G46D	599.2	4.5E-06	Vandalia Till
T408	597.6	1.5E-07	
SB-12	577.7-572.7	6.8E-09	
SB-13	598-593	7.0E-09	
SB-18	603.5-603	8.8E-09	
	Geometric Mean	**4.9E-08**	
SB-09	598.5-598	1.9E-06	Mulberry Grove Silt
SB-16	589-588.5	1.6E-06	
	Geometric Mean	**1.7E-06**	
G45D	586.4	1.0E-07	Smithboro Till
G46D	578.9	2.1E-08	
SB-07	572-571.5	1.1E-09	
	Geometric Mean	**1.3E-08**	
SB-19	569-564	3.4E-09	Deep Confining Unit
SB-16	548-547.5	1.3E-08	
	Geometric Mean	**6.6E-09**	

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APPENDIX D
Geochemical Conceptual Site Model

Geosyntec consultants

engineers | scientists | innovators

Geochemical Conceptual Site Model

Coffeen Power Plant – Gypsum Management Facility Recycle Pond

(CCR Unit #104)

Prepared for

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June 2024

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ACRONYMS AND ABBREVIATIONS

ASD	alternative source demonstration
CEC	cation exchange capacity
CCR	coal combustion residuals
COCs	constituents of concern
CPP	Coffeen Power Plant
DA	deep aquifer
DCU	deep confining unit
GCSM	geochemical conceptual site model
GMF	Gypsum Management Facility
GSP	Gypsum Stack Pond
GWPS	groundwater protection standards
HSU	hydrostratigraphic unit
I.A.C.	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
LCU	lower confining unit
meq/100g	milliequivalents per 100 grams
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
N&E	nature and extent
ORP	oxidation-reduction potential
PMP	potential migration pathway
RP	Recycle Pond
SU	standard units
TDS	total dissolved solids
TOC	total organic carbon
UA	uppermost aquifer
UCU	upper confining unit
XRD	X-Ray diffraction

1. EXECUTIVE SUMMARY

A geochemical conceptual site model (GCSM) has been developed to describe subsurface conditions at the Coffeen Power Plant Gypsum Management Facility (GMF) Recycle Pond (RP) coal combustion residuals unit (Unit #104). A GCSM describes the geochemical processes that contribute to the mobilization, distribution, and attenuation of constituents of concern (COCs) in the subsurface environment. This report describes the GCSM for parameters that have exceeded the groundwater protection standard (GWPS) in GMF RP groundwater and which will be addressed in the corrective action plan. The exceedances detected at the GMF RP are sulfate and total dissolved solids (TDS). Exceedances of COCs are present in two hydrostratigraphic units at the Site: the uppermost aquifer (UA), comprised predominantly of sandy to gravelly silts with thin sand beds, and the lower confining unit (LCU), comprised primarily of sandy to silty till, with discontinuous sand lenses that have been identified as potential migration pathways (PMPs).

The coal combustion residuals (CCR) materials are the primary source of constituent loading to the CCR porewater, which is considered to represent the mobile phase constituents capable of migrating into the underlying materials and potentially downgradient in groundwater. The presence of CCR porewater is relatively minor in the GMF RP due to the limited presence of solid CCR, and porewater samples could not be collected. As an alternative, GMF RP surface water was collected from location X201 to represent CCR source water. The CCR source water is therefore representative of the mobile phase constituents capable of migrating into the underlying materials and potentially downgradient in groundwater. The GMF RP CCR source water is therefore the primary indicator of the sulfate concentration available to potentially migrate to the groundwater and is considered as the primary source term for environmental investigation and fate and transport modeling. The observed sulfate exceedances were identified in groundwater to the east of the GMF RP, where the groundwater signature is generally consistent with influence from the CCR source water. TDS is a measure of inorganic and organic substances in solution. TDS trends are generally consistent with those of sulfate in the GMF RP groundwater system.

Conditions within groundwater from the UA are predicted to favor amorphous iron oxide stability at most locations, which indicates that a portion of the sulfate in the groundwater system might be attenuated via surface complexation reactions. Attenuation of the constituents contributing to TDS, such as sulfate, will reduce TDS concentrations as well. However, amorphous iron oxides are predicted to be less stable in the LCU, with the potential for dissolution and precipitation reactions with other iron-bearing species such as siderite. Crystalline iron oxides were not identified in the mineralogical analysis and a site-specific partition coefficient for sulfate could not be calculated from the results of batch attenuation testing completed with solids from the Site. These results indicate that chemical attenuation of sulfate, and therefore TDS, downgradient of the GMF RP is expected to be limited.

2. INTRODUCTION

This report documents the development of a geochemical conceptual site model (GCSM) to describe subsurface conditions at the Coffeen Power Plant (CPP) Gypsum Management Facility (GMF) Recycle Pond (RP) coal combustion residuals (CCR) unit (Unit #104). A GCSM describes the environmental media and geochemical processes that contribute to the mobilization, distribution, and attenuation of constituents of concern (COCs) in the subsurface environment. The GCSM was prepared in support of an evaluation of the nature and extent of exceedances of COCs above the groundwater protection standards (GWPS) at the RP. The document has been prepared as an appendix to the CPP GMF RP Nature and Extent (N&E) Report prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll).

Sulfate and total dissolved solids (TDS) are the only constituents with statistical exceedances above the GWPS at the RP for the second, third, and fourth quarters of 2023 monitoring events (Q2 2023, Q3, 2023, and Q4 2023) completed under Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845.630. For the 2023 events discussed above, sulfate and TDS exceedances were detected in samples from the lower confining unit (LCU) at compliance monitoring well G285; a sulfate exceedance was detected in samples from the uppermost aquifer (UA) at compliance monitoring well G273; and a TDS exceedance was detected in samples from the UA at compliance monitoring well G279.

An exceedance of arsenic was detected at deep aquifer (DA) compliance monitoring well G275D during the fourth quarter 2023 sampling event (Ramboll 2024). An alternative source demonstration (ASD), as allowed by 35 I.A.C. § 845.650(e), was completed for the arsenic exceedance (Geosyntec 2024). Therefore, arsenic is not included as a COC in this GCSM.

3. SITE BACKGROUND

3.1 Site Overview

An overview of site characteristics and hydrogeology is presented in the CPP GMF RP N&E Report. A site layout figure is provided in Attachment A.[1] The CPP property is located approximately two miles south of the city of Coffeen, Illinois, and bordered by lobes of Coffeen Lake to the west, east, and south, and by agricultural land to the north. The Coffeen GMF RP impoundment is located to the south of the GMF Gypsum Stack Pond (GSP) CCR unit (Unit # 103). An unnamed tributary runs north to south to the east of the GMF GSP and RP.

The GMF RP is an 18.3-acre lined surface impoundment that received decanted water from the GMF GSP from 2010 to 2021 to act as a polishing pond. Outflow from the GMF RP was pumped back to the CPP for use in the wet scrubber system, and the GMF RP also has an emergency spillway that discharges to the unnamed tributary via a National Pollutant Discharge Elimination System permitted outfall. The GMF RP was constructed in accordance with Illinois Environmental Protection Agency (IEPA) Water Pollution Control Permit No. 2008-EA-4661 and is constructed with a composite high-density polyethylene (HDPE) liner with three feet of recompacted soil and a groundwater underdrain system.

A Hydrogeologic Site Characterization Report (Ramboll 2021a) previously described the hydrostratigraphic units (HSUs) present in the vicinity of the CPP GMF RP, which consist of an Upper Confining Unit (UCU), UA, LCU, DA, and Deep Confining Unit (DCU). The UCU consists of the silty or clayey silt of the Loess Unit and the upper clayey portion of the Hagerstown Member. The UA is predominantly sandy to gravelly silts with thin sand beds, with lithology identified as the Hagarstown Member. The LCU, which contains the Vandalia Member, Mulberry Grove Member, and Smithboro Member, is comprised primarily of sandy to silty till, with discontinuous sand lenses that have been identified as potential migration pathways (PMPs). The DA is predominantly sand and sandy silt/clay units of the Yarmouth Soil and is discontinuous beneath COF.

Vertical gradients measured near CPP indicate downward flow from the UA to the LCU and DA. Vertical gradients at the G275/G725D well nest, located near the southeast corner of the GMF RP, were consistently strongly downward with an average vertical gradient of 0.71 feet per foot (CPP GMF RP N&E Report). Both the DA and the LCU have been identified as PMPs due to the presence of these downward gradients.

3.2 Groundwater Monitoring Network

A groundwater monitoring network was proposed in accordance with 35 I.A.C. § 845.630 to monitor groundwater quality which passes the waste boundary as part of the Operating Permit application to IEPA for the GMF RP. The proposed groundwater monitoring network is described

[1] This figure is also provided as Figure 2-1 of the CPP GMF RP N&E Report.

in the Groundwater Monitoring Plan (Ramboll 2021b) and shown in Attachment B.[2] Well construction information is provided in Attachment C.[3]

Groundwater flow is generally east to southeast in the vicinity of the GMF RP in the direction of the unnamed tributary. Groundwater flow directions are generally consistent across seasons. A detailed discussion of the hydrology of the Site is presented in Section 2 of the CPP GMF RP N&E Report.

[2] This figure is also provided as Figure 2-2 of the CPP GMF RP N&E Report.
[3] This table is also provided as Table 3-1 of the CPP GMF RP N&E Report.

4. GEOCHEMICAL SITE CONDITIONS

The general behavior of the COCs is discussed in Section 4.1. Summaries of Site solids and aqueous conditions within the relevant HSUs are provided in Section 4.2 and 4.3, respectively, with discussion of how groundwater both upgradient and downgradient of the GMF RP may interact with the Site solids to affect constituent behavior. This includes discussion of potential sorbing or precipitating phases and how the stability of those phases may be affected by variable groundwater pH and redox conditions.

4.1 Constituent Transport and Fate

Sulfate is the primary form of oxidized sulfur (S(VI)) in the environment and is a divalent oxyanion at pH values greater than 2 SU (Stumm and Morgan 1996). Sulfate in groundwater might sorb onto positively charged sites on solid metal oxide phases, most commonly iron and manganese oxides (Brown et al. 1999). The extent and strength of sulfate sorption to metal oxide surfaces depends on pH, ionic strength, and oxide surface area available for sorption. Sulfate can also form insoluble complexes such as barite ($BaSO_4$) (NCBI 2024). Sulfate in groundwater may be reduced to elemental sulfur (S(0)) or sulfide (S(-II)) under sufficiently reducing conditions, a process governed by local microbial communities (Stumm and Morgan 1996). Generally, reduced sulfur is less mobile in groundwater than sulfate because reduced sulfur readily precipitates as metal sulfides (Stumm and Morgan 1996).

TDS is a measure of the mass of dissolved material in water, rather than a specific chemical constituent. Individual constituent contributions to TDS depends on the concentration of each contributor species. Typically, major ions (i.e., calcium, sodium, magnesium, potassium, chloride, sulfate, and carbonate species) represent the primary contributors to TDS. As such, TDS is often positively correlated with electrical conductivity and ionic strength (Rusydi 2018, Ghalib et al. 2020). TDS concentrations can be reduced by removing the individual constituents that contribute to TDS from aqueous phases.

4.2 Site Solids Characterization

Solid phase data for the CCR source material within the GMF RP has not been collected due to safety concerns and limited abundance of solid phase CCR. As noted in Section 3.1, the GMF RP served as a polishing pond for the GMF GSP and did not receive any other inputs of CCR solids. Therefore, analysis of CCR solids from two locations within the GMF GSP in 2021 are considered representative of the CCR solids that would be expected to influence CCR source water composition at the GMF RP and are discussed throughout the following sections.

Solids from HSUs across the monitoring network were characterized using various analytical techniques, the results of which are presented in Tables 1 and 2, to characterize their geochemical

properties and to understand their effect on the geochemistry of the groundwater system.[4] Solids were collected from three locations adjacent to the following existing wells in the GMF RP monitoring network and one additional location adjacent to the GMF RP, specifically:

- G270, located upgradient of the GMF RP to the northwest. Solids were collected within the UA and are considered representative of background conditions for the GMF RP.
- G275D, located downgradient of the GMF RP to the south. Solids were collected within the UCU, UA, and LCU.
- G284, located downgradient of the GMF RP to the southeast. Solids were collected within the UCU and UA.
- G288, located side-gradient of the GMF RP to the east. Solids were collected within the UCU and UA.

The monitoring well locations are shown on Attachment B. Boring logs for these locations are provided in Attachment D.

Samples from two additional locations across the Site were analyzed as part of investigations at the CPP GMF GSP but are representative of conditions within the same HSUs beneath the GMF RP. These solids were collected adjacent to existing wells in the GMF GSP monitoring network, specifically:

- G200, located upgradient of the GMF GSP to the north. Solids were collected within the UA and are considered representative of background conditions for the GMF RP.
- G215, located at the downgradient edge of the GSP to the east. Solids were collected within the UA.

The monitoring well locations for G200 and G215 and the boring logs for these locations are provided in Attachment D.

4.2.1 Bulk Characterization

Bulk characterization analytical data is presented on Table 1 and the analytical data is provided in Attachment E. Total organic carbon (TOC) represents only the carbon component of organic matter within a solid material. Non-detect to 1.12 percent by dry weight [% wt]) abundances of

[4] Sequential extraction procedures are chemical extractions used to dissolve metals from specific solid-associated phases. While useful for solid phase characterization, reporting limits are often elevated for sulfate and boron and samples from the vicinity of the CPP GMF RP were not submitted for analysis via this technique.

TOC were reported in the vicinity of the GMF RP within the UA, with similarly low abundances in the LCU (1.09 % wt), and UCU solids (0.06 to 0.16 % wt).[5]

The cation exchange capacity (CEC) of a solid represents the total negative surface charge of that material, which is related to the material's surface potential to sorb cations. Amorphous iron hydroxides, organic matter, and clays all tend to possess high negative surface charges at circumneutral pH and therefore tend to contribute to higher CEC values. CEC values in UA solids (7.93 to 15 milliequivalents per 100 g of sample [meq/100g]) are similar to those in UCU solids (9.60 to 22.95 meq/100g) and LCU solids (9.25 meq/100g).

Total sulfide was only detected in one out of three samples submitted (0.08 wt% at background location SB-200), consistent with the low total sulfur concentrations (less than 950 milligrams per kilogram [mg/kg]) in all samples. Acid volatile sulfide (AVS) represents the portion of sulfide within a solid material that can be liberated to hydrogen sulfide (H_2S) gas after the acidification of the sample. Of three samples submitted for AVS analysis, AVS was only detected at SB-200 (0.17 milligrams per kilogram [mg/kg]). The low abundance of total sulfides and AVS indicates sulfides have a limited abundance in the Site solids and sulfur is primarily present within other mineral phases. Sulfate was only detected in solids from within the UA at the G275D boring location (20 mg/kg) as well as in solid samples from the UCU (12 to 50 mg/kg) and LCU (48 mg/kg) (Table 1). Note that sulfate concentrations in GMF GSP solids were 15,000 to 19,000 mg/kg (Table 1); the higher concentrations in the CCR solid materials compared to the aquifer lithology is consistent with the predominance of gypsum in the CCR.

Total metals were analyzed to determine the major and trace metal content of the solids. The abundance of total aluminum, iron, and manganese can provide insights into the presence of adsorbing phases, as oxyhydroxides of these metals can provide sorption capacity. The total metals results are presented in Table 1 and the analytical data is provided in Attachment E.

Total aluminum was only measured at three locations within the UA (SB-200, SB-215, and G270), with concentrations ranging between 9,600 to 22,000 mg/kg. Total iron concentrations are greater in UA solids in background locations (16,000 to 22,000 mg/kg) compared to compliance locations (4,200 to 9,900 mg/kg). Iron concentrations in UCU and LCU solids (3,800 to 16,000 mg/kg) were similar to those detected in UA compliance well locations. The abundance of iron within the bulk solids matrix of the UA indicates the potential presence of iron-bearing minerals within the system. The presence of iron-bearing minerals was confirmed via X-Ray diffraction (XRD) as discussed in Section 4.2.2.

Total manganese concentrations follow a similar pattern to iron in the UA, with concentrations greater in background location UA solids (1,200 mg/kg) than compliance well location UA solids (130 to 550 mg/kg). Total manganese concentrations similar to the UA were reported in the LCU

[5] While the analytical laboratory reports provided in Attachment E provide TOC as mg/kg, the results have been converted to % wt for ease of interpretation.

solids (240 mg/kg), whereas lower concentrations were detected in UCU solids (16 to 110 mg/kg) (Table 1).

4.2.2 Mineralogical Analysis

XRD with Rietveld refinement was conducted for identification of minerals in three solid samples collected from the UA adjacent to G200, G215 and G270. XRD is an analytical technique that provides information about the identity of the crystalline material within a sample but does not provide information about non-crystalline or amorphous phases. XRD results are normalized to 100% of the total weight, meaning that material not detected by XRD is ignored in the percent calculation.

The XRD data are presented in Table 2 and the analytical data is provided in Attachment F. Solids from the SB-200 and SB-215 in the UA were predominantly composed of quartz, ranging from 53.1 to 60.6% of the minerals present. Feldspar minerals including albite (8.0 to 9.1%) and microcline (6.2 to 9.8%), and the carbonate minerals dolomite (12.9 to 18.2 %) and calcite (non-detect to 4.5%) were detected as additional primary crystalline mineral phases.

While crystalline forms of iron oxides were not detected in Site solids, ankerite, an iron-bearing carbonate mineral, was detected in all Site solids at abundances from 4.3 to 5.2%. The abundance of ankerite compared to the abundance of total iron in Site solids indicates that the total iron within Site solids is largely associated with minerals other than crystalline iron oxides and that iron oxides, if present, are likely present as non-crystalline or amorphous phases. No crystalline manganese oxide or aluminum oxide minerals were detected in Site solids.

4.3 Aqueous Geochemistry

Groundwater from wells across the UA, LCU, and DA in the vicinity of the GMF RP were analyzed for a range of geochemical parameters, as presented in Figures 1–7. For clarity in interpretation, UA well locations are shown with square symbology, LCU well locations are shown with diamond symbology and DA locations are shown with triangular symbology. Background locations G270 and G280, both of which are screened in the UA, are shown with hollow symbology. The groundwater data used in the site evaluation is summarized in Attachment G.

A limited set of aqueous phase samples representative of GMF RP CCR source water has been collected in the recent past from the X201 location, which is included in the monitoring network only to gauge pond water levels.

The CCR materials are the primary source of constituent loading to the CCR porewater, which is considered to represent the mobile phase constituents capable of migrating into the underlying materials and potentially downgradient in groundwater. The presence of CCR porewater is relatively minor in the GMF RP to the limited presence solid CCR, and porewater samples could not be collected. As an alternative, GMF RP surface water was collected from location X201 to represent CCR source water. The RP CCR source water is the primary indicator of constituents available to the groundwater and is considered as the primary source term for environmental

investigation and fate and transport modeling. The CCR source water data collected from the X201 location and used in the Site evaluation is also summarized in Attachment G.

4.3.1 Redox/pH Summary

The oxidation-reduction (redox) potential (ORP) and pH in aqueous systems are major controls on the speciation and mobility of reactive constituents such as iron, manganese, and sulfate.

GMF RP CCR source water pH values ranged between 4.4 to 7.2 SU (Figure 1). In wells across the groundwater monitoring network, pH values appear to be stable and are circumneutral, consistent with the buffering capacity associated with the presence of carbonate mineral species detected within UA solids (Table 2). Compliance UA groundwater pH values largely range between 6.5 to 7.5 SU, which overlaps with the range detected for background UA groundwater with pH values 6.0 to 7.5 SU. LCU groundwater near the GMF RP, represented by G283 and G285, has a range of pH values between 6.7 to 7.7 SU. DA groundwater near the GMF RP, represented by G275D, has a range of pH values between 7.0 to 7.5 SU. Within UA compliance wells, pH values are highest in G271, located to the south/southeast of the GMF RP, and lowest in G79, northeast of the GMF RP. This spatial distribution of pH may relate to an increasing influence of GMF RP porewater at this location.

Groundwater across the Site has a range of redox conditions, with UA monitoring network wells having almost exclusively positive (oxidizing) ORP values at both background and compliance well locations (Figure 2). ORP values in the DA near the GMF RP are almost exclusively negative (more reducing), while LCU ORP values are both positive and negative values (at the G285 and G283 locations, respectively). GMF RP CCR source water at the X201 location is relatively more oxidizing than groundwater in the UA compliance network. This is likely due to the shallow construction of the GMF RP and its high surface area.

4.3.2 Exceedance Parameters

Total sulfate concentrations within GMF RP porewater at X201 ranged between 5,500 to 17,000 mg/L[6], above the GWPS of 400 mg/L (Figure 3a). When measured, dissolved sulfate was similar (14,000 to 18,000 mg/L) (Figure 3b). These elevated concentrations are consistent with the nature of the CCR material within the unit (gypsum) and the high sulfate concentrations detected for GMF GSP solids (Table 1).

Sulfate in UA background wells G270 (48 to 58 mg/L) and G280 (43 to 113 mg/L)[7] rarely exceed the sulfate GWPS (Figure 3a). Sulfate concentrations are generally stable through time across the monitoring network, with sulfate concentrations consistently above the GWPS only at G273 in the UA and G285 in the LCU (Figure 3a). Sulfate concentrations at G279 have shown an increasing

[6] For the 31 March 2021 porewater sample at X201, the detected sulfate concentration was anomalously low at 1,600 mg/L and has been excluded from the presented range.
[7] For the 9 November 2022 groundwater sample at G280, the detected sulfate concentration was anomalously high at 910 mg/L and has been excluded from the presented range.

trend since mid-2022, resulting in a statistical exceedance of the GWPS in Q4 2023. Sulfate concentrations within the DA near the GMF RP have remained relatively low (99 to 270 mg/L). When measured, dissolved sulfate represents the majority of total sulfate at all locations and within all HSUs (Figure 3b).

UA background wells G270 (360 to 510 mg/L) and G280 (400 to 608 mg/L) have lower TDS concentrations relative to UA compliance wells (440 to 1,600 mg/L; excluding G279) and LCU and DA compliance wells (770 to 1,000 mg/L; excluding G285; Figure 4). TDS concentrations at wells with exceedances, G279 within the UA (560 to 6,260 mg/L) and G285 within the LCU (1,400 to 1,700 mg/L), are higher than the other compliance wells. GMF RP CCR source water at X201 has TDS concentrations well above those detected in the compliance monitoring network (3,100 to 17,000 mg/L). Sulfate and TDS concentrations are significantly positively linearly correlated for wells in the compliance monitoring network (R^2= 0.92, Figure 5), indicating that sulfate is a major contributor to TDS across the GMF RP monitoring network. This includes both G279 and G285, where a statistically significant exceedance of sulfate was identified.

4.3.3 Pourbaix Diagrams

Eh-pH (Pourbaix) diagrams can be used to illustrate the predicted stability of specific phases at thermodynamic equilibrium under the conditions detected for a groundwater sample. Select crystalline mineral species were suppressed to be representative of groundwater conditions (e.g. mineral formation not anticipated to be kinetically favored for igneous and metamorphic minerals in the low temperature near-surface environment).

Using conditions detected at compliance well G273 on 5 June 2023 to represent groundwater within the UA (Table 3), amorphous ferrihydrite (represented as $Fe(OH)_3$(ppd) on the diagram) is predicted to be stable under groundwater conditions at most UA locations (Figure 6a).[8] However, most locations are poised on the redox boundary between dissolved iron and amorphous iron oxides, suggesting the potential for dynamic iron precipitation and dissolution conditions. Ankerite, which is an analogous iron-bearing carbonate species to siderite, was identified via XRD but is not expected to be thermodynamically stable within the UA based upon the detected pH and redox conditions. Dissolution of ankerite may provide a source of iron for the subsequent formation of amorphous iron oxide coatings. Overall, these modeling results indicate that amorphous iron oxides (the formation of which is more kinetically favorable than crystalline iron oxides) might be present, although unstable, at some locations within the UA.

Using conditions detected at well G285 on 8 June 2023 to represent groundwater within the LCU and DA (Table 3), the dissolved ferrous sulfate ion pair is predicted to be stable under groundwater conditions at many LCU and DA locations (Figure 6b). Given the high sulfate concentrations at G285, an additional Eh-pH diagram was generated using conditions at well G283 on 8 June 2023 to represent groundwater within the LCU and DA at other locations. Amorphous ferrihydrite is predicted to be unstable under these conditions, with many sample observations poised on the

[8] Field ORP measurements were converted to Eh by adding +200 millivolts to correct for the Ag/AgCl electrode.

redox boundary with siderite (Figure 6c). This is consistent with the observation of ankerite via XRD in solids near the GMF RP and indicates the potential for a dynamic equilibrium between amorphous iron oxides and iron carbonate minerals.

The manganese Eh-pH diagrams for the UA and LCU/DA show that solid phase manganese minerals, including manganese oxides, are not predicted to be stable under conditions across the Site in the UA, LCU, or DA (Figures 7a, 7b, and 7c).

4.3.4 Total and Dissolved Iron and Manganese Concentrations

The distribution of iron and manganese between total and dissolved phases can provide insights on Site redox conditions and constituent behavior. Paired total and dissolved iron and manganese data are available across the Site for the Q2, Q3, and Q4 2023 sampling events. A comparison of the total and dissolved iron and manganese data for these events is provided in Table 4.

Total iron concentrations ranged from 0.029 mg/L at downgradient UA compliance well G276 to 0.97 mg/L at UA background well G280. Iron was higher in the LCU and DA HSUs relative to the UA compliance locations, ranging from 0.326 mg/L at sidegradient compliance well G285 to 7.39 mg/L at downgradient DA compliance well G275D. The total iron concentration in GMF RP CCR source water was 0.068 mg/L (Table 4).

Where detected, dissolved iron concentrations followed similar patterns of relative concentrations to those detected for total iron, with concentrations ranging from 0.0016 mg/L at downgradient UA compliance well G277 to 2.9 mg/L at downgradient LCU well G283. The dissolved iron concentration as a percentage of the total iron value was less than 35%, except for at G283. These observations are consistent with Eh-pH modeling results indicating geochemical conditions favoring the stability of amorphous ferrihydrite at UA locations, and dissolved iron species at LCU and DA locations.

Total manganese concentrations in GMF RP CCR source water ranged from 45 to 53.3 mg/L (Table 4). Total manganese concentrations in groundwater ranged from below reporting limits to 0.85 mg/L at background UA well G270 (Table 4). Dissolved manganese concentrations ranged from below reporting limits to 0.835 mg/L at downgradient DA well G275D. Dissolved manganese represents the majority of total manganese concentrations at most locations. This is consistent with the predicted mobilization of manganese to the aqueous phase based on the Pourbaix diagrams (Figures 6a & 6b).

4.3.5 Major Ion Distribution and Groundwater Signatures

Piper diagrams were constructed using data from the GMF RP to visualize major ion distributions in groundwater (Figure 8). Piper diagrams are a common tool for assessing geochemical similarities or differences between aqueous samples. The cation composition of the GMF RP CCR source water is dominated by magnesium, with a major anion composition that is sulfate-dominated. Background UA wells G270 and G280 compositions have lower contributions of sulfate, greater contributions of carbonate alkalinity (consistent with the presence of carbonate

minerals in the solids detected at G270), and major cation distributions of relatively equal contributions of both monovalent and divalent cations (Table 2). Groundwater from DA compliance well G275D and sidegradient UA compliance well G284 cluster with these background wells, consistent with the low total sulfate concentrations detected at these locations. Groundwaters from the UA compliance network cluster along a continuum between background locations and GMF RP CCR source water, consistent with the higher concentrations of sulfate detected at these locations. This is particularly notable for G279, which clusters near GMF RP CCR source water from X201, and the fourth quarter sample from G275, which appears to be driven by an anomalously high sulfate value (Figure 3a). These results provide further evidence for the influence of GMF RP CCR source water on compliance wells located to the east of the unit.

5. EVALUATION OF PARTITION COEFFICIENT RESULTS

Batch test studies combine soil and groundwater collected from the Site to evaluate the attenuation of chemical constituents. A draft memorandum discussing batch attenuation testing at the CPP GMF Recycle Pond was included as an appendix to the *Groundwater Modeling Report (*Ramboll 2022) and is provided as Attachment H to this document.

5.1 Batch Attenuation Testing

Batch attenuation testing was conducted for sulfate to evaluate the potential for sorption and to generate site-specific distribution coefficients between the solid and aqueous phase. In 2021, Geosyntec conducted a field investigation at the GMF GSP which included completion of two soil borings ranging in depth from 18 to 28 feet below ground surface. One groundwater sample (G215) and one soil sample (SB-215) were used for batch attenuation testing at five soil:solution ratios (Table 6), each ran in duplicate. One set of microcosms was amended (i.e., spiked) with sodium sulfate (Na_2SO4) to achieve target concentrations of sulfate (Table 5). After the end of the test, the samples were filtered through a 0.45-micron (µm) filter prior to analysis for dissolved concentrations of sulfate. Analysis of the dissolved phase is important to adequately measure the portioning of mass between the solid and liquid fractions of the experiment.

5.2 Partition Coefficient Results

The mass of sulfate in the water versus in the solids of each sample was plotted according to three sorption models: linear, Langmuir, and Freundlich. Data obtained from the batch attenuation tests was used to calculate attenuation distribution coefficients (K_d) for each sorption model. The calculated linear, Langmuir, and Freundlich distribution coefficients (K_d, K_L, and K_F, respectively) and $1/n$ values are shown in Table 7. The linear and Langmuir isotherms for sulfate are provided in Figure 9.

A sulfate partition coefficient was not determined for any isotherm for the sulfate amended microcosms. The linear isotherm yielded a partition coefficient of 0.1 L/kg but had a very poor goodness-of-fit, and the Langmuir isotherm yielded a negative coefficient. A Freundlich isotherm could not be calculated because the data were not conducive to log transformation.

6. GEOCHEMICAL CONCEPTUAL SITE MODEL

6.1 Source and Mobilization Mechanisms

Sulfate is concentrated in flue gas desulfurization wastewater, as gypsum is the main solid component formed in the blowdown and the majority of sulfate mineral phases are soluble under environmental conditions such that sulfate associated with flue gas desulfurization wastewater is leachable (Koralegedara et al., 2019). The likely primary source of sulfate to the UA is GMF RP CCR CCR source water. Sulfate was identified in the CCR CCR source water at concentrations up to 17,000 mg/L. Groundwater conditions at the wells with sulfate exceedances, which are located east of the GMF RP, are consistent with the influence from CCR source water. Detected concentrations of sulfate are a major contributor to the exceedances of TDS identified at G279 and G285.

6.2 Potential and Observed Attenuation Mechanisms

Sulfate exceedances are currently limited to the UA and LCU. Sulfate is typically considered to be a conservative species within groundwater at circumneutral pH conditions, although sorption onto mineral surfaces is a potential attenuation mechanism. Sulfate attenuation is expected to occur largely as the result of sorption onto iron oxides and oxyhydroxides associated with solids if the pH is low resulting in positive surface charge. Modeling of pH and redox conditions support the presence of iron oxides in amorphous phases across the Site in the UA at some locations, although they may be poised to undergo dynamic conditions. This indicates that attenuation of sulfate via sorption mechanisms is possible in the UA, though it will be dependent on speciation, redox conditions, and pH in this HSU. However, chemical attenuation of sulfate is anticipated to be limited, as batch attenuation testing was not able to determine a partition coefficient for sulfate at the Site. Chemical attenuation of sulfate in the LCU and DA is also anticipated to be limited, as amorphous iron oxides are predicted to be less stable in the LCU, with the potential for dissolution and precipitation reactions with other iron-bearing species such as siderite. Any attenuation of sulfate would likely contribute to a reduction of TDS in the groundwater.

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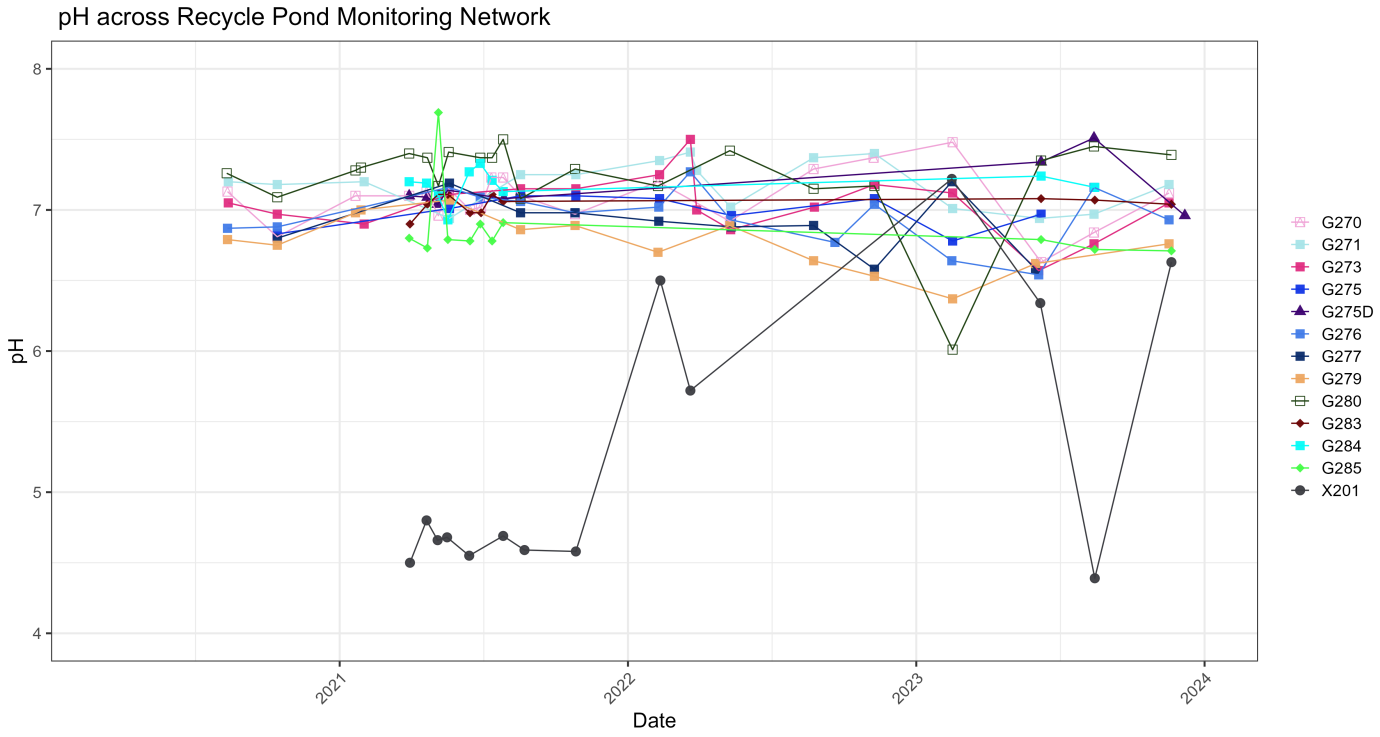
FIGURES



Notes:
Background wells shown with open symbols.

pH Time Series

Coffeen Power Plant – Gypsum Management Facility
Recycle Pond

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Figure **1**

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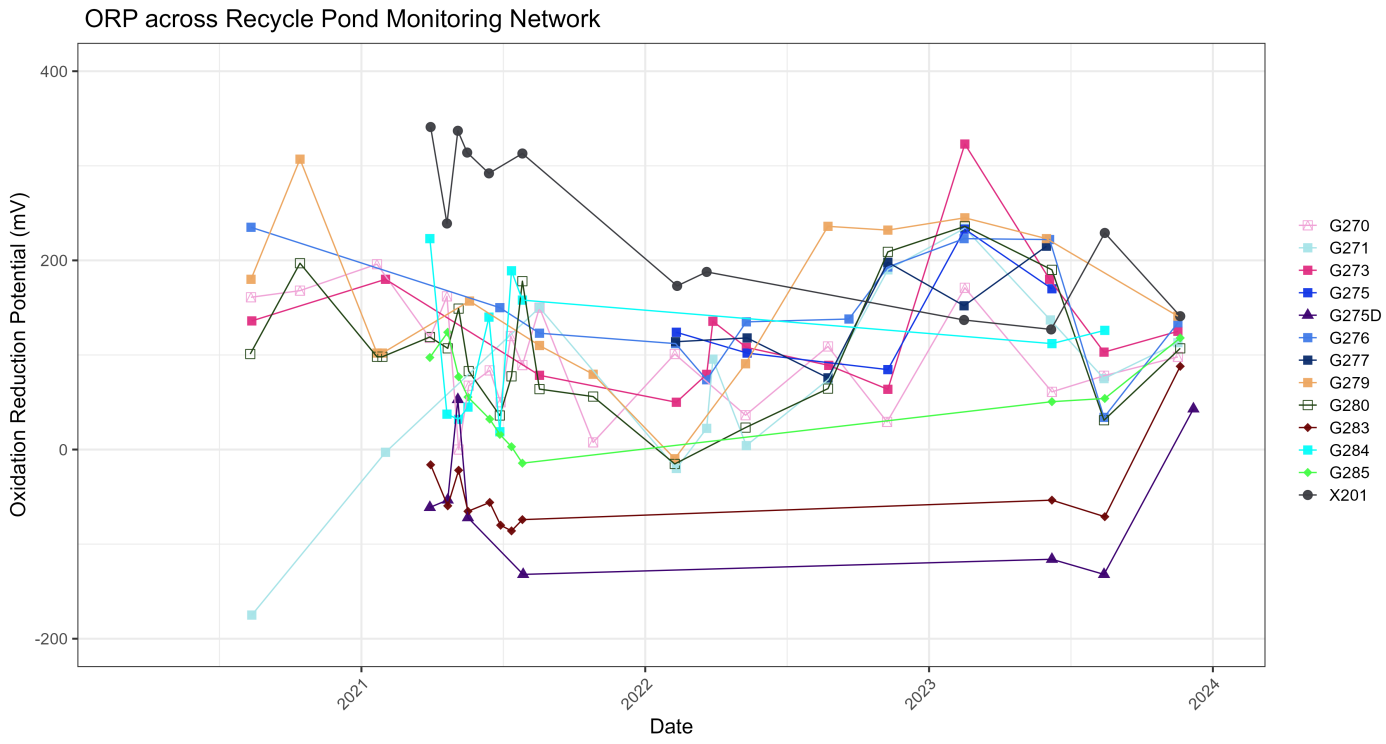

Notes:
mV: millivolts
Background wells shown with open symbols.

ORP Time Series

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Figure **2**

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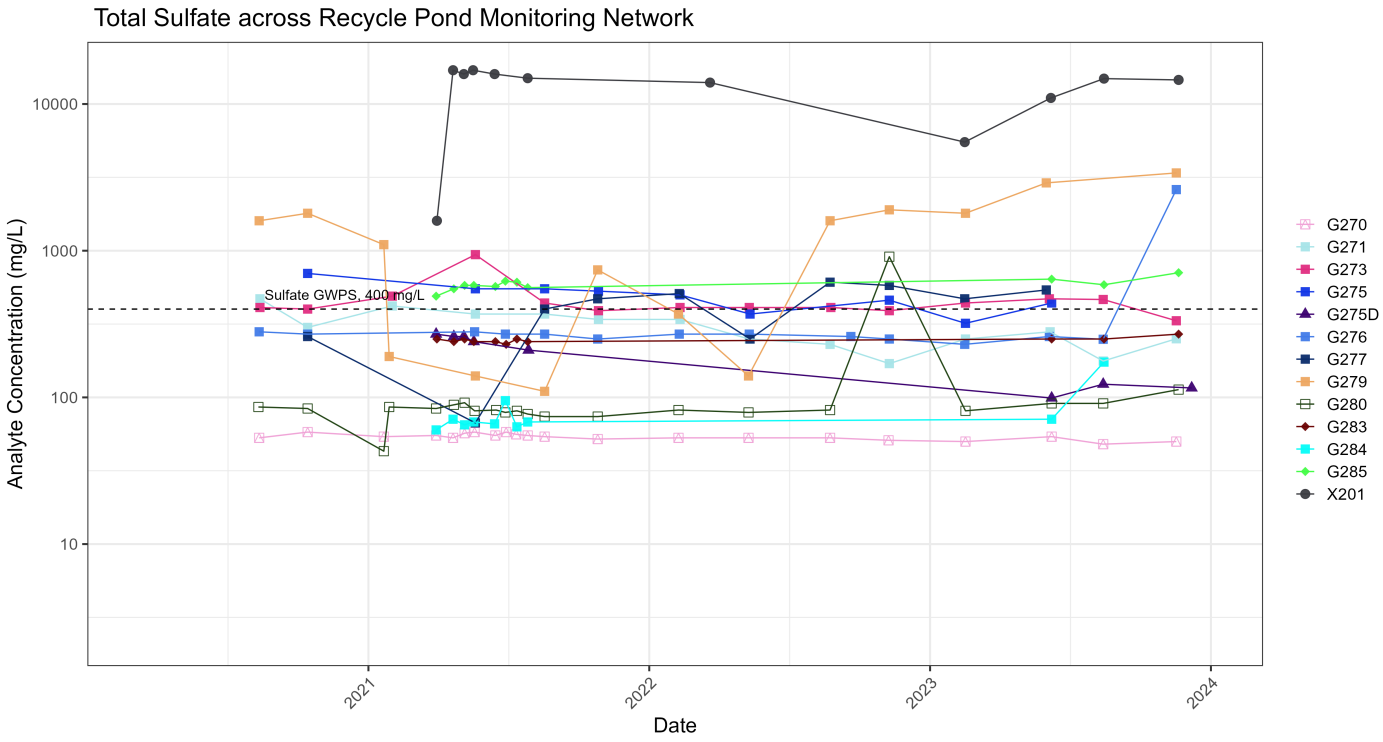

Notes:
mg/L: milligrams per liter
GWPS: Groundwater Protection Standard
Background wells shown with open symbols.

Total Sulfate Concentration Time Series

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Figure **3a**

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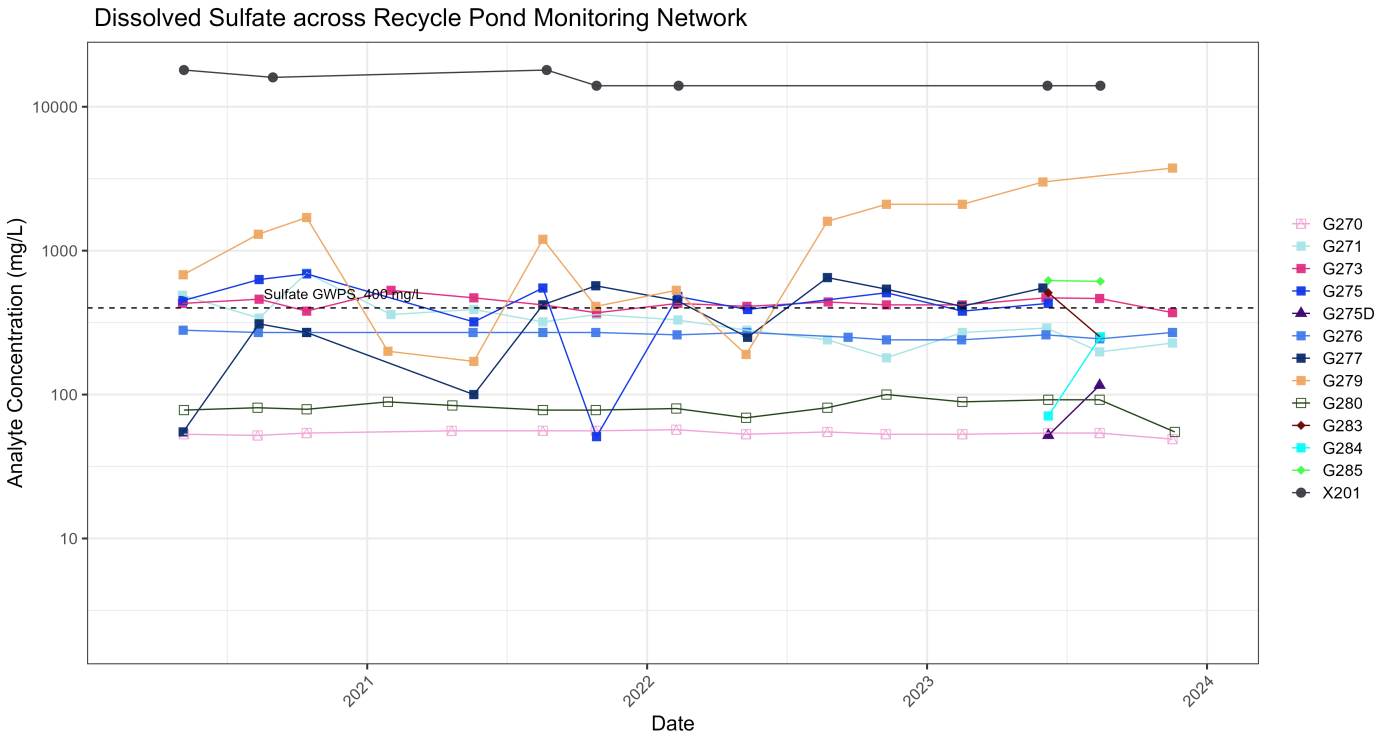

Notes:
mg/L: milligrams per liter
GWPS: Groundwater Protection Standard
Background wells shown with open symbols.

Dissolved Sulfate Concentration Time Series

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Figure **3b**

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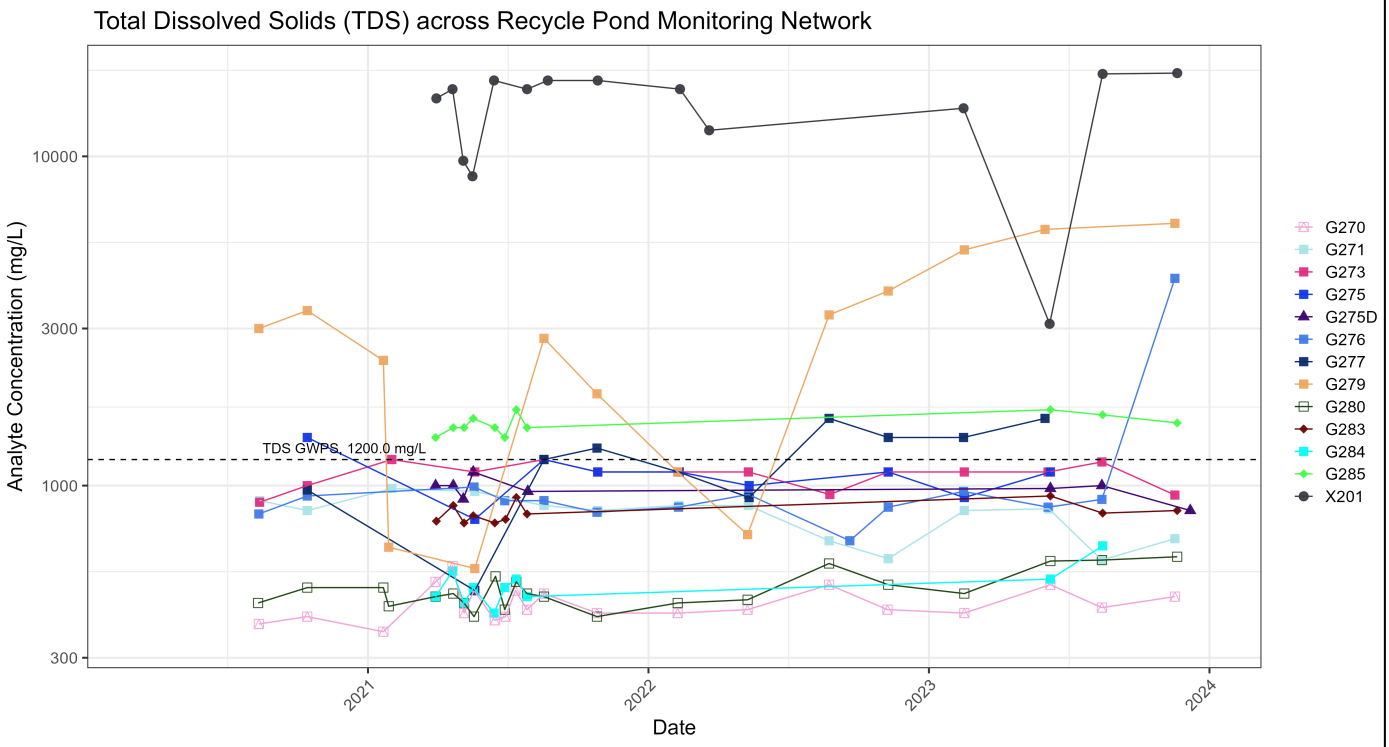

Notes:
mg/L: milligrams per liter
GWPS: Groundwater Protection Standard
Background wells shown with open symbols.

TDS Concentration Time Series

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Recycle Pond

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Figure
4

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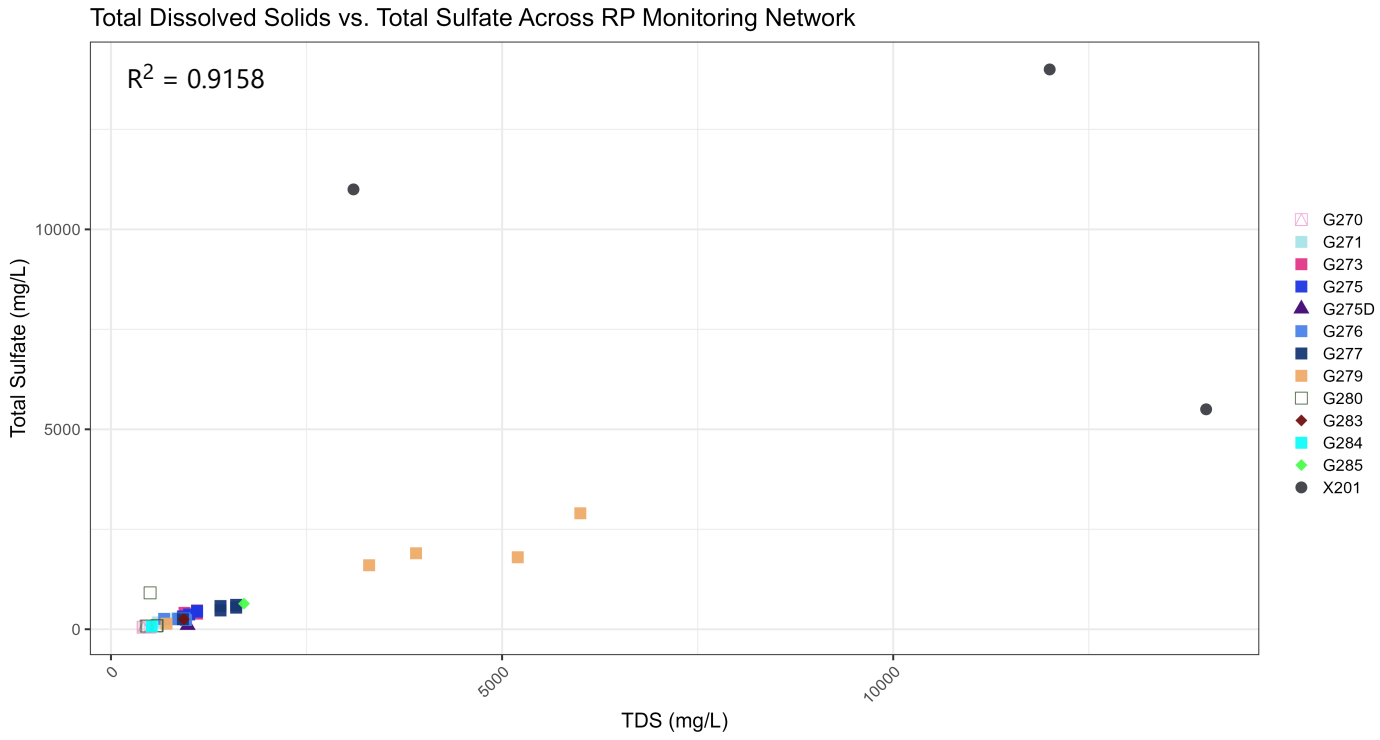

Notes:
mg/L: milligrams per liter
Background wells shown with open symbols.
Regression was run using only groundwater results.

TDS Concentration vs Sulfate Concentration

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Figure
5

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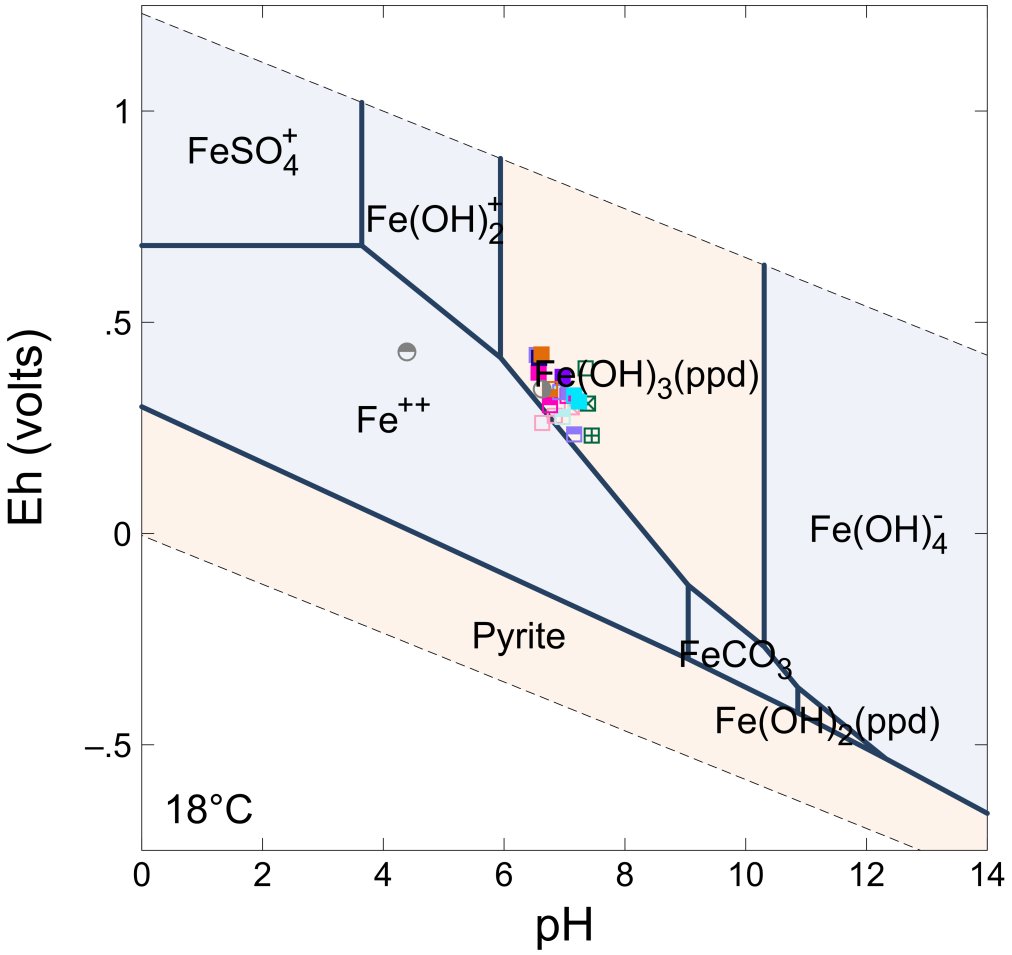

Diagram Fe^{++}, T = 18 °C, P = 1.013 bars, a [main] = $10^{-6.682}$, a [H_2O] = 1, a [Ca^{++}] = $10^{-2.74}$, a [Cl^-] = $10^{-2.758}$, a [HCO_3^-] = $10^{-2.511}$, a [K^+] = $10^{-5.073}$, a [Mg^{++}] = $10^{-2.772}$, a [Na^+] = $10^{-2.452}$, a [SO_4^{--}] = $10^{-2.703}$, a [Mn^{++}] = $10^{-6.027}$; Suppressed: FeO(c), Ferrite-Ca, Ferrite-Mg, Goethite, Hematite, Magnetite

- G270_20230608
- G270_20230814
- G270_20231117
- G271_20230606
- G271_20230814
- G271_20231117
- G273_20230605
- G273_20230814
- G273_20231117
- G275_20230608
- G276_20230605
- G276_20230814
- G276_20231117
- G277_20230601
- G279_20230601
- G279_20231117
- G280_20230608
- G280_20230814
- G280_20231120
- G284_20230608
- G284_20230815
- X201_20230815
- X201_20231120

Notes:

1. Diagram was generated using conditions detected at well G273 on 6/5/23
2. Well G273 is screened in the uppermost aquifer.
3. Available Q2, Q3, and Q4 data points are displayed.
4. Crystalline iron oxide, ferrite-Ca, ferrite-Mg, goethite, hematite, and magnetite were suppressed during model generation.

Iron Pourbaix Diagram – G273 Conditions

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Figure **6a**

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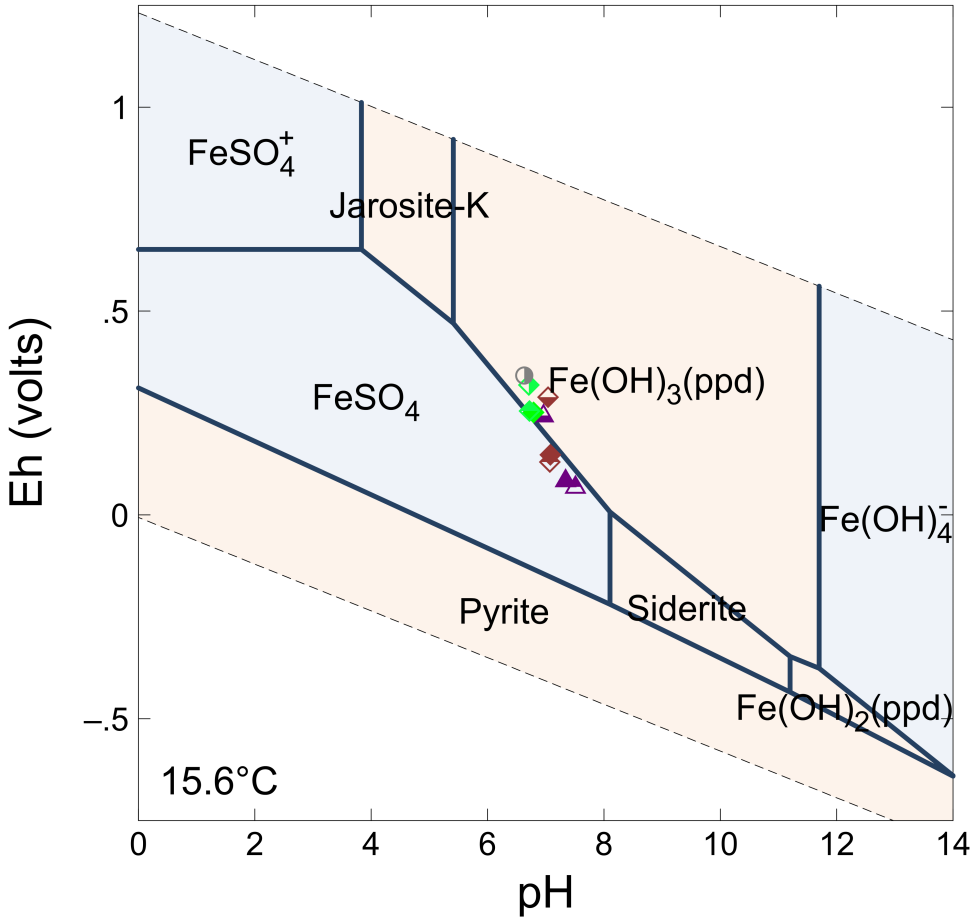

Diagram Fe^{++}, T = 15.6 °C, P = 1.013 bars, a [main] = $10^{-5.368}$, a [H_2O] = 1, a [Ca^{++}] = $10^{-2.557}$, a [Cl^-] = $10^{-3.235}$, a [HCO_3^-] = $10^{-2.207}$, a [K^+] = $10^{-4.373}$, a [Mg^{++}] = $10^{-2.775}$, a [Na^+] = $10^{-2.327}$, a [SO_4^{--}] = $10^{-1.623}$, a [Mn^{++}] = $10^{-5.195}$; Suppressed: FeO(c), Ferrite-Ca, Ferrite-Mg, Goethite, Hematite, Magnetite

- G275D_20230608
- G275D_20230814
- G275D_20231207
- G283_20230608
- G283_20230815
- G283_20231120
- G285_20230608
- G285_20230815
- G285_20231120
- X201_20231120

Notes:

1. Diagram was generated using conditions detected at well G285 on 6/8/23.
2. Well G285 is screened in the lower confining unit.
3. The three most recent available pH and ORP data points for each location are displayed.
4. Crystalline iron oxide, ferrite-Ca, ferrite-Mg, goethite, hematite, and magnetite were suppressed during model generation.

Iron Pourbaix Diagram – G285 Conditions

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Figure **6b**

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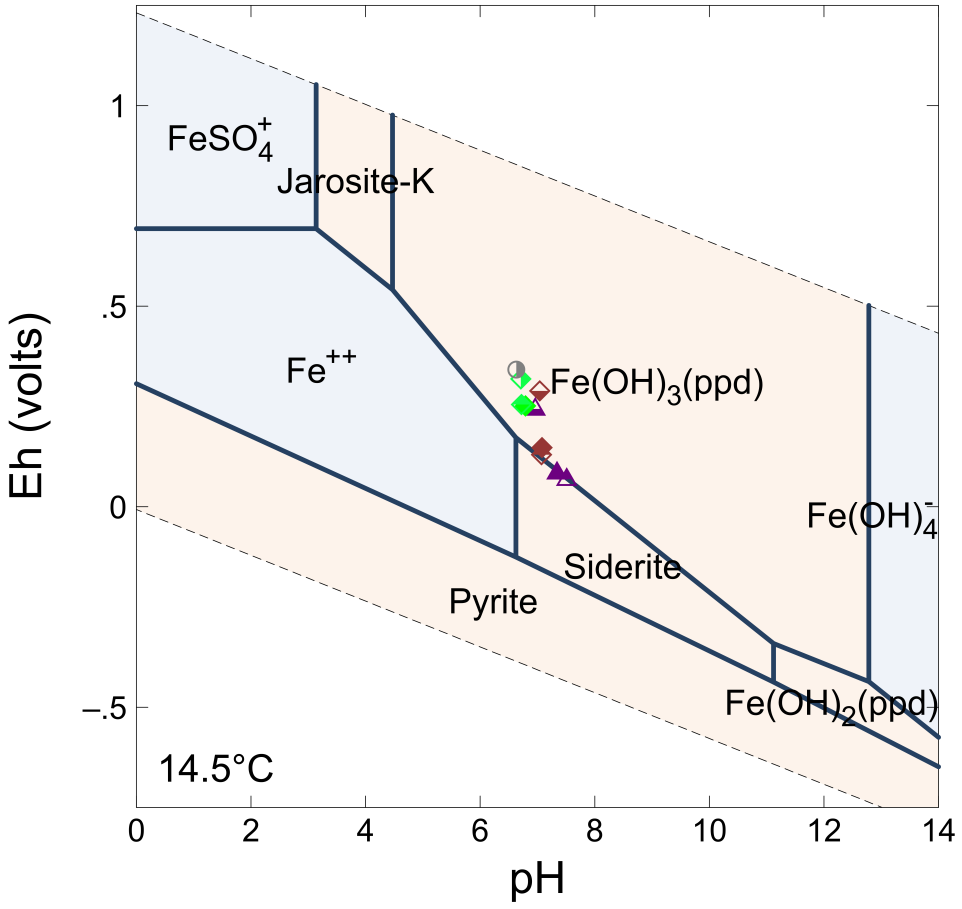

Diagram Fe^{++}, T = 14.5 °C, P = 1.013 bars, a [main] = $10^{-4.323}$, a [H_2O] = 1, a [Ca^{++}] = $10^{-2.749}$, a [Cl-] = $10^{-3.059}$, a [HCO_3^-] = $10^{-2.326}$, a [K^+] = $10^{-4.576}$, a [Mg^{++}] = $10^{-2.815}$, a [Na^+] = $10^{-2.7}$, a [$SO_4^=$] = $10^{-2.951}$, a [Mn^{++}] = $10^{-5.747}$; Suppressed: FeO(c), Ferrite-Ca, Ferrite-Mg, Goethite, Hematite, Magnetite

- G275D_20230608
- G275D_20230814
- G275D_20231207
- G283_20230608
- G283_20230815
- G283_20231120
- G285_20230608
- G285_20230815
- G285_20231120
- X201_20231120

Notes:

1. Diagram was generated using conditions detected at well G283 on 6/8/23.
2. The three most recent available pH and ORP data points for each location are displayed.
3. Crystalline iron oxide, ferrite-Ca, ferrite-Mg, goethite, hematite, and magnetite were suppressed during model generation.

Iron Pourbaix Diagram – G283 Conditions

Coffeen Power Plant – Gypsum Management Facility Recycle Pond

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Figure **6c**

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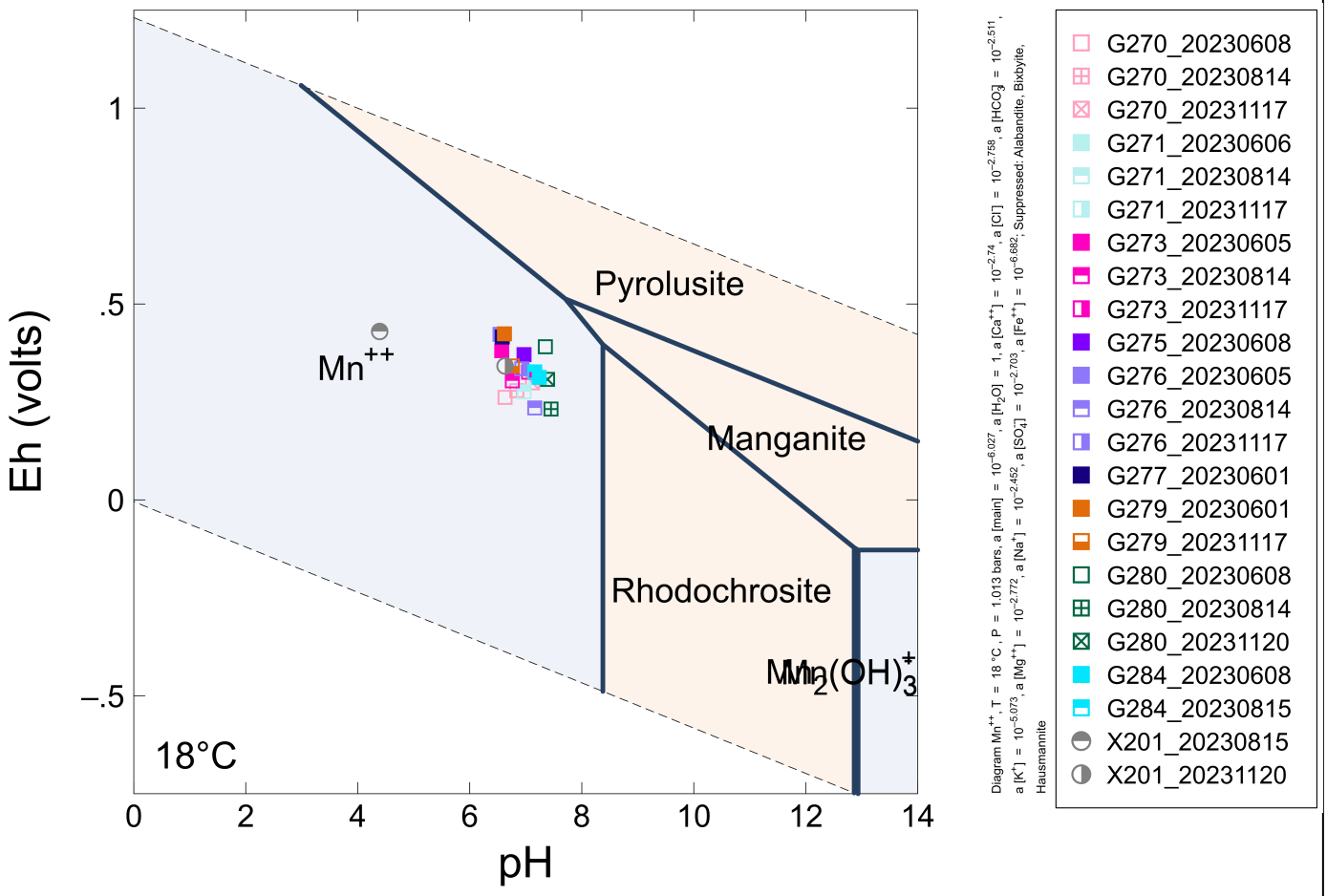


Notes:

1. Diagram was generated using conditions detected at well G273 on 6/5/23. Well
2. G273 is screened in the uppermost aquifer.
3. Available Q2, Q3, and Q4 data points are displayed.
4. Alabandite, bixbyite, and hausmannite were suppressed during model generation.

Manganese Pourbaix Diagram – G273 Conditions

Coffeen Power Plant – Gypsum Management Facility Recycle Pond

Geosyntec consultants

Columbus, Ohio | May 2024

Figure **7a**

V:\tro - Groundwater Compliance - Documents\General\GCSM\Coffeen\Figures

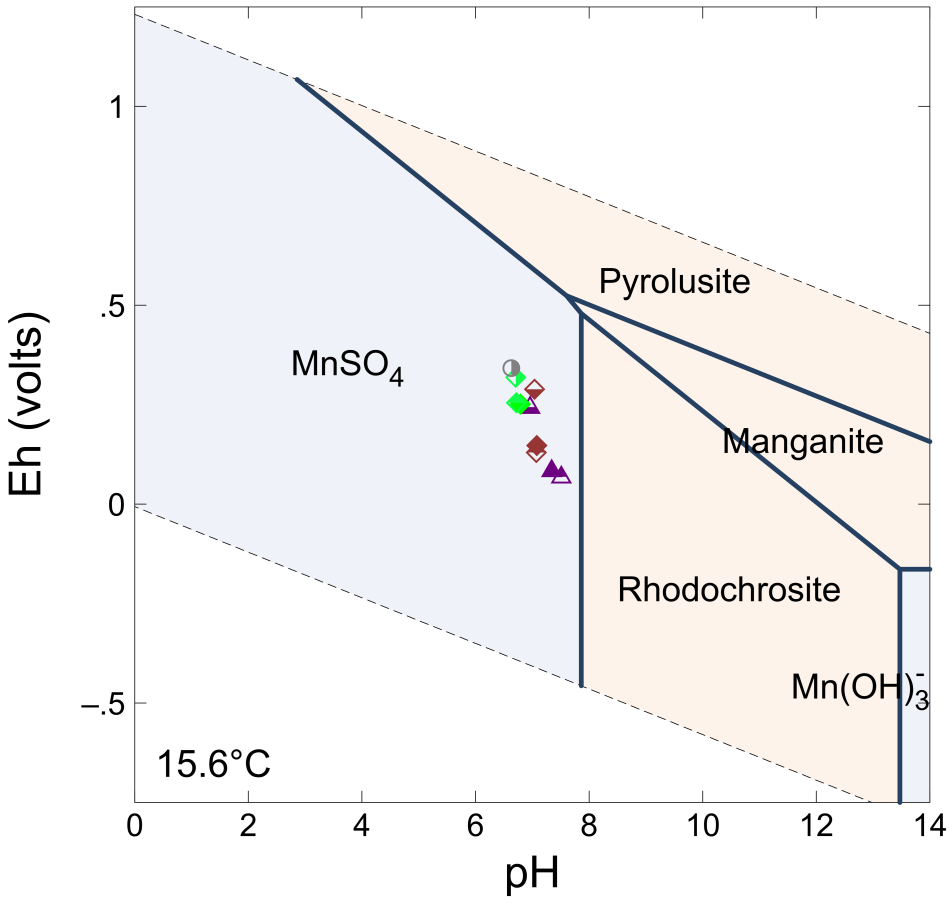


Diagram Mn^{++}, T = 15.6 °C, P = 1.013 bars, a [main] = $10^{-5.195}$, a [H_2O] = 1, a [Ca^{++}] = $10^{-2.557}$, a [Cl^-] = $10^{-3.235}$, a [HCO_3^-] = $10^{-2.207}$, a [K^+] = $10^{-4.373}$, a [Mg^{++}] = $10^{-2.775}$, a [Na^+] = $10^{-2.327}$, a [SO_4^{--}] = $10^{-1.623}$, a [Fe^{++}] = $10^{-5.388}$, Suppressed: Alabandite, Bixbyite, Hausmannite

- G275D_20230608
- G275D_20230814
- G275D_20231207
- G283_20230608
- G283_20230815
- G283_20231120
- G285_20230608
- G285_20230815
- G285_20231120
- X201_20231120

Notes:

1. Diagram was generated using conditions detected at well G285 on 6/8/23.
2. Well G285 is screened in the lower confining unit.
3. The three most recent available pH and ORP data points for each location are displayed.
4. Alabandite, bixbyite, and hausmannite were suppressed during model generation.

Manganese Pourbaix Diagram – G285 Conditions

Coffeen Power Plant – Gypsum Management Facility Recycle Pond

Geosyntec consultants

Columbus, Ohio | May 2024

Figure **7b**

V:\tro - Groundwater Compliance - Document\General\GCSM\Coffeen\Figures

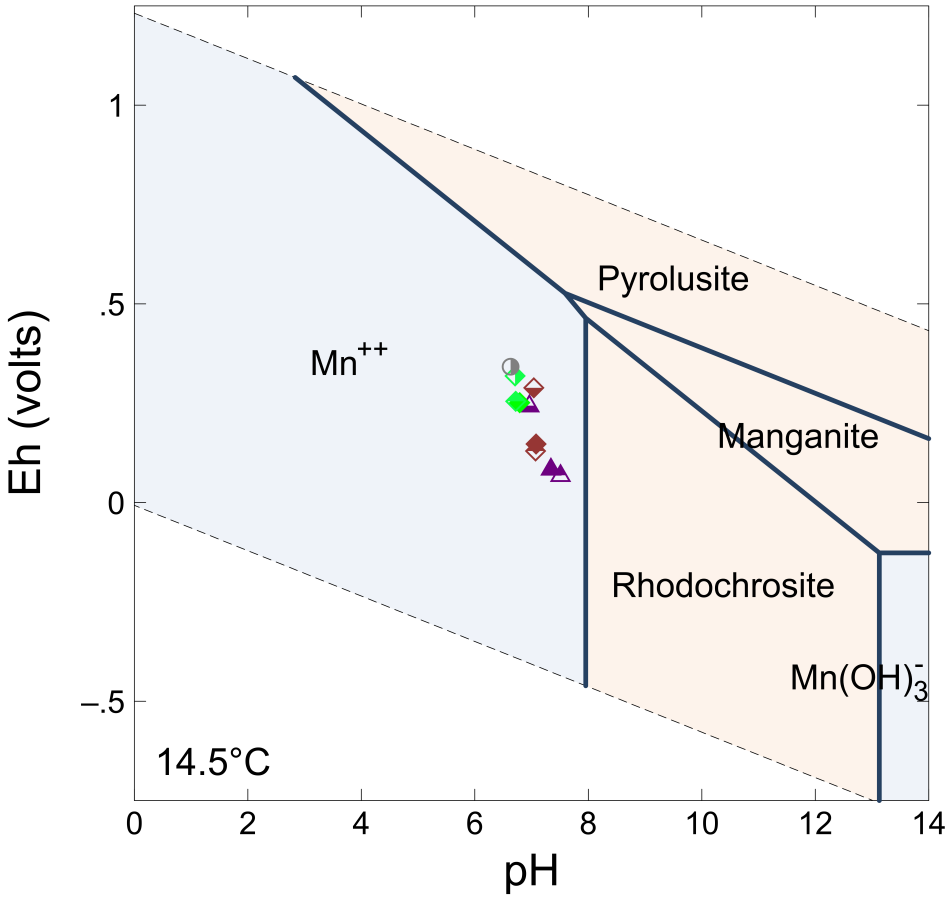


Diagram Mn^{++}, T = 14.5 °C, P = 1.013 bars, a [main] = $10^{-5.747}$, a [H_2O] = 1, a [Ca^{++}] = $10^{-2.749}$, a [Cl⁻] = $10^{-3.059}$, a [HCO_3^-] = $10^{-2.326}$, a [K^+] = $10^{-4.576}$, a [Mg^{++}] = $10^{-2.815}$, a [Na^+] = $10^{-2.7}$, a [SO_4^{--}] = $10^{-2.951}$, a [Fe^{++}] = $10^{-4.323}$; Suppressed: Alabandite, Bixbyite, Hausmannite

- G275D_20230608
- G275D_20230814
- G275D_20231207
- G283_20230608
- G283_20230815
- G283_20231120
- G285_20230608
- G285_20230815
- G285_20231120
- X201_20231120

Notes:

1. Diagram was generated using conditions detected at well G283 on 6/8/23.
2. The three most recent available pH and ORP data points for each location are displayed.
3. Alabandite, bixbyite, and hausmannite were suppressed during model generation.

Manganese Pourbaix Diagram – G283 Conditions

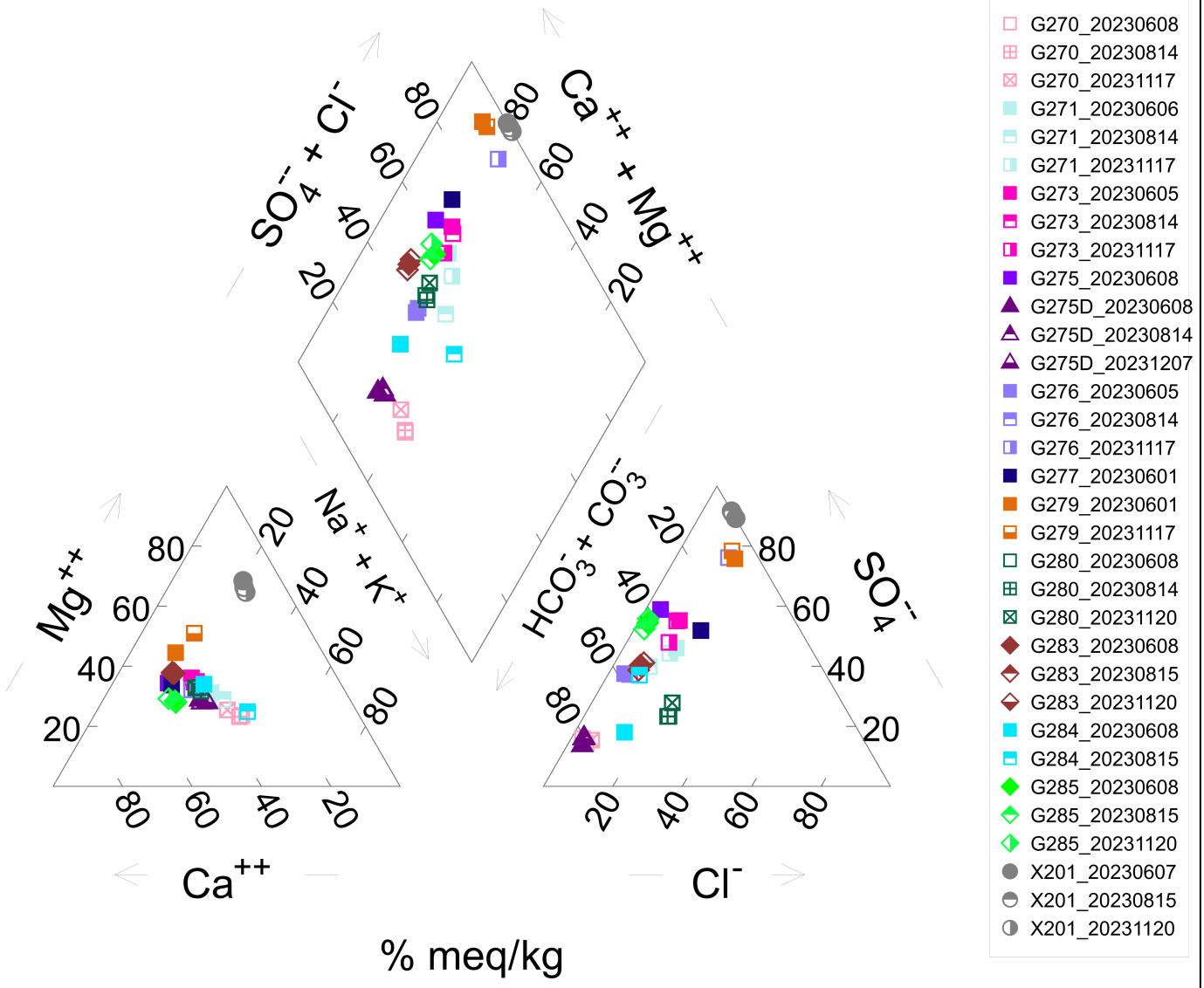
Coffeen Power Plant – Gypsum Management Facility Recycle Pond

Geosyntec consultants

Columbus, Ohio | May 2024

Figure **7c**

Vistra - Groundwater Compliance - Documents\General\GCSM\Coffeen\Figures



Notes:

1. Available Q2, Q3, and Q4 data points are displayed.

% meq/kg: percent milliequivalents per kilogram

Piper Diagram

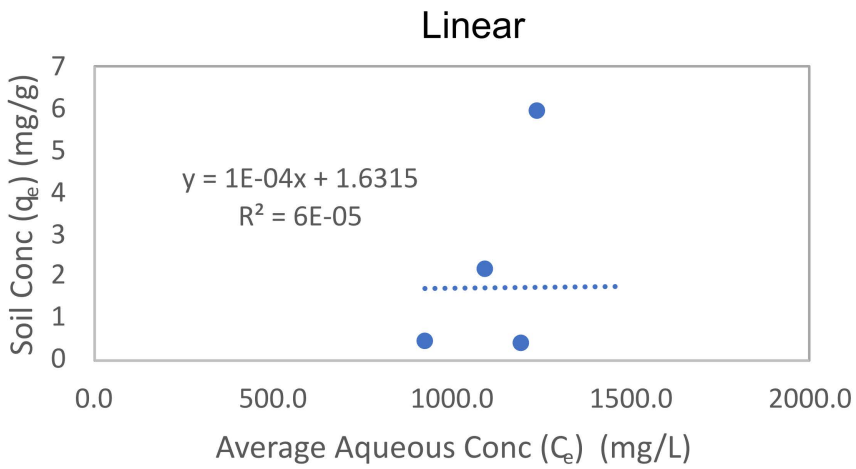
Coffeen Power Plant – Gypsum Management Facility Recycle Pond

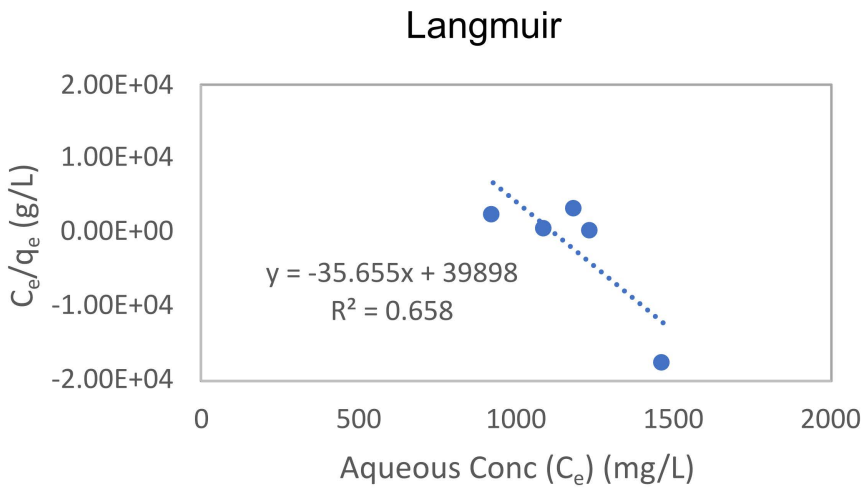
Geosyntec consultants

Columbus, Ohio | May 2024

Figure **8**

Vistra - Groundwater Compliance - Documents\General\GCSM\Coffeen\Figures





Notes:

The Freundlich isotherm was not calculated because the data were not conducive to log transformation.

q_e - mass of constituent adsorbed to the solid phase

C_e - remaining aqueous constituent concentration

mg/L - milligrams per liter

mg/g - milligrams per gram

g/L - grams per liter

G215 Sulfate Partition Coefficients

Coffeen Power Plant - GMF Recycle Pond

Geosyntec consultants

Columbus, OH | May 2024

Figure 9

TABLES

Table 1. Bulk Characterization of Site Solids
Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Field Boring Location	SB-200	SB-215	G270	G275D			G284		G288			GSP Gypsum 1	GSP Gypsum 2
Sample Depth (ft bgs)	(14-15, 15-18)	(23-24, 24-24.5)	(12-16)	(4-9.5)	(9.5 -10.9)	(16-46)	(4-8.9)	(10-14)	(3.3-6)	(6-11.2)	(11.2-12)	0-0	0-0
Sampled Aquifer Unit	UA	UA	UA	UCU	UA	LCU	UCU	UA	UCU	UCU	UA	CCR	CCR
Analyte	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration	Concentration
Aluminum	21000	22000	9600	--	--	--	--	--	--	--	--	--	--
Antimony	< 0.8	< 0.8	<0.8	< 2.9	< 3	< 3	< 3	< 3	< 2.8	< 3	< 3	<1.5	<3
Arsenic	3.1	7.9	12	4.3	2.1	2.6	< 1	< 1	1.8	1.2	1.8	<0.51	<1
Barium	205	219	210	47	63	53	18	48	47	32	43	6.6	13
Beryllium	0.42	0.45	0.48	< 0.95	< 1	< 1	< 1	< 1	< 0.94	< 1	< 1	<0.51	<1
Bismuth	< 0.09	< 0.09	0.18	--	--	--	--	--	--	--	--	--	--
Boron	--	--	5	< 9.5	< 10	< 10	< 10	< 10	< 9.4	< 10	< 10	13	<10
Cadmium	0.17	0.17	0.12	<0.95	< 1	< 1	< 1	< 1	< 0.94	< 1	< 1	<0.51	<0.51
Calcium	59000	63000	5000	--	--	--	--	--	--	--	--	--	--
Chloride	--	--	--	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	25	260
Chromium	144	124	16	14	11	9.1	7.6	4.7	5.5	5.4	6.3	<2	<4
Cobalt	4	4	10	6.3	4.2	4.3	2	5.9	1.9	2.4	3.3	<1	<2
Copper	10	8	12	--	--	--	--	--	--	--	--	--	--
Fluoride	--	--	--	< 2.5	< 2.5	< 2.5	3	< 2.5	3.2	< 2.5	< 2.5	13	7.6
Iron	16000	16000	22000	16000	9900	8200	4700	4200	3800	9500	8000	--	--
Lead	10	11	12	13	7.2	6.7	3.4	9.7	5	5.8	6.5	0.67	<1
Lithium	8.8	7.1	11	6.7	12	7.7	5	5	4.7	5	5	<2.6	<5
Magnesium	26000	25000	4700	--	--	--	--	--	--	--	--	--	--
Manganese	403	364	1200	110	190	240	16	130	39	62	550	--	--
Mercury	--	--	--	< 0.19	< 0.2	< 0.2	< 0.2	< 0.2	< 0.19	< 0.2	< 0.2	<0.1	--
Molybdenum	1.5	1.1	0.8	< 0.95	< 1	1	< 1	< 1	< 0.94	< 1	< 1	1.2	<1
Nickel	14	10	20	--	--	--	--	--	--	--	--	--	--
Phosphorus	320	320	--	--	--	--	--	--	--	--	--	--	--
Potassium	11000	12000	1400									--	--
Selenium	0.7	< 0.7	<0.7	0.96	< 1	< 1	< 1	< 1	< 0.94	< 1	< 1	<0.51	<1
Silver	< 0.5	< 0.5	< 0.05	--	--	--	--	--	--	--	--	--	--
Sodium	5200	4900	110	--	--	--	--	--	--	--	--	--	--
Strontium	102	90	10	--	--	--	--	--	--	--	--	--	--
Sulfate	--	--	-	50	20	48	23	< 10	17	12	< 10	19000	15000
Tin	< 6	< 6	0.16	--	--	--	--	--	--	--	--	--	--
Titanium	955	374	< 0.5	--	--	--	--	--	--	--	--	--	--
Thallium	0.18	0.2	230	< 0.95	< 1	< 1	< 1	< 1	< 0.94	< 1	< 1	<0.51	<1
Uranium	0.65	0.52	1.46	--	--	--	--	--	--	--	--	--	--
Vanadium	20	19	22	--	--	--	--	--	--	--	--	--	--
Yttrium	8.76	8.52	9.4	--	--	--	--	--	--	--	--	--	--
Zinc	31	30	50	--	--	--	--	--	--	--	--	--	--
Carbon (%)	3.17%	2.84%	--	--	--	--	--	--	--	--	--	--	--
Sulfur	950	60	< 50	24	66	640	26	< 10	15	18	17	--	--
Sulfide (%)	0.08%	< 0.04%	< 0.04	--	--	--	--	--	--	--	--	--	--
TOC (%)	0.531	0.566	0.138	0.0603	1.12	1.09	0.0806	0.102	0.155	0.105	1.11	--	--
Cation Exchange Capacity (meq/100g)	--	--	--	22.95	7.93	9.25	15.6	15	9.6	12.1	14.7	--	--
AVS (mg/kg)	0.17	< 0.19	< 0.19	--	--	--	--	--	--	--	--	--	--

Notes
Sample depth is shown in feet below ground surface (ft bgs)
All results shown in mg/kg (milligrams per kilogram) unless otherwise noted
UA - uppermost aquifer
UCU - upper confining unit
LCU - lower confining unit
TOC - total organic carbon
AVS - acid volatile sulfide

Table 2. XRD Analysis of Site Solids
Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Field Boring Location			SB-200	SB-215	G270
Sample Depth (ft bgs)			(14-15, 15-18)	(23-24, 24-24.5)	(12-16)
Sampled Aquifer Unit			UA	UA	UA
Mineral/compound	**Formula**	**Mineral type**	**(wt %)**	**(wt %)**	**(wt %)**
Quartz	SiO_2	Silicate	53.1	58.3	60.6
Microcline	$KAlSi_3O_8$	Feldspar	6.4	6.2	9.8
Albite	$NaAlSi_3O_8$	Feldspar	8.0	9.0	9.1
Calcite	$CaCO_3$	Carbonate	3.3	4.5	-
Dolomite	$CaMg(CO_3)_2$	Carbonate	18.2	12.9	0.6
Ankerite	$CaFe(CO3)_2$	Carbonate	5.2	4.3	0.5
Diopside	$CaMgSi_2O_6$	Pyroxene	3.8	4.1	1.3
Actinolite	$Ca_2(Mg,Fe)_5Si_8O_{22}(OH)_2$	Amphibole	-	-	3.3
Pyrite	FeS_2	Sulfide	-	-	0.2
Biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$	Mica	-	-	2.4
Muscovite	$KAl_2(AlSi_3O_{10})(OH)_2$	Mica	-	-	9.0
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$	Phyllosilicate/clay	2.1	0.8	1.4
Stilpnomelane	$K(Fe^{2+},Mg,Fe^{3+})_8(Si,Al)_{12}(O,OH)_{27}\cdot n(H_2O)$	Sheet silicate	-	-	2.0
Clay minerals total			2.1	0.8	3.4

Notes

Dashes indicate mineral was not identified by lab

Sample depth is shown in feet below ground surface (ft bgs)

wt %: percentage by weight

Table 3. Eh-pH Diagram Inputs
Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Well ID		G273	G285	G283
Sample Date		**6/5/2023**	**6/8/2023**	**6/8/2023**
Aquifer Unit		**UA**	**LCU**	**LCU**
Input Parameter	**Unit**			
Temperature	°C	18	15.6	14.5
pH	SU	6.57	6.79	7.08
Calcium	mg/L	160	270	140
Chloride	mg/L	73	25	36
Bicarbonate Alkalinity	mg/L	360	640	410
Magnesium	mg/L	83	90	68
Sodium	mg/L	95	130	53
Potassium	mg/L	0.39	2	1.2
Sulfate	mg/L	470	640	250
Total Manganese	mg/L	0.11	0.83	0.19
Total Iron	mg/L	0.14	0.61	5.3

Notes
°C - degrees Celsius
mg/L - milligrams per liter
SU - standard units
UA - uppermost aquifer
LCU - lower confining unit

Table 4 - RP Total and Dissolved Aqueous Iron and Manganese Results
Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Geosyntec Consultants, Inc.

Well ID	Well Characterization	Sampled Aquifer Unit	Date	Iron, dissolved (mg/L)	Iron, total (mg/L)	Manganese, dissolved (mg/L)	Manganese, total (mg/L)
G270	Background	UA	2023/06/08	0.044	0.68	0.079	0.85
			2023/08/14	0.019	0.147	0.157	0.244
			2023/11/17	< 0.0115	0.119	0.0675	0.197
G271	Compliance	UA	2023/06/06	0.032	0.19	0.022	0.024
			2023/08/14	0.0261	0.273	0.0126	0.0191
			2023/11/17	< 0.0115	0.6	0.0089	0.0297
G273	Compliance	UA	2023/06/05	0.031	0.14	0.096	0.11
			2023/08/14	< 0.0175	0.0679	< 0.0008	0.111
			2023/11/17	0.019	0.31	0.0625	0.117
G275	Compliance	UA	2023/06/08	0.0087	0.59	0.026	0.036
G275D	Compliance	DA	2023/06/08	1	5.7	0.73	0.72
			2023/08/14	2.85	7.39	0.835	0.67
G276	Compliance	UA	2023/06/05	0.01	0.029	0.00023	< 0.00085
			2023/08/14	< 0.0175	0.178	< 0.0008	0.0118
			2023/11/17	< 0.0115	1.02	< 0.0042	0.0193
G277	Compliance	UA	2023/06/01	0.0016	0.18	0.0097	0.012
G279	Compliance	UA	2023/06/01	0.0037	0.074	0.16	0.18
			2023/11/17	< 0.0115	0.209	0.623	0.368
G280	Background	UA	2023/06/08	0.0061	0.97	0.0014	0.043
			2023/08/14	< 0.0175	0.264	0.0032	0.0159
			2023/11/20	< 0.0115	0.31	0.0123	0.0452
G283	Compliance	LCU	2023/06/08	2.9	5.3	0.18	0.19
			2023/08/15	2.32	2.66	0.177	0.177
G284	Compliance	UA	2023/06/08	0.029	0.88	0.0022	0.034
			2023/08/15	0.0115	0.0329	0.0008	0.0017
G285	Compliance	LCU	2023/06/08	0.1	0.61	0.8	0.83
			2023/08/15	0.075	0.326	0.865	0.937
X201	Source	RP Porewater	2023/06/07	0.01	0.068	46	45
			2023/08/15	0.02	-	56.2	53.3

Notes
Dashes indicate sample was not analyzed for analyte
Non-detect results are shown as less than the method detection limit.
mg/L: milligrams per liter
UA: uppermost aquifer
LCU: lower confining unit
DA: deep aquifer

Table 5 - Microcosm Amendment and Target Concentrations
Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Groundwater Sample ID	Soil Sample ID	Compound	Amendment	Target Concentration (mg/L)
G215	SB-215 (19-24.5 ft bgs)	Sulfate	3.41 g of Na_2SO_4	1500

Notes:

ft bgs - feet below ground surface
mg/L - milligrams per liter
Na_2SO_4 - sodium sulfate

Table 6 - Batch Attenuation Testing Results,
G215 Geochemical Conceptual Site Model
Coffeen Power Plant - GMF Recycle Pond

Groundwater Sample ID	Geologic Material Sample ID	Treatment	Soil: Water Ratio	Date	Day	Replicate	Dissolved Sulfate	pH	ORP
							mg/L	SU	mV
G215	--	Groundwater Only Control	--	25-Jan-22	0	G215-1a (SO_4^{2-})	1,589	6.98	83
						G215-2a (SO_4^{2-})	1,826	6.99	79
						Average Concentration (mg/L)	**1,708**	**6.99**	**81**
				7-Feb-22	7	G215-1 (SO_4^{2-})	1,617	6.8	26
						G215-2 (SO_4^{2-})	1,478	6.81	13
						Average Concentration (mg/L)	**1,548**	**6.81**	**20**
	G215 SB-215 Geologic Material	2:1 Soil:Water Ratio	2:1.5	31-Jan-22	0				
				7-Feb-22	7	SB-215-(19-24.5) :G215 2:1-1 (SO_4^{2-})	1,321	6.92	57
						SB-215-(19-24.5) :G215 2:1-2 (SO_4^{2-})	1,302	6.94	103
						Average Concentration (mg/L)	**1,311**	**6.93**	**80**
		1:1 Soil:Water Ratio	1:1.3	31-Jan-22	0				
				7-Feb-22	7	SB-215-(19-24.5) :G215 1:1-1 (SO_4^{2-})	1,727	6.89	85
						SB-215-(19-24.5) :G215 1:1-2 (SO_4^{2-})	860	6.91	91
						Average Concentration (mg/L)	**1,294**	**6.90**	**88**
		1:5 Soil:Water Ratio	1:5.8	31-Jan-22	0				
				7-Feb-22	7	SB-215-(19-24.5) :G215 1:5-1 (SO_4^{2-})	1,326	6.92	29
						SB-215-(19-24.5) :G215 1:5-2 (SO_4^{2-})	1,516	6.87	15
						Average Concentration (mg/L)	**1,421**	**6.90**	**22**
		1:10 Soil:Water Ratio	1:11.5	31-Jan-22	0				
				7-Feb-22	7	SB-215-(19-24.5) :G215 1:10-1 (SO_4^{2-})	1,570	6.87	23
						SB-215-(19-24.5) :G215 1:10-2 (SO_4^{2-})	1,551	6.85	30
						Average Concentration (mg/L)	**1,560**	**6.86**	**27**
		1:20 Soil:Water Ratio	1:27.2	31-Jan-22	0				
				7-Feb-22	7	SB-215-(19-24.5) :G215 1:20-1 (SO_4^{2-})	1,511	6.83	32
						SB-215-(19-24.5) :G215 1:20-2 (SO_4^{2-})	1,588	6.84	79
						Average Concentration (mg/L)	**1,550**	**6.84**	**56**

Notes:
mg/L - milligrams per liter
mV - millivolts
SU - Standard Units
ORP - oxidation/reduction potential

Table 7 - Partition Coefficient Results, G215
Geochemical Conceptual Site Model Coffeen
Power Plant - GMF Recycle Pond

Analyte	Amendment	Isotherm	Variable	Value
Sulfate	Sodium Sulfate	Linear	R^2	0.0
			K_D (L/kg)	0.10
		Langmuir	R^2	0.66
			q_m (mg/g)	-0.028
			K_L (L/kg)	-8.94E+02
		Freundlich	R^2	--
			1/n	--
			K_F (L/kg)	--

Notes:

The Freundlich isotherm was not calculated for boron or sulfate because the data were not conducive to log transformation

K_D - linear partition coefficient

K_L - Langmuir partition coefficient

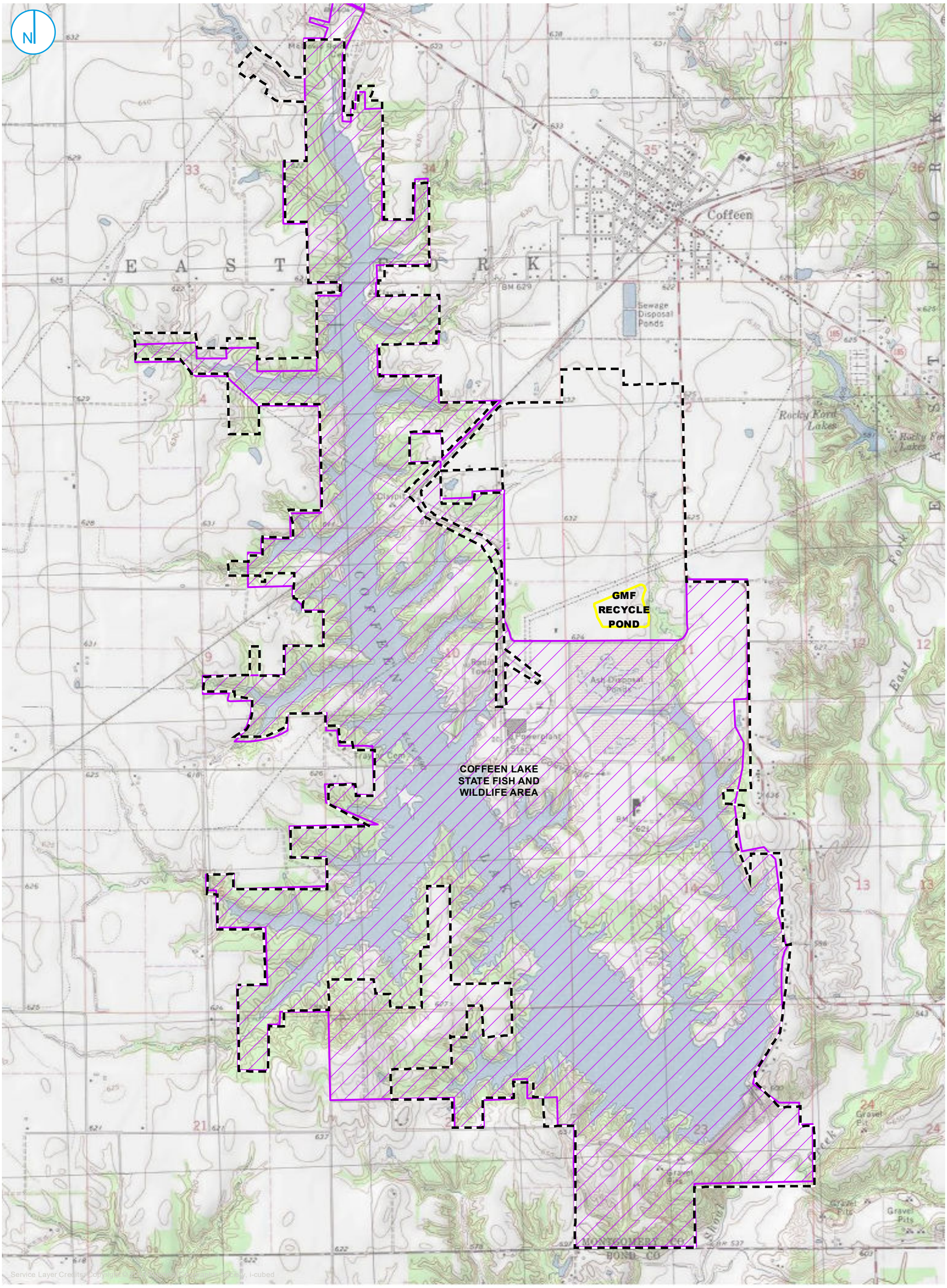
K_F - Freundlich partition coefficient

q_m - inverse of the slope of the linearized Langmuir isotherm

n - non-linearity constant of the Freundlich isotherm

L/kg - liters per kilogram

Attachment A
Site Layout Figure



PART 845 REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY
COFFEEN LAKE STATE FISH AND WILDLIFE AREA

0 1,000 2,000 Feet

SITE LOCATION MAP

FIGURE 2-1

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Attachment B
Proposed Part 845 Groundwater Monitoring Network

PROJECT: 169000XXXX | DATED: 5/21/2024 | DESIGNER: GALARNMC

Y:\Mapping\Projects\22\2285\MXD\Nature_and_Extent\COF\Nature_and_Extent_Report\104\Figure 2-2. Monitoring Well Location Map.mxd

- COMPLIANCE MONITORING WELL
- BACKGROUND MONITORING WELL
- MONITORING WELL
- CCR SOURCEWATER SAMPLE
- STAFF GAGE, RIVER
- COAL MINE SHAFT
- REGULATED UNIT (SUBJECT UNIT)
- SITE FEATURE
- LIMITS OF FINAL COVER
- PROPERTY BOUNDARY

0 275 550 Feet

MONITORING WELL LOCATION MAP

FIGURE 2-2

NATURE AND EXTENT REPORT
GMF RECYCLE POND
COFFEEN POWER PLANT
COFFEEN, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Attachment C
Monitoring Well Construction Information

Table 3-1. Monitoring Well Construction Details
Nature and Extent Report
Coffeen Power Plant
GMF Recycle Pond
Coffeen, IL

Location	HSU	Date Constructed	Top of PVC Elevation (ft)	Measuring Point Elevation (ft)	Measuring Point Description	Ground Elevation (ft)	Screen Top Depth (ft bgs)	Screen Bottom Depth (ft bgs)	Screen Top Elevation (ft)	Screen Bottom Elevation (ft)	Well Depth (ft bgs)	Bottom of Boring Elevation (ft)	Screen Length (ft)	Screen Diameter (inches)	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)
G270	UA	2008-02-26	--	625.43	Top of Disk	623.73	13.13	17.92	610.60	605.81	18.27	605.50	4.8	2	39.0665638	-89.3974031
G271	UA	2009-09-10	--	625.34	Top of Disk	622.89	9.96	14.31	612.93	608.58	14.79	606.90	4.4	2	39.0650072	-89.3955874
G272	UA	2009-09-10	--	623.51	Top of Disk	620.72	9.11	13.98	611.61	606.74	14.32	606.40	4.9	2	39.0649894	-89.3947851
G273	UA	2009-09-10	--	622.66	Top of Disk	620.17	9.08	14.56	611.09	605.61	15.1	604.20	5.5	2	39.0649852	-89.3939733
G274	UA	2009-09-16	--	623.79	Top of Disk	621.67	12.9	17.67	608.77	604.00	18.06	603.60	4.8	2	39.064991	-89.393198
G275	UA	2009-09-16	--	618.26	Top of Disk	616.14	8.22	12.62	607.92	603.52	13.19	603.00	4.4	2	39.0651507	-89.3925614
G275D	DA	2021-01-14	620.31	620.23	Top of PVC	617.52	49.76	59.55	567.76	557.97	59.89	517.80	9.8	2	39.065121	-89.392595
G276	UA	2009-09-16	--	631.51	Top of Disk	629.14	22.41	27.22	606.73	601.92	27.65	601.10	4.8	2	39.0655345	-89.3926172
G277	UA	2009-09-14	--	623.08	Top of Disk	620.79	14.29	18.77	606.50	602.02	19.24	600.80	4.5	2	39.0659274	-89.3925718
G279	UA	2009-09-10	--	632.04	Top of Disk	629.19	22.4	26.79	606.79	602.40	27.3	601.20	4.4	2	39.0671555	-89.3929983
G280	UA	2008-02-26	625.35	625.26	Top of Riser	623.11	12.79	17.63	610.32	605.48	17.98	605.10	4.8	2	39.0672155	-89.3949916
G283	LCU	2021-01-14	610.75	610.75	Top of PVC	608.30	8.39	18.17	599.91	590.13	18.36	589.90	9.8	2	39.064645	-89.392119
G284	UA	2021-02-03	618.42	618.42	Top of PVC	615.33	8.08	12.85	607.25	602.48	13.23	601.30	4.8	2	39.065487	-89.390631
G285	LCU	2021-01-25	613.52	613.52	Top of PVC	610.54	13.68	23.45	596.86	587.09	23.83	584.50	9.8	2	39.066513	-89.391474
G286	UA	2021-01-18	613.13	613.30	Top of PVC	609.97	3.37	8.16	606.60	601.81	8.5	600.00	4.8	2	39.067277	-89.391883
G287	UA	2021-01-20	617.45	617.45	Top of PVC	614.34	5.43	10.25	608.91	604.09	10.59	602.50	4.8	2	39.068297	-89.392388
G288	UA	2021-01-19	620.07	620.07	Top of PVC	617.08	7.59	12.26	609.49	604.82	12.75	603.10	4.7	2	39.067834	-89.390082
MW20S	UA	2007-05-01	622.90	622.86	Top of PVC	620.26	8.41	13.22	611.85	607.04	13.67	604.30	4.8	2	39.0649676	-89.3943221

Notes:
All elevation data are presented relative to the North American Vertical Datum of 1988 (NAVD88), GEOID 12A
-- = not measured/recorded
bgs = below ground surface
DA = Deep Aquifer
ft = foot or feet
HSU = Hydrostratigraphic Unit
LCU = Lower Confining Unit
PVC = polyvinyl chloride
UA = Uppermost Aquifer

Attachment D
Boring Logs for Solids Collection Locations

Legend

Pond Boundary

Well Locations

Notes:
1. GMF Recycle Pond boundaries are approximate.
2. Well locations provided by Coffeen Power Plant.
GMF: Gypsum Management Facility

0 1,500 Feet

Relevant Well Locations

134 Cips Lane
Coffeen, Illinois

Geosyntec consultants

Columbus, Ohio | May 2024

Figure D-1

S:\Projects_post_2014\GLP8005_Coffeen MNA\GIS\20240530_Coffeen_GMF_RecyclePond.mxd 5/30/2024 8:47:13 AM

FIELD BORING LOG

HANSON

CLIENT: AEG Coffeen Power Station
Site: CCB Management Facility
Location: Coffeen, Illinois
Project: 05S3004A
DATES: **Start:** 2/25/2008
Finish: 2/25/2008
WEATHER: Overcast, cold

CONTRACTOR: Testing Service Corp.
Rig mfg/model: CME-650 Track Drill
Drilling Method: 3¼" HSA w/SS & CME samplers
FIELD STAFF: **Driller:** B. Williamson
Helper: R. Keedy
Eng/Geo: .

BOREHOLE ID: G200
Well ID: G200
Surface Elev: 624.20 ft. MSL
Completion: 18.00 ft. BGS
Station: 877,930.59N
2,515,649.96E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork
Section 2, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 13.50 - While drilling
▼ = 2.75 - 3/12/08
▽ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Moisture (%)	Dry Den. (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
	24/24 100%	ss	3-2 3-3 N=5					Very dark grayish brown (10YR3/2), moist, firm, friable, clayey SILT		624	
1A				31		1.36 B	2	Dark gray (10YR4/1) with 5% yellowish brown (10YR5/6) mottles, moist, firm, silty CLAY		622	
2A	19/24 79%	ss	3-3 6-6 N=9	26		1.94 BSh	▼				
2B				26		2.33 Sh	4	Dark gray (10YR4/1) with 70% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY		620	
3A	19/24 79%	ss	3-3 4-5 N=7	26		1.59 B		Dark gray (10YR4/1) with 70% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, slight trace sand			
3B				23		1.55 B	6	Very dark gray (10YR3/1), moist, firm, silty CLAY, slight trace sand		618	
4A	22/24 92%	ss	5-5 5-5 N=10	29		0.31 B		Dark gray (10YR4/1) with 10% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, trace coarse sand			
5A	20/24 83%	ss	2-2 3-5 N=5	25		1.09 B	8			616	
6A	22/24 92%	ss	1-3 2-3 N=5	22		1.01	10	Dark gray (10YR4/1) with 10% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, sand and slight trace gravel		614	
7A	24/24 100%	ss	3-3 5-6 N=8	15		0.50 B	12			612	
7B				18			▼	Yellowish brown (10YR5/8), moist, soft, sandy CLAY			
8A	19/24 79%	ss	0-3 5-8 N=8	24		0.27 B	14	Gray (10YR5/1), wet, soft, fine- to coarse-grained SAND		610	
8B				17				Gray (10YR5/1), wet, soft, silty CLAY, trace sand and gravel			
9A	24/24 100%	ss	8-15 30-50 N=45	13			16	Yellowish brown (10YR5/4), wet, soft, fine- to coarse-grained SAND, trace gravel		608	
9B				8			18	Gray (10YR5/1), moist, hard, silty CLAY, trace sand and gravel			

End of Boring = 18.0 ft. BGS

NOTE(S):

FIELD BORING LOG

HANSON

CLIENT: AEG Coffeen Power Station
Site: CCB Management Facility
Location: Coffeen, Illinois
Project: 05S3004A
DATES: **Start:** 10/13/2010
Finish: 10/13/2010
WEATHER: Sunny, warm, windy (hi-60's)

CONTRACTOR: Layne-Western Co
Rig mfg/model: CME-750 ATV Drill
Drilling Method: 4¼" HSA w/SS samplers
FIELD STAFF: **Driller:** D. Mahurin
Helper: J. Litsch/D. Smail
Eng/Geo: .

BOREHOLE ID: G215
Well ID: G215
Surface Elev: 630.48 ft. MSL
Completion: 24.31 ft. BGS
Station: 875,810.19N
2,515,971.55E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = Dry - While drilling
▼ = Dry - Upon completion
▽ = 22.52 - 10/14/10

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Moisture (%)	Dry Den. (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Elevation ft. MSL	Remarks
1A	23/24 96%	ss	5-3 3-5 N=6	18			0		630	
2A	19/24 79%	ss	3-3 5-6 N=8	17			2	FILL - Brown (10YR4/3) with 30% dark gray (10YR4/1) and 10% dark yellowish brown (10YR4/6) mottles, moist, firm, silty CLAY with trace sand and gravel.	628	
3A	20/24 83%	ss	2-3 7-7 N=10	13			4		626	
4A	23/24 96%	ss	3-6 6-7 N=12	16			6	FILL - Dark grayish brown (10YR4/2), moist, firm, silty CLAY with trace sand and gravel.	624	
4B				27			8	FILL - Gray (10YR5/1) with 15% dark yellowish brown (10YR4/6) mottles, moist, firm, silty CLAY with trace sand.	622	
5A	20/24 83%	ss	3-3 3-5 N=6	20				Very dark gray (10YR3/1), moist, firm, silty CLAY with trace sand, trace roots.		
6A	13/24 54%	ss	2-2 3-5 N=5	24			10	Dark gray (10YR4/1) with 30% dark yellowish brown (10YR4/6) moist, firm, silty CLAY with trace sand.	620	
7A	19/24 79%	ss	2-3 4-6 N=7	17			12	Gray (10YR5/1) with 30% dark yellowish brown (10YR4/6) mottles, moist, firm, clayey SILT with trace sand.	618	
8A	20/24 83%	ss	2-3 4-5 N=7	19			14	Dark gray (10YR4/1), moist, firm, clayey SILT with trace sand.	616	
9A	22/24 92%	ss	1-3 3-4 N=6	19			16	Dark gray (10YR4/1) with 30% Dark yellowish brown (10YR4/6) mottles, moist, firm, silty CLAY with trace sand and gravel.	614	
10A	24/24 100%	ss	woh-1 2-2 N=3	17			18	Dark gray (10YR4/1) with 30% Dark yellowish brown (10YR4/6) mottles, moist, soft, sandy CLAY with trace gravel.	612	
							20			

NOTE(S): G215 installed in borehole.

FIELD BORING LOG

CLIENT: AEG Coffeen Power Station
Site: CCB Management Facility
Location: Coffeen, Illinois
Project: 05S3004A
DATES: **Start:** 10/13/2010
Finish: 10/13/2010
WEATHER: Sunny, warm, windy (hi-60's)

CONTRACTOR: Layne-Western Co
Rig mfg/model: CME-750 ATV Drill
Drilling Method: 4¼" HSA w/SS samplers
FIELD STAFF: **Driller:** D. Mahurin
Helper: J. Litsch/D. Smail
Eng/Geo: .

BOREHOLE ID: G215
Well ID: G215
Surface Elev: 630.48 ft. MSL
Completion: 24.31 ft. BGS
Station: 875,810.19N
2,515,971.55E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = Dry - While drilling
▼ = Dry - Upon completion
▽ = 22.52 - 10/14/10

SAMPLE			TESTING						
Number	Recov / Total (in) *% Recovery*	Type	*Blows / 6 in* N - Value **RQD**	Moisture (%)	Dry Den. (lb/ft³)	Qu (tsf) *Qp* (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Elevation ft. MSL
11A	20/24 *83%*	SS	*2-4 4-4* N=8	17				Dark yellowish brown (10YR4/6), moist, medium dense, clayey SILT with sand and trace gravel.	610
								Yellowish brown (10YR5/6), moist, medium dense, silty, very fine- to fine-grained SAND.	
							22 ▽	Dark yellowish brown (10YR4/6) with 30% dark gray (10YR4/1) mottles, moist, firm, sandy CLAY with trace gravel.	
12A	24/24 *100%*	SS	*7-11 17-19* N=28	11				Grayish brown (10YR5/2), slightly moist, very firm, very silty CLAY with sand and gravel.	608
12B	0/4 *0%*	BD		9			24	Dark gray (10YR4/1), slightly moist, hard, very silty CLAY with sand and gravel.	
								End of Boring = 24.3 ft. BGS	

NOTE(S): G215 installed in borehole.

FIELD BORING LOG

HANSON

CLIENT: AEG Coffeen Power Station
Site: CCB Management Facility
Location: Coffeen, Illinois
Project: 05S3004A
DATES: **Start:** 2/26/2008
Finish: 2/26/2008
WEATHER: Overcast, cold

CONTRACTOR: Testing Service Corp.
Rig mfg/model: CME-650 Track Drill
Drilling Method: 3¼" HSA w/SS & CME samplers
FIELD STAFF: **Driller:** B. Williamson
Helper: R. Keedy
Eng/Geo: .

BOREHOLE ID: G270
Well ID: G270
Surface Elev: 622.92 ft. MSL
Completion: 18.27 ft. BGS
Station: 874,801.92N
2,514,996.84E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 16.00 - While drilling
▼ = 5.62 - 3/12/08
▽ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Moisture (%)	Dry Den. (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
	20/24 83%	ss	2-2 2-4 N=4					Dark grayish brown (10YR4/2), moist, firm, clayey SILT		622	
1A				24				Dark grayish brown (10YR4/2), moist, firm, silty CLAY			
							2	Dark grayish brown (10YR4/2) with 5% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, slight trace sand			
2A	19/24 79%	ss	3-4 5-9 N=9	22		2.33 B				620	
2B				20		5.04 Sh	4	Gray (10YR5/1) with 70% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, slight trace sand and gravel			
	20/24 83%	ss	14-5 7-8 N=12							618	
3A				17		2.52 Sh	▼ 6	Dark gray (10YR4/1) with 5% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, trace sand, slight trace gravel			
4A	24/24 100%	ss	8-6 7-5 N=13	21		1.24 BSh				616	
4B				21		1.20 B	8	Gray (10YR5/1) with 10% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, trace sand, slight trace gravel			
	22/24 92%	ss	2-3 4-4 N=7							614	
5A				21		1.36 B	10	Gray (10YR5/1) with 60% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, trace sand, slight trace gravel			
6A	24/24 100%	ss	1-2 2-3 N=4	21		0.74 BSh				612	
6B				24		0.78 B		Gray (10YR5/1), moist, soft, sandy CLAY			
	17/24 71%	ss	2-2 2-3 N=4				12	Gray (10YR5/1), moist, soft, sandy CLAY, trace gravel		610	
7A				21							
8A				20			14	Gray (10YR5/1), moist, soft, fine- to coarse-grained SAND, trace gravel			
	19/24 79%	ss	1-3 5-6 N=8					Dark yellowish brown (10YR4/4), moist, soft, sandy CLAY		608	
8B				17		4.46 Sh		Gray (10YR5/1) with 10% yellowish brown (10YR5/8) mottles, moist, firm, silty CLAY, slight trace sand and gravel			
							▼ 16				
9A	24/24 100%	ss	6-8 30-35 N=38	20				Yellowish brown (10YR5/4), wet, soft, fine to coarse SAND		606	
9B				8			18	Gray (10YR5/1), moist, hard, silty CLAY, trace sand and gravel			

End of Boring = 18.27 ft. BGS

NOTE(S):

FIELD BORING LOG

HANSON

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) / % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
1A	21/24 88%	SS	3-4 5-10 N=9				0	Dark yellowish brown (10YR4/4), moist, stiff, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel, trace roots. [FILL]		616	
2A	22/24 92%	SS	3-4 6-9 N=10				2	Gray (10YR5/1) with 15% yellowish brown (10YR5/6) mottles, moist, very stiff, lean CLAY, with some silt, few very fine- to fine-grained sand, trace small gravel.		614	
3A	19/24 79%	SS	2-4 6-8 N=10				4	Gray (10YR5/1) with 10% yellowish brown (10YR5/6) mottles, moist, very stiff, lean CLAY, with some silt, few very fine- to fine-grained sand, trace small gravel.		612	
4A	23/24 96%	SS	2-5 5-6 N=10				6	Gray (10YR5/1) with 20% yellowish brown (10YR5/6) and 5% yellowish red (5YR4/6) mottles, moist, very stiff, lean CLAY, with some silt, few very fine- to fine-grained sand, trace small gravel.		610	
5A	24/24 100%	SS	2-3 5-6 N=8				8	Dark yellowish brown (10YR3/6), moist, stiff, SILT, with some very fine- to medium-grained sand, few clay and small gravel.		608	
5B								Gray (10YR6/1) with 10% dark yellowish brown (10YR3/6) mottles, moist, stiff, lean CLAY, with some silt, little very fine- to fine-grained sand, few small gravel.			
6A	24/24 100%	SS	0-1 2-2 N=3				10 ▼			606	
6B								Dark yellowish brown (10YR3/6), wet, loose, SILT, with some very fine- to fine-grained sand, few clay and small gravel.			
7A	18/24 75%	SH					12	Gray (10YR6/1) with 20% yellowish brown (10YR5/6) mottles, moist, hard, SILT, with some very fine- to fine-grained sand, few clay and small gravel.		604	
8A	14/14 100%	SS	26-43 50/2"				14	Grayish brown (10YR5/2) with 10% yellowish brown (10YR5/6) mottles, moist, hard, SILT, with some very fine- to fine-grained sand, few clay and small gravel.		602	
9A	24/24 100%	SS	5-12 18-22 N=30				16			600	
10A	24/24 100%	SS	4-11 13-20 N=24				18	Brown (10YR5/3) with 10% yellowish brown (10YR5/6) mottles, moist, hard, SILT, with some clay and very fine- to fine-grained sand, few small gravel.		598	
							20				

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) / % Recovery	Type	TESTING Blows / 6 in / N - Value / RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
11A	24/24 100%	SS	3-9 13-22 N=22				22	Brown (10YR5/3) with 10% yellowish brown (10YR5/6) mottles, moist, hard, SILT, with some clay and very fine- to fine-grained sand, few small gravel. *[Continued from previous page]*		596	
12A	24/24 100%	SS	7-14 20-24 N=34				24			594	Vertical fractures with oxidation from 22 to 24 ft, no oxidation below 24 ft.
13A	24/24 100%	SS	6-11 15-21 N=26				26			592	Occasional thin SILT and SAND lenses from 25.3 to 25.8 ft.
14A	18/24 75%	SS	4-8 12-10 N=20				28			590	Trace wood fragments below 28 ft.
15A	24/24 100%	SS	5-7 13-17 N=20				30	Dark gray (10YR4/1) with frequent dark yellowish brown (10YR3/6) oxidation along fractures, moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel.		588	
16A	23/24 96%	SS	4-7 12-16 N=19								
17A	2/24 8%	SS	4-10 13-17 N=23				32			586	
18A	21/24 88%	SH					34			584	
19A	24/24 100%	SS	3-6 10-14 N=16				36			582	
20A	4/24 17%	SS	3-8 11-17 N=19				38			580	
							40			578	

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

HANSON

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) / % Recovery	Type	TESTING Blows / 6 in / N - Value / RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
21A	24/24 100%	SS	4-8 11-15 N=19				42	Dark gray (10YR4/1) with frequent dark yellowish brown (10YR3/6) oxidation along fractures, moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel. *[Continued from previous page]*		576	
22A	24/24 100%	SS	7-8 11-17 N=19				44			574	0.5" lignite fragment seam at 42.8 ft.
23A	24/24 100%	SS	5-8 13-40 N=21				46	Dark gray (10YR4/1), moist, hard, SILT, with some to little clay and very fine- to fine-grained sand, few small to medium gravel.		572	
24A	23/24 96%	SS	22-45 35-23 N=80				48	Dark gray (10YR4/1), moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel.		570	
25A	24/24 100%	SS	7-9 14-21 N=23				50	Very dark gray (10YR3/1), moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel, trace wood fragments.		568	
26A	24/24 100%	SS	3-8 15-15 N=23				52	Dark gray (10YR3/1), moist, SILT, with some very fine-grained sand seams. Dark gray (10YR4/1) with 15% dark grayish brown (10YR4/2) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand, small gravel and wood fragments.		566	Methane deposit encountered at approx. 51 ft.
27A	17/24 71%	SS	12-27 13-15 N=40				54	Gray (10YR5/1), moist, dense, very fine- to medium-grained SAND, with some silt, trace small gravel.		564	
28A	24/24 100%	SS	4-9 11-13 N=20				56	Very dark grayish brown (10YR3/2), moist, hard, lean CLAY, with some silt, trace very fine-grained sand and organics.		562	
29A	24/24 100%	SS	5-9 13-12 N=22				58	Very dark grayish brown (10YR3/2) with 10% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, trace very fine-grained sand and organics.		560	
30A	24/24 100%	SS	3-4 7-14 N=11				60	Very dark grayish brown (10YR3/2), wet, SAND, with some silt. Gray (GLEY15/1) with 20% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel.		558	

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
31A	24/24 100%	SS	0-4 5-7 N=9					Gray (GLEY15/) with 30% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel.		556	
32A	24/24 100%	SS	4-6 8-11 N=14				62				
33A	24/24 100%	SH					64	Greenish gray (GLEY15/1) with 15% very dark gray (10YR3/1) mottles, moist, hard, lean CLAY, with some silt, few very fine- to fine-grained sand and small gravel.		554	
34A	24/24 100%	SS	5-10 22-41 N=32				66			552	
35A	24/24 100%	SS	12-24 33-45 N=57				68			550	
36A	23/24 96%	SS	6-14 25-30 N=39				70	Yellowish brown (10YR5/4) with occasional thin greenish gray (GLEY15/1) seams, moist, hard, lean CLAY, with some silt, few small gravel, trace very fine-grained sand.		548	Trace medium gravel at 70 ft.
37A	24/24 100%	SS	8-18 24-32 N=42				72			546	
38A	24/24 100%	SS	7-16 25-29 N=41				74			544	
39A	24/24 100%	SS	7-15 20-21 N=35				76	Yellowish brown (10YR5/4) with 15% gray (10YR6/1) mottles, moist, hard, lean CLAY, with some silt, few small gravel, trace very fine-grained sand.		542	
40A	19/24 79%	SS	3-5 7-10 N=12				78			540	
							80	Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very		538	

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

HANSON

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
								fine-grained sand.			
41A	22/24 92%	SS	1-5 7-11 N=12					Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand. *[Continued from previous page]*			
								Very dark gray (10YR3/1), moist, stiff, lean CLAY, with some silt, trace very fine-grained sand.		536	
							82				
42A	24/24 100%	SS	4-14 19-20 N=33					Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand.			
										534	
43A							84				
	8/24 33%	SS	6-20 22-23 N=42					Greenish gray (GLEY15/1) with 20% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand and small gravel.			
										532	
							86				
44A	24/24 100%	SS	7-8 16-17 N=24					Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand and small gravel.			
								Brown (10YR4/3) with 5% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, trace very fine-grained sand and small gravel.		530	
							88				
45A	24/24 100%	SS	5-13 16-21 N=29					Brown (10YR4/3) with 5% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, few small gravel, trace very fine-grained sand, medium gravel and black (10YR2/1) organics.		528	
							90				
46A	24/24 100%	SS	4-8 15-9 N=23								
										526	
47A							92				
47B	24/24 100%	SS	5-6 8-10 N=14					Brown (10YR4/3) with 5% dark yellowish brown (10YR4/6) mottles, moist, hard, lean CLAY, with some silt, few small gravel and wood fragments, trace very fine-grained sand, medium gravel and black (10YR2/1) organics. Very dark grayish brown (10YR3/2), moist, stiff, fat CLAY, with some silt.		524	
							94				
48A	24/24 100%	SS	2-4 7-8 N=11					Dark grayish brown (10YR4/2), moist, stiff, fat CLAY, with some silt.			
										522	
							96				
49A	24/24 100%	SS	2-6 7-11 N=13								
										520	
							98	Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, little to trace very fine-grained sand, trace small gravel.			
50A	18/20 90%	SS	3-15 28-50/2" N=43								
								Greenish gray (GLEY15/1) with 5% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt and very		518	

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

HANSON

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/28/2021
Finish: 2/3/2021
WEATHER: Clear, cold (20s)

CONTRACTOR: Roberts
Rig mfg/model: CME-75 Track Rig
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G275D
Well ID: G275
Surface Elev: 617.52 ft. MSL
Completion: 99.70 ft. BGS
Station: 874,285.30N
2,516,366.50E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 10.90 - During Drilling
▼ =
▼ =

SAMPLE			TESTING					
Number	Recov / Total (in) *% Recovery*	Type	*Blows / 6 in* N - Value **RQD**	Water Content (%)	Dry Density (lb/ft^3)	Qu (tsf) *Qp* (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
								fine-grained sand, trace small gravel.			
								End of boring = 99.7 feet			

NOTE(S): G275 installed in adjacent blind drill borehole.

FIELD BORING LOG

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/20/2021
Finish: 1/20/2021
WEATHER: Clear, cool (40s)

CONTRACTOR: Roberts
Rig mfg/model: GeoProbe 8040DT
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G284
Well ID: G284
Surface Elev: 615.33 ft. MSL
Completion: 14.00 ft. BGS
Station: 874,423.60N
2,516,922.90E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 11.60 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
1A	18/24 75%	SS	0-2 2-5 N=4				0	Very dark gray (10YR3/1), moist, very stiff, lean CLAY, some silt, few roots.		615	
							1	Gray (10YR6/1) with 20% yellowish brown (10YR5/6) mottles, moist, very stiff, lean CLAY, with some silt, trace very fine-grained sand.		614	
2A	22/24 92%	SS	1-2 3-4 N=5				2				
							3	Dark gray (10YR4/1) with 10% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace very fine-grained sand.		613	
3A	20/24 83%	SS	0-3 4-4 N=7				4			612	
							5	Gray (10YR6/1) with 10% yellowish brown (10YR5/6) moist, very stiff, lean CLAY, with some very fine-grained sand and silt, few small gravel.		611	
4A	22/24 92%	SS	2-3 4-6 N=7				6			610	
							7	Gray (10YR6/1) with 30% yellowish brown (10YR5/6) moist, very stiff, lean CLAY, with some very fine-grained sand and silt, few small gravel.		609	
5A 5B	24/24 100%	SS	2-3 4-4 N=7				8			608	
							9	Yellowish brown (10YR5/4), moist, loose, SILT, with some very fine- to fine-grained sand, few clay and small gravel.		607	
6A	20/24 83%	SS	1-2 3-3 N=5				10			606	
							11	Yellowish brown (10YR5/4) with 20% yellowish brown (10YR5/6) mottles, moist, loose, SILT, with some very fine- to fine-grained sand, few clay and small gravel.		605	
7A	23/24 96%	SS	7-22 27-48 N=49				12	▼ Yellowish brown (10YR5/4), wet, SAND, with some silt. Yellowish brown (10YR5/4) with 20% yellowish brown (10YR5/6) mottles, wet, loose, SILT, with few very fine- to medium-grained sand, little clay, few small gravel.		604	
							13	Light yellowish brown (10YR6/4) with 10% yellowish brown (10YR5/6) mottles, moist, hard, SILT, trace very fine-grained sand.		603	
							14			602	

End of boring = 14.0 feet

NOTE(S): G284 installed in borehole.

FIELD BORING LOG

CLIENT: Illinois Power Generating Co.
Site: Coffeen Part 845 Groundwater
Location: Coffeen, Illinois
Project: 20E0111A
DATES: **Start:** 1/21/2021
Finish: 1/21/2021
WEATHER: Clear, cold (30s)

CONTRACTOR: Roberts
Rig mfg/model: GeoProbe 8040DT
Drilling Method: 4.25" HSA w/SS sampler
FIELD STAFF: **Driller:** Matt
Helper: Corey
Eng/Geo: C. Colin Winter

BOREHOLE ID: G288
Well ID: G288
Surface Elev: 617.08 ft. MSL
Completion: 14.00 ft. BGS
Station: 875,279.60N
2,517,071.40E

TOPOGRAPHIC MAP INFORMATION:
Quadrangle: Coffeen, IL
Township: East Fork Township
Section 11, **Tier** 7N; **Range** 3W

WATER LEVEL INFORMATION:
▼ = 11.20 - During Drilling
▼ =
▼ =

SAMPLE Number	Recov / Total (in) % Recovery	Type	TESTING Blows / 6 in N - Value RQD	Water Content (%)	Dry Density (lb/ft³)	Qu (tsf) Qp (tsf) Failure Type	Depth ft. BGS	Lithologic Description	Borehole Detail	Elevation ft. MSL	Remarks
1A	18/24 75%	SS	1-2 2-3 N=4				0	Brown (10YR4/3), moist, medium stiff, SILT, with some clay, trace roots.		617	
2A							2			616	
2B	20/24 83%	SS	1-1 2-3 N=3				4	Gray (10YR5/1) with 10% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, trace small gravel.		614	
3A	20/24 83%	SS	2-3 4-4 N=7				6	Dark gray (10YR4/1) with 10% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt, little very fine- to fine-grained sand, trace small gravel.		612	
4A	24/24 100%	SS	1-2 4-4 N=6				8	Gray (10YR6/1) with 20% yellowish brown (10YR5/6) mottles, moist, stiff, lean CLAY, with some silt and very fine- to fine-grained sand, trace small gravel.		610	
5A	24/24 100%	SS	0-2 2-3 N=4				10	Light yellowish brown (10YR6/4), moist, stiff, lean CLAY, with some silt and very fine- to fine-grained sand, trace small gravel.		608	
6A							▼			606	
6B	21/24 88%	SS	1-2 3-5 N=5				12	Gray (10YR6/1), wet, medium stiff, SILT, with some very fine- to fine-grained sand, few small to medium gravel, occasional thin sand seams.		604	
7A	22/24 92%	SS	5-12 19-19 N=31				14	Gray (10YR6/1) with 25% dark yellowish brown (10YR4/6) mottles, moist, hard, SILT, with some very fine- to fine-grained sand, few clay, trace small gravel.			

End of boring = 14.0 feet

NOTE(S): G288 installed in borehole.

Attachment E
Site Solids Bulk Characterization Analytical Data

February 23, 2021

Rhonald Hasenyager
Hanson Professional Services, Inc.
1525 South Sixth Street
Springfield, IL 62703-2886

RE: HANSON VISTRA SOIL

Dear Rhonald Hasenyager:

Please find enclosed the analytical results for the **6** sample(s) the laboratory received on **1/22/21 2:00 pm** and logged in under work order **EA03939**. All testing is performed according to our current TNI accreditations unless otherwise noted. This report cannot be reproduced, except in full, without the written permission of PDC Laboratories, Inc.

If you have any questions regarding your report, please contact your project manager. Quality and timely data is of the utmost importance to us.

PDC Laboratories, Inc. appreciates the opportunity to provide you with analytical expertise. We are always trying to improve our customer service and we welcome you to contact the Director of Client Services, Lisa Grant, with any feedback you have about your experience with our laboratory at 309-683-1764 or lgrant@pdclab.com.

Sincerely,

Gail J Schindler

Gail Schindler
Project Manager
(309) 692-9688 x1716
gschindler@pdclab.com

SAMPLE RECEIPT CHECK LIST

Items not applicable will be marked as in compliance

Work Order EA03939

YES	Samples received within temperature compliance when applicable
YES	COC present upon sample receipt
YES	COC completed & legible
YES	Sampler name & signature present
YES	Unique sample IDs assigned
YES	Sample collection location recorded
YES	Date & time collected recorded on COC
YES	Relinquished by client signature on COC
YES	COC & labels match
YES	Sample labels are legible
YES	Appropriate bottle(s) received
YES	Sufficient sample volume received
YES	Sample containers recieved undamaged
NO	Zero headspace, <6 mm present in VOA vials
NO	Trip blank(s) received
YES	All non-field analyses received within holding times
NO	Short hold time analysis
YES	Current PDC COC submitted
NO	Case narrative provided

ANALYTICAL RESULTS

Sample: EA03939-01
Name: G284-S1
Matrix: Soil - Composite

Sampled: 01/20/21 15:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	15.6	meq/100g			1	1			Subcontracted

Sample: EA03939-02
Name: G284-S2
Matrix: Soil - Composite

Sampled: 01/20/21 15:45
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	15	meq/100g			1	1			Subcontracted

Sample: EA03939-03
Name: G284-S3
Matrix: Soil - Composite

Sampled: 01/20/21 15:55
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	6.2	meq/100g			1	1			Subcontracted

Sample: EA03939-04
Name: G288-S1
Matrix: Soil - Composite

Sampled: 01/21/21 08:00
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	9.6	meq/100g			1	1			Subcontracted

ANALYTICAL RESULTS

Sample: EA03939-05
Name: G288-S2
Matrix: Soil - Composite

Sampled: 01/21/21 08:15
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	12.1	meq/100g			1	1			Subcontracted

Sample: EA03939-06
Name: G288-S3
Matrix: Soil - Composite

Sampled: 01/21/21 08:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - A & L Great Lakes Laboratory									
Cation Exchange Capacity - subcontracted	14.7	meq/100g			1	1			Subcontracted

ANALYTICAL RESULTS

Sample: EA03939-01
Name: G284-S1
Matrix: Soil - Composite

Sampled: 01/20/21 15:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	806 H	mg/kg			1.99	597	02/04/21 19:07		SM 5310C 2000

Sample: EA03939-02
Name: G284-S2
Matrix: Soil - Composite

Sampled: 01/20/21 15:45
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	1020 J	mg/kg			4.05	1220	02/03/21 23:18		SM 5310C 2000

ANALYTICAL RESULTS

Sample: EA03939-03
Name: G284-S3
Matrix: Soil - Composite

Sampled: 01/20/21 15:55
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	656 J	mg/kg			2.78	834	02/03/21 23:56		SM 5310C 2000

Sample: EA03939-04
Name: G288-S1
Matrix: Soil - Composite

Sampled: 01/21/21 08:00
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	1550	mg/kg			4.17	1250	02/04/21 00:09		SM 5310C 2000

Sample: EA03939-05
Name: G288-S2
Matrix: Soil - Composite

Sampled: 01/21/21 08:15
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	1050	mg/kg			3.09	927	02/04/21 00:22		SM 5310C 2000

Sample: EA03939-06
Name: G288-S3
Matrix: Soil - Composite

Sampled: 01/21/21 08:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Lloyd Kahn - Eurofins Eaton Analytical, Inc. - Lancaster, PA									
Total Organic Carbon (TOC)	11100	mg/kg			2.79	837	02/04/21 00:34		SM 5310C 2000

ANALYTICAL RESULTS

ANALYTICAL RESULTS

Sample: EA03939-01
Name: G284-S1
Matrix: Soil - Composite

Sampled: 01/20/21 15:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.72	pCi/g dry wt			1		02/11/21 09:57		Subcontracted
Radium 228 - subcontracted	0.666	pCi/g dry wt			1		02/08/21 09:30		Subcontracted

Sample: EA03939-02
Name: G284-S2
Matrix: Soil - Composite

Sampled: 01/20/21 15:45
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.499	pCi/g dry wt			1		02/11/21 09:57		Subcontracted
Radium 228 - subcontracted	-0.0666	pCi/g dry wt	U		1		02/08/21 09:30		Subcontracted

Sample: EA03939-03
Name: G284-S3
Matrix: Soil - Composite

Sampled: 01/20/21 15:55
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.615	pCi/g dry wt			1		02/11/21 09:57		Subcontracted
Radium 228 - subcontracted	-0.0718	pCi/g dry wt	U		1		02/08/21 09:30		Subcontracted

Sample: EA03939-04
Name: G288-S1
Matrix: Soil - Composite

Sampled: 01/21/21 08:00
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.45	pCi/g dry wt			1		02/11/21 10:01		Subcontracted
Radium 228 - subcontracted	-0.17	pCi/g dry wt	U		1		02/08/21 09:30		Subcontracted

ANALYTICAL RESULTS

Sample: EA03939-05
Name: G288-S2
Matrix: Soil - Composite

Sampled: 01/21/21 08:15
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.424	pCi/g dry wt			1		02/11/21 10:01		Subcontracted
Radium 228 - subcontracted	0.567	pCi/g dry wt	J		1		02/08/21 09:30		Subcontracted

Sample: EA03939-06
Name: G288-S3
Matrix: Soil - Composite

Sampled: 01/21/21 08:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Miscellaneous - Pace Analytical - Mt Juliet, Tn									
Radium 226 - subcontracted	0.277	pCi/g dry wt			1		02/11/21 10:01		Subcontracted
Radium 228 - subcontracted	0.684	pCi/g dry wt			1		02/08/21 09:30		Subcontracted

ANALYTICAL RESULTS

ANALYTICAL RESULTS

Sample: EA03939-01
Name: G284-S1
Matrix: Soil - Composite

Sampled: 01/20/21 15:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 14:12	1	10	01/25/21 14:12	CRD	EPA 9056A
Sulfate	23	mg/kg		01/25/21 14:12	1	10	01/25/21 14:12	CRD	EPA 9056A
General Chemistry - PIA									
Fluoride	3.0	mg/kg		01/27/21 15:02	1	2.5	01/27/21 15:02	TTH	SM 4500F C 1997
Total Nitrogen	250	mg/kg dry		01/27/21 13:18	1	60	01/28/21 13:06	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	6700	mg/kg		01/26/21 14:39	10	43	01/28/21 11:46	JMW	calculated
Manganese as MnO2	26	mg/kg		01/26/21 14:39	10	1.6	01/28/21 11:46	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	0.59	mg/kg		01/27/21 13:18	1	0.20	01/27/21 13:18	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	210	mg/kg		01/26/21 08:28	1	50	01/28/21 13:06	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 3.0	mg/kg		01/26/21 14:39	10	3.0	01/28/21 11:46	JMW	EPA 6020A
Arsenic	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Barium	18	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Beryllium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Boron	< 10	mg/kg		01/26/21 14:39	10	10	01/29/21 07:54	JMW	EPA 6020A*
Cadmium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Chromium	7.6	mg/kg		01/26/21 14:39	10	4.0	01/28/21 11:46	JMW	EPA 6020A
Cobalt	< 2.0	mg/kg		01/26/21 14:39	10	2.0	01/28/21 11:46	JMW	EPA 6020A
Iron	4700	mg/kg		01/26/21 14:39	10	30	01/28/21 11:46	JMW	EPA 6020A*
Lead	3.4	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Manganese	16	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Molybdenum	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Selenium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:46	JMW	EPA 6020A
Thallium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/29/21 07:54	JMW	EPA 6020A
Mercury	< 0.20	mg/kg		01/26/21 14:39	10	0.20	01/28/21 11:46	JMW	EPA 6020A
Lithium	< 5.0	mg/kg		01/26/21 14:39	1	5.0	01/28/21 12:59	AMB	EPA 6010B*
Sulfur	26	mg/kg		01/26/21 14:39	1	10	01/27/21 13:56	TJJ	EPA 6010B*

ANALYTICAL RESULTS

Sample: EA03939-02
Name: G284-S2
Matrix: Soil - Composite

Sampled: 01/20/21 15:45
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 15:42	1	10	01/25/21 15:42	CRD	EPA 9056A
Fluoride	< 2.5	mg/kg		01/25/21 15:42	1	2.5	01/25/21 15:42	CRD	EPA 9056A
Sulfate	< 10	mg/kg		01/25/21 15:42	1	10	01/25/21 15:42	CRD	EPA 9056A
General Chemistry - PIA									
Total Nitrogen	140	mg/kg dry		01/27/21 13:19	1	60	01/28/21 13:07	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	6000	mg/kg		01/26/21 14:39	10	43	01/28/21 11:50	JMW	calculated
Manganese as MnO2	200	mg/kg		01/26/21 14:39	10	1.6	01/28/21 11:50	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	0.92	mg/kg		01/27/21 13:19	1	0.20	01/27/21 13:19	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	110	mg/kg		01/26/21 08:28	1	50	01/28/21 13:07	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 3.0	mg/kg		01/26/21 14:39	10	3.0	01/28/21 11:50	JMW	EPA 6020A
Arsenic	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Barium	48	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Beryllium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Boron	< 10	mg/kg		01/26/21 14:39	10	10	01/29/21 07:58	JMW	EPA 6020A*
Cadmium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Chromium	4.7	mg/kg		01/26/21 14:39	10	4.0	01/28/21 11:50	JMW	EPA 6020A
Cobalt	5.9	mg/kg		01/26/21 14:39	10	2.0	01/28/21 11:50	JMW	EPA 6020A
Iron	4200	mg/kg		01/26/21 14:39	10	30	01/28/21 11:50	JMW	EPA 6020A*
Lead	9.7	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Manganese	130	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Molybdenum	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Selenium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 11:50	JMW	EPA 6020A
Thallium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/29/21 07:58	JMW	EPA 6020A
Mercury	< 0.20	mg/kg		01/26/21 14:39	10	0.20	01/28/21 11:50	JMW	EPA 6020A
Lithium	< 5.0	mg/kg		01/26/21 14:39	1	5.0	01/28/21 13:01	AMB	EPA 6010B*
Sulfur	< 10	mg/kg		01/26/21 14:39	1	10	01/27/21 13:58	TJJ	EPA 6010B*

ANALYTICAL RESULTS

Sample: EA03939-03
Name: G284-S3
Matrix: Soil - Composite

Sampled: 01/20/21 15:55
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 16:19	1	10	01/25/21 16:19	CRD	EPA 9056A
Sulfate	10	mg/kg		01/25/21 16:19	1	10	01/25/21 16:19	CRD	EPA 9056A
General Chemistry - PIA									
Fluoride	< 2.5	mg/kg	Q3	01/27/21 14:58	1	2.5	01/27/21 14:58	TTH	SM 4500F C 1997
Total Nitrogen	100	mg/kg dry		01/27/21 13:20	1	58	01/28/21 13:08	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	5900	mg/kg		01/26/21 14:39	10	41	01/28/21 11:54	JMW	calculated
Manganese as MnO2	400	mg/kg		01/26/21 14:39	10	1.5	01/28/21 11:54	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	< 0.20	mg/kg		01/27/21 13:20	1	0.20	01/27/21 13:20	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	86	mg/kg		01/26/21 08:28	1	50	01/28/21 13:08	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 2.8	mg/kg		01/26/21 14:39	10	2.8	01/28/21 11:54	JMW	EPA 6020A
Arsenic	1.9	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Barium	26	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Beryllium	< 0.95	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Boron	< 9.5	mg/kg		01/26/21 14:39	10	9.5	01/29/21 08:02	JMW	EPA 6020A*
Cadmium	< 0.95	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Chromium	5.5	mg/kg		01/26/21 14:39	10	3.8	01/28/21 11:54	JMW	EPA 6020A
Cobalt	< 1.9	mg/kg		01/26/21 14:39	10	1.9	01/28/21 11:54	JMW	EPA 6020A
Iron	4200	mg/kg		01/26/21 14:39	10	28	01/28/21 11:54	JMW	EPA 6020A*
Lead	5.1	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Manganese	260	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Molybdenum	< 0.95	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Selenium	< 0.95	mg/kg		01/26/21 14:39	10	0.95	01/28/21 11:54	JMW	EPA 6020A
Thallium	< 0.95	mg/kg		01/26/21 14:39	10	0.95	01/29/21 08:02	JMW	EPA 6020A
Mercury	< 0.19	mg/kg		01/26/21 14:39	10	0.19	01/28/21 11:54	JMW	EPA 6020A
Lithium	< 4.7	mg/kg		01/26/21 14:39	1	4.7	01/28/21 13:03	AMB	EPA 6010B*
Sulfur	9.6	mg/kg		01/26/21 14:39	1	9.5	01/27/21 14:00	TJJ	EPA 6010B*

ANALYTICAL RESULTS

Sample: EA03939-04
Name: G288-S1
Matrix: Soil - Composite

Sampled: 01/21/21 08:00
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 16:55	1	10	01/25/21 16:55	CRD	EPA 9056A
Fluoride	3.2	mg/kg		01/25/21 16:55	1	2.5	01/25/21 16:55	CRD	EPA 9056A
Sulfate	17	mg/kg		01/25/21 16:55	1	10	01/25/21 16:55	CRD	EPA 9056A
General Chemistry - PIA									
Total Nitrogen	350	mg/kg dry		01/27/21 13:20	1	64	01/28/21 13:09	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	5500	mg/kg		01/26/21 14:39	10	40	01/28/21 11:57	JMW	calculated
Manganese as MnO2	61	mg/kg		01/26/21 14:39	10	1.5	01/28/21 11:57	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	0.78	mg/kg		01/27/21 13:20	1	0.20	01/27/21 13:20	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	280	mg/kg		01/26/21 08:28	1	50	01/28/21 13:09	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 2.8	mg/kg		01/26/21 14:39	10	2.8	01/28/21 11:57	JMW	EPA 6020A
Arsenic	1.8	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Barium	47	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Beryllium	< 0.94	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Boron	< 9.4	mg/kg		01/26/21 14:39	10	9.4	01/29/21 08:06	JMW	EPA 6020A*
Cadmium	< 0.94	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Chromium	5.5	mg/kg		01/26/21 14:39	10	3.8	01/28/21 11:57	JMW	EPA 6020A
Cobalt	< 1.9	mg/kg		01/26/21 14:39	10	1.9	01/28/21 11:57	JMW	EPA 6020A
Iron	3800	mg/kg		01/26/21 14:39	10	28	01/28/21 11:57	JMW	EPA 6020A*
Lead	5.0	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Manganese	39	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Molybdenum	< 0.94	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Selenium	< 0.94	mg/kg		01/26/21 14:39	10	0.94	01/28/21 11:57	JMW	EPA 6020A
Thallium	< 0.94	mg/kg		01/26/21 14:39	10	0.94	01/29/21 08:06	JMW	EPA 6020A
Mercury	< 0.19	mg/kg		01/26/21 14:39	10	0.19	01/28/21 11:57	JMW	EPA 6020A
Lithium	< 4.7	mg/kg		01/26/21 14:39	1	4.7	01/28/21 13:12	AMB	EPA 6010B*
Sulfur	15	mg/kg		01/26/21 14:39	1	9.4	01/27/21 14:07	TJJ	EPA 6010B*

ANALYTICAL RESULTS

Sample: EA03939-05
Name: G288-S2
Matrix: Soil - Composite

Sampled: 01/21/21 08:15
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 17:31	1	10	01/25/21 17:31	CRD	EPA 9056A
Sulfate	12	mg/kg		01/25/21 17:31	1	10	01/25/21 17:31	CRD	EPA 9056A
General Chemistry - PIA									
Fluoride	< 2.5	mg/kg		01/27/21 14:53	1	2.5	01/27/21 14:53	TTH	SM 4500F C 1997
Total Nitrogen	160	mg/kg dry		01/27/21 13:21	1	64	01/28/21 13:09	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	14000	mg/kg		01/26/21 14:39	10	43	01/28/21 12:01	JMW	calculated
Manganese as MnO2	98	mg/kg		01/26/21 14:39	10	1.6	01/28/21 12:01	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	0.34	mg/kg		01/27/21 13:21	1	0.20	01/27/21 13:21	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	120	mg/kg		01/26/21 08:28	1	50	01/28/21 13:09	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 3.0	mg/kg		01/26/21 14:39	10	3.0	01/28/21 12:01	JMW	EPA 6020A
Arsenic	1.2	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Barium	32	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Beryllium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Boron	< 10	mg/kg		01/26/21 14:39	10	10	01/29/21 08:09	JMW	EPA 6020A*
Cadmium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Chromium	5.4	mg/kg		01/26/21 14:39	10	4.0	01/28/21 12:01	JMW	EPA 6020A
Cobalt	2.4	mg/kg		01/26/21 14:39	10	2.0	01/28/21 12:01	JMW	EPA 6020A
Iron	9500	mg/kg		01/26/21 14:39	10	30	01/28/21 12:01	JMW	EPA 6020A*
Lead	5.8	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Manganese	62	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Molybdenum	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Selenium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:01	JMW	EPA 6020A
Thallium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/29/21 08:09	JMW	EPA 6020A
Mercury	< 0.20	mg/kg		01/26/21 14:39	10	0.20	01/28/21 12:01	JMW	EPA 6020A
Lithium	< 5.0	mg/kg		01/26/21 14:39	1	5.0	01/28/21 13:14	AMB	EPA 6010B*
Sulfur	18	mg/kg		01/26/21 14:39	1	10	01/27/21 14:09	TJJ	EPA 6010B*

ANALYTICAL RESULTS

Sample: EA03939-06
Name: G288-S3
Matrix: Soil - Composite

Sampled: 01/21/21 08:30
Received: 01/22/21 14:00

Parameter	Result	Unit	Qualifier	Prepared	Dilution	MRL	Analyzed	Analyst	Method
Anions - PIA									
Chloride	< 10	mg/kg		01/25/21 18:07	1	10	01/25/21 18:07	CRD	EPA 9056A
Fluoride	< 2.5	mg/kg		01/25/21 18:07	1	2.5	01/25/21 18:07	CRD	EPA 9056A
Sulfate	< 10	mg/kg		01/25/21 18:07	1	10	01/25/21 18:07	CRD	EPA 9056A
General Chemistry - PIA									
Total Nitrogen	360	mg/kg dry		01/27/21 13:22	1	58	01/28/21 13:10	CRS1	(calc)
Metals by ICP-MS - PIA									
Iron as Fe2O3	12000	mg/kg		01/26/21 14:39	10	43	01/28/21 12:05	JMW	calculated
Manganese as MnO2	870	mg/kg		01/26/21 14:39	10	1.6	01/28/21 12:05	JMW	calculated
Nutrients - PIA									
Nitrate/Nitrite-N	0.42	mg/kg		01/27/21 13:22	1	0.20	01/27/21 13:22	CJP	EPA 353.2 REV 2
Total Kjeldahl Nitrogen (TKN)	310	mg/kg		01/26/21 08:28	1	50	01/28/21 13:10	CRS1	EPA 351.2 REV 2*
Total Metals - PIA									
Antimony	< 3.0	mg/kg		01/26/21 14:39	10	3.0	01/28/21 12:05	JMW	EPA 6020A
Arsenic	1.8	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Barium	43	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Beryllium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Boron	< 10	mg/kg		01/26/21 14:39	10	10	01/29/21 08:13	JMW	EPA 6020A*
Cadmium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Chromium	6.3	mg/kg		01/26/21 14:39	10	4.0	01/28/21 12:05	JMW	EPA 6020A
Cobalt	3.3	mg/kg		01/26/21 14:39	10	2.0	01/28/21 12:05	JMW	EPA 6020A
Iron	8000	mg/kg		01/26/21 14:39	10	30	01/28/21 12:05	JMW	EPA 6020A*
Lead	6.5	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Manganese	550	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Molybdenum	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Selenium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/28/21 12:05	JMW	EPA 6020A
Thallium	< 1.0	mg/kg		01/26/21 14:39	10	1.0	01/29/21 08:13	JMW	EPA 6020A
Mercury	< 0.20	mg/kg		01/26/21 14:39	10	0.20	01/28/21 12:05	JMW	EPA 6020A
Lithium	< 5.0	mg/kg		01/26/21 14:39	1	5.0	01/28/21 13:16	AMB	EPA 6010B*
Sulfur	17	mg/kg		01/26/21 14:39	1	10	01/27/21 14:11	TJJ	EPA 6010B*

NOTES

Specifications regarding method revisions and method modifications used for analysis are available upon request. Please contact your project manager.

* Not a TNI accredited analyte

Memos

TOC, CEC and Radium 226/228 subcontracted - report attached

Certifications

CHI - McHenry, IL - 4314-A W. Crystal Lake Road, McHenry, IL 60050
TNI Accreditation for Drinking Water and Wastewater Fields of Testing through IL EPA Accreditation No. 100279
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17556

PIA - Peoria, IL - 2231 W. Altorfer Drive, Peoria, IL 61615
TNI Accreditation for Drinking Water, Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. 100230
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory Registry No. 17553
Drinking Water Certifications/Accreditations: Iowa (240); Kansas (E-10338); Missouri (870)
Wastewater Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)
Solid and Hazardous Material Certifications/Accreditations: Arkansas (88-0677); Iowa (240); Kansas (E-10338)

SPMO - Springfield, MO - 1805 W Sunset Street, Springfield, MO 65807
USEPA DMR-QA Program

STL - Hazelwood, MO - 944 Anglum Rd, Hazelwood, MO 63042
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through KS KDHE Certification No. E-10389
TNI Accreditation for Wastewater, Solid and Hazardous Material Fields of Testing through IL EPA Accreditation No. - 200080
Illinois Department of Public Health Bacterial Analysis in Drinking Water Approved Laboratory, Registry No. 171050
Missouri Department of Natural Resources - Certificate of Approval for Microbiological Laboratory Service - No. 1050

Qualifiers

Q3 Matrix Spike/Matrix Spike Duplicate both failed % recovery acceptance limits. The associated blank spike recovery was acceptable.

Gail J Schindler

Certified by: Gail Schindler, Project Manager

Report Number
F21026-0048
Account Number
67045

a&lgreatlakes LABORATORIES
Scientists who don't mind getting dirty.™

3505 Conestoga Dr.
Fort Wayne, IN 46808
260.483.4759
algreatlakes.com

To: PDC LABORATORIES, INC.
2231 W ALTORFER DR
PEORIA, IL 61615-1807

For: EA03939

Purchase Order: 12450

Attn: JANET CLUTTERS

SOIL TEST REPORT

Date Received: 1/26/2021
Date Reported: 1/28/2021 Page: 1 of 1

Sample ID	Lab Number	Organic Matter %	Phosphorus		Potassium K lb/A	Magnesium Mg lb/A	Calcium Ca lb/A	Sodium Na lb/A	Soil pH	Buffer pH	CEC meq/100g	Percent Cation Saturation				
			Bray-1 Equiv lb/A	Bray P2 lb/A								% K	% Mg	% Ca	% H	%Na
G284-S1	13309	0.6	4		112	1250	1700		5.3	6.5	15.6	0.9	33.4	27.2	38.5	
G284-S2	13310	0.7	4		152	1830	2800		6.9		15.0	1.3	50.7	46.5	1.5	
G284-S3	13311	0.5	6		78	680	1300		7.6		6.2	1.6	45.8	52.6		
G288-S1	13312	1.2	16		110	490	2500		6.6	6.9	9.6	1.5	21.2	64.9	12.5	
G288-S2	13313	0.8	4		148	1300	2600		7.6		12.1	1.6	44.7	53.7		
G288-S3	13314	0.4	4		94	1340	3600		8.0		14.7	0.8	38.0	61.2		

Sample ID	Sulfur S lb/A	Zinc Zn lb/A	Manganese Mn lb/A	Iron Fe lb/A	Copper Cu lb/A	Boron B lb/A	Soluble Salts (1:2) mmhos/cm	Nitrate NO_3-N lb/A	Ammonium NH_4-N lb/A	Bicarb-P P lb/A				Comments
														lb/A = ppm x 2

A&L-NP

National Center for Testing & Innovation

ANALYTICAL REPORT

February 12, 2021

PDC Laboratory, Inc.

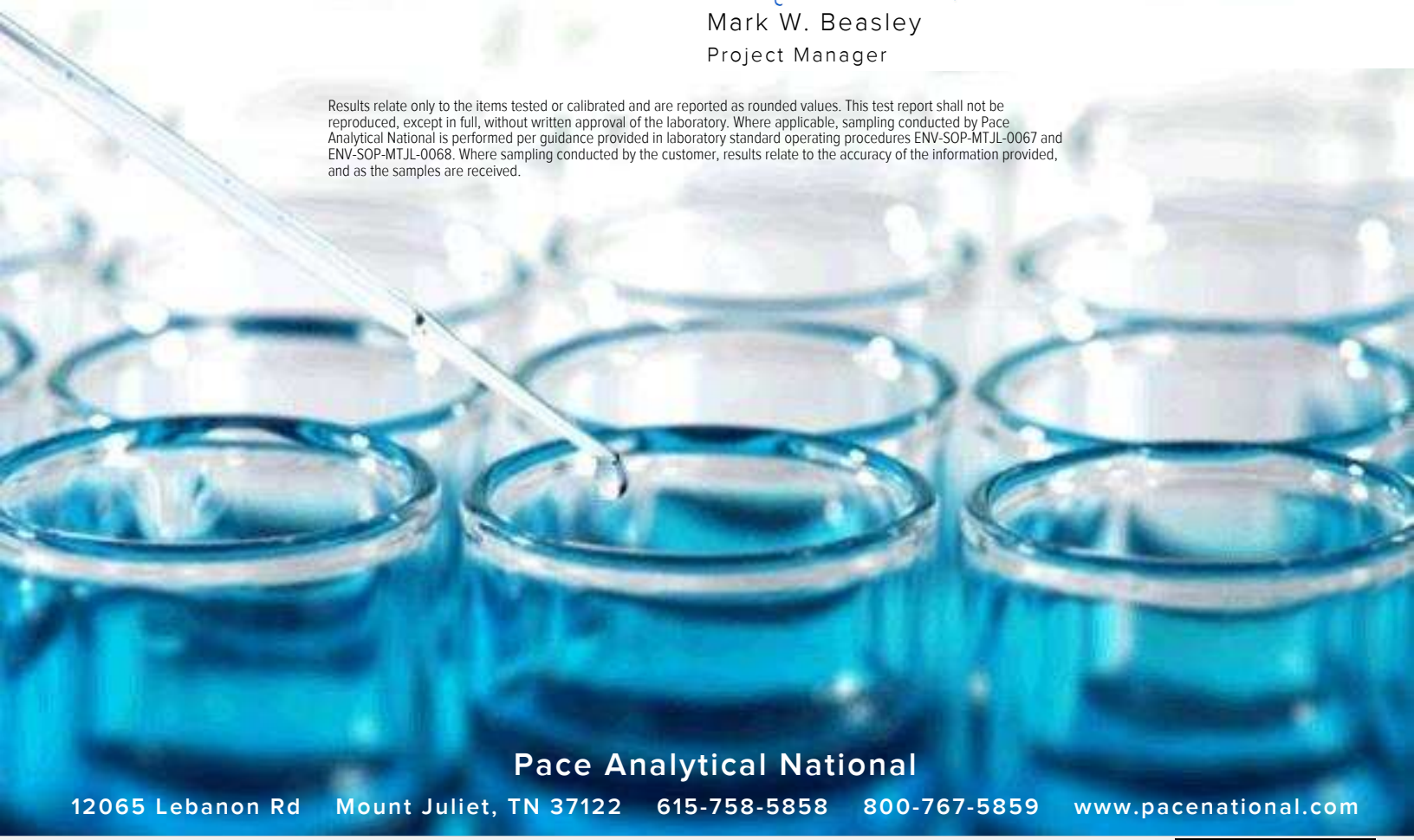
Sample Delivery Group:	L1310837
Samples Received:	01/27/2021
Project Number:	EA03939
Description:	

Report To: Gail Schindler
2231 W. Altorfer Drive
Peoria, IL 61615

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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EA03939-01 L1310837-01 Solids and Chemical Materials

Collected by | Collected date/time 01/20/21 15:30 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN

EA03939-02 L1310837-02 Solids and Chemical Materials

Collected by | Collected date/time 01/20/21 15:45 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN

EA03939-03 L1310837-03 Solids and Chemical Materials

Collected by | Collected date/time 01/20/21 15:55 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 09:57	RGT	Mt. Juliet, TN

EA03939-04 L1310837-04 Solids and Chemical Materials

Collected by | Collected date/time 01/21/21 08:00 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN

EA03939-05 L1310837-05 Solids and Chemical Materials

Collected by | Collected date/time 01/21/21 08:15 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN

EA03939-06 L1310837-06 Solids and Chemical Materials

Collected by | Collected date/time 01/21/21 08:30 | Received date/time 01/27/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 9320	WG1613494	1	02/01/21 14:02	02/08/21 09:30	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1614846	1	02/08/21 09:33	02/11/21 10:01	RGT	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.666		0.296	0.542	02/08/2021 09:30	WG1613494
(T) Barium	*91.6*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*96.7*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	1.39		0.455	0.598	02/11/2021 09:57	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.720		0.159	0.0559	02/11/2021 09:57	WG1614846
(T) Barium-133	*94.5*			*30.0-143*	*02/11/2021 09:57*	WG1614846

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0666	U	0.303	0.573	02/08/2021 09:30	WG1613494
(T) Barium	*94.4*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*96.5*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	0.499	J	0.430	0.634	02/11/2021 09:57	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.499		0.127	0.0605	02/11/2021 09:57	WG1614846
(T) Barium-133	*100*			*30.0-143*	*02/11/2021 09:57*	WG1614846

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0718	U	0.320	0.611	02/08/2021 09:30	WG1613494
(T) Barium	*85.2*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*102*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	0.615	J	0.473	0.682	02/11/2021 09:57	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.615		0.153	0.071	02/11/2021 09:57	WG1614846
(T) Barium-133	*101*			*30.0-143*	*02/11/2021 09:57*	WG1614846

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.170	U	0.313	0.599	02/08/2021 09:30	WG1613494
(T) Barium	*86.0*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*97.9*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	0.450	J	0.438	0.654	02/11/2021 10:01	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.450		0.125	0.0547	02/11/2021 10:01	WG1614846
(T) Barium-133	*98.2*			*30.0-143*	*02/11/2021 10:01*	WG1614846

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.567	J	0.318	0.586	02/08/2021 09:30	WG1613494
(T) Barium	*96.3*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*98.6*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	0.990		0.448	0.651	02/11/2021 10:01	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.424		0.130	0.0651	02/11/2021 10:01	WG1614846
(T) Barium-133	*100*			*30.0-143*	*02/11/2021 10:01*	WG1614846

Radiochemistry by Method 9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.684		0.306	0.56	02/08/2021 09:30	WG1613494
(T) Barium	*93.0*			*62.0-143*	*02/08/2021 09:30*	WG1613494
(T) Yttrium	*102*			*79.0-136*	*02/08/2021 09:30*	WG1613494

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
Combined Radium	0.962		0.411	0.638	02/11/2021 10:01	WG1614846

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/g		+ / -	pCi/g	date / time	
RADIUM-226	0.277		0.105	0.0779	02/11/2021 10:01	WG1614846
(T) Barium-133	*105*			*30.0-143*	*02/11/2021 10:01*	WG1614846

Method Blank (MB)

(MB) R3621132-1 02/08/21 09:30

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.154	U	0.465
(T) Barium	*93.6*		
(T) Yttrium	*98.0*		

L1310837-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1310837-02 02/08/21 09:30 • (DUP) R3621132-4 02/08/21 09:30

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	-0.0666	-0.0207	1	0.000	0.113	U	20	3
(T) Barium	*94.4*	*86.6*						
(T) Yttrium	*96.5*	*98.2*						

Laboratory Control Sample (LCS)

(LCS) R3621132-2 02/08/21 09:30

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.44	109	80.0-120	
(T) Barium			*97.0*		
(T) Yttrium			*95.2*		

L1310837-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1310837-01 02/08/21 09:30 • (MS) R3621132-3 02/08/21 09:30

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Radium-228	4.84	0.666	6.78	126	1	70.0-130	
(T) Barium		*91.6*		*88.3*			
(T) Yttrium		*96.7*		*105*			

Method Blank (MB)

(MB) R3621772-1 02/11/21 09:57

Analyte	MB Result pCi/g	MB Qualifier	MB MDA pCi/g
Radium-226	0.00798	U	0.0460
(T) Barium-133	*90.1*		

L1310837-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1310837-06 02/11/21 10:01 • (DUP) R3621772-4 02/11/21 09:57

Analyte	Original Result pCi/g	DUP Result pCi/g	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.277	0.391	1	34.1	0.685		20	3
(T) Barium-133	*105*	*92.0*						

Laboratory Control Sample (LCS)

(LCS) R3621772-2 02/11/21 09:57

Analyte	Spike Amount pCi/g	LCS Result pCi/g	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.26	105	60.0-144	
(T) Barium-133			*102*		

L1310837-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1310837-01 02/11/21 09:57 • (MS) R3621772-3 02/11/21 09:57

Analyte	Spike Amount pCi/g	Original Result pCi/g	MS Result pCi/g	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Radium-226	5.00	0.720	6.75	121	1	65.0-135	
(T) Barium-133		*94.5*		*88.8*			

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
North Dakota	R-214		

Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

SUBCONTRACT ORDER
Transfer Chain of Custody

PDC Laboratories, Inc.

EA03939

H097

L1310837

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

Sample: EA03939-01
Name: G284-S1

Sampled: 01/20/21 15:30
Matrix: Soil
Preservative: Cool <6

-01

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/02/21 16:00	07/19/21 15:30	

Sample: EA03939-02
Name: G284-S2

Sampled: 01/20/21 15:45
Matrix: Soil
Preservative: Cool <6

-02

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/02/21 16:00	07/19/21 15:45	

Sample: EA03939-03
Name: G284-S3

Sampled: 01/20/21 15:55
Matrix: Soil
Preservative: Cool <6

-03

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/02/21 16:00	07/19/21 15:55	

Sample: EA03939-04
Name: G288-S1

Sampled: 01/21/21 08:00
Matrix: Soil
Preservative: Cool <6

-04

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/02/21 16:00	07/20/21 08:00	

Sample: EA03939-05
Name: G288-S2

RAD SCREEN: <0.5 mR/hr

Sampled: 01/21/21 08:15
Matrix: Soil
Preservative: Cool <6

-05

Analysis	Due	Expires	Comments
		07/20/21 08:15	MPA5 96-2=94

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

<500 CPM

& Total

SUBCONTRACT ORDER
Transfer Chain of Custody

PDC Laboratories, Inc.

EA03939

L1310837

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Pace Analytical - Mt Juliet, Tn
12065 Lebanon Rd
Mt Juliet, TN 37122
(615) 758-5858

Sample: EA03939-06
Name: G288-S3

Sampled: 01/21/21 08:30
Matrix: Soil
Preservative: Cool <6

-06

Analysis	Due	Expires	Comments
01-Radium 226/228 combined	02/02/21 16:00	07/20/21 08:30	

Please email results to Gail Schindler at gschindler@pdclab.com

Date Shipped: 1-25-21 Total # of Containers: 6 Sample Origin (State): IL PO #: 11508

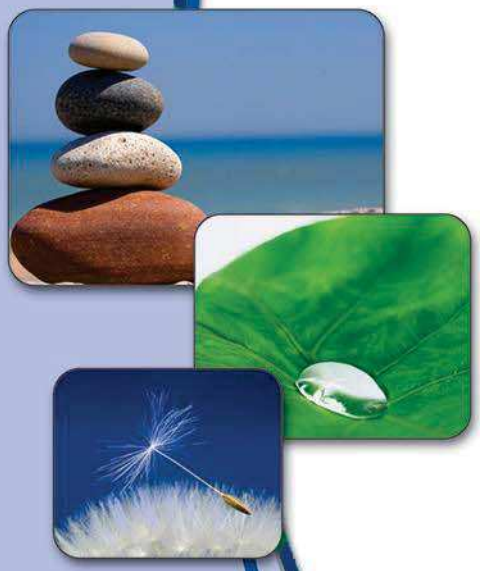
Turn-Around Time Requested ☑ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-25-21 11:00		
		[signature]	1-27-21 845

Sample Temperature Upon Receipt	____ °C
Sample(s) Received on Ice	Y or N
Proper Bottles Received in Good Condition	Y or N
Bottles Filled with Adequate Volume	Y or N
Samples Received Within Hold Time	Y or N
Date/Time Taken From Sample Bottle	Y or N

RAD SCREEN: <0.5 mR/hr

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-27780-1
Client Project/Site: EA03939

For:
PDC Laboratories, Inc.
2231 W. Altorfer Drive
Peoria, Illinois 61615

Attn: Gail Schindler

Marrissa Williams

Authorized for release by:
2/10/2021 2:27:43 PM

Marrissa Williams, Project Manager
(717)556-7246
Marrissa.Williams@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· 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 is 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.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Marrissa Williams
Project Manager
2/10/2021 2:27:43 PM

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Qualifiers

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
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)
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

Job ID: 410-27780-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-27780-1

Receipt
The samples were received on 1/28/2021 10:13 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -1.1°C

General Chemistry
Method Lloyd_Kahn: Reanalysis of the following sample was performed outside of the analytical holding time due to the initial analysis exceeding the calibration range. : EA03939-01 G284-S1 (410-27780-1).

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

Detection Summary

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Client Sample ID: EA03939-01 G284-S1 — Lab Sample ID: 410-27780-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	806	H	597	199	mg/Kg	1.99		Lloyd Kahn	Total/NA

Client Sample ID: EA03939-02 G284-S2 — Lab Sample ID: 410-27780-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	1020	J	1220	405	mg/Kg	4.05		Lloyd Kahn	Total/NA

Client Sample ID: EA03939-03 G284-S3 — Lab Sample ID: 410-27780-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	656	J	834	278	mg/Kg	2.78		Lloyd Kahn	Total/NA

Client Sample ID: EA03939-04 G288-S1 — Lab Sample ID: 410-27780-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	1550		1250	417	mg/Kg	4.17		Lloyd Kahn	Total/NA

Client Sample ID: EA03939-05 G288-S2 — Lab Sample ID: 410-27780-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	1050		927	309	mg/Kg	3.09		Lloyd Kahn	Total/NA

Client Sample ID: EA03939-06 G288-S3 — Lab Sample ID: 410-27780-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	11100		837	279	mg/Kg	2.79		Lloyd Kahn	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EA03939-01 G284-S1

Lab Sample ID: 410-27780-1

Date Collected: 01/20/21 15:30

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	806	H	597	199	mg/Kg			02/04/21 19:07	1.99
Percent Moisture	18.9		1.0	1.0	%			01/28/21 20:42	1
Percent Solids	81.1		1.0	1.0	%			01/28/21 20:42	1

Client Sample ID: EA03939-02 G284-S2

Lab Sample ID: 410-27780-2

Date Collected: 01/20/21 15:45

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1020	J	1220	405	mg/Kg			02/03/21 23:18	4.05
Percent Moisture	16.6		1.0	1.0	%			01/28/21 20:42	1
Percent Solids	83.4		1.0	1.0	%			01/28/21 20:42	1

Client Sample ID: EA03939-03 G284-S3

Lab Sample ID: 410-27780-3

Date Collected: 01/20/21 15:55

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	656	J	834	278	mg/Kg			02/03/21 23:56	2.78
Percent Moisture	14.9		1.0	1.0	%			01/28/21 20:42	1
Percent Solids	85.1		1.0	1.0	%			01/28/21 20:42	1

Client Sample ID: EA03939-04 G288-S1

Lab Sample ID: 410-27780-4

Date Collected: 01/21/21 08:00

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1550		1250	417	mg/Kg			02/04/21 00:09	4.17
Percent Moisture	17.2		1.0	1.0	%			01/28/21 20:42	1
Percent Solids	82.8		1.0	1.0	%			01/28/21 20:42	1

Client Sample ID: EA03939-05 G288-S2

Lab Sample ID: 410-27780-5

Date Collected: 01/21/21 08:15

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1050		927	309	mg/Kg			02/04/21 00:22	3.09
Percent Moisture	17.9		1.0	1.0	%			01/28/21 20:42	1
Percent Solids	82.1		1.0	1.0	%			01/28/21 20:42	1

Client Sample ID: EA03939-06 G288-S3

Lab Sample ID: 410-27780-6

Date Collected: 01/21/21 08:30

Matrix: Solid

Date Received: 01/28/21 10:13

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	11100		837	279	mg/Kg			02/04/21 00:34	2.79
Percent Moisture	12.7		1.0	1.0	%			01/28/21 20:42	1

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Client Sample ID: EA03939-06 G288-S3
Date Collected: 01/21/21 08:30
Date Received: 01/28/21 10:13

Lab Sample ID: 410-27780-6
Matrix: Solid

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	87.3		1.0	1.0	%			01/28/21 20:42	1

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Method: Lloyd Kahn - Organic Carbon, Total (TOC)

Lab Sample ID: MB 410-91050/3
Matrix: Solid
Analysis Batch: 91050

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		300	100	mg/Kg			02/03/21 18:52	1

Lab Sample ID: LCS 410-91050/4
Matrix: Solid
Analysis Batch: 91050

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4300	4097		mg/Kg		95	47 - 143

Lab Sample ID: MB 410-91563/3
Matrix: Solid
Analysis Batch: 91563

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		300	100	mg/Kg			02/04/21 17:51	1

Lab Sample ID: LCS 410-91563/4
Matrix: Solid
Analysis Batch: 91563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4300	4159		mg/Kg		97	47 - 143

General Chemistry

Analysis Batch: 89236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27780-1	EA03939-01 G284-S1	Total/NA	Solid	Moisture	
410-27780-2	EA03939-02 G284-S2	Total/NA	Solid	Moisture	
410-27780-3	EA03939-03 G284-S3	Total/NA	Solid	Moisture	
410-27780-4	EA03939-04 G288-S1	Total/NA	Solid	Moisture	
410-27780-5	EA03939-05 G288-S2	Total/NA	Solid	Moisture	
410-27780-6	EA03939-06 G288-S3	Total/NA	Solid	Moisture	

Analysis Batch: 91050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27780-2	EA03939-02 G284-S2	Total/NA	Solid	Lloyd Kahn	
410-27780-3	EA03939-03 G284-S3	Total/NA	Solid	Lloyd Kahn	
410-27780-4	EA03939-04 G288-S1	Total/NA	Solid	Lloyd Kahn	
410-27780-5	EA03939-05 G288-S2	Total/NA	Solid	Lloyd Kahn	
410-27780-6	EA03939-06 G288-S3	Total/NA	Solid	Lloyd Kahn	
MB 410-91050/3	Method Blank	Total/NA	Solid	Lloyd Kahn	
LCS 410-91050/4	Lab Control Sample	Total/NA	Solid	Lloyd Kahn	

Analysis Batch: 91563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-27780-1	EA03939-01 G284-S1	Total/NA	Solid	Lloyd Kahn	
MB 410-91563/3	Method Blank	Total/NA	Solid	Lloyd Kahn	
LCS 410-91563/4	Lab Control Sample	Total/NA	Solid	Lloyd Kahn	

Lab Chronicle

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Client Sample ID: EA03939-01 G284-S1

Lab Sample ID: 410-27780-1

Date Collected: 01/20/21 15:30

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		1.99	91563	02/04/21 19:07	KGQ6	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Client Sample ID: EA03939-02 G284-S2

Lab Sample ID: 410-27780-2

Date Collected: 01/20/21 15:45

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		4.05	91050	02/03/21 23:18	NKL9	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Client Sample ID: EA03939-03 G284-S3

Lab Sample ID: 410-27780-3

Date Collected: 01/20/21 15:55

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		2.78	91050	02/03/21 23:56	NKL9	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Client Sample ID: EA03939-04 G288-S1

Lab Sample ID: 410-27780-4

Date Collected: 01/21/21 08:00

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		4.17	91050	02/04/21 00:09	NKL9	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Client Sample ID: EA03939-05 G288-S2

Lab Sample ID: 410-27780-5

Date Collected: 01/21/21 08:15

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		3.09	91050	02/04/21 00:22	NKL9	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Client Sample ID: EA03939-06 G288-S3

Lab Sample ID: 410-27780-6

Date Collected: 01/21/21 08:30

Matrix: Solid

Date Received: 01/28/21 10:13

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Lloyd Kahn		2.79	91050	02/04/21 00:34	NKL9	ELLE
Total/NA	Analysis	Moisture		1	89236	01/28/21 20:42	PTG7	ELLE

Laboratory References:

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

Accreditation/Certification Summary

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Laboratory: Eurofins Lancaster Laboratories Env, 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	1.01	11-30-22
Alaska	State	PA00009	06-30-21
Alaska (UST)	State	17-027	01-31-21 *
Arizona	State	AZ0780	03-12-21
Arkansas DEQ	State	19-053-0	08-09-21
California	State	2792	02-01-22
Colorado	State	PA00009	06-30-21
Connecticut	State	PH-0746	06-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-22
Delaware (DW)	State	N/A	02-01-22
Florida	NELAP	E87997	07-01-21
Hawaii	State	N/A	01-31-22
Iowa	State	361	03-02-22
Kansas	NELAP	E-10151	10-31-21
Kentucky (DW)	State	KY90088	01-01-22
Kentucky (WW)	State	KY90088	12-31-21
Louisiana	NELAP	02055	06-30-21
Maine	State	2019012	03-12-21
Maryland	State	100	06-30-21
Massachusetts	State	M-PA009	06-30-21
Minnesota	NELAP	042-999-487	12-31-21
Missouri	State	450	01-31-22
Montana (DW)	State	0098	01-01-22
Montana (UST)	State	0098	01-01-22
Nebraska	State	NE-OS-32-17	01-31-20 *
Nevada	State	PA000092019-3	07-31-21
New Hampshire	NELAP	273019	01-10-22
New Jersey	NELAP	PA011	06-30-21
New York	NELAP	10670	04-01-21
North Carolina (DW)	State	42705	07-31-21
North Carolina (WW/SW)	State	521	12-31-21
North Dakota	State	R-205	01-31-20 *
Oklahoma	NELAP	R-205	08-31-21
Oregon	NELAP	PA200001-018	09-12-21
PALA	Canada	1978	05-08-21
Pennsylvania	NELAP	36-00037	01-31-22
Texas	NELAP	T104704194-20-38	08-31-21
Utah	NELAP	PA000092019-16	02-28-21
Vermont	State	VT - 36037	10-29-21
Virginia	NELAP	10561	06-14-21
Washington	State	C457	04-11-21
West Virginia DEP	State	055	06-30-21
Wyoming	State	8TMS-L	01-31-22
Wyoming (UST)	A2LA	1.01	11-30-22

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

Method Summary

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Method	Method Description	Protocol	Laboratory
Lloyd Kahn	Organic Carbon, Total (TOC)	EPA	ELLE
Moisture	Percent Moisture	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

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

Sample Summary

Client: PDC Laboratories, Inc.
Project/Site: EA03939

Job ID: 410-27780-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-27780-1	EA03939-01 G284-S1	Solid	01/20/21 15:30	01/28/21 10:13	
410-27780-2	EA03939-02 G284-S2	Solid	01/20/21 15:45	01/28/21 10:13	
410-27780-3	EA03939-03 G284-S3	Solid	01/20/21 15:55	01/28/21 10:13	
410-27780-4	EA03939-04 G288-S1	Solid	01/21/21 08:00	01/28/21 10:13	
410-27780-5	EA03939-05 G288-S2	Solid	01/21/21 08:15	01/28/21 10:13	
410-27780-6	EA03939-06 G288-S3	Solid	01/21/21 08:30	01/28/21 10:13	

SUBCONTRACT ORDER
Transfer Chain of Custody

PDC Laboratories, Inc.

EA03939

410-27780 Chain of Custody

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Eurofins Eaton Analytical, Inc. - Lancaster, PA
2425 New Holland Pike
Lancaster, PA 17601
(717) 656-2300

Sample: EA03939-01
Name: G284-S1

Sampled: 01/20/21 15:30
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/17/21 15:30	

Sample: EA03939-02
Name: G284-S2

Sampled: 01/20/21 15:45
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/17/21 15:45	

Sample: EA03939-03
Name: G284-S3

Sampled: 01/20/21 15:55
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/17/21 15:55	

Sample: EA03939-04
Name: G288-S1

Sampled: 01/21/21 08:00
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/18/21 08:00	

Sample: EA03939-05
Name: G288-S2

Sampled: 01/21/21 08:15
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/18/21 08:15	

SUBCONTRACT ORDER
Transfer Chain of Custody

PDC Laboratories, Inc.

EA03939

SENDING LABORATORY

PDC Laboratories, Inc.
2231 W Altorfer Dr
Peoria, IL 61615
(800) 752-6651

RECEIVING LABORATORY

Eurofins Eaton Analytical, Inc. - Lancaster, PA
2425 New Holland Pike
Lancaster, PA 17601
(717) 656-2300

Sample: EA03939-06
Name: G288-S3

Sampled: 01/21/21 08:30
Matrix: Soil
Preservative: H2SO4, cool <6

Analysis	Due	Expires	Comments
01-TOC-STL	02/02/21 16:00	02/18/21 08:30	

Please email results to Gail Schindler at gschindler@pdclab.com

Date Shipped: 1/26/21 Total # of Containers: 16 Sample Origin (State): IL PO #: 115046

Turn-Around Time Requested ☒ NORMAL ☐ RUSH Date Results Needed: _____

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1/26/21 1204		
		[signature]	1/28/21 10:13

Sample Temperature Upon Receipt	°C
Sample(s) Received on Ice	Y or N
Proper Bottles Received in Good Condition	Y or N
Bottles Filled with Adequate Volume	Y or N
Samples Received Within Hold Time	Y or N
Date/Time Taken From Sample Bottle	Y or N

Login Sample Receipt Checklist

Client: PDC Laboratories, Inc.

Job Number: 410-27780-1

Login Number: 27780

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Rivera, Tatiana

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=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	
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	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	

PDC LABORATORIES, INC.
WWW.PDCLAB.COM

REGULATORY PROGRAM (CIRCLE):	NPDES
MORBCA	RCRA
CCDD	TACO: RES OR IND/COMM

CHAIN OF CUSTODY RECORD

STATE WHERE SAMPLE COLLECTED IL

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT)

1 CLIENT: HANSON PROFESSIONAL SERVICES
ADDRESS: 1525 S 6TH STREET
CITY / STATE / ZIP: SPRINGFIELD IL 62703-6801
CONTACT PERSON: MR RHON HASENYAGER

PROJECT NUMBER: COFFEEN GMF
PROJECT LOCATION:
PURCHASE ORDER #:
PHONE NUMBER:
E-MAIL:
DATE SHIPPED:
SAMPLER (PLEASE PRINT): COLIN WINTER
SAMPLER'S SIGNATURE:

MATRIX TYPES:
WW- WASTEWATER
DW- DRINKING WATER
GW- GROUND WATER
WWSL- SLUDGE
NAS- NON AQUEOUS SOLID
LCHT-LEACHATE
OIL-OIL
SO-SOIL
SOL-SOLID

3 ANALYSIS REQUESTED

4 (FOR LAB USE ONLY)
LOGIN # EA03939-06
LOGGED BY: DCW
CLIENT: HANSON PROFESSIONAL SERVICES
PROJECT: HANSON VISTRA COFFEEN GMF SOIL
PRJ. MGR.: GJ SCHINDLER

2 SAMPLE DESCRIPTION (UNIQUE DESCRIPTION AS IT WILL APPEAR ON THE ANALYTICAL REPORT)	DATE COLLECTED	TIME COLLECTED	SAMPLE TYPE GRAB	SAMPLE TYPE COMP	MATRIX TYPE	BOTTLE COUNT	PRES CODE (CLIENT PROVIDED)	SB, AS, BA, BE, B, CD, CA, CR,	CO, FE, PB, LI, MG, MN, MO, K	SE, NA, S, TL, CL, F, SO4, TN	FE OXIDE, MN OXIDE	RAD 226/228	TOC	CEC	REMARKS
G284 - S1	1/20/21	3:30PM		X	SO	2									
G284 - S2	1/20/21	3:45PM		X	SO	3									
G284 - S3	1/20/21	3:55PM		X	SO	2									
G288 - S1	1/21/20	8AM		X	SO	3									
G288 - S2	1/21/20	8:15AM		X	SO	3									
G288 - S3	1/21/20	8:30AM		X	SO	1									

CHEMICAL PRESERVATION CODES: 1 – HCL | 2 – H2SO4 | 3 – HNO3 | 4 – NAOH | 5 – NA2S2O3 | 6 – UNPRESERVED | 7 – OTHER

5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) NORMAL RUSH
(RUSH TAT IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE)
DATE RESULTS NEEDED:
RUSH RESULTS VIA (PLEASE CIRCLE) EMAIL PHONE
EMAIL IF DIFFERENT FROM ABOVE:
PHONE # IF DIFFERENT FROM ABOVE:

6 *I understand that by initialing this box I give the lab permission to proceed with analysis, even though it may not meet all sample conformance requirements as defined in the receiving facility's Sample Acceptance Policy and the data will be qualified. Qualified data may NOT be acceptable to report to all regulatory authorities.*
PROCEED WITH ANALYSIS AND QUALIFY RESULTS: (INITIALS) _____

7	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	1/22/21	10:30AM		1-22-21	10:30
RELINQUISHED BY: (SIGNATURE)	1-22-21	14:00	RECEIVED BY: (SIGNATURE)		
RELINQUISHED BY: (SIGNATURE)			RECEIVED BY: (SIGNATURE) Gail Schindler	1-22-21	1400

8 COMMENTS: (FOR LAB USE ONLY)

SAMPLE TEMPERATURE UPON RECEIPT 4.7 °C
CHILL PROCESS STARTED PRIOR TO RECEIPT Y OR N
SAMPLE(S) RECEIVED ON ICE Y OR N
SAMPLE ACCEPTANCE NONCONFORMANT REPORT IS NEEDED Y OR N
DATE AND TIME TAKEN FROM SAMPLE BOTTLE _____

September 15, 2021

Michael Healy
SiREM
130 Stone Road West
Guelph, Ontario, Canada N1G 3Z2

RE: Report of Findings, Measurement of AVS
Client ID: Coffeen GMF MNA
PRIMA ID: Sirem 08312021-Coffeen GMF

Dear Mr. Healy:

This letter report describes the results of analyses conducted on two soil samples. Each soil was analyzed for acid volatile sulfide (AVS). Results are reported herein.

Sample Receipt and Preparation

Samples were received on August 31, 2021. The samples were placed in an anaerobic glovebox upon receipt. All sample preparation was conducted in the glove box.

Procedures

AVS was measured via sequential extraction of soil based on methods provided by Microseeps, Inc. In order to minimize exposure of the soil or extraction fluid to oxygen, the soil samples were transferred to the extraction vessel while in the glove box and the extractions were carried out on the bench top under a flow of nitrogen. A brief description of the extraction procedure is provided below.

WAS-Fe. Approximately 10 g of soil is extracted with 1 N hydrochloric acid (HCl) for 30 minutes at room temperature (approximately 20° C), after which an aliquot of the HCl is withdrawn and analyzed for ferrous iron and total iron colorimetrically using a Hach DR2800 spectrophotometer and appropriate Hach test kit reagents. Dilutions are made as needed using deoxygenated, deionized (DO/DI) water.

AVS. Hydrogen sulfide generated during the WAS extraction step is collected in a trap filled with 1.25 N sodium hydroxide (NaOH). After collection of the WAS Fe sample, concentrated HCl is added to the soil and the mixture is heated for 30 minutes. The concentration of sulfide in trap is then measured using the methylene blue method via a

Hach DR2800 spectrophotometer and appropriate Hach test kit reagents. Dilutions are made as needed using DO/DI water.

Results

The amount of AVS in each sample is shown in **Table 1** (attached). QC results are given in **Table 2** (attached).

If you have any questions regarding these results, please give me a call at 916-939-7300. Thank you for the opportunity to be of service.

Sincerely,
PRIMA Environmental, Inc.

Cindy G. Schreier, Ph.D.
President

Attachments

Table 1. AVS Results.

Sample	AVS, mg/kg
SB-200-(14-15, 15-18)	0.17
SB-215-(23-24, 24-24.5)	< 0.19

Table 2. QC Results for AVS.

Sample ID	Result	Units
Blank *		
AVS	< 0.025	mg/L
FeS standard		
Sulfide concentration	365	g/kg
AVS	378	g/kg
% Recovered as AVS	104	%

* A blank was run in the absence of a solid material. Therefore, values are concentrations in the extraction fluids or traps.

5070 Robert J Mathews Parkway, Suite 300
El Dorado Hills, CA 95762
916-939-7300
www.primaenvironmental.com

Sample Receipt Summary

Date/Time: 8/31/21 10:40 AM

Client/Company: SiRem - AVS 08312021

Project: Coffeen GMF

	Yes	No	N/A
Custody seals intact?	☐	☐	☒
Chain of custody Present?	☒	☐	☐

If no, list number of samples and Sample ID

Ice present?	☒ Blue ice	☐	☐
If no, what is temperature? _____			
Samples in good condition?	☐	☐	☐

If no, explain:
jars in tact, but no tape around lids.
Lid for SB-215 (23-24, 24-24.5) loss loose.

Do sample IDs on containers match IDs on COC?	☒	☐	☐

If no, explain:

Other Comments:
Store in glove box

PRIMA ENVIRONMENTAL INC.
Mathews Parkway, Suite 300 El Dorado Hills, CA 95762
(916) 939-7300; (916) 939-7398 Fax
www.primaenvironmental.com

CHAIN of CUSTODY

Project Manager:	Michael Healey	Phone:	(519) 822-2265
Project Name:	Coffeen GMF MNA	Fax:	(519) 822-3151
Job Number:		Email:	mhealey@siremlab.com
Sampler Signature:		TAT:	1 week

SAMPLE ID	Date	Time	Matrix	# Containers	Analysis: Acid Volatile Sulfide									Comments
SB-200-(14-15,15-18)	30-Aug-21	2:30	S	1	X									
SB-215-(23-24,24-24.5)	30-Aug-21	2:45	S	1	X									

Special Instructions	Relinquished by:		Received by:
	Company SiREM	Date 30Aug21	Company
	Printed Name Rachel Hallman	Time 3:00 pm.	Printed Name
	Signature		Signature
	Relinquished by:		Received by:
	Company	Date 8/31/21	Company PRIMA
	Printed Name	Time 10:40	Printed Name Molly Scott
	Signature		Signature

Matrix key: S - soil/sediment; W - water; OT - other

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

16-November-2021

SiREM Laboratory
Attn : Michael Healey

130 Stone Road W
Guelph, ON
N1G 3Z2, Canada

Phone: 519-822-2265
Fax:519-822-3151

Date Rec. : 31 August 2021
LR Report: **CA19059-AUG21**
Reference: Project Name: Coffeen GMF MNA, PO# 800003210A

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: SB-200-(14-15,15-18)	6: SB-215-(23-24,24-24.5)
Sample Date & Time					30-Aug-21 14:30	30-Aug-21 14:45
Ag [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	< 0.5	< 0.5
Al [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	21000	22000
As [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	3.1	7.9
Ba [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	205	219
Be [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	0.42	0.45
Bi [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	< 0.09	< 0.09
Ca [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	59000	63000
Cd [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	0.17	0.17
Co [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	4	4
Cr [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	144	124
Cu [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	10	8.0
Fe [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	16000	16000
K [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	11000	12000
Li [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	8.8	7.1
Mg [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	26000	25000
Mn [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	403	364
Mo [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	1.5	1.1
Na [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	5200	4900
Ni [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	14	10
P [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	320	320
Pb [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	10	11
Sb [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	< 0.8	< 0.8
Se [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	< 0.7	< 0.7
Sn [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	< 6	< 6
Sr [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	102	90

OnLine LIMS

0002713594

Data reported represents the sample submitted to SGS. Reproduction of this analytical report in full or in part is prohibited without prior written approval. Please refer to SGS General Conditions of Services located at https://www.sgs.ca/en/terms-and-conditions (Printed copies are available upon request.)
Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples.
SGS Canada Inc. Environment-Health & Safety statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

LR Report : **CA19059-AUG21**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: SB-200-(14-15,15-18)	6: SB-215-(23-24,24-24.5)
Ti [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	955	374
Tl [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	0.18	0.20
U [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	0.65	0.52
V [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	20	19
Y [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	8.76	8.52
Zn [µg/g]	29-Sep-21	13:16	16-Nov-21	08:46	31	30
C [%]	14-Sep-21	19:33	15-Sep-21	09:28	3.17	2.84
S [%]	14-Sep-21	19:33	15-Sep-21	09:28	0.095	0.006
TOC [%]	15-Sep-21	09:51	16-Sep-21	15:24	0.531	0.566
Sulphide [%]	16-Sep-21	17:28	17-Sep-21	09:35	0.08	< 0.04

Catharine Arnold

CHARTERED CATHARINE ARNOLD CHEMIST

Catharine Arnold, B.Sc., C.Chem
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0002713594

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Test method information available upon request. "Temperature Upon Receipt" is representative of the whole shipment and may not reflect the temperature of individual samples. SGS Canada Inc. Environment-Health & Safety statement of conformity decision rule does not consider uncertainty when analytical results are compared to a specified standard or regulation.

Attachment F
X-Ray Diffraction Analytical Data

Quantitative X-Ray Diffraction by Rietveld Refinement

Report Prepared for:	*Environmental Services*
Project Number/ LIMS No.	*Custom XRD/MI4508-SEP21*
Sample Receipt:	*September 9, 2021*
Sample Analysis:	*September 24, 2021*
Reporting Date:	*October 22, 2021*

Instrument:	BRUKER AXS D8 Advance Diffractometer
Test Conditions:	Co radiation, 35 kV, 40 mA Regular Scanning: Step: 0.02°, Step time: 1s, 2θ range: 3-80°
Interpretations :	PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.
Detection Limit :	0.5-2%. Strongly dependent on crystallinity.

Contents:

1) Method Summary
2) Quantitative XRD Results
3) XRD Pattern(s)

Kim Gibbs, H.B.Sc., P.Geo.
Senior Mineralogist

Huyun Zhou, Ph.D., P.Geo.
Senior Mineralogist

ACCREDITATION: SGS Minerals Services Lakefield is accredited to the requirements of ISO/IEC 17025 for specific tests as listed on our scope of accreditation, including geochemical, mineralogical and trade mineral tests. To view a list of the accredited methods, please visit the following website and search SGS Canada - Minerals Services - Lakefield: http://palcan.scc.ca/SpecsSearch/GLSearchForm.do.

Method Summary

The Rietveld Method of Mineral Identification by XRD (ME-LR-MIN-MET-MN-D05) method used by SGS Minerals Services is accredited to the requirements of ISO/IEC 17025.

Mineral Identification and Interpretation:

Mineral identification and interpretation involves matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards have been added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Mineral or compound identification and quantitative analysis results should be accompanied by supporting chemical assay data or other additional tests.

Quantitative Rietveld Analysis:

Quantitative Rietveld Analysis is performed by using Topas 4.2 (Bruker AXS), a graphics based profile analysis program built around a non-linear least squares fitting system, to determine the amount of different phases present in a multicomponent sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental and specimen factors. Unlike other peak intensity-based methods, the Rietveld method uses a least squares approach to refine a theoretical line profile until it matches the obtained experimental patterns.

Rietveld refinement is completed with a set of minerals specifically identified for the sample. Zero values indicate that the mineral was included in the refinement calculations, but the calculated concentration was less than 0.05wt%. Minerals not identified by the analyst are not included in refinement calculations for specific samples and are indicated with a dash.

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WARNING: The sample(s) to which the findings recorded herein (the "Findings") relate was(were) drawn and / or provided by the Client or by a third party acting at the Client's direction. The Findings constitute no warranty of the sample's representativeness of any goods and strictly relate to the sample(s). The Company accepts no liability with regard to the origin or source from which the sample(s) is/are said to be extracted.

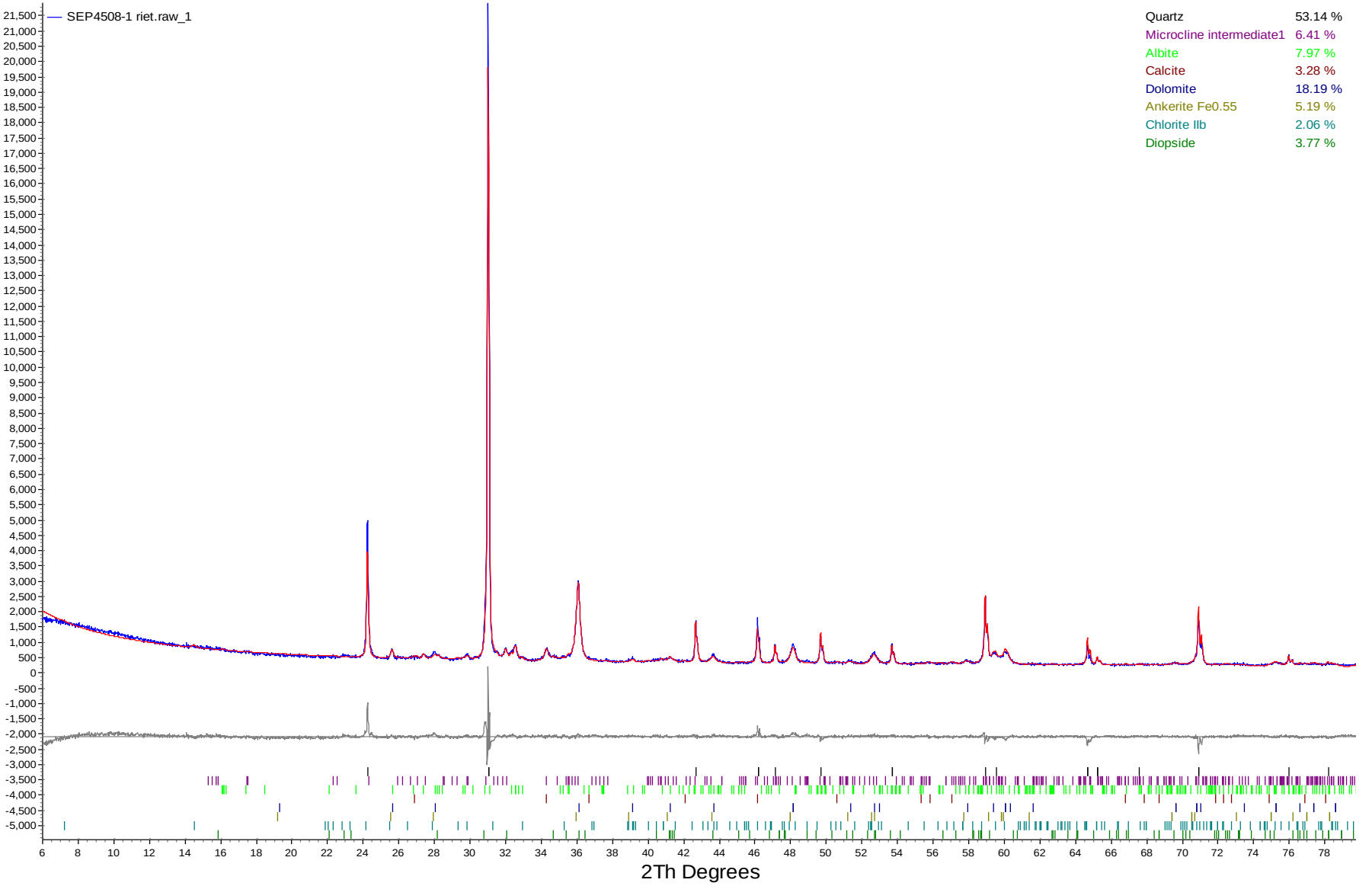
Summary of Rietveld Quantitative Analysis X-Ray Diffraction Results

Mineral/Compound	SB-200-(14-15,15-18) SEP4508-01 (wt %)	SB-215-(23-24,24-24.5) SEP4508-02 (wt %)
Quartz	53.1	58.3
Microcline	6.4	6.2
Albite	8.0	9.0
Calcite	3.3	4.5
Dolomite	18.2	12.9
Ankerite	5.2	4.3
Chlorite	2.1	0.8
Diopside	3.8	4.1
TOTAL	100	100

The weight percent quantities indicated have been normalized to a sum of 100%. The quantity of amorphous material has not been determined.

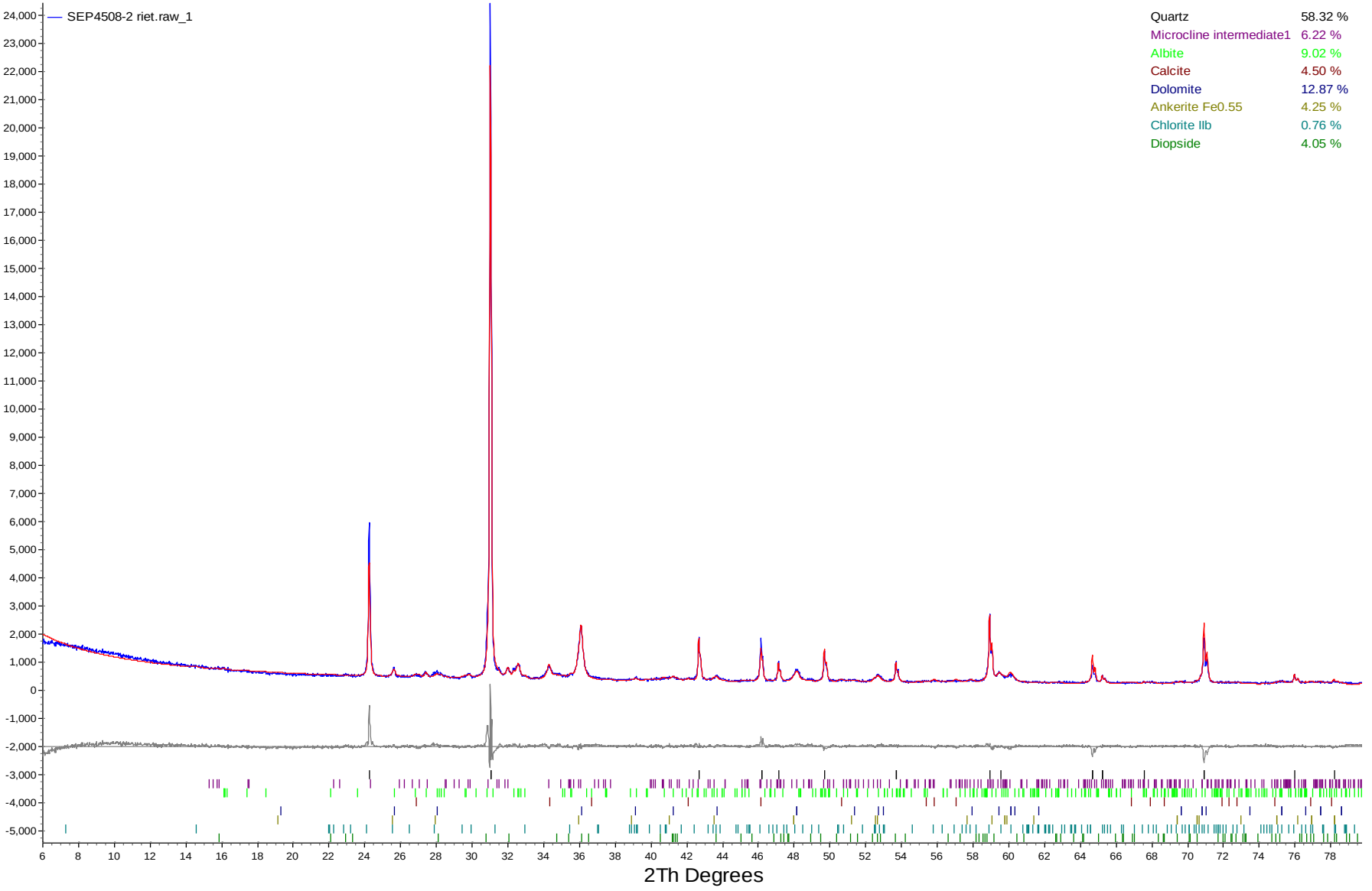
Mineral/Compound	Formula
Quartz	SiO_2
Microcline	$KAlSi_3O_8$
Albite	$NaAlSi_3O_8$
Calcite	$CaCO_3$
Dolomite	$CaMg(CO_3)_2$
Ankerite	$CaFe(CO_3)_2$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Diopside	$CaMgSi_2O_6$

SB-200-(14-15,15-18)



Quartz	53.14 %
Microcline intermediate1	6.41 %
Albite	7.97 %
Calcite	3.28 %
Dolomite	18.19 %
Ankerite Fe0.55	5.19 %
Chlorite IIb	2.06 %
Diopside	3.77 %

SB-215-(23-24,24-24.5)



Quartz	58.32 %
Microcline intermediate1	6.22 %
Albite	9.02 %
Calcite	4.50 %
Dolomite	12.87 %
Ankerite Fe0.55	4.25 %
Chlorite IIb	0.76 %
Diopside	4.05 %

Attachment G
Site Evaluation Aqueous Phase Data

Attachment G. Site Evaluation Aqueous Phase Data
Geochemical Conceptual Site Model
Coffeen GMF Recycle Pond
Coffeen Power Plant
Coffeen, IL

HSU	Location	Well Type	Date	Parameter	Unit	Result
DA	G275D	C	2021/03/30	pH (field)	SU	7.1
DA	G275D	C	2021/04/22	pH (field)	SU	7.1
DA	G275D	C	2021/05/05	pH (field)	SU	7.0
DA	G275D	C	2021/05/18	pH (field)	SU	7.1
DA	G275D	C	2021/07/28	pH (field)	SU	7.1
DA	G275D	C	2023/06/08	pH (field)	SU	7.3
DA	G275D	C	2023/08/14	pH (field)	SU	7.5
DA	G275D	C	2023/12/07	pH (field)	SU	7.0
DA	G275D	C	2021/03/30	Oxidation Reduction Potential	mV	-61.2
DA	G275D	C	2021/04/22	Oxidation Reduction Potential	mV	-53.3
DA	G275D	C	2021/05/05	Oxidation Reduction Potential	mV	52.9
DA	G275D	C	2021/05/18	Oxidation Reduction Potential	mV	-72.0
DA	G275D	C	2021/07/28	Oxidation Reduction Potential	mV	-132
DA	G275D	C	2023/06/08	Oxidation Reduction Potential	mV	-116
DA	G275D	C	2023/08/14	Oxidation Reduction Potential	mV	-132
DA	G275D	C	2023/12/07	Oxidation Reduction Potential	mV	43.0
DA	G275D	C	2021/03/30	Eh	V	0.13
DA	G275D	C	2021/04/22	Eh	V	0.14
DA	G275D	C	2021/05/05	Eh	V	0.25
DA	G275D	C	2021/05/18	Eh	V	0.12
DA	G275D	C	2021/07/28	Eh	V	0.059
DA	G275D	C	2023/06/08	Eh	V	0.078
DA	G275D	C	2023/08/14	Eh	V	0.063
DA	G275D	C	2023/12/07	Eh	V	0.24
DA	G275D	C	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	620
DA	G275D	C	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	600
DA	G275D	C	2021/05/05	Alkalinity, bicarbonate	mg/L CaCO3	590
DA	G275D	C	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	600
DA	G275D	C	2021/07/28	Alkalinity, bicarbonate	mg/L CaCO3	640
DA	G275D	C	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	750
DA	G275D	C	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	770
DA	G275D	C	2023/12/07	Alkalinity, bicarbonate	mg/L CaCO3	742
DA	G275D	C	2021/03/30	Arsenic, total	mg/L	0.00530
DA	G275D	C	2021/04/22	Arsenic, total	mg/L	0.00330
DA	G275D	C	2021/05/05	Arsenic, total	mg/L	0.00740
DA	G275D	C	2021/05/18	Arsenic, total	mg/L	0.00930
DA	G275D	C	2021/07/28	Arsenic, total	mg/L	0.00890
DA	G275D	C	2023/06/08	Arsenic, total	mg/L	0.0170
DA	G275D	C	2023/08/14	Arsenic, total	mg/L	0.0237
DA	G275D	C	2023/12/07	Arsenic, total	mg/L	0.0182
DA	G275D	C	2021/03/30	Barium, total	mg/L	0.430
DA	G275D	C	2021/04/22	Barium, total	mg/L	0.360
DA	G275D	C	2021/05/05	Barium, total	mg/L	0.340
DA	G275D	C	2021/05/18	Barium, total	mg/L	0.310
DA	G275D	C	2021/07/28	Barium, total	mg/L	0.330
DA	G275D	C	2023/06/08	Barium, total	mg/L	0.450
DA	G275D	C	2023/08/14	Barium, total	mg/L	0.506
DA	G275D	C	2023/12/07	Barium, total	mg/L	0.676
DA	G275D	C	2021/03/30	Calcium, total	mg/L	170
DA	G275D	C	2021/04/22	Calcium, total	mg/L	170
DA	G275D	C	2021/05/05	Calcium, total	mg/L	160
DA	G275D	C	2021/05/18	Calcium, total	mg/L	170
DA	G275D	C	2021/07/28	Calcium, total	mg/L	170
DA	G275D	C	2023/06/08	Calcium, total	mg/L	150
DA	G275D	C	2023/08/14	Calcium, total	mg/L	157

DA	G275D	C	2023/12/07	Calcium, total	mg/L	155
DA	G275D	C	2021/03/30	Chloride, total	mg/L	32.0
DA	G275D	C	2021/04/22	Chloride, total	mg/L	34.0
DA	G275D	C	2021/05/05	Chloride, total	mg/L	51.0
DA	G275D	C	2021/05/18	Chloride, total	mg/L	39.0
DA	G275D	C	2021/07/28	Chloride, total	mg/L	38.0
DA	G275D	C	2023/06/08	Chloride, total	mg/L	23.0
DA	G275D	C	2023/08/14	Chloride, total	mg/L	20.0
DA	G275D	C	2023/12/07	Chloride, total	mg/L	19.0
DA	G275D	C	2023/06/08	Ferrous Iron, dissolved	mg/L	1.10
DA	G275D	C	2023/06/08	Iron, dissolved	mg/L	1.00
DA	G275D	C	2023/08/14	Iron, dissolved	mg/L	2.85
DA	G275D	C	2021/03/30	Magnesium, total	mg/L	73.0
DA	G275D	C	2021/04/22	Magnesium, total	mg/L	70.0
DA	G275D	C	2021/05/05	Magnesium, total	mg/L	68.0
DA	G275D	C	2021/05/18	Magnesium, total	mg/L	66.0
DA	G275D	C	2021/07/28	Magnesium, total	mg/L	66.0
DA	G275D	C	2023/06/08	Magnesium, total	mg/L	61.0
DA	G275D	C	2023/08/14	Magnesium, total	mg/L	61.8
DA	G275D	C	2023/12/07	Magnesium, total	mg/L	63.4
DA	G275D	C	2023/06/08	Manganese, dissolved	mg/L	0.730
DA	G275D	C	2023/08/14	Manganese, dissolved	mg/L	0.835
DA	G275D	C	2023/08/14	Phosphate, dissolved	mg/L	0.292
DA	G275D	C	2021/03/30	Potassium, total	mg/L	5.40
DA	G275D	C	2021/04/22	Potassium, total	mg/L	5.50
DA	G275D	C	2021/05/05	Potassium, total	mg/L	5.00
DA	G275D	C	2021/05/18	Potassium, total	mg/L	4.70
DA	G275D	C	2021/07/28	Potassium, total	mg/L	4.00
DA	G275D	C	2023/06/08	Potassium, total	mg/L	2.50
DA	G275D	C	2023/08/14	Potassium, total	mg/L	3.00
DA	G275D	C	2023/12/07	Potassium, total	mg/L	3.14
DA	G275D	C	2023/06/08	Silicon, dissolved	mg/L	8.10
DA	G275D	C	2023/08/14	Silicon, dissolved	mg/L	7.29
DA	G275D	C	2021/03/30	Sodium, total	mg/L	96.0
DA	G275D	C	2021/04/22	Sodium, total	mg/L	100
DA	G275D	C	2021/05/05	Sodium, total	mg/L	110
DA	G275D	C	2021/05/18	Sodium, total	mg/L	110
DA	G275D	C	2021/07/28	Sodium, total	mg/L	110
DA	G275D	C	2023/06/08	Sodium, total	mg/L	110
DA	G275D	C	2023/08/14	Sodium, total	mg/L	119
DA	G275D	C	2023/12/07	Sodium, total	mg/L	128
DA	G275D	C	2021/03/30	Sulfate, total	mg/L	270
DA	G275D	C	2021/04/22	Sulfate, total	mg/L	260
DA	G275D	C	2021/05/05	Sulfate, total	mg/L	260
DA	G275D	C	2021/05/18	Sulfate, total	mg/L	240
DA	G275D	C	2021/07/28	Sulfate, total	mg/L	210
DA	G275D	C	2023/06/08	Sulfate, total	mg/L	99.0
DA	G275D	C	2023/08/14	Sulfate, total	mg/L	123
DA	G275D	C	2023/12/07	Sulfate, total	mg/L	116
DA	G275D	C	2021/03/30	Temperature (Celsius)	degrees C	18.1
DA	G275D	C	2021/04/22	Temperature (Celsius)	degrees C	14.6
DA	G275D	C	2021/05/05	Temperature (Celsius)	degrees C	18.3
DA	G275D	C	2021/05/18	Temperature (Celsius)	degrees C	17.5
DA	G275D	C	2021/07/28	Temperature (Celsius)	degrees C	21.4
DA	G275D	C	2023/06/08	Temperature (Celsius)	degrees C	17.0
DA	G275D	C	2023/08/14	Temperature (Celsius)	degrees C	15.6
DA	G275D	C	2023/12/07	Temperature (Celsius)	degrees C	12.9
DA	G275D	C	2021/03/30	Total Dissolved Solids	mg/L	1,000
DA	G275D	C	2021/04/22	Total Dissolved Solids	mg/L	1,000
DA	G275D	C	2021/05/05	Total Dissolved Solids	mg/L	910
DA	G275D	C	2021/05/18	Total Dissolved Solids	mg/L	1,100
DA	G275D	C	2021/07/28	Total Dissolved Solids	mg/L	960

DA	G275D	C	2023/06/08	Total Dissolved Solids	mg/L	980
DA	G275D	C	2023/08/14	Total Dissolved Solids	mg/L	1,000
DA	G275D	C	2023/12/07	Total Dissolved Solids	mg/L	840
LCU	G283	C	2021/03/31	pH (field)	SU	6.9
LCU	G283	C	2021/04/22	pH (field)	SU	7.0
LCU	G283	C	2021/05/06	pH (field)	SU	7.1
LCU	G283	C	2021/05/18	pH (field)	SU	7.1
LCU	G283	C	2021/06/15	pH (field)	SU	7.0
LCU	G283	C	2021/06/29	pH (field)	SU	7.0
LCU	G283	C	2021/07/13	pH (field)	SU	7.1
LCU	G283	C	2021/07/27	pH (field)	SU	7.1
LCU	G283	C	2023/06/08	pH (field)	SU	7.1
LCU	G283	C	2023/08/15	pH (field)	SU	7.1
LCU	G283	C	2023/11/20	pH (field)	SU	7.0
LCU	G283	C	2021/03/31	Oxidation Reduction Potential	mV	-16.1
LCU	G283	C	2021/04/22	Oxidation Reduction Potential	mV	-59.5
LCU	G283	C	2021/05/06	Oxidation Reduction Potential	mV	-21.9
LCU	G283	C	2021/05/18	Oxidation Reduction Potential	mV	-65.3
LCU	G283	C	2021/06/15	Oxidation Reduction Potential	mV	-55.9
LCU	G283	C	2021/06/29	Oxidation Reduction Potential	mV	-80.0
LCU	G283	C	2021/07/13	Oxidation Reduction Potential	mV	-86.0
LCU	G283	C	2021/07/27	Oxidation Reduction Potential	mV	-74.1
LCU	G283	C	2023/06/08	Oxidation Reduction Potential	mV	-53.5
LCU	G283	C	2023/08/15	Oxidation Reduction Potential	mV	-71.0
LCU	G283	C	2023/11/20	Oxidation Reduction Potential	mV	88.0
LCU	G283	C	2021/03/31	Eh	V	0.18
LCU	G283	C	2021/04/22	Eh	V	0.14
LCU	G283	C	2021/05/06	Eh	V	0.18
LCU	G283	C	2021/05/18	Eh	V	0.13
LCU	G283	C	2021/06/15	Eh	V	0.14
LCU	G283	C	2021/06/29	Eh	V	0.11
LCU	G283	C	2021/07/13	Eh	V	0.11
LCU	G283	C	2021/07/27	Eh	V	0.12
LCU	G283	C	2023/06/08	Eh	V	0.14
LCU	G283	C	2023/08/15	Eh	V	0.12
LCU	G283	C	2023/11/20	Eh	V	0.29
LCU	G283	C	2021/03/31	Alkalinity, bicarbonate	mg/L CaCO3	450
LCU	G283	C	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	420
LCU	G283	C	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	400
LCU	G283	C	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	420
LCU	G283	C	2021/06/15	Alkalinity, bicarbonate	mg/L CaCO3	440
LCU	G283	C	2021/06/29	Alkalinity, bicarbonate	mg/L CaCO3	400
LCU	G283	C	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	410
LCU	G283	C	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	420
LCU	G283	C	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	410
LCU	G283	C	2023/08/15	Alkalinity, bicarbonate	mg/L CaCO3	438
LCU	G283	C	2023/11/20	Alkalinity, bicarbonate	mg/L CaCO3	422
LCU	G283	C	2021/03/31	Arsenic, total	mg/L	0.00160
LCU	G283	C	2021/04/22	Arsenic, total	mg/L	<0.00022
LCU	G283	C	2021/05/06	Arsenic, total	mg/L	0.00100
LCU	G283	C	2021/05/18	Arsenic, total	mg/L	0.00120
LCU	G283	C	2021/06/15	Arsenic, total	mg/L	0.00100
LCU	G283	C	2021/06/29	Arsenic, total	mg/L	<0.00022
LCU	G283	C	2021/07/13	Arsenic, total	mg/L	<0.00022
LCU	G283	C	2021/07/27	Arsenic, total	mg/L	<0.00022
LCU	G283	C	2023/06/08	Arsenic, total	mg/L	0.00110
LCU	G283	C	2023/08/15	Arsenic, total	mg/L	<0.0004
LCU	G283	C	2023/11/20	Arsenic, total	mg/L	0.000500
LCU	G283	C	2021/03/31	Barium, total	mg/L	0.160
LCU	G283	C	2021/04/22	Barium, total	mg/L	0.160
LCU	G283	C	2021/05/06	Barium, total	mg/L	0.170
LCU	G283	C	2021/05/18	Barium, total	mg/L	0.160

LCU	G283	C	2021/06/15	Barium, total	mg/L	0.170
LCU	G283	C	2021/06/29	Barium, total	mg/L	0.170
LCU	G283	C	2021/07/13	Barium, total	mg/L	0.170
LCU	G283	C	2021/07/27	Barium, total	mg/L	0.160
LCU	G283	C	2023/06/08	Barium, total	mg/L	0.160
LCU	G283	C	2023/08/15	Barium, total	mg/L	0.174
LCU	G283	C	2023/11/20	Barium, total	mg/L	0.184
LCU	G283	C	2021/03/31	Calcium, total	mg/L	140
LCU	G283	C	2021/04/22	Calcium, total	mg/L	140
LCU	G283	C	2021/05/06	Calcium, total	mg/L	150
LCU	G283	C	2021/05/18	Calcium, total	mg/L	140
LCU	G283	C	2021/06/15	Calcium, total	mg/L	140
LCU	G283	C	2021/06/29	Calcium, total	mg/L	140
LCU	G283	C	2021/07/13	Calcium, total	mg/L	130
LCU	G283	C	2021/07/27	Calcium, total	mg/L	140
LCU	G283	C	2023/06/08	Calcium, total	mg/L	140
LCU	G283	C	2023/08/15	Calcium, total	mg/L	140
LCU	G283	C	2023/11/20	Calcium, total	mg/L	170
LCU	G283	C	2021/03/31	Chloride, total	mg/L	36.0
LCU	G283	C	2021/04/22	Chloride, total	mg/L	41.0
LCU	G283	C	2021/05/06	Chloride, total	mg/L	38.0
LCU	G283	C	2021/05/18	Chloride, total	mg/L	40.0
LCU	G283	C	2021/06/15	Chloride, total	mg/L	38.0
LCU	G283	C	2021/06/29	Chloride, total	mg/L	42.0
LCU	G283	C	2021/07/13	Chloride, total	mg/L	41.0
LCU	G283	C	2021/07/27	Chloride, total	mg/L	39.0
LCU	G283	C	2023/06/08	Chloride, total	mg/L	36.0
LCU	G283	C	2023/08/15	Chloride, total	mg/L	39.0
LCU	G283	C	2023/11/20	Chloride, total	mg/L	41.0
LCU	G283	C	2023/06/08	Ferrous Iron, dissolved	mg/L	2.00
LCU	G283	C	2023/06/08	Iron, dissolved	mg/L	2.90
LCU	G283	C	2023/08/15	Iron, dissolved	mg/L	2.32
LCU	G283	C	2021/03/31	Magnesium, total	mg/L	73.0
LCU	G283	C	2021/04/22	Magnesium, total	mg/L	72.0
LCU	G283	C	2021/05/06	Magnesium, total	mg/L	73.0
LCU	G283	C	2021/05/18	Magnesium, total	mg/L	68.0
LCU	G283	C	2021/06/15	Magnesium, total	mg/L	66.0
LCU	G283	C	2021/06/29	Magnesium, total	mg/L	73.0
LCU	G283	C	2021/07/13	Magnesium, total	mg/L	68.0
LCU	G283	C	2021/07/27	Magnesium, total	mg/L	71.0
LCU	G283	C	2023/06/08	Magnesium, total	mg/L	68.0
LCU	G283	C	2023/08/15	Magnesium, total	mg/L	68.9
LCU	G283	C	2023/11/20	Magnesium, total	mg/L	83.6
LCU	G283	C	2023/06/08	Manganese, dissolved	mg/L	0.180
LCU	G283	C	2023/08/15	Manganese, dissolved	mg/L	0.177
LCU	G283	C	2023/08/15	Phosphate, dissolved	mg/L	0.286
LCU	G283	C	2021/03/31	Potassium, total	mg/L	1.80
LCU	G283	C	2021/04/22	Potassium, total	mg/L	1.30
LCU	G283	C	2021/05/06	Potassium, total	mg/L	1.30
LCU	G283	C	2021/05/18	Potassium, total	mg/L	1.30
LCU	G283	C	2021/06/15	Potassium, total	mg/L	1.20
LCU	G283	C	2021/06/29	Potassium, total	mg/L	1.20
LCU	G283	C	2021/07/13	Potassium, total	mg/L	1.20
LCU	G283	C	2021/07/27	Potassium, total	mg/L	1.20
LCU	G283	C	2023/06/08	Potassium, total	mg/L	1.20
LCU	G283	C	2023/08/15	Potassium, total	mg/L	1.31
LCU	G283	C	2023/11/20	Potassium, total	mg/L	1.57
LCU	G283	C	2023/06/08	Silicon, dissolved	mg/L	9.80
LCU	G283	C	2023/08/15	Silicon, dissolved	mg/L	8.47
LCU	G283	C	2021/03/31	Sodium, total	mg/L	54.0
LCU	G283	C	2021/04/22	Sodium, total	mg/L	55.0
LCU	G283	C	2021/05/06	Sodium, total	mg/L	52.0

LCU	G283	C	2021/05/18	Sodium, total	mg/L	56.0
LCU	G283	C	2021/06/15	Sodium, total	mg/L	51.0
LCU	G283	C	2021/06/29	Sodium, total	mg/L	54.0
LCU	G283	C	2021/07/13	Sodium, total	mg/L	53.0
LCU	G283	C	2021/07/27	Sodium, total	mg/L	55.0
LCU	G283	C	2023/06/08	Sodium, total	mg/L	53.0
LCU	G283	C	2023/08/15	Sodium, total	mg/L	55.4
LCU	G283	C	2023/11/20	Sodium, total	mg/L	63.6
LCU	G283	C	2021/03/31	Sulfate, total	mg/L	250
LCU	G283	C	2021/04/22	Sulfate, total	mg/L	240
LCU	G283	C	2021/05/06	Sulfate, total	mg/L	250
LCU	G283	C	2021/05/18	Sulfate, total	mg/L	240
LCU	G283	C	2021/06/15	Sulfate, total	mg/L	240
LCU	G283	C	2021/06/29	Sulfate, total	mg/L	230
LCU	G283	C	2021/07/13	Sulfate, total	mg/L	250
LCU	G283	C	2021/07/27	Sulfate, total	mg/L	240
LCU	G283	C	2023/06/08	Sulfate, total	mg/L	250
LCU	G283	C	2023/08/15	Sulfate, total	mg/L	250
LCU	G283	C	2023/11/20	Sulfate, total	mg/L	270
LCU	G283	C	2021/03/31	Temperature (Celsius)	degrees C	10.4
LCU	G283	C	2021/04/22	Temperature (Celsius)	degrees C	11.9
LCU	G283	C	2021/05/06	Temperature (Celsius)	degrees C	12.2
LCU	G283	C	2021/05/18	Temperature (Celsius)	degrees C	12.9
LCU	G283	C	2021/06/15	Temperature (Celsius)	degrees C	15.6
LCU	G283	C	2021/06/29	Temperature (Celsius)	degrees C	17.8
LCU	G283	C	2021/07/13	Temperature (Celsius)	degrees C	16.3
LCU	G283	C	2021/07/27	Temperature (Celsius)	degrees C	17.0
LCU	G283	C	2023/06/08	Temperature (Celsius)	degrees C	14.5
LCU	G283	C	2023/08/15	Temperature (Celsius)	degrees C	14.8
LCU	G283	C	2023/11/20	Temperature (Celsius)	degrees C	12.6
LCU	G283	C	2021/03/31	Total Dissolved Solids	mg/L	780
LCU	G283	C	2021/04/22	Total Dissolved Solids	mg/L	870
LCU	G283	C	2021/05/06	Total Dissolved Solids	mg/L	770
LCU	G283	C	2021/05/18	Total Dissolved Solids	mg/L	810
LCU	G283	C	2021/06/15	Total Dissolved Solids	mg/L	770
LCU	G283	C	2021/06/29	Total Dissolved Solids	mg/L	790
LCU	G283	C	2021/07/13	Total Dissolved Solids	mg/L	920
LCU	G283	C	2021/07/27	Total Dissolved Solids	mg/L	820
LCU	G283	C	2023/06/08	Total Dissolved Solids	mg/L	930
LCU	G283	C	2023/08/15	Total Dissolved Solids	mg/L	825
LCU	G283	C	2023/11/20	Total Dissolved Solids	mg/L	840
LCU	G285	C	2021/03/30	pH (field)	SU	6.8
LCU	G285	C	2021/04/22	pH (field)	SU	6.7
LCU	G285	C	2021/05/06	pH (field)	SU	7.7
LCU	G285	C	2021/05/18	pH (field)	SU	6.8
LCU	G285	C	2021/06/15	pH (field)	SU	6.8
LCU	G285	C	2021/06/28	pH (field)	SU	6.9
LCU	G285	C	2021/07/13	pH (field)	SU	6.8
LCU	G285	C	2021/07/27	pH (field)	SU	6.9
LCU	G285	C	2023/06/08	pH (field)	SU	6.8
LCU	G285	C	2023/08/15	pH (field)	SU	6.7
LCU	G285	C	2023/11/20	pH (field)	SU	6.7
LCU	G285	C	2021/03/30	Oxidation Reduction Potential	mV	97.3
LCU	G285	C	2021/04/22	Oxidation Reduction Potential	mV	124
LCU	G285	C	2021/05/06	Oxidation Reduction Potential	mV	76.9
LCU	G285	C	2021/05/18	Oxidation Reduction Potential	mV	55.5
LCU	G285	C	2021/06/15	Oxidation Reduction Potential	mV	32.2
LCU	G285	C	2021/06/28	Oxidation Reduction Potential	mV	16.0
LCU	G285	C	2021/07/13	Oxidation Reduction Potential	mV	3.00
LCU	G285	C	2021/07/27	Oxidation Reduction Potential	mV	-14.4
LCU	G285	C	2023/06/08	Oxidation Reduction Potential	mV	50.6
LCU	G285	C	2023/08/15	Oxidation Reduction Potential	mV	54.0

LCU	G285	C	2023/11/20	Oxidation Reduction Potential	mV	118
LCU	G285	C	2021/03/30	Eh	V	0.29
LCU	G285	C	2021/04/22	Eh	V	0.32
LCU	G285	C	2021/05/06	Eh	V	0.27
LCU	G285	C	2021/05/18	Eh	V	0.25
LCU	G285	C	2021/06/15	Eh	V	0.23
LCU	G285	C	2021/06/28	Eh	V	0.21
LCU	G285	C	2021/07/13	Eh	V	0.20
LCU	G285	C	2021/07/27	Eh	V	0.18
LCU	G285	C	2023/06/08	Eh	V	0.25
LCU	G285	C	2023/08/15	Eh	V	0.25
LCU	G285	C	2023/11/20	Eh	V	0.32
LCU	G285	C	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	590
LCU	G285	C	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	600
LCU	G285	C	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	610
LCU	G285	C	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	640
LCU	G285	C	2021/06/15	Alkalinity, bicarbonate	mg/L CaCO3	600
LCU	G285	C	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	610
LCU	G285	C	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	650
LCU	G285	C	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	650
LCU	G285	C	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	640
LCU	G285	C	2023/08/15	Alkalinity, bicarbonate	mg/L CaCO3	638
LCU	G285	C	2023/11/20	Alkalinity, bicarbonate	mg/L CaCO3	678
LCU	G285	C	2021/03/30	Arsenic, total	mg/L	<0.00022
LCU	G285	C	2021/04/22	Arsenic, total	mg/L	<0.00022
LCU	G285	C	2021/05/06	Arsenic, total	mg/L	<0.00022
LCU	G285	C	2021/05/18	Arsenic, total	mg/L	0.00120
LCU	G285	C	2021/06/15	Arsenic, total	mg/L	0.00110
LCU	G285	C	2021/06/28	Arsenic, total	mg/L	<0.0002
LCU	G285	C	2021/07/13	Arsenic, total	mg/L	0.00140
LCU	G285	C	2021/07/27	Arsenic, total	mg/L	0.00100
LCU	G285	C	2023/06/08	Arsenic, total	mg/L	0.000770
LCU	G285	C	2023/08/15	Arsenic, total	mg/L	<0.0004
LCU	G285	C	2023/11/20	Arsenic, total	mg/L	0.000600
LCU	G285	C	2021/03/30	Barium, total	mg/L	0.0940
LCU	G285	C	2021/04/22	Barium, total	mg/L	0.0910
LCU	G285	C	2021/05/06	Barium, total	mg/L	0.0880
LCU	G285	C	2021/05/18	Barium, total	mg/L	0.0760
LCU	G285	C	2021/06/15	Barium, total	mg/L	0.0760
LCU	G285	C	2021/06/28	Barium, total	mg/L	0.0730
LCU	G285	C	2021/07/13	Barium, total	mg/L	0.0700
LCU	G285	C	2021/07/27	Barium, total	mg/L	0.0650
LCU	G285	C	2023/06/08	Barium, total	mg/L	0.0430
LCU	G285	C	2023/08/15	Barium, total	mg/L	0.0455
LCU	G285	C	2023/11/20	Barium, total	mg/L	0.0452
LCU	G285	C	2021/03/30	Calcium, total	mg/L	210
LCU	G285	C	2021/04/22	Calcium, total	mg/L	240
LCU	G285	C	2021/05/06	Calcium, total	mg/L	260
LCU	G285	C	2021/05/18	Calcium, total	mg/L	250
LCU	G285	C	2021/06/15	Calcium, total	mg/L	280
LCU	G285	C	2021/06/28	Calcium, total	mg/L	250
LCU	G285	C	2021/07/13	Calcium, total	mg/L	250
LCU	G285	C	2021/07/27	Calcium, total	mg/L	270
LCU	G285	C	2023/06/08	Calcium, total	mg/L	270
LCU	G285	C	2023/08/15	Calcium, total	mg/L	272
LCU	G285	C	2023/11/20	Calcium, total	mg/L	313
LCU	G285	C	2021/03/30	Chloride, total	mg/L	80.0
LCU	G285	C	2021/04/22	Chloride, total	mg/L	78.0
LCU	G285	C	2021/05/06	Chloride, total	mg/L	65.0
LCU	G285	C	2021/05/18	Chloride, total	mg/L	63.0
LCU	G285	C	2021/06/15	Chloride, total	mg/L	57.0
LCU	G285	C	2021/06/28	Chloride, total	mg/L	56.0

LCU	G285	C	2021/07/13	Chloride, total	mg/L	60.0
LCU	G285	C	2021/07/27	Chloride, total	mg/L	47.0
LCU	G285	C	2023/06/08	Chloride, total	mg/L	25.0
LCU	G285	C	2023/08/15	Chloride, total	mg/L	24.0
LCU	G285	C	2023/11/20	Chloride, total	mg/L	22.0
LCU	G285	C	2023/06/08	Ferrous Iron, dissolved	mg/L	0.170
LCU	G285	C	2023/06/08	Iron, dissolved	mg/L	0.100
LCU	G285	C	2023/08/15	Iron, dissolved	mg/L	0.0750
LCU	G285	C	2021/03/30	Magnesium, total	mg/L	61.0
LCU	G285	C	2021/04/22	Magnesium, total	mg/L	75.0
LCU	G285	C	2021/05/06	Magnesium, total	mg/L	78.0
LCU	G285	C	2021/05/18	Magnesium, total	mg/L	78.0
LCU	G285	C	2021/06/15	Magnesium, total	mg/L	87.0
LCU	G285	C	2021/06/28	Magnesium, total	mg/L	82.0
LCU	G285	C	2021/07/13	Magnesium, total	mg/L	84.0
LCU	G285	C	2021/07/27	Magnesium, total	mg/L	88.0
LCU	G285	C	2023/06/08	Magnesium, total	mg/L	90.0
LCU	G285	C	2023/08/15	Magnesium, total	mg/L	92.5
LCU	G285	C	2023/11/20	Magnesium, total	mg/L	106
LCU	G285	C	2023/06/08	Manganese, dissolved	mg/L	0.800
LCU	G285	C	2023/08/15	Manganese, dissolved	mg/L	0.865
LCU	G285	C	2023/08/15	Phosphate, dissolved	mg/L	<0.005
LCU	G285	C	2021/03/30	Potassium, total	mg/L	4.70
LCU	G285	C	2021/04/22	Potassium, total	mg/L	4.40
LCU	G285	C	2021/05/06	Potassium, total	mg/L	3.70
LCU	G285	C	2021/05/18	Potassium, total	mg/L	3.60
LCU	G285	C	2021/06/15	Potassium, total	mg/L	3.40
LCU	G285	C	2021/06/28	Potassium, total	mg/L	3.10
LCU	G285	C	2021/07/13	Potassium, total	mg/L	3.00
LCU	G285	C	2021/07/27	Potassium, total	mg/L	3.10
LCU	G285	C	2023/06/08	Potassium, total	mg/L	2.00
LCU	G285	C	2023/08/15	Potassium, total	mg/L	2.38
LCU	G285	C	2023/11/20	Potassium, total	mg/L	2.52
LCU	G285	C	2023/06/08	Silicon, dissolved	mg/L	5.10
LCU	G285	C	2023/08/15	Silicon, dissolved	mg/L	4.61
LCU	G285	C	2021/03/30	Sodium, total	mg/L	190
LCU	G285	C	2021/04/22	Sodium, total	mg/L	200
LCU	G285	C	2021/05/06	Sodium, total	mg/L	180
LCU	G285	C	2021/05/18	Sodium, total	mg/L	170
LCU	G285	C	2021/06/15	Sodium, total	mg/L	160
LCU	G285	C	2021/06/28	Sodium, total	mg/L	150
LCU	G285	C	2021/07/13	Sodium, total	mg/L	140
LCU	G285	C	2021/07/27	Sodium, total	mg/L	140
LCU	G285	C	2023/06/08	Sodium, total	mg/L	130
LCU	G285	C	2023/08/15	Sodium, total	mg/L	128
LCU	G285	C	2023/11/20	Sodium, total	mg/L	128
LCU	G285	C	2021/03/30	Sulfate, total	mg/L	490
LCU	G285	C	2021/04/22	Sulfate, total	mg/L	550
LCU	G285	C	2021/05/06	Sulfate, total	mg/L	580
LCU	G285	C	2021/05/18	Sulfate, total	mg/L	580
LCU	G285	C	2021/06/15	Sulfate, total	mg/L	570
LCU	G285	C	2021/06/28	Sulfate, total	mg/L	620
LCU	G285	C	2021/07/13	Sulfate, total	mg/L	610
LCU	G285	C	2021/07/27	Sulfate, total	mg/L	560
LCU	G285	C	2023/06/08	Sulfate, total	mg/L	640
LCU	G285	C	2023/08/15	Sulfate, total	mg/L	586
LCU	G285	C	2023/11/20	Sulfate, total	mg/L	708
LCU	G285	C	2021/03/30	Temperature (Celsius)	degrees C	12.6
LCU	G285	C	2021/04/22	Temperature (Celsius)	degrees C	12.2
LCU	G285	C	2021/05/06	Temperature (Celsius)	degrees C	13.0
LCU	G285	C	2021/05/18	Temperature (Celsius)	degrees C	14.5
LCU	G285	C	2021/06/15	Temperature (Celsius)	degrees C	16.7

LCU	G285	C	2021/06/28	Temperature (Celsius)	degrees C	17.4
LCU	G285	C	2021/07/13	Temperature (Celsius)	degrees C	16.6
LCU	G285	C	2021/07/27	Temperature (Celsius)	degrees C	17.8
LCU	G285	C	2023/06/08	Temperature (Celsius)	degrees C	15.6
LCU	G285	C	2023/08/15	Temperature (Celsius)	degrees C	14.3
LCU	G285	C	2023/11/20	Temperature (Celsius)	degrees C	12.0
LCU	G285	C	2021/03/30	Total Dissolved Solids	mg/L	1,400
LCU	G285	C	2021/04/22	Total Dissolved Solids	mg/L	1,500
LCU	G285	C	2021/05/06	Total Dissolved Solids	mg/L	1,500
LCU	G285	C	2021/05/18	Total Dissolved Solids	mg/L	1,600
LCU	G285	C	2021/06/15	Total Dissolved Solids	mg/L	1,500
LCU	G285	C	2021/06/28	Total Dissolved Solids	mg/L	1,400
LCU	G285	C	2021/07/13	Total Dissolved Solids	mg/L	1,700
LCU	G285	C	2021/07/27	Total Dissolved Solids	mg/L	1,500
LCU	G285	C	2023/06/08	Total Dissolved Solids	mg/L	1,700
LCU	G285	C	2023/08/15	Total Dissolved Solids	mg/L	1,640
LCU	G285	C	2023/11/20	Total Dissolved Solids	mg/L	1,550
UA	G270	B	2010/07/27	pH (field)	SU	7.3
UA	G270	B	2010/11/15	pH (field)	SU	7.7
UA	G270	B	2011/01/28	pH (field)	SU	7.1
UA	G270	B	2011/05/03	pH (field)	SU	7.0
UA	G270	B	2011/07/27	pH (field)	SU	7.0
UA	G270	B	2011/11/11	pH (field)	SU	7.5
UA	G270	B	2012/01/26	pH (field)	SU	7.4
UA	G270	B	2012/05/22	pH (field)	SU	7.2
UA	G270	B	2012/07/24	pH (field)	SU	7.1
UA	G270	B	2012/11/14	pH (field)	SU	7.4
UA	G270	B	2013/01/30	pH (field)	SU	7.1
UA	G270	B	2013/05/20	pH (field)	SU	7.1
UA	G270	B	2013/07/22	pH (field)	SU	7.0
UA	G270	B	2013/10/14	pH (field)	SU	7.2
UA	G270	B	2014/02/19	pH (field)	SU	7.3
UA	G270	B	2014/05/13	pH (field)	SU	6.9
UA	G270	B	2014/08/11	pH (field)	SU	7.4
UA	G270	B	2014/10/14	pH (field)	SU	7.4
UA	G270	B	2015/01/20	pH (field)	SU	7.4
UA	G270	B	2015/04/13	pH (field)	SU	6.9
UA	G270	B	2015/07/22	pH (field)	SU	7.4
UA	G270	B	2015/10/05	pH (field)	SU	7.2
UA	G270	B	2015/11/20	pH (field)	SU	6.8
UA	G270	B	2016/02/10	pH (field)	SU	6.7
UA	G270	B	2016/05/12	pH (field)	SU	7.0
UA	G270	B	2016/08/01	pH (field)	SU	7.0
UA	G270	B	2016/11/16	pH (field)	SU	7.1
UA	G270	B	2017/02/10	pH (field)	SU	7.1
UA	G270	B	2017/05/16	pH (field)	SU	7.2
UA	G270	B	2017/07/12	pH (field)	SU	7.0
UA	G270	B	2017/10/25	pH (field)	SU	7.1
UA	G270	B	2018/05/11	pH (field)	SU	7.1
UA	G270	B	2018/08/03	pH (field)	SU	7.1
UA	G270	B	2019/01/21	pH (field)	SU	7.0
UA	G270	B	2019/08/15	pH (field)	SU	7.1
UA	G270	B	2020/01/24	pH (field)	SU	7.3
UA	G270	B	2020/08/12	pH (field)	SU	7.1
UA	G270	B	2020/10/14	pH (field)	SU	6.8
UA	G270	B	2021/01/21	pH (field)	SU	7.1
UA	G270	B	2021/03/30	pH (field)	SU	7.1
UA	G270	B	2021/04/21	pH (field)	SU	7.1
UA	G270	B	2021/05/06	pH (field)	SU	7.0
UA	G270	B	2021/05/19	pH (field)	SU	7.2
UA	G270	B	2021/06/15	pH (field)	SU	7.0
UA	G270	B	2021/06/29	pH (field)	SU	7.0

UA	G270	B	2021/07/12	pH (field)	SU	7.2
UA	G270	B	2021/07/27	pH (field)	SU	7.2
UA	G270	B	2021/08/18	pH (field)	SU	7.1
UA	G270	B	2021/10/26	pH (field)	SU	7.0
UA	G270	B	2022/02/08	pH (field)	SU	7.2
UA	G270	B	2022/05/10	pH (field)	SU	6.9
UA	G270	B	2022/08/24	pH (field)	SU	7.3
UA	G270	B	2022/11/08	pH (field)	SU	7.4
UA	G270	B	2023/02/16	pH (field)	SU	7.5
UA	G270	B	2023/06/08	pH (field)	SU	6.6
UA	G270	B	2023/08/14	pH (field)	SU	6.8
UA	G270	B	2023/11/17	pH (field)	SU	7.1
UA	G270	B	2015/11/20	Oxidation Reduction Potential	mV	-32.0
UA	G270	B	2016/02/10	Oxidation Reduction Potential	mV	180
UA	G270	B	2016/05/12	Oxidation Reduction Potential	mV	81.0
UA	G270	B	2016/08/01	Oxidation Reduction Potential	mV	72.0
UA	G270	B	2016/11/16	Oxidation Reduction Potential	mV	56.0
UA	G270	B	2017/02/10	Oxidation Reduction Potential	mV	56.0
UA	G270	B	2017/05/16	Oxidation Reduction Potential	mV	71.0
UA	G270	B	2017/07/12	Oxidation Reduction Potential	mV	63.0
UA	G270	B	2017/10/25	Oxidation Reduction Potential	mV	62.0
UA	G270	B	2018/05/11	Oxidation Reduction Potential	mV	58.0
UA	G270	B	2018/08/03	Oxidation Reduction Potential	mV	68.0
UA	G270	B	2019/01/21	Oxidation Reduction Potential	mV	75.0
UA	G270	B	2019/08/15	Oxidation Reduction Potential	mV	73.0
UA	G270	B	2020/01/24	Oxidation Reduction Potential	mV	151
UA	G270	B	2020/08/12	Oxidation Reduction Potential	mV	161
UA	G270	B	2020/10/14	Oxidation Reduction Potential	mV	168
UA	G270	B	2021/01/21	Oxidation Reduction Potential	mV	196
UA	G270	B	2021/03/30	Oxidation Reduction Potential	mV	118
UA	G270	B	2021/04/21	Oxidation Reduction Potential	mV	162
UA	G270	B	2021/05/19	Oxidation Reduction Potential	mV	67.5
UA	G270	B	2021/06/15	Oxidation Reduction Potential	mV	83.7
UA	G270	B	2021/06/29	Oxidation Reduction Potential	mV	50.0
UA	G270	B	2021/07/12	Oxidation Reduction Potential	mV	120
UA	G270	B	2021/07/27	Oxidation Reduction Potential	mV	89.3
UA	G270	B	2021/08/18	Oxidation Reduction Potential	mV	150
UA	G270	B	2021/10/26	Oxidation Reduction Potential	mV	7.60
UA	G270	B	2022/02/08	Oxidation Reduction Potential	mV	101
UA	G270	B	2022/05/10	Oxidation Reduction Potential	mV	36.3
UA	G270	B	2022/08/24	Oxidation Reduction Potential	mV	109
UA	G270	B	2022/11/08	Oxidation Reduction Potential	mV	29.2
UA	G270	B	2023/02/16	Oxidation Reduction Potential	mV	171
UA	G270	B	2023/06/08	Oxidation Reduction Potential	mV	61.0
UA	G270	B	2023/08/14	Oxidation Reduction Potential	mV	78.0
UA	G270	B	2023/11/17	Oxidation Reduction Potential	mV	98.0
UA	G270	B	2015/11/20	Eh	V	0.16
UA	G270	B	2016/02/10	Eh	V	0.38
UA	G270	B	2016/05/12	Eh	V	0.28
UA	G270	B	2016/08/01	Eh	V	0.27
UA	G270	B	2016/11/16	Eh	V	0.25
UA	G270	B	2017/02/10	Eh	V	0.25
UA	G270	B	2017/05/16	Eh	V	0.27
UA	G270	B	2017/07/12	Eh	V	0.26
UA	G270	B	2017/10/25	Eh	V	0.26
UA	G270	B	2018/05/11	Eh	V	0.25
UA	G270	B	2018/08/03	Eh	V	0.26
UA	G270	B	2019/01/21	Eh	V	0.27
UA	G270	B	2019/08/15	Eh	V	0.27
UA	G270	B	2020/01/24	Eh	V	0.35
UA	G270	B	2020/08/12	Eh	V	0.35
UA	G270	B	2020/10/14	Eh	V	0.36

UA	G270	B	2021/01/21	Eh	V	0.39
UA	G270	B	2021/03/30	Eh	V	0.32
UA	G270	B	2021/04/21	Eh	V	0.36
UA	G270	B	2021/05/19	Eh	V	0.26
UA	G270	B	2021/06/15	Eh	V	0.28
UA	G270	B	2021/06/29	Eh	V	0.24
UA	G270	B	2021/07/12	Eh	V	0.31
UA	G270	B	2021/07/27	Eh	V	0.28
UA	G270	B	2021/08/18	Eh	V	0.34
UA	G270	B	2022/02/08	Eh	V	0.30
UA	G270	B	2022/05/10	Eh	V	0.23
UA	G270	B	2022/08/24	Eh	V	0.30
UA	G270	B	2022/11/08	Eh	V	0.22
UA	G270	B	2023/02/16	Eh	V	0.37
UA	G270	B	2023/06/08	Eh	V	0.26
UA	G270	B	2023/08/14	Eh	V	0.27
UA	G270	B	2023/11/17	Eh	V	0.29
UA	G270	B	2008/03/11	Alkalinity, bicarbonate	mg/L CaCO3	450
UA	G270	B	2008/04/21	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G270	B	2008/06/11	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G270	B	2008/08/13	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G270	B	2008/10/14	Alkalinity, bicarbonate	mg/L CaCO3	420
UA	G270	B	2008/12/02	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G270	B	2010/02/11	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G270	B	2011/01/28	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G270	B	2012/01/26	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G270	B	2013/01/30	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G270	B	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G270	B	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G270	B	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G270	B	2015/01/20	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G270	B	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G270	B	2016/11/16	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G270	B	2017/05/16	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2017/07/12	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G270	B	2020/01/24	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G270	B	2020/08/12	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G270	B	2021/01/21	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G270	B	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G270	B	2021/04/21	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2021/05/19	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G270	B	2021/06/15	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G270	B	2021/06/29	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G270	B	2021/07/12	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G270	B	2021/08/18	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2022/02/08	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2022/08/24	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G270	B	2023/02/16	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G270	B	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G270	B	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	347
UA	G270	B	2023/11/17	Alkalinity, bicarbonate	mg/L CaCO3	325
UA	G270	B	2022/08/24	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G270	B	2008/03/11	Arsenic, total	mg/L	<0.005
UA	G270	B	2008/04/21	Arsenic, total	mg/L	0.00160
UA	G270	B	2008/06/11	Arsenic, total	mg/L	0.00120
UA	G270	B	2008/08/13	Arsenic, total	mg/L	<0.001
UA	G270	B	2008/10/14	Arsenic, total	mg/L	<0.001
UA	G270	B	2008/12/02	Arsenic, total	mg/L	<0.001
UA	G270	B	2009/09/21	Arsenic, total	mg/L	<0.001
UA	G270	B	2009/11/10	Arsenic, total	mg/L	<0.001

UA	G270	B	2010/01/28	Arsenic, total	mg/L	<0.001
UA	G270	B	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G270	B	2010/11/15	Arsenic, total	mg/L	0.00110
UA	G270	B	2011/01/28	Arsenic, total	mg/L	<0.001
UA	G270	B	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G270	B	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G270	B	2011/11/11	Arsenic, total	mg/L	<0.001
UA	G270	B	2012/01/26	Arsenic, total	mg/L	<0.001
UA	G270	B	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G270	B	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G270	B	2012/11/14	Arsenic, total	mg/L	<0.001
UA	G270	B	2013/01/30	Arsenic, total	mg/L	<0.001
UA	G270	B	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G270	B	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G270	B	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G270	B	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G270	B	2014/05/13	Arsenic, total	mg/L	0.00130
UA	G270	B	2014/08/11	Arsenic, total	mg/L	0.00340
UA	G270	B	2014/10/14	Arsenic, total	mg/L	0.0110
UA	G270	B	2015/01/20	Arsenic, total	mg/L	<0.001
UA	G270	B	2015/04/13	Arsenic, total	mg/L	<0.001
UA	G270	B	2015/07/22	Arsenic, total	mg/L	<0.001
UA	G270	B	2015/10/05	Arsenic, total	mg/L	<0.001
UA	G270	B	2015/11/20	Arsenic, total	mg/L	0.00100
UA	G270	B	2016/02/10	Arsenic, total	mg/L	<0.00013
UA	G270	B	2016/05/12	Arsenic, total	mg/L	<0.00013
UA	G270	B	2016/08/01	Arsenic, total	mg/L	<0.00013
UA	G270	B	2016/11/16	Arsenic, total	mg/L	<0.00013
UA	G270	B	2017/02/10	Arsenic, total	mg/L	<0.00013
UA	G270	B	2017/05/16	Arsenic, total	mg/L	<0.00013
UA	G270	B	2017/07/12	Arsenic, total	mg/L	<0.00013
UA	G270	B	2018/05/11	Arsenic, total	mg/L	<0.00072
UA	G270	B	2018/08/03	Arsenic, total	mg/L	<0.0009
UA	G270	B	2019/01/21	Arsenic, total	mg/L	<0.0009
UA	G270	B	2019/08/15	Arsenic, total	mg/L	<0.0009
UA	G270	B	2020/01/24	Arsenic, total	mg/L	<0.0009
UA	G270	B	2020/08/12	Arsenic, total	mg/L	<0.00022
UA	G270	B	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G270	B	2021/01/21	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/03/30	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/04/21	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/05/06	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/05/19	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/06/15	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/06/29	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/07/12	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/07/27	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G270	B	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G270	B	2022/02/08	Arsenic, total	mg/L	<0.00069
UA	G270	B	2022/05/10	Arsenic, total	mg/L	<0.00069
UA	G270	B	2022/08/24	Arsenic, total	mg/L	<0.00069
UA	G270	B	2022/11/08	Arsenic, total	mg/L	<0.00069
UA	G270	B	2023/02/16	Arsenic, total	mg/L	<0.00069
UA	G270	B	2023/06/08	Arsenic, total	mg/L	0.00110
UA	G270	B	2023/08/14	Arsenic, total	mg/L	<0.0004
UA	G270	B	2023/11/17	Arsenic, total	mg/L	0.000500
UA	G270	B	2008/03/11	Barium, total	mg/L	0.0760
UA	G270	B	2008/04/21	Barium, total	mg/L	0.0760
UA	G270	B	2008/06/11	Barium, total	mg/L	0.0720
UA	G270	B	2008/08/13	Barium, total	mg/L	0.0690
UA	G270	B	2008/10/14	Barium, total	mg/L	0.0680

UA	G270	B	2008/12/02	Barium, total	mg/L	0.0680
UA	G270	B	2010/02/11	Barium, total	mg/L	0.0560
UA	G270	B	2011/01/28	Barium, total	mg/L	0.0640
UA	G270	B	2012/01/26	Barium, total	mg/L	0.0490
UA	G270	B	2013/01/30	Barium, total	mg/L	0.0620
UA	G270	B	2014/02/19	Barium, total	mg/L	0.0410
UA	G270	B	2015/04/13	Barium, total	mg/L	0.0500
UA	G270	B	2015/07/22	Barium, total	mg/L	0.0490
UA	G270	B	2015/10/05	Barium, total	mg/L	0.0370
UA	G270	B	2015/11/20	Barium, total	mg/L	0.0450
UA	G270	B	2016/02/10	Barium, total	mg/L	0.0320
UA	G270	B	2016/05/12	Barium, total	mg/L	0.0340
UA	G270	B	2016/08/01	Barium, total	mg/L	0.0370
UA	G270	B	2016/11/16	Barium, total	mg/L	0.0310
UA	G270	B	2017/02/10	Barium, total	mg/L	0.0360
UA	G270	B	2017/05/16	Barium, total	mg/L	0.0330
UA	G270	B	2017/07/12	Barium, total	mg/L	0.0350
UA	G270	B	2018/05/11	Barium, total	mg/L	0.0380
UA	G270	B	2018/08/03	Barium, total	mg/L	0.0360
UA	G270	B	2019/01/21	Barium, total	mg/L	0.0470
UA	G270	B	2019/08/15	Barium, total	mg/L	0.0400
UA	G270	B	2020/01/24	Barium, total	mg/L	0.0380
UA	G270	B	2020/08/12	Barium, total	mg/L	0.0420
UA	G270	B	2020/10/14	Barium, total	mg/L	0.0430
UA	G270	B	2021/01/21	Barium, total	mg/L	0.0390
UA	G270	B	2021/03/30	Barium, total	mg/L	0.0450
UA	G270	B	2021/04/21	Barium, total	mg/L	0.0360
UA	G270	B	2021/05/06	Barium, total	mg/L	0.0410
UA	G270	B	2021/05/19	Barium, total	mg/L	0.0340
UA	G270	B	2021/06/15	Barium, total	mg/L	0.0340
UA	G270	B	2021/06/29	Barium, total	mg/L	0.0330
UA	G270	B	2021/07/12	Barium, total	mg/L	0.0350
UA	G270	B	2021/07/27	Barium, total	mg/L	0.0330
UA	G270	B	2021/08/18	Barium, total	mg/L	0.0340
UA	G270	B	2021/10/26	Barium, total	mg/L	0.0330
UA	G270	B	2022/02/08	Barium, total	mg/L	0.0330
UA	G270	B	2022/05/10	Barium, total	mg/L	0.0370
UA	G270	B	2022/08/24	Barium, total	mg/L	0.0360
UA	G270	B	2022/11/08	Barium, total	mg/L	0.0380
UA	G270	B	2023/02/16	Barium, total	mg/L	0.0410
UA	G270	B	2023/06/08	Barium, total	mg/L	0.0640
UA	G270	B	2023/08/14	Barium, total	mg/L	0.0467
UA	G270	B	2023/11/17	Barium, total	mg/L	0.0649
UA	G270	B	2008/03/11	Calcium, total	mg/L	77.0
UA	G270	B	2008/04/21	Calcium, total	mg/L	72.0
UA	G270	B	2008/06/11	Calcium, total	mg/L	70.0
UA	G270	B	2008/08/13	Calcium, total	mg/L	67.0
UA	G270	B	2008/10/14	Calcium, total	mg/L	71.0
UA	G270	B	2008/12/02	Calcium, total	mg/L	69.0
UA	G270	B	2009/09/21	Calcium, total	mg/L	77.0
UA	G270	B	2009/11/10	Calcium, total	mg/L	75.0
UA	G270	B	2010/01/28	Calcium, total	mg/L	74.0
UA	G270	B	2010/07/27	Calcium, total	mg/L	58.0
UA	G270	B	2010/11/15	Calcium, total	mg/L	60.0
UA	G270	B	2011/01/28	Calcium, total	mg/L	80.0
UA	G270	B	2011/05/03	Calcium, total	mg/L	<100
UA	G270	B	2011/07/27	Calcium, total	mg/L	59.0
UA	G270	B	2011/11/11	Calcium, total	mg/L	61.0
UA	G270	B	2012/01/26	Calcium, total	mg/L	64.0
UA	G270	B	2012/05/22	Calcium, total	mg/L	67.0
UA	G270	B	2012/07/24	Calcium, total	mg/L	73.0
UA	G270	B	2012/11/14	Calcium, total	mg/L	65.0

UA	G270	B	2013/01/30	Calcium, total	mg/L	65.0
UA	G270	B	2013/05/20	Calcium, total	mg/L	72.0
UA	G270	B	2013/07/22	Calcium, total	mg/L	70.0
UA	G270	B	2013/10/14	Calcium, total	mg/L	81.0
UA	G270	B	2014/02/19	Calcium, total	mg/L	67.0
UA	G270	B	2014/05/13	Calcium, total	mg/L	68.0
UA	G270	B	2014/08/11	Calcium, total	mg/L	62.0
UA	G270	B	2014/10/14	Calcium, total	mg/L	67.0
UA	G270	B	2015/01/20	Calcium, total	mg/L	70.0
UA	G270	B	2015/04/13	Calcium, total	mg/L	70.0
UA	G270	B	2015/11/20	Calcium, total	mg/L	59.0
UA	G270	B	2016/02/10	Calcium, total	mg/L	49.0
UA	G270	B	2016/05/12	Calcium, total	mg/L	57.0
UA	G270	B	2016/08/01	Calcium, total	mg/L	50.0
UA	G270	B	2016/11/16	Calcium, total	mg/L	48.0
UA	G270	B	2017/02/10	Calcium, total	mg/L	53.0
UA	G270	B	2017/05/16	Calcium, total	mg/L	54.0
UA	G270	B	2017/07/12	Calcium, total	mg/L	52.0
UA	G270	B	2017/10/25	Calcium, total	mg/L	56.0
UA	G270	B	2018/05/11	Calcium, total	mg/L	53.0
UA	G270	B	2018/08/03	Calcium, total	mg/L	57.0
UA	G270	B	2019/01/21	Calcium, total	mg/L	56.0
UA	G270	B	2019/08/15	Calcium, total	mg/L	54.0
UA	G270	B	2020/01/24	Calcium, total	mg/L	59.0
UA	G270	B	2020/08/12	Calcium, total	mg/L	58.0
UA	G270	B	2020/10/14	Calcium, total	mg/L	61.0
UA	G270	B	2021/01/21	Calcium, total	mg/L	59.0
UA	G270	B	2021/03/30	Calcium, total	mg/L	58.0
UA	G270	B	2021/04/21	Calcium, total	mg/L	55.0
UA	G270	B	2021/05/06	Calcium, total	mg/L	57.0
UA	G270	B	2021/05/19	Calcium, total	mg/L	53.0
UA	G270	B	2021/06/15	Calcium, total	mg/L	60.0
UA	G270	B	2021/06/29	Calcium, total	mg/L	56.0
UA	G270	B	2021/07/12	Calcium, total	mg/L	55.0
UA	G270	B	2021/07/27	Calcium, total	mg/L	52.0
UA	G270	B	2021/08/18	Calcium, total	mg/L	55.0
UA	G270	B	2021/10/26	Calcium, total	mg/L	49.0
UA	G270	B	2022/02/08	Calcium, total	mg/L	53.0
UA	G270	B	2022/05/10	Calcium, total	mg/L	59.0
UA	G270	B	2022/08/24	Calcium, total	mg/L	56.0
UA	G270	B	2022/11/08	Calcium, total	mg/L	57.0
UA	G270	B	2023/02/16	Calcium, total	mg/L	56.0
UA	G270	B	2023/06/08	Calcium, total	mg/L	57.0
UA	G270	B	2023/08/14	Calcium, total	mg/L	57.9
UA	G270	B	2023/11/17	Calcium, total	mg/L	58.1
UA	G270	B	2008/03/11	Chloride, total	mg/L	9.50
UA	G270	B	2008/04/21	Chloride, total	mg/L	11.0
UA	G270	B	2008/06/11	Chloride, total	mg/L	<10
UA	G270	B	2008/08/13	Chloride, total	mg/L	8.90
UA	G270	B	2008/10/14	Chloride, total	mg/L	9.40
UA	G270	B	2008/12/02	Chloride, total	mg/L	9.60
UA	G270	B	2009/09/21	Chloride, total	mg/L	9.40
UA	G270	B	2009/11/10	Chloride, total	mg/L	11.0
UA	G270	B	2010/01/28	Chloride, total	mg/L	19.0
UA	G270	B	2010/07/27	Chloride, total	mg/L	40.0
UA	G270	B	2010/11/15	Chloride, total	mg/L	40.0
UA	G270	B	2011/01/28	Chloride, total	mg/L	45.0
UA	G270	B	2011/05/03	Chloride, total	mg/L	57.0
UA	G270	B	2011/07/27	Chloride, total	mg/L	57.0
UA	G270	B	2011/11/11	Chloride, total	mg/L	64.0
UA	G270	B	2012/01/26	Chloride, total	mg/L	73.0
UA	G270	B	2012/05/22	Chloride, total	mg/L	83.0

UA	G270	B	2012/07/24	Chloride, total	mg/L	66.0
UA	G270	B	2012/11/14	Chloride, total	mg/L	76.0
UA	G270	B	2013/01/30	Chloride, total	mg/L	91.0
UA	G270	B	2013/05/20	Chloride, total	mg/L	85.0
UA	G270	B	2013/07/22	Chloride, total	mg/L	79.0
UA	G270	B	2013/10/14	Chloride, total	mg/L	72.0
UA	G270	B	2014/02/19	Chloride, total	mg/L	56.0
UA	G270	B	2014/05/13	Chloride, total	mg/L	30.0
UA	G270	B	2014/08/11	Chloride, total	mg/L	34.0
UA	G270	B	2014/10/14	Chloride, total	mg/L	21.0
UA	G270	B	2015/01/20	Chloride, total	mg/L	18.0
UA	G270	B	2015/04/13	Chloride, total	mg/L	20.0
UA	G270	B	2015/07/22	Chloride, total	mg/L	15.0
UA	G270	B	2015/10/05	Chloride, total	mg/L	11.0
UA	G270	B	2015/11/20	Chloride, total	mg/L	12.0
UA	G270	B	2016/02/10	Chloride, total	mg/L	16.0
UA	G270	B	2016/05/12	Chloride, total	mg/L	12.0
UA	G270	B	2016/08/01	Chloride, total	mg/L	15.0
UA	G270	B	2016/11/16	Chloride, total	mg/L	12.0
UA	G270	B	2017/02/10	Chloride, total	mg/L	11.0
UA	G270	B	2017/05/16	Chloride, total	mg/L	9.70
UA	G270	B	2017/07/12	Chloride, total	mg/L	12.0
UA	G270	B	2017/10/25	Chloride, total	mg/L	13.0
UA	G270	B	2018/05/11	Chloride, total	mg/L	7.90
UA	G270	B	2018/08/03	Chloride, total	mg/L	8.60
UA	G270	B	2019/01/21	Chloride, total	mg/L	9.60
UA	G270	B	2019/08/15	Chloride, total	mg/L	9.80
UA	G270	B	2020/01/24	Chloride, total	mg/L	10.0
UA	G270	B	2020/08/12	Chloride, total	mg/L	12.0
UA	G270	B	2020/10/14	Chloride, total	mg/L	12.0
UA	G270	B	2021/01/21	Chloride, total	mg/L	10.0
UA	G270	B	2021/03/30	Chloride, total	mg/L	14.0
UA	G270	B	2021/04/21	Chloride, total	mg/L	16.0
UA	G270	B	2021/05/06	Chloride, total	mg/L	11.0
UA	G270	B	2021/05/19	Chloride, total	mg/L	10.0
UA	G270	B	2021/06/15	Chloride, total	mg/L	12.0
UA	G270	B	2021/06/29	Chloride, total	mg/L	12.0
UA	G270	B	2021/07/12	Chloride, total	mg/L	11.0
UA	G270	B	2021/07/27	Chloride, total	mg/L	12.0
UA	G270	B	2021/08/18	Chloride, total	mg/L	12.0
UA	G270	B	2021/10/26	Chloride, total	mg/L	9.90
UA	G270	B	2022/02/08	Chloride, total	mg/L	8.70
UA	G270	B	2022/05/10	Chloride, total	mg/L	9.30
UA	G270	B	2022/08/24	Chloride, total	mg/L	9.70
UA	G270	B	2022/11/08	Chloride, total	mg/L	9.00
UA	G270	B	2023/02/16	Chloride, total	mg/L	7.80
UA	G270	B	2023/06/08	Chloride, total	mg/L	8.30
UA	G270	B	2023/08/14	Chloride, total	mg/L	13.0
UA	G270	B	2023/11/17	Chloride, total	mg/L	15.0
UA	G270	B	2023/06/08	Ferrous Iron, dissolved	mg/L	0.260
UA	G270	B	2008/03/11	Iron, dissolved	mg/L	<0.5
UA	G270	B	2008/04/21	Iron, dissolved	mg/L	0.530
UA	G270	B	2008/06/11	Iron, dissolved	mg/L	0.860
UA	G270	B	2008/08/13	Iron, dissolved	mg/L	0.730
UA	G270	B	2008/10/14	Iron, dissolved	mg/L	0.800
UA	G270	B	2008/12/02	Iron, dissolved	mg/L	0.700
UA	G270	B	2009/09/21	Iron, dissolved	mg/L	0.560
UA	G270	B	2009/11/10	Iron, dissolved	mg/L	0.370
UA	G270	B	2010/01/28	Iron, dissolved	mg/L	<0.1
UA	G270	B	2010/07/27	Iron, dissolved	mg/L	0.0460
UA	G270	B	2010/11/15	Iron, dissolved	mg/L	0.0530
UA	G270	B	2011/01/28	Iron, dissolved	mg/L	0.0340

UA	G270	B	2011/05/03	Iron, dissolved	mg/L	0.0120
UA	G270	B	2011/07/27	Iron, dissolved	mg/L	0.0150
UA	G270	B	2011/11/11	Iron, dissolved	mg/L	0.0320
UA	G270	B	2012/01/26	Iron, dissolved	mg/L	<0.01
UA	G270	B	2012/05/22	Iron, dissolved	mg/L	0.0140
UA	G270	B	2012/07/24	Iron, dissolved	mg/L	0.0180
UA	G270	B	2012/11/14	Iron, dissolved	mg/L	0.0440
UA	G270	B	2013/01/30	Iron, dissolved	mg/L	<0.01
UA	G270	B	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G270	B	2013/07/22	Iron, dissolved	mg/L	0.0460
UA	G270	B	2013/10/14	Iron, dissolved	mg/L	0.0620
UA	G270	B	2014/02/19	Iron, dissolved	mg/L	<0.01
UA	G270	B	2014/05/13	Iron, dissolved	mg/L	<0.01
UA	G270	B	2014/08/11	Iron, dissolved	mg/L	0.0300
UA	G270	B	2014/10/14	Iron, dissolved	mg/L	0.0300
UA	G270	B	2015/01/20	Iron, dissolved	mg/L	<0.01
UA	G270	B	2015/04/13	Iron, dissolved	mg/L	0.0210
UA	G270	B	2015/07/22	Iron, dissolved	mg/L	0.180
UA	G270	B	2015/10/05	Iron, dissolved	mg/L	0.0840
UA	G270	B	2016/02/10	Iron, dissolved	mg/L	0.0180
UA	G270	B	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G270	B	2016/07/27	Iron, dissolved	mg/L	0.0180
UA	G270	B	2016/11/21	Iron, dissolved	mg/L	<0.01
UA	G270	B	2017/02/08	Iron, dissolved	mg/L	<0.01
UA	G270	B	2017/05/18	Iron, dissolved	mg/L	0.0110
UA	G270	B	2017/07/12	Iron, dissolved	mg/L	0.0760
UA	G270	B	2017/10/25	Iron, dissolved	mg/L	<0.01
UA	G270	B	2018/01/29	Iron, dissolved	mg/L	0.280
UA	G270	B	2018/05/11	Iron, dissolved	mg/L	0.0120
UA	G270	B	2018/08/10	Iron, dissolved	mg/L	0.0570
UA	G270	B	2018/11/06	Iron, dissolved	mg/L	<0.01
UA	G270	B	2019/01/21	Iron, dissolved	mg/L	0.0460
UA	G270	B	2019/05/01	Iron, dissolved	mg/L	<0.01
UA	G270	B	2019/08/15	Iron, dissolved	mg/L	<0.01
UA	G270	B	2019/10/21	Iron, dissolved	mg/L	0.0430
UA	G270	B	2020/01/24	Iron, dissolved	mg/L	<0.01
UA	G270	B	2020/05/07	Iron, dissolved	mg/L	<0.01
UA	G270	B	2020/08/11	Iron, dissolved	mg/L	<0.01
UA	G270	B	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G270	B	2021/01/21	Iron, dissolved	mg/L	<0.01
UA	G270	B	2021/04/21	Iron, dissolved	mg/L	<0.01
UA	G270	B	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G270	B	2021/10/26	Iron, dissolved	mg/L	<0.01
UA	G270	B	2022/02/08	Iron, dissolved	mg/L	<0.01
UA	G270	B	2022/05/10	Iron, dissolved	mg/L	0.160
UA	G270	B	2022/08/24	Iron, dissolved	mg/L	<0.00072
UA	G270	B	2022/11/08	Iron, dissolved	mg/L	0.00360
UA	G270	B	2023/02/16	Iron, dissolved	mg/L	<0.00072
UA	G270	B	2023/06/08	Iron, dissolved	mg/L	0.0440
UA	G270	B	2023/08/14	Iron, dissolved	mg/L	0.0190
UA	G270	B	2023/11/17	Iron, dissolved	mg/L	<0.0115
UA	G270	B	2008/03/11	Magnesium, total	mg/L	39.0
UA	G270	B	2008/04/21	Magnesium, total	mg/L	34.0
UA	G270	B	2008/06/11	Magnesium, total	mg/L	33.0
UA	G270	B	2008/08/13	Magnesium, total	mg/L	31.0
UA	G270	B	2008/10/14	Magnesium, total	mg/L	34.0
UA	G270	B	2008/12/02	Magnesium, total	mg/L	32.0
UA	G270	B	2010/02/11	Magnesium, total	mg/L	30.0
UA	G270	B	2011/01/28	Magnesium, total	mg/L	37.0
UA	G270	B	2012/01/26	Magnesium, total	mg/L	29.0
UA	G270	B	2013/01/30	Magnesium, total	mg/L	29.0
UA	G270	B	2014/02/19	Magnesium, total	mg/L	27.0

UA	G270	B	2015/04/13	Magnesium, total	mg/L	32.0
UA	G270	B	2016/11/16	Magnesium, total	mg/L	22.0
UA	G270	B	2017/05/16	Magnesium, total	mg/L	27.0
UA	G270	B	2017/07/12	Magnesium, total	mg/L	24.0
UA	G270	B	2020/01/24	Magnesium, total	mg/L	26.0
UA	G270	B	2020/08/12	Magnesium, total	mg/L	25.0
UA	G270	B	2021/01/21	Magnesium, total	mg/L	24.0
UA	G270	B	2021/03/30	Magnesium, total	mg/L	26.0
UA	G270	B	2021/04/21	Magnesium, total	mg/L	26.0
UA	G270	B	2021/05/06	Magnesium, total	mg/L	25.0
UA	G270	B	2021/05/19	Magnesium, total	mg/L	24.0
UA	G270	B	2021/06/15	Magnesium, total	mg/L	25.0
UA	G270	B	2021/06/29	Magnesium, total	mg/L	25.0
UA	G270	B	2021/07/12	Magnesium, total	mg/L	25.0
UA	G270	B	2021/07/27	Magnesium, total	mg/L	24.0
UA	G270	B	2021/08/18	Magnesium, total	mg/L	24.0
UA	G270	B	2022/02/08	Magnesium, total	mg/L	22.0
UA	G270	B	2022/08/24	Magnesium, total	mg/L	25.0
UA	G270	B	2023/02/16	Magnesium, total	mg/L	21.0
UA	G270	B	2023/06/08	Magnesium, total	mg/L	24.0
UA	G270	B	2023/08/14	Magnesium, total	mg/L	23.4
UA	G270	B	2023/11/17	Magnesium, total	mg/L	24.1
UA	G270	B	2008/03/11	Manganese, dissolved	mg/L	0.190
UA	G270	B	2008/04/21	Manganese, dissolved	mg/L	0.210
UA	G270	B	2008/06/11	Manganese, dissolved	mg/L	0.210
UA	G270	B	2008/08/13	Manganese, dissolved	mg/L	0.260
UA	G270	B	2008/10/14	Manganese, dissolved	mg/L	0.220
UA	G270	B	2008/12/02	Manganese, dissolved	mg/L	0.220
UA	G270	B	2009/09/21	Manganese, dissolved	mg/L	0.260
UA	G270	B	2009/11/10	Manganese, dissolved	mg/L	0.230
UA	G270	B	2010/01/28	Manganese, dissolved	mg/L	0.140
UA	G270	B	2010/07/27	Manganese, dissolved	mg/L	0.0620
UA	G270	B	2010/11/15	Manganese, dissolved	mg/L	0.0690
UA	G270	B	2011/01/28	Manganese, dissolved	mg/L	0.0320
UA	G270	B	2011/05/03	Manganese, dissolved	mg/L	0.0230
UA	G270	B	2011/07/27	Manganese, dissolved	mg/L	0.0460
UA	G270	B	2011/11/11	Manganese, dissolved	mg/L	0.0500
UA	G270	B	2012/01/26	Manganese, dissolved	mg/L	0.00940
UA	G270	B	2012/05/22	Manganese, dissolved	mg/L	0.0400
UA	G270	B	2012/07/24	Manganese, dissolved	mg/L	0.0450
UA	G270	B	2012/11/14	Manganese, dissolved	mg/L	0.0170
UA	G270	B	2013/01/30	Manganese, dissolved	mg/L	0.0110
UA	G270	B	2013/05/20	Manganese, dissolved	mg/L	0.0250
UA	G270	B	2013/07/22	Manganese, dissolved	mg/L	0.0450
UA	G270	B	2013/10/14	Manganese, dissolved	mg/L	0.0410
UA	G270	B	2014/02/19	Manganese, dissolved	mg/L	0.00290
UA	G270	B	2014/05/13	Manganese, dissolved	mg/L	0.0160
UA	G270	B	2014/08/11	Manganese, dissolved	mg/L	0.0400
UA	G270	B	2014/10/14	Manganese, dissolved	mg/L	0.0400
UA	G270	B	2015/01/20	Manganese, dissolved	mg/L	0.0110
UA	G270	B	2015/04/13	Manganese, dissolved	mg/L	0.00550
UA	G270	B	2015/07/22	Manganese, dissolved	mg/L	0.470
UA	G270	B	2015/10/05	Manganese, dissolved	mg/L	0.0560
UA	G270	B	2016/02/10	Manganese, dissolved	mg/L	0.0120
UA	G270	B	2016/05/12	Manganese, dissolved	mg/L	0.0290
UA	G270	B	2016/07/27	Manganese, dissolved	mg/L	0.00320
UA	G270	B	2016/11/21	Manganese, dissolved	mg/L	0.0260
UA	G270	B	2017/02/08	Manganese, dissolved	mg/L	0.00110
UA	G270	B	2017/05/18	Manganese, dissolved	mg/L	0.0250
UA	G270	B	2017/07/12	Manganese, dissolved	mg/L	0.400
UA	G270	B	2017/10/25	Manganese, dissolved	mg/L	0.00870
UA	G270	B	2018/01/29	Manganese, dissolved	mg/L	0.0770

UA	G270	B	2018/03/05	Manganese, dissolved	mg/L	0.00240
UA	G270	B	2019/05/01	Manganese, dissolved	mg/L	<0.001
UA	G270	B	2019/08/15	Manganese, dissolved	mg/L	0.00220
UA	G270	B	2020/01/24	Manganese, dissolved	mg/L	<0.001
UA	G270	B	2020/10/14	Manganese, dissolved	mg/L	0.0540
UA	G270	B	2021/01/21	Manganese, dissolved	mg/L	0.00340
UA	G270	B	2021/04/21	Manganese, dissolved	mg/L	<0.001
UA	G270	B	2021/08/18	Manganese, dissolved	mg/L	0.0100
UA	G270	B	2021/10/26	Manganese, dissolved	mg/L	0.0240
UA	G270	B	2022/02/08	Manganese, dissolved	mg/L	<0.001
UA	G270	B	2022/05/10	Manganese, dissolved	mg/L	0.00210
UA	G270	B	2022/08/24	Manganese, dissolved	mg/L	0.00130
UA	G270	B	2022/11/08	Manganese, dissolved	mg/L	0.0150
UA	G270	B	2023/02/16	Manganese, dissolved	mg/L	0.00430
UA	G270	B	2023/06/08	Manganese, dissolved	mg/L	0.0790
UA	G270	B	2023/08/14	Manganese, dissolved	mg/L	0.157
UA	G270	B	2023/11/17	Manganese, dissolved	mg/L	0.0675
UA	G270	B	2023/08/14	Phosphate, dissolved	mg/L	0.0210
UA	G270	B	2008/03/11	Potassium, total	mg/L	<2.5
UA	G270	B	2008/04/21	Potassium, total	mg/L	1.30
UA	G270	B	2008/06/11	Potassium, total	mg/L	1.50
UA	G270	B	2008/08/13	Potassium, total	mg/L	1.10
UA	G270	B	2008/10/14	Potassium, total	mg/L	1.10
UA	G270	B	2008/12/02	Potassium, total	mg/L	1.20
UA	G270	B	2010/02/11	Potassium, total	mg/L	0.780
UA	G270	B	2011/01/28	Potassium, total	mg/L	0.980
UA	G270	B	2012/01/26	Potassium, total	mg/L	0.680
UA	G270	B	2013/01/30	Potassium, total	mg/L	0.590
UA	G270	B	2014/02/19	Potassium, total	mg/L	0.570
UA	G270	B	2015/04/13	Potassium, total	mg/L	0.790
UA	G270	B	2016/11/16	Potassium, total	mg/L	0.720
UA	G270	B	2017/05/16	Potassium, total	mg/L	0.720
UA	G270	B	2017/07/12	Potassium, total	mg/L	0.800
UA	G270	B	2020/01/24	Potassium, total	mg/L	0.880
UA	G270	B	2020/08/12	Potassium, total	mg/L	0.570
UA	G270	B	2021/01/21	Potassium, total	mg/L	1.20
UA	G270	B	2021/03/30	Potassium, total	mg/L	1.00
UA	G270	B	2021/04/21	Potassium, total	mg/L	0.860
UA	G270	B	2021/05/06	Potassium, total	mg/L	0.840
UA	G270	B	2021/05/19	Potassium, total	mg/L	0.500
UA	G270	B	2021/06/15	Potassium, total	mg/L	0.630
UA	G270	B	2021/06/29	Potassium, total	mg/L	0.580
UA	G270	B	2021/07/12	Potassium, total	mg/L	0.630
UA	G270	B	2021/07/27	Potassium, total	mg/L	0.590
UA	G270	B	2021/08/18	Potassium, total	mg/L	0.690
UA	G270	B	2022/02/08	Potassium, total	mg/L	0.580
UA	G270	B	2022/08/24	Potassium, total	mg/L	0.620
UA	G270	B	2023/02/16	Potassium, total	mg/L	0.620
UA	G270	B	2023/06/08	Potassium, total	mg/L	0.670
UA	G270	B	2023/08/14	Potassium, total	mg/L	0.757
UA	G270	B	2023/11/17	Potassium, total	mg/L	0.749
UA	G270	B	2023/06/08	Silicon, dissolved	mg/L	7.40
UA	G270	B	2023/08/14	Silicon, dissolved	mg/L	6.48
UA	G270	B	2008/03/11	Sodium, total	mg/L	63.0
UA	G270	B	2008/04/21	Sodium, total	mg/L	65.0
UA	G270	B	2008/06/11	Sodium, total	mg/L	64.0
UA	G270	B	2008/08/13	Sodium, total	mg/L	72.0
UA	G270	B	2008/10/14	Sodium, total	mg/L	76.0
UA	G270	B	2008/12/02	Sodium, total	mg/L	71.0
UA	G270	B	2010/02/11	Sodium, total	mg/L	84.0
UA	G270	B	2011/01/28	Sodium, total	mg/L	74.0
UA	G270	B	2012/01/26	Sodium, total	mg/L	78.0

UA	G270	B	2013/01/30	Sodium, total	mg/L	78.0
UA	G270	B	2014/02/19	Sodium, total	mg/L	77.0
UA	G270	B	2015/04/13	Sodium, total	mg/L	91.0
UA	G270	B	2016/11/16	Sodium, total	mg/L	77.0
UA	G270	B	2017/05/16	Sodium, total	mg/L	88.0
UA	G270	B	2017/07/12	Sodium, total	mg/L	78.0
UA	G270	B	2020/01/24	Sodium, total	mg/L	82.0
UA	G270	B	2020/08/12	Sodium, total	mg/L	78.0
UA	G270	B	2021/01/21	Sodium, total	mg/L	87.0
UA	G270	B	2021/03/30	Sodium, total	mg/L	81.0
UA	G270	B	2021/04/21	Sodium, total	mg/L	84.0
UA	G270	B	2021/05/06	Sodium, total	mg/L	88.0
UA	G270	B	2021/05/19	Sodium, total	mg/L	87.0
UA	G270	B	2021/06/15	Sodium, total	mg/L	92.0
UA	G270	B	2021/06/29	Sodium, total	mg/L	85.0
UA	G270	B	2021/07/12	Sodium, total	mg/L	79.0
UA	G270	B	2021/07/27	Sodium, total	mg/L	89.0
UA	G270	B	2021/08/18	Sodium, total	mg/L	100
UA	G270	B	2022/02/08	Sodium, total	mg/L	89.0
UA	G270	B	2022/08/24	Sodium, total	mg/L	98.0
UA	G270	B	2023/02/16	Sodium, total	mg/L	81.0
UA	G270	B	2023/06/08	Sodium, total	mg/L	82.0
UA	G270	B	2023/08/14	Sodium, total	mg/L	80.3
UA	G270	B	2023/11/17	Sodium, total	mg/L	67.1
UA	G270	B	2008/03/11	Sulfate, total	mg/L	2.30
UA	G270	B	2008/04/21	Sulfate, total	mg/L	2.40
UA	G270	B	2008/06/11	Sulfate, total	mg/L	2.80
UA	G270	B	2008/08/13	Sulfate, total	mg/L	4.20
UA	G270	B	2008/10/14	Sulfate, total	mg/L	4.70
UA	G270	B	2008/12/02	Sulfate, total	mg/L	4.40
UA	G270	B	2009/09/21	Sulfate, total	mg/L	3.20
UA	G270	B	2009/11/10	Sulfate, total	mg/L	5.10
UA	G270	B	2010/01/28	Sulfate, total	mg/L	8.20
UA	G270	B	2010/07/27	Sulfate, total	mg/L	9.10
UA	G270	B	2010/11/15	Sulfate, total	mg/L	7.60
UA	G270	B	2011/01/28	Sulfate, total	mg/L	9.60
UA	G270	B	2011/05/03	Sulfate, total	mg/L	13.0
UA	G270	B	2011/07/27	Sulfate, total	mg/L	18.0
UA	G270	B	2011/11/11	Sulfate, total	mg/L	23.0
UA	G270	B	2012/01/26	Sulfate, total	mg/L	40.0
UA	G270	B	2012/05/22	Sulfate, total	mg/L	57.0
UA	G270	B	2012/07/24	Sulfate, total	mg/L	43.0
UA	G270	B	2012/11/14	Sulfate, total	mg/L	77.0
UA	G270	B	2013/01/30	Sulfate, total	mg/L	96.0
UA	G270	B	2013/05/20	Sulfate, total	mg/L	120
UA	G270	B	2013/07/22	Sulfate, total	mg/L	120
UA	G270	B	2013/10/14	Sulfate, total	mg/L	85.0
UA	G270	B	2014/02/19	Sulfate, total	mg/L	140
UA	G270	B	2014/05/13	Sulfate, total	mg/L	140
UA	G270	B	2014/08/11	Sulfate, total	mg/L	130
UA	G270	B	2014/10/14	Sulfate, total	mg/L	140
UA	G270	B	2015/01/20	Sulfate, total	mg/L	140
UA	G270	B	2015/04/13	Sulfate, total	mg/L	120
UA	G270	B	2015/07/22	Sulfate, total	mg/L	110
UA	G270	B	2015/10/05	Sulfate, total	mg/L	82.0
UA	G270	B	2015/11/20	Sulfate, total	mg/L	89.0
UA	G270	B	2016/02/10	Sulfate, total	mg/L	77.0
UA	G270	B	2016/05/12	Sulfate, total	mg/L	76.0
UA	G270	B	2016/08/01	Sulfate, total	mg/L	76.0
UA	G270	B	2016/11/16	Sulfate, total	mg/L	63.0
UA	G270	B	2017/02/10	Sulfate, total	mg/L	55.0
UA	G270	B	2017/05/16	Sulfate, total	mg/L	50.0

UA	G270	B	2017/07/12	Sulfate, total	mg/L	54.0
UA	G270	B	2017/10/25	Sulfate, total	mg/L	55.0
UA	G270	B	2018/05/11	Sulfate, total	mg/L	53.0
UA	G270	B	2018/08/03	Sulfate, total	mg/L	54.0
UA	G270	B	2019/01/21	Sulfate, total	mg/L	49.0
UA	G270	B	2019/08/15	Sulfate, total	mg/L	50.0
UA	G270	B	2020/01/24	Sulfate, total	mg/L	51.0
UA	G270	B	2020/08/12	Sulfate, total	mg/L	53.0
UA	G270	B	2020/10/14	Sulfate, total	mg/L	58.0
UA	G270	B	2021/01/21	Sulfate, total	mg/L	54.0
UA	G270	B	2021/03/30	Sulfate, total	mg/L	55.0
UA	G270	B	2021/04/21	Sulfate, total	mg/L	53.0
UA	G270	B	2021/05/06	Sulfate, total	mg/L	57.0
UA	G270	B	2021/05/19	Sulfate, total	mg/L	58.0
UA	G270	B	2021/06/15	Sulfate, total	mg/L	55.0
UA	G270	B	2021/06/29	Sulfate, total	mg/L	58.0
UA	G270	B	2021/07/12	Sulfate, total	mg/L	56.0
UA	G270	B	2021/07/27	Sulfate, total	mg/L	55.0
UA	G270	B	2021/08/18	Sulfate, total	mg/L	54.0
UA	G270	B	2021/10/26	Sulfate, total	mg/L	52.0
UA	G270	B	2022/02/08	Sulfate, total	mg/L	53.0
UA	G270	B	2022/05/10	Sulfate, total	mg/L	53.0
UA	G270	B	2022/08/24	Sulfate, total	mg/L	53.0
UA	G270	B	2022/11/08	Sulfate, total	mg/L	51.0
UA	G270	B	2023/02/16	Sulfate, total	mg/L	50.0
UA	G270	B	2023/06/08	Sulfate, total	mg/L	54.0
UA	G270	B	2023/08/14	Sulfate, total	mg/L	48.0
UA	G270	B	2023/11/17	Sulfate, total	mg/L	50.0
UA	G270	B	2015/11/20	Temperature (Celsius)	degrees C	16.6
UA	G270	B	2016/02/10	Temperature (Celsius)	degrees C	8.00
UA	G270	B	2016/05/12	Temperature (Celsius)	degrees C	16.8
UA	G270	B	2016/08/01	Temperature (Celsius)	degrees C	17.6
UA	G270	B	2016/11/16	Temperature (Celsius)	degrees C	14.5
UA	G270	B	2017/02/10	Temperature (Celsius)	degrees C	15.0
UA	G270	B	2017/05/16	Temperature (Celsius)	degrees C	15.4
UA	G270	B	2017/07/12	Temperature (Celsius)	degrees C	17.3
UA	G270	B	2017/10/25	Temperature (Celsius)	degrees C	12.7
UA	G270	B	2018/05/11	Temperature (Celsius)	degrees C	13.5
UA	G270	B	2018/08/03	Temperature (Celsius)	degrees C	15.9
UA	G270	B	2019/01/21	Temperature (Celsius)	degrees C	12.0
UA	G270	B	2019/08/15	Temperature (Celsius)	degrees C	17.0
UA	G270	B	2020/01/24	Temperature (Celsius)	degrees C	9.70
UA	G270	B	2020/08/12	Temperature (Celsius)	degrees C	18.5
UA	G270	B	2020/10/14	Temperature (Celsius)	degrees C	16.5
UA	G270	B	2021/01/21	Temperature (Celsius)	degrees C	11.6
UA	G270	B	2021/03/30	Temperature (Celsius)	degrees C	12.2
UA	G270	B	2021/04/21	Temperature (Celsius)	degrees C	11.9
UA	G270	B	2021/05/06	Temperature (Celsius)	degrees C	12.2
UA	G270	B	2021/05/19	Temperature (Celsius)	degrees C	15.2
UA	G270	B	2021/06/15	Temperature (Celsius)	degrees C	19.8
UA	G270	B	2021/06/29	Temperature (Celsius)	degrees C	20.5
UA	G270	B	2021/07/12	Temperature (Celsius)	degrees C	18.5
UA	G270	B	2021/07/27	Temperature (Celsius)	degrees C	20.4
UA	G270	B	2021/08/18	Temperature (Celsius)	degrees C	20.2
UA	G270	B	2022/02/08	Temperature (Celsius)	degrees C	10.4
UA	G270	B	2022/05/10	Temperature (Celsius)	degrees C	14.6
UA	G270	B	2022/08/24	Temperature (Celsius)	degrees C	19.7
UA	G270	B	2022/11/08	Temperature (Celsius)	degrees C	16.4
UA	G270	B	2023/02/16	Temperature (Celsius)	degrees C	8.90
UA	G270	B	2023/06/08	Temperature (Celsius)	degrees C	14.6
UA	G270	B	2023/08/14	Temperature (Celsius)	degrees C	15.2
UA	G270	B	2023/11/17	Temperature (Celsius)	degrees C	15.2

UA	G270	B	2008/03/11	Total Dissolved Solids	mg/L	440
UA	G270	B	2008/04/21	Total Dissolved Solids	mg/L	420
UA	G270	B	2008/06/11	Total Dissolved Solids	mg/L	430
UA	G270	B	2008/08/13	Total Dissolved Solids	mg/L	440
UA	G270	B	2008/10/14	Total Dissolved Solids	mg/L	440
UA	G270	B	2008/12/02	Total Dissolved Solids	mg/L	400
UA	G270	B	2009/09/21	Total Dissolved Solids	mg/L	430
UA	G270	B	2009/11/10	Total Dissolved Solids	mg/L	450
UA	G270	B	2010/01/28	Total Dissolved Solids	mg/L	430
UA	G270	B	2010/02/11	Total Dissolved Solids	mg/L	460
UA	G270	B	2010/07/27	Total Dissolved Solids	mg/L	480
UA	G270	B	2010/11/15	Total Dissolved Solids	mg/L	490
UA	G270	B	2011/01/28	Total Dissolved Solids	mg/L	470
UA	G270	B	2011/05/03	Total Dissolved Solids	mg/L	430
UA	G270	B	2011/07/27	Total Dissolved Solids	mg/L	480
UA	G270	B	2011/11/11	Total Dissolved Solids	mg/L	440
UA	G270	B	2012/01/26	Total Dissolved Solids	mg/L	420
UA	G270	B	2012/05/22	Total Dissolved Solids	mg/L	460
UA	G270	B	2012/07/24	Total Dissolved Solids	mg/L	480
UA	G270	B	2012/11/14	Total Dissolved Solids	mg/L	500
UA	G270	B	2013/01/30	Total Dissolved Solids	mg/L	540
UA	G270	B	2013/05/20	Total Dissolved Solids	mg/L	480
UA	G270	B	2013/07/22	Total Dissolved Solids	mg/L	500
UA	G270	B	2013/10/14	Total Dissolved Solids	mg/L	520
UA	G270	B	2014/02/19	Total Dissolved Solids	mg/L	500
UA	G270	B	2014/05/13	Total Dissolved Solids	mg/L	500
UA	G270	B	2014/08/11	Total Dissolved Solids	mg/L	500
UA	G270	B	2014/10/14	Total Dissolved Solids	mg/L	500
UA	G270	B	2015/01/20	Total Dissolved Solids	mg/L	500
UA	G270	B	2015/04/13	Total Dissolved Solids	mg/L	540
UA	G270	B	2015/07/22	Total Dissolved Solids	mg/L	550
UA	G270	B	2015/10/05	Total Dissolved Solids	mg/L	480
UA	G270	B	2015/11/20	Total Dissolved Solids	mg/L	400
UA	G270	B	2016/02/10	Total Dissolved Solids	mg/L	340
UA	G270	B	2016/05/12	Total Dissolved Solids	mg/L	340
UA	G270	B	2016/08/01	Total Dissolved Solids	mg/L	360
UA	G270	B	2016/11/16	Total Dissolved Solids	mg/L	450
UA	G270	B	2017/02/10	Total Dissolved Solids	mg/L	390
UA	G270	B	2017/05/16	Total Dissolved Solids	mg/L	380
UA	G270	B	2017/07/12	Total Dissolved Solids	mg/L	400
UA	G270	B	2017/10/25	Total Dissolved Solids	mg/L	400
UA	G270	B	2018/05/11	Total Dissolved Solids	mg/L	400
UA	G270	B	2018/08/03	Total Dissolved Solids	mg/L	420
UA	G270	B	2019/01/21	Total Dissolved Solids	mg/L	480
UA	G270	B	2019/08/15	Total Dissolved Solids	mg/L	470
UA	G270	B	2020/01/24	Total Dissolved Solids	mg/L	480
UA	G270	B	2020/08/12	Total Dissolved Solids	mg/L	380
UA	G270	B	2020/10/14	Total Dissolved Solids	mg/L	400
UA	G270	B	2021/01/21	Total Dissolved Solids	mg/L	360
UA	G270	B	2021/03/30	Total Dissolved Solids	mg/L	510
UA	G270	B	2021/04/21	Total Dissolved Solids	mg/L	570
UA	G270	B	2021/05/06	Total Dissolved Solids	mg/L	410
UA	G270	B	2021/05/19	Total Dissolved Solids	mg/L	480
UA	G270	B	2021/06/15	Total Dissolved Solids	mg/L	390
UA	G270	B	2021/06/29	Total Dissolved Solids	mg/L	400
UA	G270	B	2021/07/12	Total Dissolved Solids	mg/L	480
UA	G270	B	2021/07/27	Total Dissolved Solids	mg/L	420
UA	G270	B	2021/08/18	Total Dissolved Solids	mg/L	470
UA	G270	B	2021/10/26	Total Dissolved Solids	mg/L	410
UA	G270	B	2022/02/08	Total Dissolved Solids	mg/L	410
UA	G270	B	2022/05/10	Total Dissolved Solids	mg/L	420
UA	G270	B	2022/08/24	Total Dissolved Solids	mg/L	500

UA	G270	B	2022/11/08	Total Dissolved Solids	mg/L	420
UA	G270	B	2023/02/16	Total Dissolved Solids	mg/L	410
UA	G270	B	2023/06/08	Total Dissolved Solids	mg/L	500
UA	G270	B	2023/08/14	Total Dissolved Solids	mg/L	426
UA	G270	B	2023/11/17	Total Dissolved Solids	mg/L	460
UA	G280	B	2010/07/27	pH (field)	SU	7.3
UA	G280	B	2010/11/16	pH (field)	SU	7.9
UA	G280	B	2011/01/28	pH (field)	SU	7.3
UA	G280	B	2011/05/04	pH (field)	SU	7.2
UA	G280	B	2011/07/27	pH (field)	SU	7.2
UA	G280	B	2011/11/11	pH (field)	SU	7.8
UA	G280	B	2012/01/30	pH (field)	SU	7.3
UA	G280	B	2012/05/22	pH (field)	SU	7.5
UA	G280	B	2012/07/24	pH (field)	SU	7.1
UA	G280	B	2012/11/14	pH (field)	SU	7.7
UA	G280	B	2013/01/31	pH (field)	SU	7.5
UA	G280	B	2013/05/20	pH (field)	SU	7.3
UA	G280	B	2013/07/22	pH (field)	SU	7.3
UA	G280	B	2013/10/14	pH (field)	SU	7.4
UA	G280	B	2014/02/19	pH (field)	SU	7.7
UA	G280	B	2014/05/13	pH (field)	SU	7.2
UA	G280	B	2014/08/12	pH (field)	SU	7.6
UA	G280	B	2014/10/14	pH (field)	SU	7.5
UA	G280	B	2015/01/21	pH (field)	SU	7.6
UA	G280	B	2015/04/13	pH (field)	SU	7.2
UA	G280	B	2015/07/23	pH (field)	SU	7.6
UA	G280	B	2015/10/08	pH (field)	SU	7.7
UA	G280	B	2015/11/24	pH (field)	SU	7.4
UA	G280	B	2016/02/10	pH (field)	SU	6.5
UA	G280	B	2016/05/10	pH (field)	SU	7.2
UA	G280	B	2016/08/03	pH (field)	SU	7.2
UA	G280	B	2016/11/20	pH (field)	SU	7.1
UA	G280	B	2017/02/15	pH (field)	SU	7.0
UA	G280	B	2017/05/20	pH (field)	SU	7.2
UA	G280	B	2017/07/18	pH (field)	SU	7.3
UA	G280	B	2017/11/04	pH (field)	SU	7.2
UA	G280	B	2018/05/16	pH (field)	SU	7.2
UA	G280	B	2018/08/10	pH (field)	SU	7.1
UA	G280	B	2019/01/22	pH (field)	SU	7.1
UA	G280	B	2019/08/26	pH (field)	SU	7.1
UA	G280	B	2020/01/23	pH (field)	SU	7.7
UA	G280	B	2020/08/11	pH (field)	SU	7.3
UA	G280	B	2020/10/14	pH (field)	SU	7.1
UA	G280	B	2021/01/21	pH (field)	SU	7.3
UA	G280	B	2021/01/28	pH (field)	SU	7.3
UA	G280	B	2021/03/30	pH (field)	SU	7.4
UA	G280	B	2021/04/22	pH (field)	SU	7.4
UA	G280	B	2021/05/06	pH (field)	SU	7.2
UA	G280	B	2021/05/19	pH (field)	SU	7.4
UA	G280	B	2021/06/28	pH (field)	SU	7.4
UA	G280	B	2021/07/13	pH (field)	SU	7.4
UA	G280	B	2021/07/27	pH (field)	SU	7.5
UA	G280	B	2021/08/18	pH (field)	SU	7.1
UA	G280	B	2021/10/26	pH (field)	SU	7.3
UA	G280	B	2022/02/08	pH (field)	SU	7.2
UA	G280	B	2022/05/10	pH (field)	SU	7.4
UA	G280	B	2022/08/24	pH (field)	SU	7.2
UA	G280	B	2022/11/09	pH (field)	SU	7.2
UA	G280	B	2023/02/16	pH (field)	SU	6.0
UA	G280	B	2023/06/08	pH (field)	SU	7.3
UA	G280	B	2023/08/14	pH (field)	SU	7.4
UA	G280	B	2023/11/20	pH (field)	SU	7.4

UA	G280	B	2015/11/24	Oxidation Reduction Potential	mV	18.0
UA	G280	B	2016/02/10	Oxidation Reduction Potential	mV	193
UA	G280	B	2016/05/10	Oxidation Reduction Potential	mV	140
UA	G280	B	2016/08/03	Oxidation Reduction Potential	mV	101
UA	G280	B	2016/11/20	Oxidation Reduction Potential	mV	103
UA	G280	B	2017/02/15	Oxidation Reduction Potential	mV	65.0
UA	G280	B	2017/05/20	Oxidation Reduction Potential	mV	89.0
UA	G280	B	2017/07/18	Oxidation Reduction Potential	mV	93.0
UA	G280	B	2017/11/04	Oxidation Reduction Potential	mV	106
UA	G280	B	2018/05/16	Oxidation Reduction Potential	mV	86.0
UA	G280	B	2018/08/10	Oxidation Reduction Potential	mV	102
UA	G280	B	2019/01/22	Oxidation Reduction Potential	mV	107
UA	G280	B	2019/08/26	Oxidation Reduction Potential	mV	99.0
UA	G280	B	2020/01/23	Oxidation Reduction Potential	mV	189
UA	G280	B	2020/08/11	Oxidation Reduction Potential	mV	101
UA	G280	B	2020/10/14	Oxidation Reduction Potential	mV	197
UA	G280	B	2021/01/21	Oxidation Reduction Potential	mV	98.1
UA	G280	B	2021/01/28	Oxidation Reduction Potential	mV	98.1
UA	G280	B	2021/03/30	Oxidation Reduction Potential	mV	119
UA	G280	B	2021/04/22	Oxidation Reduction Potential	mV	107
UA	G280	B	2021/05/06	Oxidation Reduction Potential	mV	149
UA	G280	B	2021/05/19	Oxidation Reduction Potential	mV	82.9
UA	G280	B	2021/06/28	Oxidation Reduction Potential	mV	36.0
UA	G280	B	2021/07/13	Oxidation Reduction Potential	mV	77.4
UA	G280	B	2021/07/27	Oxidation Reduction Potential	mV	178
UA	G280	B	2021/08/18	Oxidation Reduction Potential	mV	63.9
UA	G280	B	2021/10/26	Oxidation Reduction Potential	mV	56.0
UA	G280	B	2022/02/08	Oxidation Reduction Potential	mV	-15.2
UA	G280	B	2022/05/10	Oxidation Reduction Potential	mV	23.2
UA	G280	B	2022/08/24	Oxidation Reduction Potential	mV	64.4
UA	G280	B	2022/11/09	Oxidation Reduction Potential	mV	209
UA	G280	B	2023/02/16	Oxidation Reduction Potential	mV	236
UA	G280	B	2023/06/08	Oxidation Reduction Potential	mV	190
UA	G280	B	2023/08/14	Oxidation Reduction Potential	mV	31.0
UA	G280	B	2023/11/20	Oxidation Reduction Potential	mV	107
UA	G280	B	2015/11/24	Eh	V	0.21
UA	G280	B	2016/02/10	Eh	V	0.39
UA	G280	B	2016/05/10	Eh	V	0.33
UA	G280	B	2016/08/03	Eh	V	0.29
UA	G280	B	2016/11/20	Eh	V	0.30
UA	G280	B	2017/02/15	Eh	V	0.26
UA	G280	B	2017/05/20	Eh	V	0.28
UA	G280	B	2017/07/18	Eh	V	0.28
UA	G280	B	2017/11/04	Eh	V	0.30
UA	G280	B	2018/05/16	Eh	V	0.28
UA	G280	B	2018/08/10	Eh	V	0.30
UA	G280	B	2019/01/22	Eh	V	0.30
UA	G280	B	2019/08/26	Eh	V	0.29
UA	G280	B	2020/01/23	Eh	V	0.39
UA	G280	B	2020/08/11	Eh	V	0.29
UA	G280	B	2020/10/14	Eh	V	0.39
UA	G280	B	2021/01/21	Eh	V	0.30
UA	G280	B	2021/01/28	Eh	V	0.30
UA	G280	B	2021/03/30	Eh	V	0.32
UA	G280	B	2021/04/22	Eh	V	0.30
UA	G280	B	2021/05/06	Eh	V	0.35
UA	G280	B	2021/05/19	Eh	V	0.28
UA	G280	B	2021/06/28	Eh	V	0.23
UA	G280	B	2021/07/13	Eh	V	0.27
UA	G280	B	2021/07/27	Eh	V	0.37
UA	G280	B	2021/08/18	Eh	V	0.26
UA	G280	B	2022/02/08	Eh	V	0.18

UA	G280	B	2022/05/10	Eh	V	0.22
UA	G280	B	2022/08/24	Eh	V	0.26
UA	G280	B	2022/11/09	Eh	V	0.40
UA	G280	B	2023/02/16	Eh	V	0.44
UA	G280	B	2023/06/08	Eh	V	0.39
UA	G280	B	2023/08/14	Eh	V	0.23
UA	G280	B	2023/11/20	Eh	V	0.30
UA	G280	B	2008/03/11	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G280	B	2008/04/21	Alkalinity, bicarbonate	mg/L CaCO3	270
UA	G280	B	2008/06/11	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G280	B	2008/08/13	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2008/10/13	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2008/12/03	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G280	B	2010/02/11	Alkalinity, bicarbonate	mg/L CaCO3	230
UA	G280	B	2011/01/28	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2012/01/30	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	220
UA	G280	B	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2014/08/12	Alkalinity, bicarbonate	mg/L CaCO3	270
UA	G280	B	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G280	B	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2017/07/18	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2020/01/23	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2021/01/28	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	220
UA	G280	B	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G280	B	2021/05/19	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G280	B	2021/06/16	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	220
UA	G280	B	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2022/02/08	Alkalinity, bicarbonate	mg/L CaCO3	220
UA	G280	B	2022/08/24	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2023/02/16	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G280	B	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G280	B	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	262
UA	G280	B	2023/11/20	Alkalinity, bicarbonate	mg/L CaCO3	254
UA	G280	B	2022/08/24	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G280	B	2008/03/11	Arsenic, total	mg/L	<0.01
UA	G280	B	2008/04/21	Arsenic, total	mg/L	<0.001
UA	G280	B	2008/06/11	Arsenic, total	mg/L	<0.001
UA	G280	B	2008/08/13	Arsenic, total	mg/L	<0.001
UA	G280	B	2008/10/13	Arsenic, total	mg/L	<0.001
UA	G280	B	2008/12/03	Arsenic, total	mg/L	<0.001
UA	G280	B	2009/09/21	Arsenic, total	mg/L	<0.001
UA	G280	B	2009/11/12	Arsenic, total	mg/L	<0.001
UA	G280	B	2010/01/28	Arsenic, total	mg/L	<0.001
UA	G280	B	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G280	B	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G280	B	2011/01/28	Arsenic, total	mg/L	0.00120
UA	G280	B	2011/05/04	Arsenic, total	mg/L	<0.001
UA	G280	B	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G280	B	2011/11/11	Arsenic, total	mg/L	<0.001
UA	G280	B	2012/01/30	Arsenic, total	mg/L	<0.001
UA	G280	B	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G280	B	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G280	B	2012/11/14	Arsenic, total	mg/L	0.00210
UA	G280	B	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G280	B	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G280	B	2013/07/22	Arsenic, total	mg/L	<0.001

UA	G280	B	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G280	B	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G280	B	2014/05/13	Arsenic, total	mg/L	0.00140
UA	G280	B	2014/08/12	Arsenic, total	mg/L	<0.001
UA	G280	B	2014/10/14	Arsenic, total	mg/L	0.00120
UA	G280	B	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G280	B	2015/04/13	Arsenic, total	mg/L	<0.001
UA	G280	B	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G280	B	2015/10/08	Arsenic, total	mg/L	<0.001
UA	G280	B	2015/11/24	Arsenic, total	mg/L	0.00660
UA	G280	B	2016/02/10	Arsenic, total	mg/L	<0.00013
UA	G280	B	2016/05/10	Arsenic, total	mg/L	<0.00013
UA	G280	B	2016/08/03	Arsenic, total	mg/L	<0.00013
UA	G280	B	2016/11/20	Arsenic, total	mg/L	<0.00013
UA	G280	B	2017/02/15	Arsenic, total	mg/L	0.00170
UA	G280	B	2017/05/20	Arsenic, total	mg/L	<0.00013
UA	G280	B	2017/07/18	Arsenic, total	mg/L	<0.00013
UA	G280	B	2018/05/16	Arsenic, total	mg/L	0.00110
UA	G280	B	2018/08/10	Arsenic, total	mg/L	<0.0009
UA	G280	B	2019/01/22	Arsenic, total	mg/L	0.00350
UA	G280	B	2019/08/26	Arsenic, total	mg/L	<0.0009
UA	G280	B	2020/01/23	Arsenic, total	mg/L	<0.0009
UA	G280	B	2020/08/11	Arsenic, total	mg/L	0.00340
UA	G280	B	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G280	B	2021/01/21	Arsenic, total	mg/L	<0.001
UA	G280	B	2021/01/28	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/03/30	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/04/22	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/05/06	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/05/19	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/06/16	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/06/28	Arsenic, total	mg/L	<0.0002
UA	G280	B	2021/07/13	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/07/27	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G280	B	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G280	B	2022/02/08	Arsenic, total	mg/L	<0.0002
UA	G280	B	2022/05/10	Arsenic, total	mg/L	<0.00069
UA	G280	B	2022/08/24	Arsenic, total	mg/L	<0.00069
UA	G280	B	2022/11/09	Arsenic, total	mg/L	0.000900
UA	G280	B	2023/02/16	Arsenic, total	mg/L	0.00140
UA	G280	B	2023/06/08	Arsenic, total	mg/L	0.000770
UA	G280	B	2023/08/14	Arsenic, total	mg/L	<0.0004
UA	G280	B	2023/11/20	Arsenic, total	mg/L	0.000500
UA	G280	B	2008/03/11	Barium, total	mg/L	0.0490
UA	G280	B	2008/04/21	Barium, total	mg/L	0.0580
UA	G280	B	2008/06/11	Barium, total	mg/L	0.0520
UA	G280	B	2008/08/13	Barium, total	mg/L	0.0530
UA	G280	B	2008/10/13	Barium, total	mg/L	0.0500
UA	G280	B	2008/12/03	Barium, total	mg/L	0.110
UA	G280	B	2010/02/11	Barium, total	mg/L	0.0390
UA	G280	B	2011/01/28	Barium, total	mg/L	0.0820
UA	G280	B	2012/01/30	Barium, total	mg/L	0.0470
UA	G280	B	2013/01/31	Barium, total	mg/L	0.0360
UA	G280	B	2014/02/19	Barium, total	mg/L	0.0410
UA	G280	B	2015/04/13	Barium, total	mg/L	0.0450
UA	G280	B	2015/07/23	Barium, total	mg/L	0.0490
UA	G280	B	2015/10/08	Barium, total	mg/L	0.0560
UA	G280	B	2015/11/24	Barium, total	mg/L	0.110
UA	G280	B	2016/02/10	Barium, total	mg/L	0.0450
UA	G280	B	2016/05/10	Barium, total	mg/L	0.0450
UA	G280	B	2016/08/03	Barium, total	mg/L	0.0450

UA	G280	B	2016/11/20	Barium, total	mg/L	0.0440
UA	G280	B	2017/02/15	Barium, total	mg/L	0.0520
UA	G280	B	2017/05/20	Barium, total	mg/L	0.0420
UA	G280	B	2017/07/18	Barium, total	mg/L	0.0410
UA	G280	B	2018/05/16	Barium, total	mg/L	0.0380
UA	G280	B	2018/08/10	Barium, total	mg/L	0.0380
UA	G280	B	2019/01/22	Barium, total	mg/L	0.0700
UA	G280	B	2019/08/26	Barium, total	mg/L	0.0450
UA	G280	B	2020/01/23	Barium, total	mg/L	0.0410
UA	G280	B	2020/08/11	Barium, total	mg/L	0.210
UA	G280	B	2020/10/14	Barium, total	mg/L	0.0440
UA	G280	B	2021/01/21	Barium, total	mg/L	0.0450
UA	G280	B	2021/01/28	Barium, total	mg/L	0.0430
UA	G280	B	2021/03/30	Barium, total	mg/L	0.0420
UA	G280	B	2021/04/22	Barium, total	mg/L	0.0400
UA	G280	B	2021/05/06	Barium, total	mg/L	0.0400
UA	G280	B	2021/05/19	Barium, total	mg/L	0.0380
UA	G280	B	2021/06/16	Barium, total	mg/L	0.0420
UA	G280	B	2021/06/28	Barium, total	mg/L	0.0430
UA	G280	B	2021/07/13	Barium, total	mg/L	0.0410
UA	G280	B	2021/07/27	Barium, total	mg/L	0.0420
UA	G280	B	2021/08/18	Barium, total	mg/L	0.0460
UA	G280	B	2021/10/26	Barium, total	mg/L	0.0380
UA	G280	B	2022/02/08	Barium, total	mg/L	0.0420
UA	G280	B	2022/05/10	Barium, total	mg/L	0.0400
UA	G280	B	2022/08/24	Barium, total	mg/L	0.0450
UA	G280	B	2022/11/09	Barium, total	mg/L	0.0440
UA	G280	B	2023/02/16	Barium, total	mg/L	0.0420
UA	G280	B	2023/06/08	Barium, total	mg/L	0.0490
UA	G280	B	2023/08/14	Barium, total	mg/L	0.0531
UA	G280	B	2023/11/20	Barium, total	mg/L	0.0611
UA	G280	B	2008/03/11	Calcium, total	mg/L	63.0
UA	G280	B	2008/04/21	Calcium, total	mg/L	59.0
UA	G280	B	2008/06/11	Calcium, total	mg/L	66.0
UA	G280	B	2008/08/13	Calcium, total	mg/L	63.0
UA	G280	B	2008/10/13	Calcium, total	mg/L	69.0
UA	G280	B	2008/12/03	Calcium, total	mg/L	120
UA	G280	B	2009/09/21	Calcium, total	mg/L	59.0
UA	G280	B	2009/11/12	Calcium, total	mg/L	61.0
UA	G280	B	2010/01/28	Calcium, total	mg/L	60.0
UA	G280	B	2010/07/27	Calcium, total	mg/L	60.0
UA	G280	B	2010/11/16	Calcium, total	mg/L	58.0
UA	G280	B	2011/01/28	Calcium, total	mg/L	100
UA	G280	B	2011/05/04	Calcium, total	mg/L	<100
UA	G280	B	2011/07/27	Calcium, total	mg/L	63.0
UA	G280	B	2011/11/11	Calcium, total	mg/L	60.0
UA	G280	B	2012/01/30	Calcium, total	mg/L	81.0
UA	G280	B	2012/05/22	Calcium, total	mg/L	65.0
UA	G280	B	2012/07/24	Calcium, total	mg/L	72.0
UA	G280	B	2012/11/14	Calcium, total	mg/L	63.0
UA	G280	B	2013/01/31	Calcium, total	mg/L	63.0
UA	G280	B	2013/05/20	Calcium, total	mg/L	67.0
UA	G280	B	2013/07/22	Calcium, total	mg/L	73.0
UA	G280	B	2013/10/14	Calcium, total	mg/L	72.0
UA	G280	B	2014/02/19	Calcium, total	mg/L	69.0
UA	G280	B	2014/05/13	Calcium, total	mg/L	73.0
UA	G280	B	2014/08/12	Calcium, total	mg/L	75.0
UA	G280	B	2014/10/14	Calcium, total	mg/L	76.0
UA	G280	B	2015/01/21	Calcium, total	mg/L	74.0
UA	G280	B	2015/04/13	Calcium, total	mg/L	71.0
UA	G280	B	2015/11/24	Calcium, total	mg/L	120
UA	G280	B	2016/02/10	Calcium, total	mg/L	60.0

UA	G280	B	2016/05/10	Calcium, total	mg/L	63.0
UA	G280	B	2016/08/03	Calcium, total	mg/L	65.0
UA	G280	B	2016/11/20	Calcium, total	mg/L	63.0
UA	G280	B	2017/02/15	Calcium, total	mg/L	64.0
UA	G280	B	2017/05/20	Calcium, total	mg/L	54.0
UA	G280	B	2017/07/18	Calcium, total	mg/L	67.0
UA	G280	B	2017/11/04	Calcium, total	mg/L	63.0
UA	G280	B	2018/05/16	Calcium, total	mg/L	57.0
UA	G280	B	2018/08/10	Calcium, total	mg/L	62.0
UA	G280	B	2019/01/22	Calcium, total	mg/L	82.0
UA	G280	B	2019/08/26	Calcium, total	mg/L	72.0
UA	G280	B	2020/01/23	Calcium, total	mg/L	73.0
UA	G280	B	2020/08/11	Calcium, total	mg/L	220
UA	G280	B	2020/10/14	Calcium, total	mg/L	78.0
UA	G280	B	2021/01/21	Calcium, total	mg/L	77.0
UA	G280	B	2021/01/28	Calcium, total	mg/L	73.0
UA	G280	B	2021/03/30	Calcium, total	mg/L	62.0
UA	G280	B	2021/04/22	Calcium, total	mg/L	63.0
UA	G280	B	2021/05/06	Calcium, total	mg/L	64.0
UA	G280	B	2021/05/19	Calcium, total	mg/L	64.0
UA	G280	B	2021/06/16	Calcium, total	mg/L	73.0
UA	G280	B	2021/06/28	Calcium, total	mg/L	72.0
UA	G280	B	2021/07/13	Calcium, total	mg/L	70.0
UA	G280	B	2021/07/27	Calcium, total	mg/L	74.0
UA	G280	B	2021/08/18	Calcium, total	mg/L	69.0
UA	G280	B	2021/10/26	Calcium, total	mg/L	65.0
UA	G280	B	2022/02/08	Calcium, total	mg/L	68.0
UA	G280	B	2022/05/10	Calcium, total	mg/L	69.0
UA	G280	B	2022/08/24	Calcium, total	mg/L	80.0
UA	G280	B	2022/11/09	Calcium, total	mg/L	70.0
UA	G280	B	2023/02/16	Calcium, total	mg/L	72.0
UA	G280	B	2023/06/08	Calcium, total	mg/L	79.0
UA	G280	B	2023/08/14	Calcium, total	mg/L	79.5
UA	G280	B	2023/11/20	Calcium, total	mg/L	91.5
UA	G280	B	2008/03/11	Chloride, total	mg/L	47.0
UA	G280	B	2008/04/21	Chloride, total	mg/L	51.0
UA	G280	B	2008/06/11	Chloride, total	mg/L	43.0
UA	G280	B	2008/08/13	Chloride, total	mg/L	44.0
UA	G280	B	2008/10/13	Chloride, total	mg/L	45.0
UA	G280	B	2008/12/03	Chloride, total	mg/L	110
UA	G280	B	2009/09/21	Chloride, total	mg/L	40.0
UA	G280	B	2009/11/12	Chloride, total	mg/L	40.0
UA	G280	B	2010/01/28	Chloride, total	mg/L	41.0
UA	G280	B	2010/07/27	Chloride, total	mg/L	60.0
UA	G280	B	2010/11/16	Chloride, total	mg/L	35.0
UA	G280	B	2011/01/28	Chloride, total	mg/L	57.0
UA	G280	B	2011/05/04	Chloride, total	mg/L	87.0
UA	G280	B	2011/07/27	Chloride, total	mg/L	45.0
UA	G280	B	2011/11/11	Chloride, total	mg/L	51.0
UA	G280	B	2012/01/30	Chloride, total	mg/L	54.0
UA	G280	B	2012/05/22	Chloride, total	mg/L	67.0
UA	G280	B	2012/07/24	Chloride, total	mg/L	48.0
UA	G280	B	2012/11/14	Chloride, total	mg/L	46.0
UA	G280	B	2013/01/31	Chloride, total	mg/L	46.0
UA	G280	B	2013/05/20	Chloride, total	mg/L	59.0
UA	G280	B	2013/07/22	Chloride, total	mg/L	52.0
UA	G280	B	2013/10/14	Chloride, total	mg/L	51.0
UA	G280	B	2014/02/19	Chloride, total	mg/L	56.0
UA	G280	B	2014/05/13	Chloride, total	mg/L	55.0
UA	G280	B	2014/08/12	Chloride, total	mg/L	55.0
UA	G280	B	2014/10/14	Chloride, total	mg/L	60.0
UA	G280	B	2015/01/21	Chloride, total	mg/L	62.0

UA	G280	B	2015/04/13	Chloride, total	mg/L	67.0
UA	G280	B	2015/07/23	Chloride, total	mg/L	53.0
UA	G280	B	2015/10/08	Chloride, total	mg/L	54.0
UA	G280	B	2015/11/24	Chloride, total	mg/L	54.0
UA	G280	B	2016/02/10	Chloride, total	mg/L	52.0
UA	G280	B	2016/05/10	Chloride, total	mg/L	50.0
UA	G280	B	2016/08/03	Chloride, total	mg/L	46.0
UA	G280	B	2016/11/20	Chloride, total	mg/L	49.0
UA	G280	B	2017/02/15	Chloride, total	mg/L	46.0
UA	G280	B	2017/05/20	Chloride, total	mg/L	44.0
UA	G280	B	2017/07/18	Chloride, total	mg/L	46.0
UA	G280	B	2017/11/04	Chloride, total	mg/L	48.0
UA	G280	B	2018/05/16	Chloride, total	mg/L	43.0
UA	G280	B	2018/08/10	Chloride, total	mg/L	55.0
UA	G280	B	2019/01/22	Chloride, total	mg/L	52.0
UA	G280	B	2019/08/26	Chloride, total	mg/L	60.0
UA	G280	B	2020/01/23	Chloride, total	mg/L	64.0
UA	G280	B	2020/08/11	Chloride, total	mg/L	68.0
UA	G280	B	2020/10/14	Chloride, total	mg/L	67.0
UA	G280	B	2021/01/21	Chloride, total	mg/L	33.0
UA	G280	B	2021/01/28	Chloride, total	mg/L	64.0
UA	G280	B	2021/03/30	Chloride, total	mg/L	49.0
UA	G280	B	2021/04/22	Chloride, total	mg/L	55.0
UA	G280	B	2021/05/06	Chloride, total	mg/L	43.0
UA	G280	B	2021/05/19	Chloride, total	mg/L	46.0
UA	G280	B	2021/06/16	Chloride, total	mg/L	67.0
UA	G280	B	2021/06/28	Chloride, total	mg/L	65.0
UA	G280	B	2021/07/13	Chloride, total	mg/L	65.0
UA	G280	B	2021/07/27	Chloride, total	mg/L	63.0
UA	G280	B	2021/08/18	Chloride, total	mg/L	59.0
UA	G280	B	2021/10/26	Chloride, total	mg/L	58.0
UA	G280	B	2022/02/08	Chloride, total	mg/L	51.0
UA	G280	B	2022/05/10	Chloride, total	mg/L	58.0
UA	G280	B	2022/08/24	Chloride, total	mg/L	93.0
UA	G280	B	2022/11/09	Chloride, total	mg/L	710
UA	G280	B	2023/02/16	Chloride, total	mg/L	63.0
UA	G280	B	2023/06/08	Chloride, total	mg/L	71.0
UA	G280	B	2023/08/14	Chloride, total	mg/L	70.0
UA	G280	B	2023/11/20	Chloride, total	mg/L	70.0
UA	G280	B	2023/06/08	Ferrous Iron, dissolved	mg/L	<0.02
UA	G280	B	2008/03/11	Iron, dissolved	mg/L	<1
UA	G280	B	2008/04/21	Iron, dissolved	mg/L	<0.1
UA	G280	B	2008/06/11	Iron, dissolved	mg/L	<0.1
UA	G280	B	2008/08/13	Iron, dissolved	mg/L	<0.1
UA	G280	B	2008/10/13	Iron, dissolved	mg/L	<0.1
UA	G280	B	2008/12/03	Iron, dissolved	mg/L	<0.1
UA	G280	B	2009/09/21	Iron, dissolved	mg/L	<0.1
UA	G280	B	2009/11/12	Iron, dissolved	mg/L	<0.1
UA	G280	B	2010/01/28	Iron, dissolved	mg/L	<0.1
UA	G280	B	2010/07/27	Iron, dissolved	mg/L	<0.01
UA	G280	B	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G280	B	2011/01/28	Iron, dissolved	mg/L	0.0230
UA	G280	B	2011/05/04	Iron, dissolved	mg/L	<0.01
UA	G280	B	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G280	B	2011/11/11	Iron, dissolved	mg/L	0.0140
UA	G280	B	2012/01/30	Iron, dissolved	mg/L	0.0230
UA	G280	B	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G280	B	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G280	B	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G280	B	2013/01/31	Iron, dissolved	mg/L	<0.01
UA	G280	B	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G280	B	2013/07/22	Iron, dissolved	mg/L	<0.01

UA	G280	B	2013/10/14	Iron, dissolved	mg/L	<0.01
UA	G280	B	2014/02/19	Iron, dissolved	mg/L	0.0270
UA	G280	B	2014/05/13	Iron, dissolved	mg/L	<0.01
UA	G280	B	2014/08/12	Iron, dissolved	mg/L	<0.01
UA	G280	B	2014/10/14	Iron, dissolved	mg/L	0.0120
UA	G280	B	2015/01/21	Iron, dissolved	mg/L	0.0180
UA	G280	B	2015/04/13	Iron, dissolved	mg/L	0.270
UA	G280	B	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G280	B	2015/10/08	Iron, dissolved	mg/L	0.0120
UA	G280	B	2016/02/10	Iron, dissolved	mg/L	0.0200
UA	G280	B	2016/05/13	Iron, dissolved	mg/L	<0.01
UA	G280	B	2016/08/03	Iron, dissolved	mg/L	0.0160
UA	G280	B	2016/11/22	Iron, dissolved	mg/L	0.0520
UA	G280	B	2017/02/14	Iron, dissolved	mg/L	0.0110
UA	G280	B	2017/05/19	Iron, dissolved	mg/L	<0.01
UA	G280	B	2017/07/25	Iron, dissolved	mg/L	0.0120
UA	G280	B	2017/11/04	Iron, dissolved	mg/L	0.400
UA	G280	B	2018/01/30	Iron, dissolved	mg/L	0.130
UA	G280	B	2018/05/16	Iron, dissolved	mg/L	<0.01
UA	G280	B	2018/08/10	Iron, dissolved	mg/L	0.0120
UA	G280	B	2018/11/06	Iron, dissolved	mg/L	<0.01
UA	G280	B	2019/01/22	Iron, dissolved	mg/L	0.0530
UA	G280	B	2019/05/01	Iron, dissolved	mg/L	<0.01
UA	G280	B	2019/08/26	Iron, dissolved	mg/L	<0.01
UA	G280	B	2019/10/22	Iron, dissolved	mg/L	<0.01
UA	G280	B	2020/01/23	Iron, dissolved	mg/L	0.0110
UA	G280	B	2020/05/07	Iron, dissolved	mg/L	<0.01
UA	G280	B	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G280	B	2021/01/21	Iron, dissolved	mg/L	<0.01
UA	G280	B	2021/01/28	Iron, dissolved	mg/L	<0.01
UA	G280	B	2021/04/22	Iron, dissolved	mg/L	<0.01
UA	G280	B	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G280	B	2021/10/26	Iron, dissolved	mg/L	0.0180
UA	G280	B	2022/02/08	Iron, dissolved	mg/L	<0.01
UA	G280	B	2022/05/10	Iron, dissolved	mg/L	<0.00072
UA	G280	B	2022/08/24	Iron, dissolved	mg/L	0.0180
UA	G280	B	2022/11/09	Iron, dissolved	mg/L	0.00780
UA	G280	B	2023/02/16	Iron, dissolved	mg/L	0.00470
UA	G280	B	2023/06/08	Iron, dissolved	mg/L	0.00610
UA	G280	B	2023/08/14	Iron, dissolved	mg/L	<0.0175
UA	G280	B	2023/11/20	Iron, dissolved	mg/L	<0.0115
UA	G280	B	2008/03/11	Magnesium, total	mg/L	35.0
UA	G280	B	2008/04/21	Magnesium, total	mg/L	32.0
UA	G280	B	2008/06/11	Magnesium, total	mg/L	33.0
UA	G280	B	2008/08/13	Magnesium, total	mg/L	32.0
UA	G280	B	2008/10/13	Magnesium, total	mg/L	36.0
UA	G280	B	2008/12/03	Magnesium, total	mg/L	55.0
UA	G280	B	2010/02/11	Magnesium, total	mg/L	30.0
UA	G280	B	2011/01/28	Magnesium, total	mg/L	47.0
UA	G280	B	2012/01/30	Magnesium, total	mg/L	31.0
UA	G280	B	2013/01/31	Magnesium, total	mg/L	31.0
UA	G280	B	2014/02/19	Magnesium, total	mg/L	34.0
UA	G280	B	2015/04/13	Magnesium, total	mg/L	36.0
UA	G280	B	2017/07/18	Magnesium, total	mg/L	31.0
UA	G280	B	2020/01/23	Magnesium, total	mg/L	36.0
UA	G280	B	2021/01/28	Magnesium, total	mg/L	37.0
UA	G280	B	2021/03/30	Magnesium, total	mg/L	32.0
UA	G280	B	2021/04/22	Magnesium, total	mg/L	33.0
UA	G280	B	2021/05/06	Magnesium, total	mg/L	31.0
UA	G280	B	2021/05/19	Magnesium, total	mg/L	33.0
UA	G280	B	2021/06/16	Magnesium, total	mg/L	36.0
UA	G280	B	2021/06/28	Magnesium, total	mg/L	38.0

UA	G280	B	2021/07/13	Magnesium, total	mg/L	37.0
UA	G280	B	2021/07/27	Magnesium, total	mg/L	36.0
UA	G280	B	2022/02/08	Magnesium, total	mg/L	30.0
UA	G280	B	2022/08/24	Magnesium, total	mg/L	41.0
UA	G280	B	2023/06/08	Magnesium, total	mg/L	38.0
UA	G280	B	2023/08/14	Magnesium, total	mg/L	36.6
UA	G280	B	2023/11/20	Magnesium, total	mg/L	42.7
UA	G280	B	2008/03/11	Manganese, dissolved	mg/L	0.110
UA	G280	B	2008/04/21	Manganese, dissolved	mg/L	0.180
UA	G280	B	2008/06/11	Manganese, dissolved	mg/L	0.130
UA	G280	B	2008/08/13	Manganese, dissolved	mg/L	0.130
UA	G280	B	2008/10/13	Manganese, dissolved	mg/L	0.0780
UA	G280	B	2008/12/03	Manganese, dissolved	mg/L	0.240
UA	G280	B	2009/09/21	Manganese, dissolved	mg/L	0.0120
UA	G280	B	2009/11/12	Manganese, dissolved	mg/L	0.0190
UA	G280	B	2010/01/28	Manganese, dissolved	mg/L	0.00690
UA	G280	B	2010/07/27	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2010/11/16	Manganese, dissolved	mg/L	0.0180
UA	G280	B	2011/01/28	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2011/05/04	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2011/07/27	Manganese, dissolved	mg/L	0.0150
UA	G280	B	2011/11/11	Manganese, dissolved	mg/L	0.00330
UA	G280	B	2012/01/30	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2012/05/22	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2012/07/24	Manganese, dissolved	mg/L	0.00730
UA	G280	B	2012/11/14	Manganese, dissolved	mg/L	0.00810
UA	G280	B	2013/01/31	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2013/10/14	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2014/02/19	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2014/05/13	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2014/08/12	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2014/10/14	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2015/01/21	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2015/04/13	Manganese, dissolved	mg/L	0.0260
UA	G280	B	2015/07/23	Manganese, dissolved	mg/L	0.0740
UA	G280	B	2015/10/08	Manganese, dissolved	mg/L	0.00350
UA	G280	B	2016/02/10	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2016/05/13	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2016/08/03	Manganese, dissolved	mg/L	0.00760
UA	G280	B	2016/11/22	Manganese, dissolved	mg/L	0.0690
UA	G280	B	2017/02/14	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2017/05/19	Manganese, dissolved	mg/L	0.00460
UA	G280	B	2017/07/25	Manganese, dissolved	mg/L	0.00230
UA	G280	B	2017/11/04	Manganese, dissolved	mg/L	0.0590
UA	G280	B	2018/01/30	Manganese, dissolved	mg/L	0.00670
UA	G280	B	2018/03/01	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2018/05/16	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2019/05/01	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2019/08/26	Manganese, dissolved	mg/L	0.00190
UA	G280	B	2020/01/23	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2020/05/07	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2020/10/14	Manganese, dissolved	mg/L	0.00360
UA	G280	B	2021/01/21	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2021/01/28	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2021/04/22	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2021/08/18	Manganese, dissolved	mg/L	<0.001
UA	G280	B	2021/10/26	Manganese, dissolved	mg/L	0.00180
UA	G280	B	2022/02/08	Manganese, dissolved	mg/L	0.00120
UA	G280	B	2022/05/10	Manganese, dissolved	mg/L	<0.00023
UA	G280	B	2022/08/24	Manganese, dissolved	mg/L	0.00100

UA	G280	B	2022/11/09	Manganese, dissolved	mg/L	0.00550
UA	G280	B	2023/02/16	Manganese, dissolved	mg/L	0.00200
UA	G280	B	2023/06/08	Manganese, dissolved	mg/L	0.00140
UA	G280	B	2023/08/14	Manganese, dissolved	mg/L	0.00320
UA	G280	B	2023/11/20	Manganese, dissolved	mg/L	0.0123
UA	G280	B	2023/08/14	Phosphate, dissolved	mg/L	0.0370
UA	G280	B	2008/03/11	Potassium, total	mg/L	<5
UA	G280	B	2008/04/21	Potassium, total	mg/L	1.20
UA	G280	B	2008/06/11	Potassium, total	mg/L	1.00
UA	G280	B	2008/08/13	Potassium, total	mg/L	1.20
UA	G280	B	2008/10/13	Potassium, total	mg/L	0.850
UA	G280	B	2008/12/03	Potassium, total	mg/L	0.870
UA	G280	B	2010/02/11	Potassium, total	mg/L	0.640
UA	G280	B	2011/01/28	Potassium, total	mg/L	0.870
UA	G280	B	2012/01/30	Potassium, total	mg/L	0.610
UA	G280	B	2013/01/31	Potassium, total	mg/L	0.730
UA	G280	B	2014/02/19	Potassium, total	mg/L	0.430
UA	G280	B	2015/04/13	Potassium, total	mg/L	0.580
UA	G280	B	2017/07/18	Potassium, total	mg/L	0.580
UA	G280	B	2020/01/23	Potassium, total	mg/L	0.440
UA	G280	B	2021/01/28	Potassium, total	mg/L	0.540
UA	G280	B	2021/03/30	Potassium, total	mg/L	0.570
UA	G280	B	2021/04/22	Potassium, total	mg/L	0.470
UA	G280	B	2021/05/06	Potassium, total	mg/L	0.470
UA	G280	B	2021/05/19	Potassium, total	mg/L	0.350
UA	G280	B	2021/06/16	Potassium, total	mg/L	0.340
UA	G280	B	2021/06/28	Potassium, total	mg/L	0.460
UA	G280	B	2021/07/13	Potassium, total	mg/L	0.330
UA	G280	B	2021/07/27	Potassium, total	mg/L	0.360
UA	G280	B	2022/02/08	Potassium, total	mg/L	6.70
UA	G280	B	2022/08/24	Potassium, total	mg/L	0.420
UA	G280	B	2023/02/16	Potassium, total	mg/L	0.520
UA	G280	B	2023/06/08	Potassium, total	mg/L	0.580
UA	G280	B	2023/08/14	Potassium, total	mg/L	0.539
UA	G280	B	2023/11/20	Potassium, total	mg/L	0.644
UA	G280	B	2023/06/08	Silicon, dissolved	mg/L	8.20
UA	G280	B	2023/08/14	Silicon, dissolved	mg/L	7.33
UA	G280	B	2008/03/11	Sodium, total	mg/L	48.0
UA	G280	B	2008/04/21	Sodium, total	mg/L	49.0
UA	G280	B	2008/06/11	Sodium, total	mg/L	50.0
UA	G280	B	2008/08/13	Sodium, total	mg/L	50.0
UA	G280	B	2008/10/13	Sodium, total	mg/L	54.0
UA	G280	B	2008/12/03	Sodium, total	mg/L	97.0
UA	G280	B	2010/02/11	Sodium, total	mg/L	58.0
UA	G280	B	2011/01/28	Sodium, total	mg/L	82.0
UA	G280	B	2012/01/30	Sodium, total	mg/L	91.0
UA	G280	B	2013/01/31	Sodium, total	mg/L	47.0
UA	G280	B	2014/02/19	Sodium, total	mg/L	50.0
UA	G280	B	2015/04/13	Sodium, total	mg/L	65.0
UA	G280	B	2017/07/18	Sodium, total	mg/L	49.0
UA	G280	B	2020/01/23	Sodium, total	mg/L	60.0
UA	G280	B	2021/01/28	Sodium, total	mg/L	60.0
UA	G280	B	2021/03/30	Sodium, total	mg/L	61.0
UA	G280	B	2021/04/22	Sodium, total	mg/L	60.0
UA	G280	B	2021/05/06	Sodium, total	mg/L	60.0
UA	G280	B	2021/05/19	Sodium, total	mg/L	61.0
UA	G280	B	2021/06/16	Sodium, total	mg/L	50.0
UA	G280	B	2021/06/28	Sodium, total	mg/L	53.0
UA	G280	B	2021/07/13	Sodium, total	mg/L	54.0
UA	G280	B	2021/07/27	Sodium, total	mg/L	52.0
UA	G280	B	2022/02/08	Sodium, total	mg/L	53.0
UA	G280	B	2022/08/24	Sodium, total	mg/L	62.0

UA	G280	B	2023/02/16	Sodium, total	mg/L	61.0
UA	G280	B	2023/06/08	Sodium, total	mg/L	56.0
UA	G280	B	2023/08/14	Sodium, total	mg/L	58.5
UA	G280	B	2023/11/20	Sodium, total	mg/L	60.7
UA	G280	B	2008/03/11	Sulfate, total	mg/L	60.0
UA	G280	B	2008/04/21	Sulfate, total	mg/L	58.0
UA	G280	B	2008/06/11	Sulfate, total	mg/L	62.0
UA	G280	B	2008/08/13	Sulfate, total	mg/L	59.0
UA	G280	B	2008/10/13	Sulfate, total	mg/L	60.0
UA	G280	B	2008/12/03	Sulfate, total	mg/L	230
UA	G280	B	2009/09/21	Sulfate, total	mg/L	43.0
UA	G280	B	2009/11/12	Sulfate, total	mg/L	42.0
UA	G280	B	2010/01/28	Sulfate, total	mg/L	47.0
UA	G280	B	2010/07/27	Sulfate, total	mg/L	80.0
UA	G280	B	2010/11/16	Sulfate, total	mg/L	43.0
UA	G280	B	2011/01/28	Sulfate, total	mg/L	76.0
UA	G280	B	2011/05/04	Sulfate, total	mg/L	98.0
UA	G280	B	2011/07/27	Sulfate, total	mg/L	54.0
UA	G280	B	2011/11/11	Sulfate, total	mg/L	59.0
UA	G280	B	2012/01/30	Sulfate, total	mg/L	68.0
UA	G280	B	2012/05/22	Sulfate, total	mg/L	93.0
UA	G280	B	2012/07/24	Sulfate, total	mg/L	51.0
UA	G280	B	2012/11/14	Sulfate, total	mg/L	48.0
UA	G280	B	2013/01/31	Sulfate, total	mg/L	54.0
UA	G280	B	2013/05/20	Sulfate, total	mg/L	71.0
UA	G280	B	2013/07/22	Sulfate, total	mg/L	67.0
UA	G280	B	2013/10/14	Sulfate, total	mg/L	65.0
UA	G280	B	2014/02/19	Sulfate, total	mg/L	74.0
UA	G280	B	2014/05/13	Sulfate, total	mg/L	78.0
UA	G280	B	2014/08/12	Sulfate, total	mg/L	76.0
UA	G280	B	2014/10/14	Sulfate, total	mg/L	83.0
UA	G280	B	2015/01/21	Sulfate, total	mg/L	87.0
UA	G280	B	2015/04/13	Sulfate, total	mg/L	86.0
UA	G280	B	2015/07/23	Sulfate, total	mg/L	74.0
UA	G280	B	2015/10/08	Sulfate, total	mg/L	92.0
UA	G280	B	2015/11/24	Sulfate, total	mg/L	94.0
UA	G280	B	2016/02/10	Sulfate, total	mg/L	84.0
UA	G280	B	2016/05/10	Sulfate, total	mg/L	80.0
UA	G280	B	2016/08/03	Sulfate, total	mg/L	55.0
UA	G280	B	2016/11/20	Sulfate, total	mg/L	67.0
UA	G280	B	2017/02/15	Sulfate, total	mg/L	94.0
UA	G280	B	2017/05/20	Sulfate, total	mg/L	84.0
UA	G280	B	2017/07/18	Sulfate, total	mg/L	58.0
UA	G280	B	2017/11/04	Sulfate, total	mg/L	57.0
UA	G280	B	2018/05/16	Sulfate, total	mg/L	52.0
UA	G280	B	2018/08/10	Sulfate, total	mg/L	63.0
UA	G280	B	2019/01/22	Sulfate, total	mg/L	69.0
UA	G280	B	2019/08/26	Sulfate, total	mg/L	81.0
UA	G280	B	2020/01/23	Sulfate, total	mg/L	84.0
UA	G280	B	2020/08/11	Sulfate, total	mg/L	86.0
UA	G280	B	2020/10/14	Sulfate, total	mg/L	84.0
UA	G280	B	2021/01/21	Sulfate, total	mg/L	43.0
UA	G280	B	2021/01/28	Sulfate, total	mg/L	86.0
UA	G280	B	2021/03/30	Sulfate, total	mg/L	84.0
UA	G280	B	2021/04/22	Sulfate, total	mg/L	89.0
UA	G280	B	2021/05/06	Sulfate, total	mg/L	92.0
UA	G280	B	2021/05/19	Sulfate, total	mg/L	81.0
UA	G280	B	2021/06/16	Sulfate, total	mg/L	82.0
UA	G280	B	2021/06/28	Sulfate, total	mg/L	79.0
UA	G280	B	2021/07/13	Sulfate, total	mg/L	81.0
UA	G280	B	2021/07/27	Sulfate, total	mg/L	77.0
UA	G280	B	2021/08/18	Sulfate, total	mg/L	74.0

UA	G280	B	2021/10/26	Sulfate, total	mg/L	74.0
UA	G280	B	2022/02/08	Sulfate, total	mg/L	82.0
UA	G280	B	2022/05/10	Sulfate, total	mg/L	79.0
UA	G280	B	2022/08/24	Sulfate, total	mg/L	82.0
UA	G280	B	2022/11/09	Sulfate, total	mg/L	910
UA	G280	B	2023/02/16	Sulfate, total	mg/L	81.0
UA	G280	B	2023/06/08	Sulfate, total	mg/L	91.0
UA	G280	B	2023/08/14	Sulfate, total	mg/L	91.0
UA	G280	B	2023/11/20	Sulfate, total	mg/L	113
UA	G280	B	2015/11/24	Temperature (Celsius)	degrees C	16.0
UA	G280	B	2016/02/10	Temperature (Celsius)	degrees C	8.20
UA	G280	B	2016/05/10	Temperature (Celsius)	degrees C	16.0
UA	G280	B	2016/08/03	Temperature (Celsius)	degrees C	17.7
UA	G280	B	2016/11/20	Temperature (Celsius)	degrees C	14.7
UA	G280	B	2017/02/15	Temperature (Celsius)	degrees C	15.5
UA	G280	B	2017/05/20	Temperature (Celsius)	degrees C	14.9
UA	G280	B	2017/07/18	Temperature (Celsius)	degrees C	22.4
UA	G280	B	2017/11/04	Temperature (Celsius)	degrees C	13.5
UA	G280	B	2018/05/16	Temperature (Celsius)	degrees C	14.9
UA	G280	B	2018/08/10	Temperature (Celsius)	degrees C	15.9
UA	G280	B	2019/01/22	Temperature (Celsius)	degrees C	11.6
UA	G280	B	2019/08/26	Temperature (Celsius)	degrees C	17.0
UA	G280	B	2020/01/23	Temperature (Celsius)	degrees C	10.4
UA	G280	B	2020/08/11	Temperature (Celsius)	degrees C	19.0
UA	G280	B	2020/10/14	Temperature (Celsius)	degrees C	16.5
UA	G280	B	2021/01/21	Temperature (Celsius)	degrees C	12.1
UA	G280	B	2021/01/28	Temperature (Celsius)	degrees C	12.1
UA	G280	B	2021/03/30	Temperature (Celsius)	degrees C	13.4
UA	G280	B	2021/04/22	Temperature (Celsius)	degrees C	13.1
UA	G280	B	2021/05/06	Temperature (Celsius)	degrees C	12.9
UA	G280	B	2021/05/19	Temperature (Celsius)	degrees C	15.0
UA	G280	B	2021/06/28	Temperature (Celsius)	degrees C	20.9
UA	G280	B	2021/07/13	Temperature (Celsius)	degrees C	18.1
UA	G280	B	2021/07/27	Temperature (Celsius)	degrees C	20.2
UA	G280	B	2021/08/18	Temperature (Celsius)	degrees C	19.8
UA	G280	B	2022/02/08	Temperature (Celsius)	degrees C	9.90
UA	G280	B	2022/05/10	Temperature (Celsius)	degrees C	17.8
UA	G280	B	2022/08/24	Temperature (Celsius)	degrees C	19.1
UA	G280	B	2022/11/09	Temperature (Celsius)	degrees C	16.4
UA	G280	B	2023/02/16	Temperature (Celsius)	degrees C	9.90
UA	G280	B	2023/06/08	Temperature (Celsius)	degrees C	15.4
UA	G280	B	2023/08/14	Temperature (Celsius)	degrees C	15.5
UA	G280	B	2023/11/20	Temperature (Celsius)	degrees C	14.7
UA	G280	B	2008/03/11	Total Dissolved Solids	mg/L	420
UA	G280	B	2008/04/21	Total Dissolved Solids	mg/L	400
UA	G280	B	2008/06/11	Total Dissolved Solids	mg/L	430
UA	G280	B	2008/08/13	Total Dissolved Solids	mg/L	410
UA	G280	B	2008/10/13	Total Dissolved Solids	mg/L	450
UA	G280	B	2008/12/03	Total Dissolved Solids	mg/L	760
UA	G280	B	2009/09/21	Total Dissolved Solids	mg/L	380
UA	G280	B	2009/11/12	Total Dissolved Solids	mg/L	370
UA	G280	B	2010/01/28	Total Dissolved Solids	mg/L	400
UA	G280	B	2010/02/11	Total Dissolved Solids	mg/L	440
UA	G280	B	2010/07/27	Total Dissolved Solids	mg/L	520
UA	G280	B	2010/11/16	Total Dissolved Solids	mg/L	370
UA	G280	B	2011/01/28	Total Dissolved Solids	mg/L	500
UA	G280	B	2011/05/04	Total Dissolved Solids	mg/L	560
UA	G280	B	2011/07/27	Total Dissolved Solids	mg/L	420
UA	G280	B	2011/11/11	Total Dissolved Solids	mg/L	390
UA	G280	B	2012/01/30	Total Dissolved Solids	mg/L	440
UA	G280	B	2012/05/22	Total Dissolved Solids	mg/L	470
UA	G280	B	2012/07/24	Total Dissolved Solids	mg/L	360

UA	G280	B	2012/11/14	Total Dissolved Solids	mg/L	440
UA	G280	B	2013/01/31	Total Dissolved Solids	mg/L	380
UA	G280	B	2013/05/20	Total Dissolved Solids	mg/L	410
UA	G280	B	2013/07/22	Total Dissolved Solids	mg/L	400
UA	G280	B	2013/10/14	Total Dissolved Solids	mg/L	480
UA	G280	B	2014/02/19	Total Dissolved Solids	mg/L	440
UA	G280	B	2014/05/13	Total Dissolved Solids	mg/L	440
UA	G280	B	2014/08/12	Total Dissolved Solids	mg/L	490
UA	G280	B	2014/10/14	Total Dissolved Solids	mg/L	480
UA	G280	B	2015/01/21	Total Dissolved Solids	mg/L	540
UA	G280	B	2015/04/13	Total Dissolved Solids	mg/L	480
UA	G280	B	2015/07/23	Total Dissolved Solids	mg/L	480
UA	G280	B	2015/10/08	Total Dissolved Solids	mg/L	450
UA	G280	B	2015/11/24	Total Dissolved Solids	mg/L	460
UA	G280	B	2016/02/10	Total Dissolved Solids	mg/L	400
UA	G280	B	2016/05/10	Total Dissolved Solids	mg/L	350
UA	G280	B	2016/08/03	Total Dissolved Solids	mg/L	350
UA	G280	B	2016/11/20	Total Dissolved Solids	mg/L	430
UA	G280	B	2017/02/15	Total Dissolved Solids	mg/L	440
UA	G280	B	2017/05/20	Total Dissolved Solids	mg/L	420
UA	G280	B	2017/07/18	Total Dissolved Solids	mg/L	400
UA	G280	B	2017/11/04	Total Dissolved Solids	mg/L	350
UA	G280	B	2018/05/16	Total Dissolved Solids	mg/L	360
UA	G280	B	2018/08/10	Total Dissolved Solids	mg/L	400
UA	G280	B	2019/01/22	Total Dissolved Solids	mg/L	500
UA	G280	B	2019/08/26	Total Dissolved Solids	mg/L	480
UA	G280	B	2020/01/23	Total Dissolved Solids	mg/L	1,100
UA	G280	B	2020/08/11	Total Dissolved Solids	mg/L	440
UA	G280	B	2020/10/14	Total Dissolved Solids	mg/L	490
UA	G280	B	2021/01/21	Total Dissolved Solids	mg/L	490
UA	G280	B	2021/01/28	Total Dissolved Solids	mg/L	430
UA	G280	B	2021/03/30	Total Dissolved Solids	mg/L	460
UA	G280	B	2021/04/22	Total Dissolved Solids	mg/L	470
UA	G280	B	2021/05/06	Total Dissolved Solids	mg/L	440
UA	G280	B	2021/05/19	Total Dissolved Solids	mg/L	400
UA	G280	B	2021/06/16	Total Dissolved Solids	mg/L	530
UA	G280	B	2021/06/28	Total Dissolved Solids	mg/L	420
UA	G280	B	2021/07/13	Total Dissolved Solids	mg/L	510
UA	G280	B	2021/07/27	Total Dissolved Solids	mg/L	470
UA	G280	B	2021/08/18	Total Dissolved Solids	mg/L	460
UA	G280	B	2021/10/26	Total Dissolved Solids	mg/L	400
UA	G280	B	2022/02/08	Total Dissolved Solids	mg/L	440
UA	G280	B	2022/05/10	Total Dissolved Solids	mg/L	450
UA	G280	B	2022/08/24	Total Dissolved Solids	mg/L	580
UA	G280	B	2022/11/09	Total Dissolved Solids	mg/L	500
UA	G280	B	2023/02/16	Total Dissolved Solids	mg/L	470
UA	G280	B	2023/06/08	Total Dissolved Solids	mg/L	590
UA	G280	B	2023/08/14	Total Dissolved Solids	mg/L	594
UA	G280	B	2023/11/20	Total Dissolved Solids	mg/L	608
UA	G271	C	2010/07/27	pH (field)	SU	7.2
UA	G271	C	2010/07/28	pH (field)	SU	7.2
UA	G271	C	2010/09/20	pH (field)	SU	7.8
UA	G271	C	2010/11/16	pH (field)	SU	7.8
UA	G271	C	2011/01/28	pH (field)	SU	7.3
UA	G271	C	2011/05/04	pH (field)	SU	7.3
UA	G271	C	2011/07/27	pH (field)	SU	7.4
UA	G271	C	2011/11/14	pH (field)	SU	7.3
UA	G271	C	2012/01/26	pH (field)	SU	7.6
UA	G271	C	2012/05/22	pH (field)	SU	7.4
UA	G271	C	2012/07/24	pH (field)	SU	7.2
UA	G271	C	2012/11/14	pH (field)	SU	7.4
UA	G271	C	2013/01/31	pH (field)	SU	7.4

UA	G271	C	2013/05/20	pH (field)	SU	7.3
UA	G271	C	2013/07/22	pH (field)	SU	7.1
UA	G271	C	2013/10/14	pH (field)	SU	7.1
UA	G271	C	2014/02/19	pH (field)	SU	7.3
UA	G271	C	2014/05/13	pH (field)	SU	6.8
UA	G271	C	2014/08/11	pH (field)	SU	7.5
UA	G271	C	2014/10/14	pH (field)	SU	7.4
UA	G271	C	2015/01/21	pH (field)	SU	7.5
UA	G271	C	2015/04/10	pH (field)	SU	7.3
UA	G271	C	2015/07/22	pH (field)	SU	7.2
UA	G271	C	2015/10/08	pH (field)	SU	7.0
UA	G271	C	2015/11/23	pH (field)	SU	7.3
UA	G271	C	2016/02/16	pH (field)	SU	7.5
UA	G271	C	2016/05/12	pH (field)	SU	7.2
UA	G271	C	2016/08/05	pH (field)	SU	7.2
UA	G271	C	2016/11/21	pH (field)	SU	7.2
UA	G271	C	2017/02/11	pH (field)	SU	7.2
UA	G271	C	2017/05/20	pH (field)	SU	7.1
UA	G271	C	2017/07/17	pH (field)	SU	7.1
UA	G271	C	2017/11/04	pH (field)	SU	7.3
UA	G271	C	2018/05/16	pH (field)	SU	7.3
UA	G271	C	2018/08/10	pH (field)	SU	7.1
UA	G271	C	2019/01/22	pH (field)	SU	7.2
UA	G271	C	2019/08/26	pH (field)	SU	7.2
UA	G271	C	2020/01/22	pH (field)	SU	7.2
UA	G271	C	2020/08/13	pH (field)	SU	7.2
UA	G271	C	2020/10/14	pH (field)	SU	7.2
UA	G271	C	2021/02/01	pH (field)	SU	7.2
UA	G271	C	2021/05/20	pH (field)	SU	6.9
UA	G271	C	2021/08/18	pH (field)	SU	7.2
UA	G271	C	2021/10/27	pH (field)	SU	7.2
UA	G271	C	2022/02/10	pH (field)	SU	7.3
UA	G271	C	2022/03/21	pH (field)	SU	7.4
UA	G271	C	2022/03/29	pH (field)	SU	7.3
UA	G271	C	2022/05/11	pH (field)	SU	7.0
UA	G271	C	2022/08/24	pH (field)	SU	7.4
UA	G271	C	2022/11/09	pH (field)	SU	7.4
UA	G271	C	2023/02/16	pH (field)	SU	7.0
UA	G271	C	2023/06/06	pH (field)	SU	6.9
UA	G271	C	2023/08/14	pH (field)	SU	7.0
UA	G271	C	2023/11/17	pH (field)	SU	7.2
UA	G271	C	2015/11/23	Oxidation Reduction Potential	mV	123
UA	G271	C	2016/02/16	Oxidation Reduction Potential	mV	165
UA	G271	C	2016/05/12	Oxidation Reduction Potential	mV	205
UA	G271	C	2016/08/05	Oxidation Reduction Potential	mV	191
UA	G271	C	2016/11/21	Oxidation Reduction Potential	mV	154
UA	G271	C	2017/02/11	Oxidation Reduction Potential	mV	145
UA	G271	C	2017/05/20	Oxidation Reduction Potential	mV	152
UA	G271	C	2017/07/17	Oxidation Reduction Potential	mV	189
UA	G271	C	2017/11/04	Oxidation Reduction Potential	mV	170
UA	G271	C	2018/05/16	Oxidation Reduction Potential	mV	174
UA	G271	C	2018/08/10	Oxidation Reduction Potential	mV	117
UA	G271	C	2019/01/22	Oxidation Reduction Potential	mV	180
UA	G271	C	2019/08/26	Oxidation Reduction Potential	mV	183
UA	G271	C	2020/01/22	Oxidation Reduction Potential	mV	190
UA	G271	C	2020/08/13	Oxidation Reduction Potential	mV	-175
UA	G271	C	2021/02/01	Oxidation Reduction Potential	mV	-2.90
UA	G271	C	2021/08/18	Oxidation Reduction Potential	mV	150
UA	G271	C	2022/02/10	Oxidation Reduction Potential	mV	-20.0
UA	G271	C	2022/03/21	Oxidation Reduction Potential	mV	22.4
UA	G271	C	2022/03/29	Oxidation Reduction Potential	mV	95.6
UA	G271	C	2022/05/11	Oxidation Reduction Potential	mV	4.20

UA	G271	C	2022/08/24	Oxidation Reduction Potential	mV	73.8
UA	G271	C	2022/11/09	Oxidation Reduction Potential	mV	190
UA	G271	C	2023/02/16	Oxidation Reduction Potential	mV	234
UA	G271	C	2023/06/06	Oxidation Reduction Potential	mV	137
UA	G271	C	2023/08/14	Oxidation Reduction Potential	mV	75.0
UA	G271	C	2023/11/17	Oxidation Reduction Potential	mV	113
UA	G271	C	2015/11/23	Eh	V	0.32
UA	G271	C	2016/02/16	Eh	V	0.36
UA	G271	C	2016/05/12	Eh	V	0.40
UA	G271	C	2016/08/05	Eh	V	0.38
UA	G271	C	2016/11/21	Eh	V	0.35
UA	G271	C	2017/02/11	Eh	V	0.34
UA	G271	C	2017/05/20	Eh	V	0.35
UA	G271	C	2017/07/17	Eh	V	0.38
UA	G271	C	2017/11/04	Eh	V	0.37
UA	G271	C	2018/05/16	Eh	V	0.37
UA	G271	C	2018/08/10	Eh	V	0.31
UA	G271	C	2019/01/22	Eh	V	0.38
UA	G271	C	2019/08/26	Eh	V	0.38
UA	G271	C	2020/01/22	Eh	V	0.39
UA	G271	C	2020/08/13	Eh	V	0.015
UA	G271	C	2021/02/01	Eh	V	0.20
UA	G271	C	2021/08/18	Eh	V	0.34
UA	G271	C	2022/02/10	Eh	V	0.18
UA	G271	C	2022/03/21	Eh	V	0.22
UA	G271	C	2022/03/29	Eh	V	0.29
UA	G271	C	2022/05/11	Eh	V	0.20
UA	G271	C	2022/08/24	Eh	V	0.26
UA	G271	C	2022/11/09	Eh	V	0.38
UA	G271	C	2023/02/16	Eh	V	0.43
UA	G271	C	2023/06/06	Eh	V	0.33
UA	G271	C	2023/08/14	Eh	V	0.27
UA	G271	C	2023/11/17	Eh	V	0.31
UA	G271	C	2009/09/22	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G271	C	2009/11/09	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2010/01/19	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2010/03/08	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2010/07/27	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G271	C	2011/01/28	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2012/01/26	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G271	C	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G271	C	2015/04/10	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2017/07/17	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G271	C	2020/01/22	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2021/02/01	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G271	C	2022/03/29	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G271	C	2022/08/24	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2023/02/16	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G271	C	2023/06/06	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G271	C	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	281
UA	G271	C	2023/11/17	Alkalinity, bicarbonate	mg/L CaCO3	299
UA	G271	C	2022/08/24	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G271	C	2009/09/22	Arsenic, total	mg/L	0.00300
UA	G271	C	2009/11/09	Arsenic, total	mg/L	0.00490
UA	G271	C	2010/01/19	Arsenic, total	mg/L	<0.001
UA	G271	C	2010/03/08	Arsenic, total	mg/L	<0.001
UA	G271	C	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G271	C	2010/11/16	Arsenic, total	mg/L	<0.001

UA	G271	C	2011/01/28	Arsenic, total	mg/L	0.00150
UA	G271	C	2011/05/04	Arsenic, total	mg/L	<0.001
UA	G271	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G271	C	2011/11/14	Arsenic, total	mg/L	0.00130
UA	G271	C	2012/01/26	Arsenic, total	mg/L	0.00130
UA	G271	C	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G271	C	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G271	C	2012/11/14	Arsenic, total	mg/L	0.00140
UA	G271	C	2013/01/31	Arsenic, total	mg/L	0.00310
UA	G271	C	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G271	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G271	C	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G271	C	2014/02/19	Arsenic, total	mg/L	0.00280
UA	G271	C	2014/05/13	Arsenic, total	mg/L	0.00170
UA	G271	C	2014/08/11	Arsenic, total	mg/L	0.00270
UA	G271	C	2014/10/14	Arsenic, total	mg/L	0.00190
UA	G271	C	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G271	C	2015/04/10	Arsenic, total	mg/L	<0.001
UA	G271	C	2015/07/22	Arsenic, total	mg/L	<0.001
UA	G271	C	2015/10/08	Arsenic, total	mg/L	<0.001
UA	G271	C	2015/11/23	Arsenic, total	mg/L	<0.00013
UA	G271	C	2016/02/16	Arsenic, total	mg/L	<0.00013
UA	G271	C	2016/05/12	Arsenic, total	mg/L	<0.00013
UA	G271	C	2016/08/05	Arsenic, total	mg/L	<0.00013
UA	G271	C	2016/11/21	Arsenic, total	mg/L	<0.00013
UA	G271	C	2017/02/11	Arsenic, total	mg/L	<0.00013
UA	G271	C	2017/05/20	Arsenic, total	mg/L	0.00170
UA	G271	C	2017/07/17	Arsenic, total	mg/L	<0.00013
UA	G271	C	2018/05/16	Arsenic, total	mg/L	<0.0009
UA	G271	C	2018/08/10	Arsenic, total	mg/L	<0.0009
UA	G271	C	2019/01/22	Arsenic, total	mg/L	<0.0009
UA	G271	C	2019/08/26	Arsenic, total	mg/L	0.00200
UA	G271	C	2020/01/22	Arsenic, total	mg/L	<0.0009
UA	G271	C	2020/08/13	Arsenic, total	mg/L	<0.00022
UA	G271	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G271	C	2021/02/01	Arsenic, total	mg/L	<0.00022
UA	G271	C	2021/05/20	Arsenic, total	mg/L	<0.001
UA	G271	C	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G271	C	2021/10/27	Arsenic, total	mg/L	<0.001
UA	G271	C	2022/02/10	Arsenic, total	mg/L	<0.00069
UA	G271	C	2022/05/11	Arsenic, total	mg/L	<0.00069
UA	G271	C	2022/08/24	Arsenic, total	mg/L	<0.00069
UA	G271	C	2022/11/09	Arsenic, total	mg/L	<0.00069
UA	G271	C	2023/02/16	Arsenic, total	mg/L	<0.00069
UA	G271	C	2023/06/06	Arsenic, total	mg/L	<0.00069
UA	G271	C	2023/08/14	Arsenic, total	mg/L	0.000500
UA	G271	C	2023/11/17	Arsenic, total	mg/L	0.000600
UA	G271	C	2009/09/22	Barium, total	mg/L	0.0800
UA	G271	C	2009/11/09	Barium, total	mg/L	0.110
UA	G271	C	2010/01/19	Barium, total	mg/L	0.0550
UA	G271	C	2010/03/08	Barium, total	mg/L	0.0550
UA	G271	C	2010/07/27	Barium, total	mg/L	0.0410
UA	G271	C	2011/01/28	Barium, total	mg/L	0.0500
UA	G271	C	2012/01/26	Barium, total	mg/L	0.0340
UA	G271	C	2013/01/31	Barium, total	mg/L	0.0630
UA	G271	C	2014/02/19	Barium, total	mg/L	0.0620
UA	G271	C	2015/04/10	Barium, total	mg/L	0.0290
UA	G271	C	2015/07/22	Barium, total	mg/L	0.0280
UA	G271	C	2015/10/08	Barium, total	mg/L	0.0300
UA	G271	C	2015/11/23	Barium, total	mg/L	0.0310
UA	G271	C	2016/02/16	Barium, total	mg/L	0.0280
UA	G271	C	2016/05/12	Barium, total	mg/L	0.0280

UA	G271	C	2016/08/05	Barium, total	mg/L	0.0320
UA	G271	C	2016/11/21	Barium, total	mg/L	0.0310
UA	G271	C	2017/02/11	Barium, total	mg/L	0.0270
UA	G271	C	2017/05/20	Barium, total	mg/L	0.0290
UA	G271	C	2017/07/17	Barium, total	mg/L	0.0280
UA	G271	C	2018/05/16	Barium, total	mg/L	0.0210
UA	G271	C	2018/08/10	Barium, total	mg/L	0.0240
UA	G271	C	2019/01/22	Barium, total	mg/L	0.0230
UA	G271	C	2019/08/26	Barium, total	mg/L	0.0420
UA	G271	C	2020/01/22	Barium, total	mg/L	0.0240
UA	G271	C	2020/08/13	Barium, total	mg/L	0.0250
UA	G271	C	2020/10/14	Barium, total	mg/L	0.0250
UA	G271	C	2021/02/01	Barium, total	mg/L	0.0210
UA	G271	C	2021/05/20	Barium, total	mg/L	0.0180
UA	G271	C	2021/08/18	Barium, total	mg/L	0.0190
UA	G271	C	2021/10/27	Barium, total	mg/L	0.0210
UA	G271	C	2022/02/10	Barium, total	mg/L	0.0190
UA	G271	C	2022/05/11	Barium, total	mg/L	0.0190
UA	G271	C	2022/08/24	Barium, total	mg/L	0.0200
UA	G271	C	2022/11/09	Barium, total	mg/L	0.0200
UA	G271	C	2023/02/16	Barium, total	mg/L	0.0210
UA	G271	C	2023/06/06	Barium, total	mg/L	0.0210
UA	G271	C	2023/08/14	Barium, total	mg/L	0.0254
UA	G271	C	2023/11/17	Barium, total	mg/L	0.0350
UA	G271	C	2009/09/22	Calcium, total	mg/L	110
UA	G271	C	2009/11/09	Calcium, total	mg/L	140
UA	G271	C	2010/01/19	Calcium, total	mg/L	110
UA	G271	C	2010/03/08	Calcium, total	mg/L	120
UA	G271	C	2010/07/27	Calcium, total	mg/L	120
UA	G271	C	2010/11/16	Calcium, total	mg/L	110
UA	G271	C	2011/01/28	Calcium, total	mg/L	110
UA	G271	C	2011/05/04	Calcium, total	mg/L	<100
UA	G271	C	2011/07/27	Calcium, total	mg/L	96.0
UA	G271	C	2011/11/14	Calcium, total	mg/L	110
UA	G271	C	2012/01/26	Calcium, total	mg/L	110
UA	G271	C	2012/05/22	Calcium, total	mg/L	110
UA	G271	C	2012/07/24	Calcium, total	mg/L	110
UA	G271	C	2012/11/14	Calcium, total	mg/L	130
UA	G271	C	2013/01/31	Calcium, total	mg/L	150
UA	G271	C	2013/05/20	Calcium, total	mg/L	120
UA	G271	C	2013/07/22	Calcium, total	mg/L	99.0
UA	G271	C	2013/10/14	Calcium, total	mg/L	120
UA	G271	C	2014/02/19	Calcium, total	mg/L	150
UA	G271	C	2014/05/13	Calcium, total	mg/L	140
UA	G271	C	2014/08/11	Calcium, total	mg/L	140
UA	G271	C	2014/10/14	Calcium, total	mg/L	150
UA	G271	C	2015/01/21	Calcium, total	mg/L	120
UA	G271	C	2015/04/10	Calcium, total	mg/L	130
UA	G271	C	2015/11/23	Calcium, total	mg/L	130
UA	G271	C	2016/02/16	Calcium, total	mg/L	130
UA	G271	C	2016/05/12	Calcium, total	mg/L	170
UA	G271	C	2016/08/05	Calcium, total	mg/L	110
UA	G271	C	2016/11/21	Calcium, total	mg/L	110
UA	G271	C	2017/02/11	Calcium, total	mg/L	100
UA	G271	C	2017/05/20	Calcium, total	mg/L	110
UA	G271	C	2017/07/17	Calcium, total	mg/L	110
UA	G271	C	2017/11/04	Calcium, total	mg/L	100
UA	G271	C	2018/05/16	Calcium, total	mg/L	76.0
UA	G271	C	2018/08/10	Calcium, total	mg/L	86.0
UA	G271	C	2019/01/22	Calcium, total	mg/L	100
UA	G271	C	2019/08/26	Calcium, total	mg/L	100
UA	G271	C	2020/01/22	Calcium, total	mg/L	180

UA	G271	C	2020/08/13	Calcium, total	mg/L	150
UA	G271	C	2021/02/01	Calcium, total	mg/L	150
UA	G271	C	2021/08/18	Calcium, total	mg/L	100
UA	G271	C	2022/02/10	Calcium, total	mg/L	120
UA	G271	C	2022/08/24	Calcium, total	mg/L	110
UA	G271	C	2023/02/16	Calcium, total	mg/L	120
UA	G271	C	2023/06/06	Calcium, total	mg/L	110
UA	G271	C	2023/08/14	Calcium, total	mg/L	80.9
UA	G271	C	2023/11/17	Calcium, total	mg/L	90.6
UA	G271	C	2009/09/22	Chloride, total	mg/L	37.0
UA	G271	C	2009/11/09	Chloride, total	mg/L	34.0
UA	G271	C	2010/01/19	Chloride, total	mg/L	33.0
UA	G271	C	2010/03/08	Chloride, total	mg/L	36.0
UA	G271	C	2010/07/27	Chloride, total	mg/L	40.0
UA	G271	C	2010/11/16	Chloride, total	mg/L	44.0
UA	G271	C	2011/01/28	Chloride, total	mg/L	44.0
UA	G271	C	2011/05/04	Chloride, total	mg/L	53.0
UA	G271	C	2011/07/27	Chloride, total	mg/L	49.0
UA	G271	C	2011/11/14	Chloride, total	mg/L	50.0
UA	G271	C	2012/01/26	Chloride, total	mg/L	44.0
UA	G271	C	2012/05/22	Chloride, total	mg/L	5.10
UA	G271	C	2012/07/24	Chloride, total	mg/L	45.0
UA	G271	C	2012/11/14	Chloride, total	mg/L	50.0
UA	G271	C	2013/01/31	Chloride, total	mg/L	58.0
UA	G271	C	2013/05/20	Chloride, total	mg/L	47.0
UA	G271	C	2013/07/22	Chloride, total	mg/L	49.0
UA	G271	C	2013/10/14	Chloride, total	mg/L	47.0
UA	G271	C	2014/02/19	Chloride, total	mg/L	51.0
UA	G271	C	2014/05/13	Chloride, total	mg/L	47.0
UA	G271	C	2014/08/11	Chloride, total	mg/L	42.0
UA	G271	C	2014/10/14	Chloride, total	mg/L	45.0
UA	G271	C	2015/01/21	Chloride, total	mg/L	39.0
UA	G271	C	2015/04/10	Chloride, total	mg/L	45.0
UA	G271	C	2015/07/22	Chloride, total	mg/L	35.0
UA	G271	C	2015/10/08	Chloride, total	mg/L	38.0
UA	G271	C	2015/11/23	Chloride, total	mg/L	38.0
UA	G271	C	2016/02/16	Chloride, total	mg/L	38.0
UA	G271	C	2016/05/12	Chloride, total	mg/L	39.0
UA	G271	C	2016/08/05	Chloride, total	mg/L	37.0
UA	G271	C	2016/11/21	Chloride, total	mg/L	29.0
UA	G271	C	2017/02/11	Chloride, total	mg/L	30.0
UA	G271	C	2017/05/20	Chloride, total	mg/L	28.0
UA	G271	C	2017/07/17	Chloride, total	mg/L	29.0
UA	G271	C	2017/11/04	Chloride, total	mg/L	24.0
UA	G271	C	2018/05/16	Chloride, total	mg/L	38.0
UA	G271	C	2018/08/10	Chloride, total	mg/L	32.0
UA	G271	C	2019/01/22	Chloride, total	mg/L	21.0
UA	G271	C	2019/08/26	Chloride, total	mg/L	21.0
UA	G271	C	2020/01/22	Chloride, total	mg/L	51.0
UA	G271	C	2020/08/13	Chloride, total	mg/L	44.0
UA	G271	C	2020/10/14	Chloride, total	mg/L	23.0
UA	G271	C	2021/02/01	Chloride, total	mg/L	60.0
UA	G271	C	2021/05/20	Chloride, total	mg/L	58.0
UA	G271	C	2021/08/18	Chloride, total	mg/L	49.0
UA	G271	C	2021/10/27	Chloride, total	mg/L	47.0
UA	G271	C	2022/02/10	Chloride, total	mg/L	58.0
UA	G271	C	2022/05/11	Chloride, total	mg/L	43.0
UA	G271	C	2022/08/24	Chloride, total	mg/L	64.0
UA	G271	C	2022/11/09	Chloride, total	mg/L	62.0
UA	G271	C	2023/02/16	Chloride, total	mg/L	59.0
UA	G271	C	2023/06/06	Chloride, total	mg/L	69.0
UA	G271	C	2023/08/14	Chloride, total	mg/L	35.0

UA	G271	C	2023/11/17	Chloride, total	mg/L	60.0
UA	G271	C	2023/06/06	Ferrous Iron, dissolved	mg/L	0.150
UA	G271	C	2009/11/10	Iron, dissolved	mg/L	<0.1
UA	G271	C	2010/01/19	Iron, dissolved	mg/L	<0.1
UA	G271	C	2010/03/08	Iron, dissolved	mg/L	<0.2
UA	G271	C	2010/07/27	Iron, dissolved	mg/L	0.0120
UA	G271	C	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G271	C	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G271	C	2011/01/28	Iron, dissolved	mg/L	<0.01
UA	G271	C	2011/05/04	Iron, dissolved	mg/L	<0.01
UA	G271	C	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G271	C	2011/11/14	Iron, dissolved	mg/L	<0.01
UA	G271	C	2012/01/26	Iron, dissolved	mg/L	<0.01
UA	G271	C	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G271	C	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G271	C	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G271	C	2013/01/31	Iron, dissolved	mg/L	0.0260
UA	G271	C	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G271	C	2013/07/22	Iron, dissolved	mg/L	0.0110
UA	G271	C	2013/10/14	Iron, dissolved	mg/L	<0.01
UA	G271	C	2014/02/19	Iron, dissolved	mg/L	<0.01
UA	G271	C	2014/05/13	Iron, dissolved	mg/L	0.0200
UA	G271	C	2014/08/11	Iron, dissolved	mg/L	<0.01
UA	G271	C	2014/10/14	Iron, dissolved	mg/L	<0.01
UA	G271	C	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G271	C	2015/04/10	Iron, dissolved	mg/L	<0.01
UA	G271	C	2015/07/22	Iron, dissolved	mg/L	<0.01
UA	G271	C	2015/10/08	Iron, dissolved	mg/L	<0.01
UA	G271	C	2016/02/16	Iron, dissolved	mg/L	<0.01
UA	G271	C	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G271	C	2016/07/27	Iron, dissolved	mg/L	0.0130
UA	G271	C	2016/11/21	Iron, dissolved	mg/L	<0.01
UA	G271	C	2017/02/08	Iron, dissolved	mg/L	<0.01
UA	G271	C	2017/05/18	Iron, dissolved	mg/L	<0.01
UA	G271	C	2017/07/25	Iron, dissolved	mg/L	<0.01
UA	G271	C	2017/11/04	Iron, dissolved	mg/L	<0.01
UA	G271	C	2018/01/29	Iron, dissolved	mg/L	0.0400
UA	G271	C	2018/05/16	Iron, dissolved	mg/L	<0.01
UA	G271	C	2018/08/10	Iron, dissolved	mg/L	<0.01
UA	G271	C	2018/11/05	Iron, dissolved	mg/L	<0.1
UA	G271	C	2019/01/22	Iron, dissolved	mg/L	0.0240
UA	G271	C	2019/05/03	Iron, dissolved	mg/L	<0.01
UA	G271	C	2019/08/26	Iron, dissolved	mg/L	0.0110
UA	G271	C	2019/10/22	Iron, dissolved	mg/L	<0.01
UA	G271	C	2020/01/22	Iron, dissolved	mg/L	<0.01
UA	G271	C	2020/05/05	Iron, dissolved	mg/L	<0.01
UA	G271	C	2020/08/13	Iron, dissolved	mg/L	0.0500
UA	G271	C	2020/10/14	Iron, dissolved	mg/L	0.0170
UA	G271	C	2021/02/01	Iron, dissolved	mg/L	0.140
UA	G271	C	2021/05/20	Iron, dissolved	mg/L	0.0750
UA	G271	C	2021/08/18	Iron, dissolved	mg/L	0.120
UA	G271	C	2021/10/27	Iron, dissolved	mg/L	<0.01
UA	G271	C	2022/02/10	Iron, dissolved	mg/L	0.200
UA	G271	C	2022/05/11	Iron, dissolved	mg/L	0.120
UA	G271	C	2022/08/24	Iron, dissolved	mg/L	0.00290
UA	G271	C	2022/11/09	Iron, dissolved	mg/L	0.0120
UA	G271	C	2023/02/16	Iron, dissolved	mg/L	<0.00072
UA	G271	C	2023/06/06	Iron, dissolved	mg/L	0.0320
UA	G271	C	2023/08/14	Iron, dissolved	mg/L	0.0261
UA	G271	C	2023/11/17	Iron, dissolved	mg/L	<0.0115
UA	G271	C	2009/09/22	Magnesium, total	mg/L	51.0
UA	G271	C	2009/11/09	Magnesium, total	mg/L	68.0

UA	G271	C	2010/01/19	Magnesium, total	mg/L	56.0
UA	G271	C	2010/03/08	Magnesium, total	mg/L	62.0
UA	G271	C	2010/07/27	Magnesium, total	mg/L	56.0
UA	G271	C	2011/01/28	Magnesium, total	mg/L	58.0
UA	G271	C	2012/01/26	Magnesium, total	mg/L	53.0
UA	G271	C	2013/01/31	Magnesium, total	mg/L	69.0
UA	G271	C	2014/02/19	Magnesium, total	mg/L	67.0
UA	G271	C	2015/04/10	Magnesium, total	mg/L	66.0
UA	G271	C	2017/07/17	Magnesium, total	mg/L	59.0
UA	G271	C	2020/01/22	Magnesium, total	mg/L	91.0
UA	G271	C	2021/02/01	Magnesium, total	mg/L	68.0
UA	G271	C	2022/02/10	Magnesium, total	mg/L	56.0
UA	G271	C	2022/08/24	Magnesium, total	mg/L	53.0
UA	G271	C	2023/02/16	Magnesium, total	mg/L	49.0
UA	G271	C	2023/06/06	Magnesium, total	mg/L	56.0
UA	G271	C	2023/08/14	Magnesium, total	mg/L	38.6
UA	G271	C	2023/11/17	Magnesium, total	mg/L	43.9
UA	G271	C	2009/11/10	Manganese, dissolved	mg/L	0.110
UA	G271	C	2010/01/19	Manganese, dissolved	mg/L	0.00700
UA	G271	C	2010/03/08	Manganese, dissolved	mg/L	<0.0025
UA	G271	C	2010/07/27	Manganese, dissolved	mg/L	0.0160
UA	G271	C	2010/09/20	Manganese, dissolved	mg/L	0.00150
UA	G271	C	2010/11/16	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2011/01/28	Manganese, dissolved	mg/L	0.00130
UA	G271	C	2011/05/04	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2011/07/27	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2011/11/14	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2012/01/26	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2012/05/22	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2012/07/24	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2012/11/14	Manganese, dissolved	mg/L	0.00210
UA	G271	C	2013/01/31	Manganese, dissolved	mg/L	0.0240
UA	G271	C	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2013/10/14	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2014/02/19	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2014/05/13	Manganese, dissolved	mg/L	0.220
UA	G271	C	2014/08/11	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2014/10/14	Manganese, dissolved	mg/L	0.00210
UA	G271	C	2015/01/21	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2015/04/10	Manganese, dissolved	mg/L	<0.002
UA	G271	C	2015/07/22	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2015/10/08	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2016/02/16	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2016/05/12	Manganese, dissolved	mg/L	<0.002
UA	G271	C	2016/07/27	Manganese, dissolved	mg/L	0.00760
UA	G271	C	2016/11/21	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2017/02/08	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2017/05/18	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2017/07/25	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2017/11/04	Manganese, dissolved	mg/L	0.00170
UA	G271	C	2018/01/29	Manganese, dissolved	mg/L	0.00440
UA	G271	C	2018/05/16	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2018/08/10	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2018/11/05	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2019/01/22	Manganese, dissolved	mg/L	0.00220
UA	G271	C	2019/05/03	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2019/08/26	Manganese, dissolved	mg/L	0.0120
UA	G271	C	2019/10/22	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2020/01/22	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2020/05/05	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2020/08/13	Manganese, dissolved	mg/L	0.0450

UA	G271	C	2020/10/14	Manganese, dissolved	mg/L	0.00750
UA	G271	C	2021/02/01	Manganese, dissolved	mg/L	0.0170
UA	G271	C	2021/05/20	Manganese, dissolved	mg/L	0.00600
UA	G271	C	2021/08/18	Manganese, dissolved	mg/L	0.00940
UA	G271	C	2021/10/27	Manganese, dissolved	mg/L	<0.001
UA	G271	C	2022/02/10	Manganese, dissolved	mg/L	0.0160
UA	G271	C	2022/05/11	Manganese, dissolved	mg/L	0.0710
UA	G271	C	2022/08/24	Manganese, dissolved	mg/L	0.00220
UA	G271	C	2022/11/09	Manganese, dissolved	mg/L	0.00340
UA	G271	C	2023/02/16	Manganese, dissolved	mg/L	<0.00023
UA	G271	C	2023/06/06	Manganese, dissolved	mg/L	0.0220
UA	G271	C	2023/08/14	Manganese, dissolved	mg/L	0.0126
UA	G271	C	2023/11/17	Manganese, dissolved	mg/L	0.00890
UA	G271	C	2023/08/14	Phosphate, dissolved	mg/L	0.0400
UA	G271	C	2009/09/22	Potassium, total	mg/L	2.60
UA	G271	C	2009/11/09	Potassium, total	mg/L	3.00
UA	G271	C	2010/01/19	Potassium, total	mg/L	1.60
UA	G271	C	2010/03/08	Potassium, total	mg/L	1.10
UA	G271	C	2010/07/27	Potassium, total	mg/L	0.730
UA	G271	C	2011/01/28	Potassium, total	mg/L	0.800
UA	G271	C	2012/01/26	Potassium, total	mg/L	0.730
UA	G271	C	2013/01/31	Potassium, total	mg/L	1.70
UA	G271	C	2014/02/19	Potassium, total	mg/L	1.50
UA	G271	C	2015/04/10	Potassium, total	mg/L	0.390
UA	G271	C	2017/07/17	Potassium, total	mg/L	0.390
UA	G271	C	2020/01/22	Potassium, total	mg/L	0.430
UA	G271	C	2021/02/01	Potassium, total	mg/L	0.420
UA	G271	C	2022/02/10	Potassium, total	mg/L	0.390
UA	G271	C	2022/08/24	Potassium, total	mg/L	0.390
UA	G271	C	2023/02/16	Potassium, total	mg/L	0.290
UA	G271	C	2023/06/06	Potassium, total	mg/L	0.270
UA	G271	C	2023/08/14	Potassium, total	mg/L	0.369
UA	G271	C	2023/11/17	Potassium, total	mg/L	0.445
UA	G271	C	2023/06/06	Silicon, dissolved	mg/L	8.30
UA	G271	C	2023/08/14	Silicon, dissolved	mg/L	7.60
UA	G271	C	2009/09/22	Sodium, total	mg/L	67.0
UA	G271	C	2009/11/09	Sodium, total	mg/L	69.0
UA	G271	C	2010/01/19	Sodium, total	mg/L	68.0
UA	G271	C	2010/03/08	Sodium, total	mg/L	70.0
UA	G271	C	2010/07/27	Sodium, total	mg/L	71.0
UA	G271	C	2011/01/28	Sodium, total	mg/L	75.0
UA	G271	C	2012/01/26	Sodium, total	mg/L	67.0
UA	G271	C	2013/01/31	Sodium, total	mg/L	77.0
UA	G271	C	2014/02/19	Sodium, total	mg/L	80.0
UA	G271	C	2015/04/10	Sodium, total	mg/L	100
UA	G271	C	2017/07/17	Sodium, total	mg/L	120
UA	G271	C	2020/01/22	Sodium, total	mg/L	100
UA	G271	C	2021/02/01	Sodium, total	mg/L	81.0
UA	G271	C	2022/02/10	Sodium, total	mg/L	86.0
UA	G271	C	2022/08/24	Sodium, total	mg/L	87.0
UA	G271	C	2023/02/16	Sodium, total	mg/L	77.0
UA	G271	C	2023/06/06	Sodium, total	mg/L	78.0
UA	G271	C	2023/08/14	Sodium, total	mg/L	87.4
UA	G271	C	2023/11/17	Sodium, total	mg/L	80.0
UA	G271	C	2009/09/22	Sulfate, total	mg/L	230
UA	G271	C	2009/11/09	Sulfate, total	mg/L	290
UA	G271	C	2010/01/19	Sulfate, total	mg/L	320
UA	G271	C	2010/03/08	Sulfate, total	mg/L	300
UA	G271	C	2010/07/27	Sulfate, total	mg/L	350
UA	G271	C	2010/11/16	Sulfate, total	mg/L	280
UA	G271	C	2011/01/28	Sulfate, total	mg/L	270
UA	G271	C	2011/05/04	Sulfate, total	mg/L	240

UA	G271	C	2011/07/27	Sulfate, total	mg/L	240
UA	G271	C	2011/11/14	Sulfate, total	mg/L	250
UA	G271	C	2012/01/26	Sulfate, total	mg/L	240
UA	G271	C	2012/05/22	Sulfate, total	mg/L	240
UA	G271	C	2012/07/24	Sulfate, total	mg/L	280
UA	G271	C	2012/11/14	Sulfate, total	mg/L	300
UA	G271	C	2013/01/31	Sulfate, total	mg/L	380
UA	G271	C	2013/05/20	Sulfate, total	mg/L	350
UA	G271	C	2013/07/22	Sulfate, total	mg/L	360
UA	G271	C	2013/10/14	Sulfate, total	mg/L	390
UA	G271	C	2014/02/19	Sulfate, total	mg/L	420
UA	G271	C	2014/05/13	Sulfate, total	mg/L	440
UA	G271	C	2014/08/11	Sulfate, total	mg/L	500
UA	G271	C	2014/10/14	Sulfate, total	mg/L	480
UA	G271	C	2015/01/21	Sulfate, total	mg/L	490
UA	G271	C	2015/04/10	Sulfate, total	mg/L	440
UA	G271	C	2015/07/22	Sulfate, total	mg/L	350
UA	G271	C	2015/10/08	Sulfate, total	mg/L	400
UA	G271	C	2015/11/23	Sulfate, total	mg/L	420
UA	G271	C	2016/02/16	Sulfate, total	mg/L	440
UA	G271	C	2016/05/12	Sulfate, total	mg/L	540
UA	G271	C	2016/08/05	Sulfate, total	mg/L	440
UA	G271	C	2016/11/21	Sulfate, total	mg/L	400
UA	G271	C	2017/02/11	Sulfate, total	mg/L	430
UA	G271	C	2017/05/20	Sulfate, total	mg/L	390
UA	G271	C	2017/07/17	Sulfate, total	mg/L	380
UA	G271	C	2017/11/04	Sulfate, total	mg/L	360
UA	G271	C	2018/05/16	Sulfate, total	mg/L	330
UA	G271	C	2018/08/10	Sulfate, total	mg/L	470
UA	G271	C	2019/01/22	Sulfate, total	mg/L	420
UA	G271	C	2019/08/26	Sulfate, total	mg/L	340
UA	G271	C	2020/01/22	Sulfate, total	mg/L	610
UA	G271	C	2020/08/13	Sulfate, total	mg/L	470
UA	G271	C	2020/10/14	Sulfate, total	mg/L	300
UA	G271	C	2021/02/01	Sulfate, total	mg/L	420
UA	G271	C	2021/05/20	Sulfate, total	mg/L	370
UA	G271	C	2021/08/18	Sulfate, total	mg/L	370
UA	G271	C	2021/10/27	Sulfate, total	mg/L	340
UA	G271	C	2022/02/10	Sulfate, total	mg/L	340
UA	G271	C	2022/05/11	Sulfate, total	mg/L	250
UA	G271	C	2022/08/24	Sulfate, total	mg/L	230
UA	G271	C	2022/11/09	Sulfate, total	mg/L	170
UA	G271	C	2023/02/16	Sulfate, total	mg/L	250
UA	G271	C	2023/06/06	Sulfate, total	mg/L	280
UA	G271	C	2023/08/14	Sulfate, total	mg/L	177
UA	G271	C	2023/11/17	Sulfate, total	mg/L	251
UA	G271	C	2015/11/23	Temperature (Celsius)	degrees C	16.7
UA	G271	C	2016/02/16	Temperature (Celsius)	degrees C	10.6
UA	G271	C	2016/05/12	Temperature (Celsius)	degrees C	16.1
UA	G271	C	2016/08/05	Temperature (Celsius)	degrees C	19.2
UA	G271	C	2016/11/21	Temperature (Celsius)	degrees C	15.0
UA	G271	C	2017/02/11	Temperature (Celsius)	degrees C	15.0
UA	G271	C	2017/05/20	Temperature (Celsius)	degrees C	15.7
UA	G271	C	2017/07/17	Temperature (Celsius)	degrees C	20.7
UA	G271	C	2017/11/04	Temperature (Celsius)	degrees C	13.4
UA	G271	C	2018/05/16	Temperature (Celsius)	degrees C	13.2
UA	G271	C	2018/08/10	Temperature (Celsius)	degrees C	15.4
UA	G271	C	2019/01/22	Temperature (Celsius)	degrees C	11.4
UA	G271	C	2019/08/26	Temperature (Celsius)	degrees C	17.3
UA	G271	C	2020/01/22	Temperature (Celsius)	degrees C	12.8
UA	G271	C	2020/08/13	Temperature (Celsius)	degrees C	22.9
UA	G271	C	2021/02/01	Temperature (Celsius)	degrees C	11.1

UA	G271	C	2021/08/18	Temperature (Celsius)	degrees C	19.0
UA	G271	C	2022/02/10	Temperature (Celsius)	degrees C	10.8
UA	G271	C	2022/03/21	Temperature (Celsius)	degrees C	15.7
UA	G271	C	2022/03/29	Temperature (Celsius)	degrees C	11.1
UA	G271	C	2022/05/11	Temperature (Celsius)	degrees C	19.4
UA	G271	C	2022/08/24	Temperature (Celsius)	degrees C	21.3
UA	G271	C	2022/11/09	Temperature (Celsius)	degrees C	17.4
UA	G271	C	2023/02/16	Temperature (Celsius)	degrees C	9.40
UA	G271	C	2023/06/06	Temperature (Celsius)	degrees C	17.1
UA	G271	C	2023/08/14	Temperature (Celsius)	degrees C	17.2
UA	G271	C	2023/11/17	Temperature (Celsius)	degrees C	16.3
UA	G271	C	2009/09/22	Total Dissolved Solids	mg/L	770
UA	G271	C	2009/11/09	Total Dissolved Solids	mg/L	770
UA	G271	C	2010/01/19	Total Dissolved Solids	mg/L	860
UA	G271	C	2010/03/08	Total Dissolved Solids	mg/L	880
UA	G271	C	2010/07/27	Total Dissolved Solids	mg/L	840
UA	G271	C	2010/11/16	Total Dissolved Solids	mg/L	830
UA	G271	C	2011/01/28	Total Dissolved Solids	mg/L	730
UA	G271	C	2011/05/04	Total Dissolved Solids	mg/L	750
UA	G271	C	2011/07/27	Total Dissolved Solids	mg/L	800
UA	G271	C	2011/11/14	Total Dissolved Solids	mg/L	710
UA	G271	C	2012/01/26	Total Dissolved Solids	mg/L	750
UA	G271	C	2012/05/22	Total Dissolved Solids	mg/L	710
UA	G271	C	2012/07/24	Total Dissolved Solids	mg/L	770
UA	G271	C	2012/11/14	Total Dissolved Solids	mg/L	940
UA	G271	C	2013/01/31	Total Dissolved Solids	mg/L	880
UA	G271	C	2013/05/20	Total Dissolved Solids	mg/L	790
UA	G271	C	2013/07/22	Total Dissolved Solids	mg/L	800
UA	G271	C	2013/10/14	Total Dissolved Solids	mg/L	840
UA	G271	C	2014/02/19	Total Dissolved Solids	mg/L	840
UA	G271	C	2014/05/13	Total Dissolved Solids	mg/L	670
UA	G271	C	2014/08/11	Total Dissolved Solids	mg/L	1,000
UA	G271	C	2014/10/14	Total Dissolved Solids	mg/L	940
UA	G271	C	2015/01/21	Total Dissolved Solids	mg/L	870
UA	G271	C	2015/04/10	Total Dissolved Solids	mg/L	1,000
UA	G271	C	2015/07/22	Total Dissolved Solids	mg/L	1,000
UA	G271	C	2015/10/08	Total Dissolved Solids	mg/L	1,000
UA	G271	C	2015/11/23	Total Dissolved Solids	mg/L	860
UA	G271	C	2016/02/16	Total Dissolved Solids	mg/L	1,000
UA	G271	C	2016/05/12	Total Dissolved Solids	mg/L	940
UA	G271	C	2016/08/05	Total Dissolved Solids	mg/L	840
UA	G271	C	2016/11/21	Total Dissolved Solids	mg/L	910
UA	G271	C	2017/02/11	Total Dissolved Solids	mg/L	1,100
UA	G271	C	2017/05/20	Total Dissolved Solids	mg/L	870
UA	G271	C	2017/07/17	Total Dissolved Solids	mg/L	950
UA	G271	C	2017/11/04	Total Dissolved Solids	mg/L	820
UA	G271	C	2018/05/16	Total Dissolved Solids	mg/L	820
UA	G271	C	2018/08/10	Total Dissolved Solids	mg/L	880
UA	G271	C	2019/01/22	Total Dissolved Solids	mg/L	770
UA	G271	C	2019/08/26	Total Dissolved Solids	mg/L	690
UA	G271	C	2020/01/22	Total Dissolved Solids	mg/L	1,100
UA	G271	C	2020/08/13	Total Dissolved Solids	mg/L	900
UA	G271	C	2020/10/14	Total Dissolved Solids	mg/L	840
UA	G271	C	2021/02/01	Total Dissolved Solids	mg/L	980
UA	G271	C	2021/05/20	Total Dissolved Solids	mg/L	960
UA	G271	C	2021/08/18	Total Dissolved Solids	mg/L	870
UA	G271	C	2021/10/27	Total Dissolved Solids	mg/L	840
UA	G271	C	2022/02/10	Total Dissolved Solids	mg/L	870
UA	G271	C	2022/05/11	Total Dissolved Solids	mg/L	870
UA	G271	C	2022/08/24	Total Dissolved Solids	mg/L	680
UA	G271	C	2022/11/09	Total Dissolved Solids	mg/L	600
UA	G271	C	2023/02/16	Total Dissolved Solids	mg/L	840

UA	G271	C	2023/06/06	Total Dissolved Solids	mg/L	850
UA	G271	C	2023/08/14	Total Dissolved Solids	mg/L	594
UA	G271	C	2023/11/17	Total Dissolved Solids	mg/L	690
UA	G273	C	2010/07/27	pH (field)	SU	7.0
UA	G273	C	2010/07/28	pH (field)	SU	7.0
UA	G273	C	2010/09/20	pH (field)	SU	7.7
UA	G273	C	2010/11/16	pH (field)	SU	7.8
UA	G273	C	2011/01/31	pH (field)	SU	7.1
UA	G273	C	2011/05/03	pH (field)	SU	7.1
UA	G273	C	2011/07/27	pH (field)	SU	7.3
UA	G273	C	2011/11/14	pH (field)	SU	7.2
UA	G273	C	2012/01/26	pH (field)	SU	7.2
UA	G273	C	2012/05/22	pH (field)	SU	7.2
UA	G273	C	2012/07/24	pH (field)	SU	7.1
UA	G273	C	2012/11/14	pH (field)	SU	7.4
UA	G273	C	2013/01/31	pH (field)	SU	7.0
UA	G273	C	2013/05/20	pH (field)	SU	7.1
UA	G273	C	2013/07/22	pH (field)	SU	7.0
UA	G273	C	2013/10/14	pH (field)	SU	7.1
UA	G273	C	2014/02/19	pH (field)	SU	7.4
UA	G273	C	2014/05/13	pH (field)	SU	7.8
UA	G273	C	2014/08/11	pH (field)	SU	7.3
UA	G273	C	2014/10/14	pH (field)	SU	7.3
UA	G273	C	2015/01/21	pH (field)	SU	7.3
UA	G273	C	2015/04/13	pH (field)	SU	7.0
UA	G273	C	2015/07/23	pH (field)	SU	7.2
UA	G273	C	2015/10/08	pH (field)	SU	7.4
UA	G273	C	2015/11/24	pH (field)	SU	7.1
UA	G273	C	2016/02/16	pH (field)	SU	7.2
UA	G273	C	2016/05/12	pH (field)	SU	7.0
UA	G273	C	2016/08/05	pH (field)	SU	7.1
UA	G273	C	2016/11/21	pH (field)	SU	7.3
UA	G273	C	2017/02/15	pH (field)	SU	6.9
UA	G273	C	2017/05/20	pH (field)	SU	7.1
UA	G273	C	2017/07/17	pH (field)	SU	7.3
UA	G273	C	2017/11/04	pH (field)	SU	7.0
UA	G273	C	2018/05/16	pH (field)	SU	7.2
UA	G273	C	2018/08/10	pH (field)	SU	7.1
UA	G273	C	2019/01/22	pH (field)	SU	7.1
UA	G273	C	2019/08/26	pH (field)	SU	7.0
UA	G273	C	2020/01/22	pH (field)	SU	7.1
UA	G273	C	2020/08/13	pH (field)	SU	7.0
UA	G273	C	2020/10/14	pH (field)	SU	7.0
UA	G273	C	2021/02/01	pH (field)	SU	6.9
UA	G273	C	2021/05/20	pH (field)	SU	7.1
UA	G273	C	2021/08/18	pH (field)	SU	7.2
UA	G273	C	2021/10/27	pH (field)	SU	7.2
UA	G273	C	2022/02/10	pH (field)	SU	7.2
UA	G273	C	2022/03/21	pH (field)	SU	7.5
UA	G273	C	2022/03/29	pH (field)	SU	7.0
UA	G273	C	2022/05/11	pH (field)	SU	6.9
UA	G273	C	2022/08/25	pH (field)	SU	7.0
UA	G273	C	2022/11/09	pH (field)	SU	7.2
UA	G273	C	2023/02/16	pH (field)	SU	7.1
UA	G273	C	2023/06/05	pH (field)	SU	6.6
UA	G273	C	2023/08/14	pH (field)	SU	6.8
UA	G273	C	2023/11/17	pH (field)	SU	7.0
UA	G273	C	2015/11/24	Oxidation Reduction Potential	mV	105
UA	G273	C	2016/02/16	Oxidation Reduction Potential	mV	156
UA	G273	C	2016/05/12	Oxidation Reduction Potential	mV	177
UA	G273	C	2016/08/05	Oxidation Reduction Potential	mV	172
UA	G273	C	2016/11/21	Oxidation Reduction Potential	mV	150

UA	G273	C	2017/02/15	Oxidation Reduction Potential	mV	96.0
UA	G273	C	2017/05/20	Oxidation Reduction Potential	mV	60.0
UA	G273	C	2017/07/17	Oxidation Reduction Potential	mV	142
UA	G273	C	2017/11/04	Oxidation Reduction Potential	mV	141
UA	G273	C	2018/05/16	Oxidation Reduction Potential	mV	168
UA	G273	C	2018/08/10	Oxidation Reduction Potential	mV	161
UA	G273	C	2019/01/22	Oxidation Reduction Potential	mV	173
UA	G273	C	2019/08/26	Oxidation Reduction Potential	mV	161
UA	G273	C	2020/01/22	Oxidation Reduction Potential	mV	109
UA	G273	C	2020/08/13	Oxidation Reduction Potential	mV	136
UA	G273	C	2021/02/01	Oxidation Reduction Potential	mV	180
UA	G273	C	2021/08/18	Oxidation Reduction Potential	mV	78.5
UA	G273	C	2022/02/10	Oxidation Reduction Potential	mV	50.0
UA	G273	C	2022/03/21	Oxidation Reduction Potential	mV	79.5
UA	G273	C	2022/03/29	Oxidation Reduction Potential	mV	136
UA	G273	C	2022/05/11	Oxidation Reduction Potential	mV	108
UA	G273	C	2022/08/25	Oxidation Reduction Potential	mV	89.0
UA	G273	C	2022/11/09	Oxidation Reduction Potential	mV	63.7
UA	G273	C	2023/02/16	Oxidation Reduction Potential	mV	323
UA	G273	C	2023/06/05	Oxidation Reduction Potential	mV	180
UA	G273	C	2023/08/14	Oxidation Reduction Potential	mV	103
UA	G273	C	2023/11/17	Oxidation Reduction Potential	mV	125
UA	G273	C	2015/11/24	Eh	V	0.30
UA	G273	C	2016/02/16	Eh	V	0.35
UA	G273	C	2016/05/12	Eh	V	0.37
UA	G273	C	2016/08/05	Eh	V	0.37
UA	G273	C	2016/11/21	Eh	V	0.35
UA	G273	C	2017/02/15	Eh	V	0.29
UA	G273	C	2017/05/20	Eh	V	0.26
UA	G273	C	2017/07/17	Eh	V	0.33
UA	G273	C	2017/11/04	Eh	V	0.34
UA	G273	C	2018/05/16	Eh	V	0.36
UA	G273	C	2018/08/10	Eh	V	0.36
UA	G273	C	2019/01/22	Eh	V	0.37
UA	G273	C	2019/08/26	Eh	V	0.36
UA	G273	C	2020/01/22	Eh	V	0.31
UA	G273	C	2020/08/13	Eh	V	0.33
UA	G273	C	2021/02/01	Eh	V	0.38
UA	G273	C	2021/08/18	Eh	V	0.27
UA	G273	C	2022/02/10	Eh	V	0.25
UA	G273	C	2022/03/21	Eh	V	0.27
UA	G273	C	2022/03/29	Eh	V	0.33
UA	G273	C	2022/05/11	Eh	V	0.30
UA	G273	C	2022/08/25	Eh	V	0.28
UA	G273	C	2022/11/09	Eh	V	0.26
UA	G273	C	2023/02/16	Eh	V	0.52
UA	G273	C	2023/06/05	Eh	V	0.37
UA	G273	C	2023/08/14	Eh	V	0.30
UA	G273	C	2023/11/17	Eh	V	0.32
UA	G273	C	2009/09/23	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G273	C	2009/11/10	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G273	C	2010/01/21	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G273	C	2010/03/04	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G273	C	2010/07/27	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G273	C	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G273	C	2012/01/26	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G273	C	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	370
UA	G273	C	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G273	C	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G273	C	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G273	C	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G273	C	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	360

UA	G273	C	2017/07/17	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G273	C	2020/01/22	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G273	C	2021/02/01	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G273	C	2022/03/29	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G273	C	2022/08/25	Alkalinity, bicarbonate	mg/L CaCO3	1,100
UA	G273	C	2023/02/16	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G273	C	2023/06/05	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G273	C	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	366
UA	G273	C	2023/11/17	Alkalinity, bicarbonate	mg/L CaCO3	353
UA	G273	C	2022/08/25	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G273	C	2009/09/23	Arsenic, total	mg/L	<0.001
UA	G273	C	2009/11/10	Arsenic, total	mg/L	<0.001
UA	G273	C	2010/01/21	Arsenic, total	mg/L	<0.001
UA	G273	C	2010/03/04	Arsenic, total	mg/L	<0.001
UA	G273	C	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G273	C	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G273	C	2011/01/31	Arsenic, total	mg/L	<0.001
UA	G273	C	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G273	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G273	C	2011/11/14	Arsenic, total	mg/L	0.00130
UA	G273	C	2012/01/26	Arsenic, total	mg/L	<0.001
UA	G273	C	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G273	C	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G273	C	2012/11/14	Arsenic, total	mg/L	0.00340
UA	G273	C	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G273	C	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G273	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G273	C	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G273	C	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G273	C	2014/05/13	Arsenic, total	mg/L	<0.001
UA	G273	C	2014/08/11	Arsenic, total	mg/L	<0.001
UA	G273	C	2014/10/14	Arsenic, total	mg/L	0.00110
UA	G273	C	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G273	C	2015/04/13	Arsenic, total	mg/L	<0.001
UA	G273	C	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G273	C	2015/10/08	Arsenic, total	mg/L	<0.001
UA	G273	C	2015/11/24	Arsenic, total	mg/L	<0.00013
UA	G273	C	2016/02/16	Arsenic, total	mg/L	<0.00013
UA	G273	C	2016/05/12	Arsenic, total	mg/L	0.00450
UA	G273	C	2016/08/05	Arsenic, total	mg/L	<0.00013
UA	G273	C	2016/11/21	Arsenic, total	mg/L	<0.00013
UA	G273	C	2017/02/15	Arsenic, total	mg/L	<0.00013
UA	G273	C	2017/05/20	Arsenic, total	mg/L	<0.00013
UA	G273	C	2017/07/17	Arsenic, total	mg/L	<0.00013
UA	G273	C	2018/05/16	Arsenic, total	mg/L	<0.0009
UA	G273	C	2018/08/10	Arsenic, total	mg/L	<0.0009
UA	G273	C	2019/01/22	Arsenic, total	mg/L	0.00150
UA	G273	C	2019/08/26	Arsenic, total	mg/L	<0.0009
UA	G273	C	2020/01/22	Arsenic, total	mg/L	0.00110
UA	G273	C	2020/08/13	Arsenic, total	mg/L	<0.00022
UA	G273	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G273	C	2021/02/01	Arsenic, total	mg/L	<0.00022
UA	G273	C	2021/05/20	Arsenic, total	mg/L	<0.001
UA	G273	C	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G273	C	2021/10/27	Arsenic, total	mg/L	<0.001
UA	G273	C	2022/02/10	Arsenic, total	mg/L	<0.00069
UA	G273	C	2022/05/11	Arsenic, total	mg/L	<0.00069
UA	G273	C	2022/08/25	Arsenic, total	mg/L	<0.00069
UA	G273	C	2022/11/09	Arsenic, total	mg/L	<0.00069
UA	G273	C	2023/02/16	Arsenic, total	mg/L	0.00120
UA	G273	C	2023/06/05	Arsenic, total	mg/L	<0.00069
UA	G273	C	2023/08/14	Arsenic, total	mg/L	0.000400

UA	G273	C	2023/11/17	Arsenic, total	mg/L	0.000700
UA	G273	C	2009/09/23	Barium, total	mg/L	0.0940
UA	G273	C	2009/11/10	Barium, total	mg/L	0.0900
UA	G273	C	2010/01/21	Barium, total	mg/L	0.0850
UA	G273	C	2010/03/04	Barium, total	mg/L	0.0790
UA	G273	C	2010/07/27	Barium, total	mg/L	0.0480
UA	G273	C	2011/01/31	Barium, total	mg/L	0.0500
UA	G273	C	2012/01/26	Barium, total	mg/L	0.0430
UA	G273	C	2013/01/31	Barium, total	mg/L	0.0460
UA	G273	C	2014/02/19	Barium, total	mg/L	0.0390
UA	G273	C	2015/04/13	Barium, total	mg/L	0.0280
UA	G273	C	2015/07/23	Barium, total	mg/L	0.0440
UA	G273	C	2015/10/08	Barium, total	mg/L	0.0390
UA	G273	C	2015/11/24	Barium, total	mg/L	0.0490
UA	G273	C	2016/02/16	Barium, total	mg/L	0.0310
UA	G273	C	2016/05/12	Barium, total	mg/L	0.0310
UA	G273	C	2016/08/05	Barium, total	mg/L	0.0320
UA	G273	C	2016/11/21	Barium, total	mg/L	0.0360
UA	G273	C	2017/02/15	Barium, total	mg/L	0.0330
UA	G273	C	2017/05/20	Barium, total	mg/L	0.0320
UA	G273	C	2017/07/17	Barium, total	mg/L	0.0350
UA	G273	C	2018/05/16	Barium, total	mg/L	0.0320
UA	G273	C	2018/08/10	Barium, total	mg/L	0.0270
UA	G273	C	2019/01/22	Barium, total	mg/L	0.0490
UA	G273	C	2019/08/26	Barium, total	mg/L	0.0270
UA	G273	C	2020/01/22	Barium, total	mg/L	0.0300
UA	G273	C	2020/08/13	Barium, total	mg/L	0.0270
UA	G273	C	2020/10/14	Barium, total	mg/L	0.0290
UA	G273	C	2021/02/01	Barium, total	mg/L	0.0290
UA	G273	C	2021/05/20	Barium, total	mg/L	0.0280
UA	G273	C	2021/08/18	Barium, total	mg/L	0.0280
UA	G273	C	2021/10/27	Barium, total	mg/L	0.0280
UA	G273	C	2022/02/10	Barium, total	mg/L	0.0290
UA	G273	C	2022/05/11	Barium, total	mg/L	0.0290
UA	G273	C	2022/08/25	Barium, total	mg/L	0.0290
UA	G273	C	2022/11/09	Barium, total	mg/L	0.0260
UA	G273	C	2023/02/16	Barium, total	mg/L	0.0300
UA	G273	C	2023/06/05	Barium, total	mg/L	0.0320
UA	G273	C	2023/08/14	Barium, total	mg/L	0.0347
UA	G273	C	2023/11/17	Barium, total	mg/L	0.0410
UA	G273	C	2009/09/23	Calcium, total	mg/L	120
UA	G273	C	2009/11/10	Calcium, total	mg/L	140
UA	G273	C	2010/01/21	Calcium, total	mg/L	150
UA	G273	C	2010/03/04	Calcium, total	mg/L	190
UA	G273	C	2010/07/27	Calcium, total	mg/L	160
UA	G273	C	2010/11/16	Calcium, total	mg/L	130
UA	G273	C	2011/01/31	Calcium, total	mg/L	170
UA	G273	C	2011/05/03	Calcium, total	mg/L	160
UA	G273	C	2011/07/27	Calcium, total	mg/L	150
UA	G273	C	2011/11/14	Calcium, total	mg/L	150
UA	G273	C	2012/01/26	Calcium, total	mg/L	180
UA	G273	C	2012/05/22	Calcium, total	mg/L	160
UA	G273	C	2012/07/24	Calcium, total	mg/L	140
UA	G273	C	2012/11/14	Calcium, total	mg/L	160
UA	G273	C	2013/01/31	Calcium, total	mg/L	180
UA	G273	C	2013/05/20	Calcium, total	mg/L	180
UA	G273	C	2013/07/22	Calcium, total	mg/L	160
UA	G273	C	2013/10/14	Calcium, total	mg/L	140
UA	G273	C	2014/02/19	Calcium, total	mg/L	150
UA	G273	C	2014/05/13	Calcium, total	mg/L	160
UA	G273	C	2014/08/11	Calcium, total	mg/L	140
UA	G273	C	2014/10/14	Calcium, total	mg/L	150

UA	G273	C	2015/01/21	Calcium, total	mg/L	150
UA	G273	C	2015/04/13	Calcium, total	mg/L	200
UA	G273	C	2015/11/24	Calcium, total	mg/L	140
UA	G273	C	2016/02/16	Calcium, total	mg/L	150
UA	G273	C	2016/05/12	Calcium, total	mg/L	170
UA	G273	C	2016/08/05	Calcium, total	mg/L	120
UA	G273	C	2016/11/21	Calcium, total	mg/L	140
UA	G273	C	2017/02/15	Calcium, total	mg/L	140
UA	G273	C	2017/05/20	Calcium, total	mg/L	130
UA	G273	C	2017/07/17	Calcium, total	mg/L	140
UA	G273	C	2017/11/04	Calcium, total	mg/L	120
UA	G273	C	2018/05/16	Calcium, total	mg/L	160
UA	G273	C	2018/08/10	Calcium, total	mg/L	140
UA	G273	C	2019/01/22	Calcium, total	mg/L	170
UA	G273	C	2019/08/26	Calcium, total	mg/L	150
UA	G273	C	2020/01/22	Calcium, total	mg/L	170
UA	G273	C	2020/08/13	Calcium, total	mg/L	150
UA	G273	C	2021/02/01	Calcium, total	mg/L	160
UA	G273	C	2021/08/18	Calcium, total	mg/L	150
UA	G273	C	2022/02/10	Calcium, total	mg/L	160
UA	G273	C	2022/08/25	Calcium, total	mg/L	160
UA	G273	C	2023/02/16	Calcium, total	mg/L	150
UA	G273	C	2023/06/05	Calcium, total	mg/L	160
UA	G273	C	2023/08/14	Calcium, total	mg/L	164
UA	G273	C	2023/11/17	Calcium, total	mg/L	131
UA	G273	C	2009/09/23	Chloride, total	mg/L	35.0
UA	G273	C	2009/11/10	Chloride, total	mg/L	28.0
UA	G273	C	2010/01/21	Chloride, total	mg/L	30.0
UA	G273	C	2010/03/04	Chloride, total	mg/L	25.0
UA	G273	C	2010/07/27	Chloride, total	mg/L	30.0
UA	G273	C	2010/11/16	Chloride, total	mg/L	27.0
UA	G273	C	2011/01/31	Chloride, total	mg/L	33.0
UA	G273	C	2011/05/03	Chloride, total	mg/L	59.0
UA	G273	C	2011/07/27	Chloride, total	mg/L	29.0
UA	G273	C	2011/11/14	Chloride, total	mg/L	29.0
UA	G273	C	2012/01/26	Chloride, total	mg/L	27.0
UA	G273	C	2012/05/22	Chloride, total	mg/L	27.0
UA	G273	C	2012/07/24	Chloride, total	mg/L	32.0
UA	G273	C	2012/11/14	Chloride, total	mg/L	33.0
UA	G273	C	2013/01/31	Chloride, total	mg/L	37.0
UA	G273	C	2013/05/20	Chloride, total	mg/L	4.00
UA	G273	C	2013/07/22	Chloride, total	mg/L	35.0
UA	G273	C	2013/10/14	Chloride, total	mg/L	37.0
UA	G273	C	2014/02/19	Chloride, total	mg/L	38.0
UA	G273	C	2014/05/13	Chloride, total	mg/L	47.0
UA	G273	C	2014/08/11	Chloride, total	mg/L	37.0
UA	G273	C	2014/10/14	Chloride, total	mg/L	37.0
UA	G273	C	2015/01/21	Chloride, total	mg/L	46.0
UA	G273	C	2015/04/13	Chloride, total	mg/L	41.0
UA	G273	C	2015/07/23	Chloride, total	mg/L	39.0
UA	G273	C	2015/10/08	Chloride, total	mg/L	46.0
UA	G273	C	2015/11/24	Chloride, total	mg/L	41.0
UA	G273	C	2016/02/16	Chloride, total	mg/L	45.0
UA	G273	C	2016/05/12	Chloride, total	mg/L	44.0
UA	G273	C	2016/08/05	Chloride, total	mg/L	46.0
UA	G273	C	2016/11/21	Chloride, total	mg/L	48.0
UA	G273	C	2017/02/15	Chloride, total	mg/L	47.0
UA	G273	C	2017/05/20	Chloride, total	mg/L	51.0
UA	G273	C	2017/07/17	Chloride, total	mg/L	48.0
UA	G273	C	2017/11/04	Chloride, total	mg/L	50.0
UA	G273	C	2018/05/16	Chloride, total	mg/L	50.0
UA	G273	C	2018/08/10	Chloride, total	mg/L	53.0

UA	G273	C	2019/01/22	Chloride, total	mg/L	54.0
UA	G273	C	2019/08/26	Chloride, total	mg/L	59.0
UA	G273	C	2020/01/22	Chloride, total	mg/L	59.0
UA	G273	C	2020/08/13	Chloride, total	mg/L	64.0
UA	G273	C	2020/10/14	Chloride, total	mg/L	61.0
UA	G273	C	2021/02/01	Chloride, total	mg/L	82.0
UA	G273	C	2021/05/20	Chloride, total	mg/L	64.0
UA	G273	C	2021/08/18	Chloride, total	mg/L	66.0
UA	G273	C	2021/10/27	Chloride, total	mg/L	62.0
UA	G273	C	2022/02/10	Chloride, total	mg/L	69.0
UA	G273	C	2022/05/11	Chloride, total	mg/L	67.0
UA	G273	C	2022/08/25	Chloride, total	mg/L	74.0
UA	G273	C	2022/11/09	Chloride, total	mg/L	68.0
UA	G273	C	2023/02/16	Chloride, total	mg/L	77.0
UA	G273	C	2023/06/05	Chloride, total	mg/L	73.0
UA	G273	C	2023/08/14	Chloride, total	mg/L	68.0
UA	G273	C	2023/11/17	Chloride, total	mg/L	63.0
UA	G273	C	2023/06/05	Ferrous Iron, dissolved	mg/L	0.220
UA	G273	C	2009/11/10	Iron, dissolved	mg/L	<0.1
UA	G273	C	2010/01/21	Iron, dissolved	mg/L	<0.1
UA	G273	C	2010/03/04	Iron, dissolved	mg/L	<0.2
UA	G273	C	2010/07/27	Iron, dissolved	mg/L	<0.01
UA	G273	C	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G273	C	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G273	C	2011/01/31	Iron, dissolved	mg/L	<0.01
UA	G273	C	2011/05/03	Iron, dissolved	mg/L	<0.01
UA	G273	C	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G273	C	2011/11/14	Iron, dissolved	mg/L	<0.01
UA	G273	C	2012/01/26	Iron, dissolved	mg/L	<0.01
UA	G273	C	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G273	C	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G273	C	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G273	C	2013/01/31	Iron, dissolved	mg/L	<0.01
UA	G273	C	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G273	C	2013/07/22	Iron, dissolved	mg/L	<0.01
UA	G273	C	2013/10/14	Iron, dissolved	mg/L	<0.01
UA	G273	C	2014/02/19	Iron, dissolved	mg/L	<0.01
UA	G273	C	2014/05/13	Iron, dissolved	mg/L	<0.01
UA	G273	C	2014/08/11	Iron, dissolved	mg/L	<0.01
UA	G273	C	2014/10/14	Iron, dissolved	mg/L	<0.01
UA	G273	C	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G273	C	2015/04/13	Iron, dissolved	mg/L	0.0290
UA	G273	C	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G273	C	2015/10/08	Iron, dissolved	mg/L	<0.01
UA	G273	C	2016/02/16	Iron, dissolved	mg/L	<0.01
UA	G273	C	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G273	C	2016/07/27	Iron, dissolved	mg/L	<0.01
UA	G273	C	2016/11/21	Iron, dissolved	mg/L	0.0240
UA	G273	C	2017/02/08	Iron, dissolved	mg/L	<0.01
UA	G273	C	2017/05/18	Iron, dissolved	mg/L	<0.01
UA	G273	C	2017/07/25	Iron, dissolved	mg/L	<0.01
UA	G273	C	2017/11/04	Iron, dissolved	mg/L	0.0230
UA	G273	C	2018/01/29	Iron, dissolved	mg/L	0.120
UA	G273	C	2018/05/16	Iron, dissolved	mg/L	0.0150
UA	G273	C	2018/08/10	Iron, dissolved	mg/L	<0.01
UA	G273	C	2018/11/05	Iron, dissolved	mg/L	<0.1
UA	G273	C	2019/01/22	Iron, dissolved	mg/L	0.0180
UA	G273	C	2019/05/03	Iron, dissolved	mg/L	<0.01
UA	G273	C	2019/08/26	Iron, dissolved	mg/L	0.0120
UA	G273	C	2019/10/22	Iron, dissolved	mg/L	<0.01
UA	G273	C	2020/01/22	Iron, dissolved	mg/L	0.0160
UA	G273	C	2020/05/05	Iron, dissolved	mg/L	<0.01

UA	G273	C	2020/08/13	Iron, dissolved	mg/L	<0.01
UA	G273	C	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G273	C	2021/02/01	Iron, dissolved	mg/L	0.0150
UA	G273	C	2021/05/20	Iron, dissolved	mg/L	0.0130
UA	G273	C	2021/08/18	Iron, dissolved	mg/L	0.0120
UA	G273	C	2021/10/27	Iron, dissolved	mg/L	0.0190
UA	G273	C	2022/02/10	Iron, dissolved	mg/L	0.0570
UA	G273	C	2022/05/11	Iron, dissolved	mg/L	0.00400
UA	G273	C	2022/08/25	Iron, dissolved	mg/L	0.0140
UA	G273	C	2022/11/09	Iron, dissolved	mg/L	0.0220
UA	G273	C	2023/02/16	Iron, dissolved	mg/L	<0.00072
UA	G273	C	2023/06/05	Iron, dissolved	mg/L	0.0310
UA	G273	C	2023/08/14	Iron, dissolved	mg/L	<0.0175
UA	G273	C	2023/11/17	Iron, dissolved	mg/L	0.0190
UA	G273	C	2009/09/23	Magnesium, total	mg/L	63.0
UA	G273	C	2009/11/10	Magnesium, total	mg/L	72.0
UA	G273	C	2010/01/21	Magnesium, total	mg/L	75.0
UA	G273	C	2010/03/04	Magnesium, total	mg/L	95.0
UA	G273	C	2010/07/27	Magnesium, total	mg/L	79.0
UA	G273	C	2011/01/31	Magnesium, total	mg/L	89.0
UA	G273	C	2012/01/26	Magnesium, total	mg/L	92.0
UA	G273	C	2013/01/31	Magnesium, total	mg/L	93.0
UA	G273	C	2014/02/19	Magnesium, total	mg/L	88.0
UA	G273	C	2015/04/13	Magnesium, total	mg/L	100
UA	G273	C	2017/07/17	Magnesium, total	mg/L	63.0
UA	G273	C	2020/01/22	Magnesium, total	mg/L	90.0
UA	G273	C	2021/02/01	Magnesium, total	mg/L	83.0
UA	G273	C	2022/02/10	Magnesium, total	mg/L	77.0
UA	G273	C	2022/08/25	Magnesium, total	mg/L	82.0
UA	G273	C	2023/02/16	Magnesium, total	mg/L	76.0
UA	G273	C	2023/06/05	Magnesium, total	mg/L	83.0
UA	G273	C	2023/08/14	Magnesium, total	mg/L	82.0
UA	G273	C	2023/11/17	Magnesium, total	mg/L	67.2
UA	G273	C	2009/11/10	Manganese, dissolved	mg/L	0.0970
UA	G273	C	2010/01/21	Manganese, dissolved	mg/L	0.0630
UA	G273	C	2010/03/04	Manganese, dissolved	mg/L	0.0550
UA	G273	C	2010/07/27	Manganese, dissolved	mg/L	0.0480
UA	G273	C	2010/09/20	Manganese, dissolved	mg/L	0.0520
UA	G273	C	2010/11/16	Manganese, dissolved	mg/L	0.0580
UA	G273	C	2011/01/31	Manganese, dissolved	mg/L	0.0470
UA	G273	C	2011/05/03	Manganese, dissolved	mg/L	0.0420
UA	G273	C	2011/07/27	Manganese, dissolved	mg/L	0.0290
UA	G273	C	2011/11/14	Manganese, dissolved	mg/L	0.0410
UA	G273	C	2012/01/26	Manganese, dissolved	mg/L	0.0330
UA	G273	C	2012/05/22	Manganese, dissolved	mg/L	0.0280
UA	G273	C	2012/07/24	Manganese, dissolved	mg/L	0.0220
UA	G273	C	2012/11/14	Manganese, dissolved	mg/L	0.0260
UA	G273	C	2013/01/31	Manganese, dissolved	mg/L	0.0300
UA	G273	C	2013/05/20	Manganese, dissolved	mg/L	0.0130
UA	G273	C	2013/07/22	Manganese, dissolved	mg/L	0.0220
UA	G273	C	2013/10/14	Manganese, dissolved	mg/L	0.0150
UA	G273	C	2014/02/19	Manganese, dissolved	mg/L	0.0150
UA	G273	C	2014/05/13	Manganese, dissolved	mg/L	0.330
UA	G273	C	2014/08/11	Manganese, dissolved	mg/L	0.0100
UA	G273	C	2014/10/14	Manganese, dissolved	mg/L	0.0130
UA	G273	C	2015/01/21	Manganese, dissolved	mg/L	0.0180
UA	G273	C	2015/04/13	Manganese, dissolved	mg/L	0.0190
UA	G273	C	2015/07/23	Manganese, dissolved	mg/L	0.00110
UA	G273	C	2015/10/08	Manganese, dissolved	mg/L	0.0140
UA	G273	C	2016/02/16	Manganese, dissolved	mg/L	0.0100
UA	G273	C	2016/05/12	Manganese, dissolved	mg/L	0.0120
UA	G273	C	2016/07/27	Manganese, dissolved	mg/L	0.0210

UA	G273	C	2016/11/21	Manganese, dissolved	mg/L	0.0220
UA	G273	C	2017/02/08	Manganese, dissolved	mg/L	0.0180
UA	G273	C	2017/05/18	Manganese, dissolved	mg/L	0.00830
UA	G273	C	2017/07/25	Manganese, dissolved	mg/L	<0.001
UA	G273	C	2017/11/04	Manganese, dissolved	mg/L	0.0200
UA	G273	C	2018/01/29	Manganese, dissolved	mg/L	0.0280
UA	G273	C	2018/05/16	Manganese, dissolved	mg/L	0.0130
UA	G273	C	2018/08/10	Manganese, dissolved	mg/L	0.00800
UA	G273	C	2018/11/05	Manganese, dissolved	mg/L	0.0130
UA	G273	C	2019/01/22	Manganese, dissolved	mg/L	0.0180
UA	G273	C	2019/05/03	Manganese, dissolved	mg/L	0.0170
UA	G273	C	2019/08/26	Manganese, dissolved	mg/L	0.0270
UA	G273	C	2019/10/22	Manganese, dissolved	mg/L	0.0210
UA	G273	C	2020/01/22	Manganese, dissolved	mg/L	0.0250
UA	G273	C	2020/05/05	Manganese, dissolved	mg/L	0.0240
UA	G273	C	2020/08/13	Manganese, dissolved	mg/L	0.0290
UA	G273	C	2020/10/14	Manganese, dissolved	mg/L	0.0240
UA	G273	C	2021/02/01	Manganese, dissolved	mg/L	0.0360
UA	G273	C	2021/05/20	Manganese, dissolved	mg/L	0.0400
UA	G273	C	2021/08/18	Manganese, dissolved	mg/L	0.0380
UA	G273	C	2021/10/27	Manganese, dissolved	mg/L	0.0470
UA	G273	C	2022/02/10	Manganese, dissolved	mg/L	0.0440
UA	G273	C	2022/05/11	Manganese, dissolved	mg/L	0.0390
UA	G273	C	2022/08/25	Manganese, dissolved	mg/L	0.0490
UA	G273	C	2022/11/09	Manganese, dissolved	mg/L	0.0680
UA	G273	C	2023/02/16	Manganese, dissolved	mg/L	<0.00023
UA	G273	C	2023/06/05	Manganese, dissolved	mg/L	0.0960
UA	G273	C	2023/08/14	Manganese, dissolved	mg/L	<0.0008
UA	G273	C	2023/11/17	Manganese, dissolved	mg/L	0.0625
UA	G273	C	2023/08/14	Phosphate, dissolved	mg/L	<0.005
UA	G273	C	2009/09/23	Potassium, total	mg/L	0.790
UA	G273	C	2009/11/10	Potassium, total	mg/L	0.760
UA	G273	C	2010/01/21	Potassium, total	mg/L	0.530
UA	G273	C	2010/03/04	Potassium, total	mg/L	0.580
UA	G273	C	2010/07/27	Potassium, total	mg/L	0.520
UA	G273	C	2011/01/31	Potassium, total	mg/L	0.460
UA	G273	C	2012/01/26	Potassium, total	mg/L	0.450
UA	G273	C	2013/01/31	Potassium, total	mg/L	0.400
UA	G273	C	2014/02/19	Potassium, total	mg/L	0.450
UA	G273	C	2015/04/13	Potassium, total	mg/L	0.300
UA	G273	C	2017/07/17	Potassium, total	mg/L	0.490
UA	G273	C	2020/01/22	Potassium, total	mg/L	0.400
UA	G273	C	2021/02/01	Potassium, total	mg/L	0.380
UA	G273	C	2022/02/10	Potassium, total	mg/L	0.440
UA	G273	C	2022/08/25	Potassium, total	mg/L	0.470
UA	G273	C	2023/02/16	Potassium, total	mg/L	0.460
UA	G273	C	2023/06/05	Potassium, total	mg/L	0.390
UA	G273	C	2023/08/14	Potassium, total	mg/L	0.557
UA	G273	C	2023/11/17	Potassium, total	mg/L	0.539
UA	G273	C	2023/06/05	Silicon, dissolved	mg/L	8.50
UA	G273	C	2023/08/14	Silicon, dissolved	mg/L	7.95
UA	G273	C	2009/09/23	Sodium, total	mg/L	91.0
UA	G273	C	2009/11/10	Sodium, total	mg/L	99.0
UA	G273	C	2010/01/21	Sodium, total	mg/L	93.0
UA	G273	C	2010/03/04	Sodium, total	mg/L	100
UA	G273	C	2010/07/27	Sodium, total	mg/L	90.0
UA	G273	C	2011/01/31	Sodium, total	mg/L	94.0
UA	G273	C	2012/01/26	Sodium, total	mg/L	96.0
UA	G273	C	2013/01/31	Sodium, total	mg/L	96.0
UA	G273	C	2014/02/19	Sodium, total	mg/L	92.0
UA	G273	C	2015/04/13	Sodium, total	mg/L	95.0
UA	G273	C	2017/07/17	Sodium, total	mg/L	85.0

UA	G273	C	2020/01/22	Sodium, total	mg/L	100
UA	G273	C	2021/02/01	Sodium, total	mg/L	94.0
UA	G273	C	2022/02/10	Sodium, total	mg/L	99.0
UA	G273	C	2022/08/25	Sodium, total	mg/L	100
UA	G273	C	2023/02/16	Sodium, total	mg/L	97.0
UA	G273	C	2023/06/05	Sodium, total	mg/L	95.0
UA	G273	C	2023/08/14	Sodium, total	mg/L	104
UA	G273	C	2023/11/17	Sodium, total	mg/L	87.0
UA	G273	C	2009/09/23	Sulfate, total	mg/L	340
UA	G273	C	2009/11/10	Sulfate, total	mg/L	400
UA	G273	C	2010/01/21	Sulfate, total	mg/L	560
UA	G273	C	2010/03/04	Sulfate, total	mg/L	570
UA	G273	C	2010/07/27	Sulfate, total	mg/L	490
UA	G273	C	2010/11/16	Sulfate, total	mg/L	420
UA	G273	C	2011/01/31	Sulfate, total	mg/L	520
UA	G273	C	2011/05/03	Sulfate, total	mg/L	640
UA	G273	C	2011/07/27	Sulfate, total	mg/L	510
UA	G273	C	2011/11/14	Sulfate, total	mg/L	510
UA	G273	C	2012/01/26	Sulfate, total	mg/L	750
UA	G273	C	2012/05/22	Sulfate, total	mg/L	470
UA	G273	C	2012/07/24	Sulfate, total	mg/L	360
UA	G273	C	2012/11/14	Sulfate, total	mg/L	630
UA	G273	C	2013/01/31	Sulfate, total	mg/L	740
UA	G273	C	2013/05/20	Sulfate, total	mg/L	670
UA	G273	C	2013/07/22	Sulfate, total	mg/L	510
UA	G273	C	2013/10/14	Sulfate, total	mg/L	450
UA	G273	C	2014/02/19	Sulfate, total	mg/L	570
UA	G273	C	2014/05/13	Sulfate, total	mg/L	620
UA	G273	C	2014/08/11	Sulfate, total	mg/L	530
UA	G273	C	2014/10/14	Sulfate, total	mg/L	500
UA	G273	C	2015/01/21	Sulfate, total	mg/L	650
UA	G273	C	2015/04/13	Sulfate, total	mg/L	690
UA	G273	C	2015/07/23	Sulfate, total	mg/L	390
UA	G273	C	2015/10/08	Sulfate, total	mg/L	450
UA	G273	C	2015/11/24	Sulfate, total	mg/L	420
UA	G273	C	2016/02/16	Sulfate, total	mg/L	550
UA	G273	C	2016/05/12	Sulfate, total	mg/L	520
UA	G273	C	2016/08/05	Sulfate, total	mg/L	400
UA	G273	C	2016/11/21	Sulfate, total	mg/L	440
UA	G273	C	2017/02/15	Sulfate, total	mg/L	470
UA	G273	C	2017/05/20	Sulfate, total	mg/L	390
UA	G273	C	2017/07/17	Sulfate, total	mg/L	360
UA	G273	C	2017/11/04	Sulfate, total	mg/L	380
UA	G273	C	2018/05/16	Sulfate, total	mg/L	490
UA	G273	C	2018/08/10	Sulfate, total	mg/L	460
UA	G273	C	2019/01/22	Sulfate, total	mg/L	590
UA	G273	C	2019/08/26	Sulfate, total	mg/L	440
UA	G273	C	2020/01/22	Sulfate, total	mg/L	510
UA	G273	C	2020/08/13	Sulfate, total	mg/L	410
UA	G273	C	2020/10/14	Sulfate, total	mg/L	400
UA	G273	C	2021/02/01	Sulfate, total	mg/L	490
UA	G273	C	2021/05/20	Sulfate, total	mg/L	940
UA	G273	C	2021/08/18	Sulfate, total	mg/L	440
UA	G273	C	2021/10/27	Sulfate, total	mg/L	390
UA	G273	C	2022/02/10	Sulfate, total	mg/L	410
UA	G273	C	2022/05/11	Sulfate, total	mg/L	410
UA	G273	C	2022/08/25	Sulfate, total	mg/L	410
UA	G273	C	2022/11/09	Sulfate, total	mg/L	390
UA	G273	C	2023/02/16	Sulfate, total	mg/L	440
UA	G273	C	2023/06/05	Sulfate, total	mg/L	470
UA	G273	C	2023/08/14	Sulfate, total	mg/L	465
UA	G273	C	2023/11/17	Sulfate, total	mg/L	333

UA	G273	C	2015/11/24	Temperature (Celsius)	degrees C	16.7
UA	G273	C	2016/02/16	Temperature (Celsius)	degrees C	10.9
UA	G273	C	2016/05/12	Temperature (Celsius)	degrees C	16.0
UA	G273	C	2016/08/05	Temperature (Celsius)	degrees C	18.2
UA	G273	C	2016/11/21	Temperature (Celsius)	degrees C	14.3
UA	G273	C	2017/02/15	Temperature (Celsius)	degrees C	15.6
UA	G273	C	2017/05/20	Temperature (Celsius)	degrees C	15.0
UA	G273	C	2017/07/17	Temperature (Celsius)	degrees C	21.7
UA	G273	C	2017/11/04	Temperature (Celsius)	degrees C	12.6
UA	G273	C	2018/05/16	Temperature (Celsius)	degrees C	14.3
UA	G273	C	2018/08/10	Temperature (Celsius)	degrees C	15.2
UA	G273	C	2019/01/22	Temperature (Celsius)	degrees C	11.9
UA	G273	C	2019/08/26	Temperature (Celsius)	degrees C	16.9
UA	G273	C	2020/01/22	Temperature (Celsius)	degrees C	12.6
UA	G273	C	2020/08/13	Temperature (Celsius)	degrees C	17.6
UA	G273	C	2021/02/01	Temperature (Celsius)	degrees C	11.8
UA	G273	C	2021/08/18	Temperature (Celsius)	degrees C	18.8
UA	G273	C	2022/02/10	Temperature (Celsius)	degrees C	12.0
UA	G273	C	2022/03/21	Temperature (Celsius)	degrees C	17.1
UA	G273	C	2022/03/29	Temperature (Celsius)	degrees C	11.8
UA	G273	C	2022/05/11	Temperature (Celsius)	degrees C	19.6
UA	G273	C	2022/08/25	Temperature (Celsius)	degrees C	18.7
UA	G273	C	2022/11/09	Temperature (Celsius)	degrees C	17.9
UA	G273	C	2023/02/16	Temperature (Celsius)	degrees C	9.30
UA	G273	C	2023/06/05	Temperature (Celsius)	degrees C	18.0
UA	G273	C	2023/08/14	Temperature (Celsius)	degrees C	16.6
UA	G273	C	2023/11/17	Temperature (Celsius)	degrees C	16.4
UA	G273	C	2009/09/23	Total Dissolved Solids	mg/L	890
UA	G273	C	2009/11/10	Total Dissolved Solids	mg/L	980
UA	G273	C	2010/01/21	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2010/03/04	Total Dissolved Solids	mg/L	1,300
UA	G273	C	2010/07/27	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2010/11/16	Total Dissolved Solids	mg/L	960
UA	G273	C	2011/01/31	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2011/05/03	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2011/07/27	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2011/11/14	Total Dissolved Solids	mg/L	990
UA	G273	C	2012/01/26	Total Dissolved Solids	mg/L	1,300
UA	G273	C	2012/05/22	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2012/07/24	Total Dissolved Solids	mg/L	910
UA	G273	C	2012/11/14	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2013/01/31	Total Dissolved Solids	mg/L	1,300
UA	G273	C	2013/05/20	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2013/07/22	Total Dissolved Solids	mg/L	980
UA	G273	C	2013/10/14	Total Dissolved Solids	mg/L	900
UA	G273	C	2014/02/19	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2014/05/13	Total Dissolved Solids	mg/L	910
UA	G273	C	2014/08/11	Total Dissolved Solids	mg/L	1,000
UA	G273	C	2014/10/14	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2015/01/21	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2015/04/13	Total Dissolved Solids	mg/L	1,300
UA	G273	C	2015/07/23	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2015/10/08	Total Dissolved Solids	mg/L	930
UA	G273	C	2015/11/24	Total Dissolved Solids	mg/L	890
UA	G273	C	2016/02/16	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2016/05/12	Total Dissolved Solids	mg/L	980
UA	G273	C	2016/08/05	Total Dissolved Solids	mg/L	840
UA	G273	C	2016/11/21	Total Dissolved Solids	mg/L	900
UA	G273	C	2017/02/15	Total Dissolved Solids	mg/L	990
UA	G273	C	2017/05/20	Total Dissolved Solids	mg/L	890
UA	G273	C	2017/07/17	Total Dissolved Solids	mg/L	920
UA	G273	C	2017/11/04	Total Dissolved Solids	mg/L	820

UA	G273	C	2018/05/16	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2018/08/10	Total Dissolved Solids	mg/L	940
UA	G273	C	2019/01/22	Total Dissolved Solids	mg/L	1,300
UA	G273	C	2019/08/26	Total Dissolved Solids	mg/L	1,000
UA	G273	C	2020/01/22	Total Dissolved Solids	mg/L	1,000
UA	G273	C	2020/08/13	Total Dissolved Solids	mg/L	890
UA	G273	C	2020/10/14	Total Dissolved Solids	mg/L	1,000
UA	G273	C	2021/02/01	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2021/05/20	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2021/08/18	Total Dissolved Solids	mg/L	1,200
UA	G273	C	2021/10/27	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2022/02/10	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2022/05/11	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2022/08/25	Total Dissolved Solids	mg/L	940
UA	G273	C	2022/11/09	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2023/02/16	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2023/06/05	Total Dissolved Solids	mg/L	1,100
UA	G273	C	2023/08/14	Total Dissolved Solids	mg/L	1,180
UA	G273	C	2023/11/17	Total Dissolved Solids	mg/L	936
UA	G275	C	2010/07/26	pH (field)	SU	7.2
UA	G275	C	2010/07/28	pH (field)	SU	7.2
UA	G275	C	2010/09/20	pH (field)	SU	7.6
UA	G275	C	2010/11/16	pH (field)	SU	7.5
UA	G275	C	2011/01/31	pH (field)	SU	7.0
UA	G275	C	2011/05/03	pH (field)	SU	6.8
UA	G275	C	2011/07/27	pH (field)	SU	6.7
UA	G275	C	2011/11/14	pH (field)	SU	6.9
UA	G275	C	2012/01/31	pH (field)	SU	6.9
UA	G275	C	2012/05/22	pH (field)	SU	6.9
UA	G275	C	2012/07/24	pH (field)	SU	6.8
UA	G275	C	2012/11/14	pH (field)	SU	7.0
UA	G275	C	2013/05/20	pH (field)	SU	6.8
UA	G275	C	2013/07/22	pH (field)	SU	6.7
UA	G275	C	2014/05/13	pH (field)	SU	7.7
UA	G275	C	2014/08/11	pH (field)	SU	7.1
UA	G275	C	2014/10/14	pH (field)	SU	6.8
UA	G275	C	2015/01/21	pH (field)	SU	7.0
UA	G275	C	2015/04/13	pH (field)	SU	6.7
UA	G275	C	2015/07/23	pH (field)	SU	7.1
UA	G275	C	2020/10/14	pH (field)	SU	6.8
UA	G275	C	2021/05/20	pH (field)	SU	7.0
UA	G275	C	2021/08/18	pH (field)	SU	7.1
UA	G275	C	2021/10/27	pH (field)	SU	7.1
UA	G275	C	2022/02/10	pH (field)	SU	7.1
UA	G275	C	2022/05/12	pH (field)	SU	7.0
UA	G275	C	2022/11/09	pH (field)	SU	7.1
UA	G275	C	2023/02/16	pH (field)	SU	6.8
UA	G275	C	2023/06/08	pH (field)	SU	7.0
UA	G275	C	2022/02/10	Oxidation Reduction Potential	mV	124
UA	G275	C	2022/05/12	Oxidation Reduction Potential	mV	102
UA	G275	C	2022/11/09	Oxidation Reduction Potential	mV	84.5
UA	G275	C	2023/02/16	Oxidation Reduction Potential	mV	233
UA	G275	C	2023/06/08	Oxidation Reduction Potential	mV	170
UA	G275	C	2022/02/10	Eh	V	0.32
UA	G275	C	2022/05/12	Eh	V	0.30
UA	G275	C	2022/11/09	Eh	V	0.28
UA	G275	C	2023/02/16	Eh	V	0.43
UA	G275	C	2023/06/08	Eh	V	0.36
UA	G275	C	2009/09/22	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G275	C	2009/11/11	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G275	C	2010/01/21	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G275	C	2010/03/08	Alkalinity, bicarbonate	mg/L CaCO3	250

UA	G275	C	2010/07/26	Alkalinity, bicarbonate	mg/L CaCO3	420
UA	G275	C	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G275	C	2012/01/31	Alkalinity, bicarbonate	mg/L CaCO3	390
UA	G275	C	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G275	C	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	440
UA	G275	C	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G275	C	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G275	C	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G275	C	2009/09/22	Arsenic, total	mg/L	<0.005
UA	G275	C	2009/11/11	Arsenic, total	mg/L	<0.001
UA	G275	C	2010/01/21	Arsenic, total	mg/L	<0.001
UA	G275	C	2010/03/08	Arsenic, total	mg/L	<0.001
UA	G275	C	2010/07/26	Arsenic, total	mg/L	<0.001
UA	G275	C	2010/11/16	Arsenic, total	mg/L	0.00280
UA	G275	C	2011/01/31	Arsenic, total	mg/L	0.00150
UA	G275	C	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G275	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G275	C	2011/11/14	Arsenic, total	mg/L	0.00410
UA	G275	C	2012/01/31	Arsenic, total	mg/L	0.00110
UA	G275	C	2012/05/22	Arsenic, total	mg/L	0.00170
UA	G275	C	2012/07/24	Arsenic, total	mg/L	0.00180
UA	G275	C	2012/11/14	Arsenic, total	mg/L	0.00250
UA	G275	C	2013/05/20	Arsenic, total	mg/L	0.00250
UA	G275	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G275	C	2014/05/13	Arsenic, total	mg/L	0.00190
UA	G275	C	2014/08/11	Arsenic, total	mg/L	0.00430
UA	G275	C	2014/10/14	Arsenic, total	mg/L	0.00110
UA	G275	C	2015/01/21	Arsenic, total	mg/L	0.00430
UA	G275	C	2015/04/13	Arsenic, total	mg/L	<0.001
UA	G275	C	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G275	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G275	C	2021/05/20	Arsenic, total	mg/L	<0.001
UA	G275	C	2021/08/18	Arsenic, total	mg/L	<0.001
UA	G275	C	2021/10/27	Arsenic, total	mg/L	<0.001
UA	G275	C	2022/02/10	Arsenic, total	mg/L	<0.001
UA	G275	C	2022/05/12	Arsenic, total	mg/L	<0.00069
UA	G275	C	2022/11/09	Arsenic, total	mg/L	0.00120
UA	G275	C	2023/02/16	Arsenic, total	mg/L	0.00110
UA	G275	C	2023/06/08	Arsenic, total	mg/L	<0.00069
UA	G275	C	2009/09/22	Barium, total	mg/L	0.120
UA	G275	C	2009/11/11	Barium, total	mg/L	0.0320
UA	G275	C	2010/01/21	Barium, total	mg/L	0.0320
UA	G275	C	2010/03/08	Barium, total	mg/L	0.0350
UA	G275	C	2010/07/26	Barium, total	mg/L	0.0380
UA	G275	C	2011/01/31	Barium, total	mg/L	0.0460
UA	G275	C	2012/01/31	Barium, total	mg/L	0.0390
UA	G275	C	2015/04/13	Barium, total	mg/L	0.0560
UA	G275	C	2015/07/23	Barium, total	mg/L	0.0350
UA	G275	C	2020/10/14	Barium, total	mg/L	0.0320
UA	G275	C	2021/05/20	Barium, total	mg/L	0.0250
UA	G275	C	2021/08/18	Barium, total	mg/L	0.0270
UA	G275	C	2021/10/27	Barium, total	mg/L	0.0240
UA	G275	C	2022/02/10	Barium, total	mg/L	0.0530
UA	G275	C	2022/05/12	Barium, total	mg/L	0.0270
UA	G275	C	2022/11/09	Barium, total	mg/L	0.0290
UA	G275	C	2023/02/16	Barium, total	mg/L	0.0300
UA	G275	C	2023/06/08	Barium, total	mg/L	0.0240
UA	G275	C	2009/09/22	Calcium, total	mg/L	300
UA	G275	C	2009/11/11	Calcium, total	mg/L	140
UA	G275	C	2010/01/21	Calcium, total	mg/L	120
UA	G275	C	2010/03/08	Calcium, total	mg/L	160
UA	G275	C	2010/07/26	Calcium, total	mg/L	180

UA	G275	C	2010/11/16	Calcium, total	mg/L	260
UA	G275	C	2011/01/31	Calcium, total	mg/L	230
UA	G275	C	2011/05/03	Calcium, total	mg/L	240
UA	G275	C	2011/07/27	Calcium, total	mg/L	200
UA	G275	C	2011/11/14	Calcium, total	mg/L	260
UA	G275	C	2012/01/31	Calcium, total	mg/L	310
UA	G275	C	2012/05/22	Calcium, total	mg/L	240
UA	G275	C	2012/07/24	Calcium, total	mg/L	260
UA	G275	C	2012/11/14	Calcium, total	mg/L	270
UA	G275	C	2013/05/20	Calcium, total	mg/L	250
UA	G275	C	2013/07/22	Calcium, total	mg/L	210
UA	G275	C	2014/05/13	Calcium, total	mg/L	210
UA	G275	C	2014/08/11	Calcium, total	mg/L	240
UA	G275	C	2014/10/14	Calcium, total	mg/L	200
UA	G275	C	2015/01/21	Calcium, total	mg/L	230
UA	G275	C	2015/04/13	Calcium, total	mg/L	180
UA	G275	C	2023/06/08	Calcium, total	mg/L	160
UA	G275	C	2009/09/22	Chloride, total	mg/L	14.0
UA	G275	C	2009/11/11	Chloride, total	mg/L	12.0
UA	G275	C	2010/01/21	Chloride, total	mg/L	13.0
UA	G275	C	2010/03/08	Chloride, total	mg/L	23.0
UA	G275	C	2010/07/26	Chloride, total	mg/L	9.90
UA	G275	C	2010/11/16	Chloride, total	mg/L	9.70
UA	G275	C	2011/01/31	Chloride, total	mg/L	11.0
UA	G275	C	2011/05/03	Chloride, total	mg/L	13.0
UA	G275	C	2011/07/27	Chloride, total	mg/L	9.20
UA	G275	C	2011/11/14	Chloride, total	mg/L	17.0
UA	G275	C	2012/01/31	Chloride, total	mg/L	15.0
UA	G275	C	2012/05/22	Chloride, total	mg/L	11.0
UA	G275	C	2012/07/24	Chloride, total	mg/L	13.0
UA	G275	C	2012/11/14	Chloride, total	mg/L	19.0
UA	G275	C	2013/05/20	Chloride, total	mg/L	24.0
UA	G275	C	2013/07/22	Chloride, total	mg/L	19.0
UA	G275	C	2014/05/13	Chloride, total	mg/L	20.0
UA	G275	C	2014/08/11	Chloride, total	mg/L	20.0
UA	G275	C	2014/10/14	Chloride, total	mg/L	16.0
UA	G275	C	2015/01/21	Chloride, total	mg/L	20.0
UA	G275	C	2015/04/13	Chloride, total	mg/L	22.0
UA	G275	C	2015/07/23	Chloride, total	mg/L	30.0
UA	G275	C	2020/10/14	Chloride, total	mg/L	27.0
UA	G275	C	2021/05/20	Chloride, total	mg/L	18.0
UA	G275	C	2021/08/18	Chloride, total	mg/L	23.0
UA	G275	C	2021/10/27	Chloride, total	mg/L	18.0
UA	G275	C	2022/02/10	Chloride, total	mg/L	22.0
UA	G275	C	2022/05/12	Chloride, total	mg/L	20.0
UA	G275	C	2022/11/09	Chloride, total	mg/L	32.0
UA	G275	C	2023/02/16	Chloride, total	mg/L	19.0
UA	G275	C	2023/06/08	Chloride, total	mg/L	24.0
UA	G275	C	2023/06/08	Ferrous Iron, dissolved	mg/L	0.100
UA	G275	C	2009/11/11	Iron, dissolved	mg/L	<0.1
UA	G275	C	2010/01/21	Iron, dissolved	mg/L	<0.1
UA	G275	C	2010/03/08	Iron, dissolved	mg/L	<0.2
UA	G275	C	2010/07/26	Iron, dissolved	mg/L	0.0110
UA	G275	C	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G275	C	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G275	C	2011/01/31	Iron, dissolved	mg/L	0.0250
UA	G275	C	2011/05/03	Iron, dissolved	mg/L	<0.01
UA	G275	C	2011/07/27	Iron, dissolved	mg/L	0.0350
UA	G275	C	2011/11/14	Iron, dissolved	mg/L	0.0190
UA	G275	C	2012/01/31	Iron, dissolved	mg/L	0.0260
UA	G275	C	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G275	C	2012/07/24	Iron, dissolved	mg/L	0.0130

UA	G275	C	2012/11/14	Iron, dissolved	mg/L	0.0280
UA	G275	C	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G275	C	2013/07/22	Iron, dissolved	mg/L	0.0140
UA	G275	C	2014/05/13	Iron, dissolved	mg/L	0.0220
UA	G275	C	2014/08/11	Iron, dissolved	mg/L	<0.01
UA	G275	C	2014/10/14	Iron, dissolved	mg/L	0.0110
UA	G275	C	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G275	C	2015/04/13	Iron, dissolved	mg/L	<0.01
UA	G275	C	2015/07/23	Iron, dissolved	mg/L	0.0120
UA	G275	C	2016/02/09	Iron, dissolved	mg/L	0.0270
UA	G275	C	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G275	C	2016/07/27	Iron, dissolved	mg/L	0.0380
UA	G275	C	2016/11/21	Iron, dissolved	mg/L	0.0700
UA	G275	C	2017/02/14	Iron, dissolved	mg/L	<0.01
UA	G275	C	2017/05/18	Iron, dissolved	mg/L	<0.01
UA	G275	C	2017/07/25	Iron, dissolved	mg/L	0.0600
UA	G275	C	2017/11/03	Iron, dissolved	mg/L	0.0880
UA	G275	C	2018/05/16	Iron, dissolved	mg/L	0.0230
UA	G275	C	2018/08/10	Iron, dissolved	mg/L	<0.01
UA	G275	C	2018/11/05	Iron, dissolved	mg/L	<0.1
UA	G275	C	2019/01/22	Iron, dissolved	mg/L	0.0530
UA	G275	C	2019/05/03	Iron, dissolved	mg/L	0.0140
UA	G275	C	2019/08/26	Iron, dissolved	mg/L	0.0250
UA	G275	C	2019/10/22	Iron, dissolved	mg/L	0.0270
UA	G275	C	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G275	C	2020/05/06	Iron, dissolved	mg/L	<0.01
UA	G275	C	2020/08/13	Iron, dissolved	mg/L	<0.01
UA	G275	C	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G275	C	2021/05/20	Iron, dissolved	mg/L	<0.01
UA	G275	C	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G275	C	2021/10/27	Iron, dissolved	mg/L	<0.01
UA	G275	C	2022/02/10	Iron, dissolved	mg/L	<0.01
UA	G275	C	2022/05/12	Iron, dissolved	mg/L	0.00350
UA	G275	C	2022/11/09	Iron, dissolved	mg/L	0.0110
UA	G275	C	2023/02/16	Iron, dissolved	mg/L	0.00950
UA	G275	C	2023/06/08	Iron, dissolved	mg/L	0.00870
UA	G275	C	2009/09/22	Magnesium, total	mg/L	140
UA	G275	C	2009/11/11	Magnesium, total	mg/L	67.0
UA	G275	C	2010/01/21	Magnesium, total	mg/L	60.0
UA	G275	C	2010/03/08	Magnesium, total	mg/L	76.0
UA	G275	C	2010/07/26	Magnesium, total	mg/L	81.0
UA	G275	C	2011/01/31	Magnesium, total	mg/L	110
UA	G275	C	2012/01/31	Magnesium, total	mg/L	97.0
UA	G275	C	2015/04/13	Magnesium, total	mg/L	75.0
UA	G275	C	2023/06/08	Magnesium, total	mg/L	67.0
UA	G275	C	2009/11/11	Manganese, dissolved	mg/L	0.0320
UA	G275	C	2010/01/21	Manganese, dissolved	mg/L	0.0230
UA	G275	C	2010/03/08	Manganese, dissolved	mg/L	0.0290
UA	G275	C	2010/07/26	Manganese, dissolved	mg/L	0.0190
UA	G275	C	2010/09/20	Manganese, dissolved	mg/L	0.0260
UA	G275	C	2010/11/16	Manganese, dissolved	mg/L	0.160
UA	G275	C	2011/01/31	Manganese, dissolved	mg/L	0.0160
UA	G275	C	2011/05/03	Manganese, dissolved	mg/L	0.0400
UA	G275	C	2011/07/27	Manganese, dissolved	mg/L	0.0300
UA	G275	C	2011/11/14	Manganese, dissolved	mg/L	0.0900
UA	G275	C	2012/01/31	Manganese, dissolved	mg/L	0.00810
UA	G275	C	2012/05/22	Manganese, dissolved	mg/L	0.0100
UA	G275	C	2012/07/24	Manganese, dissolved	mg/L	0.0900
UA	G275	C	2012/11/14	Manganese, dissolved	mg/L	0.280
UA	G275	C	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G275	C	2013/07/22	Manganese, dissolved	mg/L	0.00170
UA	G275	C	2014/05/13	Manganese, dissolved	mg/L	0.340

UA	G275	C	2014/08/11	Manganese, dissolved	mg/L	<0.001
UA	G275	C	2014/10/14	Manganese, dissolved	mg/L	0.00300
UA	G275	C	2015/01/21	Manganese, dissolved	mg/L	0.0250
UA	G275	C	2015/04/13	Manganese, dissolved	mg/L	0.00240
UA	G275	C	2015/07/23	Manganese, dissolved	mg/L	0.0120
UA	G275	C	2016/02/09	Manganese, dissolved	mg/L	0.00640
UA	G275	C	2016/05/12	Manganese, dissolved	mg/L	0.00360
UA	G275	C	2016/07/27	Manganese, dissolved	mg/L	0.680
UA	G275	C	2016/11/21	Manganese, dissolved	mg/L	0.0480
UA	G275	C	2017/02/14	Manganese, dissolved	mg/L	0.0100
UA	G275	C	2017/05/18	Manganese, dissolved	mg/L	0.0170
UA	G275	C	2017/07/25	Manganese, dissolved	mg/L	0.0460
UA	G275	C	2017/11/03	Manganese, dissolved	mg/L	0.0210
UA	G275	C	2018/05/16	Manganese, dissolved	mg/L	0.00870
UA	G275	C	2018/08/10	Manganese, dissolved	mg/L	0.00370
UA	G275	C	2018/11/05	Manganese, dissolved	mg/L	0.0580
UA	G275	C	2019/01/22	Manganese, dissolved	mg/L	0.0180
UA	G275	C	2019/05/03	Manganese, dissolved	mg/L	0.00140
UA	G275	C	2019/08/26	Manganese, dissolved	mg/L	0.0130
UA	G275	C	2019/10/22	Manganese, dissolved	mg/L	0.0160
UA	G275	C	2020/01/23	Manganese, dissolved	mg/L	0.0140
UA	G275	C	2020/05/06	Manganese, dissolved	mg/L	0.0150
UA	G275	C	2020/08/13	Manganese, dissolved	mg/L	0.0480
UA	G275	C	2020/10/14	Manganese, dissolved	mg/L	0.0120
UA	G275	C	2021/05/20	Manganese, dissolved	mg/L	<0.001
UA	G275	C	2021/08/18	Manganese, dissolved	mg/L	0.00320
UA	G275	C	2021/10/27	Manganese, dissolved	mg/L	0.00630
UA	G275	C	2022/02/10	Manganese, dissolved	mg/L	<0.001
UA	G275	C	2022/05/12	Manganese, dissolved	mg/L	0.00150
UA	G275	C	2022/11/09	Manganese, dissolved	mg/L	0.140
UA	G275	C	2023/02/16	Manganese, dissolved	mg/L	0.0690
UA	G275	C	2023/06/08	Manganese, dissolved	mg/L	0.0260
UA	G275	C	2009/09/22	Potassium, total	mg/L	1.80
UA	G275	C	2009/11/11	Potassium, total	mg/L	<0.5
UA	G275	C	2010/01/21	Potassium, total	mg/L	<0.5
UA	G275	C	2010/03/08	Potassium, total	mg/L	<0.5
UA	G275	C	2010/07/26	Potassium, total	mg/L	0.240
UA	G275	C	2011/01/31	Potassium, total	mg/L	0.890
UA	G275	C	2012/01/31	Potassium, total	mg/L	0.490
UA	G275	C	2015/04/13	Potassium, total	mg/L	1.80
UA	G275	C	2023/06/08	Potassium, total	mg/L	0.410
UA	G275	C	2023/06/08	Silicon, dissolved	mg/L	8.80
UA	G275	C	2009/09/22	Sodium, total	mg/L	87.0
UA	G275	C	2009/11/11	Sodium, total	mg/L	68.0
UA	G275	C	2010/01/21	Sodium, total	mg/L	50.0
UA	G275	C	2010/03/08	Sodium, total	mg/L	58.0
UA	G275	C	2010/07/26	Sodium, total	mg/L	64.0
UA	G275	C	2011/01/31	Sodium, total	mg/L	65.0
UA	G275	C	2012/01/31	Sodium, total	mg/L	96.0
UA	G275	C	2015/04/13	Sodium, total	mg/L	79.0
UA	G275	C	2023/06/08	Sodium, total	mg/L	59.0
UA	G275	C	2009/09/22	Sulfate, total	mg/L	990
UA	G275	C	2009/11/11	Sulfate, total	mg/L	350
UA	G275	C	2010/01/21	Sulfate, total	mg/L	390
UA	G275	C	2010/03/08	Sulfate, total	mg/L	460
UA	G275	C	2010/07/26	Sulfate, total	mg/L	550
UA	G275	C	2010/11/16	Sulfate, total	mg/L	970
UA	G275	C	2011/01/31	Sulfate, total	mg/L	840
UA	G275	C	2011/05/03	Sulfate, total	mg/L	790
UA	G275	C	2011/07/27	Sulfate, total	mg/L	720
UA	G275	C	2011/11/14	Sulfate, total	mg/L	820
UA	G275	C	2012/01/31	Sulfate, total	mg/L	370

UA	G275	C	2012/05/22	Sulfate, total	mg/L	670
UA	G275	C	2012/07/24	Sulfate, total	mg/L	900
UA	G275	C	2012/11/14	Sulfate, total	mg/L	950
UA	G275	C	2013/05/20	Sulfate, total	mg/L	840
UA	G275	C	2013/07/22	Sulfate, total	mg/L	700
UA	G275	C	2014/05/13	Sulfate, total	mg/L	750
UA	G275	C	2014/08/11	Sulfate, total	mg/L	880
UA	G275	C	2014/10/14	Sulfate, total	mg/L	500
UA	G275	C	2015/01/21	Sulfate, total	mg/L	940
UA	G275	C	2015/04/13	Sulfate, total	mg/L	650
UA	G275	C	2015/07/23	Sulfate, total	mg/L	750
UA	G275	C	2020/10/14	Sulfate, total	mg/L	700
UA	G275	C	2021/05/20	Sulfate, total	mg/L	550
UA	G275	C	2021/08/18	Sulfate, total	mg/L	550
UA	G275	C	2021/10/27	Sulfate, total	mg/L	530
UA	G275	C	2022/02/10	Sulfate, total	mg/L	500
UA	G275	C	2022/05/12	Sulfate, total	mg/L	370
UA	G275	C	2022/11/09	Sulfate, total	mg/L	460
UA	G275	C	2023/02/16	Sulfate, total	mg/L	320
UA	G275	C	2023/06/08	Sulfate, total	mg/L	440
UA	G275	C	2022/02/10	Temperature (Celsius)	degrees C	10.6
UA	G275	C	2022/05/12	Temperature (Celsius)	degrees C	17.9
UA	G275	C	2022/11/09	Temperature (Celsius)	degrees C	18.3
UA	G275	C	2023/02/16	Temperature (Celsius)	degrees C	9.90
UA	G275	C	2023/06/08	Temperature (Celsius)	degrees C	16.7
UA	G275	C	2009/09/22	Total Dissolved Solids	mg/L	2,000
UA	G275	C	2009/11/11	Total Dissolved Solids	mg/L	910
UA	G275	C	2010/01/21	Total Dissolved Solids	mg/L	870
UA	G275	C	2010/03/08	Total Dissolved Solids	mg/L	1,100
UA	G275	C	2010/07/26	Total Dissolved Solids	mg/L	1,200
UA	G275	C	2010/11/16	Total Dissolved Solids	mg/L	1,700
UA	G275	C	2011/01/31	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2011/05/03	Total Dissolved Solids	mg/L	1,600
UA	G275	C	2011/07/27	Total Dissolved Solids	mg/L	1,300
UA	G275	C	2011/11/14	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2012/01/31	Total Dissolved Solids	mg/L	1,300
UA	G275	C	2012/05/22	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2012/07/24	Total Dissolved Solids	mg/L	1,600
UA	G275	C	2012/11/14	Total Dissolved Solids	mg/L	1,600
UA	G275	C	2013/05/20	Total Dissolved Solids	mg/L	1,400
UA	G275	C	2013/07/22	Total Dissolved Solids	mg/L	1,400
UA	G275	C	2014/05/13	Total Dissolved Solids	mg/L	370
UA	G275	C	2014/08/11	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2014/10/14	Total Dissolved Solids	mg/L	840
UA	G275	C	2015/01/21	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2015/04/13	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2015/07/23	Total Dissolved Solids	mg/L	1,500
UA	G275	C	2020/10/14	Total Dissolved Solids	mg/L	1,400
UA	G275	C	2021/05/20	Total Dissolved Solids	mg/L	790
UA	G275	C	2021/08/18	Total Dissolved Solids	mg/L	1,200
UA	G275	C	2021/10/27	Total Dissolved Solids	mg/L	1,100
UA	G275	C	2022/02/10	Total Dissolved Solids	mg/L	1,100
UA	G275	C	2022/05/12	Total Dissolved Solids	mg/L	1,000
UA	G275	C	2022/11/09	Total Dissolved Solids	mg/L	1,100
UA	G275	C	2023/02/16	Total Dissolved Solids	mg/L	920
UA	G275	C	2023/06/08	Total Dissolved Solids	mg/L	1,100
UA	G276	C	2010/07/26	pH (field)	SU	7.0
UA	G276	C	2010/07/28	pH (field)	SU	7.0
UA	G276	C	2010/09/20	pH (field)	SU	7.7
UA	G276	C	2010/11/16	pH (field)	SU	7.8
UA	G276	C	2011/01/31	pH (field)	SU	7.3
UA	G276	C	2011/05/03	pH (field)	SU	7.2

UA	G276	C	2011/07/27	pH (field)	SU	7.2
UA	G276	C	2011/11/14	pH (field)	SU	7.4
UA	G276	C	2012/01/31	pH (field)	SU	7.3
UA	G276	C	2012/05/22	pH (field)	SU	7.3
UA	G276	C	2012/07/24	pH (field)	SU	7.2
UA	G276	C	2012/11/14	pH (field)	SU	7.5
UA	G276	C	2013/01/31	pH (field)	SU	7.2
UA	G276	C	2013/05/20	pH (field)	SU	7.2
UA	G276	C	2013/07/22	pH (field)	SU	7.2
UA	G276	C	2014/05/13	pH (field)	SU	7.1
UA	G276	C	2014/08/12	pH (field)	SU	7.3
UA	G276	C	2014/10/14	pH (field)	SU	6.8
UA	G276	C	2015/01/21	pH (field)	SU	7.4
UA	G276	C	2015/04/13	pH (field)	SU	6.9
UA	G276	C	2015/07/23	pH (field)	SU	7.4
UA	G276	C	2015/11/24	pH (field)	SU	7.3
UA	G276	C	2016/02/16	pH (field)	SU	7.2
UA	G276	C	2016/05/12	pH (field)	SU	7.1
UA	G276	C	2016/08/03	pH (field)	SU	7.2
UA	G276	C	2016/11/21	pH (field)	SU	7.1
UA	G276	C	2017/02/17	pH (field)	SU	7.2
UA	G276	C	2017/05/20	pH (field)	SU	7.0
UA	G276	C	2017/07/18	pH (field)	SU	7.2
UA	G276	C	2017/11/04	pH (field)	SU	7.1
UA	G276	C	2018/05/16	pH (field)	SU	7.1
UA	G276	C	2018/08/10	pH (field)	SU	7.1
UA	G276	C	2019/01/22	pH (field)	SU	7.1
UA	G276	C	2019/08/26	pH (field)	SU	7.2
UA	G276	C	2020/01/23	pH (field)	SU	7.0
UA	G276	C	2020/08/12	pH (field)	SU	6.9
UA	G276	C	2020/10/14	pH (field)	SU	6.9
UA	G276	C	2021/05/19	pH (field)	SU	7.2
UA	G276	C	2021/06/28	pH (field)	SU	7.1
UA	G276	C	2021/08/18	pH (field)	SU	7.1
UA	G276	C	2021/10/26	pH (field)	SU	7.0
UA	G276	C	2022/02/09	pH (field)	SU	7.0
UA	G276	C	2022/03/21	pH (field)	SU	7.3
UA	G276	C	2022/05/11	pH (field)	SU	6.9
UA	G276	C	2022/09/20	pH (field)	SU	6.8
UA	G276	C	2022/11/09	pH (field)	SU	7.0
UA	G276	C	2023/02/15	pH (field)	SU	6.6
UA	G276	C	2023/06/05	pH (field)	SU	6.5
UA	G276	C	2023/08/14	pH (field)	SU	7.2
UA	G276	C	2023/11/17	pH (field)	SU	6.9
UA	G276	C	2015/11/24	Oxidation Reduction Potential	mV	112
UA	G276	C	2016/02/16	Oxidation Reduction Potential	mV	148
UA	G276	C	2016/05/12	Oxidation Reduction Potential	mV	186
UA	G276	C	2016/08/03	Oxidation Reduction Potential	mV	118
UA	G276	C	2016/11/21	Oxidation Reduction Potential	mV	96.0
UA	G276	C	2017/02/17	Oxidation Reduction Potential	mV	99.0
UA	G276	C	2017/05/20	Oxidation Reduction Potential	mV	98.0
UA	G276	C	2017/07/18	Oxidation Reduction Potential	mV	98.0
UA	G276	C	2017/11/04	Oxidation Reduction Potential	mV	105
UA	G276	C	2018/05/16	Oxidation Reduction Potential	mV	122
UA	G276	C	2018/08/10	Oxidation Reduction Potential	mV	110
UA	G276	C	2019/01/22	Oxidation Reduction Potential	mV	114
UA	G276	C	2019/08/26	Oxidation Reduction Potential	mV	104
UA	G276	C	2020/01/23	Oxidation Reduction Potential	mV	198
UA	G276	C	2020/08/12	Oxidation Reduction Potential	mV	235
UA	G276	C	2021/06/28	Oxidation Reduction Potential	mV	150
UA	G276	C	2021/08/18	Oxidation Reduction Potential	mV	123
UA	G276	C	2022/02/09	Oxidation Reduction Potential	mV	112

UA	G276	C	2022/03/21	Oxidation Reduction Potential	mV	73.8
UA	G276	C	2022/05/11	Oxidation Reduction Potential	mV	135
UA	G276	C	2022/09/20	Oxidation Reduction Potential	mV	138
UA	G276	C	2022/11/09	Oxidation Reduction Potential	mV	193
UA	G276	C	2023/02/15	Oxidation Reduction Potential	mV	223
UA	G276	C	2023/06/05	Oxidation Reduction Potential	mV	222
UA	G276	C	2023/08/14	Oxidation Reduction Potential	mV	34.0
UA	G276	C	2023/11/17	Oxidation Reduction Potential	mV	134
UA	G276	C	2015/11/24	Eh	V	0.31
UA	G276	C	2016/02/16	Eh	V	0.35
UA	G276	C	2016/05/12	Eh	V	0.38
UA	G276	C	2016/08/03	Eh	V	0.31
UA	G276	C	2016/11/21	Eh	V	0.29
UA	G276	C	2017/02/17	Eh	V	0.29
UA	G276	C	2017/05/20	Eh	V	0.29
UA	G276	C	2017/07/18	Eh	V	0.29
UA	G276	C	2017/11/04	Eh	V	0.30
UA	G276	C	2018/05/16	Eh	V	0.32
UA	G276	C	2018/08/10	Eh	V	0.31
UA	G276	C	2019/01/22	Eh	V	0.31
UA	G276	C	2019/08/26	Eh	V	0.30
UA	G276	C	2020/01/23	Eh	V	0.40
UA	G276	C	2020/08/12	Eh	V	0.43
UA	G276	C	2021/06/28	Eh	V	0.34
UA	G276	C	2021/08/18	Eh	V	0.32
UA	G276	C	2022/02/09	Eh	V	0.31
UA	G276	C	2022/03/21	Eh	V	0.27
UA	G276	C	2022/05/11	Eh	V	0.33
UA	G276	C	2022/09/20	Eh	V	0.33
UA	G276	C	2022/11/09	Eh	V	0.38
UA	G276	C	2023/02/15	Eh	V	0.42
UA	G276	C	2023/06/05	Eh	V	0.41
UA	G276	C	2023/08/14	Eh	V	0.23
UA	G276	C	2023/11/17	Eh	V	0.33
UA	G276	C	2009/09/23	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G276	C	2009/11/11	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G276	C	2010/01/21	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G276	C	2010/03/09	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G276	C	2010/07/26	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G276	C	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G276	C	2012/01/31	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G276	C	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G276	C	2014/08/12	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G276	C	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G276	C	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G276	C	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G276	C	2017/07/18	Alkalinity, bicarbonate	mg/L CaCO3	470
UA	G276	C	2020/01/23	Alkalinity, bicarbonate	mg/L CaCO3	500
UA	G276	C	2022/02/09	Alkalinity, bicarbonate	mg/L CaCO3	460
UA	G276	C	2022/09/20	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G276	C	2023/02/15	Alkalinity, bicarbonate	mg/L CaCO3	490
UA	G276	C	2023/06/05	Alkalinity, bicarbonate	mg/L CaCO3	510
UA	G276	C	2023/08/14	Alkalinity, bicarbonate	mg/L CaCO3	481
UA	G276	C	2023/11/17	Alkalinity, bicarbonate	mg/L CaCO3	377
UA	G276	C	2022/09/20	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G276	C	2009/09/23	Arsenic, total	mg/L	<0.005
UA	G276	C	2009/11/11	Arsenic, total	mg/L	<0.001
UA	G276	C	2010/01/21	Arsenic, total	mg/L	<0.001
UA	G276	C	2010/03/10	Arsenic, total	mg/L	<0.001
UA	G276	C	2010/07/26	Arsenic, total	mg/L	<0.001
UA	G276	C	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G276	C	2011/01/31	Arsenic, total	mg/L	0.00260

UA	G276	C	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G276	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G276	C	2011/11/14	Arsenic, total	mg/L	0.00130
UA	G276	C	2012/01/31	Arsenic, total	mg/L	<0.001
UA	G276	C	2012/05/22	Arsenic, total	mg/L	0.00110
UA	G276	C	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G276	C	2012/11/14	Arsenic, total	mg/L	0.00150
UA	G276	C	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G276	C	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G276	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G276	C	2014/05/13	Arsenic, total	mg/L	0.00130
UA	G276	C	2014/08/12	Arsenic, total	mg/L	0.00130
UA	G276	C	2014/10/14	Arsenic, total	mg/L	<0.001
UA	G276	C	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G276	C	2015/04/13	Arsenic, total	mg/L	0.00570
UA	G276	C	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G276	C	2015/11/24	Arsenic, total	mg/L	<0.00013
UA	G276	C	2016/02/16	Arsenic, total	mg/L	<0.00013
UA	G276	C	2016/05/12	Arsenic, total	mg/L	<0.00013
UA	G276	C	2016/08/03	Arsenic, total	mg/L	<0.00013
UA	G276	C	2016/11/21	Arsenic, total	mg/L	<0.00013
UA	G276	C	2017/02/17	Arsenic, total	mg/L	<0.00013
UA	G276	C	2017/05/20	Arsenic, total	mg/L	<0.00013
UA	G276	C	2017/07/18	Arsenic, total	mg/L	<0.00013
UA	G276	C	2018/05/16	Arsenic, total	mg/L	<0.0009
UA	G276	C	2018/08/10	Arsenic, total	mg/L	<0.0009
UA	G276	C	2019/01/22	Arsenic, total	mg/L	<0.0009
UA	G276	C	2019/08/26	Arsenic, total	mg/L	<0.0009
UA	G276	C	2020/01/23	Arsenic, total	mg/L	<0.0009
UA	G276	C	2020/08/12	Arsenic, total	mg/L	<0.00022
UA	G276	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G276	C	2021/05/19	Arsenic, total	mg/L	<0.001
UA	G276	C	2021/06/28	Arsenic, total	mg/L	<0.0002
UA	G276	C	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G276	C	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G276	C	2022/02/09	Arsenic, total	mg/L	<0.00069
UA	G276	C	2022/05/11	Arsenic, total	mg/L	<0.00069
UA	G276	C	2022/09/20	Arsenic, total	mg/L	<0.00069
UA	G276	C	2022/11/09	Arsenic, total	mg/L	0.000770
UA	G276	C	2023/02/15	Arsenic, total	mg/L	<0.00069
UA	G276	C	2023/06/05	Arsenic, total	mg/L	<0.00069
UA	G276	C	2023/08/14	Arsenic, total	mg/L	<0.0004
UA	G276	C	2023/11/17	Arsenic, total	mg/L	0.000500
UA	G276	C	2009/09/23	Barium, total	mg/L	0.160
UA	G276	C	2009/11/11	Barium, total	mg/L	0.0790
UA	G276	C	2010/01/21	Barium, total	mg/L	0.0750
UA	G276	C	2010/03/10	Barium, total	mg/L	0.0830
UA	G276	C	2010/07/26	Barium, total	mg/L	0.0630
UA	G276	C	2011/01/31	Barium, total	mg/L	0.0780
UA	G276	C	2012/01/31	Barium, total	mg/L	0.0750
UA	G276	C	2013/01/31	Barium, total	mg/L	0.0810
UA	G276	C	2015/04/13	Barium, total	mg/L	0.340
UA	G276	C	2015/07/23	Barium, total	mg/L	0.0960
UA	G276	C	2015/11/24	Barium, total	mg/L	0.0770
UA	G276	C	2016/02/16	Barium, total	mg/L	0.0900
UA	G276	C	2016/05/12	Barium, total	mg/L	0.0780
UA	G276	C	2016/08/03	Barium, total	mg/L	0.0850
UA	G276	C	2016/11/21	Barium, total	mg/L	0.0810
UA	G276	C	2017/02/17	Barium, total	mg/L	0.0820
UA	G276	C	2017/05/20	Barium, total	mg/L	0.0810
UA	G276	C	2017/07/18	Barium, total	mg/L	0.0840
UA	G276	C	2018/05/16	Barium, total	mg/L	0.0730

UA	G276	C	2018/08/10	Barium, total	mg/L	0.0690
UA	G276	C	2019/01/22	Barium, total	mg/L	0.0760
UA	G276	C	2019/08/26	Barium, total	mg/L	0.0660
UA	G276	C	2020/01/23	Barium, total	mg/L	0.0630
UA	G276	C	2020/08/12	Barium, total	mg/L	0.0530
UA	G276	C	2020/10/14	Barium, total	mg/L	0.0530
UA	G276	C	2021/05/19	Barium, total	mg/L	0.0530
UA	G276	C	2021/06/28	Barium, total	mg/L	0.0500
UA	G276	C	2021/08/18	Barium, total	mg/L	0.0460
UA	G276	C	2021/10/26	Barium, total	mg/L	0.0460
UA	G276	C	2022/02/09	Barium, total	mg/L	0.0480
UA	G276	C	2022/05/11	Barium, total	mg/L	0.0500
UA	G276	C	2022/09/20	Barium, total	mg/L	0.0560
UA	G276	C	2022/11/09	Barium, total	mg/L	0.0450
UA	G276	C	2023/02/15	Barium, total	mg/L	0.0460
UA	G276	C	2023/06/05	Barium, total	mg/L	0.0460
UA	G276	C	2023/08/14	Barium, total	mg/L	0.0553
UA	G276	C	2023/11/17	Barium, total	mg/L	0.0683
UA	G276	C	2009/09/23	Calcium, total	mg/L	94.0
UA	G276	C	2009/11/11	Calcium, total	mg/L	91.0
UA	G276	C	2010/01/21	Calcium, total	mg/L	91.0
UA	G276	C	2010/03/10	Calcium, total	mg/L	110
UA	G276	C	2010/07/26	Calcium, total	mg/L	93.0
UA	G276	C	2010/11/16	Calcium, total	mg/L	96.0
UA	G276	C	2011/01/31	Calcium, total	mg/L	96.0
UA	G276	C	2011/05/03	Calcium, total	mg/L	<100
UA	G276	C	2011/07/27	Calcium, total	mg/L	96.0
UA	G276	C	2011/11/14	Calcium, total	mg/L	94.0
UA	G276	C	2012/01/31	Calcium, total	mg/L	130
UA	G276	C	2012/05/22	Calcium, total	mg/L	97.0
UA	G276	C	2012/07/24	Calcium, total	mg/L	100
UA	G276	C	2012/11/14	Calcium, total	mg/L	100
UA	G276	C	2013/01/31	Calcium, total	mg/L	110
UA	G276	C	2013/05/20	Calcium, total	mg/L	99.0
UA	G276	C	2013/07/22	Calcium, total	mg/L	100
UA	G276	C	2014/05/13	Calcium, total	mg/L	130
UA	G276	C	2014/08/12	Calcium, total	mg/L	120
UA	G276	C	2014/10/14	Calcium, total	mg/L	100
UA	G276	C	2015/01/21	Calcium, total	mg/L	100
UA	G276	C	2015/04/13	Calcium, total	mg/L	170
UA	G276	C	2015/11/24	Calcium, total	mg/L	120
UA	G276	C	2016/02/16	Calcium, total	mg/L	120
UA	G276	C	2016/05/12	Calcium, total	mg/L	130
UA	G276	C	2016/08/03	Calcium, total	mg/L	110
UA	G276	C	2016/11/21	Calcium, total	mg/L	120
UA	G276	C	2017/02/17	Calcium, total	mg/L	110
UA	G276	C	2017/05/20	Calcium, total	mg/L	110
UA	G276	C	2017/07/18	Calcium, total	mg/L	130
UA	G276	C	2017/11/04	Calcium, total	mg/L	120
UA	G276	C	2018/05/16	Calcium, total	mg/L	110
UA	G276	C	2018/08/10	Calcium, total	mg/L	120
UA	G276	C	2019/01/22	Calcium, total	mg/L	120
UA	G276	C	2019/08/26	Calcium, total	mg/L	140
UA	G276	C	2020/01/23	Calcium, total	mg/L	140
UA	G276	C	2020/08/12	Calcium, total	mg/L	140
UA	G276	C	2021/06/28	Calcium, total	mg/L	140
UA	G276	C	2021/08/18	Calcium, total	mg/L	140
UA	G276	C	2022/02/09	Calcium, total	mg/L	140
UA	G276	C	2022/09/20	Calcium, total	mg/L	140
UA	G276	C	2023/02/15	Calcium, total	mg/L	140
UA	G276	C	2023/06/05	Calcium, total	mg/L	130
UA	G276	C	2023/08/14	Calcium, total	mg/L	139

UA	G276	C	2023/11/17	Calcium, total	mg/L	146
UA	G276	C	2009/09/23	Chloride, total	mg/L	38.0
UA	G276	C	2009/11/11	Chloride, total	mg/L	40.0
UA	G276	C	2010/01/21	Chloride, total	mg/L	36.0
UA	G276	C	2010/03/09	Chloride, total	mg/L	38.0
UA	G276	C	2010/07/26	Chloride, total	mg/L	40.0
UA	G276	C	2010/11/16	Chloride, total	mg/L	35.0
UA	G276	C	2011/01/31	Chloride, total	mg/L	36.0
UA	G276	C	2011/05/03	Chloride, total	mg/L	36.0
UA	G276	C	2011/07/27	Chloride, total	mg/L	37.0
UA	G276	C	2011/11/14	Chloride, total	mg/L	35.0
UA	G276	C	2012/01/31	Chloride, total	mg/L	32.0
UA	G276	C	2012/05/22	Chloride, total	mg/L	38.0
UA	G276	C	2012/07/24	Chloride, total	mg/L	38.0
UA	G276	C	2012/11/14	Chloride, total	mg/L	36.0
UA	G276	C	2013/01/31	Chloride, total	mg/L	35.0
UA	G276	C	2013/05/20	Chloride, total	mg/L	3.80
UA	G276	C	2013/07/22	Chloride, total	mg/L	32.0
UA	G276	C	2014/05/13	Chloride, total	mg/L	31.0
UA	G276	C	2014/08/12	Chloride, total	mg/L	29.0
UA	G276	C	2014/10/14	Chloride, total	mg/L	28.0
UA	G276	C	2015/01/21	Chloride, total	mg/L	30.0
UA	G276	C	2015/04/13	Chloride, total	mg/L	34.0
UA	G276	C	2015/07/23	Chloride, total	mg/L	26.0
UA	G276	C	2015/11/24	Chloride, total	mg/L	28.0
UA	G276	C	2016/02/16	Chloride, total	mg/L	23.0
UA	G276	C	2016/05/12	Chloride, total	mg/L	22.0
UA	G276	C	2016/08/03	Chloride, total	mg/L	23.0
UA	G276	C	2016/11/21	Chloride, total	mg/L	23.0
UA	G276	C	2017/02/17	Chloride, total	mg/L	23.0
UA	G276	C	2017/05/20	Chloride, total	mg/L	22.0
UA	G276	C	2017/07/18	Chloride, total	mg/L	23.0
UA	G276	C	2017/11/04	Chloride, total	mg/L	20.0
UA	G276	C	2018/05/16	Chloride, total	mg/L	24.0
UA	G276	C	2018/08/10	Chloride, total	mg/L	24.0
UA	G276	C	2019/01/22	Chloride, total	mg/L	26.0
UA	G276	C	2019/08/26	Chloride, total	mg/L	21.0
UA	G276	C	2020/01/23	Chloride, total	mg/L	25.0
UA	G276	C	2020/08/12	Chloride, total	mg/L	23.0
UA	G276	C	2020/10/14	Chloride, total	mg/L	24.0
UA	G276	C	2021/05/19	Chloride, total	mg/L	22.0
UA	G276	C	2021/06/28	Chloride, total	mg/L	29.0
UA	G276	C	2021/08/18	Chloride, total	mg/L	22.0
UA	G276	C	2021/10/26	Chloride, total	mg/L	21.0
UA	G276	C	2022/02/09	Chloride, total	mg/L	23.0
UA	G276	C	2022/05/11	Chloride, total	mg/L	22.0
UA	G276	C	2022/09/20	Chloride, total	mg/L	23.0
UA	G276	C	2022/11/09	Chloride, total	mg/L	21.0
UA	G276	C	2023/02/15	Chloride, total	mg/L	25.0
UA	G276	C	2023/06/05	Chloride, total	mg/L	24.0
UA	G276	C	2023/08/14	Chloride, total	mg/L	31.0
UA	G276	C	2023/11/17	Chloride, total	mg/L	387
UA	G276	C	2023/06/05	Ferrous Iron, dissolved	mg/L	0.160
UA	G276	C	2009/11/11	Iron, dissolved	mg/L	<0.1
UA	G276	C	2010/01/21	Iron, dissolved	mg/L	<0.1
UA	G276	C	2010/03/10	Iron, dissolved	mg/L	<0.2
UA	G276	C	2010/07/26	Iron, dissolved	mg/L	0.0140
UA	G276	C	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G276	C	2010/11/16	Iron, dissolved	mg/L	0.0340
UA	G276	C	2011/01/31	Iron, dissolved	mg/L	0.0270
UA	G276	C	2011/05/03	Iron, dissolved	mg/L	<0.01
UA	G276	C	2011/07/27	Iron, dissolved	mg/L	<0.01

UA	G276	C	2011/11/14	Iron, dissolved	mg/L	<0.01
UA	G276	C	2012/01/31	Iron, dissolved	mg/L	<0.01
UA	G276	C	2012/05/22	Iron, dissolved	mg/L	0.0410
UA	G276	C	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G276	C	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G276	C	2013/01/31	Iron, dissolved	mg/L	<0.01
UA	G276	C	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G276	C	2013/07/22	Iron, dissolved	mg/L	<0.01
UA	G276	C	2014/05/13	Iron, dissolved	mg/L	<0.01
UA	G276	C	2014/08/12	Iron, dissolved	mg/L	<0.01
UA	G276	C	2014/10/14	Iron, dissolved	mg/L	<0.01
UA	G276	C	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G276	C	2015/04/13	Iron, dissolved	mg/L	<0.01
UA	G276	C	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G276	C	2016/02/17	Iron, dissolved	mg/L	<0.01
UA	G276	C	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G276	C	2016/08/03	Iron, dissolved	mg/L	0.100
UA	G276	C	2016/11/21	Iron, dissolved	mg/L	<0.01
UA	G276	C	2017/02/14	Iron, dissolved	mg/L	<0.01
UA	G276	C	2017/05/18	Iron, dissolved	mg/L	<0.01
UA	G276	C	2017/07/25	Iron, dissolved	mg/L	<0.01
UA	G276	C	2017/11/04	Iron, dissolved	mg/L	0.0400
UA	G276	C	2018/01/29	Iron, dissolved	mg/L	0.0130
UA	G276	C	2018/05/16	Iron, dissolved	mg/L	0.0490
UA	G276	C	2018/08/10	Iron, dissolved	mg/L	<0.01
UA	G276	C	2018/11/05	Iron, dissolved	mg/L	<0.1
UA	G276	C	2019/01/22	Iron, dissolved	mg/L	<0.01
UA	G276	C	2019/05/03	Iron, dissolved	mg/L	<0.01
UA	G276	C	2019/08/26	Iron, dissolved	mg/L	<0.01
UA	G276	C	2019/10/22	Iron, dissolved	mg/L	<0.01
UA	G276	C	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G276	C	2020/05/06	Iron, dissolved	mg/L	<0.01
UA	G276	C	2020/08/12	Iron, dissolved	mg/L	<0.01
UA	G276	C	2020/10/14	Iron, dissolved	mg/L	0.0120
UA	G276	C	2021/05/19	Iron, dissolved	mg/L	<0.01
UA	G276	C	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G276	C	2021/10/26	Iron, dissolved	mg/L	<0.01
UA	G276	C	2022/02/09	Iron, dissolved	mg/L	<0.01
UA	G276	C	2022/05/11	Iron, dissolved	mg/L	0.00610
UA	G276	C	2022/09/20	Iron, dissolved	mg/L	0.00170
UA	G276	C	2022/11/09	Iron, dissolved	mg/L	0.0120
UA	G276	C	2023/02/15	Iron, dissolved	mg/L	<0.00072
UA	G276	C	2023/06/05	Iron, dissolved	mg/L	0.0100
UA	G276	C	2023/08/14	Iron, dissolved	mg/L	<0.0175
UA	G276	C	2023/11/17	Iron, dissolved	mg/L	<0.0115
UA	G276	C	2009/09/23	Magnesium, total	mg/L	41.0
UA	G276	C	2009/11/11	Magnesium, total	mg/L	43.0
UA	G276	C	2010/01/21	Magnesium, total	mg/L	44.0
UA	G276	C	2010/03/10	Magnesium, total	mg/L	49.0
UA	G276	C	2010/07/26	Magnesium, total	mg/L	43.0
UA	G276	C	2011/01/31	Magnesium, total	mg/L	47.0
UA	G276	C	2012/01/31	Magnesium, total	mg/L	46.0
UA	G276	C	2013/01/31	Magnesium, total	mg/L	53.0
UA	G276	C	2015/04/13	Magnesium, total	mg/L	77.0
UA	G276	C	2017/07/18	Magnesium, total	mg/L	58.0
UA	G276	C	2020/01/23	Magnesium, total	mg/L	67.0
UA	G276	C	2022/02/09	Magnesium, total	mg/L	66.0
UA	G276	C	2022/09/20	Magnesium, total	mg/L	67.0
UA	G276	C	2023/02/15	Magnesium, total	mg/L	59.0
UA	G276	C	2023/06/05	Magnesium, total	mg/L	63.0
UA	G276	C	2023/08/14	Magnesium, total	mg/L	64.2
UA	G276	C	2023/11/17	Magnesium, total	mg/L	64.4

UA	G276	C	2009/11/11	Manganese, dissolved	mg/L	0.0300
UA	G276	C	2010/01/21	Manganese, dissolved	mg/L	0.00930
UA	G276	C	2010/03/10	Manganese, dissolved	mg/L	0.0100
UA	G276	C	2010/07/26	Manganese, dissolved	mg/L	0.00540
UA	G276	C	2010/09/20	Manganese, dissolved	mg/L	0.00500
UA	G276	C	2010/11/16	Manganese, dissolved	mg/L	0.00180
UA	G276	C	2011/01/31	Manganese, dissolved	mg/L	0.00410
UA	G276	C	2011/05/03	Manganese, dissolved	mg/L	0.00160
UA	G276	C	2011/07/27	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2011/11/14	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2012/01/31	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2012/05/22	Manganese, dissolved	mg/L	0.00140
UA	G276	C	2012/07/24	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2012/11/14	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2013/01/31	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2014/05/13	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2014/08/12	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2014/10/14	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2015/01/21	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2015/04/13	Manganese, dissolved	mg/L	<0.002
UA	G276	C	2015/07/23	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2016/02/17	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2016/05/12	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2016/08/03	Manganese, dissolved	mg/L	0.00110
UA	G276	C	2016/11/21	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2017/02/14	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2017/05/18	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2017/07/25	Manganese, dissolved	mg/L	0.00150
UA	G276	C	2017/11/04	Manganese, dissolved	mg/L	0.00170
UA	G276	C	2018/01/29	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2018/05/16	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2018/08/10	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2018/11/05	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2019/01/22	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2019/05/03	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2019/08/26	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2019/10/22	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2020/01/23	Manganese, dissolved	mg/L	0.00110
UA	G276	C	2020/05/06	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2020/08/12	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2020/10/14	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2021/05/19	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2021/08/18	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2021/10/26	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2022/02/09	Manganese, dissolved	mg/L	<0.001
UA	G276	C	2022/05/11	Manganese, dissolved	mg/L	0.000850
UA	G276	C	2022/09/20	Manganese, dissolved	mg/L	<0.00023
UA	G276	C	2022/11/09	Manganese, dissolved	mg/L	<0.00023
UA	G276	C	2023/02/15	Manganese, dissolved	mg/L	<0.00023
UA	G276	C	2023/06/05	Manganese, dissolved	mg/L	<0.00023
UA	G276	C	2023/08/14	Manganese, dissolved	mg/L	<0.0008
UA	G276	C	2023/11/17	Manganese, dissolved	mg/L	0.00420
UA	G276	C	2023/08/14	Phosphate, dissolved	mg/L	<0.005
UA	G276	C	2009/09/23	Potassium, total	mg/L	3.80
UA	G276	C	2009/11/11	Potassium, total	mg/L	2.20
UA	G276	C	2010/01/21	Potassium, total	mg/L	1.20
UA	G276	C	2010/03/10	Potassium, total	mg/L	1.40
UA	G276	C	2010/07/26	Potassium, total	mg/L	0.860
UA	G276	C	2011/01/31	Potassium, total	mg/L	1.40
UA	G276	C	2012/01/31	Potassium, total	mg/L	1.30

UA	G276	C	2013/01/31	Potassium, total	mg/L	1.10
UA	G276	C	2015/04/13	Potassium, total	mg/L	3.10
UA	G276	C	2017/07/18	Potassium, total	mg/L	0.500
UA	G276	C	2020/01/23	Potassium, total	mg/L	0.450
UA	G276	C	2022/02/09	Potassium, total	mg/L	0.550
UA	G276	C	2022/09/20	Potassium, total	mg/L	0.560
UA	G276	C	2023/02/15	Potassium, total	mg/L	0.470
UA	G276	C	2023/06/05	Potassium, total	mg/L	0.420
UA	G276	C	2023/08/14	Potassium, total	mg/L	0.966
UA	G276	C	2023/11/17	Potassium, total	mg/L	0.875
UA	G276	C	2023/06/05	Silicon, dissolved	mg/L	10.0
UA	G276	C	2023/08/14	Silicon, dissolved	mg/L	8.80
UA	G276	C	2009/09/23	Sodium, total	mg/L	110
UA	G276	C	2009/11/11	Sodium, total	mg/L	83.0
UA	G276	C	2010/01/21	Sodium, total	mg/L	74.0
UA	G276	C	2010/03/10	Sodium, total	mg/L	80.0
UA	G276	C	2010/07/26	Sodium, total	mg/L	72.0
UA	G276	C	2011/01/31	Sodium, total	mg/L	76.0
UA	G276	C	2012/01/31	Sodium, total	mg/L	110
UA	G276	C	2013/01/31	Sodium, total	mg/L	81.0
UA	G276	C	2015/04/13	Sodium, total	mg/L	86.0
UA	G276	C	2017/07/18	Sodium, total	mg/L	85.0
UA	G276	C	2020/01/23	Sodium, total	mg/L	96.0
UA	G276	C	2022/02/09	Sodium, total	mg/L	96.0
UA	G276	C	2022/09/20	Sodium, total	mg/L	93.0
UA	G276	C	2023/02/15	Sodium, total	mg/L	84.0
UA	G276	C	2023/06/05	Sodium, total	mg/L	93.0
UA	G276	C	2023/08/14	Sodium, total	mg/L	96.4
UA	G276	C	2023/11/17	Sodium, total	mg/L	90.3
UA	G276	C	2009/09/23	Sulfate, total	mg/L	170
UA	G276	C	2009/11/11	Sulfate, total	mg/L	170
UA	G276	C	2010/01/21	Sulfate, total	mg/L	190
UA	G276	C	2010/03/09	Sulfate, total	mg/L	180
UA	G276	C	2010/07/26	Sulfate, total	mg/L	230
UA	G276	C	2010/11/16	Sulfate, total	mg/L	200
UA	G276	C	2011/01/31	Sulfate, total	mg/L	200
UA	G276	C	2011/05/03	Sulfate, total	mg/L	200
UA	G276	C	2011/07/27	Sulfate, total	mg/L	170
UA	G276	C	2011/11/14	Sulfate, total	mg/L	180
UA	G276	C	2012/01/31	Sulfate, total	mg/L	190
UA	G276	C	2012/05/22	Sulfate, total	mg/L	160
UA	G276	C	2012/07/24	Sulfate, total	mg/L	190
UA	G276	C	2012/11/14	Sulfate, total	mg/L	190
UA	G276	C	2013/01/31	Sulfate, total	mg/L	250
UA	G276	C	2013/05/20	Sulfate, total	mg/L	180
UA	G276	C	2013/07/22	Sulfate, total	mg/L	220
UA	G276	C	2014/05/13	Sulfate, total	mg/L	230
UA	G276	C	2014/08/12	Sulfate, total	mg/L	220
UA	G276	C	2014/10/14	Sulfate, total	mg/L	220
UA	G276	C	2015/01/21	Sulfate, total	mg/L	260
UA	G276	C	2015/04/13	Sulfate, total	mg/L	310
UA	G276	C	2015/07/23	Sulfate, total	mg/L	180
UA	G276	C	2015/11/24	Sulfate, total	mg/L	190
UA	G276	C	2016/02/16	Sulfate, total	mg/L	230
UA	G276	C	2016/05/12	Sulfate, total	mg/L	230
UA	G276	C	2016/08/03	Sulfate, total	mg/L	190
UA	G276	C	2016/11/21	Sulfate, total	mg/L	210
UA	G276	C	2017/02/17	Sulfate, total	mg/L	200
UA	G276	C	2017/05/20	Sulfate, total	mg/L	220
UA	G276	C	2017/07/18	Sulfate, total	mg/L	220
UA	G276	C	2017/11/04	Sulfate, total	mg/L	210
UA	G276	C	2018/05/16	Sulfate, total	mg/L	220

UA	G276	C	2018/08/10	Sulfate, total	mg/L	230
UA	G276	C	2019/01/22	Sulfate, total	mg/L	240
UA	G276	C	2019/08/26	Sulfate, total	mg/L	260
UA	G276	C	2020/01/23	Sulfate, total	mg/L	270
UA	G276	C	2020/08/12	Sulfate, total	mg/L	280
UA	G276	C	2020/10/14	Sulfate, total	mg/L	270
UA	G276	C	2021/05/19	Sulfate, total	mg/L	280
UA	G276	C	2021/06/28	Sulfate, total	mg/L	270
UA	G276	C	2021/08/18	Sulfate, total	mg/L	270
UA	G276	C	2021/10/26	Sulfate, total	mg/L	250
UA	G276	C	2022/02/09	Sulfate, total	mg/L	270
UA	G276	C	2022/05/11	Sulfate, total	mg/L	270
UA	G276	C	2022/09/20	Sulfate, total	mg/L	260
UA	G276	C	2022/11/09	Sulfate, total	mg/L	250
UA	G276	C	2023/02/15	Sulfate, total	mg/L	230
UA	G276	C	2023/06/05	Sulfate, total	mg/L	260
UA	G276	C	2023/08/14	Sulfate, total	mg/L	249
UA	G276	C	2023/11/17	Sulfate, total	mg/L	2,610
UA	G276	C	2015/11/24	Temperature (Celsius)	degrees C	15.9
UA	G276	C	2016/02/16	Temperature (Celsius)	degrees C	10.8
UA	G276	C	2016/05/12	Temperature (Celsius)	degrees C	17.6
UA	G276	C	2016/08/03	Temperature (Celsius)	degrees C	18.2
UA	G276	C	2016/11/21	Temperature (Celsius)	degrees C	14.0
UA	G276	C	2017/02/17	Temperature (Celsius)	degrees C	14.6
UA	G276	C	2017/05/20	Temperature (Celsius)	degrees C	15.7
UA	G276	C	2017/07/18	Temperature (Celsius)	degrees C	19.6
UA	G276	C	2017/11/04	Temperature (Celsius)	degrees C	12.9
UA	G276	C	2018/05/16	Temperature (Celsius)	degrees C	14.8
UA	G276	C	2018/08/10	Temperature (Celsius)	degrees C	15.2
UA	G276	C	2019/01/22	Temperature (Celsius)	degrees C	12.0
UA	G276	C	2019/08/26	Temperature (Celsius)	degrees C	17.2
UA	G276	C	2020/01/23	Temperature (Celsius)	degrees C	12.1
UA	G276	C	2020/08/12	Temperature (Celsius)	degrees C	22.2
UA	G276	C	2021/06/28	Temperature (Celsius)	degrees C	17.2
UA	G276	C	2021/08/18	Temperature (Celsius)	degrees C	20.0
UA	G276	C	2022/02/09	Temperature (Celsius)	degrees C	12.8
UA	G276	C	2022/03/21	Temperature (Celsius)	degrees C	17.3
UA	G276	C	2022/05/11	Temperature (Celsius)	degrees C	18.8
UA	G276	C	2022/09/20	Temperature (Celsius)	degrees C	19.4
UA	G276	C	2022/11/09	Temperature (Celsius)	degrees C	22.6
UA	G276	C	2023/02/15	Temperature (Celsius)	degrees C	14.4
UA	G276	C	2023/06/05	Temperature (Celsius)	degrees C	19.0
UA	G276	C	2023/08/14	Temperature (Celsius)	degrees C	16.2
UA	G276	C	2023/11/17	Temperature (Celsius)	degrees C	15.0
UA	G276	C	2009/09/23	Total Dissolved Solids	mg/L	620
UA	G276	C	2009/11/11	Total Dissolved Solids	mg/L	670
UA	G276	C	2010/01/21	Total Dissolved Solids	mg/L	660
UA	G276	C	2010/03/09	Total Dissolved Solids	mg/L	650
UA	G276	C	2010/07/26	Total Dissolved Solids	mg/L	710
UA	G276	C	2010/11/16	Total Dissolved Solids	mg/L	670
UA	G276	C	2011/01/31	Total Dissolved Solids	mg/L	710
UA	G276	C	2011/05/03	Total Dissolved Solids	mg/L	650
UA	G276	C	2011/07/27	Total Dissolved Solids	mg/L	670
UA	G276	C	2011/11/14	Total Dissolved Solids	mg/L	620
UA	G276	C	2012/01/31	Total Dissolved Solids	mg/L	650
UA	G276	C	2012/05/22	Total Dissolved Solids	mg/L	660
UA	G276	C	2012/07/24	Total Dissolved Solids	mg/L	680
UA	G276	C	2012/11/14	Total Dissolved Solids	mg/L	680
UA	G276	C	2013/01/31	Total Dissolved Solids	mg/L	680
UA	G276	C	2013/05/20	Total Dissolved Solids	mg/L	640
UA	G276	C	2013/07/22	Total Dissolved Solids	mg/L	670
UA	G276	C	2014/05/13	Total Dissolved Solids	mg/L	700

UA	G276	C	2014/08/12	Total Dissolved Solids	mg/L	640
UA	G276	C	2014/10/14	Total Dissolved Solids	mg/L	700
UA	G276	C	2015/01/21	Total Dissolved Solids	mg/L	700
UA	G276	C	2015/04/13	Total Dissolved Solids	mg/L	780
UA	G276	C	2015/07/23	Total Dissolved Solids	mg/L	800
UA	G276	C	2015/11/24	Total Dissolved Solids	mg/L	710
UA	G276	C	2016/02/16	Total Dissolved Solids	mg/L	760
UA	G276	C	2016/05/12	Total Dissolved Solids	mg/L	660
UA	G276	C	2016/08/03	Total Dissolved Solids	mg/L	680
UA	G276	C	2016/11/21	Total Dissolved Solids	mg/L	720
UA	G276	C	2017/02/17	Total Dissolved Solids	mg/L	680
UA	G276	C	2017/05/20	Total Dissolved Solids	mg/L	750
UA	G276	C	2017/07/18	Total Dissolved Solids	mg/L	780
UA	G276	C	2017/11/04	Total Dissolved Solids	mg/L	720
UA	G276	C	2018/05/16	Total Dissolved Solids	mg/L	740
UA	G276	C	2018/08/10	Total Dissolved Solids	mg/L	760
UA	G276	C	2019/01/22	Total Dissolved Solids	mg/L	860
UA	G276	C	2019/08/26	Total Dissolved Solids	mg/L	880
UA	G276	C	2020/01/23	Total Dissolved Solids	mg/L	1,400
UA	G276	C	2020/08/12	Total Dissolved Solids	mg/L	820
UA	G276	C	2020/10/14	Total Dissolved Solids	mg/L	930
UA	G276	C	2021/05/19	Total Dissolved Solids	mg/L	990
UA	G276	C	2021/06/28	Total Dissolved Solids	mg/L	900
UA	G276	C	2021/08/18	Total Dissolved Solids	mg/L	900
UA	G276	C	2021/10/26	Total Dissolved Solids	mg/L	830
UA	G276	C	2022/02/09	Total Dissolved Solids	mg/L	860
UA	G276	C	2022/05/11	Total Dissolved Solids	mg/L	940
UA	G276	C	2022/09/20	Total Dissolved Solids	mg/L	680
UA	G276	C	2022/11/09	Total Dissolved Solids	mg/L	860
UA	G276	C	2023/02/15	Total Dissolved Solids	mg/L	960
UA	G276	C	2023/06/05	Total Dissolved Solids	mg/L	860
UA	G276	C	2023/08/14	Total Dissolved Solids	mg/L	908
UA	G276	C	2023/11/17	Total Dissolved Solids	mg/L	4,260
UA	G277	C	2010/07/26	pH (field)	SU	7.3
UA	G277	C	2010/07/28	pH (field)	SU	7.3
UA	G277	C	2010/09/20	pH (field)	SU	7.4
UA	G277	C	2010/11/16	pH (field)	SU	7.7
UA	G277	C	2011/01/31	pH (field)	SU	7.0
UA	G277	C	2011/05/03	pH (field)	SU	6.8
UA	G277	C	2011/07/27	pH (field)	SU	6.8
UA	G277	C	2011/11/14	pH (field)	SU	7.0
UA	G277	C	2012/01/31	pH (field)	SU	7.0
UA	G277	C	2012/05/22	pH (field)	SU	6.9
UA	G277	C	2012/07/25	pH (field)	SU	6.7
UA	G277	C	2012/11/14	pH (field)	SU	6.8
UA	G277	C	2013/05/20	pH (field)	SU	6.9
UA	G277	C	2013/07/22	pH (field)	SU	6.8
UA	G277	C	2014/05/13	pH (field)	SU	6.8
UA	G277	C	2014/10/15	pH (field)	SU	6.5
UA	G277	C	2014/10/16	pH (field)	SU	6.5
UA	G277	C	2020/10/14	pH (field)	SU	6.8
UA	G277	C	2021/05/20	pH (field)	SU	7.2
UA	G277	C	2021/08/18	pH (field)	SU	7.0
UA	G277	C	2021/10/26	pH (field)	SU	7.0
UA	G277	C	2022/02/09	pH (field)	SU	6.9
UA	G277	C	2022/05/12	pH (field)	SU	6.9
UA	G277	C	2022/08/24	pH (field)	SU	6.9
UA	G277	C	2022/11/09	pH (field)	SU	6.6
UA	G277	C	2023/02/15	pH (field)	SU	7.2
UA	G277	C	2023/06/01	pH (field)	SU	6.6
UA	G277	C	2022/02/09	Oxidation Reduction Potential	mV	114
UA	G277	C	2022/05/12	Oxidation Reduction Potential	mV	118

UA	G277	C	2022/08/24	Oxidation Reduction Potential	mV	75.8
UA	G277	C	2022/11/09	Oxidation Reduction Potential	mV	198
UA	G277	C	2023/02/15	Oxidation Reduction Potential	mV	152
UA	G277	C	2023/06/01	Oxidation Reduction Potential	mV	215
UA	G277	C	2022/02/09	Eh	V	0.31
UA	G277	C	2022/05/12	Eh	V	0.31
UA	G277	C	2022/08/24	Eh	V	0.27
UA	G277	C	2022/11/09	Eh	V	0.39
UA	G277	C	2023/02/15	Eh	V	0.35
UA	G277	C	2023/06/01	Eh	V	0.41
UA	G277	C	2009/09/23	Alkalinity, bicarbonate	mg/L CaCO3	220
UA	G277	C	2009/11/11	Alkalinity, bicarbonate	mg/L CaCO3	270
UA	G277	C	2010/01/19	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G277	C	2010/03/08	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G277	C	2010/07/26	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G277	C	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G277	C	2012/01/31	Alkalinity, bicarbonate	mg/L CaCO3	420
UA	G277	C	2014/10/15	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G277	C	2023/06/01	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G277	C	2009/09/23	Arsenic, total	mg/L	0.0270
UA	G277	C	2009/11/11	Arsenic, total	mg/L	0.0200
UA	G277	C	2010/01/19	Arsenic, total	mg/L	0.00190
UA	G277	C	2010/03/08	Arsenic, total	mg/L	<0.001
UA	G277	C	2010/07/26	Arsenic, total	mg/L	0.00180
UA	G277	C	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G277	C	2011/01/31	Arsenic, total	mg/L	0.00150
UA	G277	C	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G277	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G277	C	2011/11/14	Arsenic, total	mg/L	0.00390
UA	G277	C	2012/01/31	Arsenic, total	mg/L	0.00300
UA	G277	C	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G277	C	2012/07/25	Arsenic, total	mg/L	0.00110
UA	G277	C	2012/11/14	Arsenic, total	mg/L	<0.001
UA	G277	C	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G277	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G277	C	2014/05/13	Arsenic, total	mg/L	0.00210
UA	G277	C	2014/10/15	Arsenic, total	mg/L	0.00230
UA	G277	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G277	C	2021/05/20	Arsenic, total	mg/L	0.00130
UA	G277	C	2021/08/18	Arsenic, total	mg/L	<0.001
UA	G277	C	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G277	C	2022/02/09	Arsenic, total	mg/L	<0.001
UA	G277	C	2022/05/12	Arsenic, total	mg/L	0.000720
UA	G277	C	2022/08/24	Arsenic, total	mg/L	<0.00069
UA	G277	C	2022/11/09	Arsenic, total	mg/L	0.000840
UA	G277	C	2023/02/15	Arsenic, total	mg/L	0.000830
UA	G277	C	2023/06/01	Arsenic, total	mg/L	0.00100
UA	G277	C	2009/09/23	Barium, total	mg/L	0.610
UA	G277	C	2009/11/11	Barium, total	mg/L	0.220
UA	G277	C	2010/01/19	Barium, total	mg/L	0.0930
UA	G277	C	2010/03/08	Barium, total	mg/L	0.0750
UA	G277	C	2010/07/26	Barium, total	mg/L	0.0850
UA	G277	C	2011/01/31	Barium, total	mg/L	0.0850
UA	G277	C	2012/01/31	Barium, total	mg/L	0.120
UA	G277	C	2020/10/14	Barium, total	mg/L	0.120
UA	G277	C	2021/05/20	Barium, total	mg/L	0.100
UA	G277	C	2021/08/18	Barium, total	mg/L	0.140
UA	G277	C	2021/10/26	Barium, total	mg/L	0.130
UA	G277	C	2022/02/09	Barium, total	mg/L	0.120
UA	G277	C	2022/05/12	Barium, total	mg/L	0.0940
UA	G277	C	2022/08/24	Barium, total	mg/L	0.0990
UA	G277	C	2022/11/09	Barium, total	mg/L	0.0430

UA	G277	C	2023/02/15	Barium, total	mg/L	0.0990
UA	G277	C	2023/06/01	Barium, total	mg/L	0.0940
UA	G277	C	2009/09/23	Calcium, total	mg/L	190
UA	G277	C	2009/11/11	Calcium, total	mg/L	110
UA	G277	C	2010/01/19	Calcium, total	mg/L	92.0
UA	G277	C	2010/03/08	Calcium, total	mg/L	93.0
UA	G277	C	2010/07/26	Calcium, total	mg/L	85.0
UA	G277	C	2010/11/16	Calcium, total	mg/L	86.0
UA	G277	C	2011/01/31	Calcium, total	mg/L	97.0
UA	G277	C	2011/05/03	Calcium, total	mg/L	<100
UA	G277	C	2011/07/27	Calcium, total	mg/L	110
UA	G277	C	2011/11/14	Calcium, total	mg/L	110
UA	G277	C	2012/01/31	Calcium, total	mg/L	160
UA	G277	C	2012/05/22	Calcium, total	mg/L	110
UA	G277	C	2012/07/25	Calcium, total	mg/L	110
UA	G277	C	2012/11/14	Calcium, total	mg/L	120
UA	G277	C	2013/05/20	Calcium, total	mg/L	110
UA	G277	C	2013/07/22	Calcium, total	mg/L	93.0
UA	G277	C	2014/05/13	Calcium, total	mg/L	130
UA	G277	C	2014/10/15	Calcium, total	mg/L	84.0
UA	G277	C	2023/06/01	Calcium, total	mg/L	240
UA	G277	C	2009/09/23	Chloride, total	mg/L	41.0
UA	G277	C	2009/11/11	Chloride, total	mg/L	43.0
UA	G277	C	2010/01/19	Chloride, total	mg/L	39.0
UA	G277	C	2010/03/08	Chloride, total	mg/L	43.0
UA	G277	C	2010/07/26	Chloride, total	mg/L	46.0
UA	G277	C	2011/01/31	Chloride, total	mg/L	40.0
UA	G277	C	2011/05/03	Chloride, total	mg/L	42.0
UA	G277	C	2011/07/27	Chloride, total	mg/L	49.0
UA	G277	C	2011/11/14	Chloride, total	mg/L	36.0
UA	G277	C	2012/01/31	Chloride, total	mg/L	37.0
UA	G277	C	2012/05/22	Chloride, total	mg/L	30.0
UA	G277	C	2012/07/24	Chloride, total	mg/L	34.0
UA	G277	C	2012/11/14	Chloride, total	mg/L	11.0
UA	G277	C	2013/05/20	Chloride, total	mg/L	3.30
UA	G277	C	2013/07/22	Chloride, total	mg/L	18.0
UA	G277	C	2014/05/13	Chloride, total	mg/L	30.0
UA	G277	C	2014/10/15	Chloride, total	mg/L	3.60
UA	G277	C	2020/10/14	Chloride, total	mg/L	68.0
UA	G277	C	2021/05/20	Chloride, total	mg/L	15.0
UA	G277	C	2021/08/18	Chloride, total	mg/L	91.0
UA	G277	C	2021/10/26	Chloride, total	mg/L	89.0
UA	G277	C	2022/02/09	Chloride, total	mg/L	120
UA	G277	C	2022/05/12	Chloride, total	mg/L	52.0
UA	G277	C	2022/08/24	Chloride, total	mg/L	120
UA	G277	C	2022/11/09	Chloride, total	mg/L	110
UA	G277	C	2023/02/15	Chloride, total	mg/L	120
UA	G277	C	2023/06/01	Chloride, total	mg/L	150
UA	G277	C	2023/06/01	Ferrous Iron, dissolved	mg/L	<0.02
UA	G277	C	2009/11/11	Iron, dissolved	mg/L	39.0
UA	G277	C	2010/01/19	Iron, dissolved	mg/L	<0.1
UA	G277	C	2010/03/09	Iron, dissolved	mg/L	<0.2
UA	G277	C	2010/07/26	Iron, dissolved	mg/L	0.0160
UA	G277	C	2010/09/20	Iron, dissolved	mg/L	0.0280
UA	G277	C	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G277	C	2011/01/31	Iron, dissolved	mg/L	<0.01
UA	G277	C	2011/05/03	Iron, dissolved	mg/L	<0.01
UA	G277	C	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G277	C	2011/11/14	Iron, dissolved	mg/L	0.0160
UA	G277	C	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G277	C	2012/07/25	Iron, dissolved	mg/L	<0.01
UA	G277	C	2013/05/20	Iron, dissolved	mg/L	<0.01

UA	G277	C	2013/07/22	Iron, dissolved	mg/L	<0.01
UA	G277	C	2014/05/13	Iron, dissolved	mg/L	<0.01
UA	G277	C	2014/10/16	Iron, dissolved	mg/L	<0.01
UA	G277	C	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G277	C	2016/08/03	Iron, dissolved	mg/L	0.0220
UA	G277	C	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G277	C	2020/05/06	Iron, dissolved	mg/L	<0.01
UA	G277	C	2020/08/13	Iron, dissolved	mg/L	<0.01
UA	G277	C	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G277	C	2021/05/20	Iron, dissolved	mg/L	<0.01
UA	G277	C	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G277	C	2021/10/26	Iron, dissolved	mg/L	<0.01
UA	G277	C	2022/02/09	Iron, dissolved	mg/L	<0.01
UA	G277	C	2022/05/12	Iron, dissolved	mg/L	<0.00072
UA	G277	C	2022/08/24	Iron, dissolved	mg/L	0.0170
UA	G277	C	2022/11/09	Iron, dissolved	mg/L	0.00550
UA	G277	C	2023/02/15	Iron, dissolved	mg/L	0.00100
UA	G277	C	2023/06/01	Iron, dissolved	mg/L	0.00160
UA	G277	C	2009/09/23	Magnesium, total	mg/L	91.0
UA	G277	C	2009/11/11	Magnesium, total	mg/L	53.0
UA	G277	C	2010/01/19	Magnesium, total	mg/L	39.0
UA	G277	C	2010/03/08	Magnesium, total	mg/L	40.0
UA	G277	C	2010/07/26	Magnesium, total	mg/L	37.0
UA	G277	C	2011/01/31	Magnesium, total	mg/L	43.0
UA	G277	C	2012/01/31	Magnesium, total	mg/L	49.0
UA	G277	C	2023/06/01	Magnesium, total	mg/L	100
UA	G277	C	2009/11/11	Manganese, dissolved	mg/L	1.60
UA	G277	C	2010/01/19	Manganese, dissolved	mg/L	0.0200
UA	G277	C	2010/03/09	Manganese, dissolved	mg/L	0.00370
UA	G277	C	2010/07/26	Manganese, dissolved	mg/L	0.00300
UA	G277	C	2010/09/20	Manganese, dissolved	mg/L	0.00550
UA	G277	C	2010/11/16	Manganese, dissolved	mg/L	0.00210
UA	G277	C	2011/01/31	Manganese, dissolved	mg/L	0.00310
UA	G277	C	2011/05/03	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2011/07/27	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2011/11/14	Manganese, dissolved	mg/L	0.00540
UA	G277	C	2012/05/22	Manganese, dissolved	mg/L	0.00520
UA	G277	C	2012/07/25	Manganese, dissolved	mg/L	0.0130
UA	G277	C	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2014/05/13	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2014/10/16	Manganese, dissolved	mg/L	0.00300
UA	G277	C	2016/05/12	Manganese, dissolved	mg/L	0.00170
UA	G277	C	2016/08/03	Manganese, dissolved	mg/L	0.340
UA	G277	C	2020/01/23	Manganese, dissolved	mg/L	0.00120
UA	G277	C	2020/05/06	Manganese, dissolved	mg/L	0.00120
UA	G277	C	2020/08/13	Manganese, dissolved	mg/L	0.00890
UA	G277	C	2020/10/14	Manganese, dissolved	mg/L	0.0250
UA	G277	C	2021/05/20	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2021/08/18	Manganese, dissolved	mg/L	<0.001
UA	G277	C	2021/10/26	Manganese, dissolved	mg/L	0.00840
UA	G277	C	2022/02/09	Manganese, dissolved	mg/L	0.0160
UA	G277	C	2022/05/12	Manganese, dissolved	mg/L	0.0200
UA	G277	C	2022/08/24	Manganese, dissolved	mg/L	0.0150
UA	G277	C	2022/11/09	Manganese, dissolved	mg/L	0.0930
UA	G277	C	2023/02/15	Manganese, dissolved	mg/L	0.000320
UA	G277	C	2023/06/01	Manganese, dissolved	mg/L	0.00970
UA	G277	C	2009/09/23	Potassium, total	mg/L	7.90
UA	G277	C	2009/11/11	Potassium, total	mg/L	5.00
UA	G277	C	2010/01/19	Potassium, total	mg/L	2.20
UA	G277	C	2010/03/08	Potassium, total	mg/L	1.40
UA	G277	C	2010/07/26	Potassium, total	mg/L	2.20

UA	G277	C	2011/01/31	Potassium, total	mg/L	0.960
UA	G277	C	2012/01/31	Potassium, total	mg/L	2.60
UA	G277	C	2023/06/01	Potassium, total	mg/L	0.790
UA	G277	C	2023/06/01	Silicon, dissolved	mg/L	9.50
UA	G277	C	2009/09/23	Sodium, total	mg/L	66.0
UA	G277	C	2009/11/11	Sodium, total	mg/L	52.0
UA	G277	C	2010/01/19	Sodium, total	mg/L	55.0
UA	G277	C	2010/03/08	Sodium, total	mg/L	55.0
UA	G277	C	2010/07/26	Sodium, total	mg/L	52.0
UA	G277	C	2011/01/31	Sodium, total	mg/L	55.0
UA	G277	C	2012/01/31	Sodium, total	mg/L	76.0
UA	G277	C	2023/06/01	Sodium, total	mg/L	97.0
UA	G277	C	2009/09/23	Sulfate, total	mg/L	79.0
UA	G277	C	2009/11/11	Sulfate, total	mg/L	49.0
UA	G277	C	2010/01/19	Sulfate, total	mg/L	63.0
UA	G277	C	2010/03/08	Sulfate, total	mg/L	49.0
UA	G277	C	2010/07/26	Sulfate, total	mg/L	58.0
UA	G277	C	2011/01/31	Sulfate, total	mg/L	52.0
UA	G277	C	2011/05/03	Sulfate, total	mg/L	56.0
UA	G277	C	2011/07/27	Sulfate, total	mg/L	61.0
UA	G277	C	2011/11/14	Sulfate, total	mg/L	51.0
UA	G277	C	2012/01/31	Sulfate, total	mg/L	45.0
UA	G277	C	2012/05/22	Sulfate, total	mg/L	49.0
UA	G277	C	2012/07/24	Sulfate, total	mg/L	52.0
UA	G277	C	2012/11/14	Sulfate, total	mg/L	42.0
UA	G277	C	2013/05/20	Sulfate, total	mg/L	5.70
UA	G277	C	2013/07/22	Sulfate, total	mg/L	45.0
UA	G277	C	2014/05/13	Sulfate, total	mg/L	60.0
UA	G277	C	2014/10/15	Sulfate, total	mg/L	18.0
UA	G277	C	2020/10/14	Sulfate, total	mg/L	260
UA	G277	C	2021/05/20	Sulfate, total	mg/L	67.0
UA	G277	C	2021/08/18	Sulfate, total	mg/L	400
UA	G277	C	2021/10/26	Sulfate, total	mg/L	470
UA	G277	C	2022/02/09	Sulfate, total	mg/L	510
UA	G277	C	2022/05/12	Sulfate, total	mg/L	250
UA	G277	C	2022/08/24	Sulfate, total	mg/L	610
UA	G277	C	2022/11/09	Sulfate, total	mg/L	580
UA	G277	C	2023/02/15	Sulfate, total	mg/L	470
UA	G277	C	2023/06/01	Sulfate, total	mg/L	540
UA	G277	C	2022/02/09	Temperature (Celsius)	degrees C	11.3
UA	G277	C	2022/05/12	Temperature (Celsius)	degrees C	16.6
UA	G277	C	2022/08/24	Temperature (Celsius)	degrees C	19.2
UA	G277	C	2022/11/09	Temperature (Celsius)	degrees C	19.1
UA	G277	C	2023/02/15	Temperature (Celsius)	degrees C	16.2
UA	G277	C	2023/06/01	Temperature (Celsius)	degrees C	16.5
UA	G277	C	2009/09/24	Total Dissolved Solids	mg/L	430
UA	G277	C	2009/11/11	Total Dissolved Solids	mg/L	680
UA	G277	C	2010/01/20	Total Dissolved Solids	mg/L	550
UA	G277	C	2010/03/08	Total Dissolved Solids	mg/L	540
UA	G277	C	2010/07/26	Total Dissolved Solids	mg/L	790
UA	G277	C	2011/01/31	Total Dissolved Solids	mg/L	610
UA	G277	C	2011/05/03	Total Dissolved Solids	mg/L	600
UA	G277	C	2011/07/27	Total Dissolved Solids	mg/L	650
UA	G277	C	2011/11/14	Total Dissolved Solids	mg/L	580
UA	G277	C	2012/05/22	Total Dissolved Solids	mg/L	580
UA	G277	C	2012/07/24	Total Dissolved Solids	mg/L	580
UA	G277	C	2013/05/20	Total Dissolved Solids	mg/L	520
UA	G277	C	2013/07/22	Total Dissolved Solids	mg/L	500
UA	G277	C	2014/05/13	Total Dissolved Solids	mg/L	560
UA	G277	C	2014/10/16	Total Dissolved Solids	mg/L	360
UA	G277	C	2020/10/14	Total Dissolved Solids	mg/L	970
UA	G277	C	2021/05/20	Total Dissolved Solids	mg/L	480

UA	G277	C	2021/08/18	Total Dissolved Solids	mg/L	1,200
UA	G277	C	2021/10/26	Total Dissolved Solids	mg/L	1,300
UA	G277	C	2022/02/09	Total Dissolved Solids	mg/L	1,100
UA	G277	C	2022/05/12	Total Dissolved Solids	mg/L	920
UA	G277	C	2022/08/24	Total Dissolved Solids	mg/L	1,600
UA	G277	C	2022/11/09	Total Dissolved Solids	mg/L	1,400
UA	G277	C	2023/02/15	Total Dissolved Solids	mg/L	1,400
UA	G277	C	2023/06/01	Total Dissolved Solids	mg/L	1,600
UA	G279	C	2010/07/26	pH (field)	SU	7.2
UA	G279	C	2010/07/28	pH (field)	SU	7.2
UA	G279	C	2010/09/20	pH (field)	SU	7.5
UA	G279	C	2010/11/16	pH (field)	SU	7.7
UA	G279	C	2011/01/28	pH (field)	SU	7.7
UA	G279	C	2011/05/04	pH (field)	SU	6.9
UA	G279	C	2011/07/27	pH (field)	SU	7.2
UA	G279	C	2011/11/14	pH (field)	SU	7.3
UA	G279	C	2012/01/30	pH (field)	SU	7.1
UA	G279	C	2012/05/22	pH (field)	SU	7.1
UA	G279	C	2012/07/24	pH (field)	SU	7.0
UA	G279	C	2012/11/14	pH (field)	SU	7.2
UA	G279	C	2013/01/31	pH (field)	SU	7.0
UA	G279	C	2013/05/20	pH (field)	SU	7.1
UA	G279	C	2013/07/22	pH (field)	SU	7.0
UA	G279	C	2013/10/14	pH (field)	SU	7.1
UA	G279	C	2014/02/19	pH (field)	SU	7.4
UA	G279	C	2014/05/13	pH (field)	SU	7.0
UA	G279	C	2014/08/12	pH (field)	SU	7.2
UA	G279	C	2014/10/14	pH (field)	SU	7.1
UA	G279	C	2015/01/21	pH (field)	SU	7.1
UA	G279	C	2015/04/13	pH (field)	SU	6.6
UA	G279	C	2015/07/23	pH (field)	SU	7.1
UA	G279	C	2015/10/08	pH (field)	SU	7.0
UA	G279	C	2015/11/24	pH (field)	SU	7.2
UA	G279	C	2016/02/16	pH (field)	SU	7.2
UA	G279	C	2016/05/13	pH (field)	SU	6.9
UA	G279	C	2016/08/03	pH (field)	SU	7.1
UA	G279	C	2016/11/22	pH (field)	SU	7.2
UA	G279	C	2017/02/15	pH (field)	SU	7.1
UA	G279	C	2017/05/20	pH (field)	SU	7.0
UA	G279	C	2017/07/18	pH (field)	SU	7.3
UA	G279	C	2017/11/04	pH (field)	SU	7.2
UA	G279	C	2018/05/16	pH (field)	SU	7.1
UA	G279	C	2018/08/10	pH (field)	SU	7.1
UA	G279	C	2019/01/23	pH (field)	SU	7.0
UA	G279	C	2019/08/26	pH (field)	SU	7.0
UA	G279	C	2020/01/23	pH (field)	SU	7.0
UA	G279	C	2020/08/12	pH (field)	SU	6.8
UA	G279	C	2020/10/14	pH (field)	SU	6.8
UA	G279	C	2021/01/21	pH (field)	SU	7.0
UA	G279	C	2021/01/28	pH (field)	SU	7.0
UA	G279	C	2021/05/20	pH (field)	SU	7.1
UA	G279	C	2021/08/18	pH (field)	SU	6.9
UA	G279	C	2021/10/26	pH (field)	SU	6.9
UA	G279	C	2022/02/08	pH (field)	SU	6.7
UA	G279	C	2022/05/10	pH (field)	SU	6.9
UA	G279	C	2022/08/24	pH (field)	SU	6.6
UA	G279	C	2022/11/09	pH (field)	SU	6.5
UA	G279	C	2023/02/16	pH (field)	SU	6.4
UA	G279	C	2023/06/01	pH (field)	SU	6.6
UA	G279	C	2023/11/17	pH (field)	SU	6.8
UA	G279	C	2015/11/24	Oxidation Reduction Potential	mV	71.0
UA	G279	C	2016/02/16	Oxidation Reduction Potential	mV	147

UA	G279	C	2016/05/13	Oxidation Reduction Potential	mV	127
UA	G279	C	2016/08/03	Oxidation Reduction Potential	mV	-63.0
UA	G279	C	2016/11/22	Oxidation Reduction Potential	mV	-76.0
UA	G279	C	2017/02/15	Oxidation Reduction Potential	mV	-70.0
UA	G279	C	2017/05/20	Oxidation Reduction Potential	mV	-62.0
UA	G279	C	2017/07/18	Oxidation Reduction Potential	mV	-65.0
UA	G279	C	2017/11/04	Oxidation Reduction Potential	mV	-61.0
UA	G279	C	2018/05/16	Oxidation Reduction Potential	mV	-57.0
UA	G279	C	2018/08/10	Oxidation Reduction Potential	mV	-70.0
UA	G279	C	2019/01/23	Oxidation Reduction Potential	mV	-64.0
UA	G279	C	2019/08/26	Oxidation Reduction Potential	mV	-69.0
UA	G279	C	2020/01/23	Oxidation Reduction Potential	mV	342
UA	G279	C	2020/08/12	Oxidation Reduction Potential	mV	180
UA	G279	C	2020/10/14	Oxidation Reduction Potential	mV	307
UA	G279	C	2021/01/21	Oxidation Reduction Potential	mV	102
UA	G279	C	2021/01/28	Oxidation Reduction Potential	mV	102
UA	G279	C	2021/05/20	Oxidation Reduction Potential	mV	157
UA	G279	C	2021/08/18	Oxidation Reduction Potential	mV	110
UA	G279	C	2021/10/26	Oxidation Reduction Potential	mV	79.6
UA	G279	C	2022/02/08	Oxidation Reduction Potential	mV	-9.70
UA	G279	C	2022/05/10	Oxidation Reduction Potential	mV	90.7
UA	G279	C	2022/08/24	Oxidation Reduction Potential	mV	236
UA	G279	C	2022/11/09	Oxidation Reduction Potential	mV	232
UA	G279	C	2023/02/16	Oxidation Reduction Potential	mV	245
UA	G279	C	2023/06/01	Oxidation Reduction Potential	mV	223
UA	G279	C	2023/11/17	Oxidation Reduction Potential	mV	141
UA	G279	C	2015/11/24	Eh	V	0.27
UA	G279	C	2016/02/16	Eh	V	0.35
UA	G279	C	2016/05/13	Eh	V	0.32
UA	G279	C	2016/08/03	Eh	V	0.13
UA	G279	C	2016/11/22	Eh	V	0.12
UA	G279	C	2017/02/15	Eh	V	0.13
UA	G279	C	2017/05/20	Eh	V	0.13
UA	G279	C	2017/07/18	Eh	V	0.13
UA	G279	C	2017/11/04	Eh	V	0.14
UA	G279	C	2018/05/16	Eh	V	0.14
UA	G279	C	2018/08/10	Eh	V	0.12
UA	G279	C	2019/01/23	Eh	V	0.13
UA	G279	C	2019/08/26	Eh	V	0.12
UA	G279	C	2020/01/23	Eh	V	0.54
UA	G279	C	2020/08/12	Eh	V	0.37
UA	G279	C	2020/10/14	Eh	V	0.50
UA	G279	C	2021/01/21	Eh	V	0.30
UA	G279	C	2021/01/28	Eh	V	0.30
UA	G279	C	2021/05/20	Eh	V	0.35
UA	G279	C	2021/08/18	Eh	V	0.30
UA	G279	C	2022/02/08	Eh	V	0.19
UA	G279	C	2022/05/10	Eh	V	0.28
UA	G279	C	2022/08/24	Eh	V	0.43
UA	G279	C	2022/11/09	Eh	V	0.42
UA	G279	C	2023/02/16	Eh	V	0.44
UA	G279	C	2023/06/01	Eh	V	0.42
UA	G279	C	2023/11/17	Eh	V	0.34
UA	G279	C	2009/09/23	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G279	C	2009/11/09	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G279	C	2010/01/27	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G279	C	2010/03/04	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G279	C	2010/07/26	Alkalinity, bicarbonate	mg/L CaCO3	430
UA	G279	C	2011/01/28	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G279	C	2012/01/30	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G279	C	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G279	C	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	370

UA	G279	C	2014/08/12	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G279	C	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G279	C	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G279	C	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	460
UA	G279	C	2017/07/18	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G279	C	2020/01/23	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G279	C	2021/01/28	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G279	C	2022/02/08	Alkalinity, bicarbonate	mg/L CaCO3	400
UA	G279	C	2022/08/24	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G279	C	2023/02/16	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G279	C	2023/06/01	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G279	C	2023/11/17	Alkalinity, bicarbonate	mg/L CaCO3	357
UA	G279	C	2022/08/24	Alkalinity, carbonate	mg/L CaCO3	10.0
UA	G279	C	2009/09/23	Arsenic, total	mg/L	0.00640
UA	G279	C	2009/11/09	Arsenic, total	mg/L	<0.001
UA	G279	C	2010/01/27	Arsenic, total	mg/L	<0.001
UA	G279	C	2010/03/04	Arsenic, total	mg/L	<0.001
UA	G279	C	2010/07/26	Arsenic, total	mg/L	<0.001
UA	G279	C	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G279	C	2011/01/28	Arsenic, total	mg/L	0.00260
UA	G279	C	2011/05/04	Arsenic, total	mg/L	<0.001
UA	G279	C	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G279	C	2011/11/14	Arsenic, total	mg/L	<0.001
UA	G279	C	2012/01/30	Arsenic, total	mg/L	<0.001
UA	G279	C	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G279	C	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G279	C	2012/11/14	Arsenic, total	mg/L	0.00180
UA	G279	C	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G279	C	2013/05/20	Arsenic, total	mg/L	0.00120
UA	G279	C	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G279	C	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G279	C	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G279	C	2014/05/13	Arsenic, total	mg/L	<0.001
UA	G279	C	2014/08/12	Arsenic, total	mg/L	<0.001
UA	G279	C	2014/10/14	Arsenic, total	mg/L	<0.001
UA	G279	C	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G279	C	2015/04/13	Arsenic, total	mg/L	0.00130
UA	G279	C	2015/07/23	Arsenic, total	mg/L	0.00200
UA	G279	C	2015/10/08	Arsenic, total	mg/L	0.00150
UA	G279	C	2015/11/24	Arsenic, total	mg/L	<0.00013
UA	G279	C	2016/02/16	Arsenic, total	mg/L	<0.00013
UA	G279	C	2016/05/13	Arsenic, total	mg/L	<0.00013
UA	G279	C	2016/08/03	Arsenic, total	mg/L	<0.00013
UA	G279	C	2016/11/22	Arsenic, total	mg/L	<0.00013
UA	G279	C	2017/02/15	Arsenic, total	mg/L	<0.00013
UA	G279	C	2017/05/20	Arsenic, total	mg/L	<0.00013
UA	G279	C	2017/07/18	Arsenic, total	mg/L	<0.00013
UA	G279	C	2018/05/16	Arsenic, total	mg/L	<0.0009
UA	G279	C	2018/08/10	Arsenic, total	mg/L	<0.0009
UA	G279	C	2019/01/23	Arsenic, total	mg/L	0.00300
UA	G279	C	2019/08/26	Arsenic, total	mg/L	<0.0009
UA	G279	C	2020/01/23	Arsenic, total	mg/L	<0.0009
UA	G279	C	2020/08/12	Arsenic, total	mg/L	<0.00022
UA	G279	C	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G279	C	2021/01/21	Arsenic, total	mg/L	<0.001
UA	G279	C	2021/01/28	Arsenic, total	mg/L	<0.00022
UA	G279	C	2021/05/20	Arsenic, total	mg/L	<0.001
UA	G279	C	2021/08/18	Arsenic, total	mg/L	<0.00022
UA	G279	C	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G279	C	2022/02/08	Arsenic, total	mg/L	<0.00069
UA	G279	C	2022/05/10	Arsenic, total	mg/L	<0.00069
UA	G279	C	2022/08/24	Arsenic, total	mg/L	<0.00069

UA	G279	C	2022/11/09	Arsenic, total	mg/L	0.00110
UA	G279	C	2023/02/16	Arsenic, total	mg/L	0.00200
UA	G279	C	2023/06/01	Arsenic, total	mg/L	0.00110
UA	G279	C	2023/11/17	Arsenic, total	mg/L	0.000700
UA	G279	C	2009/09/23	Barium, total	mg/L	0.0950
UA	G279	C	2009/11/09	Barium, total	mg/L	0.0650
UA	G279	C	2010/01/27	Barium, total	mg/L	0.0670
UA	G279	C	2010/03/04	Barium, total	mg/L	0.0650
UA	G279	C	2010/07/26	Barium, total	mg/L	0.0620
UA	G279	C	2011/01/28	Barium, total	mg/L	0.0980
UA	G279	C	2012/01/30	Barium, total	mg/L	0.0500
UA	G279	C	2013/01/31	Barium, total	mg/L	0.0600
UA	G279	C	2014/02/19	Barium, total	mg/L	0.0580
UA	G279	C	2015/04/13	Barium, total	mg/L	0.0290
UA	G279	C	2015/07/23	Barium, total	mg/L	0.110
UA	G279	C	2015/10/08	Barium, total	mg/L	0.0960
UA	G279	C	2015/11/24	Barium, total	mg/L	0.0530
UA	G279	C	2016/02/16	Barium, total	mg/L	0.0720
UA	G279	C	2016/05/13	Barium, total	mg/L	0.0540
UA	G279	C	2016/08/03	Barium, total	mg/L	0.0690
UA	G279	C	2016/11/22	Barium, total	mg/L	0.0570
UA	G279	C	2017/02/15	Barium, total	mg/L	0.0530
UA	G279	C	2017/05/20	Barium, total	mg/L	0.0890
UA	G279	C	2017/07/18	Barium, total	mg/L	0.0540
UA	G279	C	2018/05/16	Barium, total	mg/L	0.0520
UA	G279	C	2018/08/10	Barium, total	mg/L	0.0440
UA	G279	C	2019/01/23	Barium, total	mg/L	0.0830
UA	G279	C	2019/08/26	Barium, total	mg/L	0.0500
UA	G279	C	2020/01/23	Barium, total	mg/L	0.0620
UA	G279	C	2020/08/12	Barium, total	mg/L	0.0320
UA	G279	C	2020/10/14	Barium, total	mg/L	0.0310
UA	G279	C	2021/01/21	Barium, total	mg/L	0.0480
UA	G279	C	2021/01/28	Barium, total	mg/L	0.0430
UA	G279	C	2021/05/20	Barium, total	mg/L	0.0500
UA	G279	C	2021/08/18	Barium, total	mg/L	0.0380
UA	G279	C	2021/10/26	Barium, total	mg/L	0.0620
UA	G279	C	2022/02/08	Barium, total	mg/L	0.0560
UA	G279	C	2022/05/10	Barium, total	mg/L	0.0560
UA	G279	C	2022/08/24	Barium, total	mg/L	0.0460
UA	G279	C	2022/11/09	Barium, total	mg/L	0.0280
UA	G279	C	2023/02/16	Barium, total	mg/L	0.0390
UA	G279	C	2023/06/01	Barium, total	mg/L	0.0430
UA	G279	C	2023/11/17	Barium, total	mg/L	0.0460
UA	G279	C	2009/09/23	Calcium, total	mg/L	90.0
UA	G279	C	2009/11/09	Calcium, total	mg/L	81.0
UA	G279	C	2010/01/27	Calcium, total	mg/L	80.0
UA	G279	C	2010/03/04	Calcium, total	mg/L	85.0
UA	G279	C	2010/07/26	Calcium, total	mg/L	91.0
UA	G279	C	2010/11/16	Calcium, total	mg/L	89.0
UA	G279	C	2011/01/28	Calcium, total	mg/L	100
UA	G279	C	2011/05/04	Calcium, total	mg/L	130
UA	G279	C	2011/07/27	Calcium, total	mg/L	83.0
UA	G279	C	2011/11/14	Calcium, total	mg/L	84.0
UA	G279	C	2012/01/30	Calcium, total	mg/L	120
UA	G279	C	2012/05/22	Calcium, total	mg/L	69.0
UA	G279	C	2012/07/24	Calcium, total	mg/L	98.0
UA	G279	C	2012/11/14	Calcium, total	mg/L	97.0
UA	G279	C	2013/01/31	Calcium, total	mg/L	120
UA	G279	C	2013/05/20	Calcium, total	mg/L	87.0
UA	G279	C	2013/07/22	Calcium, total	mg/L	88.0
UA	G279	C	2013/10/14	Calcium, total	mg/L	97.0
UA	G279	C	2014/02/19	Calcium, total	mg/L	86.0

UA	G279	C	2014/05/13	Calcium, total	mg/L	94.0
UA	G279	C	2014/08/12	Calcium, total	mg/L	97.0
UA	G279	C	2014/10/14	Calcium, total	mg/L	92.0
UA	G279	C	2015/01/21	Calcium, total	mg/L	100
UA	G279	C	2015/04/13	Calcium, total	mg/L	170
UA	G279	C	2015/11/24	Calcium, total	mg/L	140
UA	G279	C	2016/02/16	Calcium, total	mg/L	180
UA	G279	C	2016/05/13	Calcium, total	mg/L	120
UA	G279	C	2016/08/03	Calcium, total	mg/L	210
UA	G279	C	2016/11/22	Calcium, total	mg/L	170
UA	G279	C	2017/02/15	Calcium, total	mg/L	210
UA	G279	C	2017/05/20	Calcium, total	mg/L	150
UA	G279	C	2017/07/18	Calcium, total	mg/L	240
UA	G279	C	2017/11/04	Calcium, total	mg/L	220
UA	G279	C	2018/05/16	Calcium, total	mg/L	180
UA	G279	C	2018/08/10	Calcium, total	mg/L	250
UA	G279	C	2019/01/23	Calcium, total	mg/L	120
UA	G279	C	2019/08/26	Calcium, total	mg/L	120
UA	G279	C	2020/01/23	Calcium, total	mg/L	190
UA	G279	C	2020/08/12	Calcium, total	mg/L	480
UA	G279	C	2020/10/14	Calcium, total	mg/L	490
UA	G279	C	2021/01/21	Calcium, total	mg/L	350
UA	G279	C	2021/01/28	Calcium, total	mg/L	100
UA	G279	C	2021/05/20	Calcium, total	mg/L	120
UA	G279	C	2021/08/18	Calcium, total	mg/L	360
UA	G279	C	2021/10/26	Calcium, total	mg/L	250
UA	G279	C	2022/02/08	Calcium, total	mg/L	190
UA	G279	C	2022/05/10	Calcium, total	mg/L	130
UA	G279	C	2022/08/24	Calcium, total	mg/L	450
UA	G279	C	2022/11/09	Calcium, total	mg/L	460
UA	G279	C	2023/02/16	Calcium, total	mg/L	450
UA	G279	C	2023/06/01	Calcium, total	mg/L	710
UA	G279	C	2023/11/17	Calcium, total	mg/L	530
UA	G279	C	2009/09/23	Chloride, total	mg/L	59.0
UA	G279	C	2009/11/09	Chloride, total	mg/L	50.0
UA	G279	C	2010/01/27	Chloride, total	mg/L	54.0
UA	G279	C	2010/03/04	Chloride, total	mg/L	57.0
UA	G279	C	2010/07/26	Chloride, total	mg/L	64.0
UA	G279	C	2010/11/16	Chloride, total	mg/L	52.0
UA	G279	C	2011/01/28	Chloride, total	mg/L	50.0
UA	G279	C	2011/05/04	Chloride, total	mg/L	49.0
UA	G279	C	2011/07/27	Chloride, total	mg/L	51.0
UA	G279	C	2011/11/14	Chloride, total	mg/L	53.0
UA	G279	C	2012/01/30	Chloride, total	mg/L	51.0
UA	G279	C	2012/05/22	Chloride, total	mg/L	54.0
UA	G279	C	2012/07/24	Chloride, total	mg/L	71.0
UA	G279	C	2012/11/14	Chloride, total	mg/L	62.0
UA	G279	C	2013/01/31	Chloride, total	mg/L	60.0
UA	G279	C	2013/05/20	Chloride, total	mg/L	56.0
UA	G279	C	2013/07/22	Chloride, total	mg/L	55.0
UA	G279	C	2013/10/14	Chloride, total	mg/L	55.0
UA	G279	C	2014/02/19	Chloride, total	mg/L	54.0
UA	G279	C	2014/05/13	Chloride, total	mg/L	50.0
UA	G279	C	2014/08/12	Chloride, total	mg/L	56.0
UA	G279	C	2014/10/14	Chloride, total	mg/L	63.0
UA	G279	C	2015/01/21	Chloride, total	mg/L	74.0
UA	G279	C	2015/04/13	Chloride, total	mg/L	46.0
UA	G279	C	2015/07/23	Chloride, total	mg/L	96.0
UA	G279	C	2015/10/08	Chloride, total	mg/L	120
UA	G279	C	2015/11/24	Chloride, total	mg/L	61.0
UA	G279	C	2016/02/16	Chloride, total	mg/L	130
UA	G279	C	2016/05/13	Chloride, total	mg/L	18.0

UA	G279	C	2016/08/03	Chloride, total	mg/L	110
UA	G279	C	2016/11/22	Chloride, total	mg/L	130
UA	G279	C	2017/02/15	Chloride, total	mg/L	120
UA	G279	C	2017/05/20	Chloride, total	mg/L	57.0
UA	G279	C	2017/07/18	Chloride, total	mg/L	130
UA	G279	C	2017/11/04	Chloride, total	mg/L	170
UA	G279	C	2018/05/16	Chloride, total	mg/L	76.0
UA	G279	C	2018/08/10	Chloride, total	mg/L	160
UA	G279	C	2019/01/23	Chloride, total	mg/L	7.30
UA	G279	C	2019/08/26	Chloride, total	mg/L	4.70
UA	G279	C	2020/01/23	Chloride, total	mg/L	72.0
UA	G279	C	2020/08/12	Chloride, total	mg/L	410
UA	G279	C	2020/10/14	Chloride, total	mg/L	420
UA	G279	C	2021/01/21	Chloride, total	mg/L	260
UA	G279	C	2021/01/28	Chloride, total	mg/L	5.80
UA	G279	C	2021/05/20	Chloride, total	mg/L	3.30
UA	G279	C	2021/08/18	Chloride, total	mg/L	270
UA	G279	C	2021/10/26	Chloride, total	mg/L	190
UA	G279	C	2022/02/08	Chloride, total	mg/L	76.0
UA	G279	C	2022/05/10	Chloride, total	mg/L	6.80
UA	G279	C	2022/08/24	Chloride, total	mg/L	370
UA	G279	C	2022/11/09	Chloride, total	mg/L	480
UA	G279	C	2023/02/16	Chloride, total	mg/L	320
UA	G279	C	2023/06/01	Chloride, total	mg/L	490
UA	G279	C	2023/11/17	Chloride, total	mg/L	485
UA	G279	C	2023/06/01	Ferrous Iron, dissolved	mg/L	<0.02
UA	G279	C	2009/11/09	Iron, dissolved	mg/L	<0.1
UA	G279	C	2010/01/27	Iron, dissolved	mg/L	<0.1
UA	G279	C	2010/03/04	Iron, dissolved	mg/L	<0.2
UA	G279	C	2010/07/26	Iron, dissolved	mg/L	0.0110
UA	G279	C	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G279	C	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G279	C	2011/01/28	Iron, dissolved	mg/L	0.0160
UA	G279	C	2011/05/04	Iron, dissolved	mg/L	<0.01
UA	G279	C	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G279	C	2011/11/14	Iron, dissolved	mg/L	<0.01
UA	G279	C	2012/01/30	Iron, dissolved	mg/L	<0.01
UA	G279	C	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G279	C	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G279	C	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G279	C	2013/01/31	Iron, dissolved	mg/L	<0.01
UA	G279	C	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G279	C	2013/07/22	Iron, dissolved	mg/L	0.0130
UA	G279	C	2013/10/14	Iron, dissolved	mg/L	0.110
UA	G279	C	2014/02/19	Iron, dissolved	mg/L	<0.01
UA	G279	C	2014/05/13	Iron, dissolved	mg/L	0.0150
UA	G279	C	2014/08/12	Iron, dissolved	mg/L	<0.01
UA	G279	C	2014/10/14	Iron, dissolved	mg/L	<0.01
UA	G279	C	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G279	C	2015/04/13	Iron, dissolved	mg/L	<0.01
UA	G279	C	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G279	C	2015/10/08	Iron, dissolved	mg/L	<0.01
UA	G279	C	2016/02/16	Iron, dissolved	mg/L	<0.01
UA	G279	C	2016/05/13	Iron, dissolved	mg/L	<0.01
UA	G279	C	2016/08/03	Iron, dissolved	mg/L	<0.01
UA	G279	C	2016/11/22	Iron, dissolved	mg/L	<0.01
UA	G279	C	2017/02/14	Iron, dissolved	mg/L	<0.01
UA	G279	C	2017/05/19	Iron, dissolved	mg/L	<0.01
UA	G279	C	2017/07/25	Iron, dissolved	mg/L	<0.01
UA	G279	C	2017/11/04	Iron, dissolved	mg/L	0.0930
UA	G279	C	2018/01/30	Iron, dissolved	mg/L	0.0600
UA	G279	C	2018/05/16	Iron, dissolved	mg/L	<0.01

UA	G279	C	2018/08/10	Iron, dissolved	mg/L	0.0160
UA	G279	C	2018/11/06	Iron, dissolved	mg/L	<0.01
UA	G279	C	2019/01/23	Iron, dissolved	mg/L	<0.01
UA	G279	C	2019/05/01	Iron, dissolved	mg/L	<0.01
UA	G279	C	2019/08/26	Iron, dissolved	mg/L	<0.01
UA	G279	C	2019/10/22	Iron, dissolved	mg/L	0.0120
UA	G279	C	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G279	C	2020/05/06	Iron, dissolved	mg/L	<0.01
UA	G279	C	2020/08/12	Iron, dissolved	mg/L	<0.01
UA	G279	C	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G279	C	2021/01/21	Iron, dissolved	mg/L	<0.01
UA	G279	C	2021/01/28	Iron, dissolved	mg/L	0.0150
UA	G279	C	2021/05/20	Iron, dissolved	mg/L	<0.01
UA	G279	C	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G279	C	2021/10/26	Iron, dissolved	mg/L	<0.01
UA	G279	C	2022/02/08	Iron, dissolved	mg/L	<0.01
UA	G279	C	2022/05/10	Iron, dissolved	mg/L	0.000770
UA	G279	C	2022/08/24	Iron, dissolved	mg/L	0.00470
UA	G279	C	2022/11/09	Iron, dissolved	mg/L	0.0200
UA	G279	C	2023/02/16	Iron, dissolved	mg/L	0.00580
UA	G279	C	2023/06/01	Iron, dissolved	mg/L	0.00370
UA	G279	C	2023/11/17	Iron, dissolved	mg/L	<0.0115
UA	G279	C	2009/09/23	Magnesium, total	mg/L	50.0
UA	G279	C	2009/11/09	Magnesium, total	mg/L	47.0
UA	G279	C	2010/01/27	Magnesium, total	mg/L	49.0
UA	G279	C	2010/03/04	Magnesium, total	mg/L	50.0
UA	G279	C	2010/07/26	Magnesium, total	mg/L	48.0
UA	G279	C	2011/01/28	Magnesium, total	mg/L	54.0
UA	G279	C	2012/01/30	Magnesium, total	mg/L	49.0
UA	G279	C	2013/01/31	Magnesium, total	mg/L	65.0
UA	G279	C	2014/02/19	Magnesium, total	mg/L	46.0
UA	G279	C	2015/04/13	Magnesium, total	mg/L	80.0
UA	G279	C	2017/07/18	Magnesium, total	mg/L	120
UA	G279	C	2020/01/23	Magnesium, total	mg/L	88.0
UA	G279	C	2021/01/28	Magnesium, total	mg/L	43.0
UA	G279	C	2022/02/08	Magnesium, total	mg/L	86.0
UA	G279	C	2022/08/24	Magnesium, total	mg/L	290
UA	G279	C	2023/02/16	Magnesium, total	mg/L	280
UA	G279	C	2023/06/01	Magnesium, total	mg/L	450
UA	G279	C	2023/11/17	Magnesium, total	mg/L	484
UA	G279	C	2009/11/09	Manganese, dissolved	mg/L	0.260
UA	G279	C	2010/01/27	Manganese, dissolved	mg/L	0.0940
UA	G279	C	2010/03/04	Manganese, dissolved	mg/L	0.0590
UA	G279	C	2010/07/26	Manganese, dissolved	mg/L	0.0190
UA	G279	C	2010/09/20	Manganese, dissolved	mg/L	0.0140
UA	G279	C	2010/11/16	Manganese, dissolved	mg/L	0.00880
UA	G279	C	2011/01/28	Manganese, dissolved	mg/L	0.0140
UA	G279	C	2011/05/04	Manganese, dissolved	mg/L	0.00330
UA	G279	C	2011/07/27	Manganese, dissolved	mg/L	0.00710
UA	G279	C	2011/11/14	Manganese, dissolved	mg/L	0.00350
UA	G279	C	2012/01/30	Manganese, dissolved	mg/L	0.00490
UA	G279	C	2012/05/22	Manganese, dissolved	mg/L	0.0420
UA	G279	C	2012/07/24	Manganese, dissolved	mg/L	0.00200
UA	G279	C	2012/11/14	Manganese, dissolved	mg/L	0.0190
UA	G279	C	2013/01/31	Manganese, dissolved	mg/L	0.00190
UA	G279	C	2013/05/20	Manganese, dissolved	mg/L	0.00110
UA	G279	C	2013/07/22	Manganese, dissolved	mg/L	0.00780
UA	G279	C	2013/10/14	Manganese, dissolved	mg/L	0.0780
UA	G279	C	2014/02/19	Manganese, dissolved	mg/L	0.0290
UA	G279	C	2014/05/13	Manganese, dissolved	mg/L	0.0340
UA	G279	C	2014/08/12	Manganese, dissolved	mg/L	0.0240
UA	G279	C	2014/10/14	Manganese, dissolved	mg/L	0.0260

UA	G279	C	2015/01/21	Manganese, dissolved	mg/L	0.0170
UA	G279	C	2015/04/13	Manganese, dissolved	mg/L	0.00330
UA	G279	C	2015/07/23	Manganese, dissolved	mg/L	0.0130
UA	G279	C	2015/10/08	Manganese, dissolved	mg/L	0.0320
UA	G279	C	2016/02/16	Manganese, dissolved	mg/L	0.0110
UA	G279	C	2016/05/13	Manganese, dissolved	mg/L	0.00610
UA	G279	C	2016/08/03	Manganese, dissolved	mg/L	0.00330
UA	G279	C	2016/11/22	Manganese, dissolved	mg/L	0.00450
UA	G279	C	2017/02/14	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2017/05/19	Manganese, dissolved	mg/L	0.00500
UA	G279	C	2017/07/25	Manganese, dissolved	mg/L	0.00860
UA	G279	C	2017/11/04	Manganese, dissolved	mg/L	0.0240
UA	G279	C	2018/01/30	Manganese, dissolved	mg/L	0.0210
UA	G279	C	2018/03/05	Manganese, dissolved	mg/L	0.00660
UA	G279	C	2018/11/06	Manganese, dissolved	mg/L	0.00400
UA	G279	C	2019/05/01	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2019/08/26	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2020/01/23	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2020/10/14	Manganese, dissolved	mg/L	0.0450
UA	G279	C	2021/01/21	Manganese, dissolved	mg/L	0.0290
UA	G279	C	2021/01/28	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2021/05/20	Manganese, dissolved	mg/L	<0.001
UA	G279	C	2021/08/18	Manganese, dissolved	mg/L	0.0290
UA	G279	C	2021/10/26	Manganese, dissolved	mg/L	0.0120
UA	G279	C	2022/02/08	Manganese, dissolved	mg/L	0.00900
UA	G279	C	2022/05/10	Manganese, dissolved	mg/L	<0.00023
UA	G279	C	2022/08/24	Manganese, dissolved	mg/L	0.0550
UA	G279	C	2022/11/09	Manganese, dissolved	mg/L	0.0990
UA	G279	C	2023/02/16	Manganese, dissolved	mg/L	0.0460
UA	G279	C	2023/06/01	Manganese, dissolved	mg/L	0.160
UA	G279	C	2023/11/17	Manganese, dissolved	mg/L	0.623
UA	G279	C	2009/09/23	Potassium, total	mg/L	2.30
UA	G279	C	2009/11/09	Potassium, total	mg/L	1.00
UA	G279	C	2010/01/27	Potassium, total	mg/L	0.780
UA	G279	C	2010/03/04	Potassium, total	mg/L	0.590
UA	G279	C	2010/07/26	Potassium, total	mg/L	0.570
UA	G279	C	2011/01/28	Potassium, total	mg/L	1.40
UA	G279	C	2012/01/30	Potassium, total	mg/L	0.600
UA	G279	C	2013/01/31	Potassium, total	mg/L	0.680
UA	G279	C	2014/02/19	Potassium, total	mg/L	0.290
UA	G279	C	2015/04/13	Potassium, total	mg/L	0.650
UA	G279	C	2017/07/18	Potassium, total	mg/L	0.360
UA	G279	C	2020/01/23	Potassium, total	mg/L	0.330
UA	G279	C	2021/01/28	Potassium, total	mg/L	0.380
UA	G279	C	2022/02/08	Potassium, total	mg/L	0.320
UA	G279	C	2022/08/24	Potassium, total	mg/L	0.950
UA	G279	C	2023/02/16	Potassium, total	mg/L	0.520
UA	G279	C	2023/06/01	Potassium, total	mg/L	2.50
UA	G279	C	2023/11/17	Potassium, total	mg/L	4.73
UA	G279	C	2023/06/01	Silicon, dissolved	mg/L	9.90
UA	G279	C	2009/09/23	Sodium, total	mg/L	80.0
UA	G279	C	2009/11/09	Sodium, total	mg/L	84.0
UA	G279	C	2010/01/27	Sodium, total	mg/L	84.0
UA	G279	C	2010/03/04	Sodium, total	mg/L	83.0
UA	G279	C	2010/07/26	Sodium, total	mg/L	81.0
UA	G279	C	2011/01/28	Sodium, total	mg/L	75.0
UA	G279	C	2012/01/30	Sodium, total	mg/L	140
UA	G279	C	2013/01/31	Sodium, total	mg/L	110
UA	G279	C	2014/02/19	Sodium, total	mg/L	72.0
UA	G279	C	2015/04/13	Sodium, total	mg/L	110
UA	G279	C	2017/07/18	Sodium, total	mg/L	120
UA	G279	C	2020/01/23	Sodium, total	mg/L	78.0

UA	G279	C	2021/01/28	Sodium, total	mg/L	50.0
UA	G279	C	2022/02/08	Sodium, total	mg/L	81.0
UA	G279	C	2022/08/24	Sodium, total	mg/L	190
UA	G279	C	2023/02/16	Sodium, total	mg/L	170
UA	G279	C	2023/06/01	Sodium, total	mg/L	250
UA	G279	C	2023/11/17	Sodium, total	mg/L	272
UA	G279	C	2009/09/23	Sulfate, total	mg/L	99.0
UA	G279	C	2009/11/09	Sulfate, total	mg/L	92.0
UA	G279	C	2010/01/27	Sulfate, total	mg/L	88.0
UA	G279	C	2010/03/04	Sulfate, total	mg/L	83.0
UA	G279	C	2010/07/26	Sulfate, total	mg/L	88.0
UA	G279	C	2010/11/16	Sulfate, total	mg/L	96.0
UA	G279	C	2011/01/28	Sulfate, total	mg/L	93.0
UA	G279	C	2011/05/04	Sulfate, total	mg/L	100
UA	G279	C	2011/07/27	Sulfate, total	mg/L	95.0
UA	G279	C	2011/11/14	Sulfate, total	mg/L	95.0
UA	G279	C	2012/01/30	Sulfate, total	mg/L	160
UA	G279	C	2012/05/22	Sulfate, total	mg/L	96.0
UA	G279	C	2012/07/24	Sulfate, total	mg/L	130
UA	G279	C	2012/11/14	Sulfate, total	mg/L	140
UA	G279	C	2013/01/31	Sulfate, total	mg/L	390
UA	G279	C	2013/05/20	Sulfate, total	mg/L	180
UA	G279	C	2013/07/22	Sulfate, total	mg/L	140
UA	G279	C	2013/10/14	Sulfate, total	mg/L	120
UA	G279	C	2014/02/19	Sulfate, total	mg/L	110
UA	G279	C	2014/05/13	Sulfate, total	mg/L	110
UA	G279	C	2014/08/12	Sulfate, total	mg/L	120
UA	G279	C	2014/10/14	Sulfate, total	mg/L	140
UA	G279	C	2015/01/21	Sulfate, total	mg/L	230
UA	G279	C	2015/04/13	Sulfate, total	mg/L	470
UA	G279	C	2015/07/23	Sulfate, total	mg/L	470
UA	G279	C	2015/10/08	Sulfate, total	mg/L	810
UA	G279	C	2015/11/24	Sulfate, total	mg/L	520
UA	G279	C	2016/02/16	Sulfate, total	mg/L	610
UA	G279	C	2016/05/13	Sulfate, total	mg/L	230
UA	G279	C	2016/08/03	Sulfate, total	mg/L	570
UA	G279	C	2016/11/22	Sulfate, total	mg/L	720
UA	G279	C	2017/02/15	Sulfate, total	mg/L	700
UA	G279	C	2017/05/20	Sulfate, total	mg/L	370
UA	G279	C	2017/07/18	Sulfate, total	mg/L	730
UA	G279	C	2017/11/04	Sulfate, total	mg/L	870
UA	G279	C	2018/05/16	Sulfate, total	mg/L	540
UA	G279	C	2018/08/10	Sulfate, total	mg/L	940
UA	G279	C	2019/01/23	Sulfate, total	mg/L	240
UA	G279	C	2019/08/26	Sulfate, total	mg/L	170
UA	G279	C	2020/01/23	Sulfate, total	mg/L	400
UA	G279	C	2020/08/12	Sulfate, total	mg/L	1,600
UA	G279	C	2020/10/14	Sulfate, total	mg/L	1,800
UA	G279	C	2021/01/21	Sulfate, total	mg/L	1,100
UA	G279	C	2021/01/28	Sulfate, total	mg/L	190
UA	G279	C	2021/05/20	Sulfate, total	mg/L	140
UA	G279	C	2021/08/18	Sulfate, total	mg/L	110
UA	G279	C	2021/10/26	Sulfate, total	mg/L	740
UA	G279	C	2022/02/08	Sulfate, total	mg/L	370
UA	G279	C	2022/05/10	Sulfate, total	mg/L	140
UA	G279	C	2022/08/24	Sulfate, total	mg/L	1,600
UA	G279	C	2022/11/09	Sulfate, total	mg/L	1,900
UA	G279	C	2023/02/16	Sulfate, total	mg/L	1,800
UA	G279	C	2023/06/01	Sulfate, total	mg/L	2,900
UA	G279	C	2023/11/17	Sulfate, total	mg/L	3,390
UA	G279	C	2015/11/24	Temperature (Celsius)	degrees C	16.4
UA	G279	C	2016/02/16	Temperature (Celsius)	degrees C	10.7

UA	G279	C	2016/05/13	Temperature (Celsius)	degrees C	16.8
UA	G279	C	2016/08/03	Temperature (Celsius)	degrees C	19.6
UA	G279	C	2016/11/22	Temperature (Celsius)	degrees C	13.2
UA	G279	C	2017/02/15	Temperature (Celsius)	degrees C	14.3
UA	G279	C	2017/05/20	Temperature (Celsius)	degrees C	15.3
UA	G279	C	2017/07/18	Temperature (Celsius)	degrees C	18.7
UA	G279	C	2017/11/04	Temperature (Celsius)	degrees C	13.2
UA	G279	C	2018/05/16	Temperature (Celsius)	degrees C	14.4
UA	G279	C	2018/08/10	Temperature (Celsius)	degrees C	15.8
UA	G279	C	2019/01/23	Temperature (Celsius)	degrees C	11.8
UA	G279	C	2019/08/26	Temperature (Celsius)	degrees C	17.5
UA	G279	C	2020/01/23	Temperature (Celsius)	degrees C	12.4
UA	G279	C	2020/08/12	Temperature (Celsius)	degrees C	19.6
UA	G279	C	2020/10/14	Temperature (Celsius)	degrees C	17.2
UA	G279	C	2021/01/21	Temperature (Celsius)	degrees C	13.4
UA	G279	C	2021/01/28	Temperature (Celsius)	degrees C	13.4
UA	G279	C	2021/05/20	Temperature (Celsius)	degrees C	18.1
UA	G279	C	2021/08/18	Temperature (Celsius)	degrees C	19.8
UA	G279	C	2022/02/08	Temperature (Celsius)	degrees C	13.8
UA	G279	C	2022/05/10	Temperature (Celsius)	degrees C	19.8
UA	G279	C	2022/08/24	Temperature (Celsius)	degrees C	18.5
UA	G279	C	2022/11/09	Temperature (Celsius)	degrees C	19.6
UA	G279	C	2023/02/16	Temperature (Celsius)	degrees C	11.1
UA	G279	C	2023/06/01	Temperature (Celsius)	degrees C	18.3
UA	G279	C	2023/11/17	Temperature (Celsius)	degrees C	16.8
UA	G279	C	2009/09/23	Total Dissolved Solids	mg/L	620
UA	G279	C	2009/11/09	Total Dissolved Solids	mg/L	620
UA	G279	C	2010/01/27	Total Dissolved Solids	mg/L	630
UA	G279	C	2010/03/04	Total Dissolved Solids	mg/L	610
UA	G279	C	2010/07/26	Total Dissolved Solids	mg/L	670
UA	G279	C	2010/11/16	Total Dissolved Solids	mg/L	600
UA	G279	C	2011/01/28	Total Dissolved Solids	mg/L	600
UA	G279	C	2011/05/04	Total Dissolved Solids	mg/L	630
UA	G279	C	2011/07/27	Total Dissolved Solids	mg/L	600
UA	G279	C	2011/11/14	Total Dissolved Solids	mg/L	580
UA	G279	C	2012/01/30	Total Dissolved Solids	mg/L	630
UA	G279	C	2012/05/22	Total Dissolved Solids	mg/L	590
UA	G279	C	2012/07/24	Total Dissolved Solids	mg/L	660
UA	G279	C	2012/11/14	Total Dissolved Solids	mg/L	750
UA	G279	C	2013/01/31	Total Dissolved Solids	mg/L	1,200
UA	G279	C	2013/05/20	Total Dissolved Solids	mg/L	600
UA	G279	C	2013/07/22	Total Dissolved Solids	mg/L	560
UA	G279	C	2013/10/14	Total Dissolved Solids	mg/L	640
UA	G279	C	2014/02/19	Total Dissolved Solids	mg/L	600
UA	G279	C	2014/05/13	Total Dissolved Solids	mg/L	1,200
UA	G279	C	2014/08/12	Total Dissolved Solids	mg/L	600
UA	G279	C	2014/10/14	Total Dissolved Solids	mg/L	650
UA	G279	C	2015/01/21	Total Dissolved Solids	mg/L	810
UA	G279	C	2015/04/13	Total Dissolved Solids	mg/L	800
UA	G279	C	2015/07/23	Total Dissolved Solids	mg/L	1,200
UA	G279	C	2015/10/08	Total Dissolved Solids	mg/L	1,700
UA	G279	C	2015/11/24	Total Dissolved Solids	mg/L	1,100
UA	G279	C	2016/02/16	Total Dissolved Solids	mg/L	1,400
UA	G279	C	2016/05/13	Total Dissolved Solids	mg/L	600
UA	G279	C	2016/08/03	Total Dissolved Solids	mg/L	1,300
UA	G279	C	2016/11/22	Total Dissolved Solids	mg/L	1,300
UA	G279	C	2017/02/15	Total Dissolved Solids	mg/L	1,500
UA	G279	C	2017/05/20	Total Dissolved Solids	mg/L	940
UA	G279	C	2017/07/18	Total Dissolved Solids	mg/L	1,600
UA	G279	C	2017/11/04	Total Dissolved Solids	mg/L	1,600
UA	G279	C	2018/05/16	Total Dissolved Solids	mg/L	1,200
UA	G279	C	2018/08/10	Total Dissolved Solids	mg/L	1,800

UA	G279	C	2019/01/23	Total Dissolved Solids	mg/L	740
UA	G279	C	2019/08/26	Total Dissolved Solids	mg/L	560
UA	G279	C	2020/01/23	Total Dissolved Solids	mg/L	830
UA	G279	C	2020/08/12	Total Dissolved Solids	mg/L	3,000
UA	G279	C	2020/10/14	Total Dissolved Solids	mg/L	3,400
UA	G279	C	2021/01/21	Total Dissolved Solids	mg/L	2,400
UA	G279	C	2021/01/28	Total Dissolved Solids	mg/L	650
UA	G279	C	2021/05/20	Total Dissolved Solids	mg/L	560
UA	G279	C	2021/08/18	Total Dissolved Solids	mg/L	2,800
UA	G279	C	2021/10/26	Total Dissolved Solids	mg/L	1,900
UA	G279	C	2022/02/08	Total Dissolved Solids	mg/L	1,100
UA	G279	C	2022/05/10	Total Dissolved Solids	mg/L	710
UA	G279	C	2022/08/24	Total Dissolved Solids	mg/L	3,300
UA	G279	C	2022/11/09	Total Dissolved Solids	mg/L	3,900
UA	G279	C	2023/02/16	Total Dissolved Solids	mg/L	5,200
UA	G279	C	2023/06/01	Total Dissolved Solids	mg/L	6,000
UA	G279	C	2023/11/17	Total Dissolved Solids	mg/L	6,260
UA	G284	C	2021/03/30	pH (field)	SU	7.2
UA	G284	C	2021/04/21	pH (field)	SU	7.2
UA	G284	C	2021/05/06	pH (field)	SU	7.1
UA	G284	C	2021/05/18	pH (field)	SU	6.9
UA	G284	C	2021/06/14	pH (field)	SU	7.3
UA	G284	C	2021/06/28	pH (field)	SU	7.3
UA	G284	C	2021/07/13	pH (field)	SU	7.2
UA	G284	C	2021/07/27	pH (field)	SU	7.1
UA	G284	C	2023/06/08	pH (field)	SU	7.2
UA	G284	C	2023/08/15	pH (field)	SU	7.2
UA	G284	C	2021/03/30	Oxidation Reduction Potential	mV	223
UA	G284	C	2021/04/21	Oxidation Reduction Potential	mV	37.4
UA	G284	C	2021/05/06	Oxidation Reduction Potential	mV	31.9
UA	G284	C	2021/05/18	Oxidation Reduction Potential	mV	44.9
UA	G284	C	2021/06/14	Oxidation Reduction Potential	mV	140
UA	G284	C	2021/06/28	Oxidation Reduction Potential	mV	18.8
UA	G284	C	2021/07/13	Oxidation Reduction Potential	mV	189
UA	G284	C	2021/07/27	Oxidation Reduction Potential	mV	158
UA	G284	C	2023/06/08	Oxidation Reduction Potential	mV	112
UA	G284	C	2023/08/15	Oxidation Reduction Potential	mV	126
UA	G284	C	2021/03/30	Eh	V	0.42
UA	G284	C	2021/04/21	Eh	V	0.24
UA	G284	C	2021/05/06	Eh	V	0.23
UA	G284	C	2021/05/18	Eh	V	0.24
UA	G284	C	2021/06/14	Eh	V	0.33
UA	G284	C	2021/06/28	Eh	V	0.21
UA	G284	C	2021/07/13	Eh	V	0.38
UA	G284	C	2021/07/27	Eh	V	0.35
UA	G284	C	2023/06/08	Eh	V	0.31
UA	G284	C	2023/08/15	Eh	V	0.32
UA	G284	C	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G284	C	2021/04/21	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G284	C	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	160
UA	G284	C	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G284	C	2021/06/14	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G284	C	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G284	C	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G284	C	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G284	C	2023/06/08	Alkalinity, bicarbonate	mg/L CaCO3	340
UA	G284	C	2023/08/15	Alkalinity, bicarbonate	mg/L CaCO3	322
UA	G284	C	2021/03/30	Arsenic, total	mg/L	<0.00022
UA	G284	C	2021/04/21	Arsenic, total	mg/L	<0.00022
UA	G284	C	2021/05/06	Arsenic, total	mg/L	<0.00022
UA	G284	C	2021/05/18	Arsenic, total	mg/L	<0.00022
UA	G284	C	2021/06/14	Arsenic, total	mg/L	<0.00022

UA	G284	C	2021/06/28	Arsenic, total	mg/L	<0.0002
UA	G284	C	2021/07/13	Arsenic, total	mg/L	<0.00022
UA	G284	C	2021/07/27	Arsenic, total	mg/L	<0.00022
UA	G284	C	2023/06/08	Arsenic, total	mg/L	0.00100
UA	G284	C	2023/08/15	Arsenic, total	mg/L	<0.0004
UA	G284	C	2021/03/30	Barium, total	mg/L	0.0600
UA	G284	C	2021/04/21	Barium, total	mg/L	0.0670
UA	G284	C	2021/05/06	Barium, total	mg/L	0.0640
UA	G284	C	2021/05/18	Barium, total	mg/L	0.0640
UA	G284	C	2021/06/14	Barium, total	mg/L	0.0680
UA	G284	C	2021/06/28	Barium, total	mg/L	0.0630
UA	G284	C	2021/07/13	Barium, total	mg/L	0.0650
UA	G284	C	2021/07/27	Barium, total	mg/L	0.0650
UA	G284	C	2023/06/08	Barium, total	mg/L	0.0690
UA	G284	C	2023/08/15	Barium, total	mg/L	0.0875
UA	G284	C	2021/03/30	Calcium, total	mg/L	70.0
UA	G284	C	2021/04/21	Calcium, total	mg/L	75.0
UA	G284	C	2021/05/06	Calcium, total	mg/L	76.0
UA	G284	C	2021/05/18	Calcium, total	mg/L	76.0
UA	G284	C	2021/06/14	Calcium, total	mg/L	78.0
UA	G284	C	2021/06/28	Calcium, total	mg/L	69.0
UA	G284	C	2021/07/13	Calcium, total	mg/L	68.0
UA	G284	C	2021/07/27	Calcium, total	mg/L	74.0
UA	G284	C	2023/06/08	Calcium, total	mg/L	73.0
UA	G284	C	2023/08/15	Calcium, total	mg/L	72.5
UA	G284	C	2021/03/30	Chloride, total	mg/L	41.0
UA	G284	C	2021/04/21	Chloride, total	mg/L	45.0
UA	G284	C	2021/05/06	Chloride, total	mg/L	38.0
UA	G284	C	2021/05/18	Chloride, total	mg/L	42.0
UA	G284	C	2021/06/14	Chloride, total	mg/L	40.0
UA	G284	C	2021/06/28	Chloride, total	mg/L	64.0
UA	G284	C	2021/07/13	Chloride, total	mg/L	48.0
UA	G284	C	2021/07/27	Chloride, total	mg/L	44.0
UA	G284	C	2023/06/08	Chloride, total	mg/L	42.0
UA	G284	C	2023/08/15	Chloride, total	mg/L	32.0
UA	G284	C	2023/06/08	Ferrous Iron, dissolved	mg/L	0.0580
UA	G284	C	2023/06/08	Iron, dissolved	mg/L	0.0290
UA	G284	C	2023/08/15	Iron, dissolved	mg/L	<0.0115
UA	G284	C	2021/03/30	Magnesium, total	mg/L	39.0
UA	G284	C	2021/04/21	Magnesium, total	mg/L	41.0
UA	G284	C	2021/05/06	Magnesium, total	mg/L	40.0
UA	G284	C	2021/05/18	Magnesium, total	mg/L	38.0
UA	G284	C	2021/06/14	Magnesium, total	mg/L	40.0
UA	G284	C	2021/06/28	Magnesium, total	mg/L	38.0
UA	G284	C	2021/07/13	Magnesium, total	mg/L	37.0
UA	G284	C	2021/07/27	Magnesium, total	mg/L	41.0
UA	G284	C	2023/06/08	Magnesium, total	mg/L	38.0
UA	G284	C	2023/08/15	Magnesium, total	mg/L	34.6
UA	G284	C	2023/06/08	Manganese, dissolved	mg/L	0.00220
UA	G284	C	2023/08/15	Manganese, dissolved	mg/L	<0.0008
UA	G284	C	2023/08/15	Phosphate, dissolved	mg/L	0.0210
UA	G284	C	2021/03/30	Potassium, total	mg/L	0.360
UA	G284	C	2021/04/21	Potassium, total	mg/L	0.300
UA	G284	C	2021/05/06	Potassium, total	mg/L	0.280
UA	G284	C	2021/05/18	Potassium, total	mg/L	0.360
UA	G284	C	2021/06/14	Potassium, total	mg/L	0.300
UA	G284	C	2021/06/28	Potassium, total	mg/L	0.270
UA	G284	C	2021/07/13	Potassium, total	mg/L	0.270
UA	G284	C	2021/07/27	Potassium, total	mg/L	0.320
UA	G284	C	2023/06/08	Potassium, total	mg/L	0.340
UA	G284	C	2023/08/15	Potassium, total	mg/L	0.572
UA	G284	C	2023/06/08	Silicon, dissolved	mg/L	9.90

UA	G284	C	2023/08/15	Silicon, dissolved	mg/L	8.83
UA	G284	C	2021/03/30	Sodium, total	mg/L	52.0
UA	G284	C	2021/04/21	Sodium, total	mg/L	55.0
UA	G284	C	2021/05/06	Sodium, total	mg/L	51.0
UA	G284	C	2021/05/18	Sodium, total	mg/L	57.0
UA	G284	C	2021/06/14	Sodium, total	mg/L	53.0
UA	G284	C	2021/06/28	Sodium, total	mg/L	50.0
UA	G284	C	2021/07/13	Sodium, total	mg/L	53.0
UA	G284	C	2021/07/27	Sodium, total	mg/L	56.0
UA	G284	C	2023/06/08	Sodium, total	mg/L	56.0
UA	G284	C	2023/08/15	Sodium, total	mg/L	115
UA	G284	C	2021/03/30	Sulfate, total	mg/L	60.0
UA	G284	C	2021/04/21	Sulfate, total	mg/L	71.0
UA	G284	C	2021/05/06	Sulfate, total	mg/L	65.0
UA	G284	C	2021/05/18	Sulfate, total	mg/L	68.0
UA	G284	C	2021/06/14	Sulfate, total	mg/L	66.0
UA	G284	C	2021/06/28	Sulfate, total	mg/L	95.0
UA	G284	C	2021/07/13	Sulfate, total	mg/L	63.0
UA	G284	C	2021/07/27	Sulfate, total	mg/L	68.0
UA	G284	C	2023/06/08	Sulfate, total	mg/L	71.0
UA	G284	C	2023/08/15	Sulfate, total	mg/L	174
UA	G284	C	2021/03/30	Temperature (Celsius)	degrees C	12.2
UA	G284	C	2021/04/21	Temperature (Celsius)	degrees C	11.4
UA	G284	C	2021/05/06	Temperature (Celsius)	degrees C	11.8
UA	G284	C	2021/05/18	Temperature (Celsius)	degrees C	13.3
UA	G284	C	2021/06/14	Temperature (Celsius)	degrees C	17.0
UA	G284	C	2021/06/28	Temperature (Celsius)	degrees C	17.4
UA	G284	C	2021/07/13	Temperature (Celsius)	degrees C	16.5
UA	G284	C	2021/07/27	Temperature (Celsius)	degrees C	18.8
UA	G284	C	2023/06/08	Temperature (Celsius)	degrees C	16.7
UA	G284	C	2023/08/15	Temperature (Celsius)	degrees C	17.0
UA	G284	C	2021/03/30	Total Dissolved Solids	mg/L	460
UA	G284	C	2021/04/21	Total Dissolved Solids	mg/L	550
UA	G284	C	2021/05/06	Total Dissolved Solids	mg/L	440
UA	G284	C	2021/05/18	Total Dissolved Solids	mg/L	490
UA	G284	C	2021/06/14	Total Dissolved Solids	mg/L	410
UA	G284	C	2021/06/28	Total Dissolved Solids	mg/L	490
UA	G284	C	2021/07/13	Total Dissolved Solids	mg/L	520
UA	G284	C	2021/07/27	Total Dissolved Solids	mg/L	460
UA	G284	C	2023/06/08	Total Dissolved Solids	mg/L	520
UA	G284	C	2023/08/15	Total Dissolved Solids	mg/L	656
UA	G272	WLOA	2010/07/27	pH (field)	SU	7.2
UA	G272	WLOA	2010/07/28	pH (field)	SU	7.2
UA	G272	WLOA	2010/09/20	pH (field)	SU	7.8
UA	G272	WLOA	2010/11/16	pH (field)	SU	7.8
UA	G272	WLOA	2011/01/31	pH (field)	SU	7.5
UA	G272	WLOA	2011/05/04	pH (field)	SU	7.3
UA	G272	WLOA	2011/07/27	pH (field)	SU	7.5
UA	G272	WLOA	2011/11/14	pH (field)	SU	7.5
UA	G272	WLOA	2012/01/26	pH (field)	SU	7.7
UA	G272	WLOA	2012/05/22	pH (field)	SU	7.4
UA	G272	WLOA	2012/07/24	pH (field)	SU	7.2
UA	G272	WLOA	2012/11/14	pH (field)	SU	7.5
UA	G272	WLOA	2013/01/31	pH (field)	SU	7.3
UA	G272	WLOA	2013/05/20	pH (field)	SU	7.4
UA	G272	WLOA	2013/07/22	pH (field)	SU	7.3
UA	G272	WLOA	2013/10/14	pH (field)	SU	7.4
UA	G272	WLOA	2014/02/19	pH (field)	SU	7.8
UA	G272	WLOA	2014/05/13	pH (field)	SU	7.8
UA	G272	WLOA	2014/08/11	pH (field)	SU	7.6
UA	G272	WLOA	2014/10/14	pH (field)	SU	7.4
UA	G272	WLOA	2015/01/21	pH (field)	SU	7.6

UA	G272	WLOA	2015/04/10	pH (field)	SU	7.2
UA	G272	WLOA	2015/07/23	pH (field)	SU	7.2
UA	G272	WLOA	2015/10/08	pH (field)	SU	7.2
UA	G272	WLOA	2020/10/14	pH (field)	SU	7.4
UA	G272	WLOA	2021/02/01	pH (field)	SU	7.5
UA	G272	WLOA	2021/05/20	pH (field)	SU	7.4
UA	G272	WLOA	2021/08/18	pH (field)	SU	7.3
UA	G272	WLOA	2021/10/27	pH (field)	SU	7.3
UA	G272	WLOA	2022/02/10	pH (field)	SU	7.6
UA	G272	WLOA	2022/05/11	pH (field)	SU	7.1
UA	G272	WLOA	2022/08/24	pH (field)	SU	7.3
UA	G272	WLOA	2022/11/09	pH (field)	SU	7.4
UA	G272	WLOA	2023/02/16	pH (field)	SU	7.8
UA	G272	WLOA	2023/06/08	pH (field)	SU	7.1
UA	G272	WLOA	2023/08/14	pH (field)	SU	6.9
UA	G272	WLOA	2023/11/17	pH (field)	SU	7.2
UA	G272	WLOA	2022/02/10	Oxidation Reduction Potential	mV	88.0
UA	G272	WLOA	2022/05/11	Oxidation Reduction Potential	mV	96.1
UA	G272	WLOA	2022/08/24	Oxidation Reduction Potential	mV	115
UA	G272	WLOA	2022/11/09	Oxidation Reduction Potential	mV	171
UA	G272	WLOA	2023/02/16	Oxidation Reduction Potential	mV	147
UA	G272	WLOA	2023/06/08	Oxidation Reduction Potential	mV	100
UA	G272	WLOA	2023/08/14	Oxidation Reduction Potential	mV	90.0
UA	G272	WLOA	2023/11/17	Oxidation Reduction Potential	mV	120
UA	G272	WLOA	2022/02/10	Eh	V	0.29
UA	G272	WLOA	2022/05/11	Eh	V	0.29
UA	G272	WLOA	2022/08/24	Eh	V	0.31
UA	G272	WLOA	2022/11/09	Eh	V	0.36
UA	G272	WLOA	2023/02/16	Eh	V	0.35
UA	G272	WLOA	2023/06/08	Eh	V	0.29
UA	G272	WLOA	2023/08/14	Eh	V	0.28
UA	G272	WLOA	2023/11/17	Eh	V	0.32
UA	G272	WLOA	2009/09/22	Alkalinity, bicarbonate	mg/L CaCO3	270
UA	G272	WLOA	2009/11/10	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G272	WLOA	2010/01/19	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G272	WLOA	2010/03/04	Alkalinity, bicarbonate	mg/L CaCO3	270
UA	G272	WLOA	2010/07/27	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G272	WLOA	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G272	WLOA	2012/01/26	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G272	WLOA	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G272	WLOA	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G272	WLOA	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G272	WLOA	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G272	WLOA	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G272	WLOA	2015/04/10	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G272	WLOA	2009/09/22	Arsenic, total	mg/L	0.00120
UA	G272	WLOA	2009/11/10	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2010/01/19	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2010/03/04	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2011/01/31	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2011/05/04	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2011/11/14	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2012/01/26	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2012/11/14	Arsenic, total	mg/L	0.00110
UA	G272	WLOA	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2013/07/22	Arsenic, total	mg/L	<0.001

UA	G272	WLOA	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2014/05/13	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2014/08/11	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2014/10/14	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2015/01/21	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2015/04/10	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2015/10/08	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2021/02/01	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2021/05/20	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2021/08/18	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2021/10/27	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2022/02/10	Arsenic, total	mg/L	<0.001
UA	G272	WLOA	2022/05/11	Arsenic, total	mg/L	<0.00069
UA	G272	WLOA	2022/08/24	Arsenic, total	mg/L	<0.00069
UA	G272	WLOA	2022/11/09	Arsenic, total	mg/L	<0.00069
UA	G272	WLOA	2023/02/16	Arsenic, total	mg/L	<0.00069
UA	G272	WLOA	2023/06/08	Arsenic, total	mg/L	<0.00069
UA	G272	WLOA	2023/08/14	Arsenic, total	mg/L	<0.0004
UA	G272	WLOA	2023/11/17	Arsenic, total	mg/L	<0.0004
UA	G272	WLOA	2009/09/22	Barium, total	mg/L	0.0790
UA	G272	WLOA	2009/11/10	Barium, total	mg/L	0.0730
UA	G272	WLOA	2010/01/19	Barium, total	mg/L	0.0680
UA	G272	WLOA	2010/03/04	Barium, total	mg/L	0.0610
UA	G272	WLOA	2010/07/27	Barium, total	mg/L	0.0620
UA	G272	WLOA	2011/01/31	Barium, total	mg/L	0.0700
UA	G272	WLOA	2012/01/26	Barium, total	mg/L	0.0680
UA	G272	WLOA	2013/01/31	Barium, total	mg/L	0.0720
UA	G272	WLOA	2014/02/19	Barium, total	mg/L	0.0600
UA	G272	WLOA	2015/04/10	Barium, total	mg/L	0.0590
UA	G272	WLOA	2015/07/23	Barium, total	mg/L	0.0600
UA	G272	WLOA	2015/10/08	Barium, total	mg/L	0.0580
UA	G272	WLOA	2020/10/14	Barium, total	mg/L	0.0550
UA	G272	WLOA	2021/02/01	Barium, total	mg/L	0.0490
UA	G272	WLOA	2021/05/20	Barium, total	mg/L	0.0540
UA	G272	WLOA	2021/08/18	Barium, total	mg/L	0.0480
UA	G272	WLOA	2021/10/27	Barium, total	mg/L	0.0450
UA	G272	WLOA	2022/02/10	Barium, total	mg/L	0.0330
UA	G272	WLOA	2022/05/11	Barium, total	mg/L	0.0510
UA	G272	WLOA	2022/08/24	Barium, total	mg/L	0.0460
UA	G272	WLOA	2022/11/09	Barium, total	mg/L	0.0420
UA	G272	WLOA	2023/02/16	Barium, total	mg/L	0.0540
UA	G272	WLOA	2023/06/08	Barium, total	mg/L	0.0500
UA	G272	WLOA	2023/08/14	Barium, total	mg/L	0.0569
UA	G272	WLOA	2023/11/17	Barium, total	mg/L	0.0619
UA	G272	WLOA	2009/09/22	Calcium, total	mg/L	84.0
UA	G272	WLOA	2009/11/10	Calcium, total	mg/L	88.0
UA	G272	WLOA	2010/01/19	Calcium, total	mg/L	85.0
UA	G272	WLOA	2010/03/04	Calcium, total	mg/L	93.0
UA	G272	WLOA	2010/07/27	Calcium, total	mg/L	92.0
UA	G272	WLOA	2010/11/16	Calcium, total	mg/L	84.0
UA	G272	WLOA	2011/01/31	Calcium, total	mg/L	98.0
UA	G272	WLOA	2011/05/04	Calcium, total	mg/L	<100
UA	G272	WLOA	2011/07/27	Calcium, total	mg/L	99.0
UA	G272	WLOA	2011/11/14	Calcium, total	mg/L	98.0
UA	G272	WLOA	2012/01/26	Calcium, total	mg/L	98.0
UA	G272	WLOA	2012/05/22	Calcium, total	mg/L	82.0
UA	G272	WLOA	2012/07/24	Calcium, total	mg/L	100
UA	G272	WLOA	2012/11/14	Calcium, total	mg/L	110
UA	G272	WLOA	2013/01/31	Calcium, total	mg/L	110

UA	G272	WLOA	2013/05/20	Calcium, total	mg/L	98.0
UA	G272	WLOA	2013/07/22	Calcium, total	mg/L	100
UA	G272	WLOA	2013/10/14	Calcium, total	mg/L	100
UA	G272	WLOA	2014/02/19	Calcium, total	mg/L	110
UA	G272	WLOA	2014/05/13	Calcium, total	mg/L	93.0
UA	G272	WLOA	2014/08/11	Calcium, total	mg/L	110
UA	G272	WLOA	2014/10/14	Calcium, total	mg/L	110
UA	G272	WLOA	2015/01/21	Calcium, total	mg/L	99.0
UA	G272	WLOA	2015/04/10	Calcium, total	mg/L	110
UA	G272	WLOA	2009/09/22	Chloride, total	mg/L	53.0
UA	G272	WLOA	2009/11/10	Chloride, total	mg/L	46.0
UA	G272	WLOA	2010/01/19	Chloride, total	mg/L	45.0
UA	G272	WLOA	2010/03/04	Chloride, total	mg/L	44.0
UA	G272	WLOA	2010/07/27	Chloride, total	mg/L	44.0
UA	G272	WLOA	2010/11/16	Chloride, total	mg/L	42.0
UA	G272	WLOA	2011/01/31	Chloride, total	mg/L	43.0
UA	G272	WLOA	2011/05/04	Chloride, total	mg/L	42.0
UA	G272	WLOA	2011/07/27	Chloride, total	mg/L	<100
UA	G272	WLOA	2011/11/14	Chloride, total	mg/L	41.0
UA	G272	WLOA	2012/01/26	Chloride, total	mg/L	43.0
UA	G272	WLOA	2012/05/22	Chloride, total	mg/L	42.0
UA	G272	WLOA	2012/07/24	Chloride, total	mg/L	43.0
UA	G272	WLOA	2012/11/14	Chloride, total	mg/L	40.0
UA	G272	WLOA	2013/01/31	Chloride, total	mg/L	44.0
UA	G272	WLOA	2013/05/20	Chloride, total	mg/L	37.0
UA	G272	WLOA	2013/07/22	Chloride, total	mg/L	35.0
UA	G272	WLOA	2013/10/14	Chloride, total	mg/L	32.0
UA	G272	WLOA	2014/02/19	Chloride, total	mg/L	40.0
UA	G272	WLOA	2014/05/13	Chloride, total	mg/L	36.0
UA	G272	WLOA	2014/08/11	Chloride, total	mg/L	34.0
UA	G272	WLOA	2014/10/14	Chloride, total	mg/L	37.0
UA	G272	WLOA	2015/01/21	Chloride, total	mg/L	31.0
UA	G272	WLOA	2015/04/10	Chloride, total	mg/L	37.0
UA	G272	WLOA	2015/07/23	Chloride, total	mg/L	29.0
UA	G272	WLOA	2015/10/08	Chloride, total	mg/L	33.0
UA	G272	WLOA	2020/10/14	Chloride, total	mg/L	22.0
UA	G272	WLOA	2021/02/01	Chloride, total	mg/L	30.0
UA	G272	WLOA	2021/05/20	Chloride, total	mg/L	28.0
UA	G272	WLOA	2021/08/18	Chloride, total	mg/L	31.0
UA	G272	WLOA	2021/10/27	Chloride, total	mg/L	32.0
UA	G272	WLOA	2022/02/10	Chloride, total	mg/L	32.0
UA	G272	WLOA	2022/05/11	Chloride, total	mg/L	38.0
UA	G272	WLOA	2022/08/24	Chloride, total	mg/L	38.0
UA	G272	WLOA	2022/11/09	Chloride, total	mg/L	40.0
UA	G272	WLOA	2023/02/16	Chloride, total	mg/L	38.0
UA	G272	WLOA	2023/06/08	Chloride, total	mg/L	54.0
UA	G272	WLOA	2023/08/14	Chloride, total	mg/L	41.0
UA	G272	WLOA	2023/11/17	Chloride, total	mg/L	44.0
UA	G272	WLOA	2009/11/10	Iron, dissolved	mg/L	<0.1
UA	G272	WLOA	2010/01/19	Iron, dissolved	mg/L	<0.1
UA	G272	WLOA	2010/03/04	Iron, dissolved	mg/L	<0.2
UA	G272	WLOA	2010/07/27	Iron, dissolved	mg/L	0.0130
UA	G272	WLOA	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2011/01/31	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2011/05/04	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2011/11/14	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2012/01/26	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2012/11/14	Iron, dissolved	mg/L	<0.01

UA	G272	WLOA	2013/01/31	Iron, dissolved	mg/L	0.0140
UA	G272	WLOA	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2013/07/22	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2013/10/14	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2014/02/19	Iron, dissolved	mg/L	0.0130
UA	G272	WLOA	2014/05/13	Iron, dissolved	mg/L	0.0150
UA	G272	WLOA	2014/08/11	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2014/10/14	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2015/01/21	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2015/04/10	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2015/10/08	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2016/02/09	Iron, dissolved	mg/L	0.0340
UA	G272	WLOA	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2016/07/27	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2016/11/21	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2017/02/08	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2017/05/18	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2017/07/25	Iron, dissolved	mg/L	0.0140
UA	G272	WLOA	2017/11/03	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2018/01/29	Iron, dissolved	mg/L	0.0510
UA	G272	WLOA	2018/05/16	Iron, dissolved	mg/L	0.0170
UA	G272	WLOA	2019/06/21	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2019/09/25	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2019/10/22	Iron, dissolved	mg/L	0.0110
UA	G272	WLOA	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2020/05/05	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2020/08/13	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2020/10/14	Iron, dissolved	mg/L	0.0140
UA	G272	WLOA	2021/02/01	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2021/05/20	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2021/08/18	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2021/10/27	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2022/02/10	Iron, dissolved	mg/L	<0.01
UA	G272	WLOA	2022/05/11	Iron, dissolved	mg/L	0.00900
UA	G272	WLOA	2022/08/24	Iron, dissolved	mg/L	0.00230
UA	G272	WLOA	2022/11/09	Iron, dissolved	mg/L	0.00100
UA	G272	WLOA	2023/02/16	Iron, dissolved	mg/L	0.0170
UA	G272	WLOA	2023/06/08	Iron, dissolved	mg/L	0.0150
UA	G272	WLOA	2023/08/14	Iron, dissolved	mg/L	0.0210
UA	G272	WLOA	2023/11/17	Iron, dissolved	mg/L	<0.0115
UA	G272	WLOA	2009/09/22	Magnesium, total	mg/L	40.0
UA	G272	WLOA	2009/11/10	Magnesium, total	mg/L	43.0
UA	G272	WLOA	2010/01/19	Magnesium, total	mg/L	42.0
UA	G272	WLOA	2010/03/04	Magnesium, total	mg/L	45.0
UA	G272	WLOA	2010/07/27	Magnesium, total	mg/L	42.0
UA	G272	WLOA	2011/01/31	Magnesium, total	mg/L	50.0
UA	G272	WLOA	2012/01/26	Magnesium, total	mg/L	49.0
UA	G272	WLOA	2013/01/31	Magnesium, total	mg/L	54.0
UA	G272	WLOA	2014/02/19	Magnesium, total	mg/L	50.0
UA	G272	WLOA	2015/04/10	Magnesium, total	mg/L	52.0
UA	G272	WLOA	2009/11/10	Manganese, dissolved	mg/L	0.0560
UA	G272	WLOA	2010/01/19	Manganese, dissolved	mg/L	0.00600
UA	G272	WLOA	2010/03/04	Manganese, dissolved	mg/L	<0.0025
UA	G272	WLOA	2010/07/27	Manganese, dissolved	mg/L	0.00190
UA	G272	WLOA	2010/09/20	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2010/11/16	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2011/01/31	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2011/05/04	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2011/07/27	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2011/11/14	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2012/01/26	Manganese, dissolved	mg/L	<0.001

UA	G272	WLOA	2012/05/22	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2012/07/24	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2012/11/14	Manganese, dissolved	mg/L	0.00120
UA	G272	WLOA	2013/01/31	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2013/05/20	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2013/10/14	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2014/02/19	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2014/05/13	Manganese, dissolved	mg/L	0.230
UA	G272	WLOA	2014/08/11	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2014/10/14	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2015/01/21	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2015/04/10	Manganese, dissolved	mg/L	<0.002
UA	G272	WLOA	2015/07/23	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2015/10/08	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2016/02/09	Manganese, dissolved	mg/L	0.00130
UA	G272	WLOA	2016/05/12	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2016/07/27	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2016/11/21	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2017/02/08	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2017/05/18	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2017/07/25	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2017/11/03	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2018/01/29	Manganese, dissolved	mg/L	0.00260
UA	G272	WLOA	2018/05/16	Manganese, dissolved	mg/L	0.00160
UA	G272	WLOA	2019/06/21	Manganese, dissolved	mg/L	0.0120
UA	G272	WLOA	2019/09/25	Manganese, dissolved	mg/L	0.0140
UA	G272	WLOA	2019/10/22	Manganese, dissolved	mg/L	0.0120
UA	G272	WLOA	2020/01/23	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2020/05/05	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2020/08/13	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2020/10/14	Manganese, dissolved	mg/L	0.00320
UA	G272	WLOA	2021/02/01	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2021/05/20	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2021/08/18	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2021/10/27	Manganese, dissolved	mg/L	<0.001
UA	G272	WLOA	2022/02/10	Manganese, dissolved	mg/L	0.00100
UA	G272	WLOA	2022/05/11	Manganese, dissolved	mg/L	<0.00023
UA	G272	WLOA	2022/08/24	Manganese, dissolved	mg/L	<0.00023
UA	G272	WLOA	2022/11/09	Manganese, dissolved	mg/L	<0.00023
UA	G272	WLOA	2023/02/16	Manganese, dissolved	mg/L	0.0560
UA	G272	WLOA	2023/06/08	Manganese, dissolved	mg/L	0.00430
UA	G272	WLOA	2023/08/14	Manganese, dissolved	mg/L	0.00590
UA	G272	WLOA	2023/11/17	Manganese, dissolved	mg/L	<0.0008
UA	G272	WLOA	2009/09/22	Potassium, total	mg/L	1.20
UA	G272	WLOA	2009/11/10	Potassium, total	mg/L	1.00
UA	G272	WLOA	2010/01/19	Potassium, total	mg/L	0.800
UA	G272	WLOA	2010/03/04	Potassium, total	mg/L	0.550
UA	G272	WLOA	2010/07/27	Potassium, total	mg/L	0.610
UA	G272	WLOA	2011/01/31	Potassium, total	mg/L	0.660
UA	G272	WLOA	2012/01/26	Potassium, total	mg/L	0.460
UA	G272	WLOA	2013/01/31	Potassium, total	mg/L	0.630
UA	G272	WLOA	2014/02/19	Potassium, total	mg/L	0.390
UA	G272	WLOA	2015/04/10	Potassium, total	mg/L	0.380
UA	G272	WLOA	2009/09/22	Sodium, total	mg/L	68.0
UA	G272	WLOA	2009/11/10	Sodium, total	mg/L	78.0
UA	G272	WLOA	2010/01/19	Sodium, total	mg/L	72.0
UA	G272	WLOA	2010/03/04	Sodium, total	mg/L	77.0
UA	G272	WLOA	2010/07/27	Sodium, total	mg/L	75.0
UA	G272	WLOA	2011/01/31	Sodium, total	mg/L	80.0
UA	G272	WLOA	2012/01/26	Sodium, total	mg/L	82.0
UA	G272	WLOA	2013/01/31	Sodium, total	mg/L	87.0

UA	G272	WLOA	2014/02/19	Sodium, total	mg/L	81.0
UA	G272	WLOA	2015/04/10	Sodium, total	mg/L	86.0
UA	G272	WLOA	2009/09/22	Sulfate, total	mg/L	120
UA	G272	WLOA	2009/11/10	Sulfate, total	mg/L	130
UA	G272	WLOA	2010/01/19	Sulfate, total	mg/L	160
UA	G272	WLOA	2010/03/04	Sulfate, total	mg/L	160
UA	G272	WLOA	2010/07/27	Sulfate, total	mg/L	210
UA	G272	WLOA	2010/11/16	Sulfate, total	mg/L	200
UA	G272	WLOA	2011/01/31	Sulfate, total	mg/L	230
UA	G272	WLOA	2011/05/04	Sulfate, total	mg/L	210
UA	G272	WLOA	2011/07/27	Sulfate, total	mg/L	250
UA	G272	WLOA	2011/11/14	Sulfate, total	mg/L	230
UA	G272	WLOA	2012/01/26	Sulfate, total	mg/L	240
UA	G272	WLOA	2012/05/22	Sulfate, total	mg/L	190
UA	G272	WLOA	2012/07/24	Sulfate, total	mg/L	220
UA	G272	WLOA	2012/11/14	Sulfate, total	mg/L	220
UA	G272	WLOA	2013/01/31	Sulfate, total	mg/L	330
UA	G272	WLOA	2013/05/20	Sulfate, total	mg/L	280
UA	G272	WLOA	2013/07/22	Sulfate, total	mg/L	260
UA	G272	WLOA	2013/10/14	Sulfate, total	mg/L	300
UA	G272	WLOA	2014/02/19	Sulfate, total	mg/L	340
UA	G272	WLOA	2014/05/13	Sulfate, total	mg/L	310
UA	G272	WLOA	2014/08/11	Sulfate, total	mg/L	330
UA	G272	WLOA	2014/10/14	Sulfate, total	mg/L	310
UA	G272	WLOA	2015/01/21	Sulfate, total	mg/L	380
UA	G272	WLOA	2015/04/10	Sulfate, total	mg/L	340
UA	G272	WLOA	2015/07/23	Sulfate, total	mg/L	270
UA	G272	WLOA	2015/10/08	Sulfate, total	mg/L	340
UA	G272	WLOA	2020/10/14	Sulfate, total	mg/L	300
UA	G272	WLOA	2021/02/01	Sulfate, total	mg/L	370
UA	G272	WLOA	2021/05/20	Sulfate, total	mg/L	300
UA	G272	WLOA	2021/08/18	Sulfate, total	mg/L	370
UA	G272	WLOA	2021/10/27	Sulfate, total	mg/L	390
UA	G272	WLOA	2022/02/10	Sulfate, total	mg/L	370
UA	G272	WLOA	2022/05/11	Sulfate, total	mg/L	380
UA	G272	WLOA	2022/08/24	Sulfate, total	mg/L	420
UA	G272	WLOA	2022/11/09	Sulfate, total	mg/L	390
UA	G272	WLOA	2023/02/16	Sulfate, total	mg/L	360
UA	G272	WLOA	2023/06/08	Sulfate, total	mg/L	470
UA	G272	WLOA	2023/08/14	Sulfate, total	mg/L	416
UA	G272	WLOA	2023/11/17	Sulfate, total	mg/L	411
UA	G272	WLOA	2022/02/10	Temperature (Celsius)	degrees C	10.2
UA	G272	WLOA	2022/05/11	Temperature (Celsius)	degrees C	16.5
UA	G272	WLOA	2022/08/24	Temperature (Celsius)	degrees C	21.5
UA	G272	WLOA	2022/11/09	Temperature (Celsius)	degrees C	17.8
UA	G272	WLOA	2023/02/16	Temperature (Celsius)	degrees C	9.20
UA	G272	WLOA	2023/06/08	Temperature (Celsius)	degrees C	17.2
UA	G272	WLOA	2023/08/14	Temperature (Celsius)	degrees C	18.0
UA	G272	WLOA	2023/11/17	Temperature (Celsius)	degrees C	14.8
UA	G272	WLOA	2009/09/22	Total Dissolved Solids	mg/L	570
UA	G272	WLOA	2009/11/10	Total Dissolved Solids	mg/L	610
UA	G272	WLOA	2010/01/19	Total Dissolved Solids	mg/L	610
UA	G272	WLOA	2010/03/04	Total Dissolved Solids	mg/L	630
UA	G272	WLOA	2010/07/27	Total Dissolved Solids	mg/L	690
UA	G272	WLOA	2010/11/16	Total Dissolved Solids	mg/L	670
UA	G272	WLOA	2011/01/31	Total Dissolved Solids	mg/L	660
UA	G272	WLOA	2011/05/04	Total Dissolved Solids	mg/L	690
UA	G272	WLOA	2011/07/27	Total Dissolved Solids	mg/L	740
UA	G272	WLOA	2011/11/14	Total Dissolved Solids	mg/L	670
UA	G272	WLOA	2012/01/26	Total Dissolved Solids	mg/L	660
UA	G272	WLOA	2012/05/22	Total Dissolved Solids	mg/L	750
UA	G272	WLOA	2012/07/24	Total Dissolved Solids	mg/L	710

UA	G272	WLOA	2012/11/14	Total Dissolved Solids	mg/L	780
UA	G272	WLOA	2013/01/31	Total Dissolved Solids	mg/L	760
UA	G272	WLOA	2013/05/20	Total Dissolved Solids	mg/L	680
UA	G272	WLOA	2013/07/22	Total Dissolved Solids	mg/L	680
UA	G272	WLOA	2013/10/14	Total Dissolved Solids	mg/L	740
UA	G272	WLOA	2014/02/19	Total Dissolved Solids	mg/L	720
UA	G272	WLOA	2014/05/13	Total Dissolved Solids	mg/L	620
UA	G272	WLOA	2014/08/11	Total Dissolved Solids	mg/L	740
UA	G272	WLOA	2014/10/14	Total Dissolved Solids	mg/L	840
UA	G272	WLOA	2015/01/21	Total Dissolved Solids	mg/L	790
UA	G272	WLOA	2015/04/10	Total Dissolved Solids	mg/L	800
UA	G272	WLOA	2015/07/23	Total Dissolved Solids	mg/L	840
UA	G272	WLOA	2015/10/08	Total Dissolved Solids	mg/L	660
UA	G272	WLOA	2020/10/14	Total Dissolved Solids	mg/L	790
UA	G272	WLOA	2021/02/01	Total Dissolved Solids	mg/L	830
UA	G272	WLOA	2021/05/20	Total Dissolved Solids	mg/L	730
UA	G272	WLOA	2021/08/18	Total Dissolved Solids	mg/L	930
UA	G272	WLOA	2021/10/27	Total Dissolved Solids	mg/L	880
UA	G272	WLOA	2022/02/10	Total Dissolved Solids	mg/L	740
UA	G272	WLOA	2022/05/11	Total Dissolved Solids	mg/L	1,000
UA	G272	WLOA	2022/08/24	Total Dissolved Solids	mg/L	1,000
UA	G272	WLOA	2022/11/09	Total Dissolved Solids	mg/L	880
UA	G272	WLOA	2023/02/16	Total Dissolved Solids	mg/L	880
UA	G272	WLOA	2023/06/08	Total Dissolved Solids	mg/L	1,100
UA	G272	WLOA	2023/08/14	Total Dissolved Solids	mg/L	960
UA	G272	WLOA	2023/11/17	Total Dissolved Solids	mg/L	926
UA	G274	WLOA	2010/07/27	pH (field)	SU	6.9
UA	G274	WLOA	2010/07/28	pH (field)	SU	6.9
UA	G274	WLOA	2010/09/20	pH (field)	SU	7.8
UA	G274	WLOA	2010/11/16	pH (field)	SU	7.9
UA	G274	WLOA	2011/01/31	pH (field)	SU	7.1
UA	G274	WLOA	2011/05/03	pH (field)	SU	7.1
UA	G274	WLOA	2011/07/27	pH (field)	SU	7.3
UA	G274	WLOA	2011/11/14	pH (field)	SU	7.3
UA	G274	WLOA	2012/01/26	pH (field)	SU	7.3
UA	G274	WLOA	2012/05/22	pH (field)	SU	7.2
UA	G274	WLOA	2012/07/24	pH (field)	SU	7.1
UA	G274	WLOA	2012/11/14	pH (field)	SU	7.3
UA	G274	WLOA	2013/01/31	pH (field)	SU	7.1
UA	G274	WLOA	2013/05/20	pH (field)	SU	7.2
UA	G274	WLOA	2013/07/22	pH (field)	SU	7.0
UA	G274	WLOA	2013/10/14	pH (field)	SU	7.1
UA	G274	WLOA	2014/02/19	pH (field)	SU	7.5
UA	G274	WLOA	2014/05/13	pH (field)	SU	7.6
UA	G274	WLOA	2014/08/11	pH (field)	SU	7.4
UA	G274	WLOA	2014/10/14	pH (field)	SU	7.2
UA	G274	WLOA	2015/01/21	pH (field)	SU	7.3
UA	G274	WLOA	2015/04/13	pH (field)	SU	6.8
UA	G274	WLOA	2015/07/23	pH (field)	SU	7.3
UA	G274	WLOA	2015/10/08	pH (field)	SU	7.2
UA	G274	WLOA	2020/10/14	pH (field)	SU	6.7
UA	G274	WLOA	2021/02/01	pH (field)	SU	7.3
UA	G274	WLOA	2021/05/19	pH (field)	SU	7.3
UA	G274	WLOA	2021/08/18	pH (field)	SU	7.3
UA	G274	WLOA	2021/10/26	pH (field)	SU	7.3
UA	G274	WLOA	2022/02/10	pH (field)	SU	7.3
UA	G274	WLOA	2022/05/11	pH (field)	SU	6.9
UA	G274	WLOA	2022/08/23	pH (field)	SU	7.2
UA	G274	WLOA	2022/11/09	pH (field)	SU	7.2
UA	G274	WLOA	2023/02/16	pH (field)	SU	7.2
UA	G274	WLOA	2023/06/08	pH (field)	SU	7.0
UA	G274	WLOA	2023/08/14	pH (field)	SU	7.5

UA	G274	WLOA	2023/11/17	pH (field)	SU	7.1
UA	G274	WLOA	2022/02/10	Oxidation Reduction Potential	mV	104
UA	G274	WLOA	2022/05/11	Oxidation Reduction Potential	mV	118
UA	G274	WLOA	2022/08/23	Oxidation Reduction Potential	mV	-91.9
UA	G274	WLOA	2022/11/09	Oxidation Reduction Potential	mV	-64.0
UA	G274	WLOA	2023/02/16	Oxidation Reduction Potential	mV	222
UA	G274	WLOA	2023/06/08	Oxidation Reduction Potential	mV	45.0
UA	G274	WLOA	2023/08/14	Oxidation Reduction Potential	mV	-1.00
UA	G274	WLOA	2023/11/17	Oxidation Reduction Potential	mV	126
UA	G274	WLOA	2022/02/10	Eh	V	0.30
UA	G274	WLOA	2022/05/11	Eh	V	0.31
UA	G274	WLOA	2022/08/23	Eh	V	0.10
UA	G274	WLOA	2022/11/09	Eh	V	0.13
UA	G274	WLOA	2023/02/16	Eh	V	0.42
UA	G274	WLOA	2023/06/08	Eh	V	0.24
UA	G274	WLOA	2023/08/14	Eh	V	0.19
UA	G274	WLOA	2023/11/17	Eh	V	0.32
UA	G274	WLOA	2009/09/24	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G274	WLOA	2009/11/11	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2010/01/27	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G274	WLOA	2010/03/08	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G274	WLOA	2010/07/27	Alkalinity, bicarbonate	mg/L CaCO3	330
UA	G274	WLOA	2011/01/31	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2012/01/26	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G274	WLOA	2013/01/31	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2014/02/19	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2014/08/11	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G274	WLOA	2014/10/14	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2015/01/21	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G274	WLOA	2015/04/13	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G274	WLOA	2009/09/24	Arsenic, total	mg/L	0.00240
UA	G274	WLOA	2009/11/11	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2010/01/27	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2010/03/08	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2010/07/27	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2010/11/16	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2011/01/31	Arsenic, total	mg/L	0.00230
UA	G274	WLOA	2011/05/03	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2011/07/27	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2011/11/14	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2012/01/26	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2012/05/22	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2012/07/24	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2012/11/14	Arsenic, total	mg/L	0.00220
UA	G274	WLOA	2013/01/31	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2013/05/20	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2013/07/22	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2013/10/14	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2014/02/19	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2014/05/13	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2014/08/11	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2014/10/14	Arsenic, total	mg/L	0.00400
UA	G274	WLOA	2015/01/21	Arsenic, total	mg/L	0.00110
UA	G274	WLOA	2015/04/13	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2015/07/23	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2015/10/08	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2020/10/14	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2021/02/01	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2021/05/19	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2021/08/18	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2021/10/26	Arsenic, total	mg/L	<0.001
UA	G274	WLOA	2022/02/10	Arsenic, total	mg/L	<0.001

UA	G274	WLOA	2022/05/11	Arsenic, total	mg/L	<0.00069
UA	G274	WLOA	2022/08/23	Arsenic, total	mg/L	0.00150
UA	G274	WLOA	2022/11/09	Arsenic, total	mg/L	0.00170
UA	G274	WLOA	2023/02/16	Arsenic, total	mg/L	0.00130
UA	G274	WLOA	2023/06/08	Arsenic, total	mg/L	0.000860
UA	G274	WLOA	2023/08/14	Arsenic, total	mg/L	0.000500
UA	G274	WLOA	2023/11/17	Arsenic, total	mg/L	0.000700
UA	G274	WLOA	2009/09/24	Barium, total	mg/L	0.120
UA	G274	WLOA	2009/11/11	Barium, total	mg/L	0.0920
UA	G274	WLOA	2010/01/27	Barium, total	mg/L	0.0900
UA	G274	WLOA	2010/03/08	Barium, total	mg/L	0.0910
UA	G274	WLOA	2010/07/27	Barium, total	mg/L	0.0800
UA	G274	WLOA	2011/01/31	Barium, total	mg/L	0.0770
UA	G274	WLOA	2012/01/26	Barium, total	mg/L	0.0680
UA	G274	WLOA	2013/01/31	Barium, total	mg/L	0.0590
UA	G274	WLOA	2014/02/19	Barium, total	mg/L	0.0630
UA	G274	WLOA	2015/04/13	Barium, total	mg/L	0.0520
UA	G274	WLOA	2015/07/23	Barium, total	mg/L	0.0680
UA	G274	WLOA	2015/10/08	Barium, total	mg/L	0.0610
UA	G274	WLOA	2020/10/14	Barium, total	mg/L	0.0680
UA	G274	WLOA	2021/02/01	Barium, total	mg/L	0.0830
UA	G274	WLOA	2021/05/19	Barium, total	mg/L	0.0610
UA	G274	WLOA	2021/08/18	Barium, total	mg/L	0.0780
UA	G274	WLOA	2021/10/26	Barium, total	mg/L	0.0980
UA	G274	WLOA	2022/02/10	Barium, total	mg/L	0.0830
UA	G274	WLOA	2022/05/11	Barium, total	mg/L	0.0500
UA	G274	WLOA	2022/08/23	Barium, total	mg/L	0.0930
UA	G274	WLOA	2022/11/09	Barium, total	mg/L	0.0660
UA	G274	WLOA	2023/02/16	Barium, total	mg/L	0.0880
UA	G274	WLOA	2023/06/08	Barium, total	mg/L	0.0740
UA	G274	WLOA	2023/08/14	Barium, total	mg/L	0.0846
UA	G274	WLOA	2023/11/17	Barium, total	mg/L	0.0932
UA	G274	WLOA	2009/09/24	Calcium, total	mg/L	100
UA	G274	WLOA	2009/11/11	Calcium, total	mg/L	100
UA	G274	WLOA	2010/01/27	Calcium, total	mg/L	100
UA	G274	WLOA	2010/03/08	Calcium, total	mg/L	110
UA	G274	WLOA	2010/07/27	Calcium, total	mg/L	110
UA	G274	WLOA	2010/11/16	Calcium, total	mg/L	120
UA	G274	WLOA	2011/01/31	Calcium, total	mg/L	110
UA	G274	WLOA	2011/05/03	Calcium, total	mg/L	120
UA	G274	WLOA	2011/07/27	Calcium, total	mg/L	120
UA	G274	WLOA	2011/11/14	Calcium, total	mg/L	120
UA	G274	WLOA	2012/01/26	Calcium, total	mg/L	110
UA	G274	WLOA	2012/05/22	Calcium, total	mg/L	120
UA	G274	WLOA	2012/07/24	Calcium, total	mg/L	120
UA	G274	WLOA	2012/11/14	Calcium, total	mg/L	120
UA	G274	WLOA	2013/01/31	Calcium, total	mg/L	130
UA	G274	WLOA	2013/05/20	Calcium, total	mg/L	120
UA	G274	WLOA	2013/07/22	Calcium, total	mg/L	110
UA	G274	WLOA	2013/10/14	Calcium, total	mg/L	110
UA	G274	WLOA	2014/02/19	Calcium, total	mg/L	110
UA	G274	WLOA	2014/05/13	Calcium, total	mg/L	98.0
UA	G274	WLOA	2014/08/11	Calcium, total	mg/L	120
UA	G274	WLOA	2014/10/14	Calcium, total	mg/L	100
UA	G274	WLOA	2015/01/21	Calcium, total	mg/L	110
UA	G274	WLOA	2015/04/13	Calcium, total	mg/L	110
UA	G274	WLOA	2009/09/24	Chloride, total	mg/L	55.0
UA	G274	WLOA	2009/11/11	Chloride, total	mg/L	54.0
UA	G274	WLOA	2010/01/27	Chloride, total	mg/L	50.0
UA	G274	WLOA	2010/03/08	Chloride, total	mg/L	49.0
UA	G274	WLOA	2010/07/27	Chloride, total	mg/L	44.0
UA	G274	WLOA	2010/11/16	Chloride, total	mg/L	38.0

UA	G274	WLOA	2011/01/31	Chloride, total	mg/L	39.0
UA	G274	WLOA	2011/05/03	Chloride, total	mg/L	36.0
UA	G274	WLOA	2011/07/27	Chloride, total	mg/L	37.0
UA	G274	WLOA	2011/11/14	Chloride, total	mg/L	37.0
UA	G274	WLOA	2012/01/26	Chloride, total	mg/L	34.0
UA	G274	WLOA	2012/05/22	Chloride, total	mg/L	36.0
UA	G274	WLOA	2012/07/24	Chloride, total	mg/L	40.0
UA	G274	WLOA	2012/11/14	Chloride, total	mg/L	37.0
UA	G274	WLOA	2013/01/31	Chloride, total	mg/L	36.0
UA	G274	WLOA	2013/05/20	Chloride, total	mg/L	3.60
UA	G274	WLOA	2013/07/22	Chloride, total	mg/L	32.0
UA	G274	WLOA	2013/10/14	Chloride, total	mg/L	31.0
UA	G274	WLOA	2014/02/19	Chloride, total	mg/L	32.0
UA	G274	WLOA	2014/05/13	Chloride, total	mg/L	27.0
UA	G274	WLOA	2014/08/11	Chloride, total	mg/L	25.0
UA	G274	WLOA	2014/10/14	Chloride, total	mg/L	23.0
UA	G274	WLOA	2015/01/21	Chloride, total	mg/L	19.0
UA	G274	WLOA	2015/04/13	Chloride, total	mg/L	24.0
UA	G274	WLOA	2015/07/23	Chloride, total	mg/L	24.0
UA	G274	WLOA	2015/10/08	Chloride, total	mg/L	22.0
UA	G274	WLOA	2020/10/14	Chloride, total	mg/L	16.0
UA	G274	WLOA	2021/02/01	Chloride, total	mg/L	10.0
UA	G274	WLOA	2021/05/19	Chloride, total	mg/L	15.0
UA	G274	WLOA	2021/08/18	Chloride, total	mg/L	13.0
UA	G274	WLOA	2021/10/26	Chloride, total	mg/L	7.70
UA	G274	WLOA	2022/02/10	Chloride, total	mg/L	9.40
UA	G274	WLOA	2022/05/11	Chloride, total	mg/L	12.0
UA	G274	WLOA	2022/08/23	Chloride, total	mg/L	12.0
UA	G274	WLOA	2022/11/09	Chloride, total	mg/L	16.0
UA	G274	WLOA	2023/02/16	Chloride, total	mg/L	8.80
UA	G274	WLOA	2023/06/08	Chloride, total	mg/L	14.0
UA	G274	WLOA	2023/08/14	Chloride, total	mg/L	11.0
UA	G274	WLOA	2023/11/17	Chloride, total	mg/L	13.0
UA	G274	WLOA	2009/11/11	Iron, dissolved	mg/L	<0.1
UA	G274	WLOA	2010/01/27	Iron, dissolved	mg/L	<0.1
UA	G274	WLOA	2010/03/08	Iron, dissolved	mg/L	<0.2
UA	G274	WLOA	2010/07/27	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2010/09/20	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2010/11/16	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2011/01/31	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2011/05/03	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2011/07/27	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2011/11/14	Iron, dissolved	mg/L	0.0120
UA	G274	WLOA	2012/01/26	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2012/05/22	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2012/07/24	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2012/11/14	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2013/01/31	Iron, dissolved	mg/L	0.0140
UA	G274	WLOA	2013/05/20	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2013/07/22	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2013/10/14	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2014/02/19	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2014/05/13	Iron, dissolved	mg/L	0.0140
UA	G274	WLOA	2014/08/11	Iron, dissolved	mg/L	0.0110
UA	G274	WLOA	2014/10/14	Iron, dissolved	mg/L	0.0120
UA	G274	WLOA	2015/01/21	Iron, dissolved	mg/L	0.0260
UA	G274	WLOA	2015/04/13	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2015/07/23	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2015/10/08	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2016/02/09	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2016/05/12	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2016/07/27	Iron, dissolved	mg/L	0.130

UA	G274	WLOA	2016/11/21	Iron, dissolved	mg/L	0.0250
UA	G274	WLOA	2017/02/14	Iron, dissolved	mg/L	0.0340
UA	G274	WLOA	2017/05/18	Iron, dissolved	mg/L	3.10
UA	G274	WLOA	2017/07/25	Iron, dissolved	mg/L	2.10
UA	G274	WLOA	2017/11/03	Iron, dissolved	mg/L	3.90
UA	G274	WLOA	2018/01/29	Iron, dissolved	mg/L	5.40
UA	G274	WLOA	2018/05/16	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2018/08/10	Iron, dissolved	mg/L	0.0140
UA	G274	WLOA	2018/11/05	Iron, dissolved	mg/L	<0.1
UA	G274	WLOA	2019/01/22	Iron, dissolved	mg/L	0.0520
UA	G274	WLOA	2019/05/03	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2019/08/26	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2019/10/22	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2020/01/23	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2020/05/05	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2020/08/13	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2020/10/14	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2021/02/01	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2021/05/19	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2021/08/18	Iron, dissolved	mg/L	0.0340
UA	G274	WLOA	2021/10/26	Iron, dissolved	mg/L	0.0160
UA	G274	WLOA	2022/02/10	Iron, dissolved	mg/L	<0.01
UA	G274	WLOA	2022/05/11	Iron, dissolved	mg/L	<0.00072
UA	G274	WLOA	2022/08/23	Iron, dissolved	mg/L	0.0570
UA	G274	WLOA	2022/11/09	Iron, dissolved	mg/L	0.0530
UA	G274	WLOA	2023/02/16	Iron, dissolved	mg/L	0.00590
UA	G274	WLOA	2023/06/08	Iron, dissolved	mg/L	0.120
UA	G274	WLOA	2023/08/14	Iron, dissolved	mg/L	<0.0175
UA	G274	WLOA	2023/11/17	Iron, dissolved	mg/L	0.0120
UA	G274	WLOA	2009/09/24	Magnesium, total	mg/L	55.0
UA	G274	WLOA	2009/11/11	Magnesium, total	mg/L	54.0
UA	G274	WLOA	2010/01/27	Magnesium, total	mg/L	55.0
UA	G274	WLOA	2010/03/08	Magnesium, total	mg/L	58.0
UA	G274	WLOA	2010/07/27	Magnesium, total	mg/L	54.0
UA	G274	WLOA	2011/01/31	Magnesium, total	mg/L	58.0
UA	G274	WLOA	2012/01/26	Magnesium, total	mg/L	59.0
UA	G274	WLOA	2013/01/31	Magnesium, total	mg/L	63.0
UA	G274	WLOA	2014/02/19	Magnesium, total	mg/L	47.0
UA	G274	WLOA	2015/04/13	Magnesium, total	mg/L	56.0
UA	G274	WLOA	2009/11/11	Manganese, dissolved	mg/L	0.00700
UA	G274	WLOA	2010/01/27	Manganese, dissolved	mg/L	0.00390
UA	G274	WLOA	2010/03/08	Manganese, dissolved	mg/L	0.00560
UA	G274	WLOA	2010/07/27	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2010/09/20	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2010/11/16	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2011/01/31	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2011/05/03	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2011/07/27	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2011/11/14	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2012/01/26	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2012/05/22	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2012/07/24	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2012/11/14	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2013/01/31	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2013/05/20	Manganese, dissolved	mg/L	0.00730
UA	G274	WLOA	2013/07/22	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2013/10/14	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2014/02/19	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2014/05/13	Manganese, dissolved	mg/L	0.00590
UA	G274	WLOA	2014/08/11	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2014/10/14	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2015/01/21	Manganese, dissolved	mg/L	0.00360

UA	G274	WLOA	2015/04/13	Manganese, dissolved	mg/L	<0.002
UA	G274	WLOA	2015/07/23	Manganese, dissolved	mg/L	0.00150
UA	G274	WLOA	2015/10/08	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2016/02/09	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2016/05/12	Manganese, dissolved	mg/L	0.0460
UA	G274	WLOA	2016/07/27	Manganese, dissolved	mg/L	0.140
UA	G274	WLOA	2016/11/21	Manganese, dissolved	mg/L	0.140
UA	G274	WLOA	2017/02/14	Manganese, dissolved	mg/L	0.310
UA	G274	WLOA	2017/05/18	Manganese, dissolved	mg/L	0.140
UA	G274	WLOA	2017/07/25	Manganese, dissolved	mg/L	0.0890
UA	G274	WLOA	2017/11/03	Manganese, dissolved	mg/L	0.0740
UA	G274	WLOA	2018/01/29	Manganese, dissolved	mg/L	0.140
UA	G274	WLOA	2018/05/16	Manganese, dissolved	mg/L	0.00270
UA	G274	WLOA	2018/08/10	Manganese, dissolved	mg/L	0.00480
UA	G274	WLOA	2018/11/05	Manganese, dissolved	mg/L	0.00950
UA	G274	WLOA	2019/01/22	Manganese, dissolved	mg/L	0.00430
UA	G274	WLOA	2019/05/03	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2019/08/26	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2019/10/22	Manganese, dissolved	mg/L	0.0290
UA	G274	WLOA	2020/01/23	Manganese, dissolved	mg/L	0.0130
UA	G274	WLOA	2020/05/05	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2020/08/13	Manganese, dissolved	mg/L	0.0220
UA	G274	WLOA	2020/10/14	Manganese, dissolved	mg/L	0.0380
UA	G274	WLOA	2021/02/01	Manganese, dissolved	mg/L	0.00220
UA	G274	WLOA	2021/05/19	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2021/08/18	Manganese, dissolved	mg/L	0.0210
UA	G274	WLOA	2021/10/26	Manganese, dissolved	mg/L	0.00410
UA	G274	WLOA	2022/02/10	Manganese, dissolved	mg/L	<0.001
UA	G274	WLOA	2022/05/11	Manganese, dissolved	mg/L	0.0140
UA	G274	WLOA	2022/08/23	Manganese, dissolved	mg/L	0.0970
UA	G274	WLOA	2022/11/09	Manganese, dissolved	mg/L	0.150
UA	G274	WLOA	2023/02/16	Manganese, dissolved	mg/L	<0.00023
UA	G274	WLOA	2023/06/08	Manganese, dissolved	mg/L	0.0470
UA	G274	WLOA	2023/08/14	Manganese, dissolved	mg/L	0.0157
UA	G274	WLOA	2023/11/17	Manganese, dissolved	mg/L	0.0276
UA	G274	WLOA	2009/09/24	Potassium, total	mg/L	1.20
UA	G274	WLOA	2009/11/11	Potassium, total	mg/L	<0.5
UA	G274	WLOA	2010/01/27	Potassium, total	mg/L	<0.5
UA	G274	WLOA	2010/03/08	Potassium, total	mg/L	<0.5
UA	G274	WLOA	2010/07/27	Potassium, total	mg/L	0.360
UA	G274	WLOA	2011/01/31	Potassium, total	mg/L	0.390
UA	G274	WLOA	2012/01/26	Potassium, total	mg/L	0.370
UA	G274	WLOA	2013/01/31	Potassium, total	mg/L	0.480
UA	G274	WLOA	2014/02/19	Potassium, total	mg/L	0.480
UA	G274	WLOA	2015/04/13	Potassium, total	mg/L	0.500
UA	G274	WLOA	2009/09/24	Sodium, total	mg/L	96.0
UA	G274	WLOA	2009/11/11	Sodium, total	mg/L	100
UA	G274	WLOA	2010/01/27	Sodium, total	mg/L	100
UA	G274	WLOA	2010/03/08	Sodium, total	mg/L	100
UA	G274	WLOA	2010/07/27	Sodium, total	mg/L	97.0
UA	G274	WLOA	2011/01/31	Sodium, total	mg/L	100
UA	G274	WLOA	2012/01/26	Sodium, total	mg/L	100
UA	G274	WLOA	2013/01/31	Sodium, total	mg/L	110
UA	G274	WLOA	2014/02/19	Sodium, total	mg/L	78.0
UA	G274	WLOA	2015/04/13	Sodium, total	mg/L	89.0
UA	G274	WLOA	2009/09/24	Sulfate, total	mg/L	230
UA	G274	WLOA	2009/11/11	Sulfate, total	mg/L	250
UA	G274	WLOA	2010/01/27	Sulfate, total	mg/L	260
UA	G274	WLOA	2010/03/08	Sulfate, total	mg/L	270
UA	G274	WLOA	2010/07/27	Sulfate, total	mg/L	320
UA	G274	WLOA	2010/11/16	Sulfate, total	mg/L	360
UA	G274	WLOA	2011/01/31	Sulfate, total	mg/L	370

UA	G274	WLOA	2011/05/03	Sulfate, total	mg/L	400
UA	G274	WLOA	2011/07/27	Sulfate, total	mg/L	370
UA	G274	WLOA	2011/11/14	Sulfate, total	mg/L	370
UA	G274	WLOA	2012/01/26	Sulfate, total	mg/L	370
UA	G274	WLOA	2012/05/22	Sulfate, total	mg/L	330
UA	G274	WLOA	2012/07/24	Sulfate, total	mg/L	300
UA	G274	WLOA	2012/11/14	Sulfate, total	mg/L	420
UA	G274	WLOA	2013/01/31	Sulfate, total	mg/L	460
UA	G274	WLOA	2013/05/20	Sulfate, total	mg/L	350
UA	G274	WLOA	2013/07/22	Sulfate, total	mg/L	330
UA	G274	WLOA	2013/10/14	Sulfate, total	mg/L	380
UA	G274	WLOA	2014/02/19	Sulfate, total	mg/L	300
UA	G274	WLOA	2014/05/13	Sulfate, total	mg/L	370
UA	G274	WLOA	2014/08/11	Sulfate, total	mg/L	400
UA	G274	WLOA	2014/10/14	Sulfate, total	mg/L	320
UA	G274	WLOA	2015/01/21	Sulfate, total	mg/L	260
UA	G274	WLOA	2015/04/13	Sulfate, total	mg/L	390
UA	G274	WLOA	2015/07/23	Sulfate, total	mg/L	320
UA	G274	WLOA	2015/10/08	Sulfate, total	mg/L	320
UA	G274	WLOA	2020/10/14	Sulfate, total	mg/L	290
UA	G274	WLOA	2021/02/01	Sulfate, total	mg/L	180
UA	G274	WLOA	2021/05/19	Sulfate, total	mg/L	290
UA	G274	WLOA	2021/08/18	Sulfate, total	mg/L	240
UA	G274	WLOA	2021/10/26	Sulfate, total	mg/L	150
UA	G274	WLOA	2022/02/10	Sulfate, total	mg/L	190
UA	G274	WLOA	2022/05/11	Sulfate, total	mg/L	270
UA	G274	WLOA	2022/08/23	Sulfate, total	mg/L	250
UA	G274	WLOA	2022/11/09	Sulfate, total	mg/L	310
UA	G274	WLOA	2023/02/16	Sulfate, total	mg/L	160
UA	G274	WLOA	2023/06/08	Sulfate, total	mg/L	310
UA	G274	WLOA	2023/08/14	Sulfate, total	mg/L	286
UA	G274	WLOA	2023/11/17	Sulfate, total	mg/L	330
UA	G274	WLOA	2022/02/10	Temperature (Celsius)	degrees C	12.1
UA	G274	WLOA	2022/05/11	Temperature (Celsius)	degrees C	18.4
UA	G274	WLOA	2022/08/23	Temperature (Celsius)	degrees C	19.9
UA	G274	WLOA	2022/11/09	Temperature (Celsius)	degrees C	17.8
UA	G274	WLOA	2023/02/16	Temperature (Celsius)	degrees C	11.1
UA	G274	WLOA	2023/06/08	Temperature (Celsius)	degrees C	16.8
UA	G274	WLOA	2023/08/14	Temperature (Celsius)	degrees C	15.6
UA	G274	WLOA	2023/11/17	Temperature (Celsius)	degrees C	15.6
UA	G274	WLOA	2009/09/24	Total Dissolved Solids	mg/L	830
UA	G274	WLOA	2009/11/11	Total Dissolved Solids	mg/L	820
UA	G274	WLOA	2010/01/27	Total Dissolved Solids	mg/L	850
UA	G274	WLOA	2010/03/08	Total Dissolved Solids	mg/L	870
UA	G274	WLOA	2010/07/27	Total Dissolved Solids	mg/L	900
UA	G274	WLOA	2010/11/16	Total Dissolved Solids	mg/L	940
UA	G274	WLOA	2011/01/31	Total Dissolved Solids	mg/L	950
UA	G274	WLOA	2011/05/03	Total Dissolved Solids	mg/L	980
UA	G274	WLOA	2011/07/27	Total Dissolved Solids	mg/L	980
UA	G274	WLOA	2011/11/14	Total Dissolved Solids	mg/L	900
UA	G274	WLOA	2012/01/26	Total Dissolved Solids	mg/L	880
UA	G274	WLOA	2012/05/22	Total Dissolved Solids	mg/L	920
UA	G274	WLOA	2012/07/24	Total Dissolved Solids	mg/L	880
UA	G274	WLOA	2012/11/14	Total Dissolved Solids	mg/L	910
UA	G274	WLOA	2013/01/31	Total Dissolved Solids	mg/L	870
UA	G274	WLOA	2013/05/20	Total Dissolved Solids	mg/L	800
UA	G274	WLOA	2013/07/22	Total Dissolved Solids	mg/L	820
UA	G274	WLOA	2013/10/14	Total Dissolved Solids	mg/L	840
UA	G274	WLOA	2014/02/19	Total Dissolved Solids	mg/L	810
UA	G274	WLOA	2014/05/13	Total Dissolved Solids	mg/L	750
UA	G274	WLOA	2014/08/11	Total Dissolved Solids	mg/L	880
UA	G274	WLOA	2014/10/14	Total Dissolved Solids	mg/L	770

UA	G274	WLOA	2015/01/21	Total Dissolved Solids	mg/L	770
UA	G274	WLOA	2015/04/13	Total Dissolved Solids	mg/L	770
UA	G274	WLOA	2015/07/23	Total Dissolved Solids	mg/L	890
UA	G274	WLOA	2015/10/08	Total Dissolved Solids	mg/L	770
UA	G274	WLOA	2020/10/14	Total Dissolved Solids	mg/L	760
UA	G274	WLOA	2021/02/01	Total Dissolved Solids	mg/L	500
UA	G274	WLOA	2021/05/19	Total Dissolved Solids	mg/L	850
UA	G274	WLOA	2021/08/18	Total Dissolved Solids	mg/L	630
UA	G274	WLOA	2021/10/26	Total Dissolved Solids	mg/L	520
UA	G274	WLOA	2022/02/10	Total Dissolved Solids	mg/L	490
UA	G274	WLOA	2022/05/11	Total Dissolved Solids	mg/L	780
UA	G274	WLOA	2022/08/23	Total Dissolved Solids	mg/L	880
UA	G274	WLOA	2022/11/09	Total Dissolved Solids	mg/L	780
UA	G274	WLOA	2023/02/16	Total Dissolved Solids	mg/L	580
UA	G274	WLOA	2023/06/08	Total Dissolved Solids	mg/L	600
UA	G274	WLOA	2023/08/14	Total Dissolved Solids	mg/L	780
UA	G274	WLOA	2023/11/17	Total Dissolved Solids	mg/L	744
UA	G286	WLOA	2021/03/31	pH (field)	SU	7.0
UA	G286	WLOA	2021/04/22	pH (field)	SU	6.7
UA	G286	WLOA	2021/05/06	pH (field)	SU	7.1
UA	G286	WLOA	2021/05/18	pH (field)	SU	7.1
UA	G286	WLOA	2021/06/15	pH (field)	SU	7.1
UA	G286	WLOA	2021/06/28	pH (field)	SU	7.2
UA	G286	WLOA	2021/07/13	pH (field)	SU	7.0
UA	G286	WLOA	2021/07/27	pH (field)	SU	7.2
UA	G286	WLOA	2021/03/31	Oxidation Reduction Potential	mV	128
UA	G286	WLOA	2021/04/22	Oxidation Reduction Potential	mV	138
UA	G286	WLOA	2021/05/06	Oxidation Reduction Potential	mV	89.5
UA	G286	WLOA	2021/05/18	Oxidation Reduction Potential	mV	79.7
UA	G286	WLOA	2021/06/15	Oxidation Reduction Potential	mV	99.8
UA	G286	WLOA	2021/06/28	Oxidation Reduction Potential	mV	38.4
UA	G286	WLOA	2021/07/13	Oxidation Reduction Potential	mV	130
UA	G286	WLOA	2021/07/27	Oxidation Reduction Potential	mV	92.7
UA	G286	WLOA	2021/03/31	Eh	V	0.33
UA	G286	WLOA	2021/04/22	Eh	V	0.34
UA	G286	WLOA	2021/05/06	Eh	V	0.28
UA	G286	WLOA	2021/05/18	Eh	V	0.28
UA	G286	WLOA	2021/06/15	Eh	V	0.29
UA	G286	WLOA	2021/06/28	Eh	V	0.23
UA	G286	WLOA	2021/07/13	Eh	V	0.32
UA	G286	WLOA	2021/07/27	Eh	V	0.28
UA	G286	WLOA	2021/03/31	Alkalinity, bicarbonate	mg/L CaCO3	310
UA	G286	WLOA	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G286	WLOA	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G286	WLOA	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G286	WLOA	2021/06/15	Alkalinity, bicarbonate	mg/L CaCO3	320
UA	G286	WLOA	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G286	WLOA	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G286	WLOA	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G286	WLOA	2021/03/31	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/04/22	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/05/06	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/05/18	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/06/15	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/06/28	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/07/13	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/07/27	Arsenic, total	mg/L	<0.00022
UA	G286	WLOA	2021/03/31	Barium, total	mg/L	0.0360
UA	G286	WLOA	2021/04/22	Barium, total	mg/L	0.0420
UA	G286	WLOA	2021/05/06	Barium, total	mg/L	0.0340
UA	G286	WLOA	2021/05/18	Barium, total	mg/L	0.0320
UA	G286	WLOA	2021/06/15	Barium, total	mg/L	0.0370

UA	G286	WLOA	2021/06/28	Barium, total	mg/L	0.0400
UA	G286	WLOA	2021/07/13	Barium, total	mg/L	0.0410
UA	G286	WLOA	2021/07/27	Barium, total	mg/L	0.0460
UA	G286	WLOA	2021/03/31	Calcium, total	mg/L	71.0
UA	G286	WLOA	2021/04/22	Calcium, total	mg/L	60.0
UA	G286	WLOA	2021/05/06	Calcium, total	mg/L	66.0
UA	G286	WLOA	2021/05/18	Calcium, total	mg/L	66.0
UA	G286	WLOA	2021/06/15	Calcium, total	mg/L	73.0
UA	G286	WLOA	2021/06/28	Calcium, total	mg/L	70.0
UA	G286	WLOA	2021/07/13	Calcium, total	mg/L	70.0
UA	G286	WLOA	2021/07/27	Calcium, total	mg/L	75.0
UA	G286	WLOA	2021/03/31	Chloride, total	mg/L	3.10
UA	G286	WLOA	2021/04/22	Chloride, total	mg/L	3.20
UA	G286	WLOA	2021/05/06	Chloride, total	mg/L	2.10
UA	G286	WLOA	2021/05/18	Chloride, total	mg/L	1.70
UA	G286	WLOA	2021/06/15	Chloride, total	mg/L	2.70
UA	G286	WLOA	2021/06/28	Chloride, total	mg/L	2.30
UA	G286	WLOA	2021/07/13	Chloride, total	mg/L	2.60
UA	G286	WLOA	2021/07/27	Chloride, total	mg/L	2.70
UA	G286	WLOA	2021/03/31	Magnesium, total	mg/L	32.0
UA	G286	WLOA	2021/04/22	Magnesium, total	mg/L	30.0
UA	G286	WLOA	2021/05/06	Magnesium, total	mg/L	33.0
UA	G286	WLOA	2021/05/18	Magnesium, total	mg/L	31.0
UA	G286	WLOA	2021/06/15	Magnesium, total	mg/L	35.0
UA	G286	WLOA	2021/06/28	Magnesium, total	mg/L	36.0
UA	G286	WLOA	2021/07/13	Magnesium, total	mg/L	37.0
UA	G286	WLOA	2021/07/27	Magnesium, total	mg/L	36.0
UA	G286	WLOA	2021/03/31	Potassium, total	mg/L	0.270
UA	G286	WLOA	2021/04/22	Potassium, total	mg/L	0.450
UA	G286	WLOA	2021/05/06	Potassium, total	mg/L	0.200
UA	G286	WLOA	2021/05/18	Potassium, total	mg/L	0.290
UA	G286	WLOA	2021/06/15	Potassium, total	mg/L	0.250
UA	G286	WLOA	2021/06/28	Potassium, total	mg/L	0.150
UA	G286	WLOA	2021/07/13	Potassium, total	mg/L	0.200
UA	G286	WLOA	2021/07/27	Potassium, total	mg/L	0.280
UA	G286	WLOA	2021/03/31	Sodium, total	mg/L	4.90
UA	G286	WLOA	2021/04/22	Sodium, total	mg/L	5.20
UA	G286	WLOA	2021/05/06	Sodium, total	mg/L	4.70
UA	G286	WLOA	2021/05/18	Sodium, total	mg/L	4.50
UA	G286	WLOA	2021/06/15	Sodium, total	mg/L	4.00
UA	G286	WLOA	2021/06/28	Sodium, total	mg/L	4.70
UA	G286	WLOA	2021/07/13	Sodium, total	mg/L	4.90
UA	G286	WLOA	2021/07/27	Sodium, total	mg/L	5.10
UA	G286	WLOA	2021/03/31	Sulfate, total	mg/L	16.0
UA	G286	WLOA	2021/04/22	Sulfate, total	mg/L	12.0
UA	G286	WLOA	2021/05/06	Sulfate, total	mg/L	13.0
UA	G286	WLOA	2021/05/18	Sulfate, total	mg/L	11.0
UA	G286	WLOA	2021/06/15	Sulfate, total	mg/L	11.0
UA	G286	WLOA	2021/06/28	Sulfate, total	mg/L	14.0
UA	G286	WLOA	2021/07/13	Sulfate, total	mg/L	16.0
UA	G286	WLOA	2021/07/27	Sulfate, total	mg/L	15.0
UA	G286	WLOA	2021/03/31	Temperature (Celsius)	degrees C	9.60
UA	G286	WLOA	2021/04/22	Temperature (Celsius)	degrees C	11.2
UA	G286	WLOA	2021/05/06	Temperature (Celsius)	degrees C	16.0
UA	G286	WLOA	2021/05/18	Temperature (Celsius)	degrees C	13.4
UA	G286	WLOA	2021/06/15	Temperature (Celsius)	degrees C	19.7
UA	G286	WLOA	2021/06/28	Temperature (Celsius)	degrees C	19.8
UA	G286	WLOA	2021/07/13	Temperature (Celsius)	degrees C	19.5
UA	G286	WLOA	2021/07/27	Temperature (Celsius)	degrees C	20.0
UA	G286	WLOA	2021/03/31	Total Dissolved Solids	mg/L	320
UA	G286	WLOA	2021/04/22	Total Dissolved Solids	mg/L	270
UA	G286	WLOA	2021/05/06	Total Dissolved Solids	mg/L	300

UA	G286	WLOA	2021/05/18	Total Dissolved Solids	mg/L	270
UA	G286	WLOA	2021/06/15	Total Dissolved Solids	mg/L	300
UA	G286	WLOA	2021/06/28	Total Dissolved Solids	mg/L	230
UA	G286	WLOA	2021/07/13	Total Dissolved Solids	mg/L	370
UA	G286	WLOA	2021/07/27	Total Dissolved Solids	mg/L	340
UA	G287	WLOA	2021/03/29	pH (field)	SU	7.3
UA	G287	WLOA	2021/04/22	pH (field)	SU	7.1
UA	G287	WLOA	2021/05/06	pH (field)	SU	7.2
UA	G287	WLOA	2021/05/18	pH (field)	SU	7.2
UA	G287	WLOA	2021/06/14	pH (field)	SU	7.1
UA	G287	WLOA	2021/06/28	pH (field)	SU	7.3
UA	G287	WLOA	2021/07/13	pH (field)	SU	7.3
UA	G287	WLOA	2021/07/27	pH (field)	SU	7.3
UA	G287	WLOA	2021/03/29	Oxidation Reduction Potential	mV	59.6
UA	G287	WLOA	2021/04/22	Oxidation Reduction Potential	mV	128
UA	G287	WLOA	2021/05/06	Oxidation Reduction Potential	mV	147
UA	G287	WLOA	2021/05/18	Oxidation Reduction Potential	mV	75.0
UA	G287	WLOA	2021/06/14	Oxidation Reduction Potential	mV	102
UA	G287	WLOA	2021/06/28	Oxidation Reduction Potential	mV	30.6
UA	G287	WLOA	2021/07/13	Oxidation Reduction Potential	mV	125
UA	G287	WLOA	2021/07/27	Oxidation Reduction Potential	mV	117
UA	G287	WLOA	2021/03/29	Eh	V	0.26
UA	G287	WLOA	2021/04/22	Eh	V	0.33
UA	G287	WLOA	2021/05/06	Eh	V	0.34
UA	G287	WLOA	2021/05/18	Eh	V	0.27
UA	G287	WLOA	2021/06/14	Eh	V	0.30
UA	G287	WLOA	2021/06/28	Eh	V	0.22
UA	G287	WLOA	2021/07/13	Eh	V	0.32
UA	G287	WLOA	2021/07/27	Eh	V	0.31
UA	G287	WLOA	2021/03/29	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G287	WLOA	2021/04/22	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G287	WLOA	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	360
UA	G287	WLOA	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G287	WLOA	2021/06/14	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G287	WLOA	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G287	WLOA	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	350
UA	G287	WLOA	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	380
UA	G287	WLOA	2021/03/29	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/04/22	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/05/06	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/05/18	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/06/14	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/06/28	Arsenic, total	mg/L	<0.0002
UA	G287	WLOA	2021/07/13	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/07/27	Arsenic, total	mg/L	<0.00022
UA	G287	WLOA	2021/03/29	Barium, total	mg/L	0.0560
UA	G287	WLOA	2021/04/22	Barium, total	mg/L	0.0620
UA	G287	WLOA	2021/05/06	Barium, total	mg/L	0.0600
UA	G287	WLOA	2021/05/18	Barium, total	mg/L	0.0570
UA	G287	WLOA	2021/06/14	Barium, total	mg/L	0.0690
UA	G287	WLOA	2021/06/28	Barium, total	mg/L	0.0660
UA	G287	WLOA	2021/07/13	Barium, total	mg/L	0.0640
UA	G287	WLOA	2021/07/27	Barium, total	mg/L	0.0670
UA	G287	WLOA	2021/03/29	Calcium, total	mg/L	73.0
UA	G287	WLOA	2021/04/22	Calcium, total	mg/L	79.0
UA	G287	WLOA	2021/05/06	Calcium, total	mg/L	79.0
UA	G287	WLOA	2021/05/18	Calcium, total	mg/L	77.0
UA	G287	WLOA	2021/06/14	Calcium, total	mg/L	85.0
UA	G287	WLOA	2021/06/28	Calcium, total	mg/L	77.0
UA	G287	WLOA	2021/07/13	Calcium, total	mg/L	73.0
UA	G287	WLOA	2021/07/27	Calcium, total	mg/L	81.0
UA	G287	WLOA	2021/03/29	Chloride, total	mg/L	23.0

UA	G287	WLOA	2021/04/22	Chloride, total	mg/L	27.0
UA	G287	WLOA	2021/05/06	Chloride, total	mg/L	23.0
UA	G287	WLOA	2021/05/18	Chloride, total	mg/L	24.0
UA	G287	WLOA	2021/06/14	Chloride, total	mg/L	22.0
UA	G287	WLOA	2021/06/28	Chloride, total	mg/L	28.0
UA	G287	WLOA	2021/07/13	Chloride, total	mg/L	35.0
UA	G287	WLOA	2021/07/27	Chloride, total	mg/L	24.0
UA	G287	WLOA	2021/03/29	Magnesium, total	mg/L	39.0
UA	G287	WLOA	2021/04/22	Magnesium, total	mg/L	40.0
UA	G287	WLOA	2021/05/06	Magnesium, total	mg/L	41.0
UA	G287	WLOA	2021/05/18	Magnesium, total	mg/L	38.0
UA	G287	WLOA	2021/06/14	Magnesium, total	mg/L	41.0
UA	G287	WLOA	2021/06/28	Magnesium, total	mg/L	40.0
UA	G287	WLOA	2021/07/13	Magnesium, total	mg/L	38.0
UA	G287	WLOA	2021/07/27	Magnesium, total	mg/L	40.0
UA	G287	WLOA	2021/03/29	Potassium, total	mg/L	0.300
UA	G287	WLOA	2021/04/22	Potassium, total	mg/L	0.690
UA	G287	WLOA	2021/05/06	Potassium, total	mg/L	0.240
UA	G287	WLOA	2021/05/18	Potassium, total	mg/L	0.260
UA	G287	WLOA	2021/06/14	Potassium, total	mg/L	0.620
UA	G287	WLOA	2021/06/28	Potassium, total	mg/L	0.330
UA	G287	WLOA	2021/07/13	Potassium, total	mg/L	0.290
UA	G287	WLOA	2021/07/27	Potassium, total	mg/L	0.410
UA	G287	WLOA	2021/03/29	Sodium, total	mg/L	51.0
UA	G287	WLOA	2021/04/22	Sodium, total	mg/L	58.0
UA	G287	WLOA	2021/05/06	Sodium, total	mg/L	49.0
UA	G287	WLOA	2021/05/18	Sodium, total	mg/L	52.0
UA	G287	WLOA	2021/06/14	Sodium, total	mg/L	52.0
UA	G287	WLOA	2021/06/28	Sodium, total	mg/L	52.0
UA	G287	WLOA	2021/07/13	Sodium, total	mg/L	51.0
UA	G287	WLOA	2021/07/27	Sodium, total	mg/L	54.0
UA	G287	WLOA	2021/03/29	Sulfate, total	mg/L	44.0
UA	G287	WLOA	2021/04/22	Sulfate, total	mg/L	46.0
UA	G287	WLOA	2021/05/06	Sulfate, total	mg/L	43.0
UA	G287	WLOA	2021/05/18	Sulfate, total	mg/L	41.0
UA	G287	WLOA	2021/06/14	Sulfate, total	mg/L	43.0
UA	G287	WLOA	2021/06/28	Sulfate, total	mg/L	50.0
UA	G287	WLOA	2021/07/13	Sulfate, total	mg/L	45.0
UA	G287	WLOA	2021/07/27	Sulfate, total	mg/L	43.0
UA	G287	WLOA	2021/03/29	Temperature (Celsius)	degrees C	11.1
UA	G287	WLOA	2021/04/22	Temperature (Celsius)	degrees C	11.6
UA	G287	WLOA	2021/05/06	Temperature (Celsius)	degrees C	11.9
UA	G287	WLOA	2021/05/18	Temperature (Celsius)	degrees C	12.9
UA	G287	WLOA	2021/06/14	Temperature (Celsius)	degrees C	17.9
UA	G287	WLOA	2021/06/28	Temperature (Celsius)	degrees C	19.3
UA	G287	WLOA	2021/07/13	Temperature (Celsius)	degrees C	18.2
UA	G287	WLOA	2021/07/27	Temperature (Celsius)	degrees C	19.3
UA	G287	WLOA	2021/03/29	Total Dissolved Solids	mg/L	410
UA	G287	WLOA	2021/04/22	Total Dissolved Solids	mg/L	490
UA	G287	WLOA	2021/05/06	Total Dissolved Solids	mg/L	420
UA	G287	WLOA	2021/05/18	Total Dissolved Solids	mg/L	450
UA	G287	WLOA	2021/06/14	Total Dissolved Solids	mg/L	440
UA	G287	WLOA	2021/06/28	Total Dissolved Solids	mg/L	350
UA	G287	WLOA	2021/07/13	Total Dissolved Solids	mg/L	480
UA	G287	WLOA	2021/07/27	Total Dissolved Solids	mg/L	450
UA	G288	WLOA	2021/03/30	pH (field)	SU	7.0
UA	G288	WLOA	2021/04/21	pH (field)	SU	7.1
UA	G288	WLOA	2021/05/06	pH (field)	SU	7.1
UA	G288	WLOA	2021/05/18	pH (field)	SU	7.2
UA	G288	WLOA	2021/06/15	pH (field)	SU	7.1
UA	G288	WLOA	2021/06/28	pH (field)	SU	7.3
UA	G288	WLOA	2021/07/13	pH (field)	SU	7.2

UA	G288	WLOA	2021/07/27	pH (field)	SU	7.5
UA	G288	WLOA	2021/03/30	Oxidation Reduction Potential	mV	40.3
UA	G288	WLOA	2021/04/21	Oxidation Reduction Potential	mV	-21.0
UA	G288	WLOA	2021/05/06	Oxidation Reduction Potential	mV	-10.9
UA	G288	WLOA	2021/05/18	Oxidation Reduction Potential	mV	-74.3
UA	G288	WLOA	2021/06/15	Oxidation Reduction Potential	mV	-122
UA	G288	WLOA	2021/06/28	Oxidation Reduction Potential	mV	-96.7
UA	G288	WLOA	2021/07/13	Oxidation Reduction Potential	mV	-94.9
UA	G288	WLOA	2021/07/27	Oxidation Reduction Potential	mV	-113
UA	G288	WLOA	2021/03/30	Eh	V	0.24
UA	G288	WLOA	2021/05/06	Eh	V	0.19
UA	G288	WLOA	2021/05/18	Eh	V	0.12
UA	G288	WLOA	2021/06/15	Eh	V	0.073
UA	G288	WLOA	2021/06/28	Eh	V	0.097
UA	G288	WLOA	2021/07/13	Eh	V	0.099
UA	G288	WLOA	2021/07/27	Eh	V	0.080
UA	G288	WLOA	2021/03/30	Alkalinity, bicarbonate	mg/L CaCO3	260
UA	G288	WLOA	2021/04/21	Alkalinity, bicarbonate	mg/L CaCO3	240
UA	G288	WLOA	2021/05/06	Alkalinity, bicarbonate	mg/L CaCO3	250
UA	G288	WLOA	2021/05/18	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G288	WLOA	2021/06/15	Alkalinity, bicarbonate	mg/L CaCO3	280
UA	G288	WLOA	2021/06/28	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G288	WLOA	2021/07/13	Alkalinity, bicarbonate	mg/L CaCO3	290
UA	G288	WLOA	2021/07/27	Alkalinity, bicarbonate	mg/L CaCO3	300
UA	G288	WLOA	2021/03/30	Arsenic, total	mg/L	0.00110
UA	G288	WLOA	2021/04/21	Arsenic, total	mg/L	0.00120
UA	G288	WLOA	2021/05/06	Arsenic, total	mg/L	0.00300
UA	G288	WLOA	2021/05/18	Arsenic, total	mg/L	0.00560
UA	G288	WLOA	2021/06/15	Arsenic, total	mg/L	0.00470
UA	G288	WLOA	2021/06/28	Arsenic, total	mg/L	0.00400
UA	G288	WLOA	2021/07/13	Arsenic, total	mg/L	0.00350
UA	G288	WLOA	2021/07/27	Arsenic, total	mg/L	0.00470
UA	G288	WLOA	2021/03/30	Barium, total	mg/L	0.0460
UA	G288	WLOA	2021/04/21	Barium, total	mg/L	0.0370
UA	G288	WLOA	2021/05/06	Barium, total	mg/L	0.0620
UA	G288	WLOA	2021/05/18	Barium, total	mg/L	0.0730
UA	G288	WLOA	2021/06/15	Barium, total	mg/L	0.0740
UA	G288	WLOA	2021/06/28	Barium, total	mg/L	0.0760
UA	G288	WLOA	2021/07/13	Barium, total	mg/L	0.0780
UA	G288	WLOA	2021/07/27	Barium, total	mg/L	0.0810
UA	G288	WLOA	2021/03/30	Calcium, total	mg/L	69.0
UA	G288	WLOA	2021/04/21	Calcium, total	mg/L	170
UA	G288	WLOA	2021/05/06	Calcium, total	mg/L	72.0
UA	G288	WLOA	2021/05/18	Calcium, total	mg/L	75.0
UA	G288	WLOA	2021/06/15	Calcium, total	mg/L	79.0
UA	G288	WLOA	2021/06/28	Calcium, total	mg/L	74.0
UA	G288	WLOA	2021/07/13	Calcium, total	mg/L	71.0
UA	G288	WLOA	2021/07/27	Calcium, total	mg/L	80.0
UA	G288	WLOA	2021/03/30	Chloride, total	mg/L	18.0
UA	G288	WLOA	2021/04/21	Chloride, total	mg/L	31.0
UA	G288	WLOA	2021/05/06	Chloride, total	mg/L	28.0
UA	G288	WLOA	2021/05/18	Chloride, total	mg/L	25.0
UA	G288	WLOA	2021/06/15	Chloride, total	mg/L	31.0
UA	G288	WLOA	2021/06/28	Chloride, total	mg/L	38.0
UA	G288	WLOA	2021/07/13	Chloride, total	mg/L	51.0
UA	G288	WLOA	2021/07/27	Chloride, total	mg/L	32.0
UA	G288	WLOA	2021/03/30	Magnesium, total	mg/L	32.0
UA	G288	WLOA	2021/04/21	Magnesium, total	mg/L	75.0
UA	G288	WLOA	2021/05/06	Magnesium, total	mg/L	30.0
UA	G288	WLOA	2021/05/18	Magnesium, total	mg/L	31.0
UA	G288	WLOA	2021/06/15	Magnesium, total	mg/L	33.0
UA	G288	WLOA	2021/06/28	Magnesium, total	mg/L	33.0

UA	G288	WLOA	2021/07/13	Magnesium, total	mg/L	31.0
UA	G288	WLOA	2021/07/27	Magnesium, total	mg/L	34.0
UA	G288	WLOA	2021/03/30	Potassium, total	mg/L	0.430
UA	G288	WLOA	2021/04/21	Potassium, total	mg/L	1.40
UA	G288	WLOA	2021/05/06	Potassium, total	mg/L	0.470
UA	G288	WLOA	2021/05/18	Potassium, total	mg/L	0.550
UA	G288	WLOA	2021/06/15	Potassium, total	mg/L	0.440
UA	G288	WLOA	2021/06/28	Potassium, total	mg/L	0.420
UA	G288	WLOA	2021/07/13	Potassium, total	mg/L	0.390
UA	G288	WLOA	2021/07/27	Potassium, total	mg/L	0.470
UA	G288	WLOA	2021/03/30	Sodium, total	mg/L	30.0
UA	G288	WLOA	2021/04/21	Sodium, total	mg/L	160
UA	G288	WLOA	2021/05/06	Sodium, total	mg/L	31.0
UA	G288	WLOA	2021/05/18	Sodium, total	mg/L	36.0
UA	G288	WLOA	2021/06/15	Sodium, total	mg/L	35.0
UA	G288	WLOA	2021/06/28	Sodium, total	mg/L	35.0
UA	G288	WLOA	2021/07/13	Sodium, total	mg/L	34.0
UA	G288	WLOA	2021/07/27	Sodium, total	mg/L	36.0
UA	G288	WLOA	2021/03/30	Sulfate, total	mg/L	600
UA	G288	WLOA	2021/04/21	Sulfate, total	mg/L	770
UA	G288	WLOA	2021/05/06	Sulfate, total	mg/L	41.0
UA	G288	WLOA	2021/05/18	Sulfate, total	mg/L	29.0
UA	G288	WLOA	2021/06/15	Sulfate, total	mg/L	37.0
UA	G288	WLOA	2021/06/28	Sulfate, total	mg/L	42.0
UA	G288	WLOA	2021/07/13	Sulfate, total	mg/L	43.0
UA	G288	WLOA	2021/07/27	Sulfate, total	mg/L	42.0
UA	G288	WLOA	2021/03/30	Temperature (Celsius)	degrees C	12.3
UA	G288	WLOA	2021/05/06	Temperature (Celsius)	degrees C	13.3
UA	G288	WLOA	2021/05/18	Temperature (Celsius)	degrees C	13.2
UA	G288	WLOA	2021/06/15	Temperature (Celsius)	degrees C	15.2
UA	G288	WLOA	2021/06/28	Temperature (Celsius)	degrees C	17.6
UA	G288	WLOA	2021/07/13	Temperature (Celsius)	degrees C	17.3
UA	G288	WLOA	2021/07/27	Temperature (Celsius)	degrees C	19.1
UA	G288	WLOA	2021/03/30	Total Dissolved Solids	mg/L	310
UA	G288	WLOA	2021/04/21	Total Dissolved Solids	mg/L	1,400
UA	G288	WLOA	2021/05/06	Total Dissolved Solids	mg/L	350
UA	G288	WLOA	2021/05/18	Total Dissolved Solids	mg/L	390
UA	G288	WLOA	2021/06/15	Total Dissolved Solids	mg/L	330
UA	G288	WLOA	2021/06/28	Total Dissolved Solids	mg/L	340
UA	G288	WLOA	2021/07/13	Total Dissolved Solids	mg/L	390
UA	G288	WLOA	2021/07/27	Total Dissolved Solids	mg/L	410
UA	MW20S	WLOA	2015/10/07	pH (field)	SU	8.0
UA	MW20S	WLOA	2015/10/07	Arsenic, total	mg/L	0.00490
UA	MW20S	WLOA	2015/10/07	Barium, total	mg/L	0.200
UA	MW20S	WLOA	2015/10/07	Chloride, total	mg/L	17.0
UA	MW20S	WLOA	2015/10/07	Iron, dissolved	mg/L	<0.01
UA	MW20S	WLOA	2015/10/07	Manganese, dissolved	mg/L	0.300
UA	MW20S	WLOA	2015/10/07	Sulfate, total	mg/L	89.0
UA	MW20S	WLOA	2015/10/07	Total Dissolved Solids	mg/L	460

Notes:

< = results is less than detection limit

B = Background

C = Compliance

HSU = Hydrostratigraphic Unit

DA = Deep Aquifer

LCU = Lower Confining Unit

UA = Uppermost Aquifer

mg/L = milligrams per liter

SU = standard units

V = volts

Attachment H

Memorandum – Evaluation of Partition Coefficients – Coffeen GMF Recycle Pond

Geosyntec consultants

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Memorandum

Date:	July 5, 2022
To:	David Mitchell, Stu Cravens, Vic Modeer Illinois Power Generating Company
Copies to:	Brian Hennings - Ramboll
From:	Allison Kreinberg, Ryan Fimmen – Geosyntec Consultants, Inc.
Subject:	Evaluation of Partition Coefficient Results – Coffeen GMF Recycle Pond CCR Unit 104, Coffeen Power Plant, Coffeen, Illinois

INTRODUCTION

The Illinois Power Generation Company (IPGC) currently operates the Coffeen Power Plant (CPP) in Coffeen, Illinois. The coal combustion residuals (CCR) Unit referred to as the Gypsum Management Facility (GMP) Recycle Pond (RP) (Vistra identification [ID] number [No.] 104; Illinois Environmental Protection Agency [IEPA] ID No. W1350150004-04; National Inventory of Dams [NID] No. IL50578) is a 17-acre pond that receives blowdown from the air emission scrubber. The pond was in operation starting in 2010 until April 11, 2021, when IPGC ceased receipt of waste to the GMF RP. Geosyntec Consultants (Geosyntec) is assisting IPGC with Part 845 compliance at the Site.

IPGC is currently preparing a Construction Permit application for the GMF RP as required under Section 845.220. As part of the Construction Permit application, groundwater modeling is being completed for known potential exceedances of groundwater protection standards (GWPS) as outlined in the Operating Permit (Burns & McDonnell, 2021). In the Operating Permit (October 2021), Burns & McDonnell identified potential GWPS exceedances for several compounds potentially associated with the GMF RP, including boron, sulfate, and total dissolved solids (TDS). Batch adsorption testing was conducted for boron and sulfate to generate site-specific partition coefficients. This technical memorandum summarizes the results of the batch adsorption testing and calculation of partition coefficients.

BATCH ATTENUATION TESTING

In 2021 Geosyntec conducted a field investigation at the GMF RP which included completion of two (2) soil/rock borings ranging in depth from 18 to 28 feet below ground surface. As part of that investigation, soil and groundwater samples were submitted to SiREM Laboratories (Guelph, ON) for batch solid/liquid partitioning testing. A summary of the soil samples used for the batch testing is provided in **Table 1**.

One groundwater sample (G215) and one soil sample (SB-215) were used for batch attenuation testing at five (5) soil:solution ratios (**Table 1**), each ran in duplicate. For each treatment, 0.1 L of groundwater was brought into contact with varying amounts of soil (0.004 to 0.2 kg, depending on the ratio) and equilibrated over a seven-day period. One set of microcosms was amended (i.e., spiked) with sodium sulfate (Na_2SO_4) and another with boric acid (H_3BO_3) to achieve target concentrations of sulfate and boron, respectively (**Table 2**).

An initial sample of the stock solution for each experimental design was collected on Day 0, and a control sample (i.e., only amended G215 groundwater with no aquifer solids) was collected on Day 7 after tumbling in polypropylene bottleware to evaluate any loss to interactions with the bottleware or ambient conditions. Duplicates were constructed for each microcosm, including the control samples. After seven days of contact time, an aliquot of the free liquid was collected and filtered through a 0.45 micron (μm) filter prior to analysis for dissolved concentrations of sulfate and/or boron. The oxidation/reduction potential (redox) and pH were measured for each batch test at the beginning and end of the contact period and in the control samples.

Data obtained from the tests (**Tables 3** and **4**) were used to construct isotherms for boron and sulfate; 5-point isotherms were constructed by averaging duplicate results for each soil:solution ratio. Mathematical fitting was used to calculate the partition coefficients (K_d), assuming linear adsorption. The linear adsorption equation was used:

$$q_e = K_d \times C_e \qquad \text{Eq. 1}$$

where q_e is the mass of constituent adsorbed to the solid phase at equilibrium, C_e is the remaining aqueous constituent concentration at equilibrium, and K_d is the linear sorption coefficient (reported in liters per kilogram [L/kg]). Some of the data showed a deviation from a linear trend, and so were also fitted using non-linear isotherms. The non-linear Langmuir isotherm was used:

$$q_e = \frac{q_m K_L C_e}{1 + K_L C_e} \qquad \text{Eq. 2}$$

where q_m is the inverse of the slope and K_L is the Langmuir partition coefficient. The adsorption data were linearized according to:

$$\frac{C_e}{q_e} = \frac{1}{(K_L \times q_m)} + \frac{C_e}{q_m} \quad \text{Eq. 3}$$

A common non-linear Freundlich equation was also used:

$$q_e = K_F (C_e)^{1/n} \quad \text{Eq. 4}$$

where q_e is the mass of constituent adsorbed to the solid phase at equilibrium, C_e is the remaining aqueous constituent concentration at equilibrium, K_F is the Freundlich partition coefficient, and $1/n$ is a non-linearity constant. The adsorption data were plotted as log-transformed values to perform the non-linear isotherm fitting using the linearized Freundlich equation:

$$log(q_e) = \log(K_F) + (1/n)\log(C_e) \quad \text{Eq. 5}$$

The calculated linear, Langmuir, and Freundlich partition coefficients (K_d, K_L, and K_F, respectively) and $1/n$ values are shown in **Table 5**.

SUMMARY OF RESULTS

The partition coefficient values for each amendment (denoted as G215-SO_4 when amended with sodium sulfate and G215-B when amended with boric acid) are presented in **Table 5**. Figures which show the linear, Langmuir, and Freundlich isotherms for boron and sulfate are provided in **Appendix A**. Measurements of soil boron concentrations in SB-215 are pending; a surrogate value of 0 mg/kg was used, consistent with soil boron concentrations from other areas at the CPP.

A boron partition coefficient was not determined for any isotherm for the boron amended microcosms. Both the linear and linearized Langmuir isotherms yielded negative partition coefficients, and the linearized Freundlich could not be calculated as the data were not conducive to log transformation. Other studies have reported low partition coefficients for boron ranging from 0.19 to 1.3 L/kg, depending on pH conditions and the amount of sorbent present (EPRI, 2005; Strenge & Peterson, 1989).

A sulfate partition coefficient was not determined for any isotherm for the sulfate amended microcosms. The linear isotherm yielded a partition coefficient of 0.1 L/kg but had a very poor goodness-of-fit, and the Langmuir isotherm yielded a negative coefficient. As in the boron-amended microcosms, the Freundlich isotherm could not be calculated because the data were not conducive to log transformation These results are consistent with the findings of Strenge and Peterson (1989), who found that partition coefficients for sulfate are 0.0 L/kg, regardless of pH conditions and the amount of sorbent present.

REFERENCES

EPRI, 2005. *Chemical constituents in coal combustion product leachate: boron. Final Report 1005258.*

Burns & McDonnell. 2021. Initial Operating Permit Coffeen GMF Recycle Pond. October

Strenge, D. and Peterson, S. 1989. Chemical Data Bases for the Multimedia Environmental Pollutant Assessment System (MEPAS) (No. PNL-7145). Pacific Northwest National Laboratory, Richland, WA (USA).

TABLES

Table 1 - Batch Attenuation Testing Data Summary
Coffeen GMF RP

Geosyntec Consultants

Groundwater Sample ID	Soil Sample ID	Soil: Water Ratio
G215	SB-215 (19-24.5 ft bgs) Sodium Sulfate Amendment	2:1.5
		1:1.3
		1:5.8
		1:11.5
		1:27.2
G215	SB-215 (19-24.5 ft bgs) Boric Acid Amendment	2:1.5
		1:1.3
		1:5.8
		1:11.5
		1:28.1

Notes:

ft bgs = feet below ground surface

Table 2 - Microcosm Amendment and Target Concentrations
Coffeen GMF RP

Geosyntec Consultants

Groundwater Sample ID	Soil Sample ID	Compound	Amendment	Target Concentration (mg/L)
G215	SB-215 (19-24.5 ft bgs)	Boron	31.93 mL of a 2 g/L H_3BO_3	6
		Sulfate	3.41 g of Na_2SO_4	1500

Notes:
ft bgs - feet below ground surface
mg/L - milligrams per liter
Na_2SO_4 - sodium sulfate
H_3BO_3 - boric acid

Table 3 - Batch Attenuation Testing Results
Coffeen GMF RP - Sodium Sulfate Amendment

Groundwater Sample ID	Geologic Material Sample ID	Treatment	Date	Day	Replicate	Dissolved Sulfate	pH	ORP
						mg/L	SU	mV
G215	--	Groundwater Only Control	25-Jan-22	0	G215-1a (SO_4^{2-})	1,589	6.98	83
					G215-2a (SO_4^{2-})	1,826	6.99	79
					Average Concentration (mg/L)	**1,708**	**6.99**	**81**
			7-Feb-22	7	G215-1 (SO_4^{2-})	1,617	6.8	26
					G215-2 (SO_4^{2-})	1,478	6.81	13
					Average Concentration (mg/L)	**1,548**	**6.81**	**20**
	G215 SB-215 Geologic Material	2:1 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 2:1-1 (SO_4^{2-})	1,321	6.92	57
					SB-215-(19-24.5) :G215 2:1-2 (SO_4^{2-})	1,302	6.94	103
					Average Concentration (mg/L)	**1,311**	**6.93**	**80**
		1:1 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:1-1 (SO_4^{2-})	1,727	6.89	85
					SB-215-(19-24.5) :G215 1:1-2 (SO_4^{2-})	860	6.91	91
					Average Concentration (mg/L)	**1,294**	**6.90**	**88**
		1:5 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:5-1 (SO_4^{2-})	1,326	6.92	29
					SB-215-(19-24.5) :G215 1:5-2 (SO_4^{2-})	1,516	6.87	15
					Average Concentration (mg/L)	**1,421**	**6.90**	**22**
		1:10 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:10-1 (SO_4^{2-})	1,570	6.87	23
					SB-215-(19-24.5) :G215 1:10-2 (SO_4^{2-})	1,551	6.85	30
					Average Concentration (mg/L)	**1,560**	**6.86**	**27**
		1:20 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:20-1 (SO_4^{2-})	1,511	6.83	32
					SB-215-(19-24.5) :G215 1:20-2 (SO_4^{2-})	1,588	6.84	79
					Average Concentration (mg/L)	**1,550**	**6.84**	**56**

Notes:
mg/L - milligrams per liter
mV - millivolts
SU - Standard Units
ORP - oxidation/reduction potential

Table 4 - Batch Attenuation Testing Results
Coffeen GMF RP - Boric Acid Amendment

Geosyntec Consultants

Groundwater Sample ID	Geologic Material Sample ID	Treatment	Date	Day	Replicate	Dissolved Boron	pH	ORP
						mg/L	SU	mV
G215	--	Groundwater Only Control	25-Jan-22	0	G215-1a (B)	4.6	6.88	90
					G215-2a (B)	4.7	6.85	72
					Average Concentration (mg/L)	**4.7**	**6.87**	**81**
			7-Feb-22	7	G215-1 (B)	5.3	6.9	57
					G215-2 (B)	5.4	7.03	13
					Average Concentration (mg/L)	**5.4**	**6.97**	**35**
	G215 SB-215 Geologic Material	2:1 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 2:1-1 (B)	3.4	6.91	9
					SB-215-(19-24.5) :G215 2:1-2 (B)	3.4	7.05	11
					Average Concentration (mg/L)	**3.4**	**6.98**	**10**
		1:1 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:1-1 (B)	4.3	6.98	15
					SB-215-(19-24.5) :G215 1:1-2 (B)	4.3	7.06	31
					Average Concentration (mg/L)	**4.3**	**7.02**	**23**
		1:5 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:5-1 (B)	5.0	6.96	49
					SB-215-(19-24.5) :G215 1:5-2 (B)	5.2	7.00	19
					Average Concentration (mg/L)	**5.1**	**6.98**	**34**
		1:10 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:10-1 (B)	5.5	6.95	20
					SB-215-(19-24.5) :G215 1:10-2 (B)	5.3	6.95	29
					Average Concentration (mg/L)	**5.4**	**6.95**	**25**
		1:20 Soil:Water Ratio	31-Jan-22	0				
			7-Feb-22	7	SB-215-(19-24.5) :G215 1:20-1 (B)	5.6	6.93	174
					SB-215-(19-24.5) :G215 1:20-2 (B)	5.5	6.84	102
					Average Concentration (mg/L)	**5.5**	**6.89**	**138**

Notes:
mg/L - milligrams per liter
mV - millivolts
SU - Standard Units
ORP - oxidation/reduction potential

Table 5 - Partition Coefficient Results
Coffeen GMF RP

Analyte	Amendment	Isotherm	Variable	Value
Boron	Boric Acid	Linear	R^2	0.518
			K_D (L/kg)	-8.45
		Langmuir	R^2	0.47
			q_m (mg/g)	0.000
			K_L (L/kg)	-1.87E+05
		Freundlich	R^2	--
			1/n	--
			K_F (L/kg)	--
Sulfate	Sodium Sulfate	Linear	R^2	0.0
			K_D (L/kg)	0.10
		Langmuir	R^2	0.66
			q_m (mg/g)	-0.028
			K_L (L/kg)	-8.94E+02
		Freundlich	R^2	--
			1/n	--
			K_F (L/kg)	--

Notes:

The Freundlich isotherm was not calculated for boron or sulfate because the data were not conducive to log transformation

K_D - linear partition coefficient

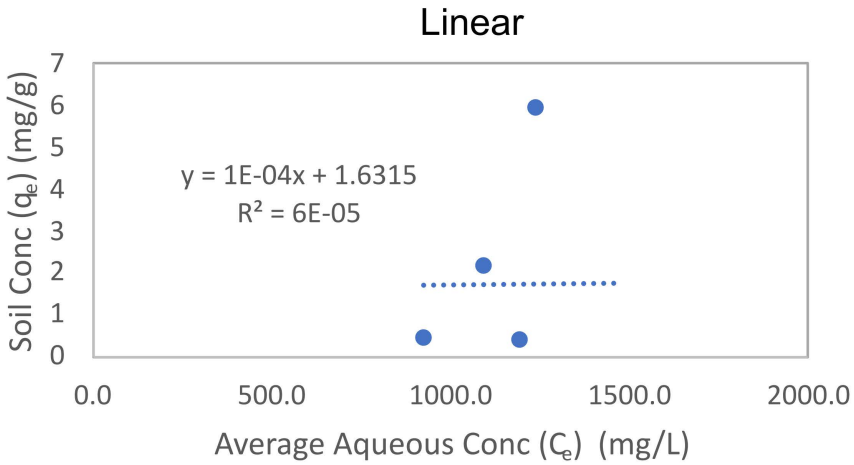
K_L - Langmuir partition coefficient

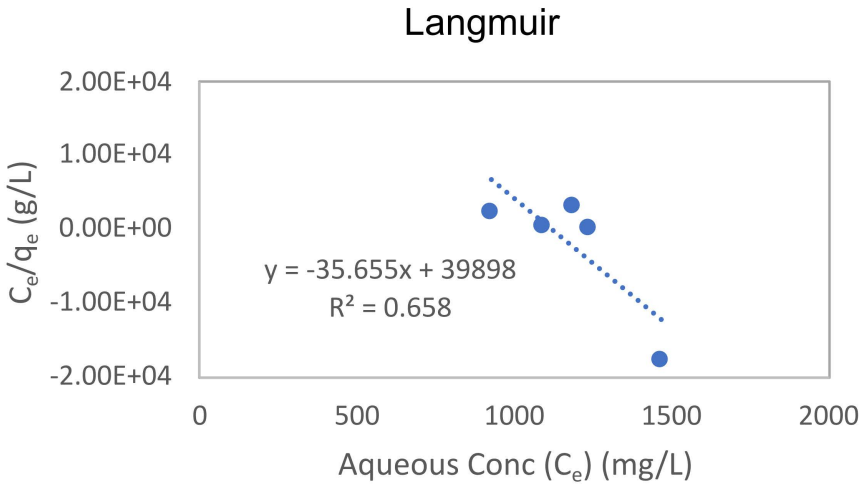
K_F - Freundlich partition coefficient

q_m - inverse of the slope of the linearized Langmuir isotherm

n - non-linearity constant of the Freundlich isotherm

APPENDIX A
BATCH TESTING ISOTHERM PLOTS





Notes:

The Freundlich isotherm was not calculated because the data were not conducive to log transformation.

q_e - mass of constituent adsorbed to the solid phase
C_e - remaining aqueous constituent concentration
mg/L - milligrams per liter
mg/g - milligrams per gram
g/L - grams per liter

G215-SO_4 Sulfate Partitioning Coefficients
Coffeen Power Plant GMF RP
Coffeen, Illinois

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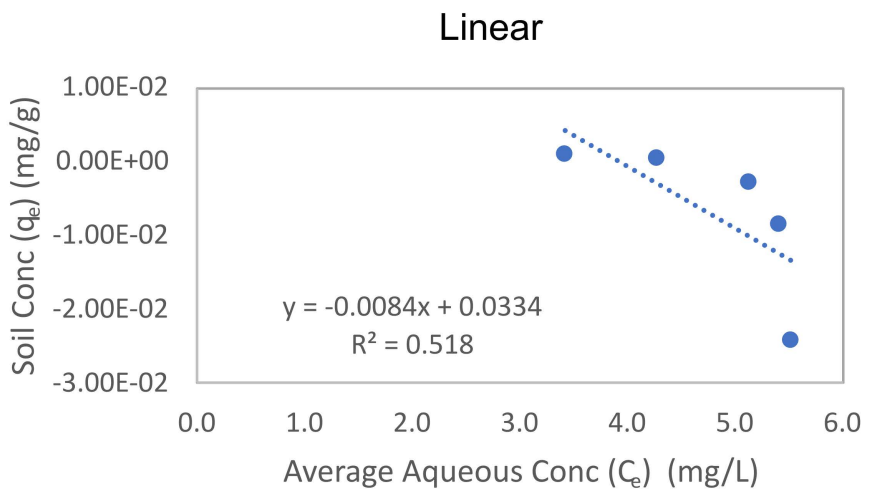
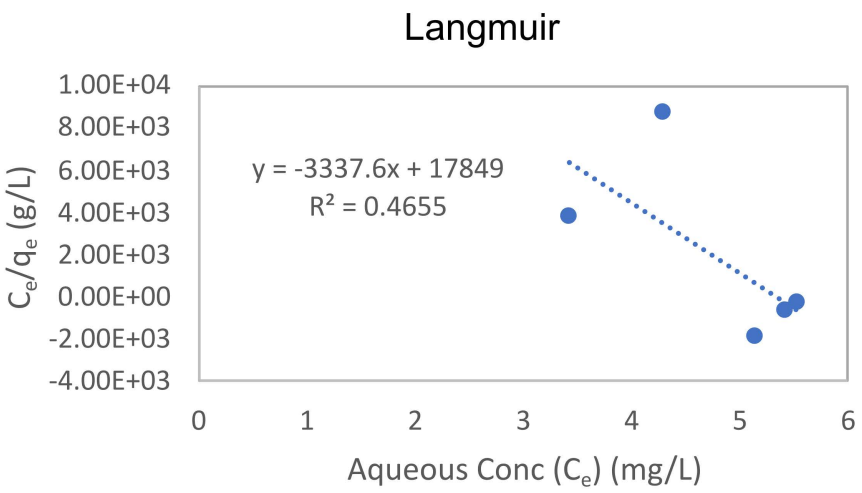
Figure 1





Notes:

The Freundlich isotherm was not calculated because the data were not conducive to log transformation.

q_e - mass of constituent adsorbed to the solid phase
C_e - remaining aqueous constituent concentration
mg/L - milligrams per liter
mg/g - milligrams per gram
g/L - grams per liter

G215-B Boron Partitioning Coefficients
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Figure **2**