City Water, Light & Power
Springfield, Illinois

Groundwater Monitoring Program – CCR Surface Impoundments

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1. INTRODUCTION

City Water, Light and Power (CWLP) owns two (2) existing coal combustion residual (CCR) surface impoundments and intends to comply with the rules promulgated by the U.S. Environmental Protection Agency (EPA) pertaining to Disposal of CCR from Electric Utilities published in 40 CFR Part 257 on April 17, 2015 in 80 FR 21202; and with the Technical Amendments published on July 2, 2015 in 80 FR 21468 and Technical Amendments published on July 30, 2018 in 83 FR 36435

The CWLP CCR surface impoundments are located north and east of the former Lakeside Power Generating Station and Dallman Power Generating Station in the Eastern ½ of Section 12, Township 15 North, Range 5 West, in Springfield, Illinois (see Figure 1). These CCR surface impoundments are identified as the Lakeside Ash Pond and the Dallman Ash Pond (see Figure 2).

The former Lakeside Power Generating Station and Dallman Power Generating Station are situated on the northwestern bank of Lake Springfield in Springfield, Illinois. The Lakeside Ash Pond is immediately north of Spaulding Dam at the northern end of Lake Springfield. The Dallman Ash Pond is immediately northwest of the Lakeside Ash Pond.

This Groundwater Monitoring Program (GMP) was prepared to meet the groundwater monitoring and corrective action requirements of the Federal CCR Rule Part 257.90-98. This GMP describes the methods and procedures to be used for conducting groundwater monitoring at CWLP CCR units. This GMP is subject to periodic revision as circumstances and/or new regulations dictate. Revisions to the GMP must be approved by a qualified professional engineer before placed in effect. The most up-to-date version of the GMP shall be kept in the Operating Records for use by CWLP and subcontractor personnel.

2. REGULATIONS

The two (2) CCR surface impoundments are regulated by Federal CCR Rule 40 CFR Part 257 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities (EPA, 2015). As indicated above, the groundwater monitoring and corrective action requirements of the Federal CCR Rule Part 257.90-98 apply to both impoundments.

3. SITE DEVELOPMENT

Placed into service prior to 1958, the Lakeside Ash Pond is primarily a diked embankment. The Lakeside Ash Pond consists of four separate ponds (i.e., three ponds formerly used for storage of lime sludge and the settling pond) totaling approximately 35.0 acres. The three lime sludge

ponds were taken out of service in September 2023 with the completion of the construction of the new lime sludge-processing area. The Lakeside Ash Pond ceased receiving ash in 2009.
The Dallman Ash Pond was placed into service in approximately 1976 and is also a diked embankment. The Dallman Ash Pond is approximately 34.5 acres and ceased receiving ash in 2021. As of October 13, 2023, all CCR and non-CCR waste streams ceased flowing into the Lakeside Ash Pond and Dallman Ash Pond.

The most recent change made to the CCR surface impoundments was a vertical expansion to the Lakeside Ash Pond system completed in 1988. The vertical expansion consisted of berms built on top and inside of the existing embankments in such a way that the toe of the outer slope of the expansion berms matches up with the top of the inner slope of the existing embankments. The vertical expansion berms are approximately ten feet in height.

4. SUBSURFACE CONDITIONS AT THE CCR SURFACE IMPOUNDMENTS

The subsurface conditions of the area in and surrounding the CCR surface impoundments have been characterized through multiple subsurface investigations, including the hydrogeologic investigation at the permitted Subtitle D CCR landfill located north of the Lakeside Ash Pond and east of the Dallman Ash Pond. These investigations were as follows:

- Professional Service Industries (PSI), June 1989. This investigation consisted of five soil borings within the east section of the south cell (Cell 1).
- Andrews Environmental Engineering, Inc., February 1990. This investigation was performed for Cell 2 and consisted of 13 soil borings. The drilling and testing were completed by PSI.
- Andrews Environmental Engineering, Inc., March 1990. This investigation was performed to install six wells at the Facility. The drilling and testing were completed by PSI.
- Patrick Engineering, Inc. (PEI), July 1992. This investigation was performed to further characterize the hydrogeology of the landfill setting. Approximately 44 soil borings and piezometers were installed by PEI.
- Stabilize, Inc. (SI), December 2008. This investigation installed three new monitoring wells as part of an assessment program for the landfill. The drilling, soil testing, and well construction were performed by Reynolds Well Drilling.
- City Water, Light and Power (CWLP), April 2010. This investigation was performed to install four piezometers on the west side of the CCR surface impoundments along Sugar Creek. The drilling and testing were completed by PSI.
- Stabilize, Inc. (SI), May 2011. This investigation installed four new monitoring wells to further the characterization of the CCR surface impoundments. The drilling, soil testing, and well construction were performed by PSI.

- Andrews Engineering, Inc., January 2012. This investigation was performed to replace CCR surface impoundment wells and install an additional background well. The drilling and well installation were completed by TerraDrill.
- Andrews Engineering, Inc., July 2017. This project included drilling peripheral to the Dallman Ash Pond.
- Andrews Engineering, Inc., June 2019. This investigation advanced 7 direct push borings peripheral to the Dallman Ash Pond and included the installation 2 new monitoring wells as part of an assessment program for the CCR ash impoundments.
- Andrews Engineering, Inc., October 2023. This investigation consisted of 34 borings next to the impoundments and 4 next to landfill Unit 1, to investigate the CCR ash surface impoundment berm construction materials and the installation of 29 vibrating wire piezometers to characterize the stability of the berms.
- Andrews Engineering, Inc., February 2024. This investigation consisted of 4 borings using a cone penetrometer adjacent to the Dallman and Lakeside Ash ponds.
- Andrews Engineering, Inc., April/May 2024. This investigation consisted of installation of six monitoring wells on the periphery of Lakeside and Dallman Ash Ponds, the installation of four monitoring wells within the Lakeside Ash Pond area, four monitoring wells within the Dallman Ash Pond Area and the advancement of a 100-foot boring northwest of the Dallman Ash Pond.

The summary discussion below of the subsurface conditions is presented in context of the 2015 Federal CCR Rule requirements for groundwater monitoring systems. Emphasis is placed on characterizing the existing wells and hydrogeologic conditions of the uppermost aquifer and underlying confining aquitard. The uppermost aquifer is the required unit for groundwater quality monitoring under the Federal CCR rule.

The occurrence of the deposits discussed below is highly variable due to the meandering nature of Sugar Creek prior to the development of Lake Springfield and Spaulding Dam. The meandering creek has resulted in sequential erosion and deposition (scour and fill) throughout much of the creek drainage system, both laterally and vertically.

4.1 SURFICIAL DEPOSITS

The shallow stratigraphy and lithology at the CCR surface impoundments include approximately 20 to 50 feet of Pleistocene sediments, dependent upon location. In ascending order these materials are identified as basal sand, lower cohesive deposit, shallow sand, upper cohesive deposit and fill material.

The overall tendency is for the finer-grained materials (clays, silty clays and silts) to overlie the coarser-grained materials (sands and gravels). This coarsening downward is present throughout much of the site. At the majority of the borehole locations, the coarser materials rest directly on

top of the weathered bedrock surface. It is this coarser material, the basal sand, which is characterized as the uppermost aquifer.

Basal Sand

In most locations, the basal sand is the lower-most surficial deposit. The basal sand is a gray colored, poorly graded, silty to clayey fine sand to well graded sand with minor amounts of fine gravel. This unit was encountered in a medium dense to dense condition. The top elevation of the basal sand varies from 491 to 513 feet mean sea level (MSL) and the thickness ranges from about 0 to 12.3 feet. The unit was not encountered consistently, likely due to excessive erosion of the creek bottom.

The basal sand generally overlies the bedrock surface and underlies the lower cohesive deposit. There are some pockets of very hard, fine grained silty clay to clay overlying bedrock in a few areas. The basal sand is present above these pockets of clayey deposits, thought to be weathered bedrock.

The basal sand generally consists of 0% to 34% gravel, 50% to 91% sand, and 6% to 44% silt/clay; and exhibits a mean field hydraulic conductivity of 6.75×10^{-3} cm/sec. The basal sand was saturated in all locations where it was encountered.

Lower Cohesive Deposit

The lower cohesive deposit consists of brown, gray, and brownish gray silty clays, clayey silts, and clays, having very soft to stiff consistency. The lower cohesive deposit ranges in thickness from 0 to 22 feet with an average thickness of about 15 feet. The deposit was not encountered in isolated areas along the abandoned creek, possibly due to excessive erosion of creek bottom in these areas.

The lower cohesive deposit is generally overlain by the shallow sand and underlain by the basal sand. However, within the abandoned creek area, the lower cohesive deposit was encountered directly below the creek fill. In some areas the basal sand is not present and the lower cohesive deposit directly overlies the bedrock.

The soils in the lower cohesive deposit can be similar in color and texture to the soils in the upper cohesive deposit. The distinction between the two deposits was based on the presence or changes in soil consistency (as measured with a calibrated hand held penetrometer) and a marked difference in moisture content. The lower cohesive deposit is not exposed at the ground surface in the investigated area.

The lower cohesive deposit consists of 0% gravel, 5% to 48% sand, and 52% to 95% silt/clay; and has a relatively low hydraulic conductivity. The vertical hydraulic conductivity ranges from 1.3

x 10^{-8} to 1.8 x 10^{-6} cm/sec (triaxial permeameter). The horizontal hydraulic conductivity ranges from 4.6 x 10^{-5} to 7.6 x 10^{-5} cm/sec (field slug tests).

Shallow Sand

The shallow sand overlies the lower cohesive deposit and underlies the upper cohesive deposit. The unit consists of a brown to gray silty to clayey fine sand. It contains small lenses of silty clay and clayey silt. This unit is not continuous over the entire site. Its thickness ranges from one to three feet over most of the investigated area.

Laboratory tests performed on representative samples collected from the shallow sand unit during previous investigations indicate the shallow sand contains 0% gravel, 50% to 52% sand, and 48% to 50% silt/clay. Two landfill piezometers were screened in the shallow sand unit to obtain groundwater surface information and conduct field hydraulic conductivity tests. The hydraulic conductivity of this unit based on the slug test results ranges from 3.6 x 10^{-3} to 2.9 x 10^{-2} cm/sec.

Upper Cohesive Deposit

The upper cohesive deposit has a relatively low hydraulic conductivity in the vertical direction as determined by laboratory triaxial hydraulic conductivity tests from borings taken from the landfill investigation. The hydraulic conductivity values determined from the laboratory tests ranged from 1.6 x 10^{-5} cm/sec to 5.2 x 10^{-7} cm/sec. However, the upper cohesive deposit is an alluvial deposit and it is expected that the horizontal coefficient of hydraulic conductivity will be greater than the vertical coefficient. Based on test results for the lower cohesive deposit, it is anticipated that the horizontal hydraulic conductivity for the upper cohesive deposit is in the range of 10^{-6} to 10^{-5} cm/sec.

The April-May 2024 site investigation included the collection of undisturbed samples from the upper cohesive deposit immediately beneath the Lakeside and Dallman Ash Ponds. Four borings were advanced in both pond areas – L1, L3, L4 and L5 in the Lakeside Ash Pond and D1, D2, D3 and D4 in the Dallman Ash Pond. Geotechnical analyses of the samples collected from the upper cohesive deposit was conducted for grain size and vertical permeability. The grain size analyses reports 0% gravel, 1.4% to 42.3% sand, and 57.2% to 98.6% silt/clay. In addition to grain size, the vertical hydraulic conductivity was determined for these samples. Based upon the geotechnical analysis report the vertical hydraulic conductivity ranges from 8.5 x 10^{-8} to 6.8 x 10^{-6} cm/sec (triaxial permeameter). These results are in general agreement with the samples collected from the upper cohesive deposit in the landfill area.

Creek Fill Material

The borings made along the abandoned creek locations indicate that the creek fill materials consist of variable soils ranging from silty clays to silty sands. Cohesive soils characterized as silty clays to organic silty clay were typically encountered. In some areas, the cohesive fill

materials extended down to the top of bedrock. The granular fill materials are typically poorly graded silty to clayey sands and contain organics or wood fragments. In some areas, the granular fill materials also extended down to the top of bedrock.

The cohesive fill material contains 0% gravel, 1.4% to 48% sand, and 52% to 98% silt/clay. The vertical hydraulic conductivity ranges from 7.6 x 10^{-8} cm/sec to 2.1 x 10^{-5} cm/sec. The granular fill materials contain 0 to 2% gravel, 55% to 65% sand and 33% to 45% silt/clay. Based on one laboratory hydraulic conductivity test performed on a Shelby tube sample obtained from berm fill in 1992 and the 2023/2024 Shelby tubes collected from the most recent investigations, the hydraulic conductivity of the undifferentiated berm fill material ranges from 2.1 x 10^{-6} cm/sec to 3.13 x 10^{-9} cm/sec, with a geometric mean of 4.67 x 10^{-8} cm/sec.

The creek fill materials identified during the previous landfill investigations have a significant effect on the site hydrogeologic conditions. In some areas the till materials, consisting of either granular soils or organic silty clays, extend from existing grade to the bedrock surface and locally interconnect all three water bearing units. The upper and lower cohesive deposits are considered aquitards (where present) which restrict vertical flow into the water bearing units. For all practical purposes, the shale bedrock is considered to be an aquitard.

Fill materials encountered in the landfill borings range from silty clays and organic silty clays to silty sands and clayey sands. These water level measurements indicate that groundwater movement within the creek fill materials is complicated because of the highly variable hydraulic characteristics of the fill materials and their random placement. In some areas, there appears to be direct hydraulic communication between fill materials, shallow sand, and basal sand.

Four landfill piezometers were screened into the fill materials. Of these, one piezometer was installed into cohesive fill material and the other piezometers were installed in granular till materials. Hydraulic conductivity of the granular fill materials is based on one field test resulting in a value of 6.1 x 10^{-2} cm/sec. The hydraulic conductivity of the cohesive fill material ranged from 7.1 x 10^{-5} cm/sec to 1.1 x 10^{-4} cm/sec. These values represent the hydraulic conductivity in the horizontal direction.

Laboratory hydraulic conductivity test performed on landfill cohesive fill materials ranged from 2.1 x 10^{-3} cm/sec to 3.3 x 10^{-8} cm/sec. The higher hydraulic conductivity values are believed to be typical of soils which contain organic matter (e.g. wood fragments). The hydraulic conductivity values based on laboratory tests are generally considered to be representative of the coefficient of hydraulic conductivity in the vertical direction because of the sample configuration during testing. However, because of the randomness of the fill, it is more likely that the hydraulic conductivity is within the range of 10^{-5} to 10^{-4} cm/sec.

4.2 UPPERMOST BEDROCK

The bedrock at the project site consists of Pennsylvanian shales which are gray in color. The bedrock surface elevation varies from approximately 492 feet MSL near the center of the existing landfill, to approximately 554 feet MSL located on a bedrock outcrop near the landfill area (southeast corner of Cell 1). In general, the bedrock surface slopes from the east and west towards the center of the landfill area.

Rock Quality Designation (RQD) measurements were performed on all core samples taken from the landfill area. RQDs measured from core samples collected during this investigation ranges from 80% to 100%. The RQD values indicate that the bedrock is not highly fractured. Two in situ hydraulic conductivity tests were performed to determine the hydraulic conductivity of the upper portions of the bedrock. Test results indicate hydraulic conductivity values of 1.8×10^{-7} cm/sec and 1.3×10^{-6} cm/sec. This shows that the bedrock encountered at the project site is relatively impermeable.

The April-May 2024 investigation included the advancement of a 100-foot boring (B100) northwest of the Dallman Ash Pond. The 100-foot boring was a requirement of the Illinois EPA. The boring was used to collect information for the calculations of resistance to mine collapse. No mine voids were encountered in this boring. Boring B100 was advanced to a total depth of 106 feet below surface. Bedrock was encountered at 32.3 feet below surface (500.7 ft MSL).

Packer testing was completed at seven intervals in boring B100 (i.e., 93 to 103.5 feet bgs, 82.5 to 93 feet bgs, 72 to 82.5 feet bgs, 61.5 to 72 feet bgs, and 51 to 61.5 feet bgs with the final two intervals overlapping 40.5 to 51 and 38.5 to 49 feet bgs). Test results indicate hydraulic conductivity below 482 feet msl is less than 1×10^{-9} cm/sec. The results confirm that bedrock below the weathered zone is relatively impermeable; however, the shallow weathered bedrock may have higher hydraulic conductivities and in direct hydraulic communication with the overlying basal sand such that the interface of the unconsolidated deposits and bedrock comprise the uppermost aquifer.

There is good correlation between the lithology of the rocks tested and the hydraulic conductivity values obtained. The upper bedrock beneath the impoundments is expected to exhibit the same characteristics as encountered at the landfill.

4.3 HYDROGEOLOGIC UNITS

The uppermost aquifer and underlying confining unit control groundwater movement and the potential for CCR impacted groundwater migration at the site. A description of the uppermost aquifer and the underlying confining unit follows:

Uppermost Aquifer

The uppermost aquifer is characterized as the basal sand overlying the shale bedrock. In some locations the creek fill materials, ranging from silty clays and organic silty clays to silty sands and clayey sands, were found to be in direct hydraulic communication with the basal sand that directly overlies the bedrock surface. Due to the highly variable hydraulic characteristics and random placement of the creek fill materials, further characterization is difficult.

As indicated above, the hydraulic conductivity of the basal sand ranges from 5.6 x 10^{-4} to 3.6 x 10^{-2} cm/sec. The groundwater in the basal sand appears to be under confined, semi-confined, or unconfined conditions dependent upon location. The upper limit of the uppermost aquifer is dependent upon the seasonally fluctuating groundwater table. The potentiometric surface of the basal sand varies from approximately 570 feet MSL at upgradient locations, south of the Lakeside Ash Pond, to approximately 523 feet MSL at downgradient locations near Sugar Creek, north of the Dallman Ash Pond. As a result, the saturated thickness is variably dependent upon the location and the seasonal variation in the groundwater table.

Lower Confining Unit

The uppermost bedrock at the project site is primarily Pennsylvanian age shale with isolated thin coal layers. The Pennsylvanian shale functions as a lower confining unit due to its low permeability and effective porosity. The lower confining unit represents a natural hydrogeologic barrier (i.e., aquitard) to the vertical movement of groundwater.

In situ hydraulic conductivity test (slug tests) indicate that the hydraulic conductivity for the upper portions of the bedrock range from 1.8 x 10^{-7} to 1.3 x 10^{-6} cm/sec. Straddle-packer testing was completed to test the deeper portions of bedrock. Straddle-packer testing uses two or more inflatable packers to isolate a section of borehole (the test interval) for testing horizontal hydraulic conductivity. The packer test results of the unweathered portions of bedrock indicate horizontal hydraulic conductivities less than 1 x 10^{-9} cm/sec. There appears to be good correlation between the rock lithology and the measured values of hydraulic conductivity. The bedrock over most of the site will act as an aquitard and prevent the downward movement of groundwater.

4.4 GROUNDWATER MOVEMENT

Groundwater movement is controlled by recharge along topographic highs and discharge along the original stream valley. The pre-surface impoundment flow direction in the uppermost aquifer was dominantly horizontal from the adjacent banks toward the natural convergence along Sugar Creek, which formerly drained the site. This was overall from south to north with local deviations. This dominant flow pattern persists under present day conditions but with localized variation introduced by the hydrologic discontinuity created upon construction of the CCR surface impoundments.

Existing wells at the site, including wells from the Flue Gas Desulfurization Systems (FGDS) Landfill, were used to derive groundwater surface maps. As shown, overall groundwater movement is from south to north (see Appendix A). The east perimeter of the Lakeside Ash Pond is largely upgradient, and the west side is largely downgradient where groundwater movement is perpendicular to the perimeter. Excavated areas within the landfill boundary act as a groundwater sink along the east side of the Dallman Ash Pond. Groundwater generally moves northward from the Dallman Ash Pond but also moves easterly towards the FGDS Landfill and westerly towards Sugar Creek.

5. GROUNDWATER MONITORING AND CORRECTIVE ACTION – 40 CFR §257.90 THROUGH §257.98

The following sections specifically address the sub rules pertaining to Groundwater Monitoring and Corrective Action under sections Applicability (§257.90), Groundwater Monitoring Systems (§257.91), Groundwater Sampling and Analysis Requirements (§257.93), Detection Monitoring Program (§257.94), Assessment Monitoring Program (§257.95), Assessment of Corrective Measures (§257.96), Selection of Remedy (§257.97), and Implementation of the Corrective Action Program (§257.98).

5.1 APPLICABILITY – §257.90

Owners of existing CCR surface impoundments are required to install groundwater monitoring systems, develop a sampling and analysis program to include statistical procedures to be used for evaluating monitoring data, and initiate detection monitoring and evaluation of data for “statistically significant increases (SSI)” over background levels for selected constituents. If detected constituents are measured at a "statistically significant level (SSL)” over the established background level, the facility must conduct assessment monitoring, and if necessary, initiate corrective action responses to control the release.

The facility must make available an annual groundwater monitoring and corrective action report, the first of which was due no later than January 31, 2018. The report must document the status the groundwater monitoring and corrective action program, summarize actions completed, describe problems encountered, and identify activities for the upcoming year. The content of the report is prescribed in §257.90(e). The report must be placed in the facility’s operating record and comply with the recordkeeping requirements in §257.105(h), notification requirements in §257.106(h), and internet requirements in §257.107(h).

5.2 GROUNDWATER MONITORING SYSTEM – §257.91

The rule for Groundwater Monitoring Systems (GMS) is a performance standard (§257.91(a)), where the system must consist of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that: (1) accurately

represent the quality of background groundwater that has not been affected by leakage from a CCR unit, and (2) accurately represent the quality of groundwater passing the impoundment boundary of the CCR unit to monitor potential contaminant pathways in the uppermost aquifer.

Under §257.91(b-c) the number, spacing, and depths of the groundwater monitoring wells have been determined based upon site-specific technical information to meet the rule's performance standard, including the subsurface conditions observed at the site as summarized in Section 2 of this document. This includes a characterization of the uppermost aquifer.

The monitoring well locations take into consideration the natural (pre-surface impoundment) and current convergence of groundwater flow paths. The wells are located as close as feasible to the downgradient CCR surface impoundments based on topography, surface impoundment construction, and operations. The existing monitor well network was installed pursuant to recommendations of the Illinois EPA Bureau of Water and updated at the request of the USEPA. The network consists of eleven monitor wells screening the silt, sand, and gravel at the bedrock interface. The direction of groundwater movement, as described above, is to the west-northwest; therefore, the northern and western boundaries of the impoundments will be downgradient, and the southern and eastern boundaries will be upgradient. The monitoring network includes two upgradient wells (wells AP-4 and AP-5), ten downgradient wells (AP-1R, AP-2A, AP-3, AP-6, AP-8, AP-10, AP-14, AW-1, RW-3 and G120), and one compliance boundary well located north of Sugar Creek (AP-7). The well locations are depicted in Figures 2 and 3. Table 1 provides a summary of well construction and the approximate screened intervals. Appendix B contains the boring logs and well completion reports.

Pursuant to §257.91(e), the monitoring wells are constructed in a manner that maintains the integrity of the monitoring well and borehole. All wells were installed pursuant to the Illinois Department of Public Health Water Well Construction Code (77 Ill. Adm. Code 920) for monitoring well construction standards. All monitoring well installations were documented in the respective reports. Well construction details are provided in Appendix B. All drilling and groundwater monitoring well construction was completed under the direct supervision of an Illinois Licensed Professional Geologist.

Background Quality – §257.91(1)

Two (2) groundwater monitoring wells are representative of background (ambient) groundwater quality conditions of the uppermost aquifer. These wells are identified as AP-4 and AP-5. Background concentrations are chemical concentrations or parameter values that represent naturally-occurring groundwater that has not been impacted by the surface impoundment or other facility activities.

Monitoring well AP-4 is located southwest of the CCR surface impoundments, along the eastern bank of Sugar Creek and immediately north of Lake Springfield dam. This location is

downgradient of the former lime ponds, and upgradient to the Lakeside and Dallman CCR surface impoundments. The well screen elevation is approximately 494.9 to 504.9 feet MSL at the surface of the Pennsylvanian shale, screening the basal sand. This well is not upgradient of the subject CCR surface impoundments in a hydrologic sense but it is located on available CWLP property where it provides representative background groundwater quality, as allowed under §257.91(a)(1)ii.

Monitoring well AP-5 is located upgradient, southeast of the CCR surface impoundments and in a topographically slightly higher location of the facility. The well screen elevation is approximately 554.44 to 563.78 feet MSL. The screened section of AP-5 is also located at the top of Pennsylvanian shale and screened across the basal sand at this location. This well monitors the upgradient groundwater quality of the uppermost aquifer at this location.

Background concentrations for AP-4 and AP-5 were developed from samples collected for eight consecutive quarters, allowing the statistical method employed to account for seasonal/temporal variability. The chemical constituents include only those parameters contained in Appendices III and IV of Part 257.

The background concentrations are statistically analyzed to establish site-specific upper confidence limits for each chemical or parameter. The data, calculations and resulting background concentrations are provided in Appendix C. The background concentration for total arsenic was recalculated utilizing a lower reporting limit from eight sampling events occurring in 2023-2024. The revised background concentration was detailed in an October 29, 2024 correspondence, also contained in Appendix C. The statistical methodology utilized for derivation of the background concentrations is provided in Appendix D.

Results from the background wells (AP-4 and AP-5) will be continually evaluated. If the groundwater quality significantly changes, it will become necessary to revise the background concentrations. In such an event, the statistical method contained in Appendix D will be utilized for such revision. Details for any revision will be placed in the facility record.

Downgradient Quality - §257.91(2)

Ten (10) groundwater wells allow monitoring of the downgradient groundwater quality conditions in the uppermost aquifer. These wells are identified as AP-1R, AP-2A, AP-3, AP-6, AP-8, AP-10, AP-14, AW-1, RW-3 and G120. The locations and depths of these wells accurately represent the quality of groundwater passing the impoundment boundaries of the CCR units and reasonably make possible the detection of geochemical changes in the uppermost aquifer. These groundwater monitoring wells are all screened at the top of the weathered bedrock surface. Monitoring wells AP-1R, AP-2A, AP-3, AP-8, AP-10, AP-14 and RW-3 are located along the toe of the CCR surface impoundments. Well AP-6 is located adjacent to and south of Sugar Creek and AP-7 is located adjacent to and north of Sugar Creek. Wells AW-1 and G120 are installed

along the berm that separates the Dallman Ash Pond from the FGDS disposal area. Further details are listed below:

Monitoring well AP-1R is screened from approximately 504.63 to 514.01 feet MSL. The screened zone consists of sand overlying the surface of the Pennsylvanian shale.

Monitoring well AP-2A is screened from approximately 515.54 to 525.19 feet MSL. The screened zone consists of clayey sand to sand overlying the surface of the Pennsylvanian shale.

Monitoring well AP-3 is screened from approximately 514.7 to 524.7 feet MSL. The screened zone consists of clayey silt overlying the surface of the Pennsylvanian shale.

Monitoring well AP-6 is screened from approximately 498.87 to 508.64 feet MSL. The screened zone consists of clayey sand overlying the surface of the Pennsylvanian shale.

Monitoring well AP-7 is screened from approximately 497.76 to 507.46 feet MSL. The screened zone consists of clayey sand overlying a clayey silt at the surface of the Pennsylvanian shale.

Monitoring well AP-8 is screened from approximately 498.02 to 508. 60 feet MSL. The screened zone consists of silty clay and clayey silt with sand at the surface of the Pennsylvanian shale.

Monitoring well AP-10 is screened from approximately 511.80 to 499.89 feet MSL. The screened zone consists of silty clay and sandy clay overlying the Pennsylvanian shale.

Monitoring well AP-14 is screened from approximately 509.75 to 519.45 feet MSL. The screened zone consists of silty clay and coarse grained sand overlying the surface of the Pennsylvanian shale.

Monitoring well AW-1 is screened from approximately 498.95 to 508.9 feet MSL. The screened zone consists of fine to coarse sand overlying the surface of the Pennsylvanian shale.

Monitoring well RW-3 is screened from approximately 496.32 to 506.32 feet MSL. The screened zone consists of silt and silty sand overlying the surface of the Pennsylvanian shale.

Monitoring well G120 is screened from approximately 503.3 to 509.3 feet MSL. The screened zone consists of a silty clay with thin sand (less than one foot) overlying the surface of the Pennsylvanian shale.

5.3 GROUNDWATER SAMPLING AND ANALYSIS REQUIREMENTS – §257.93

The Groundwater Monitoring Program (GMP) includes consistent sampling and analysis procedures to provide accurate representation of groundwater quality (§257.93(a)). The activities include sample collection, preservation and shipment, analytical procedures, chain of custody, and quality assurance and quality control as outlined in the Groundwater Sampling and Analysis Procedures (Appendix E).

Groundwater is sampled for the constituents listed in Appendices III and IV of Part 257 (§257.93(b)). For detection monitoring, these constituents include boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids from Appendix III Part 257; and for assessment monitoring (if necessary) these constituents include antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226 & 228 combined from Appendix IV Part 257. All constituents are analyzed as total recoverable, where samples are not field filtered.

5.4 DETECTION MONITORING PROGRAM – §257.94

Pursuant to §257.94(a), the Detection Monitoring Program includes, at a minimum, groundwater monitoring for all constituents listed in Appendix III to Part 257, including boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS). The long-term monitoring frequency for the Appendix III constituents under §257.94(b) will be semiannual during the active life of the CCR unit and the post closure period.

Pursuant to §257.94(b), eight (8) independent samples were collected from each background and downgradient well and analyzed for the constituents listed in Appendix III to Part 257 including boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS); and for the constituents listed in Appendix IV to Part 257 including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium thallium and radium 226 & 228 combined. Eight (8) independent sampling events were completed over the first quarter 2016 through fourth quarter 2017 (§257.94(b)). For the Appendix IV parameters antimony, cobalt, lead, lithium and thallium, the eight (8) independent samples were collected over the first quarter 2020 through fourth quarter 2021. For arsenic, the eight (8) independent samples were collected between July 2023 and August 2024. This schedule allowed the capture of seasonal variability in quality and groundwater flow conditions. Details for derivation of the background concentrations were discussed in Section 3.2 above.

The number of samples collected and analyzed are consistent with the sampling and statistical procedures referenced in §257.93(e) and account for any unique characteristics of the site (§257.94(c)). Sampling for detection monitoring will occur on a semi-annual basis.

Alternative monitoring frequency for repeated sampling and analyses for constituents listed in Appendix III of Part 257 during the active life and the post-closure period based on the availability of groundwater may be implemented pursuant to §257.94(d). No alternative monitoring frequency is sought at this time.

Detection monitoring occurs on a semi-annual basis for the Appendix III constituents. The results are compared to the established background concentrations. If a SSI is observed due to an exceedance of a background concentration, confirmation sampling may be conducted. If the concentration from the confirmation sampling does not exceed the applicable background concentration, no confirmed exceedance is deemed to have occurred and detection monitoring will resume. If the concentration from the confirmation sampling exceeds the applicable background concentration, then the SSI is confirmed. The confirmed SSI will be noted in the facility record.

Pursuant to §257.94(e), if the facility determines pursuant to §257.93(h) that there is a SSI over background concentrations for one or more of the constituents listed in Appendix III to Part 257 at any monitoring well, within 90 days of this determination the facility will establish an assessment monitoring program meeting the requirements of §257.95 and prepare a notification for the facility's operating record stating that an assessment monitoring program has been established. Such a determination for SSI will occur under the Detection Monitoring Program after completion of the initial 8 independent sampling events and the initial statistical evaluation. As applicable, the facility may also demonstrate that a source other than the CCR unit(s) caused the SSI, or that the SSI was the result of error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The demonstration must be in writing and completed within 90 days of detecting the SSI. If the demonstration is successful, then detection monitoring may continue.

5.5 ASSESSMENT MONITORING PROGRAM – §257.95

Except as stated above, assessment monitoring is required pursuant to §257.95(a) whenever a SSI has been detected during detection monitoring for one or more of the constituents in Appendix III of Part 257. Under §257.95(b), within 90 days of triggering an assessment monitoring program, and annually thereafter, the facility must sample and analyze the groundwater for all constituents listed in Appendix IV to Part 257 until detection monitoring resumes. An alternative monitoring frequency may be considered if documented under the requirements of §257.95(c).

After obtaining the results from the initial and subsequent sampling events required under §257.95(b), the facility must within 90 days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to §257.91 and conduct analyses for all constituents in Appendix III and for those constituents in Appendix IV to Part 257 that are detected. The results of the Appendix IV constituents are compared to the established GWPSs. If there is an exceedance of a GWPS, confirmation sampling may be conducted for that specific

Appendix IV constituent. If the concentration from the confirmation sampling does not exceed the GWPS, no confirmed exceedance is deemed to have occurred for that Appendix IV constituent. The results of a confirmed exceedance of a GWPS must be placed in the operating record. These activities and results will be summarized in the annual groundwater monitoring and corrective action report required under §257.90(e).

Pursuant to §257.95(e), if the concentration of all constituents listed in Appendix III and Appendix IV of Part 257 are shown to be at or below background values, using the statistical procedures in §257.93(g), for two consecutive sampling events, the facility may return to the detection monitoring and place notification in the operating record. If the concentrations of any constituent in Appendix III and Appendix IV to Part 257 are above background values, but all concentrations are below the GWPS, assessment monitoring must continue (§257.95(f)).

If one or more constituents in Appendix IV to Part 257 are confirmed detected at statistically significant levels (SSL) above the GWPS, the facility must place notification in the operating record and proceed to characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected (§257.95(g)). The characterization must meet the requirements of §257.95(g)(1) and the public notification the requirements of §257.95(g)(2). Under §257.95(g)(3), within 90 days of finding that any of the constituents listed in Appendix IV to Part 257 have been detected at a SSL exceeding the GWPS, the facility must either initiate an assessment of corrective measures under §257.96, or demonstrate an error in any such determination.

A GWPS must be established for each constituent in Appendix IV to Part 257 detected in the groundwater. The GWPS shall be: (1) for constituents for which a maximum contaminant level (MCL) has been established, the MCL for that constituent, or (2) for constituents for which an MCL has not been established, the background concentration for the constituent established from wells in accordance with §257.91, or (3) for constituents for which the background level is higher than the MCL identified under §257.95(h)(1), the background concentration shall be the GWPS.

5.6 ASSESSMENT OF CORRECTIVE MEASURES – §257.96

Within 90 days of determining that any constituent listed in Appendix IV of Part 257 has been detected at a SSL exceeding the GWPS, or immediately upon detection of a release, the facility must initiate an assessment of corrective measures to prevent further releases, to remediate releases, and to restore the affected area to original conditions (§257.96(a)). The assessment must be completed within 90 days unless a time extension of not more than 60 days is needed to complete the assessment, as demonstrated by the facility. The facility will include any such demonstration in the annual groundwater monitoring and corrective action report required under §257.90(e). The CCR unit will continue to monitor groundwater in accordance with the Assessment Monitoring Program during the assessment of corrective measures.

The assessment of corrective measures will evaluate the effectiveness of potential corrective measures in meeting the requirements and objectives of the remedy as described under §257.97, including performance, reliability, ease of implementation, impacts, exposure, time required, permitting, etc. (§257.96(c)).

The completed assessment of corrective measures will be placed in the operating record; discussed at a public meeting at least 30 days prior to the selection of a remedy under §257.97; and recordkeeping, notification, and internet requirements will be met.

5.7 SELECTION OF REMEDY – §257.97

Based on the results of the assessment of corrective measures, a remedy will be selected as soon as feasible that meets the standards listed in §257.97(b), including being protective of human health and environment, attain the GWPS, control the source(s) of release so as to reduce or eliminate, to the extent feasible, further releases on constituents in Appendix IV of Part 257, remove from the environment as much of the contaminated material as feasible, and comply with standards for management of wastes under §257.98(d). In selecting the remedy, the facility will consider the requirements of §257.97(c) and establish a schedule for implementing and completing remedial activities under §257.97(d).

5.8 IMPLEMENTATION OF THE CORRECTIVE ACTION PROGRAM – §257.98

Pursuant to §257.98(a), within 90 days of selecting the remedy, the facility will initiate remedial activities. Based on the schedule provided under §257.97(d) for implementation of remedial activities, the facility must establish and implement a corrective action groundwater monitoring program that meets the requirements of an assessment monitoring program under §257.95, implement the corrective action remedy selected under §257.97, and address any interim measures that might be needed to reduce the contaminants leaching from the CCR unit. If at any time the facility determines that compliance with the requirements of §257.97(b) is not being achieved through the remedy selected, other methods or techniques that could feasibly achieve compliance should be evaluated and implemented (§257.98(b)).

Pursuant to §257.98(c), the remedy will be considered complete when compliance with the GWPS has been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system and concentrations of constituents listed in Appendix IV of Part 257 have not exceeded the GWPS for a period of three consecutive years. When the entire interval is determined to be below the standard under §257.98(c) for three consecutive years, that well/constituent pair will be declared to be in compliance, and inorganic well/constituent pairs will be moved back into detection monitoring and appropriate limit-based statistics will resume.

All CCR units that are managed pursuant to a remedy required under §257.97 will be managed in a manner that complies with applicable RCRA requirements (§257.98(d)). Pursuant to §257.98(e), upon completion of the remedy the facility will prepare a notification stating that the remedy has been completed and obtain a certification from a qualified professional engineer.

6. RECORDKEEPING, NOTIFICATION, AND POSTING OF INFORMATION – FEDERAL RULE §257.105 THROUGH §257.107

6.1 RECORDKEEPING REQUIREMENTS – §257.105

CWLP, as owner of an existing CCR unit, will maintain files in its operating record as required under §257.105(h) – groundwater monitoring and corrective action – for a period of no less than five years. This includes:

1. annual groundwater monitoring report,
2. documentation pertaining to monitoring wells,
3. groundwater monitoring certification,
4. selection of statistical method certification,
5. notification within 30 days of establishing an assessment monitoring program,
6. analytical results of Appendices III and IV to Part 257,
7. notification within 30 days of returning to a detection monitoring program,
8. notification within 30 days of detecting of constituents in Appendix IV of Part 257 at statistically significant levels above the groundwater protection standard,
9. notification within 30 days of initiating the assessment of corrective measures,
10. the completed assessment of corrective measures,
11. documentation recording the public meeting for the corrective measures assessment,
12. the semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report, and
13. notification within 30 days of completing the remedy.

6.2 NOTIFICATION REQUIREMENTS – §257.106

Notifications required under §257.106(h) – groundwater monitoring and corrective action – will be sent to the relevant regulatory authority, including for (1) availability of:

1. the annual groundwater report,
2. availability of the groundwater monitoring system certification,
3. selection of a statistical method certification,
4. that an assessment monitoring program has been established,
5. that the CCR unit is returning to a detection monitoring program,
6. that constituent(s) in Appendix IV to Part 257 have been detected at statistically significant levels above the groundwater protection standard and notifications to landowners,
7. that an assessment of corrective measures has been initiated,
8. availability of assessment of corrective measures,

9. the availability of the semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report, and
10. completion of the remedy.

6.3 PUBLICLY ACCESSIBLE INTERNET SITE REQUIREMENTS – §257.107

CWLP will maintain a publicly accessible Internet site (CCR website) containing the information specified in §257.107(h) – groundwater monitoring and corrective action.

http://ehs.cwlp.com/

7. REFERENCES CITED

U.S. Environmental Protection Agency (EPA), March 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery Program Implementation and Information Division, U.S. Environmental Protection Agency, Washington, DC.

U.S. Environmental Protection Agency (EPA), 2015. Published in Federal Register Volume 80, No. 74 published on April 17, 2015, *Final Rule 40 CFR Part 257 Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities*; and *Technical Amendments* (correcting the effective date) published in Federal Register Volume 80, No. 127 on July 2, 2015.

8. ENGINEERING CERTIFICATION

The owner or operator of a coal combustion residual (CCR) unit must obtain a certification from a qualified professional engineer that the groundwater monitoring system at the CCR unit has been designed and constructed to meet the requirements of 40 C.F.R. § 257.91.

The engineering certification for the groundwater monitoring system follows.

Professional Engineer Certification – Groundwater Monitoring Program

40 CFR § 257.91(f) Groundwater Monitoring System Certification

In accordance with Title 40 of the Code of Federal Regulations (40 CFR), Part 257, Subpart D, Section 257.91(f) the owner or operator of a coal combustion residuals (CCR) unit must obtain certification from a qualified professional engineer stating that the groundwater monitoring system at the CCR unit has been designed and constructed to meet the requirements of 40 C.F.R. § 257.91. If the groundwater monitoring system includes the minimum number of monitoring wells specified in 40 C.F.R. § 257.91(c)(1), the certification must document the basis supporting use of the minimum number of monitoring wells. Further, in accordance with 40 C.F.R. § 257.91(e)(1), when completing the groundwater monitoring system certification, the qualified professional engineer must be given access to documentation regarding the design, installation, development, and decommissioning of any monitoring wells, piezometers, and other measurement, sampling, and analytical devices.

The groundwater monitoring system designed and constructed for the City Water, Light, and Power (CWLP) CCR surface impoundments – Lakeside Ash Pond and Dallman Ash Pond includes more than the minimum number of wells specified in 40 C.F.R. § 257.91(c)(1). The undersigned has been given access to documentation regarding the design, installation, development, and decommissioning of monitoring wells, piezometers and other measurement, sampling, and analytical devices concerning the CWLP CCR surface impoundments.

I, Karl W. Finke, a qualified professional engineer in good standing in the State of Illinois, certify that the groundwater monitoring system at the CWLP CCR surface impoundments has been designed and constructed to meet the requirements of 40 C.F.R. § 257.91.



Signature: Karl W Finke

Illinois P.E. No: 062.068571

Date: 02/21/25

TABLES

TABLE 1:
WELL CONSTRUCTION SUMMARY

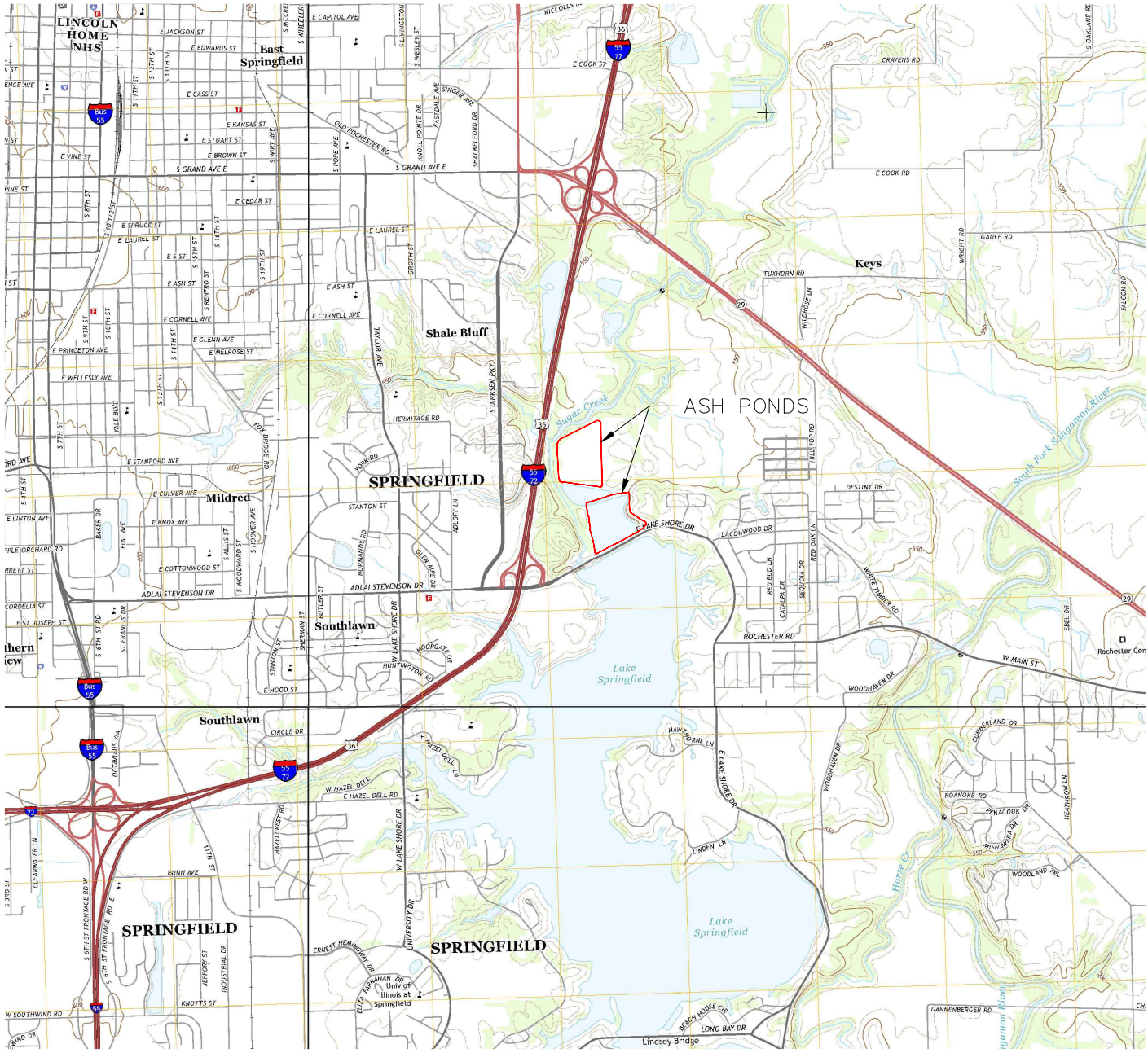
Table 1: Well Construction Summary

Well ID	Monitoring Position	Material Screened	Top of Casing (feet MSL)	Ground Surface (feet MSL)	Top of Screen (feet MSL)	Bottom of Screen (feet MSL)
AP-1R	Downgradient	Bedrock/Unconsolidated Interface	535.37	533.10	514.01	504.63
AP-2A	Downgradient	Bedrock/Unconsolidated Interface	536.1	533.60	525.19	515.54
AP-3	Downgradient	Bedrock/Unconsolidated Interface	535.4	533.70	524.7	514.7
AP-4	Upgradient	Bedrock/Unconsolidated Interface	555.6	552.46	504.9	494.9
AP-5	Upgradient	Bedrock/Unconsolidated Interface	583.9	581.60	563.78	554.44
AP-6	Downgradient	Bedrock/Unconsolidated Interface	536.46	533.92	508.64	498.87
AP-7	Downgradient	Bedrock/Unconsolidated Interface	537.89	534.99	507.46	497.76
AP-8	Downgradient	Bedrock/Unconsolidated Interface	533.12	530.08	508.6	498.02
AP-10	Downgradient	Bedrock/Unconsolidated Interface	537.5	534.40	509.7	499.9
AP-14	Downgradient	Bedrock/Unconsolidated Interface	539.6	536.80	519.45	509.75
AW-1	Downgradient	Bedrock/Unconsolidated Interface	554.2	551.24	508.9	498.95
RW-3	Downgradient	Bedrock/Unconsolidated Interface	538.42	535.65	506.32	496.32
G120	Downgradient	Bedrock/Unconsolidated Interface	551.74	551.78	509.3	503.3

FIGURES

FIGURE 1:
SITE LOCATION

C:\Civil 3D Projects\Springfield CWLP\DWG\2025\Site Map.dwg Tab: Layout1



NOTE:
BACKGROUND IMAGE COURTESY OF
UNITED STATES GEOLOGICAL SURVEY.

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APPROVED BY: KWF | DESIGNED BY: KWF | DRAWN BY: BCK

SITE LOCATION

PLANS PREPARED FOR
CITY, WATER, LIGHT & POWER
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: JANUARY 2025
PROJECT ID: 240227/0006
SHEET NUMBER:
FIGURE 1

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FIGURE 2:
SITE FEATURES



NOTE

1. AERIAL IMAGE FROM APRIL 7, 2024, FROM GOOGLE EARTH.

LEGEND

- POND/LANDFILL BOUNDARY
- ACCESS ROADS
- IMPOUNDMENT BOUNDARY
- TEMPORARY ASSESSMENT WELL
- GROUNDWATER MONITORING WELL

N

0 250 500 1000

SCALE: IN FEET

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DESIGNED BY: BJH | DRAWN BY: BCK | APPROVED BY: BJH

SITE FEATURES WITH CURRENT MONITOR WELL NETWORK

PREPARED FOR
CITY, WATER, LIGHT AND POWER
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: OCTOBER 2024

PROJECT ID: 240227/0001

SHEET NUMBER:

FIG. 2

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Tab: FIGURE 2 NEW Last Saved: February 13, 2025, by Ben Karpus Plotted: Thursday, February 13, 2025 8:57:41 AM
J:\S\Springfield CWLP\CWLP Ash Pond\DWG\2024\Site Plan Map.dwg

FIGURE 3:
ASSESSMENT WELL LOCATIONS



LEGEND

- POND/LANDFILL BOUNDARY
- IMPOUNDMENT BOUNDARY
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- PART 257 GROUNDWATER MONITORING WELL
- PART 845 GROUNDWATER MONITORING WELL

NOTE

1. AERIAL IMAGE FROM APRIL 7, 2024, FROM GOOGLE EARTH.

N

0 250 500 1000

SCALE: IN FEET

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DESIGNED BY: MTH | DRAWN BY: BCK | APPROVED BY: MTH

ASSESSMENT WELL LOCATIONS

PREPARED FOR
CITY WATER, LIGHT, AND POWER
SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: OCTOBER 2024

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FIG. 3

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Tab: FIGURE 3 Last Saved: October 24, 2024, by Ben Karpus Plotted: Thursday, October 24, 2024 10:02:46 AM
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APPENDIX A:
POTENTIOMETRIC SURFACE MAPS

LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ◪ PART 845 GROUNDWATER MONITORING WELL
- ☒ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

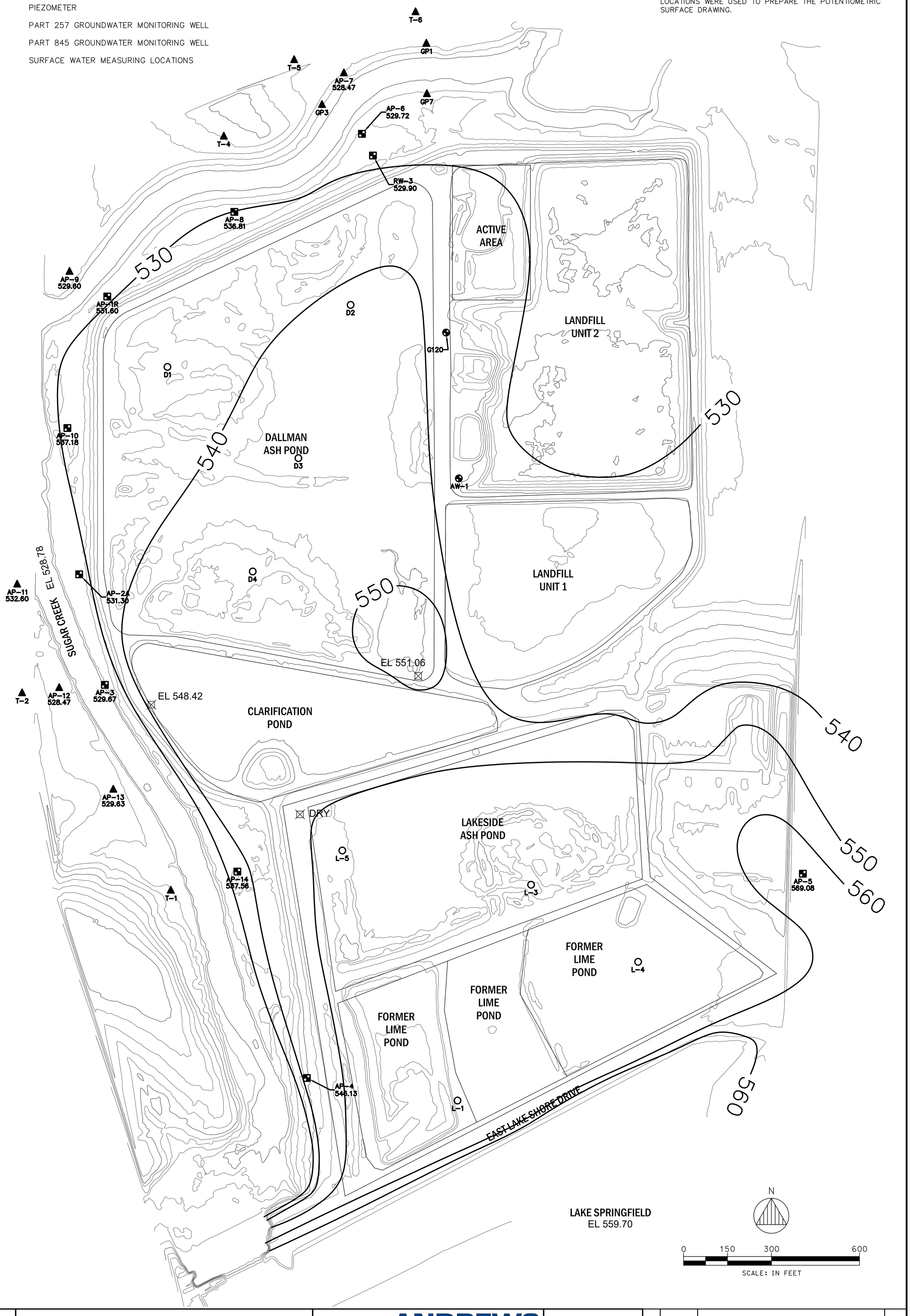


FIG. 1

POTENTIOMETRIC SURFACE MAP
JANUARY 24, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ■ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

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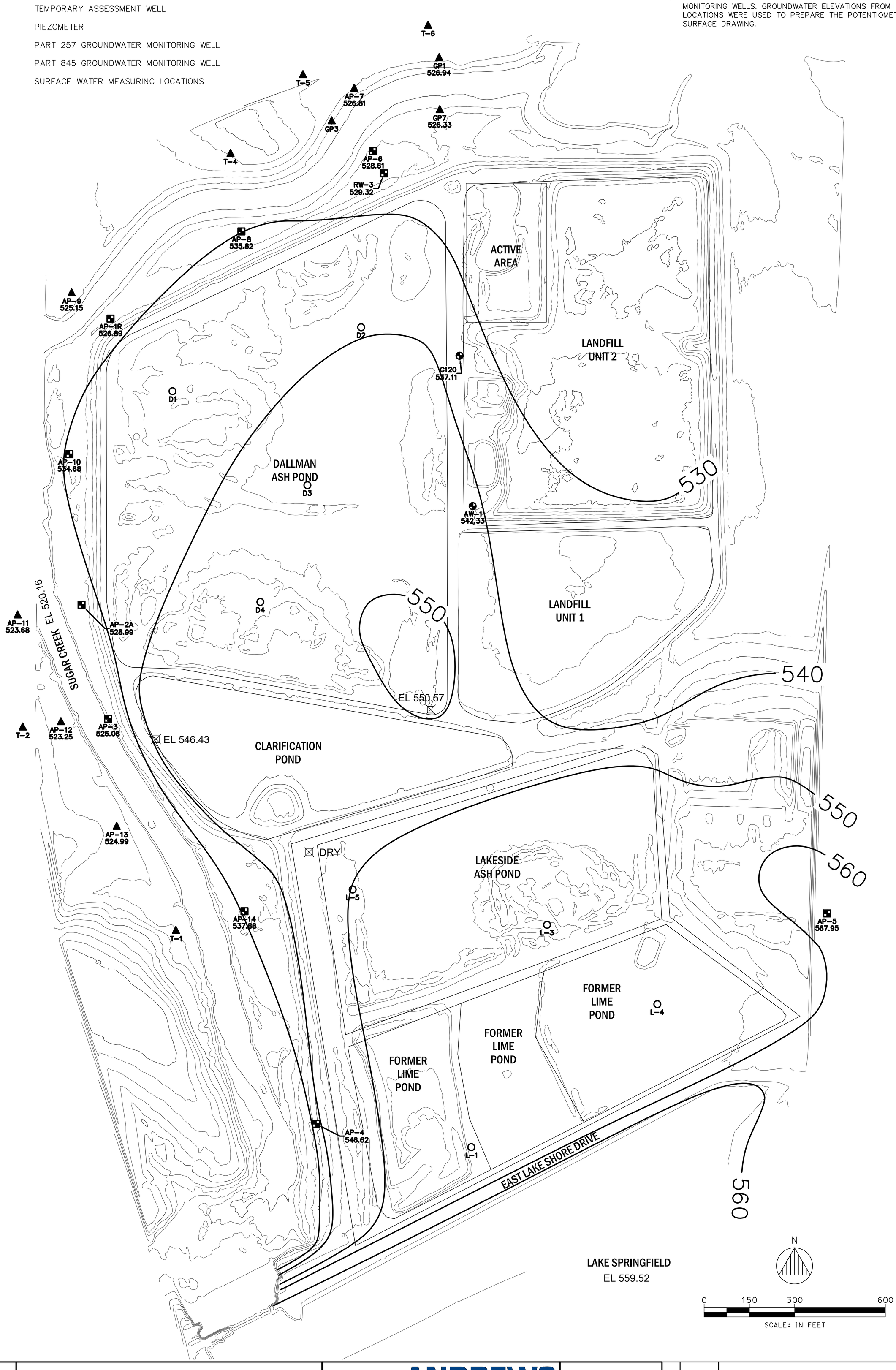


FIG. 2

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

POTENTIOMETRIC SURFACE MAP
FEBRUARY 22, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
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- ☒ SURFACE WATER MEASURING LOCATIONS

NOTES

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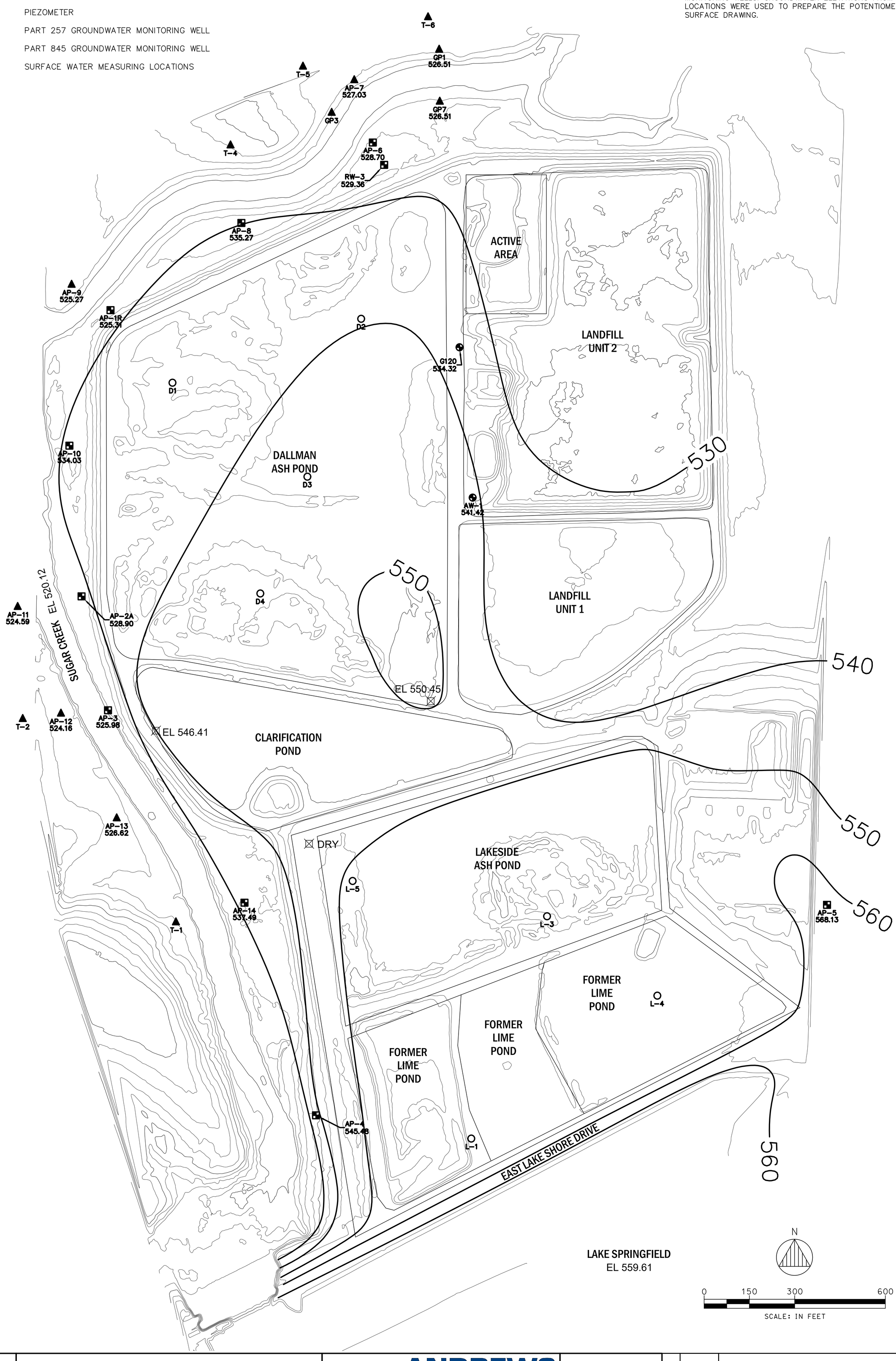


FIG. 3

POTENTIOMETRIC SURFACE MAP
MARCH 25, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ■ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

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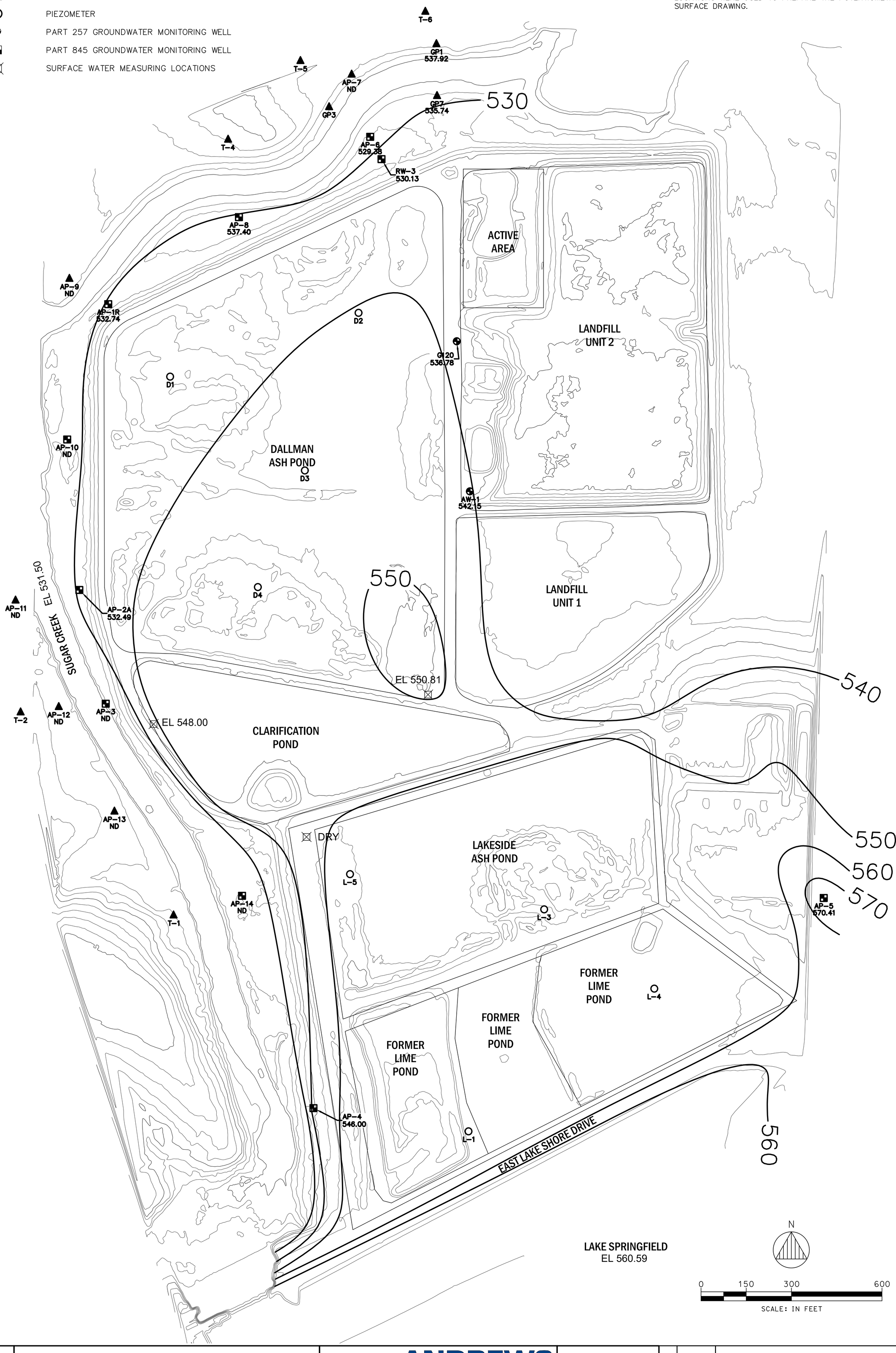


FIG. 4

POTENTIOMETRIC SURFACE MAP
APRIL 29, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◕ PART 257 GROUNDWATER MONITORING WELL
- ■ PART 845 GROUNDWATER MONITORING WELL
- ☒ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

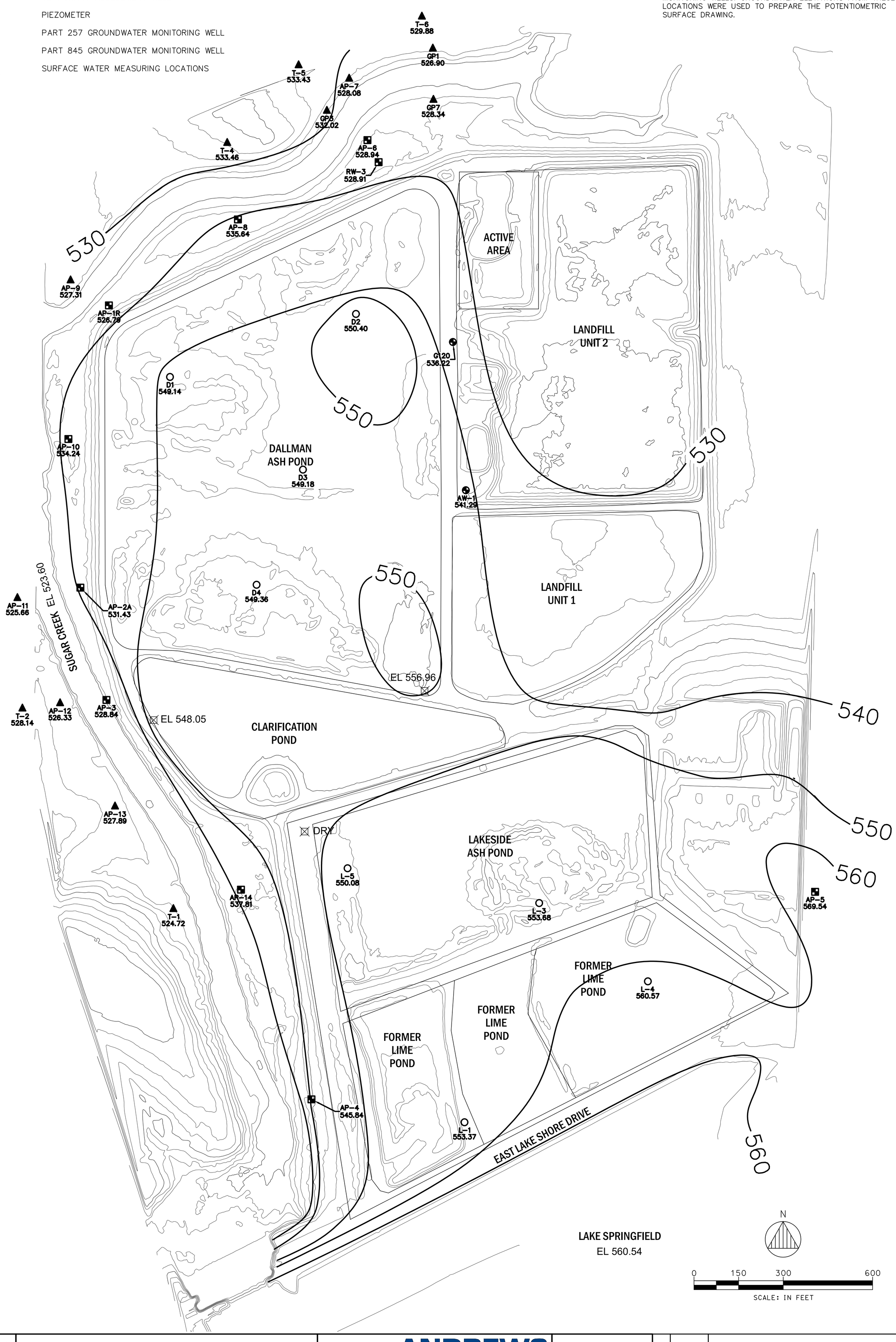


FIG. 5

POTENTIOMETRIC SURFACE MAP
MAY 13, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ◪ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

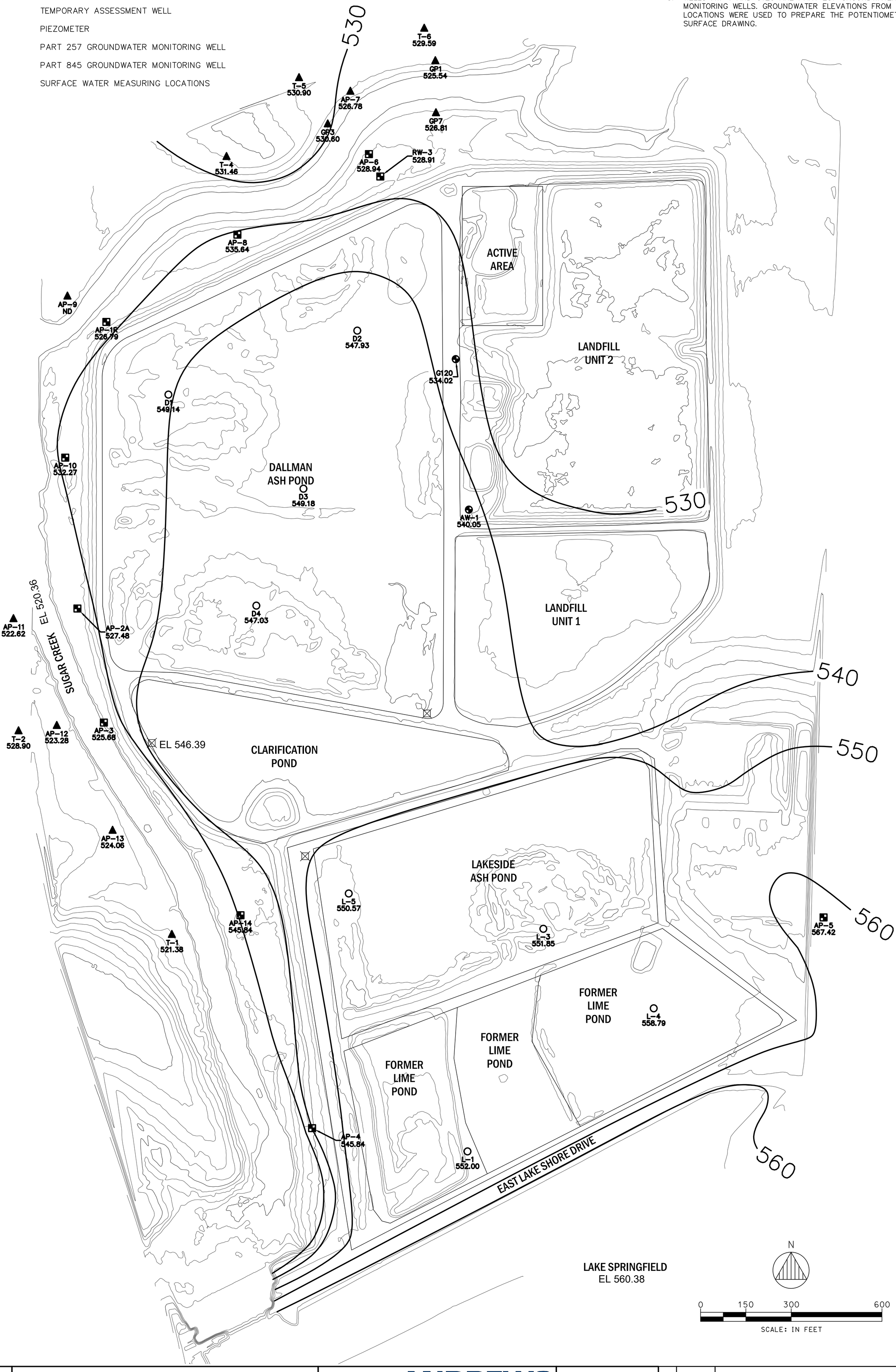


FIG. 6

POTENTIOMETRIC SURFACE MAP
JUNE 26, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: OCTOBER 2024
PROJECT ID: 240227/0010
SHEET NUMBER:

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ■ PART 845 GROUNDWATER MONITORING WELL
- ☒ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

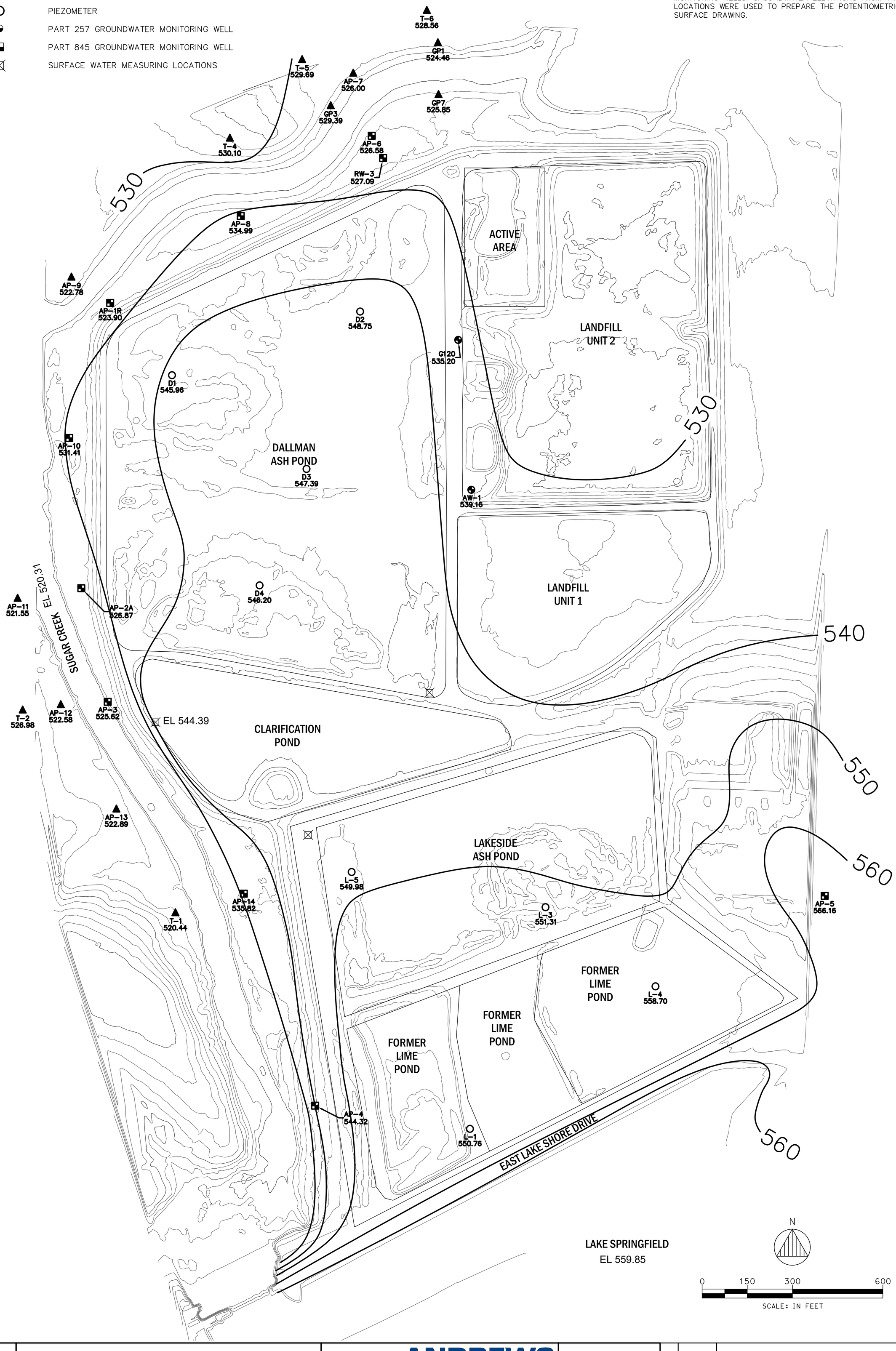


FIG. 7

POTENTIOMETRIC SURFACE MAP
JULY 30, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

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NO.	DATE	REVISION DESCRIPTION	BY

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Tab: 8-12-2024 Last Saved: October 18, 2024, by Ben Karpus Plotted: Friday, October 18, 2024 9:02:19 AM
J:\S\Springfield CWLP\CWLP Ash Pond\DWG\PMAPS\2024\2024 Monthly PMAPS.dwg

LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- TEMPORARY ASSESSMENT WELL
- PIEZOMETER
- PART 257 GROUNDWATER MONITORING WELL
- PART 845 GROUNDWATER MONITORING WELL
- SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

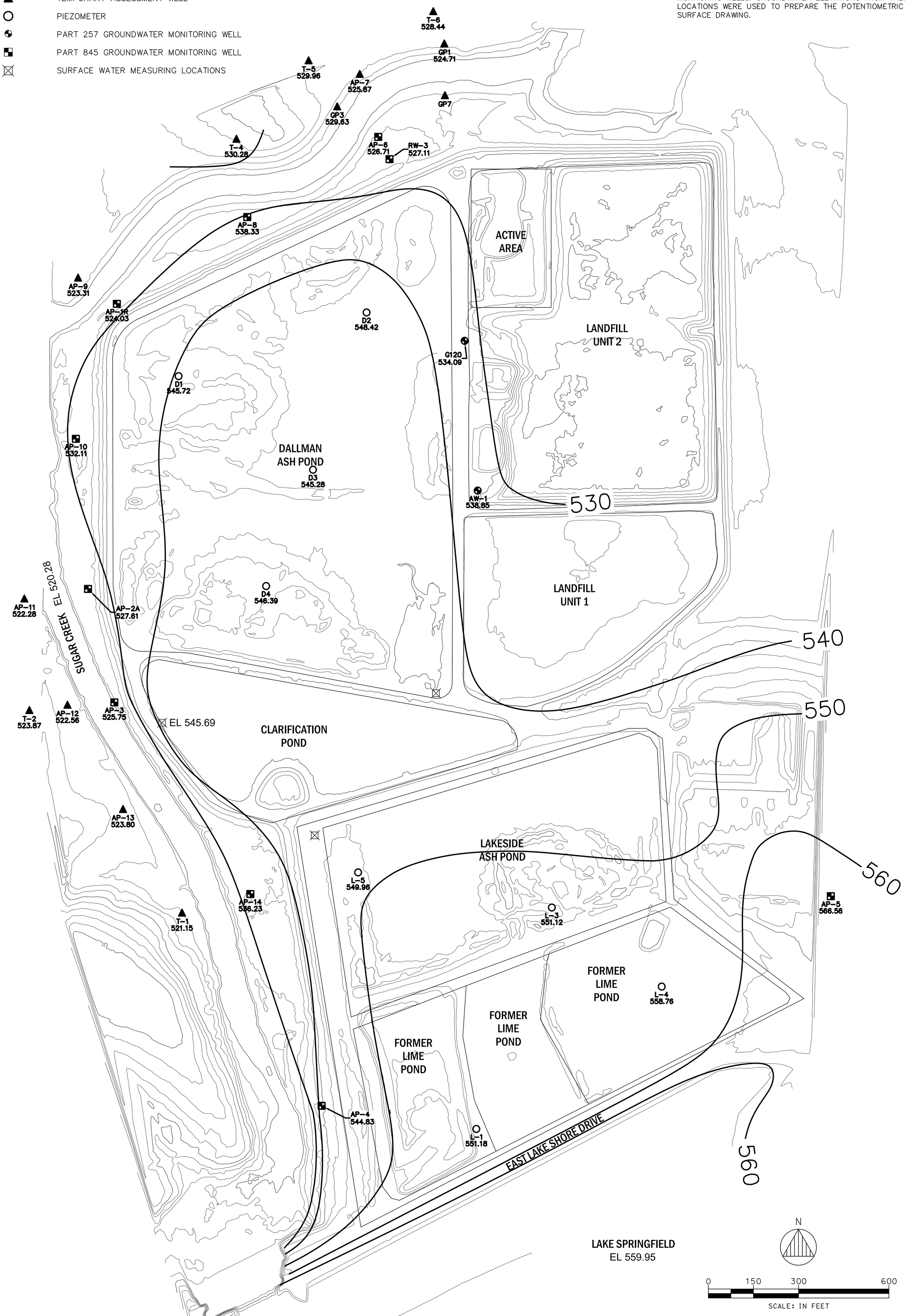


FIG. 8

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

POTENTIOMETRIC SURFACE MAP
AUGUST 12, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ◪ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. WELLS AW-1 AND G120 ARE PART 257 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

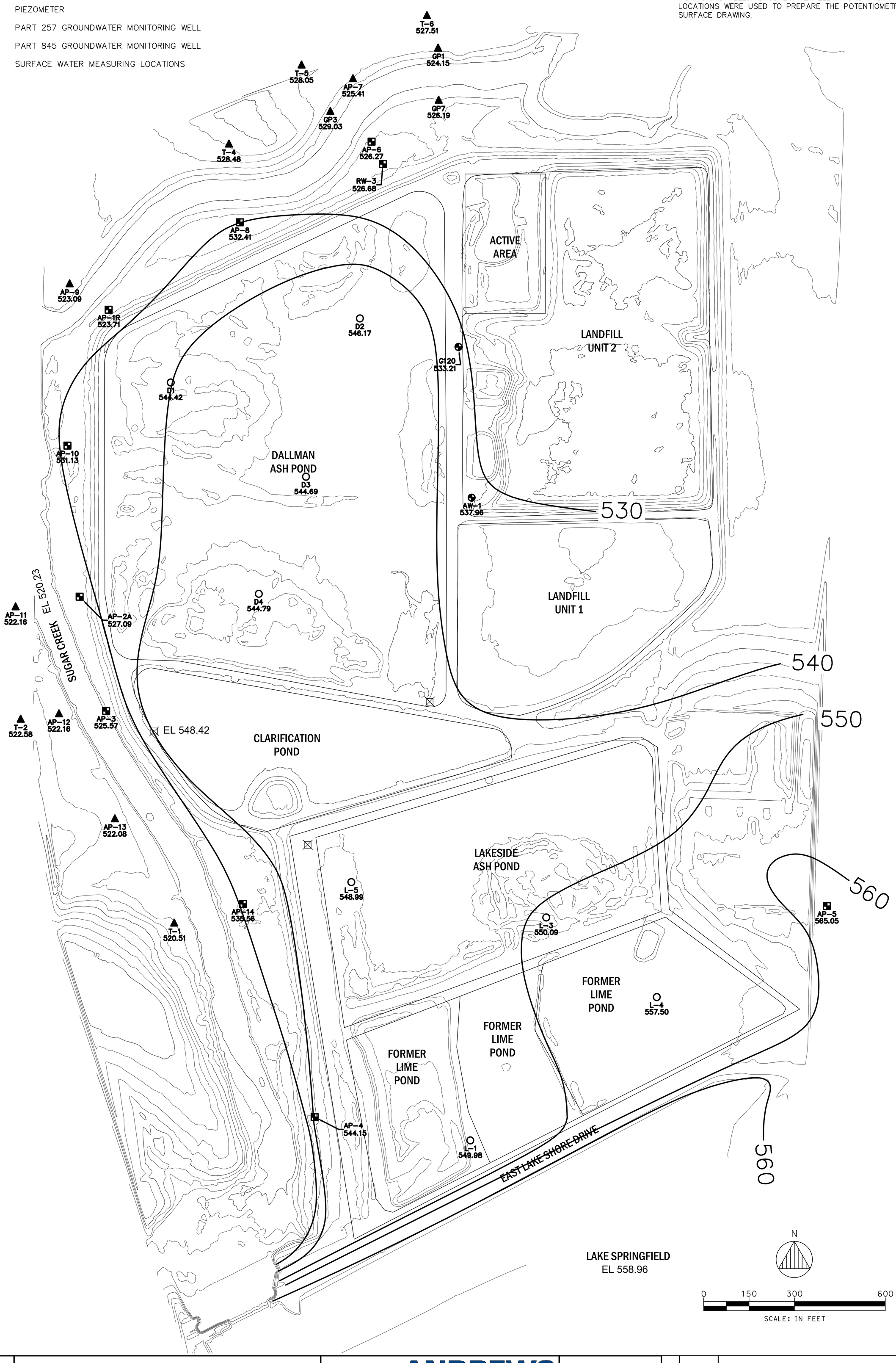


FIG. 9

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: OCTOBER 2024

POTENTIOMETRIC SURFACE MAP
SEPTEMBER 30, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ◪ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 5 FEET.
3. WELLS AP-8 AND AP-10 ARE PART 845 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

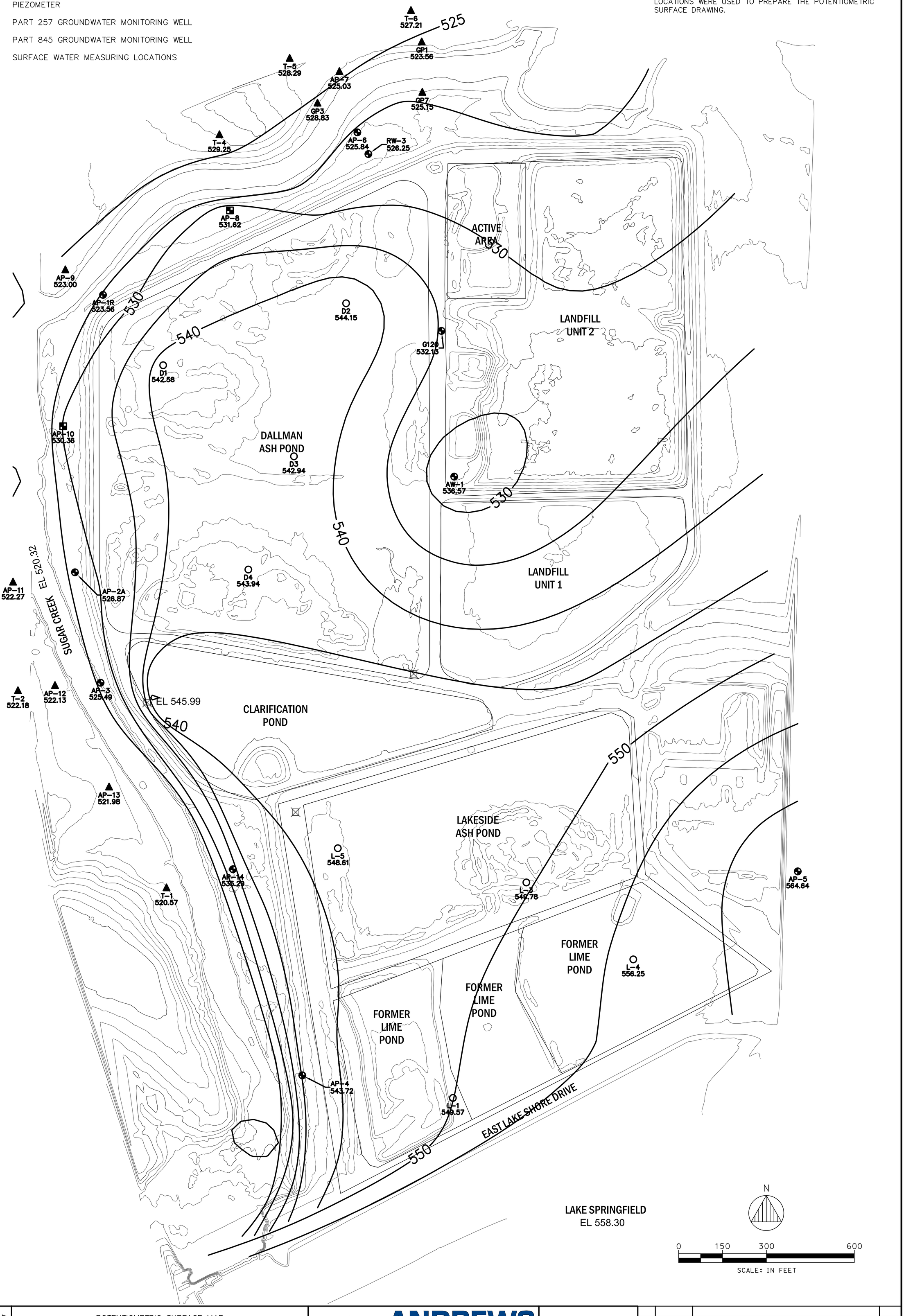


FIG. 10

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: JANUARY 2025

POTENTIOMETRIC SURFACE MAP
OCTOBER 24, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
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APPROVED BY: JSV	DESIGNED BY: JSV	DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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LEGEND

- 550 — EXISTING GROUND CONTOURS
- 540 — GROUNDWATER CONTOURS
- TEMPORARY ASSESSMENT WELL
- PIEZOMETER
- PART 257 GROUNDWATER MONITORING WELL
- PART 845 GROUNDWATER MONITORING WELL
- SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 5 FEET.
3. WELLS AP-8 AND AP-10 ARE PART 845 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

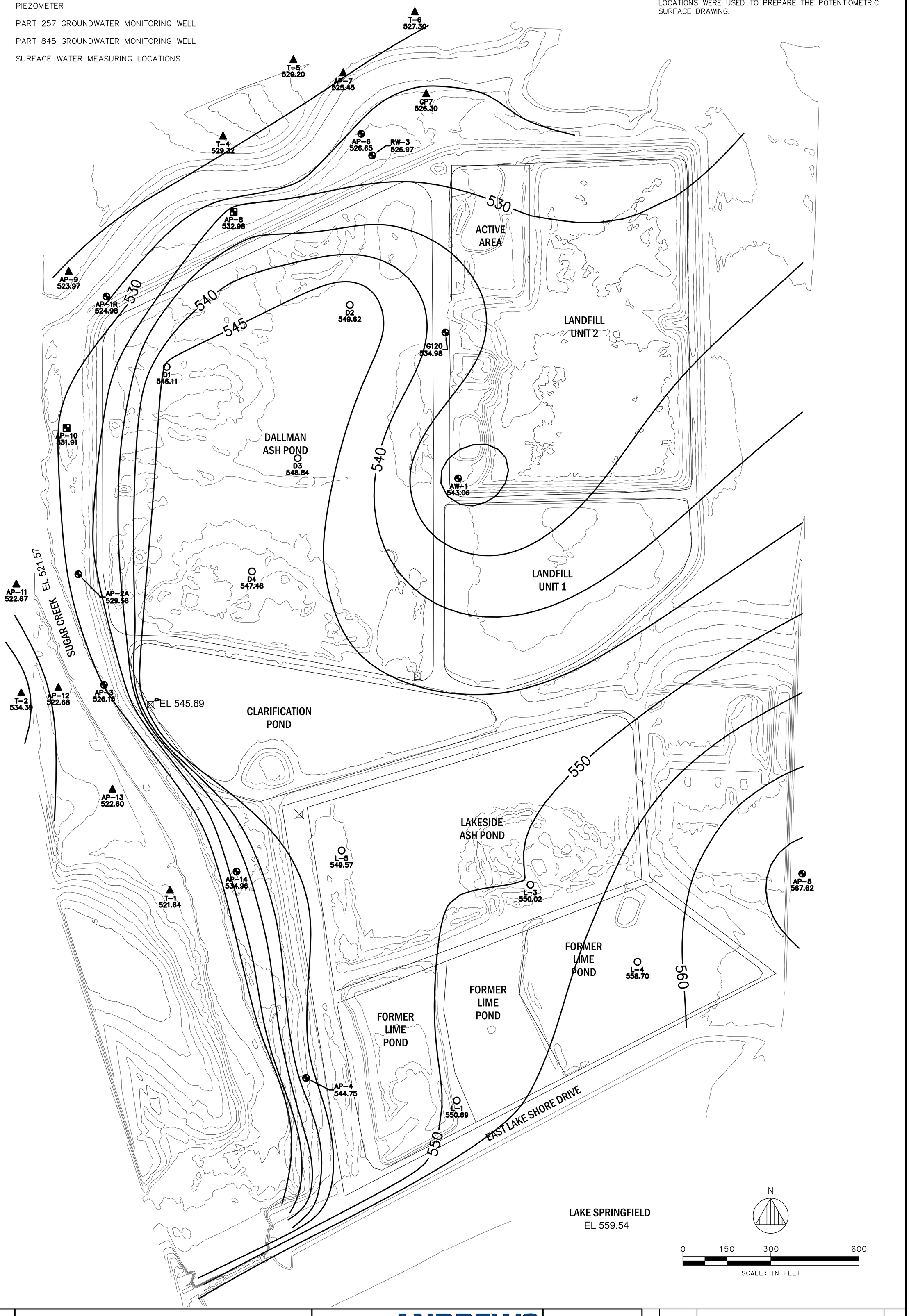


FIG. 11

SHEET NUMBER:

PROJECT ID: 240227/0010

DATE: JANUARY 2025

POTENTIOMETRIC SURFACE MAP
NOVEMBER 12, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
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APPROVED BY: JSV | DESIGNED BY: JSV | DRAWN BY: BCK

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Tab: 12-18-2024 Last Saved: January 7, 2025, by Ben Karpus Plotted: Tuesday, January 7, 2025 1:53:55 PM
J:\S\Springfield CWLP\CWLP Ash Pond\DWG\PMAPS\2024\2024 Monthly PMAPS 257 ASD.dwg

LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- ▲ TEMPORARY ASSESSMENT WELL
- ○ PIEZOMETER
- ◔ PART 257 GROUNDWATER MONITORING WELL
- ◪ PART 845 GROUNDWATER MONITORING WELL
- ⊠ SURFACE WATER MEASURING LOCATIONS

NOTES

1. FLIGHT DATE APRIL 2023.
2. CONTOUR INTERVAL SHOWN IS 5 FEET.
3. WELLS AP-8 AND AP-10 ARE PART 845 GROUNDWATER MONITORING WELLS. GROUNDWATER ELEVATIONS FROM THESE LOCATIONS WERE USED TO PREPARE THE POTENTIOMETRIC SURFACE DRAWING.

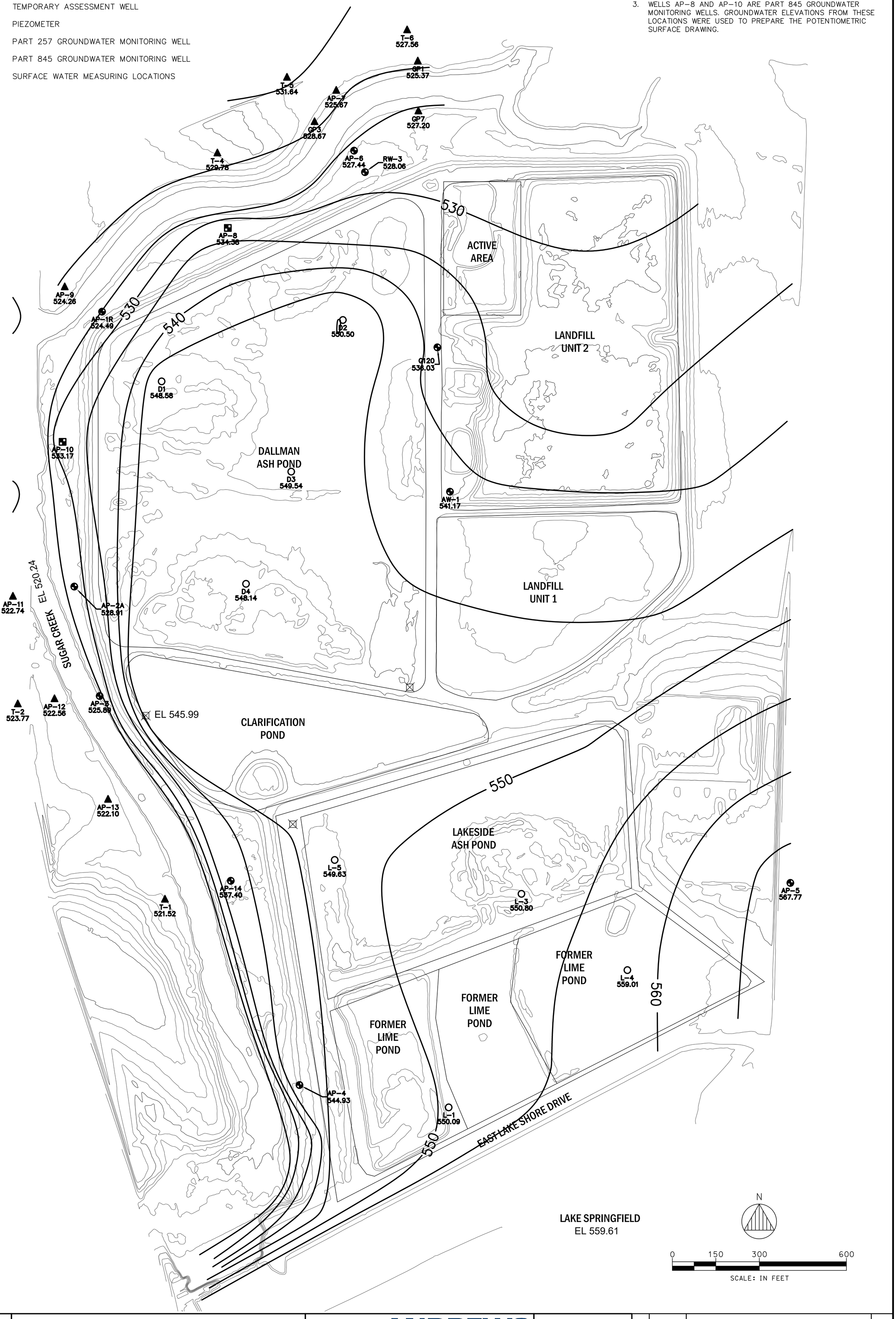


FIG. 12

POTENTIOMETRIC SURFACE MAP
DECEMBER 18, 2024

PREPARED FOR

CITY WATER, LIGHT, AND POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

DATE: JANUARY 2025
PROJECT ID: 240227/0010
SHEET NUMBER:

ANDREWS ENGINEERING
3300 GINGER CREEK DRIVE
SPRINGFIELD, ILLINOIS 62711-7233
PH (217) 787-2334 WWW.ANDREWS-ENG.COM
PONTIAC, IL • LOMBARD, IL • INDIANAPOLIS, IN • WARRENTON, MO

APPROVED BY: JSV | DESIGNED BY: JSV | DRAWN BY: BCK

NO.	DATE	REVISION DESCRIPTION	BY

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APPENDIX B:
BORING LOGS AND WELL CONSTRUCTION DETAILS

Andrews Engineering, Inc.

3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 5132.40
Easting: 831.70

Weather:
Cloudy; 38° F; West 10-15 MPH

Boring Information:
Boring No.: AP-1R
Well No.: AP-1R
Surf. Elev.: 533.10

Depth Information:
Total: 32.50
Auger: 32.50
Core:

Dates:
Start: 1/30/2012
Finish: 1/30/2012

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA and 5' CB

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Sample Type: Continuous Barrel – Split Spoon – Shelby Tube – Core – Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
0	1			NA				Stickup = 2.50'		Dark brown silty CLAY; very stiff; slightly moist	CL	530
5	2			NA				Concrete		Dark brown clayey SILT; stiff; slightly moist	ML	
10	3			NA				Bentonite Grout		Gray clayey SILT; trace brown; firm; moist	ML	525
15	4			NA				Bentonite Chips		Gray silty CLAY; few brown sand; firm; saturated	CL	520
20	5							Silica Sand		Gray sandy CLAY; stiff; saturated	SC	515
										Blue-gray clayey SILT; soft to very stiff; moist to saturated	ML	

NOTES: AP-1R blind-drilled to 19.0 ft bgs
Geology from 0-19.0 ft bgs based on AP-1 log

Andrews Engineering, Inc.

3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 5132.40
Easting: 831.70

Weather:
Cloudy; 38° F; West 10-15 MPH

Boring Information:
Boring No.: AP-1R
Well No.: AP-1R
Surf. Elev.: 533.10

Depth Information:
Total: 32.50
Auger: 32.50
Core:

Dates:
Start: 1/30/2012
Finish: 1/30/2012

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA and 5' CB

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Sample Type: Continuous Barrel | Split Spoon | Shelby Tube | Core | Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
										(Cont'd) Blue-gray clayey SILT; soft to very stiff; moist to saturated		
	5			100%							ML	
												510
25										Gray SAND with silt; medium dense; saturated		
	6			100%							SM	
										Dark gray SAND and GRAVEL; loose; saturated		
												505
30	7			100%							SW	
								Silica Sand		Dark gray SHALE; weathered; dense; moist	CL	
										End of Boring = 32.5'		
												500
35												
												495
40												

NOTES: AP-1R blind-drilled to 19.0 ft bgs
Geology from 0-19.0 ft bgs based on AP-1 log

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-1R

Site Name: City Water, Light, & Power Borehole #: AP-1R

Coordinates: X 831.70 Y 5132.40 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: Terra Drill, Inc. Consulting Firm: Andrews Engineering, Inc.

Driller: J. Brown Geologist: M. Hewitt

Drilling Method: 4¼" HSA w/ 5' Continuous Barrel Logged by: M. Hewitt

Drilling Fluids (type): _____ Report Form Completed by: J. Rhoades

Date Well Started: 1/30/2012 Date Well Finished: 1/30/2012 Date Form Completed: 2/27/2012

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: Bentonite Grout

Installation method: Tremie

Setting time: 2 Hours

Type of bentonite seal: Bentonite Chips

Installation method: Free drop

Setting time: 2 Hours

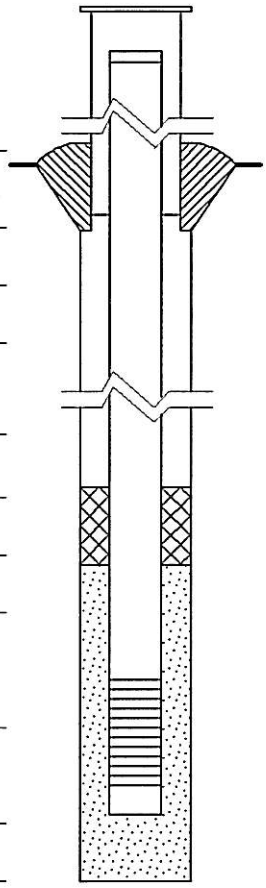
Type of sand pack: Unimin Sand

Grain size: 10/20 (sieve size)

Installation method: Free drop

Type of backfill material: _____ (if applicable)

Installation method: _____



ELEVATION (MSL)*	DEPTH (BGS)◆	(0.01 ft)
535.60	-2.50	Top of Protective Casing
.00	533.10	Top of Riser Pipe
533.10	.00	Ground Surface
530.10	3.00	Top of Annular Sealant
n/a	n/a	Static Water Level Measured on (after completion)
517.00	16.10	Top of Seal
513.51	19.59	Top of Sandpack
-21.59	554.69	Top of Screen
-30.97	564.07	Bottom of Screen
-31.50	564.60	Bottom of Well
500.60	32.50	Bottom of Borehole

* Referenced to a National Geodetic Vertical Datum
◆ positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	SS304, SS316, PTFE, PVC or *Other:Steel*
Riser Pipe Above W.T.	SS304, SS316, PTFE, *PVC*, or Other:
Riser Pipe Below W.T.	SS304, SS316, PTFE, *PVC*, or Other:
Screen	SS304, SS316, PTFE, *PVC*, or Other:

CASING MEASUREMENTS

Diameter of Borehole (in)	8.0
ID of Riser Pipe (in)	2.0
Protective Casing Length (ft)	5.0
Riser Pipe Length (ft)	21.59
Bottom of Screen to End Cap (ft)	.53
Screen Length [1st slot to last slot] (ft)	9.38
Total Length of Casing (ft)	31.50
Screen Slot Size‡	0.01"

‡Hand-slotted well screens are unacceptable.

(AE950315)

Andrews Engineering, Inc.

3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 4184.70
Easting: 725.50

Weather:
Cloudy; 38° F; West 10-15 MPH

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA and 5' CB

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Boring Information:
Boring No.: AP-2R
Well No.: AP-2R
Surf. Elev.: 533.10

Depth Information:
Total: 18.50
Auger: 18.50
Core:

Dates:
Start: 1/31/2012
Finish: 1/31/2012

Sample Type: Continuous Barrel | Split Spoon | Shelby Tube | Core | Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
								Stickup = 2.50'				
	1			NA				Concrete		Dark brown silty CLAY; some sand; stiff; slightly moist		
								Grout		Dark brown silty CLAY; soft to firm; moist	CL	530
5								Bentonite Chips				
	2			NA						Gray silty CLAY; soft to firm; moist	CL	525
10										Gray clayey SILT; very soft; moist to wet		
	3			70%				Silica Sand			ML	520
15										Light gray SAND; dense; saturated	SP	
	4			100%						Gray SHALE; hard; slightly moist	CL	515
20										*End of Boring = 18.5 '*		

NOTES: AP-2R blind-drilled to 10.0 ft bgs
Geology from 0-10.0 ft bgs based on AP-1 log

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: Springfield City Water, Light, and Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEI No.: 160192

Location:
Coord. System: Site Grid
Northing: 4185.2
Easting: 735.9

Weather: Sunny, 40F

Boring Information:
Boring No: AP-2A
Well No: AP-2A
Surf Elev.: 533.6

Depth Information:
Total: 19.0
Auger: 19.0
Core:

Dates:
Start: 2/16/16
Finish: 2/16/16

Drilling Contractor:
Contractor Name: Bulldog Drilling
City: Dupo, IL
Equipment: AMS Powerprobe w/ 4.25" HSA and 5' MC

Personnel:
Geologist: C. Myrvold
Driller: J. Edwards
Helper(s): Z. Strickland

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	533.6
0							Blind drilled to 9.0 feet. For detailed geology refer to the original log for AP-2R	
								530.0
5	1							
								525.0
10	2		3.2/4				Gray CLAYEY SILT; moist to wet; moderately loose	
								520.0
15	3		4.0/4					
	4		2.0/2				Light gray SAND; fine to medium grained; saturated; some gravel Gray SHALE; weathered; hard; slightly moist	515.0
							End of Boring = 19 Feet	
20								

Notes:

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-2A

Site Name: Springfield City Water, Light, and Power Borehole #: _____

Coordinates: X 735.9 Y 4185.2 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Springfield City Water, Light, and Power IL Registration #: _____

Drilling Contractor: Bulldog Drilling, Inc. Consulting Firm: Andrews Engineering, Inc.

Driller: J. Edwards Geologist: C. Myrvold

Drilling Method: AMS Powerprobe w/ 4.25" HSA and 5' MC Logged by: C. Myrvold

Drilling Fluids (type): na Report Form Completed by: C. Myrvold

Date Well Started: 2/16/2016 Date Well Finished: 2/16/2016 Date Form Completed: 3/06/2016

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: N/A

Installation method: _____

Setting time: _____

Type of bentonite seal: Bentonite chips

Installation method: Free drop

Setting time: 24+ hours

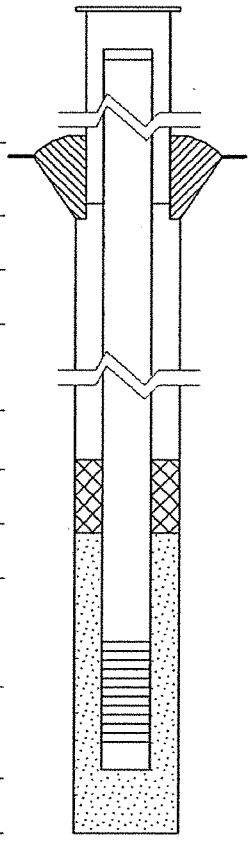
Type of sand pack: Silica sand

Grain size: 20/40 (sieve size)

Installation method: Free drop

Type of backfill material: N/A (if applicable)

Installation method: _____



ELEVATION (MSL)*	DEPTH (BGS)+ (0.01 ft)	
536.50	-2.90	Top of Protective Casing
536.10	-2.50	Top of Riser Pipe
533.60	0.00	Ground Surface
_____	N/A	Top of Annular Sealant
_____	_____	Static Water Level Measured on (after completion)
530.60	3.00	Top of Seal
527.19	6.41	Top of Sandpack
525.19	8.41	Top of Screen
515.54	18.06	Bottom of Screen
515.10	18.50	Bottom of Well
514.60	19.00	Bottom of Borehole

* Referenced to a National Geodetic Vertical Datum
+ positive (+) values below GS, negitive (-) values above GS

Notes:

WELL CONSTRUCTION MATERIALS

Protective Casing	Anodized Aluminum
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	2
Protective Casing Length (ft)	5.0
Riser Pipe Length (ft)	10.91
Bottom of Screen to End Cap (ft)	0.44
Screen Length (1st slot to last slot) (ft)	9.65
Total Length of Casing (ft)	21.00
Screen Slot Size‡	#10 (0.01)

‡Hand-slotted well screens are unacceptable.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: 217/544-6663
Fax: 217/544-6143

LOG OF BORING AP-3

PSI Job No.: 0020522
Project: Piezometer Installation
Location: CWLP Ash Pond
East Lake Shore Drive
Springfield, Illinois

Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Hammer Type: CME Automatic; ETR = 86%
Boring Location: See attached boring location plan.

WATER LEVELS
While Drilling: None feet
Upon Completion: N/A
Delay: N/A

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %
	0			1	18	Dark brown silty CLAY, very stiff, slightly moist	CL	6-7-8 N_{60}=21	
	5			2	18	Gray/brown clayey SILT, soft to stiff, moist to saturated	ML	3-3-4 N_{60}=10	
				3	18			1-1-1 N_{60}=3	
	10			4	18	Gray clayey SILT, soft to very stiff, saturated		2-1-2 N_{60}=4	
				5	18			2-2-4 N_{60}=9	
	15			6	16		ML	2-2-4 N_{60}=9	
				7	18			4-4-6 N_{60}=14	
	20			8	10	Gray SHALE, hard, slightly moist Boring terminated at -19.5	CL	32-50/3"	

STANDARD PENETRATION TEST DATA
N in blows/ft
Moisture PL LL
0 25 50
STRENGTH, tsf
Qu Qp
0 2.0 4.0

Additional Remarks

Well Diagram: J-Plug; Concrete Cap; 2" PVC Solid Riser; Bentonite Seal; Sand Filter Pack; 0.01" PVC Slotted Well Screen

Completion Depth: 20.0 ft
Date Boring Started: 4/21/10
Date Boring Completed: 4/21/10
Logged By: Rob Preuss
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Texas Cone

Latitude:
Longitude:
Drill Rig: ATV D50
Remarks: N_{60} denotes the normalization to 60% efficiency as described in ASTM D4633. Moistures determined by visual methods.

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: 217/544-6663
Fax: 217/544-6143

LOG OF BORING AP-4

Sheet 1 of 1

PSI Job No.: 0020522
Project: Piezometer Installation
Location: CWLP Ash Pond
East Lake Shore Drive
Springfield, Illinois

Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Hammer Type: CME Automatic; ETR = 86%
Boring Location: See attached boring location plan.

WATER LEVELS	
While Drilling	11 feet
Upon Completion	N/A
Delay	N/A

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %
	0			1	17	Brown silty CLAY, some brown sand, firm to stiff, slightly moist (FILL)	CL	4-4-3 N_{60}=10	
				2	18	Brown silty CLAY, trace roots, firm to stiff, moist (FILL)	CL	4-3-2 N_{60}=7	
	5			3	10	Brown SILT, trace gray, firm to stiff, moist (FILL)	ML	6-3-2 N_{60}=7	
				4	12	5" Brown SAND transitioning to Black FLY ASH at 9.4', stiff to very stiff, slightly moist (FILL)		2-2-4 N_{60}=9	
	10			5	18		SAND/FLY ASH	2-2-2 N_{60}=6	
				6	16			2-1-1 N_{60}=3	
	15			7	16			6-6-5 N_{60}=16	
				8	18	Black FLY ASH, some fine sub-round gravel, stiff to very stiff, moist to saturated (FILL)	FLY ASH	3-3-3 N_{60}=9	
	20					Gray/green (organic?) CLAY, stiff, trace fine sand, moist to saturated			
				9	1		CL	3-3-4 N_{60}=10	
	25								
				10	18	Brown/gray silty CLAY, fiorm to stiff, saturated	CL	2-2-3 N_{60}=7	
	30								
				11	18	Gray SILT, stiff to very stiff, saturated		3-3-4 N_{60}=10	
	35								
				12	18		ML	4-4-4 N_{60}=11	
	40								
				13	18			4-4-6 N_{60}=14	
	45								
				14	18	Gray fine to coarse SAND, medium dense, saturated		4-5-7 N_{60}=17	
	50								
				15	18		SW	5-5-7 N_{60}=17	
	55								
				16	1	Gray SHALE, hard, moist	CL	50/1"	
	60					Boring terminated at -60'			

STANDARD PENETRATION TEST DATA
N in blows/ft
Moisture (×) PL (◪) LL (✚)
0 25 50
STRENGTH, tsf
Qu (▲) Qp (✳)
0 2.0 4.0

Additional Remarks

Well Diagram
J-Plug
Concrete Cap
2" PVC Solid Riser
Bentonite Seal
Sand Filter Pack
0.01" PVC Slotted Screen

Completion Depth: 60.0 ft
Date Boring Started: 4/20/10
Date Boring Completed: 4/20/10
Logged By: Rob Preuss
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Texas Cone

Latitude:
Longitude:
Drill Rig: ATV D50
Remarks: N_{60} denotes the normalization to 60% efficiency as described in ASTM D4633. Moistures determined by visual methods.

The stratification lines represent approximate boundaries. The transition may be gradual.

Andrews Engineering, Inc.

3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 3164.10
Easting: 3203.10

Weather:
Cloudy; 38° F; West 10-15 MPH

Boring Information:
Boring No.: AP-5
Well No.: AP-5
Surf. Elev.: 581.6
Depth Information:
Total: 49.0
Auger: 49.0
Core:
Dates:
Start: 2/1/2012
Finish: 2/1/2012

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA
5' CB and 2' SS

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Sample Type: Continuous Barrel | Split Spoon | Shelby Tube | Core | Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
0								Stickup = 2.50'				0
	1			100%				Concrete		Dark yellowish brown silty CLAY; very firm; moist; some dark brown mottling; trace organics	CL	
5												-5
	2			76%				Bentonite Grout		Olive brown clayey SILT; moderately soft; moist; some dark yellowish brown mottling		
										grades dark yellowish brown; clay content increasing	ML	
10												-10
	3			100%						Olive brown silty CLAY; very firm; moist; trace coarse sand; few iron concretions; some dark yellowish brown mottling	CL	
15												-15
	4			100%				Bentonite Chips		some gravel		
								Silica Sand		Dark yellowish brown sandy CLAY; some gravel; very soft; moist to wet	SC	
	5			100%								
20										Dark yellowish brown clayey SILT with sand and gravel; firm; moist	ML-SM	-20

NOTES:

Andrews Engineering, Inc.
3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 3164.10
Easting: 3203.10

Weather:
Cloudy; 38° F; West 10-15 MPH

Boring Information:
Boring No.: AP-5
Well No.: AP-5
Surf. Elev.: 581.6

Depth Information:
Total: 49.0
Auger: 49.0
Core:

Dates:
Start: 2/1/2012
Finish: 2/1/2012

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA
5' CB and 2' SS

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Sample Type: - Continuous Barrel - Split Spoon - Shelby Tube - Core - Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
												20
	5									(Cont'd) Dark yellowish brown clayey SILT with sand and gravel; firm; moist	ML-SM	
	6			100%						Dark yellowish brown SAND; coarse-grained; loose; wet	SP	
										Yellowish gray clayey SILT with sand; trace gravel; very hard; moist	ML	
25	7			100%								25
										Gray silty SAND with clay; some gravel; soft; wet	SM	
	8			100%						Gray clayey SILT; some gravel; very hard; moist		
30												30
	9			90%						some shale and coal fragments	ML	
35	10			100%								35
	11									Light gray silty SAND; some gravel; trace chert; rounded; moderately firm; moist	SM	
40												40

Silica Sand
Bentonite Chips

NOTES:

Andrews Engineering, Inc.

3300 Ginger Creek Drive, Springfield, IL 62711 (217) 787-2334

Field Boring Log

Site Information:
Name: City Water, Light, & Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 2011-127

Location:
Coord. System: Site Grid
Northing: 3164.10
Easting: 3203.10

Weather:
Cloudy; 38° F; West 10-15 MPH

Boring Information:
Boring No.: AP-5
Well No.: AP-5
Surf. Elev.: 581.6

Depth Information:
Total: 49.0
Auger: 49.0
Core:

Dates:
Start: 2/1/2012
Finish: 2/1/2012

Drilling Contractor:
Name: Terra Drill, Inc.
City: Dupo, IL
Equipment: CME 550 with 4¼" I.D. HSA
5' CB and 2' SS

Personnel:
Geologist: M. Hewitt
Driller: J. Brown
Helper (s): J. Horn

Sample Type: Continuous Barrel; Split Spoon; Shelby Tube; Core; Blind Drill

Depth (ft.)	Run No.	Sample Type	Sample No.	Sample Recov.	Blow Count	q_p [q_s] (in tsf)	% Moisture	Borehole Detail	Lithology	Description/*Comments*	USC	Elev. (MSL)
												40
	11									Dark gray silty CLAY; some gravel; some shale fragments; trace coal fragments; very firm; moist	SM / CL	
45	12			100%				Bentonite Chips				45
										Gray SHALE; hard; moist	CL	
	13			55%								
										End of Boring = 49.0 '		
50												50
55												55
60												60

NOTES:

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-5

Site Name: City Water, Light, & Power Borehole #: AP-5

Coordinates: X 3203.10 Y 3164.10 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: Terra Drill, Inc. Consulting Firm: Andrews Engineering, Inc.

Driller: J. Brown Geologist: M. Hewitt

Drilling Method: 4¼" HSA w/ 5' CB & 2' SS Logged by: M. Hewitt

Drilling Fluids (type): _____ Report Form Completed by: J. Rhoades

Date Well Started: 2/1/2012 Date Well Finished: 2/1/2012 Date Form Completed: 2/27/2012

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: Bentonite Grout

Installation method: Tremie

Setting time: 2 Hours

Type of bentonite seal: Bentonite Chips

Installation method: Free drop

Setting time: 2 Hours

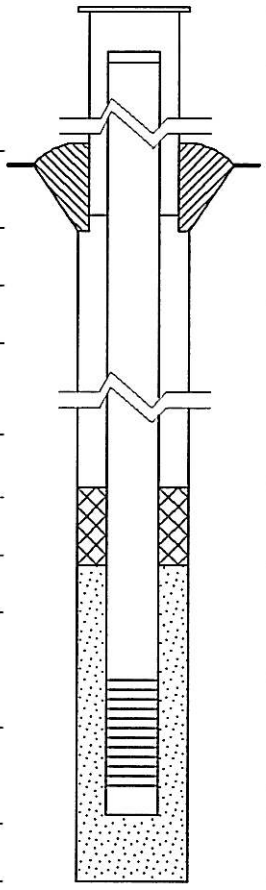
Type of sand pack: Unimin Sand

Grain size: 10/20 (sieve size)

Installation method: Free drop

Type of backfill material: Bentonite Chips (if applicable)

Installation method: Free drop



ELEVATION (MSL)*	DEPTH (BGS)• (0.01 ft)	
584.30	-2.70	Top of Protective Casing
583.90	-2.30	Top of Riser Pipe
581.60	.00	Ground Surface
578.60	3.00	Top of Annular Sealant
n/a	n/a	Static Water Level Measured on (after completion)
565.48	16.12	Top of Seal
563.48	18.12	Top of Sandpack
563.78	17.82	Top of Screen
554.44	27.16	Bottom of Screen
553.90	27.70	Bottom of Well
551.10	30.50	Bottom of Borehole

* Referenced to a National Geodetic Vertical Datum
• positive (+) values below GS, negitive (-) values above GS

NOTES:

•Borehole AP-5 sampled to 49.0 feet below ground surface (BGS) and backfilled with bentonite chips to 30.5 feet BGS

CASING MEASUREMENTS

Diameter of Borehole (in)	8.0
ID of Riser Pipe (in)	2.0
Protective Casing Length (ft)	5.0
Riser Pipe Length (ft)	20.12
Bottom of Screen to End Cap (ft)	.54
Screen Length [1st slot to last slot] (ft)	9.34
Total Length of Casing (ft)	30.00
Screen Slot Size*	0.01"

*Hand-slotted well screens are unacceptable.

WELL CONSTRUCTION MATERIALS

Protective Casing	SS304, SS316, PTFE, PVC or *Other:Steel*
Riser Pipe Above W.T.	SS304, SS316, PTFE, *PVC*, or Other:
Riser Pipe Below W.T.	SS304, SS316, PTFE, *PVC*, or Other:
Screen	SS304, SS316, PTFE, *PVC*, or Other:

(AE950315)

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: Springfield City Water Light and Power
Location: Springfield, IL
County: Sangamon
Site No.:
AEI No.: 180247

Location:
Coord. System:
Northing: 0
Easting: 0

Weather: 80's F, Sunny

Boring Information:
Boring No: GP6
Well No: GP6 /AP-6
Surf Elev.: 535.40

Depth Information:
Total: 37.0
Auger: 37.0
Core: N/A

Dates:
Start: 5/17/19
Finish: 5/17/19

Drilling Contractor:
Contractor Name: Bulldog Drilling, Inc.
City: Dupo, IL
Equipment: AMS PowerProbe 9500 w/ 5' MC

Personnel:
Geologist: C. Myrvold
Driller: J. Edwards
Helper(s): S. Guy

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	0.0
0							Dark brown clayey silt TOPSOIL, moist, moderately loose.	
							Brown/gray silty CLAY to clayey SILT, moist, stiff.	
	1		4.1/5					
5								-5.0
	2		4.0/4					
10								-10.0
	3		4.0/4				Brown silty SAND, fine-grained, saturated, loose.	
							Dark gray clayey SAND, fine-grained, wet to saturated, moderately loose, some silt.	
							Dark gray clayey SILT, moist, moderately stiff to stiff, some sand.	
15	4		1.3/4					-15.0
	5		3.0/4					
20								-20.0

Notes: refusal at 37'

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Boring Information: GP6 Boring No: GP6 Well No: AP-6

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							(cont.) Dark gray clayey SILT, moist, moderately stiff to stiff, some sand.	
	6		4.0/4				Dark gray silty CLAY, moist, moderately stiff, some sand.	
25								-25.0
	7		4.0/4					
30								-30.0
	8		2.7/4					
35	9		4.0/4					-35.0
							Dark brownish gray clayey SAND, fine-grained, moist to wet, moderately loose.	
							End of Boring = 37 Feet	
40								-40.0

Notes: refusal at 37'

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: GP6 /AP-6

Site Name: Springfield CWLP Ash Pond Borehole #: GP6

Coordinates: X _____ Y _____ (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Andrews Engineering, Inc. IL Registration #: _____

Drilling Contractor: Bulldog drilling Consulting Firm: Andrews Engineering, Inc.

Driller: J. Edwards Geologist: C. Myrvold

Drilling Method: CME 55cc 4.25 in HSA w/ 5'MC Logged by: C.Myrvold

Drilling Fluids (type): N/A Report Form Completed by: B. Kenning

Date Well Started: 5/17/19 Date Well Finished: 5/17/19 Date Form Completed: 7/19/2019

ANNULAR SPACE DETAILS

Type of surface seal: _____

Type of annular sealant: Bentonite Grout

Installation method: Tremie

Setting time: > 24 hours

Type of bentonite seal: Bentonite Chips

Installation method: Free Drop

Setting time: > 24 hours

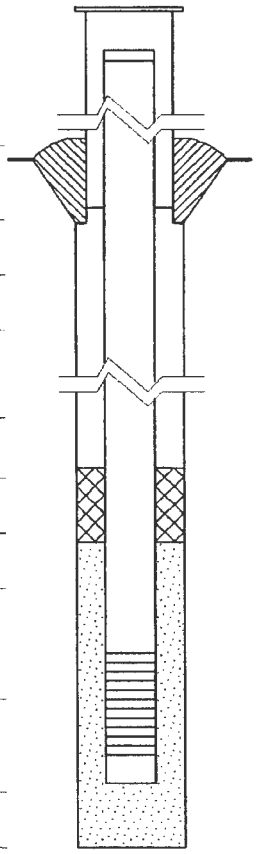
Type of sand pack: Silica Sand Pre-Pack

Grain size: 10/20 (sieve size)

Installation method: Free Drop

Type of backfill material: N/A (if applicable)

Installation method: _____



	ELEVATION (MSL)*	DEPTH (BGS)*	(0.01 ft)
Top of Protective Casing	_____	_____	
Top of Riser Pipe	537.82	-2.42	
Ground Surface	535.4	0.00'	
Top of Annular Sealant	532.4	3.00'	
Static Water Level Measured on (after completion)	_____	_____	
Top of Seal	512.97	22.43'	
Top of Sandpack	510.97	24.43'	
Top of Screen	508.64	26.76'	
Bottom of Screen	498.87	36.53'	
Bottom of Well	498.57	36.83'	
Bottom of Borehole	498.4	37.00'	

* Referenced to a National Geodetic Vertical Datum
* positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	N/A
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	#2
Protective Casing Length (ft)	N/A
Riser Pipe Length (ft)	29.18
Bottom of Screen to End Cap (ft)	0.30
Screen Length (1st slot to last slot) (ft)	9.77
Total Length of Casing (ft)	N/A
Screen Slot Size*	#10 (0.01)

*Hand-slotted well screens are unacceptable.

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: CWLP
Location: Springfield, IL
County: Sangamon
Site No.:
AEEI No.: 180247

Location:
Coord. System:
Northing: 0
Easting: 0

Weather: 60, partly cloudy, light breeze

Boring Information:
Boring No: GP2
Well No: GP2 /AP-7
Surf Elev.: 8/ 2w2

Depth Information:
Total: 40.0'
Auger: 40.0'
Core: N/A

Dates:
Start: 6/14/2019
Finish: 6/14/2019

Drilling Contractor:
Contractor Name: Bulldog Drilling
City: Dupo, IL
Equipment: CME 55cc 4.25" HSA w/ 5' MC and 2' SS

Personnel:
Geologist: B. Kenning
Driller: C. Clines
Helper(s): D. Smith

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Sample Run No.	Sample Type	Sample Recov.	Blow Count	Lithology	Description/Comments	Elev. (MSL)
						Ground Surface	0.0
0						Brown clayey TOPSOIL.	
						Brown silty CLAY, moist, stiff.	
	1		3.0				
5							-5.0
	2		3.5				
10							-10.0
						Brown/gray clayey SILT, moist, stiff.	
	3		3.0				
15							-15.0
	4		3.8				
20							-20.0
	5		2.7				
25							-25.0

Notes: No signs of freewater

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Boring Information: GP2 Boring No: GP2 Well No: AP-7

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Sample Run No.	Sample Type	Sample Recov.	Blow Count	Lithology	Description/Comments	Elev. (MSL)
	6		4.1			Gray clayey SAND, fine-grained, moist, moderately stiff.	
30							-30
	7		4.1				
						Gray clayey SILT, moist, stiff, coal fragments at 30.4'.	
35							-35
	8		3.4			Gray SHALE, weathered, slightly moist, soft.	
40							-40
						End of Boring = 40 Feet	
45							-45
50							-50

Notes: No signs of freewater

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: GP2 /AP-7

Site Name: Springfield CWLP Ash Pond Borehole #: GP2

Coordinates: X _____ Y _____ (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Andrews Engineering, Inc. IL Registration #: _____

Drilling Contractor: Bulldog drilling Consulting Firm: Andrews Engineering, Inc.

Driller: C. Clines Geologist: B. Kenning

Drilling Method: CME 55cc 4.25 in HSA w/ 5'MC Logged by: B. Kenning

Drilling Fluids (type): N/A Report Form Completed by: B. Kenning

Date Well Started: 6/14/19 Date Well Finished: 6/14/19 Date Form Completed: 7/19/2019

ANNULAR SPACE DETAILS

Type of surface seal: _____

Type of annular sealant: Bentonite Grout

Installation method: Tremie

Setting time: > 24 hours

Type of bentonite seal: Bentonite Chips

Installation method: Free Drop

Setting time: > 24 hours

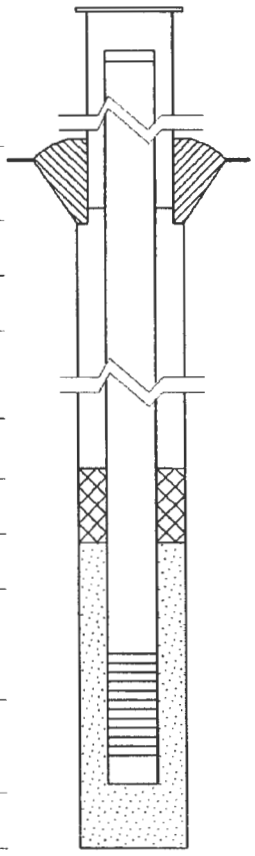
Type of sand pack: Silica Sand Pre-Pack

Grain size: 10/20 (sieve size)

Installation method: Free Drop

Type of backfill material: N/A (if applicable)

Installation method: _____



	ELEVATION (MSL)*	DEPTH (BGS)* (0.01 ft)
Top of Protective Casing	_____	_____
Top of Riser Pipe	539.02	-2.66
Ground Surface	536.36	0.00'
Top of Annular Sealant	533.36	3.00'
Static Water Level Measured on (after completion)	_____	_____
Top of Seal	511.02	24.9'
Top of Sandpack	509.02	24.9'
Top of Screen	507.46	28.9'
Bottom of Screen	497.76	38.6'
Bottom of Well	497.3	39.06'
Bottom of Borehole	496.36	40.00'

* Referenced to a National Geodetic Vertical Datum
* positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	N/A
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	#2
Protective Casing Length (ft)	N/A
Riser Pipe Length (ft)	31.56
Bottom of Screen to End Cap (ft)	0.46
Screen Length (1st slot to last slot) (ft)	9.70
Total Length of Casing (ft)	N/A
Screen Slot Size*	#10 (0.01)

* Hand-slotted well screens are unacceptable.

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: CWLP
Location: Springfield, IL.
County: Sangamon
Site No.:
AEI No.: 200387

Location:
Coord. System:
Northing: 3401.7
Easting: 1265.0

Weather: 52F Sunny

Boring Information:
Boring No: W-9
Well No: AP-8
Surf Elev.: 537.2

Depth Information:
Total: 39.6
Auger: 4.25" HSA
Core: 5ft. Continuous Sampler

Drilling Contractor:
Contractor Name: Total Drilling Services/Skinner ltd.
City: Hindsboro, IL.
Equipment: CME 850

Personnel:
Geologist: C.M. Latham
Driller: Todd Skinner
Helper(s): A. Bruce

Dates:
Start: 2/25/2021
Finish: 2/25/2021

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	0.0
0							**SILTY TOPSOIL** Dark brown, organic roots, moist, low-moderate firm.	
	1		4/5				**SILTY CLAY** Dark brown, firm, moist. Mottling with light brown and grey silty clay. Oxidation. 3'-5'.	
5								-5.0
	2		5/5				**CLAYEY SILT** Grey, oxidation mottling, moist, soft. Increased oxidation at 8'	
							SAND SEAM Fine-grained, well sorted, subrounded, saturated, soft.	
10							**CLAYEY SILT** Grey, oxidation, moist, soft.	-10.0
	3		5/5				**SILTY CLAY** Light grey, moist, soft	
15								-15.0
	4		5/5					
20								-20.0

Notes:

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Boring Information: W-9 Boring No: W-9 Well No: AP-8

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
	5		5/5				**CLAYEY SILT** Brown, moist, soft-firm. Organic roots at 20' Mottling with grey clay at 23.5'	
							SILTY CLAY Grey, moist, soft.	
25							**SILTY CLAY** Dark grey, firm, moist. Mottled dark grey clay with blue clay at 26.5'	-25.0
	6		5/5				**CLAY** Dark grey, firm, moist. Mottled dark grey clay with blue clay at 26.5'	
30							**SILTY CLAY** Blue, with trace organic coal fragments, moist, soft, moderate plasticity.	-30.0
	7		5/5					
35							**CLAYEY SILT WITH SAND** Moist, poorly sorted, trace coal.	-35.0
	8		3.5/5					
							SAND Loose sands, saturated, poorly sorted.	
				60			**SHALE**	
	9			40			Blue, moist, weathered, with lamination.	
40							End of Boring = 39.6 Feet	-40.0

Notes:

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-8

Site Name: Springfield CWLP Ash Pond Borehole #: W-9

Coordinates: X 1265.0 Y 3401.7 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Andrews Engineering, Inc. IL Registration #: _____

Drilling Contractor: Total Drilling Services/Skinner LTD. Consulting Firm: Andrews Engineering, Inc.

Driller: Todd Skinner Geologist: C. M. Latham

Drilling Method: CME 850 4.25 in HSA w/ 5'MC and 2' SS Logged by: C.M.Latham

Drilling Fluids (type): N/A Report Form Completed by: C.M. Latham

Date Well Started: 2/25/2021 Date Well Finished: 2/25/2021 Date Form Completed: 3/2/2021

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: Bentonite Chips

Installation method: Free Drop

Setting time: > 24

Type of bentonite seal: Bentonite Chips

Installation method: Free Drop

Setting time: > 24 hours

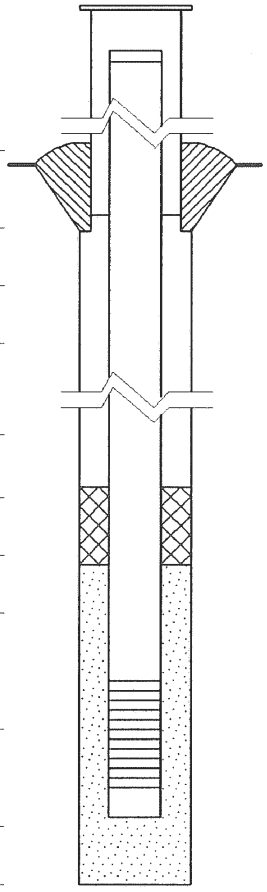
Type of sand pack: Silica Sand Pre-Pack

Grain size: 20/40 (sieve size)

Installation method: Free Drop

Type of backfill material: N/A (if applicable)

Installation method: _____



ELEVATION (MSL)®	DEPTH (BGS)* (0.01 ft)	
540.30	-3.10	Top of Protective Casing
540.30	-3.10	Top of Riser Pipe
537.20	0.00	Ground Surface
534.20	3.00	Top of Annular Sealant
530.20	7.00	Static Water Level Measured on (after completion)
	3.00	Top of Seal
510.60	26.60	Top of Sandpack
508.60	28.60	Top of Screen
498.02	39.18	Bottom of Screen
497.60	39.60	Bottom of Well
497.60	39.60	Bottom of Borehole

® Referenced to a National Geodetic Vertical Datum
* positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	N/A
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	
Protective Casing Length (ft)	N/A
Riser Pipe Length (ft)	29.48'
Bottom of Screen to End Cap (ft)	0.42
Screen Length [1st slot to last slot] (ft)	9.70
Total Length of Casing (ft)	N/A
Screen Slot Size*	#10 (0.01)

*Hand-slotted well screens are unacceptable.

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: CWLP
Location: Springfield
County: Sangamon
Site No.:
AEI No.: 200387

Location:
Coord. System:
Northing: 4684.0
Easting: 695.6

Weather: 40F Partly cloudy

Boring Information:
Boring No: W-5
Well No: AP-10
Surf Elev.: 534.4

Depth Information:
Total: 34.97
Auger: 4.25" HSA
Core: 5ft. Continous Sampler

Drilling Contractor:
Contractor Name: Total Drilling Services/Skinner ltd.
City: Hindsboro, Il.
Equipment: CME 850

Personnel:
Geologist: C.M. Latham
Driller: Todd Skinner
Helper(s): A. Bruce

Dates:
Start: 2/24/2021
Finish: 2/24/2021

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	0.0
0							**SILTY TOPSOIL** Dark brown, moist, very firm, hard silt in shoe.	
	1		2.5/5				**SILT** Medium brown, moist, very firm, hard silt in shoe.	
5							**CLAYEY SILT** Brown, moist, soft, homogenous.	-5.0
	2		4/4				**SILTY CLAY** Brown, high plasticity, moist, very soft, homogenous. Trace sand seen in top of barrel.	
10							Wet from 10'-15'	-10.0
	3		5				Free water at 12'5"	
15							**SILTY CLAY** Grey, soft, moist. Fine sands, trace gravels at 17'	-15.0
	4		5				**CLAYEY SILT WITH SAND** Blueish grey with trace gravel, soft, moderate sorting.	
20								-20.0

Notes:

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Boring Information: W-5 Boring No: W-5 Well No: AP-10

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							SANDY GRAVEL Poorly sorted, sub rounded, saturated, unconsolidated sands. Poorly sorted angular gravel.	
	5		5/5				**SILTY CLAY** Blue, high plasticity, firm, moist, tight clay. Very thin sand seam, fine grained, saturated at 23' Very thin sand seam, fine grained, saturated at 29.5'	
25								-25.0
	6		5/5					
30								-30.0
	7		4/5				**DIAMICTON** Blue, subrounded, poorly sorted sandy clay, with angular coal up to 0.3ft. Angular gravels; poorly sorted. Trace silts, saturated. Gradation into larger gravel and sand clasts towards bottom with trace silts and no clay.	
				33			**SHALE** Grey, moist, with lamination.	
	8			60				
35							End of Boring = 34.97 Feet	-35.0
40								-40.0

Notes:

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-10

Site Name: Springfield CWLP Ash Pond Borehole #: W-5

Coordinates: X 695.6 Y 4684.0 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Andrews Engineering, Inc. IL Registration #: _____

Drilling Contractor: Total Drilling Services/Skinner LTD. Consulting Firm: Andrews Engineering, Inc.

Driller: Todd Skinner Geologist: C. M. Latham

Drilling Method: CME 850 4.25 in HSA w/ 5'MC and 2' SS Logged by: C.M. Latham

Drilling Fluids (type): N/A Report Form Completed by: C.M. Latham

Date Well Started: 2/24/2021 Date Well Finished: 2/24/2021 Date Form Completed: 3/2/2021

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: Bentonite Chips

Installation method: Free Drop

Setting time: > 24

Type of bentonite seal: Bentonite Chips

Installation method: Free Drop

Setting time: > 24 hours

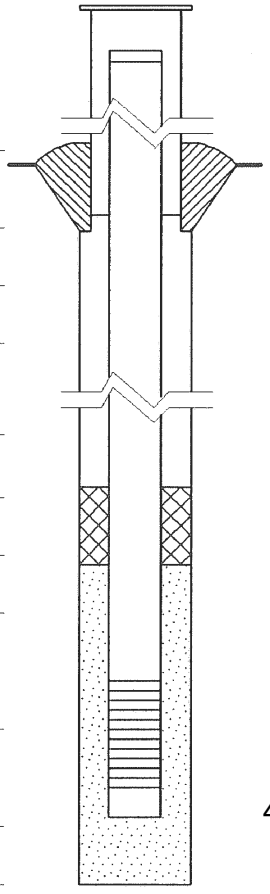
Type of sand pack: Silica Sand Pre-Pack

Grain size: 20/40 (sieve size)

Installation method: Free Drop

Type of backfill material: N/A (if applicable)

Installation method: _____



ELEVATION (MSL)®	DEPTH (BGS)* (0.01 ft)	
537.50	-3.10	Top of Protective Casing
537.50	-3.10	Top of Riser Pipe
534.40	0.00	Ground Surface
531.40	3.00	Top of Annular Sealant
528.38	6.02	Static Water Level Measured on (after completion)
531.4	3.00	Top of Seal
511.80	22.60	Top of Sandpack
509.70	24.70	Top of Screen
499.9	34.41	Bottom of Screen
499.53	34.87	Bottom of Well
499.43	34.97	Bottom of Borehole

® Referenced to a National Geodetic Vertical Datum
* positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	N/A
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	
Protective Casing Length (ft)	N/A
Riser Pipe Length (ft)	27.8
Bottom of Screen to End Cap (ft)	0.46
Screen Length [1st slot to last slot] (ft)	9.71
Total Length of Casing (ft)	N/A
Screen Slot Size*	#10 (0.01)

*Hand-slotted well screens are unacceptable.

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: CWLP
Location: Springfield, IL
County: Sangamon
Site No.:
AEI No.: 200387

Location:
Coord. System:
Northing: 3171.5
Easting: 1275.2

Weather: 44F Partly Sunny

Boring Information:
Boring No: W-1
Well No: AP-14
Surf Elev.: 536.80

Depth Information:
Total: 27.5
Auger: 4.25" HSA
Core: 5ft Continuous Sampler

Dates:
Start: 2/25/2021
Finish: 2/26/2021

Drilling Contractor:
Contractor Name: Total Drilling Services/Skinner ltd.
City: Hindsboro, IL
Equipment: CME 850 4.25" HSA w/ 5' cont. sampler and 2'SS

Personnel:
Geologist: C.M. Latham
Driller: Todd Skinner
Helper(s): A. Bruce

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	0.0
0							**SILTY TOPSOIL** Dark brown, moist, soft, organic leaves	
	1		3.5/5				**SILTY CLAY** Some gravel	
5							**CLAYEY SILT** Dark brown, moist, soft, organic leaves and roots, oxidation	-5.0
	2		5/5				**SILTY CLAY** Medium brown, mottled with grey clay and oxidation, high plasticity, moist, firm.	
10								-10.0
	3		4/5				Groundwater encountered at 14'	
15							**SILTY CLAY** Grey, moist, firm, high plasticity, oxidation	-15.0
	4		5/5					
20							21-21.5' coal fragments with undifferentiated organic materials	-20.0

Notes:

ANDREWS ENGINEERING
3300 Ginger Creek Drive - 217.787.2334
Springfield, IL 62711

FIELD BORING LOG

Boring Information: W-1 Boring No: W-1 Well No: AP-14

- Continuous Barrel (CB) - Split Spoon (SS) - Shelby Tube - Core - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
	5		3/5				**SILTY CLAY** Some gravel	
							SAND Coarse grained, poorly sorted, unconsolidated, saturated.	
25	6		3/5	30 60 4			**SHALE** Grey, weatherd with lamination	-25.0
							End of Boring = 27.5 Feet	
30								-30.0
35								-35.0
40								-40.0

Notes:

Illinois Environmental Protection Agency — Well Completion Report

Site #: _____ County: Sangamon Well #: AP-14

Site Name: Springfield CWLP Ash Pond Borehole #: W-1

Coordinates: X 1275.2 Y 3171.5 (or) Latitude: ___° ___' ___" Longitude: ___° ___' ___"

Surveyed by: Andrews Engineering, Inc. IL Registration #: _____

Drilling Contractor: Total Drilling Services/Skinner LTD. Consulting Firm: Andrews Engineering, Inc.

Driller: Todd Skinner Geologist: C. M. Latham

Drilling Method: CME 850 4.25 in HSA w/ 5'MC and 2' SS Logged by: C.M. Latham

Drilling Fluids (type): N/A Report Form Completed by: C.M. Latham

Date Well Started: 2/25/2021 Date Well Finished: 2/26/2021 Date Form Completed: 3/2/2021

ANNULAR SPACE DETAILS

Type of surface seal: Concrete

Type of annular sealant: Bentonite Chips

Installation method: Free Drop

Setting time: > 24

Type of bentonite seal: Bentonite Chips

Installation method: Free Drop

Setting time: > 24 hours

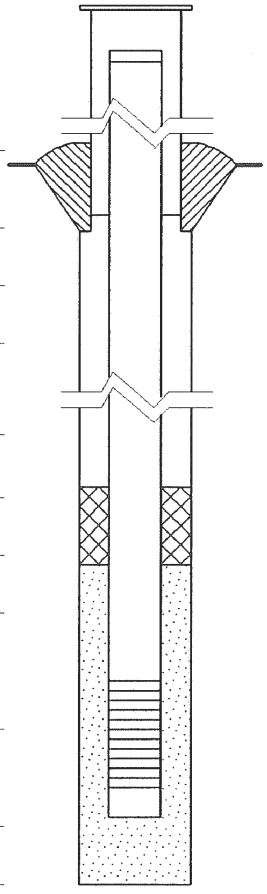
Type of sand pack: Silica Sand Pre-Pack

Grain size: 20/40 (sieve size)

Installation method: Free Drop

Type of backfill material: N/A (if applicable)

Installation method: _____



ELEVATION (MSL)®	DEPTH (BGS)* (0.01 ft)	
539.60	-2.80	Top of Protective Casing
539.60	-2.80	Top of Riser Pipe
536.80	0.00	Ground Surface
533.80	3.00	Top of Annular Sealant
534.80	2.00	Static Water Level Measured on (after completion)
	3.00	Top of Seal
521.45	15.35	Top of Sandpack
519.45	17.35	Top of Screen
509.75	27.05	Bottom of Screen
509.30	27.50	Bottom of Well
509.30	27.50	Bottom of Borehole

® Referenced to a National Geodetic Vertical Datum
* positive (+) values below GS, negitive (-) values above GS

WELL CONSTRUCTION MATERIALS

Protective Casing	N/A
Riser Pipe Above W.T.	PVC
Riser Pipe Below W.T.	PVC
Screen	PVC

CASING MEASUREMENTS

Diameter of Borehole (in)	8.25
ID of Riser Pipe (in)	
Protective Casing Length (ft)	N/A
Riser Pipe Length (ft)	20.15
Bottom of Screen to End Cap (ft)	0.45
Screen Length [1st slot to last slot] (ft)	9.70
Total Length of Casing (ft)	N/A
Screen Slot Size*	#10 (0.01)

*Hand-slotted well screens are unacceptable.

RAPPS

ENGINEERING and APPLIED SCIENCE

BORING LOG

821 SOUTH DURKIN – SPRINGFIELD IL 62704 – (217)787-2118

Site Name: FGDS Development Landfill Boring No: AW-1

Drilling Firm: Reynolds Drilling Corp. Drilling Method: HSA Surface Elev: 552.85

Logged By: KJM Checked By: KJM Date Started: 12/29/08 Completed: 12/30/08

DEPTH	Material Description Classification System_____	Sampling: Tube No.	Sampling: Type	Sampling: % Rec.	Tests: OVM (ppm)	Tests: Qu t/sf PEN	Tests: Moist	Comments	Well	DEPTH
0	Fill (not sampled)		5' CONTINUOUS SAMPLER							0
5								Blind drilled to 15'		5
10										10
15	Gray to brown silty clay fill; Moist; Soft to firm; Sand, pebbles & coal fragments	1		100						15
20	Plant debris	2		100						20
25	Dk. brown to gray clayey silt; Moist; Firm to hard; Laminated	3		100				Base of fill @ 23.6'		25
30										30

Water Level_____after_____hrs.

RAPPS

ENGINEERING and APPLIED SCIENCE

BORING LOG

821 SOUTH DURKIN – SPRINGFIELD IL 62704 – (217)787-2118

Site Name: FGDS Development Landfill — Boring No: AW-1

Drilling Firm: Reynolds Drilling Corp. — Drilling Method: HSA — Surface Elev: 552.85

Logged By: KJM — Checked By: KJM — Date Started: 12/29/08 — Completed: 12/30/08

DEPTH	Material Description Classification System	Sampling Tube No.	Type	% Rec.	Tests OVM (ppm)	Qu t/sf PEN	Moist	Comments	Well	DEPTH
30	Trace fine sand; Mottled	4	5' CONTINUOUS SAMPLER	100				Wet seam @ 32.2' Wet seam @ 33.3'		30
35	Softer	5		100						35
	Gray fine to coarse sand; Moist to wet; Clayey and silty zones; Trace gravel	6		90						
40										40
45		7		80						45
50	Pebbles									50
	Dark gray shale; Weathered/broken	8		25				Increased resistance		
55	End of boring @ 54.34'							Refusal		55
60										60

Water Level_____ after_____ hrs.

Illinois Environmental Protection Agency — **Well Completion Report**

Site Number: 1678250020 County: Sangamon

Site Name: FGDS Development Landfill Well #: AW-1

State Plane Coordinate: X ____ Y ____ (or) Latitude: ___ ___ ___ Longitude: ___ ___ ___ Borehole #: AW-1

N 4512.2 E 2030.49

Surveyed by: David Mihelsic IL Registration #: 3762

Drilling Contractor: Reynolds Drilling Corp. Driller: Andrew Rachford

Consulting Firm: Rapps Engineering & Applied Science Geologist: Ken Miller

Drilling Method: HSA Drilling Fluid (Type): NA

Logged By: Ken Miller Date Started: 12/29/08 Date Finished: 12/30/08

Report Form Completed By: Ken Miller Date: 5/18/09

ANNULAR SPACE DETAILS

Type of Surface Seal: Cement

Type of Annular Sealant: Bentonite Grout

Installation Method: Tremie

Setting Time: >24 hrs

Type of Bentonite Seal - - Granular, (Pellet), Slurry (Choose One)

Installation Method: Poured

Setting Time: 20 hrs

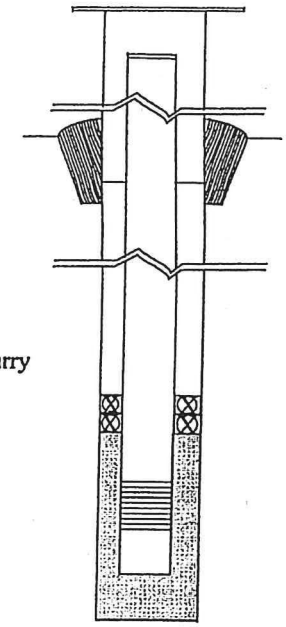
Type of Sand Pack: Quartz Sand

Grain Size: 50 (Sieve Size)

Installation Method: Poured

Type of Backfill Material: (if applicable)

Installation Method:



Elevations (MSL)*	Depths (BGS)	(.01ft.)
____	____	Top of Protective Casing
555.60	-2.75	Top of Riser Pipe
552.85	0	Ground Surface
549.85	3.00	Top of Annular Sealant
____	____	Static Water Level (After Completion)
513.90	38.95	Top of Seal
510.90	41.95	Top of Sand Pack
508.90	43.95	Top of Screen
498.90	53.95	Bottom of Screen
498.51	54.34	Bottom of Well
498.51	54.34	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or (Other)
Riser Pipe Above W.T.	SS304, SS316, PTFE, (PVC), or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, (PVC), or Other
Screen	SS304, SS316, PTFE, (PVC), or Other

CASING MEASURMENTS

Diameter of Borehole (inches)	8.25
ID of Riser Pipe (inches)	2
Protective Casing Length (feet)	5
Riser Pipe Length (feet)	46.70
Bottom of Screen to End Cap (feet)	0.4
Screen Length (1st slot to last slot) (feet)	10
Total Length of Casing (feet)	57.09
Screen Slot Size **	0.010

**Hand-Slotted Well Screens are Unacceptable

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Site Information:
Name: CWLP Ash Pond
Location: Springfield, Illinois
County: Sangamon
Site No.:
AEI No.:

Location:
Coord. System: Site Coordinates
Northing: 5613.3
Easting: 1737.4

Weather: rain, 55 deg; sunny, 73 deg

Boring Information:
Boring No: TW3N
Well No: RW-3
Surf Elev.: 536.8

Depth Information:
Total: 41.6'
Auger: 41.6'
Core: -

Drilling Contractor:
Contractor Name: Bulldog Drilling
City: Dupo
Equipment: 4.25" HSA, CME 55, 5' Continuous Macrocore

Personnel:
Geologist: D. Ghosh
Driller: J. Gates
Helper(s): C. Clines

Dates:
Start: 06/26/2017
Finish: 06/27/2017

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
							Ground Surface	536.8
0	1		3.5/5				**SILTY CLAY** dark brown, pervasive iron oxidation staining, dry (moist below 3'), firm to hard, moderate cementation, with root structure	535.0
							SILTY CLAY light tan, moist, moderate cementation, blocky	
5	2		5.0/5				**SILT** brown to gray, mottling, iron oxidation staining, moist, firm, moderate cementation	530.0
10	3		4.5/5				**SAND** sand lens, with silt, wet, trace clay	525.0
							SANDY SILT brown to gray, laminated, some wood fragments, trace coarse sand, coal and roots	
15	4		5.0/5				**SILTY CLAY** gray, wet to moist, very soft, strong cementation, laminated, some wood fragments, trace fine sand	520.0
20							**SILTY CLAY** dark gray, wet, very soft, strong cementation, homogeneous	

Notes:

Andrews Engineering, Inc.
3300 Ginger Creek Drive
Springfield, IL 62711

FIELD BORING LOG

Boring Information: RW-3 Boring No: TW3N Well No: RW-3

- Continuous Barrel (CB) | - Split Spoon (SS) | - Shelby Tube | - Core | - Blind Drill

Depth (ft)	Run No.	Sample Type	Sample Recov.	Blow Count	qu/su (tsf)	Lithology	Description/Comments	Elev. (MSL)
	5		3.0/5				cont: dark gray, wet, very soft, strong cementation, homogeneous	515
26	6		4.0/5				**SILTY CLAY** dark gray, till, moist, firm to hard, trace coarse and fine gravel, trace coal	510
31	7		4.5/5					505
36	8		5.0/5				**SANDY SILT** **SILTY SAND** gray, fine to medium graineed, wet, trace angular gravel	500
41	9						**SHALE** weathered	495
							End of Boring = 41.6 Feet	

Notes:

Illinois Environmental Protection Agency **Well Completion Report**

Site Number: _____ County: Sangamon

Site Name: City Water, Light & Power (CWLP) Ash Ponds Well #: TW3N / RW-3

State Plane Coordinate: X _____ Y _____ (or) Latitude: ____ ____ ____ Longitude: ____ ____ ____ Borehole #: TW3N

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: Bulldog Drilling, Inc. Driller: J. Gates

Consulting Firm: Andrews Engineering, Inc. Geologist: D. Ghosh

Drilling Method: CME 55 w/ 4.25" HSA Drilling Fluid (Type): none

Logged By: D. Ghosh Date Started: 6/26/17 Date Finished: 6/27/17

Report Form Completed By: M. Hewitt Date: 9/18/17

ANNULAR SPACE DETAILS

Type of Surface Seal: Bentonite Grout

Type of Annular Sealant: Bentonite Grout

Installation Method: Tremi

Setting Time: 24 hours

Type of Bentonite Seal - - Granular, Pellet, Slurry (Choose One)

Installation Method: Free drop

Setting Time: N/A

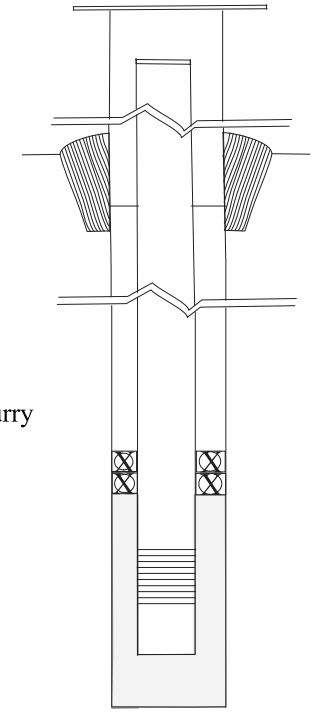
Type of Sand Pack: Silica Sand

Grain Size: 10/20 (Sieve Size)

Installation Method: Free Drop

Type of Backfill Material: None (if applicable)

Installation Method: N/A



	Elevations (MSL)*	Depths (BGS)	(.01ft.)
			Top of Protective Casing
	539.5	-2.5	Top of Riser Pipe
	536.8	0	Ground Surface
	533.8	3	Top of Annular Sealant
	528.09	8.71	Static Water Level (After Completion)
	509.8	27	Top of Seal
	507.2	29.6	Top of Sand Pack
	505.66	31.14	Top of Screen
	496.08	40.72	Bottom of Screen
	495.4	41.4	Bottom of Well
	495.2	41.6	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASURMENTS

Diameter of Borehole (inches)	8.25
ID of Riser Pipe (inches)	2.049
Protective Casing Length (feet)	
Riser Pipe Length (feet)	33.84
Bottom of Screen to End Cap (feet)	0.68
Screen Length (1st slot to last slot) (feet)	9.58
Total Length of Casing (feet)	44.1
Screen Slot Size **	0.01

**Hand-Slotted Well Screens are Unacceptable

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring G-105 / G120

Project Name: Monitoring Well Installations Date of Boring: January 9, 1990

Site: CWLP Ash Disposal Facility Project No.: 020-05001

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
SURFACE							
Silty clay to clayey silt, trace organics, brown (fill)	5	1-SS	20%				
	10	2-SS	35%				
		3-SS	25%				
Silty clay, drak grey to black, some organics	15						
Silty clay to clay, grey, mottled brown, trace sand		4-SS	100%				
	20	5-SS	40%				
	25	6-SS	35%				
Silty clay with sand, fine to medium, brown	30						While Drilling ▽
		7-SS	40%				
	35	8-SS	100%				
	40						
Silty clay, trace sand, dark grey, fine		9-SS	100%				
	45						

Professional Service Industries, Inc.

RECORD OF SUBSURFACE EXPLORATION

Boring G-105 (Continued) / G120

Project Name: Monitoring Well Installations Date of Boring: January 9, 1990

Site: CWLP Ash Disposal Facility Project No.: 020-05001

DESCRIPTION	DEPTH	SAMPLE	N	Q_u	Q_p	M_c	REMARKS
Silty clay, some sand, fine, dark grey	45	10-SS	100%				
48'-48.7': Grey sand, fine to medium	50	11-SS	80%				
Shale, grey, weathered							
End of Boring							

Illinois Environmental Protection Agency — Well Completion Report

Site #: 1678250020 County: Sangamon Well #: G-105 / G120

Site Name: CWLP - Ash Disposal Facility Grid Coordinate: Northing 1641.61 Easting 610.10

Drilling Contractor: Professional Service Industries, Inc. Date Drilled Start: January 9, 1990

Driller: B. Williamson Geologist: -- Date Completed: January 16, 19
(Re-Drilled w/4¼" I.D.)

Drilling Method: Hollow Stem Auger - 3¼" I.D & 4¼" I.D Drilling Fluids (type): None

Annular Space Details

Type of Surface Seal: Concrete

Type of Annular Sealant: Cement/Bentonite Grout

Amount of cement: # of bags 6 lbs. per bag 94

Amount of bentonite: # of bags 0.2 lbs. per bag 50

Type of Bentonite Seal (Granular, Pellet): Pellet

Amount of bentonite: # of Bags 0.5 lbs. per bag 50

Type of Sand Pack: Silica Sand (Marco-Sandblasting)

Source of Sand: Henry Nelch & Son Co., Springfield, IL

Amount of Sand: # of bags 1.8 lbs. per bag 100

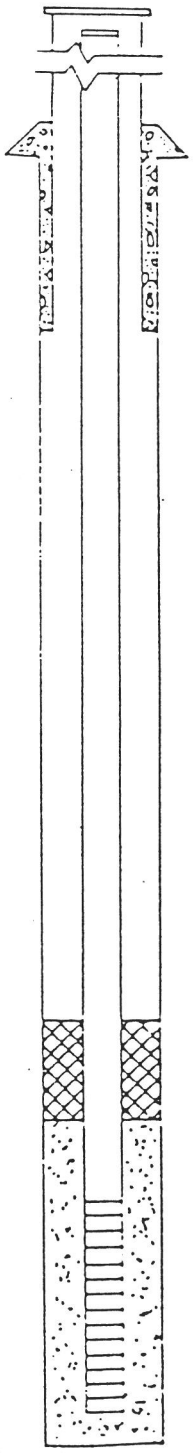
Well Construction Materials

	Stainless Steel Specify Type	Teflon Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint			--	
Riser pipe above w.t.			2"	
Riser pipe below w.t.			2"	
Screen			2"	
Coupling joint screen to riser			--	
Protective casing				6"X5' Steel

Measurements

to .01 ft. (where applicable)

Riser pipe length	43.9
Protective casing length	Flush Mount
Screen length	6'
Bottom of screen to end cap	0.3'
Top of screen to first joint	0.3'
Total length of casing	49.9
Screen slot size	0.010
# of openings in screen	--
Diameter of borehole (in)	8
ID of riser pipe (in)	2



Elevations — .01 ft.

553	49	MSL Top of Protective Cas
553	25	MSL Top of Riser Pipe
	±0.1	ft. Casing Stickup
553	49	MSL Ground Surface
	-2.9	ft. Top of annular sealant
	-40.5	ft. Top of Seal
	2.0	ft. Total Seal Interval
	-42.5	ft. Top of Sand
	-43.8	ft. Top of Screen
	6.0	ft. Total Screen Interval
	-49.8	ft. Bottom of Screen
	-53.0	ft. Bottom of Borehole

Completed by: Surveyed by: Ill. registration #

APPENDIX C:
BACKGROUND CONCENTRATIONS AND CALCULATIONS

City Water, Light and Power
CCR Surface Impoundments
Groundwater Protection Standard

Appendix III Parameter	*Units*	*MCL [1]*	*Published GWPS [2]*	*Site Specific Background*	*Final GWPS*
Boron, total	*mg/L*	*NA*	*NA*	*1.4973*	*1.4973*
Calcium, total	*mg/L*	*NA*	*NA*	*181.6*	*181.6*
Chloride, total	*mg/L*	*NA*	*NA*	*12.3*	*12.3*
Fluoride, total	*mg/L*	*4*	*NA*	*0.5*	*4*
pH	*s.u.*	*NA*	*NA*	*6.70 – 7.87*	*6.70 – 7.87*
Sulfate, total	*mg/L*	*NA*	*NA*	*55.5*	*55.5*
TDS	*mg/L*	*NA*	*NA*	*609.21*	*609.21*
Appendix IV Parameter					
Antimony, total	*mg/L*	*0.006*	*NA*	*0.001*	*0.006*
Arsenic, total	*mg/L*	*0.01*	*NA*	*0.0375*	*0.0375*
Barium, total	*mg/L*	*2*	*NA*	*0.519*	*2*
Beryllium, total	*mg/L*	*0.004*	*NA*	*0.0025*	*0.004*
Cadmium, total	*mg/L*	*0.005*	*NA*	*0.0025*	*0.005*
Chromium, total	*mg/L*	*0.1*	*NA*	*0.0653*	*0.1*
Cobalt, total	*mg/L*	*NA*	*0.006*	*0.0052*	*0.006*
Lead, total	*mg/L*	*NA*	*0.015*	*0.0075*	*0.015*
Lithium	*mg/L*	*NA*	*0.04*	*0.0124*	*0.04*
Mercury, total	*mg/L*	*0.002*	*NA*	*0.0005*	*0.002*
Molybdenum	*mg/L*	*NA*	*0.1*	*0.025*	*0.1*
Radium-226+228	*pCi/L*	*0.005*	*NA*	*5.00*	*5.00*
Selenium, total	*mg/L*	*0.05*	*NA*	*0.025*	*0.05*
Thallium	*mg/L*	*0.002*	*NA*	*0.002*	*0.002*

Notes:
1 - 40 CFR 141
2 - Published GWPS based upon 40 CFR 257.95(h)(2)

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix III Parameters
Raw Data Summary

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Distribution[1]	Proposed Background Value
AP-4	Boron, total	ug/L	78.3	123	131	136	117	120	105	129	Normal Dataset - Calculate Interwell Prediction Limit	149.73
AP-5	Boron, total	ug/L	69.9	53.7	77.9	73.3	48.3	44.3	40.7	73		
AP-4	Calcium, total	mg/L	125	118	118	117	136	117	150	141	Normal Dataset - Calculate Interwell Prediction Limit	181.60
AP-5	Calcium, total	mg/L	98.1	77.3	158	201	155	83.5	105	118		
AP-4	Chloride, total	mg/L	11.3	12.3	11.3	9.8	10.6	12	11.9	12.1	Non-Parametric - Propose Highest Detected Concentration as Prediction Limit/Background	12.30
AP-5	Chloride, total	mg/L	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 30		
AP-4	Fluoride, total	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	100% NDs - Interwell value set at the laboratory PQL	0.50
AP-5	Fluoride, total	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
AP-4	pH	s.u.	7.39	7.18	7.13	7.01	7.02	7.08	7.29	7.12	Normal Dataset - Calculate Interwell Prediction Limit	6.70 - 7.87
AP-5	pH	s.u.	7.66	7.56	6.83	7.62	7.42	7.36	7.77	7.19		
AP-4	Sulfate, total	mg/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	Non-Parametric - Propose Highest Detected Concentration as Prediction Limit/Background	55.50
AP-5	Sulfate, total	mg/L	54.3	46.8	50.8	52.5	55.5	54.8	48.4	55.3		
AP-4	Total Dissolved Solids	mg/L	492	514	554	558	482	538	526	544	Normal Dataset - Calculate Interwell Prediction Limit	609.21
AP-5	Total Dissolved Solids	mg/L	358	292	474	344	406	426	392	470		

Notes:
1. Shapiro-Wilk method utilized to determine if the data set follows a normal distribution. ProUCL 5.2 was used for the calculations. ProUCL 5.2 outputs are provided.
2. In accordance with Chapter 18.3 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater at RCRA Facilities), the maximum detected concentration is utilized as the interwell prediction limit and proposed background when the dataset does not follow a normal distribution.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix III Parameters
Outlier Analysis

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Number of Samples	Mean	Standard Deviation	Critical Values
AP-4	Boron, total	ug/L	78.3	123	131	136	117	120	105	129	16	88.775	33.73203	2.747
AP-5	Boron, total	ug/L	69.9	53.7	77.9	73.3	48.3	44.3	40.7	73				
AP-4	Calcium, total	mg/L	125	118	118	117	136	117	150	141	16	126.11875	30.70627	2.747
AP-5	Calcium, total	mg/L	98.1	77.3	158	201	155	83.5	105	118				
AP-4	pH	s.u.	7.39	7.18	7.13	7.01	7.02	7.08	7.29	7.12	16	7.289375	0.266395	2.747
AP-5	pH	s.u.	7.66	7.56	6.83	7.62	7.42	7.36	7.77	7.19				
AP-4	Total Dissolved Solids	mg/L	492	514	554	558	482	538	526	544	16	460.625	82.23128	2.747
AP-5	Total Dissolved Solids	mg/L	358	292	474	344	406	426	392	470				

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4
AP-4	Boron, total	ug/L	-0.310536	1.0146142	1.2517775	1.4000046	0.8367418	0.925678	0.4809968	1.1924867
AP-5	Boron, total	ug/L	-0.559557	-1.039813	-0.322394	-0.458763	-1.199898	-1.31848	-1.425203	-0.467656
AP-4	Calcium, total	mg/L	-0.036434	-0.2644	-0.2644	-0.296967	0.3217991	-0.296967	0.7777321	0.4846323
AP-5	Calcium, total	mg/L	-0.912477	-1.589863	1.0382652	2.4386307	0.9405653	-1.387949	-0.687767	-0.2644
AP-4	pH	s.u.	0.3777287	-0.410575	-0.598266	-1.048725	-1.011187	-0.785957	0.0023461	-0.635804
AP-5	pH	s.u.	1.3912615	1.015879	-1.724414	1.2411085	0.4903434	0.2651139	1.8041823	-0.373036
AP-4	Total Dissolved Solids	mg/L	0.3815458	0.6490839	1.1355168	1.1841601	0.2599376	0.9409436	0.7950138	1.0139086
AP-5	Total Dissolved Solids	mg/L	-1.248004	-2.050619	0.162651	-1.418256	-0.664285	-0.421068	-0.834536	0.1140077

Notes:
1. Outlier method presented above outlined is in ASTM paper E178-75 (Grubb's Test).
2. No outliers are observed.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix III Parameters
Non-Detect Percentage Analysis

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Number of Samples	Number of ND's	% ND	ND Treatment
AP-4	Boron, total	ug/L	78.3	123	131	136	117	120	105	129	16	0	0%	No Adjustment
AP-5	Boron, total	ug/L	69.9	53.7	77.9	73.3	48.3	44.3	40.7	73				
AP-4	Calcium, total	mg/L	125	118	118	117	136	117	150	141	16	0	0%	No Adjustment
AP-5	Calcium, total	mg/L	98.1	77.3	158	201	155	83.5	105	118				
AP-4	pH	s.u.	7.39	7.18	7.13	7.01	7.02	7.08	7.29	7.12	16	0	0%	No Adjustment
AP-5	pH	s.u.	7.66	7.56	6.83	7.62	7.42	7.36	7.77	7.19				
AP-4	Total Dissolved Solids	mg/L	492	514	554	558	482	538	526	544	16	0	0%	No Adjustment
AP-5	Total Dissolved Solids	mg/L	358	292	474	344	406	426	392	470				

Notes:
1. For datasets with a fraction of non-detect values from 25% to 50%, adjustments to the mean and standard deviation (SD) are required.
2. For datasets with a single censoring point (RL), Cohen's Ajustment may be used to adjust the mean and SD or a substitution of 1/2 the RL may be used for small datasets (<5) in accordance with Section 15.2 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities).
3. Kaplan-Meier may be used to adjust the mean and SD for datasets with single or multiple censoring points (RL). The Kaplan-Meier adjusted mean and SD were calculated using ProUCL 5.2.
2. For datasets that do not include non-detect values, no adjustment to the mean and standard deviation are required prior to calculating the prediction limit.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix III Parameters

Prediction Limit Calculation

Prediction Limit = x + st[1+(1/n)]^**½

Confidence Level = 95%

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	ND Treatment	Mean [x]	Standard Deviation [s]	Number of Samples	T Value [t]	Prediction Limit
AP-4	Boron, total	ug/L	78.3	123	131	136	117	120	105	129	No Adj.	88.775	33.73	16	1.753	149.7271
AP-5	Boron, total	ug/L	69.9	53.7	77.9	73.3	48.3	44.3	40.7	73						
AP-4	Calcium, total	mg/L	125	118	118	117	136	117	150	141	No Adj.	126.11875	30.71	16	1.753	181.6035
AP-5	Calcium, total	mg/L	98.1	77.3	158	201	155	83.5	105	118						
AP-4	Chloride, total	mg/L	11.3	12.3	11.3	9.8	10.6	12	11.9	12.1	Highest Detected Value	Non-parametric dataset				12.3000
AP-5	Chloride, total	mg/L	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 30						
AP-4	Fluoride, total	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	PQL	100% Non-detects				0.5000
AP-5	Fluoride, total	mg/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5						
AP-4	pH	s.u.	7.39	7.18	7.13	7.01	7.02	7.08	7.29	7.12	No Adj.	7.289375	0.27	16	2.131	6.7042 – 7.8745
AP-5	pH	s.u.	7.66	7.56	6.83	7.62	7.42	7.36	7.77	7.19						
AP-4	Sulfate, total	mg/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	Highest Detected Value	Non-parametric dataset				55.5000
AP-5	Sulfate, total	mg/L	54.3	46.8	50.8	52.5	55.5	54.8	48.4	55.3						
AP-4	Total Dissolved Solids	mg/L	492	514	554	558	482	538	526	544	No Adj.	460.625	82.23	16	1.753	609.2129
AP-5	Total Dissolved Solids	mg/L	358	292	474	344	406	426	392	470						

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameters

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Distribution[1]	Proposed Background Value
AP-4	Arsenic, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	26.6	> 50% NDs - Propose Highest Detected Concentration as Prediction Limit/Background	26.6
AP-5	Arsenic, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
AP-4	Barium, total	ug/L	322	373	381	357	413	405	391	410	Normal Dataset - Calculate Interwell Prediction Limit	519.18
AP-5	Barium, total	ug/L	61.8	62.8	251	201	137	80.7	43	308		
AP-4	Beryllium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	100% NDs - Interwell value set at the laboratory PQL	2.5
AP-5	Beryllium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5		
AP-4	Cadmium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	100% NDs - Interwell value set at the laboratory PQL	2.5
AP-5	Cadmium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5		
AP-4	Chromium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	> 50% NDs - Propose Highest Detected Concentration as Prediction Limit/Background	65.3
AP-5	Chromium, total	ug/L	< 25	< 25	60.5	43.2	< 25	< 25	< 25	65.3		
AP-4	Mercury, total	ug/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	100% NDs - Interwell value set at the laboratory PQL	0.5
AP-5	Mercury, total	ug/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5		
AP-4	Molybdenum, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	100% NDs - Interwell value set at the laboratory PQL	25
AP-5	Molybdenum, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		
AP-4	Radium-226	pCi/L	< 1	< 0.57	0.3	0.91	0.82	0.63	0.53	0.69	Normal Dataset - Calculate Interwell Prediction Limit	1.41
AP-5	Radium-226	pCi/L	< 1	< 0.42	0.3	0.34	0.34	0.55	1.9	1.3		
AP-4	Radium-228	pCi/L	2.2	< 0.58	1.3	1.4	1.7	0.73	1.5	1.3	Normal Dataset - Calculate Interwell Prediction Limit	2.38
AP-5	Radium-228	pCi/L	< 1	< -0.06	1	2.2	0.85	1.2	1	1.9		
AP-4	Selenium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	100% NDs - Interwell value set at the laboratory PQL	25
AP-5	Selenium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25		

Notes:

1. Shapiro-Wilk method utilized to determine if the data set follows a normal distribution. ProUCL 5.2 was used for the calculations. ProUCL 5.2 outputs are provided.

2. In accordance with Section 18.3 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater at RCRA Facilities), the maximum detected concentration is utilized as the interwell prediction limit and proposed background when the dataset does not follow a normal distribution.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix IV Parameters
Outlier Analysis

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Number of Samples	Mean	Standard Deviation	Critical Values
AP-4	Barium, total	ug/L	322	373	381	357	413	405	391	410	16	262.33125	142.1442	2.747
AP-5	Barium, total	ug/L	61.8	62.8	251	201	137	80.7	43	308				
AP-4	Radium-226	pCi/L	< 1	< 0.57	0.3	0.91	0.82	0.63	0.53	0.69	16	0.725	0.428906	2.747
AP-5	Radium-226	pCi/L	< 1	< 0.42	0.3	0.34	0.34	0.55	1.9	1.3				
AP-4	Radium-228	pCi/L	2.2	< 0.58	1.3	1.4	1.7	0.73	1.5	1.3	16	1.2375	0.594581	2.747
AP-5	Radium-228	pCi/L	< 1	< -0.06	1	2.2	0.85	1.2	1	1.9				

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4
AP-4	Barium, total	ug/L	0.419776	0.778567	0.834848	0.666005	1.059971	1.00369	0.905199	1.038866
AP-5	Barium, total	ug/L	-1.41076	-1.40372	-0.07972	-0.43147	-0.88172	-1.2778	-1.54302	0.321285
AP-4	Radium-226	pCi/L	0.641167	-0.36138	-0.99089	0.43133	0.221494	-0.22149	-0.45465	-0.0816
AP-5	Radium-226	pCi/L	0.641167	-0.71111	-0.99089	-0.89763	-0.89763	-0.40802	2.739531	1.340621
AP-4	Radium-228	pCi/L	1.618787	-1.10582	0.105116	0.273302	0.777859	-0.85354	0.441487	0.105116
AP-5	Radium-228	pCi/L	-0.39944	0	-0.39944	1.618787	-0.65172	-0.06307	-0.39944	1.11423

Notes:
1. Outlier method presented above outlined is in ASTM paper E178-75 (Grubb's Test).
2. No outliers are observed.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix IV Parameters
Non-Detect Percentage Analysis

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	Number of Samples	Number of ND's	% ND	ND Treatment
AP-4	Barium, total	ug/L	322	373	381	357	413	405	391	410	16	0	0%	NO ADJ
AP-5	Barium, total	ug/L	61.8	62.8	251	201	137	80.7	43	308				
AP-4	Radium-226	pCi/L	< 1	< 0.57	0.3	0.91	0.82	0.63	0.53	0.69	16	4	25%	Kaplan-Meier
AP-5	Radium-226	pCi/L	< 1	< 0.42	0.3	0.34	0.34	0.55	1.9	1.3				
AP-4	Radium-228	pCi/L	2.2	< 0.58	1.3	1.4	1.7	0.73	1.5	1.3	16	3	19%	Kaplan-Meier
AP-5	Radium-228	pCi/L	< 1	< -0.06	1	2.2	0.85	1.2	1	1.9				

Notes:
1. For datasets with a fraction of non-detect values from 25% to 50%, adjustments to the mean and standard deviation (SD) are required.
2. For datasets with a single censoring point (RL), Cohen's Ajustment may be used to adjust the mean and SD or a substitution of 1/2 the RL may be used for small datasets (<5) in accordance with Section 15.2 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities).
3. Kaplan-Meier may be used to adjust the mean and SD for datasets with single or multiple censoring points (RL). The Kaplan-Meier adjusted mean and SD were calculated using ProUCL 5.2.
2. For datasets that do not include non-detect values, no adjustment to the mean and standard deviation are required prior to calculating the prediction limit.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameters

Prediction Limit Calculation

Prediction Limit = x + st[1+(1/n)]^*½

Confidence Level = 95%

Well	Parameter	Units	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	ND Treatment	Mean [x]	Standard Deviation [s]	Number of Samples	T Value [t]	Prediction Limit Limit
AP-4	Arsenic, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	26.6	Highest Detected Value	Non-parametric dataset				26.6
AP-5	Arsenic, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25						
AP-4	Barium, total	ug/L	322	373	381	357	413	405	391	410	No Adj.	262.3313	142.14	16	1.753	519.1789
AP-5	Barium, total	ug/L	61.8	62.8	251	201	137	80.7	43	308						
AP-4	Beryllium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	PQL	100% Non-detects				2.5
AP-5	Beryllium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5						
AP-4	Cadmium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	PQL	100% Non-detects				2.5
AP-5	Cadmium, total	ug/L	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5						
AP-4	Chromium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	Highest Detected Value	Non-parametric dataset				65.3
AP-5	Chromium, total	ug/L	< 25	< 25	60.5	43.2	< 25	< 25	< 25	65.3						
AP-4	Mercury, total	ug/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	PQL	100% Non-detects				0.5
AP-5	Mercury, total	ug/L	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5						
AP-4	Molybdenum, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	PQL	100% Non-detects				25
AP-5	Molybdenum, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25						
AP-4	Radium-226	pCi/L	< 1	< 0.57	0.3	0.91	0.82	0.63	0.53	0.69	[1] Kaplan-Meier	0.646	0.42	16	1.753	1.4103
AP-5	Radium-226	pCi/L	< 1	< 0.42	0.3	0.34	0.34	0.55	1.9	1.3						
AP-4	Radium-228	pCi/L	2.2	< 0.58	1.3	1.4	1.7	0.73	1.5	1.3	[1] Kaplan-Meier	1.158	0.68	16	1.753	2.3813
AP-5	Radium-228	pCi/L	< 1	< -0.06	1	2.2	0.85	1.2	1	1.9						
AP-4	Selenium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25	PQL	100% Non-detects				25
AP-5	Selenium, total	ug/L	< 25	< 25	< 25	< 25	< 25	< 25	< 25	< 25						

Note:

1. Multiple censoring points (RL's) were observed. Therefore, Kaplan-Meier was utilized to adjust the mean and SD.

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
1Q 2016
Work Order: 16A0149

Client Sample ID: AP-4
Report Date: 03/28/2016
Collection Date: 02/26/2016 07:50
Matrix: Groundwater
Lab ID: 16A0149-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**786**			uS/cm	02/26/16 07:50	B6C0037	PB
Method: SM2550-B							
Temperature	**49.7**			°F	02/26/16 07:50	B6C0037	PB
Method: SM4500-H							
pH	**7.39**	0.05		pH Units	02/26/16 07:50	B6C0037	PB
Metals by ICP-MS							
Method: SW6020B / SW3015							
Antimony	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Arsenic	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Barium	**322**	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Beryllium	< 2.50	2.50		ug/L	03/01/16 17:02	B6B1253	AG
Boron	**78.3**	12.5		ug/L	03/01/16 17:02	B6B1253	AG
Cadmium	< 2.50	2.50		ug/L	03/01/16 17:02	B6B1253	AG
Calcium	**125**	1.25		mg/L	03/01/16 18:08	B6B1253	AG
Chromium	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Cobalt	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Copper	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Iron	**12200**	125		ug/L	03/01/16 17:02	B6B1253	AG
Lead	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Manganese	**259**	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Molybdenum	< 0.0250	0.0250		mg/L	03/01/16 17:02	B6B1253	AG
Nickel	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Selenium	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Silver	< 2.50	2.50		ug/L	03/01/16 17:02	B6B1253	AG
Thallium	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Zinc	< 25.0	25.0		ug/L	03/01/16 17:02	B6B1253	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	02/29/16 15:05	B6B1220	MB1
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**11.3**	3.00		mg/L	02/27/16 21:26	B6B1174	DZ1
Fluoride	< 0.500	0.500		mg/L	02/27/16 21:26	B6B1174	DZ1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	02/27/16 21:26	B6B1174	DZ1
Sulfate	< 5.00	5.00		mg/L	02/27/16 21:26	B6B1174	DZ1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**492**	10.0		mg/L	03/01/16 07:50	B6C0002	DN1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
1Q 2016
Work Order: 16A0149

Client Sample ID: AP-5
Report Date: 03/28/2016
Collection Date: 02/26/2016 07:05
Matrix: Groundwater
Lab ID: 16A0149-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**543**			uS/cm	02/26/16 07:05	B6C0037	PB
Method: SM2550-B							
Temperature	**52.8**			°F	02/26/16 07:05	B6C0037	PB
Method: SM4500-H							
pH	**7.66**	0.05		pH Units	02/26/16 07:05	B6C0037	PB
Metals by ICP-MS							
Method: SW6020B / SW3015							
Antimony	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Arsenic	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Barium	**61.8**	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Beryllium	< 2.50	2.50		ug/L	03/01/16 17:30	B6B1253	AG
Boron	**69.9**	12.5		ug/L	03/01/16 17:30	B6B1253	AG
Cadmium	< 2.50	2.50		ug/L	03/01/16 17:30	B6B1253	AG
Calcium	**98.1**	1.25		mg/L	03/01/16 18:17	B6B1253	AG
Chromium	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Cobalt	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Copper	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Iron	**2970**	125		ug/L	03/01/16 17:30	B6B1253	AG
Lead	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Manganese	**116**	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Molybdenum	< 0.0250	0.0250		mg/L	03/01/16 17:30	B6B1253	AG
Nickel	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Selenium	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Silver	< 2.50	2.50		ug/L	03/01/16 17:30	B6B1253	AG
Thallium	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Zinc	< 25.0	25.0		ug/L	03/01/16 17:30	B6B1253	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	03/09/16 12:46	B6C0342	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	02/27/16 21:54	B6B1174	DZ1
Fluoride	< 0.500	0.500		mg/L	02/27/16 21:54	B6B1174	DZ1
Nitrogen, Nitrate	**1.32**	0.500		mg/L	02/27/16 21:54	B6B1174	DZ1
Sulfate	**54.3**	5.00		mg/L	02/27/16 21:54	B6B1174	DZ1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**358**	10.0		mg/L	03/02/16 10:00	B6C0087	DN1

Client Name: Environmental Monitoring Technologies Report #: 358475

Sampling Point: 16A0149-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.090	1.0	**0.45 ± 0.16**	pCi/L	03/02/16 13:30	03/07/16 13:59	3407659
15262-20-1	Radium-228	7500-Ra D	---	0.63	1.0	**2.2 ± 0.7**	pCi/L	03/14/16 10:42	03/23/16 11:48	3407659
---	Combined Radium	calc.	5 *	0.63	1.0	**2.65 ± 0.72**	pCi/L	03/02/16 13:30	03/23/16 11:48	3407659

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 16A0149-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.070	1.0	**0.26 ± 0.12**	pCi/L	03/07/16 12:00	03/14/16 13:37	3407660
15262-20-1	Radium-228	7500-Ra D	---	0.64	1.0	-2.9 ± 0.5	pCi/L	03/14/16 10:42	03/23/16 11:48	3407660
---	Combined Radium	calc.	5 *	0.64	1.0	-2.64 ± 0.49	pCi/L	03/07/16 12:00	03/23/16 11:48	3407660

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2016
Work Order: 16E0241

Client Sample ID: AP-4
Report Date: 06/17/2016
Collection Date: 05/13/2016 07:30
Matrix: Groundwater
Lab ID: 16E0241-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**779**			uS/cm	05/13/16 07:30	B6E0750	AS5
Method: SM2550-B							
Temperature	**59.5**			°F	05/13/16 07:30	B6E0750	AS5
Method: SM4500-H							
pH	**7.18**	0.05		pH Units	05/13/16 07:30	B6E0750	AS5
Metals by ICP-MS							
Method: SW6020B / SW3015							
Antimony	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Arsenic	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Barium	**373**	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Beryllium	< 2.50	2.50		ug/L	05/20/16 12:05	B6E0766	AG
Boron	**123**	12.5		ug/L	05/20/16 12:05	B6E0766	AG
Cadmium	< 2.50	2.50		ug/L	05/20/16 12:05	B6E0766	AG
Calcium	**118**	2.50		mg/L	05/20/16 12:24	B6E0766	AG
Chromium	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Cobalt	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Copper	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Iron	**13000**	125		ug/L	05/20/16 12:05	B6E0766	AG
Lead	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Manganese	**156**	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Molybdenum	< 0.0250	0.0250		mg/L	05/20/16 12:05	B6E0766	AG
Nickel	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Selenium	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Silver	< 2.50	2.50		ug/L	05/20/16 12:05	B6E0766	AG
Thallium	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Zinc	< 25.0	25.0		ug/L	05/20/16 12:05	B6E0766	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	05/20/16 12:01	B6E0776	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**12.3**	3.00		mg/L	05/14/16 04:25	B6E0542	DZ1
Fluoride	< 0.500	0.500		mg/L	05/14/16 04:25	B6E0542	DZ1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	05/14/16 04:25	B6E0542	DZ1
Sulfate	< 5.00	5.00		mg/L	05/14/16 04:25	B6E0542	DZ1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**514**	10.0		mg/L	05/19/16 16:00	B6E0753	TB2

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2016
Work Order: 16E0241

Client Sample ID: AP-5
Report Date: 06/17/2016
Collection Date: 05/13/2016 07:35
Matrix: Groundwater
Lab ID: 16E0241-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**636**			uS/cm	05/13/16 07:35	B6E0750	MAJ
Method: SM2550-B							
Temperature	**53.7**			°F	05/13/16 07:35	B6E0750	MAJ
Method: SM4500-H							
pH	**7.56**	0.05		pH Units	05/13/16 07:35	B6E0750	MAJ
Metals by ICP-MS							
Method: SW6020B / SW3015							
Antimony	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Arsenic	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Barium	**62.8**	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Beryllium	< 2.50	2.50		ug/L	05/20/16 12:07	B6E0766	AG
Boron	**53.7**	12.5		ug/L	05/20/16 12:07	B6E0766	AG
Cadmium	< 2.50	2.50		ug/L	05/20/16 12:07	B6E0766	AG
Calcium	**77.3**	2.50		mg/L	05/20/16 12:26	B6E0766	AG
Chromium	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Cobalt	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Copper	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Iron	**4120**	125		ug/L	05/20/16 12:07	B6E0766	AG
Lead	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Manganese	**58.4**	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Molybdenum	< 0.0250	0.0250		mg/L	05/20/16 12:07	B6E0766	AG
Nickel	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Selenium	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Silver	< 2.50	2.50		ug/L	05/20/16 12:07	B6E0766	AG
Thallium	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Zinc	< 25.0	25.0		ug/L	05/20/16 12:07	B6E0766	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	05/18/16 13:11	B6E0654	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	05/14/16 06:16	B6E0542	DZ1
Fluoride	< 0.500	0.500		mg/L	05/14/16 06:16	B6E0542	DZ1
Nitrogen, Nitrate	**1.55**	0.500		mg/L	05/14/16 06:16	B6E0542	DZ1
Sulfate	**46.8**	5.00		mg/L	05/14/16 06:16	B6E0542	DZ1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**292**	10.0		mg/L	05/19/16 16:00	B6E0753	TB2

Client Name: Environmental Monitoring Technologies Report #: 363360

Sampling Point: 16E0241-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.16	1.0	**0.57 ± 0.25**	pCi/L	05/23/16 15:52	05/27/16 12:00	3450231
15262-20-1	Radium-228	7500-Ra D	---	0.46	1.0	**0.58 ± 0.47**	pCi/L	05/24/16 10:53	06/08/16 13:16	3450231
---	Combined Radium	calc.	5 *	0.46	1.0	**1.15 ± 0.53**	pCi/L	05/23/16 15:52	06/08/16 13:16	3450231

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 16E0241-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.16	1.0	**0.42 ± 0.22**	pCi/L	05/23/16 15:52	05/27/16 12:00	3450232
15262-20-1	Radium-228	7500-Ra D	---	0.55	1.00	-0.06 ± 0.51	pCi/L	05/24/16 10:53	06/08/16 13:16	3450232
---	Combined Radium	calc.	5 *	0.55	1.0	0	pCi/L	05/23/16 15:52	06/08/16 13:16	3450232

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2016
Work Order: 16H0152

Client Sample ID: AP-4
Report Date: 08/30/2016
Collection Date: 08/04/2016 10:15
Matrix: Groundwater
Lab ID: 16H0152-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**920**			uS/cm	08/04/16 10:15	B6H1314	CD
Method: SM2550-B							
Temperature	**70.8**			°F	08/04/16 10:15	B6H1314	CD
Method: SM4500-H							
pH	**7.13**	0.05		pH Units	08/04/16 10:15	B6H1314	CD
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Arsenic	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Barium	**381**	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Beryllium	< 2.50	2.50		ug/L	08/11/16 18:00	B6H0473	AG
Boron	**131**	12.5		ug/L	08/11/16 18:00	B6H0473	AG
Cadmium	< 2.50	2.50		ug/L	08/11/16 18:00	B6H0473	AG
Calcium	**118**	0.125		mg/L	08/11/16 18:00	B6H0473	AG
Chromium	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Cobalt	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Copper	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Iron	**11700**	125		ug/L	08/11/16 18:00	B6H0473	AG
Lead	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Manganese	**153**	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Molybdenum	< 0.0250	0.0250		mg/L	08/11/16 18:00	B6H0473	AG
Nickel	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Selenium	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Silver	< 2.50	2.50		ug/L	08/11/16 18:00	B6H0473	AG
Thallium	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Zinc	< 25.0	25.0		ug/L	08/11/16 18:00	B6H0473	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	08/23/16 12:52	B6H1223	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**11.3**	3.00		mg/L	08/05/16 23:54	B6H0291	NB1
Fluoride	< 0.500	0.500		mg/L	08/05/16 23:54	B6H0291	NB1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	08/05/16 23:54	B6H0291	NB1
Sulfate	< 5.00	5.00		mg/L	08/05/16 23:54	B6H0291	NB1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**554**	10.0		mg/L	08/10/16 13:25	B6H0564	CP1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2016
Work Order: 16H0152

Client Sample ID: AP-5
Report Date: 08/30/2016
Collection Date: 08/04/2016 10:55
Matrix: Groundwater
Lab ID: 16H0152-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**648**			uS/cm	08/04/16 10:55	B6H1314	JJ1
Method: SM2550-B							
Temperature	**60.4**			°F	08/04/16 10:55	B6H1314	JJ1
Method: SM4500-H							
pH	**6.83**	0.05		pH Units	08/04/16 10:55	B6H1314	JJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Arsenic	< 25.0	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Barium	**251**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Beryllium	< 2.50	2.50		ug/L	08/11/16 18:02	B6H0473	AG
Boron	**77.9**	12.5		ug/L	08/11/16 18:02	B6H0473	AG
Cadmium	< 2.50	2.50		ug/L	08/11/16 18:02	B6H0473	AG
Calcium	**158**	0.125		mg/L	08/11/16 18:02	B6H0473	AG
Chromium	**60.5**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Cobalt	**29.0**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Copper	**47.4**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Iron	**63900**	125		ug/L	08/11/16 18:02	B6H0473	AG
Lead	**28.6**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Manganese	**1400**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Molybdenum	< 0.0250	0.0250		mg/L	08/11/16 18:02	B6H0473	AG
Nickel	**69.6**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Selenium	< 25.0	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Silver	< 2.50	2.50		ug/L	08/11/16 18:02	B6H0473	AG
Thallium	< 25.0	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Zinc	**169**	25.0		ug/L	08/11/16 18:02	B6H0473	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	08/23/16 12:54	B6H1223	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	08/06/16 00:22	B6H0291	NB1
Fluoride	< 0.500	0.500		mg/L	08/06/16 00:22	B6H0291	NB1
Nitrogen, Nitrate	**1.51**	0.500		mg/L	08/06/16 00:22	B6H0291	NB1
Sulfate	**50.8**	5.00		mg/L	08/06/16 00:22	B6H0291	NB1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**474**	10.0		mg/L	08/10/16 13:25	B6H0564	CP1

Client Name: Environmental Monitoring Technologies Report #: 369607

Sampling Point: 16H0152-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.13	1.0	**0.30 ± 0.17**	pCi/L	08/23/16 13:10	08/29/16 10:29	3516175
15262-20-1	Radium-228	7500-Ra D	---	0.34	1.0	**1.3 ± 0.4**	pCi/L	08/17/16 17:00	08/30/16 17:28	3516175
---	Combined Radium	calc.	5 *	0.34	1.0	**1.60 ± 0.43**	pCi/L	08/23/16 13:10	08/30/16 17:28	3516175

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 16H0152-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.15	1.0	**0.30 ± 0.17**	pCi/L	08/23/16 13:10	08/29/16 10:29	3516176
15262-20-1	Radium-228	7500-Ra D	---	0.52	1.0	**1.0 ± 0.6**	pCi/L	08/17/16 17:00	08/30/16 17:28	3516176
---	Combined Radium	calc.	5 *	0.52	1.0	**1.30 ± 0.58**	pCi/L	08/23/16 13:10	08/30/16 17:28	3516176

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q 2016
Work Order: 16K0303

Client Sample ID: AP-4
Report Date: 12/30/2016
Collection Date: 11/18/2016 10:10
Matrix: Groundwater
Lab ID: 16K0303-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**873**			uS/cm	11/18/16 10:10	B6K0853	CD
Method: SM2550-B							
Temperature	**61.0**			°F	11/18/16 10:10	B6K0853	CD
Method: SM4500-H							
pH	**7.01**	0.05		pH Units	11/18/16 10:10	B6K0853	CD
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Arsenic	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Barium	**357**	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Beryllium	< 2.50	2.50		ug/L	11/23/16 14:39	B6K0988	AG
Boron	**136**	12.5		ug/L	11/23/16 14:39	B6K0988	AG
Cadmium	< 2.50	2.50		ug/L	11/23/16 14:39	B6K0988	AG
Calcium	**117**	2.50		mg/L	11/23/16 15:00	B6K0988	AG
Chromium	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Cobalt	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Copper	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Iron	**11600**	125		ug/L	11/23/16 14:39	B6K0988	AG
Lead	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Manganese	**142**	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Molybdenum	< 0.0250	0.0250		mg/L	11/23/16 14:39	B6K0988	AG
Nickel	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Selenium	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Silver	< 2.50	2.50		ug/L	11/23/16 14:39	B6K0988	AG
Thallium	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Zinc	< 25.0	25.0		ug/L	11/23/16 14:39	B6K0988	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	11/29/16 11:54	B6K1097	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**9.80**	3.00		mg/L	11/19/16 09:36	B6K0855	NB1
Fluoride	< 0.500	0.500		mg/L	11/19/16 09:36	B6K0855	NB1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	11/19/16 09:36	B6K0855	NB1
Sulfate	< 5.00	5.00		mg/L	11/19/16 09:36	B6K0855	NB1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**558**	10.0		mg/L	11/22/16 11:01	B6K0936	CP1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q 2016
Work Order: 16K0303

Client Sample ID: AP-5
Report Date: 12/30/2016
Collection Date: 11/18/2016 10:00
Matrix: Groundwater
Lab ID: 16K0303-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**728**			uS/cm	11/18/16 10:00	B6K0853	JJ1
Method: SM2550-B							
Temperature	**57.5**			°F	11/18/16 10:00	B6K0853	JJ1
Method: SM4500-H							
pH	**7.62**	0.05		pH Units	11/18/16 10:00	B6K0853	JJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Arsenic	< 25.0	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Barium	**201**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Beryllium	< 2.50	2.50		ug/L	11/23/16 14:41	B6K0988	AG
Boron	**73.3**	12.5		ug/L	11/23/16 14:41	B6K0988	AG
Cadmium	< 2.50	2.50		ug/L	11/23/16 14:41	B6K0988	AG
Calcium	**201**	2.50		mg/L	11/23/16 14:44	B6K0988	AG
Chromium	**43.2**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Cobalt	< 25.0	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Copper	**38.0**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Iron	**59400**	2500		ug/L	11/23/16 14:44	B6K0988	AG
Lead	**25.4**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Manganese	**1360**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Molybdenum	< 0.0250	0.0250		mg/L	11/23/16 14:41	B6K0988	AG
Nickel	**59.5**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Selenium	< 25.0	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Silver	< 2.50	2.50		ug/L	11/23/16 14:41	B6K0988	AG
Thallium	< 25.0	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Zinc	**148**	25.0		ug/L	11/23/16 14:41	B6K0988	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	11/29/16 12:40	B6K1097	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	11/19/16 10:04	B6K0855	NB1
Fluoride	< 0.500	0.500		mg/L	11/19/16 10:04	B6K0855	NB1
Nitrogen, Nitrate	**1.45**	0.500		mg/L	11/19/16 10:04	B6K0855	NB1
Sulfate	**52.5**	5.00		mg/L	11/19/16 10:04	B6K0855	NB1
Wet Chemistry							
Method: SM2540C							
Total Dissolved Solids (Residue, Filterable)	**344**	10.0		mg/L	11/22/16 11:01	B6K0936	CP1

Client Name: Environmental Monitoring Technologies Report #: 377695

Sampling Point: 16K0303-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.20	1.0	**0.91 ± 0.34**	pCi/L	12/08/16 11:05	12/14/16 07:50	3591353
15262-20-1	Radium-228	7500-Ra D	---	0.43	1.0	**1.4 ± 0.5**	pCi/L	12/13/16 12:00	12/16/16 16:54	3591353
---	Combined Radium	calc.	5 *	0.43	1.0	**2.31 ± 0.60**	pCi/L	12/08/16 11:05	12/16/16 16:54	3591353

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 16K0303-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.16	1.0	**0.34 ± 0.40**	pCi/L	12/08/16 11:05	12/19/16 10:00	3591354
15262-20-1	Radium-228	7500-Ra D	---	0.41	1.0	**2.2 ± 0.5**	pCi/L	12/13/16 12:00	12/16/16 16:54	3591354
---	Combined Radium	calc.	5 *	0.41	1.0	**2.54 ± 0.66**	pCi/L	12/08/16 11:05	12/19/16 10:00	3591354

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
1Q 2017
Work Order: 17B0310

Client Sample ID: AP-4
Report Date: 03/22/2017
Collection Date: 02/16/2017 07:25
Matrix: Groundwater
Lab ID: 17B0310-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**1010**			uS/cm	02/16/17 07:25	B7B0677	PB
Method: SM2550-B							
Temperature	**56.5**			°F	02/16/17 07:25	B7B0677	PB
Method: SM4500-H							
pH	**7.02**	0.05		pH Units	02/16/17 07:25	B7B0677	PB
Metals by ICP-AES							
Method: SW6010C/D / SW3015							
Lithium	< 0.0500	0.0500		mg/L	02/21/17 17:12	B7B0719	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Arsenic	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Barium	**413**	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Beryllium	< 2.50	2.50		ug/L	02/17/17 14:22	B7B0589	AG
Boron	**117**	12.5		ug/L	02/17/17 14:22	B7B0589	AG
Cadmium	< 2.50	2.50		ug/L	02/17/17 14:22	B7B0589	AG
Calcium	**136**	1.25		mg/L	02/20/17 18:45	B7B0589	AG
Chromium	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Cobalt	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Copper	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Iron	**12100**	125		ug/L	02/17/17 14:22	B7B0589	AG
Lead	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Manganese	**146**	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Molybdenum	< 0.0250	0.0250		mg/L	02/17/17 14:22	B7B0589	AG
Nickel	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Selenium	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Silver	< 2.50	2.50		ug/L	02/17/17 14:22	B7B0589	AG
Thallium	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Zinc	< 25.0	25.0		ug/L	02/17/17 14:22	B7B0589	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	03/02/17 11:53	B7C0062	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**10.6**	3.00		mg/L	02/18/17 04:05	B7B0577	NB1
Fluoride	< 0.500	0.500		mg/L	02/18/17 04:05	B7B0577	NB1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	02/18/17 04:05	B7B0577	NB1
Sulfate	< 5.00	5.00		mg/L	02/18/17 04:05	B7B0577	NB1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
1Q 2017
Work Order: 17B0310

Client Sample ID: AP-5
Report Date: 03/22/2017
Collection Date: 02/16/2017 10:05
Matrix: Groundwater
Lab ID: 17B0310-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**549**			uS/cm	02/16/17 10:05	B7B0677	CD
Method: SM2550-B							
Temperature	**52.1**			°F	02/16/17 10:05	B7B0677	CD
Method: SM4500-H							
pH	**7.42**	0.05		pH Units	02/16/17 10:05	B7B0677	CD
Metals by ICP-AES							
Method: SW6010C/D / SW3015							
Lithium	< 0.0500	0.0500		mg/L	02/21/17 17:32	B7B0719	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Arsenic	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Barium	**137**	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Beryllium	< 2.50	2.50		ug/L	02/17/17 14:24	B7B0589	AG
Boron	**48.3**	12.5		ug/L	02/17/17 14:24	B7B0589	AG
Cadmium	< 2.50	2.50		ug/L	02/17/17 14:24	B7B0589	AG
Calcium	**155**	1.25		mg/L	02/20/17 18:46	B7B0589	AG
Chromium	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Cobalt	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Copper	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Iron	**17000**	125		ug/L	02/17/17 14:24	B7B0589	AG
Lead	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Manganese	**593**	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Molybdenum	< 0.0250	0.0250		mg/L	02/17/17 14:24	B7B0589	AG
Nickel	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Selenium	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Silver	< 2.50	2.50		ug/L	02/17/17 14:24	B7B0589	AG
Thallium	< 25.0	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Zinc	**118**	25.0		ug/L	02/17/17 14:24	B7B0589	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	03/02/17 11:59	B7C0062	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	02/18/17 04:33	B7B0577	NB1
Fluoride	< 0.500	0.500		mg/L	02/18/17 04:33	B7B0577	NB1
Nitrogen, Nitrate	**1.73**	0.500		mg/L	02/18/17 04:33	B7B0577	NB1
Sulfate	**55.5**	5.00		mg/L	02/18/17 04:33	B7B0577	NB1

Client Name: Environmental Monitoring Technologies Report #: 383119

Sampling Point: 17B0310-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.16	1.0	**0.82 ± 0.29**	pCi/L	02/23/17 11:50	02/28/17 16:00	3641027
15262-20-1	Radium-228	7500-Ra D	---	0.47	1.0	**1.7 ± 0.6**	pCi/L	02/23/17 12:00	03/09/17 14:49	3641027
---	Combined Radium	calc.	5 *	0.47	1.0	**2.52 ± 0.62**	pCi/L	02/23/17 11:50	03/09/17 14:49	3641027

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 17B0310-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.12	1.0	**0.34 ± 0.17**	pCi/L	02/23/17 11:50	02/28/17 16:00	3641028
15262-20-1	Radium-228	7500-Ra D	---	0.49	1.0	**0.85 ± 0.51**	pCi/L	02/23/17 12:00	03/09/17 14:49	3641028
---	Combined Radium	calc.	5 *	0.49	1.0	**1.19 ± 0.54**	pCi/L	02/23/17 11:50	03/09/17 14:49	3641028

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2017
Work Order: 17E0123

Client Sample ID: AP-4
Report Date: 07/10/2017
Collection Date: 05/05/2017 09:30
Matrix: Groundwater
Lab ID: 17E0123-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**949**			uS/cm	05/05/17 09:30	B7F0066	CL1
Method: SM2550-B							
Temperature	**59.8**			°F	05/05/17 09:30	B7F0066	CL1
Method: SM4500-H							
pH	**7.08**	0.05		pH Units	05/05/17 09:30	B7F0066	CL1
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	05/09/17 19:45	B7E0315	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Arsenic	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Barium	**405**	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Beryllium	< 2.50	2.50		ug/L	05/08/17 14:42	B7E0267	AG
Boron	**120**	12.5		ug/L	05/08/17 14:42	B7E0267	AG
Cadmium	< 2.50	2.50		ug/L	05/08/17 14:42	B7E0267	AG
Calcium	**117**	1.25		mg/L	05/08/17 15:26	B7E0267	AG
Chromium	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Cobalt	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Copper	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Iron	**11600**	125		ug/L	05/08/17 14:42	B7E0267	AG
Lead	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Manganese	**152**	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Molybdenum	< 0.0250	0.0250		mg/L	05/08/17 14:42	B7E0267	AG
Nickel	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Selenium	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Silver	< 2.50	2.50		ug/L	05/08/17 14:42	B7E0267	AG
Thallium	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Zinc	< 25.0	25.0		ug/L	05/08/17 14:42	B7E0267	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	05/10/17 14:42	B7E0356	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**12.0**	3.00		mg/L	05/05/17 20:11	B7E0194	NB1
Fluoride	< 0.500	0.500		mg/L	05/05/17 20:11	B7E0194	NB1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	05/05/17 20:11	B7E0194	NB1
Sulfate	< 5.00	5.00		mg/L	05/05/17 20:11	B7E0194	NB1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2017
Work Order: 17E0123

Client Sample ID: AP-4
Report Date: 07/10/2017
Collection Date: 05/05/2017 09:30
Matrix: Groundwater
Lab ID: 17E0123-05 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**538**	10.0		mg/L		05/10/17 09:30	B7E0404	CP1
Method: SW9014 by Aquachem / SW9010B								
Cyanide	< 0.010	0.010		mg/L		05/09/17 12:28	B7E0313	KJ1
Method: SW9065 by Aquachem								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		05/08/17 13:37	B7E0260	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.512	0.512		ug/L		05/16/17 12:00	B7E0338	MNN
Atrazine	< 0.512	0.512		ug/L		05/16/17 12:00	B7E0338	MNN
Chlordane	< 0.512	0.512		ug/L		05/16/17 12:00	B7E0338	MNN
Endrin	< 0.0512	0.0512		ug/L		05/16/17 12:00	B7E0338	MNN
Lindane	< 0.0512	0.0512		ug/L		05/16/17 12:00	B7E0338	MNN
Heptachlor	< 0.0512	0.0512		ug/L		05/16/17 12:00	B7E0338	MNN
Heptachlor epoxide	< 0.0512	0.0512		ug/L		05/16/17 12:00	B7E0338	MNN
Methoxychlor	< 0.0512	0.0512		ug/L		05/16/17 12:00	B7E0338	MNN
Simazine	< 0.512	0.512		ug/L		05/16/17 12:00	B7E0338	MNN
Toxaphene	< 2.05	2.05		ug/L		05/16/17 12:00	B7E0338	MNN
Surrogate: Decachlorobiphenyl			*S*	*Recovery: 116%*	*Limits: 30-109*	*05/16/17 12:00*	*B7E0338*	*MNN*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 47%*	*Limits: 21-124*	*05/16/17 12:00*	*B7E0338*	*MNN*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Aroclor 1016	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1221	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1232	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1242	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1248	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1254	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Aroclor 1260	< 0.307	0.307		ug/L		05/11/17 01:30	B7E0339	CS2
Total PCB	< 1.02	1.02		ug/L		05/11/17 01:30	B7E0339	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 91%*	*Limits: 40-135*	*05/11/17 01:30*	*B7E0339*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 45%*	*Limits: 13-133*	*05/11/17 01:30*	*B7E0339*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		05/24/17 10:53	B7E0960	AMP/MNN
Carbofuran	< 2.00	2.00		ug/L		05/24/17 10:53	B7E0960	AMP/MNN
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 0.200	0.200		ug/L		05/15/17 22:07	B7E0169	AMP

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2017
Work Order: 17E0123

Client Sample ID: AP-5
Report Date: 07/10/2017
Collection Date: 05/05/2017 10:40
Matrix: Groundwater
Lab ID: 17E0123-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**616**			uS/cm	05/05/17 10:40	B7F0066	CL1
Method: SM2550-B							
Temperature	**54.8**			°F	05/05/17 10:40	B7F0066	CL1
Method: SM4500-H							
pH	**7.36**	0.05		pH Units	05/05/17 10:40	B7F0066	CL1
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	05/09/17 19:49	B7E0315	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Arsenic	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Barium	**80.7**	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Beryllium	< 2.50	2.50		ug/L	05/08/17 14:44	B7E0267	AG
Boron	**44.3**	12.5		ug/L	05/08/17 14:44	B7E0267	AG
Cadmium	< 2.50	2.50		ug/L	05/08/17 14:44	B7E0267	AG
Calcium	**83.5**	1.25		mg/L	05/08/17 15:28	B7E0267	AG
Chromium	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Cobalt	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Copper	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Iron	**7630**	125		ug/L	05/08/17 14:44	B7E0267	AG
Lead	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Manganese	**154**	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Molybdenum	< 0.0250	0.0250		mg/L	05/08/17 14:44	B7E0267	AG
Nickel	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Selenium	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Silver	< 2.50	2.50		ug/L	05/08/17 14:44	B7E0267	AG
Thallium	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Zinc	< 25.0	25.0		ug/L	05/08/17 14:44	B7E0267	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	05/10/17 14:44	B7E0356	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	05/05/17 22:06	B7E0194	NB1
Fluoride	< 0.500	0.500		mg/L	05/05/17 22:06	B7E0194	NB1
Nitrogen, Nitrate	**1.53**	0.500		mg/L	05/05/17 22:06	B7E0194	NB1
Sulfate	**54.8**	5.00		mg/L	05/05/17 22:06	B7E0194	NB1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
2Q 2017
Work Order: 17E0123

Client Sample ID: AP-5
Report Date: 07/10/2017
Collection Date: 05/05/2017 10:40
Matrix: Groundwater
Lab ID: 17E0123-06 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**426**	10.0		mg/L		05/10/17 09:30	B7E0404	CP1
Method: SW9014 by Aquachem / SW9010B								
Cyanide	< 0.010	0.010		mg/L		05/09/17 12:28	B7E0313	KJ1
Method: SW9065 by Aquachem								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		05/08/17 13:37	B7E0260	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.525	0.525		ug/L		05/16/17 12:47	B7E0338	MNN
Atrazine	< 0.525	0.525		ug/L		05/16/17 12:47	B7E0338	MNN
Chlordane	< 0.525	0.525		ug/L		05/16/17 12:47	B7E0338	MNN
Endrin	< 0.0525	0.0525		ug/L		05/16/17 12:47	B7E0338	MNN
Lindane	< 0.0525	0.0525		ug/L		05/16/17 12:47	B7E0338	MNN
Heptachlor	< 0.0525	0.0525		ug/L		05/16/17 12:47	B7E0338	MNN
Heptachlor epoxide	< 0.0525	0.0525		ug/L		05/16/17 12:47	B7E0338	MNN
Methoxychlor	< 0.0525	0.0525		ug/L		05/16/17 12:47	B7E0338	MNN
Simazine	< 0.525	0.525		ug/L		05/16/17 12:47	B7E0338	MNN
Toxaphene	< 2.10	2.10		ug/L		05/16/17 12:47	B7E0338	MNN
Surrogate: Decachlorobiphenyl				*Recovery: 108%*	*Limits: 30-109*	*05/16/17 12:47*	*B7E0338*	*MNN*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 51%*	*Limits: 21-124*	*05/16/17 12:47*	*B7E0338*	*MNN*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Aroclor 1016	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1221	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1232	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1242	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1248	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1254	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Aroclor 1260	< 0.315	0.315		ug/L		05/11/17 01:56	B7E0339	CS2
Total PCB	< 1.05	1.05		ug/L		05/11/17 01:56	B7E0339	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 84%*	*Limits: 40-135*	*05/11/17 01:56*	*B7E0339*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 44%*	*Limits: 13-133*	*05/11/17 01:56*	*B7E0339*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		05/24/17 10:21	B7E0960	AMP/MNN
Carbofuran	< 2.00	2.00		ug/L		05/24/17 10:21	B7E0960	AMP/MNN
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 0.198	0.198		ug/L		05/15/17 22:48	B7E0169	AMP

Client Name: Environmental Monitoring Technologies Report #: 388293

Sampling Point: 17E0123-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.16	1.0	**0.63 ± 0.24**	pCi/L	05/18/17 08:57	05/30/17 11:23	3690235
15262-20-1	Radium-228	7500-Ra D	---	0.57	1.0	**0.73 ± 0.58**	pCi/L	05/17/17 09:00	06/01/17 14:04	3690235
---	Combined Radium	calc.	5 *	0.57	1.0	**1.36 ± 0.63**	pCi/L	05/18/17 08:57	06/01/17 14:04	3690235

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 17E0123-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.15	1.0	**0.55 ± 0.23**	pCi/L	05/18/17 08:57	05/30/17 12:29	3690236
15262-20-1	Radium-228	7500-Ra D	---	0.53	1.0	**1.2 ± 0.6**	pCi/L	05/17/17 09:00	06/01/17 14:04	3690236
---	Combined Radium	calc.	5 *	0.53	1.0	**1.75 ± 0.61**	pCi/L	05/18/17 08:57	06/01/17 14:04	3690236

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2017
Work Order: 17H0132

Client Sample ID: AP-4
Report Date: 10/04/2017
Collection Date: 08/02/2017 10:05
Matrix: Groundwater
Lab ID: 17H0132-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**884**			uS/cm	08/02/17 10:05	B7H0619	JJ1
Method: SM2550-B							
Temperature	**65.9**			°F	08/02/17 10:05	B7H0619	JJ1
Method: SM4500-H							
pH	**7.29**	0.05		pH Units	08/02/17 10:05	B7H0619	JJ1
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	08/08/17 18:02	B7H0278	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Arsenic	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Barium	**391**	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Beryllium	< 2.50	2.50		ug/L	08/14/17 11:56	B7H0226	AG
Boron	**105**	12.5		ug/L	08/14/17 11:56	B7H0226	AG
Cadmium	< 2.50	2.50		ug/L	08/14/17 11:56	B7H0226	AG
Calcium	**150**	2.50		mg/L	08/14/17 12:55	B7H0226	AG
Chromium	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Cobalt	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Copper	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Iron	**12600**	125		ug/L	08/14/17 11:56	B7H0226	AG
Lead	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Manganese	**146**	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Molybdenum	< 0.0250	0.0250		mg/L	08/14/17 11:56	B7H0226	AG
Nickel	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Selenium	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Silver	< 2.50	2.50		ug/L	08/14/17 11:56	B7H0226	AG
Thallium	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Zinc	< 25.0	25.0		ug/L	08/14/17 11:56	B7H0226	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	08/09/17 16:48	B7H0333	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**11.9**	3.00		mg/L	08/03/17 11:57	B7H0106	NB1
Fluoride	< 0.500	0.500		mg/L	08/03/17 11:57	B7H0106	NB1
Nitrogen, Nitrate	< 0.500	0.500		mg/L	08/03/17 11:57	B7H0106	NB1
Sulfate	< 5.00	5.00		mg/L	08/05/17 08:56	B7H0150	NB1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2017
Work Order: 17H0132

Client Sample ID: AP-4
Report Date: 10/04/2017
Collection Date: 08/02/2017 10:05
Matrix: Groundwater
Lab ID: 17H0132-05 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**526**	10.0		mg/L		08/04/17 09:00	B7H0181	CP1
Method: SW9014 by Aquachem/MIDI / SW9010B								
Cyanide	< 0.010	0.010		mg/L		08/04/17 10:13	B7H0146	KJ1
Method: SW9065 by Aquachem/MIDI								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		08/07/17 14:53	B7H0219	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.492	0.492		ug/L		08/10/17 18:34	B7H0199	LP
Atrazine	< 0.492	0.492		ug/L		08/10/17 18:34	B7H0199	LP
Chlordane	< 0.492	0.492		ug/L		08/10/17 18:34	B7H0199	LP
Endrin	< 0.0492	0.0492		ug/L		08/10/17 18:34	B7H0199	LP
gamma-BHC	< 0.0492	0.0492		ug/L		08/10/17 18:34	B7H0199	LP
Heptachlor	< 0.0492	0.0492		ug/L		08/10/17 18:34	B7H0199	LP
Heptachlor epoxide	< 0.0492	0.0492		ug/L		08/10/17 18:34	B7H0199	LP
Methoxychlor	< 0.0492	0.0492		ug/L		08/10/17 18:34	B7H0199	LP
Simazine	< 0.492	0.492		ug/L		08/10/17 18:34	B7H0199	LP
Toxaphene	< 1.97	1.97		ug/L		08/10/17 18:34	B7H0199	LP
Surrogate: Decachlorobiphenyl				*Recovery: 76%*	*Limits: 30-109*	*08/10/17 18:34*	*B7H0199*	*LP*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 43%*	*Limits: 21-124*	*08/10/17 18:34*	*B7H0199*	*LP*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Aroclor 1016	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1221	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1232	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1242	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1248	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1254	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Aroclor 1260	< 0.295	0.295		ug/L		08/09/17 13:24	B7H0200	CS2
Total PCB	< 0.984	0.984		ug/L		08/09/17 13:24	B7H0200	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 99%*	*Limits: 40-135*	*08/09/17 13:24*	*B7H0200*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 59%*	*Limits: 13-133*	*08/09/17 13:24*	*B7H0200*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		08/04/17 14:44	B7H0108	MNN
Carbofuran	< 2.00	2.00		ug/L		08/04/17 14:44	B7H0108	MNN
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 1.58	1.58		ug/L		08/14/17 16:22	B7H0385	MNN

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2017
Work Order: 17H0132

Client Sample ID: AP-5
Report Date: 10/04/2017
Collection Date: 08/03/2017 11:00
Matrix: Groundwater
Lab ID: 17H0132-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**633**			uS/cm	08/03/17 11:00	B7H0619	AS5
Method: SM2550-B							
Temperature	**57.4**			°F	08/03/17 11:00	B7H0619	AS5
Method: SM4500-H							
pH	**7.77**	0.05		pH Units	08/03/17 11:00	B7H0619	AS5
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	08/08/17 18:06	B7H0278	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Arsenic	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Barium	**43.0**	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Beryllium	< 2.50	2.50		ug/L	08/14/17 11:58	B7H0226	AG
Boron	**40.7**	12.5		ug/L	08/14/17 11:58	B7H0226	AG
Cadmium	< 2.50	2.50		ug/L	08/14/17 11:58	B7H0226	AG
Calcium	**105**	2.50		mg/L	08/14/17 12:56	B7H0226	AG
Chromium	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Cobalt	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Copper	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Iron	**1510**	125		ug/L	08/14/17 11:58	B7H0226	AG
Lead	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Manganese	**30.9**	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Molybdenum	< 0.0250	0.0250		mg/L	08/14/17 11:58	B7H0226	AG
Nickel	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Selenium	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Silver	< 2.50	2.50		ug/L	08/14/17 11:58	B7H0226	AG
Thallium	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Zinc	< 25.0	25.0		ug/L	08/14/17 11:58	B7H0226	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	08/09/17 16:50	B7H0333	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 3.00	3.00		mg/L	08/04/17 20:31	B7H0150	NB1
Fluoride	< 0.500	0.500		mg/L	08/04/17 20:31	B7H0150	NB1
Nitrogen, Nitrate	**2.26**	0.500		mg/L	08/04/17 20:31	B7H0150	NB1
Sulfate	**48.4**	5.00		mg/L	08/04/17 20:31	B7H0150	NB1

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
3Q 2017
Work Order: 17H0132

Client Sample ID: AP-5
Report Date: 10/04/2017
Collection Date: 08/03/2017 11:00
Matrix: Groundwater
Lab ID: 17H0132-06 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**392**	10.0		mg/L		08/04/17 09:00	B7H0181	CP1
Method: SW9014 by Aquachem/MIDI / SW9010B								
Cyanide	< 0.010	0.010		mg/L		08/04/17 10:21	B7H0146	KJ1
Method: SW9065 by Aquachem/MIDI								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		08/07/17 14:54	B7H0219	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.517	0.517		ug/L		08/14/17 23:48	B7H0439	LP
Atrazine	< 0.517	0.517		ug/L		08/14/17 23:48	B7H0439	LP
Chlordane	< 0.517	0.517		ug/L		08/14/17 23:48	B7H0439	LP
Endrin	< 0.0517	0.0517		ug/L		08/14/17 23:48	B7H0439	LP
gamma-BHC	< 0.0517	0.0517		ug/L		08/14/17 23:48	B7H0439	LP
Heptachlor	< 0.0517	0.0517		ug/L		08/14/17 23:48	B7H0439	LP
Heptachlor epoxide	< 0.0517	0.0517		ug/L		08/14/17 23:48	B7H0439	LP
Methoxychlor	< 0.0517	0.0517		ug/L		08/14/17 23:48	B7H0439	LP
Simazine	< 0.517	0.517		ug/L		08/14/17 23:48	B7H0439	LP
Toxaphene	< 2.07	2.07		ug/L		08/14/17 23:48	B7H0439	LP
Surrogate: Decachlorobiphenyl				*Recovery: 86%*	*Limits: 30-109*	*08/14/17 23:48*	*B7H0439*	*LP*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 40%*	*Limits: 21-124*	*08/14/17 23:48*	*B7H0439*	*LP*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Aroclor 1016	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1221	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1232	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1242	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1248	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1254	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Aroclor 1260	< 0.310	0.310		ug/L		08/17/17 01:01	B7H0441	CS2
Total PCB	< 1.03	1.03		ug/L		08/17/17 01:01	B7H0441	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 97%*	*Limits: 40-135*	*08/17/17 01:01*	*B7H0441*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 40%*	*Limits: 13-133*	*08/17/17 01:01*	*B7H0441*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		08/08/17 13:11	B7H0422	MNN
Carbofuran	< 2.00	2.00		ug/L		08/08/17 13:11	B7H0422	MNN
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 1.60	1.60		ug/L		08/14/17 17:04	B7H0385	MNN

Client Name: Environmental Monitoring Technologies Report #: 394802

Sampling Point: 17H0132-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.19	1.0	**0.53 ± 0.26**	pCi/L	08/14/17 12:30	08/26/17 09:35	3749117
15262-20-1	Radium-228	7500-Ra D	---	0.60	1.0	**1.5 ± 0.6**	pCi/L	08/14/17 12:00	08/28/17 16:39	3749117
---	Combined Radium	calc.	5 *	0.60	1.0	**2.03 ± 0.69**	pCi/L	08/14/17 12:30	08/28/17 16:39	3749117

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 17H0132-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.93	1.0	**1.9 ± 1.2**	pCi/L	08/14/17 12:30	08/31/17 10:42	3749118
15262-20-1	Radium-228	7500-Ra D	---	0.54	1.0	**1.0 ± 0.6**	pCi/L	08/14/17 12:00	08/28/17 16:39	3749118
---	Combined Radium	calc.	5 *	0.93	1.0	**2.9 ± 1.3**	pCi/L	08/14/17 12:30	08/31/17 10:42	3749118

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q2017
Work Order: 17K0134

Client Sample ID: AP-4
Report Date: 01/09/2018
Collection Date: 11/09/2017 12:35
Matrix: Groundwater
Lab ID: 17K0134-05

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**826**			uS/cm	11/09/17 12:35	B7K0999	SDS
Method: SM2550-B							
Temperature	**60.4**			°F	11/09/17 12:35	B7K0999	SDS
Method: SM4500-H							
pH	**7.12**	0.05		pH Units	11/09/17 12:35	B7K0999	SDS
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	11/29/17 21:32	B7K0971	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Arsenic	**26.6**	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Barium	**410**	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Beryllium	< 2.50	2.50		ug/L	11/21/17 11:08	B7K0447	AG
Boron	**129**	12.5		ug/L	11/21/17 11:08	B7K0447	AG
Cadmium	< 2.50	2.50		ug/L	11/21/17 11:08	B7K0447	AG
Calcium	**141**	1.25		mg/L	01/08/18 14:01	B8A0185	AG
Chromium	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Cobalt	< 25.0	25.0		ug/L	11/28/17 16:01	B7K0798	MLB
Copper	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Iron	**14100**	125		ug/L	11/21/17 11:08	B7K0447	AG
Lead	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Manganese	**190**	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Molybdenum	< 0.0250	0.0250		mg/L	11/28/17 16:01	B7K0798	MLB
Nickel	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Selenium	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Silver	< 2.50	2.50		ug/L	11/21/17 11:08	B7K0447	AG
Thallium	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Vanadium	< 25.0	25.0		ug/L	11/28/17 16:01	B7K0798	MLB
Zinc	< 25.0	25.0		ug/L	11/21/17 11:08	B7K0447	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	11/14/17 12:46	B7K0442	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	**12.1**	3.00		mg/L	11/11/17 03:04	B7K0328	SK2
Fluoride	< 0.500	0.500		mg/L	11/11/17 03:04	B7K0328	SK2
Nitrogen, Nitrate	< 0.500	0.500		mg/L	11/11/17 03:04	B7K0328	SK2
Sulfate	< 5.00	5.00		mg/L	11/11/17 03:04	B7K0328	SK2

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q2017
Work Order: 17K0134

Client Sample ID: AP-4
Report Date: 01/09/2018
Collection Date: 11/09/2017 12:35
Matrix: Groundwater
Lab ID: 17K0134-05 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Anions by Ion Chromatography (Continued)								
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**544**	10.0		mg/L		11/14/17 14:32	B7K0473	JJ2
Method: SW9014 by Aquachem/MIDI / SW9010B								
Cyanide	< 0.010	0.010		mg/L		11/13/17 11:16	B7K0384	KJ1
Method: SW9065 by Aquachem/MIDI								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		11/15/17 12:12	B7K0481	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.518	0.518		ug/L		11/23/17 00:33	B7K0487	LP
alpha-BHC	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Atrazine	< 0.518	0.518		ug/L		11/23/17 00:33	B7K0487	LP
Chlordane	< 0.518	0.518		ug/L		11/22/17 23:47	B7K0487	LP
Endrin	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Lindane	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Heptachlor	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Heptachlor epoxide	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Methoxychlor	< 0.0518	0.0518		ug/L		11/22/17 23:47	B7K0487	LP
Simazine	< 0.518	0.518		ug/L		11/23/17 00:33	B7K0487	LP
Toxaphene	< 2.07	2.07		ug/L		11/22/17 23:47	B7K0487	LP
Surrogate: Decachlorobiphenyl				*Recovery: 74%*	*Limits: 30-109*	*11/22/17 23:47*	*B7K0487*	*LP*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 51%*	*Limits: 21-124*	*11/22/17 23:47*	*B7K0487*	*LP*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Total PCB	< 1.04	1.04		ug/L		11/15/17 21:59	B7K0489	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 95%*	*Limits: 40-135*	*11/15/17 21:59*	*B7K0489*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 50%*	*Limits: 13-133*	*11/15/17 21:59*	*B7K0489*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		11/21/17 11:50	B7K0742	AMP
Carbofuran	< 2.00	2.00		ug/L		11/21/17 11:50	B7K0742	AMP
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 1.54	1.54		ug/L		11/16/17 02:52	B7K0503	AMP
2,4-D	< 1.54	1.54		ug/L		11/16/17 02:52	B7K0503	AMP
Dicamba	< 1.54	1.54		ug/L		11/16/17 02:52	B7K0503	AMP
Dinoseb	< 1.54	1.54		ug/L		11/16/17 02:52	B7K0503	AMP
Picloram	< 1.54	1.54		ug/L		11/16/17 02:52	B7K0503	AMP

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q2017
Work Order: 17K0134

Client Sample ID: AP-5
Report Date: 01/09/2018
Collection Date: 11/09/2017 11:25
Matrix: Groundwater
Lab ID: 17K0134-06

Analyses	Result	EMT Reporting Limit	Qual	Units	Date/Time Analyzed	Batch	Analyst
On Site Analysis							
Method: SM2510B							
Specific Conductance	**550**			uS/cm	11/09/17 11:25	B7K0999	SDS
Method: SM2550-B							
Temperature	**56.1**			°F	11/09/17 11:25	B7K0999	SDS
Method: SM4500-H							
pH	**7.19**	0.05		pH Units	11/09/17 11:25	B7K0999	SDS
Metals by ICP-AES							
Method: SW6010C / SW3015							
Lithium	< 0.0500	0.0500		mg/L	11/29/17 21:28	B7K0971	GJ1
Metals by ICP-MS							
Method: SW6020A / SW3015							
Antimony	< 25.0	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Arsenic	< 25.0	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Barium	**308**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Beryllium	< 2.50	2.50		ug/L	11/21/17 11:10	B7K0447	AG
Boron	**73.0**	12.5		ug/L	11/21/17 11:10	B7K0447	AG
Cadmium	< 2.50	2.50		ug/L	11/21/17 11:10	B7K0447	AG
Calcium	**118**	1.25		mg/L	01/08/18 14:11	B8A0185	AG
Chromium	**65.3**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Cobalt	**27.7**	25.0		ug/L	11/28/17 16:02	B7K0798	MLB
Copper	**45.6**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Iron	**62800**	1250		ug/L	11/21/17 12:06	B7K0447	AG
Lead	**28.7**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Manganese	**1460**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Molybdenum	< 0.0250	0.0250		mg/L	11/28/17 16:02	B7K0798	MLB
Nickel	**67.7**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Selenium	< 25.0	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Silver	< 2.50	2.50		ug/L	11/21/17 11:10	B7K0447	AG
Thallium	< 25.0	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Vanadium	**56.8**	25.0		ug/L	11/28/17 16:02	B7K0798	MLB
Zinc	**184**	25.0		ug/L	11/21/17 11:10	B7K0447	AG
Mercury by CVAA							
Method: SW7470A							
Mercury	< 0.50	0.50		ug/L	11/14/17 12:49	B7K0442	GSB
Anions by Ion Chromatography							
Method: SW9056A							
Chloride	< 30.0	30.0		mg/L	11/14/17 00:47	B7K0328	SK2
Fluoride	< 0.500	0.500		mg/L	11/11/17 03:32	B7K0328	SK2
Nitrogen, Nitrate	**1.57**	0.500		mg/L	11/11/17 03:32	B7K0328	SK2
Sulfate	**55.3**	50.0		mg/L	11/14/17 00:47	B7K0393	SK2

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Client Sample Results

(Continued)

Client: City, Water, Light & Power
Project: List G20
4Q2017
Work Order: 17K0134

Client Sample ID: AP-5
Report Date: 01/09/2018
Collection Date: 11/09/2017 11:25
Matrix: Groundwater
Lab ID: 17K0134-06 (Continued)

Analyses	Result	EMT Reporting Limit	Qual	Units		Date/Time Analyzed	Batch	Analyst
Anions by Ion Chromatography (Continued)								
Wet Chemistry								
Method: SM2540C								
Total Dissolved Solids (Residue, Filterable)	**470**	10.0		mg/L		11/14/17 14:32	B7K0473	JJ2
Method: SW9014 by Aquachem/MIDI / SW9010B								
Cyanide	< 0.010	0.010		mg/L		11/13/17 11:16	B7K0384	KJ1
Method: SW9065 by Aquachem/MIDI								
Phenolics, Total Recoverable	< 0.0100	0.0100		mg/L		11/15/17 12:12	B7K0481	KJ1
Organochlorine Pesticides by GC/ECD								
Method: SW8081B / SW3510								
Alachlor	< 0.534	0.534		ug/L		11/22/17 22:13	B7K0487	LP
alpha-BHC	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Atrazine	< 0.534	0.534		ug/L		11/22/17 22:13	B7K0487	LP
Chlordane	< 0.534	0.534		ug/L		11/23/17 00:33	B7K0487	LP
Endrin	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Lindane	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Heptachlor	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Heptachlor epoxide	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Methoxychlor	< 0.0534	0.0534		ug/L		11/23/17 00:33	B7K0487	LP
Simazine	< 0.534	0.534		ug/L		11/22/17 22:13	B7K0487	LP
Toxaphene	< 2.14	2.14		ug/L		11/23/17 00:33	B7K0487	LP
Surrogate: Decachlorobiphenyl				*Recovery: 84%*	*Limits: 30-109*	*11/23/17 00:33*	*B7K0487*	*LP*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 58%*	*Limits: 21-124*	*11/23/17 00:33*	*B7K0487*	*LP*
Polychlorinated Biphenyls (PCBs) by GC/ECD								
Method: SW8082A / SW3510								
Total PCB	< 1.07	1.07		ug/L		11/15/17 22:25	B7K0489	CS2
Surrogate: Decachlorobiphenyl				*Recovery: 118%*	*Limits: 40-135*	*11/15/17 22:25*	*B7K0489*	*CS2*
Surrogate: 2,4,5,6-Tetrachloro-m-xylene				*Recovery: 62%*	*Limits: 13-133*	*11/15/17 22:25*	*B7K0489*	*CS2*
Carbamates by High Pressure Liquid Chromatography (HPLC)								
Method: E531.1								
Aldicarb	< 2.00	2.00		ug/L		11/21/17 12:28	B7K0742	AMP
Carbofuran	< 2.00	2.00		ug/L		11/21/17 12:28	B7K0742	AMP
Herbicides by High Pressure Liquid Chromatography (HPLC)								
Method: SW8321B / SW3510								
2,4,5-TP (Silvex)	< 1.64	1.64		ug/L		11/16/17 03:33	B7K0503	AMP
2,4-D	< 1.64	1.64		ug/L		11/16/17 03:33	B7K0503	AMP
Dicamba	< 1.64	1.64		ug/L		11/16/17 03:33	B7K0503	AMP
Dinoseb	< 1.64	1.64		ug/L		11/16/17 03:33	B7K0503	AMP
Picloram	< 1.64	1.64		ug/L		11/16/17 03:33	B7K0503	AMP

Client Name: Environmental Monitoring Technologies Report #: 402715

Sampling Point: 17K0134-05 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.090	1.0	**0.69 ± 0.19**	pCi/L	11/16/17 08:30	11/28/17 13:17	3820338
15262-20-1	Radium-228	7500-Ra D	---	0.46	1.0	**1.3 ± 0.5**	pCi/L	11/16/17 08:30	11/20/17 18:52	3820338
---	Combined Radium	calc.	5 *	0.46	1.0	**1.99 ± 0.55**	pCi/L	11/16/17 08:30	11/28/17 13:17	3820338

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: 17K0134-06 PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.10	1.0	**1.3 ± 0.3**	pCi/L	11/16/17 08:30	11/28/17 13:17	3820339
15262-20-1	Radium-228	7500-Ra D	---	0.48	1.0	**1.9 ± 0.6**	pCi/L	11/16/17 08:30	11/20/17 18:52	3820339
---	Combined Radium	calc.	5 *	0.48	1.0	**3.2 ± 0.6**	pCi/L	11/16/17 08:30	11/28/17 13:17	3820339

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameters

Raw Data Summary

Well	Parameter	Units	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	Distribution[1]	Proposed Background Value
AP-4	Antimony, total	ug/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	100% NDs - Interwell value set at the laboratory PQL	1.00
AP-5	Antimony, total	ug/L	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1		
AP-4	Cobalt, total	ug/L	< 5	5.2	5	< 5	< 5	< 5	< 5	< 5	> 50% NDs - Propose Highest Detected Concentration as Prediction Limit/Background	5.20
AP-5	Cobalt, total	ug/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5		
AP-4	Lithium, total	mg/L	0.0087	0.0108	0.0113	0.0079	0.0092	0.0092	0.0077		Non-Parametric - Propose Highest Detected Concentration as Prediction Limit/Background	0.0124
AP-5	Lithium, total	mg/L	0.005	0.006	0.0068	0.009	0.0053	< 0.005	0.0104			
AP-4	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	100% NDs - Interwell value set at the laboratory PQL	15.00
AP-5	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15		
AP-4	Thallium, total	ug/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	100% NDs - Interwell value set at the laboratory PQL	2.00
AP-5	Thallium, total	ug/L	< 2	< 2		< 2	< 2	< 2	< 2	< 2		

Notes:

1. Shapiro-Wilk method utilized to determine if the data set follows a normal distribution. ProUCL 5.2 was used for the calculations. ProUCL 5.2 outputs are provided.

2. In accordance with Chapter 18.3 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater at RCRA Facilities), the maximum detected concentration is utilized as the interwell prediction limit and proposed background when the dataset does not follow a normal distribution.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameters

Outlier Analysis

Well	Parameter	Units	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	Number of Samples	Mean	Standard Deviation	Critical Values
AP-4	Antimony, total	ug/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	16	0.96875	0.125	2.747
AP-5	Antimony, total	ug/L	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1				
AP-4	Cobalt, total	ug/L	< 5	5.2	5	< 5	< 5	< 5	< 5	< 5	16	5.0125	0.05	2.747
AP-5	Cobalt, total	ug/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5				
AP-4	Lithium, total	mg/L	0.0087	0.0108	0.0113	0.0079	0.0092	0.0092	0.0077	< 0.05	16	0.01326875	0.014476	2.747
AP-5	Lithium, total	mg/L	0.005	0.006	0.0068	0.009	0.0053	< 0.005	0.0104	< 0.05				
AP-4	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	16	15	0	2.747
AP-5	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15				
AP-4	Thallium, total	ug/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	16	1.99375	0.025	2.747
AP-5	Thallium, total	ug/L	< 2	< 2	1.9	< 2	< 2	< 2	< 2	< 2				

Well	Parameter	Units	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4
AP-4	Antimony, total	ug/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
AP-5	Antimony, total	ug/L	0.25	0.25	-3.75	0.25	0.25	0.25	0.25	0.25
AP-4	Cobalt, total	mg/L	-0.25	3.75	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
AP-5	Cobalt, total	mg/L	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
AP-4	Lithium, total	mg/L	-0.315598	-0.170535	-0.135996	-0.37086	-0.281059	-0.281059	-0.384675	2.5373024
AP-5	Lithium, total	mg/L	-0.571184	-0.502107	-0.446845	-0.294875	-0.550461	-0.571184	-0.198166	2.5373024
AP-4	Lead, total	ug/L	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
AP-5	Lead, total	ug/L	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
AP-4	Thallium, total	ug/L	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
AP-5	Thallium, total	ug/L	0.25	0.25	-3.75	0.25	0.25	0.25	0.25	0.25

Notes:

1. Outlier method presented above outlined is in ASTM paper E178-75 (Grubb's Test).
2. - The 3Q21 detection of 1.9 ug/L is an outlier. The outlier will be removed.
3. The 4Q22 Lithium reporting limit (0.05 mg/L) is 10 times higher than the standard reporting limit (0.005 mg/L). The data set has been removed from the evaluation.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits
40 CFR 257 Appendix IV Parameters
Non-Detect Percentage Analysis

Well	Parameter	Units	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	Number of Samples	Number of ND's	% ND	ND Treatment
AP-4	Antimony, total	ug/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	16	16	100%	PQL
AP-5	Antimony, total	ug/L	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1				
AP-4	Cobalt, total	ug/L	< 5	5.2	5	< 5	< 5	< 5	< 5	< 5	16	14	88%	Highest Detection
AP-5	Cobalt, total	ug/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5				
AP-4	Lithium, total	mg/L	0.0087	0.0108	0.0113	0.0079	0.0092	0.0092	0.0077		14	1	7%	½ PQL
AP-5	Lithium, total	mg/L	0.005	0.006	0.0068	0.009	0.0053	< 0.005	0.0104					
AP-4	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	16	16	100%	PQL
AP-5	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15				
AP-4	Thallium, total	ug/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	15	15	100%	PQL
AP-5	Thallium, total	ug/L	< 2	< 2		< 2	< 2	< 2	< 2	< 2				

Notes:
1. For datasets with a fraction of non-detect values from 25% to 50%, adjustments to the mean and standard deviation (SD) are required. Monitoring Data at RCRA Facilities).
2. For datasets that do not include non-detect values, no adjustment to the mean and standard deviation are required prior to calculating the prediction limit.

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameters

Prediction Limit Calculation

Prediction Limit = x + st[1+(1/n)]^*½

Confidence Level = 95%

Well	Parameter	Units	2021-Q1	2021-Q2	2021-Q3	2021-Q4	2022-Q1	2022-Q2	2022-Q3	2022-Q4	ND Treatment	Mean [x]	Standard Deviation [s]	Number of Samples	T Value [t]	Prediction Limit Limit
AP-4	Antimony, total	ug/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	PQL	100% Non-detects				1.0000
AP-5	Antimony, total	ug/L	< 1	< 1	< 0.5	< 1	< 1	< 1	< 1	< 1						
AP-4	Cobalt, total	ug/L	< 5	5.2	5	< 5	< 5	< 5	< 5	< 5	Highest Detection					5.2000
AP-5	Cobalt, total	ug/L	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5						
AP-4	Lithium, total	mg/L	0.0087	0.0108	0.0113	0.0079	0.0092	0.0092	0.0077		½ PQL	0.00784286	0.0025	14	1.7709	0.0124
AP-5	Lithium, total	mg/L	0.005	0.006	0.0068	0.009	0.0053	< 0.0025	0.0104							
AP-4	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15	PQL	100% Non-detects				15.0000
AP-5	Lead, total	ug/L	< 15	< 15	< 15	< 15	< 15	< 15	< 15	< 15						
AP-4	Thallium, total	ug/L	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	PQL	100% Non-detects				2.0000
AP-5	Thallium, total	ug/L	< 2	< 2		< 2	< 2	< 2	< 2	< 2						

Lithium - the 4Q22 reporting limit (0.05 mg/L) is 10 times higher than the standard reporting limit (0.005 mg/L). Data set has been removed from the evaluation.

Client: City Water, Light & Power
Work Order: 21010971
Client Project: Ash Pond Monitoring Wells
Report Date: 10-Feb-21
Lab ID: 21010971-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 01/21/2021 13:11

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	5	1		**496.65**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
3e9tD to water	5	ph-11		**7.40**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
3e9tD to water from mea. srinu 9oint	5	1		**10.56**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
glevation of urosndwater . srfaEe	5	1		**546.50**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
c ea. srinu Point glevation	5	1		**557.06**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
c ea. srinu Point HeiuDt Mbove Aand LsrfaEe	5	1		**3.16**	ft	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
STANDARD METHODS 2550 B FIELD								
Tem9eratsre	5	1		**57.9**	Sy	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
SW-846 9040B								
9HNyield	5	/ -11		**6.97**		/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
SW-846 9050A								
L9eE- UondsEtanEeNyield	5	/ -11		**876**	°mDo. 0Em F 8hU	/	1/ 08/ 0818/ / : 21/ 68* RR/ /	
STANDARD METHODS 2540 C (TOTAL) 1997								
Total 3i. . olved Lolid.	CgAMP	81		**492**	mu0A	/	1/ 08, 0818/ / R2 R 68* R*81	
SW-846 9036 (TOTAL)								
LslfateCgAMP	/ 1		**< 10**	mu0A	/	1/ 08h0818/ / *2 , 68* RRh*		
SW-846 9214 (TOTAL)								
ylsoride	CgAMP	1-/ 1		**0.12**	mu0A	/	1/ 08h0818/ / : 2h/ 68* RR, R	
SW-846 9251 (TOTAL)								
UDloride	CgAMP	µ		**13**	mu0A	/	1/ 08h0818/ / *2 * 68* RRh@	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	CgAMP	1-18h1		**0.0359**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
Barism	CgAMP	1-118h		**0.474**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
Ber7llism	CgAMP	1-111h		**< 0.0005**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
Boron	CgAMP	1-1811		**0.0996**	mu0A	/	1/ 08, 0818/ / 82h, / , : / R*	
Uadmism	CgAMP	1-1181		**< 0.0020**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
UalEism	CgAMP	1-/ 11		**117**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
UDromism	CgAMP	1-11h1		**< 0.0050**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
Uobalt	CgAMP	1-11h1		**< 0.0050**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
Aead	CgAMP	1-1/ h1		**< 0.0150**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
AitDism	CgAMP	1-11h1		**0.0087**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
c ol7bdensm	CgAMP	1-1/ 11		**< 0.0100**	mu0A	/	1/ 08h0818/ / @2 * / , : / R*	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Mntimon7	CgAMP	1-11/ 1		**< 0.0010**	mu0A	h	1/ 08R0818/ *21@/ , : / R@	
Lelenism	CgAMP	1-11/ 1		**< 0.0010**	mu0A	h	1/ 08R0818/ *21@/ , : / R@	
TDallism	CgAMP	1-1181		**< 0.0020**	mu0A	h	1/ 08R0818/ *21@/ , : / R@	
SW-846 7470A (TOTAL)								
c erEsr7	CgAMP	1-11181		**< 0.00020**	mu0A	/	1/ 08h0818/ / 821 / , : / R8	
EPA 903.0/904.0, RADIUM 226/228								
6adismp88R	5	1		**See attached**	9Ei0A	/	1801h0818/ 1211 68* , : 18	
6adismp88*	5	1		**See attached**	9Ei0A	/	1801h0818/ 1211 68* , : 18	

Client: City Water, Light & Power
Work Order: 21010971
Client Project: Ash Pond Monitoring Wells
Report Date: 10-Feb-21
Lab ID: 21010971-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 01/21/2021 13:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	5	1		**552.63**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
3e9tD to water	5	ph-11		**18.26**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
3e9tD to water from mea. srinu 9oint	5	1		**20.56**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
glevation of urosndwater . srfaEe	5	1		**563.34**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
c ea. srinu Point glevation	5	1		**583.90**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
c ea. srinu Point HeiuDt Moove Aand LsrfaEe	5	1		**2.30**	ft	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
STANDARD METHODS 2550 B FIELD								
Tem9eratsre	5	1		**55.0**	Sy	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
SW-846 9040B								
9HNyield	5	/ -11		**7.27**		/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
SW-846 9050A								
L9eE- UondsEtanEeNyield	5	/ -11		**597**	°mDo. 0Em F 8hU	/	1/ 08/ 0818/ / : 2nh 68* RR/ /	
STANDARD METHODS 2540 C (TOTAL) 1997								
Total 3i. . olved Lolid.	CgAMP	81		**362**	mu0A	/	1/ 08, 0818/ / R2 , 68* R*81	
SW-846 9036 (TOTAL)								
Lslfate	CgAMP	/ 1		**46**	mu0A	/	1/ 08h0818/ / *2n@68* RRn*	
SW-846 9214 (TOTAL)								
ylsoride	CgAMP	1-/ 1		**0.34**	mu0A	/	1/ 08h0818/ / : 2n: 68* RR, R	
SW-846 9251 (TOTAL)								
UDloride	CgAMP	µ		**< 4**	mu0A	/	1/ 08h0818/ / *2n@68* RRn@	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	CgAMP	1-18h1		**< 0.0250**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
Barism	CgAMP	1-118h		**0.0429**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
Ber7llism	CgAMP	1-111h		**< 0.0005**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
Boron	CgAMP	1-1811		**0.0256**	mu0A	/	1/ 08, 0818/ / : 281 / , : / R*	
Uadmism	CgAMP	1-1181		**< 0.0020**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
UalEism	CgAMP	1-/ 11		**75.4**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
UDromism	CgAMP	1-11h1		**< 0.0050**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
Uobalt	CgAMP	1-11h1		**< 0.0050**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
Aead	CgAMP	1-1/ h1		**< 0.0150**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
AitDism	CgAMP	1-11h1		**< 0.0050**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
c ol7bdensm	CgAMP	1-1/ 11		**< 0.0100**	mu0A	/	1/ 08h0818/ / @28/ / , : / R*	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Mntimon7	CgAMP	1-11/ 1		**< 0.0010**	mu0A	h	1/ 08R0818/ *21 , / , : / R@	
Lelenism	CgAMP	1-11/ 1		**< 0.0010**	mu0A	h	1/ 08R0818/ *21 , / , : / R@	
TDallism	CgAMP	1-1181		**< 0.0020**	mu0A	h	1/ 08R0818/ *21 , / , : / R@	
SW-846 7470A (TOTAL)								
c erEsr7	CgAMP	1-11181		**< 0.00020**	mu0A	/	1/ 08h0818/ / 828 / , : / R8	
EPA 903.0/904.0, RADIUM 226/228								
6adismp88R	5	1		**See attached**	9Ei0A	/	1801h0818/ 1211 68* , : 18	
6adismp88*	5	1		**See attached**	9Ei0A	/	1801h0818/ 1211 68* , : 18	

Client: City Water, Light & Power
Work Order: 21050932
Client Project: Ash Pond Monitoring Wells
Report Date: 28-Jun-21
Lab ID: 21050932-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 05/27/2021 11:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	R	1		**496.65**	ft	:	1/ 0820818: : : 66*	3859: / D
p eht- to water	R	./ s11		**6.61**	ft	:	1/ 0820818: : : 66*	3859: / D
p eht- to water from meaugrinE hoint	R	1		**9.77**	ft	:	1/ 0820818: : : 66*	3859: / D
c levation of Erogndwater ugrfaMe	R	1		**547.29**	ft	:	1/ 0820818: : : 66*	3859: / D
A eaugrinE Point c levation	R	1		**557.06**	ft	:	1/ 0820818: : : 66*	3859: / D
A eaugrinE Point HeiE- t L bove Sand y grfaMe	R	1		**3.16**	ft	:	1/ 0820818: : : 66*	3859: / D
STANDARD METHODS 2130 B FIELD								
TgrbiditN	R	: s1		**120**	UT°	:	1/ 0820818: : : 66*	3859: / D
STANDARD METHODS 2550 B FIELD								
Temheratgre	R	1		**60.3**	F,	:	1/ 0820818: : : 66*	3859: / D
SW-846 9040B								
hHC, ield	R	: s11		**6.74**		:	1/ 0820818: : : 66*	3859: / D
The LCS was outside of control limits for pH at 102.7%. The acceptable range is 98.57- 101.4 % recovery.								
SW-846 9050A								
y heMs µ ondgManMeC, ield	R	: s11		**1050**	@n- ou0Mn 7 8/ µ	:	1/ 0820818: : : 66*	3859: / D
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total p iuuolved y olidu	Uc SL P	81		**486**	mE0S	:	140180818: : *691	385: 2/ *
SW-846 9036 (TOTAL)								
y glfate	Uc SL P	: 1		**< 10**	mE0S	:	140180818: 8612	385: 242
SW-846 9214 (TOTAL)								
, lgoride	Uc SL P	1s 1		**0.16**	mE0S	:	1401: 0818: : 56*4	385: 2* D
SW-846 9251 (TOTAL)								
µ - loride	Uc SL P	:		**13**	mE0S	:	140180818: 861D	385: 24D
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
L rueniM	Uc SL P	1s18/ 1		**< 0.0250**	mE0S	:	140180818: : / 694	: 22** :
Barigm	Uc SL P	1s118/		**0.454**	mE0S	:	140180818: : / 694	: 22** :
BerNligm	Uc SL P	1s111/		**< 0.0005**	mE0S	:	140180818: : / 694	: 22** :
Boron	Uc SL P	1s1811		**0.0928**	mE0S	:	140180818: : / 694	: 22** :
µ admigm	Uc SL P	1s1181		**< 0.0020**	mE0S	:	140180818: : / 694	: 22** :
µ alMgm	Uc SL P	1s 11		**128**	mE0S	:	140180818: : / 694	: 22** :
µ - romigm	Uc SL P	1s11/ 1		**0.0062**	mE0S	:	140180818: : / 694	: 22** :
µ obalt	Uc SL P	1s11/ 1		**0.0052**	mE0S	:	140180818: : / 694	: 22** :
Sead	Uc SL P	1s1: / 1		**< 0.0150**	mE0S	:	140180818: : / 694	: 22** :
Sit- igm	Uc SL P	1s11/ 1		**0.0108**	mE0S	:	140180818: : / 694	: 22** :
A olNbdengm	Uc SL P	1s1: 11		**< 0.0100**	mE0S	:	140180818: : / 694	: 22** :
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
L ntimonN	Uc SL P	1s11: 1		**< 0.0010**	mE0S	/	1401: 0818: : 46BD	: 22** 8
y elenigm	Uc SL P	1s11: 1		**< 0.0010**	mE0S	/	1401: 0818: : 46BD	: 22** 8
T- alligm	Uc SL P	1s1181		**< 0.0020**	mE0S	/	1401: 0818: : 46BD	: 22** 8
SW-846 7470A (TOTAL)								
A erMgrN	Uc SL P	1s11181		**< 0.00020**	mE0S	:	140180818: : : 6*D	: 22* 2D
EPA 903.0/904.0, RADIUM 226/228								
3 adigm.884	R	1		**See attached**	hM0S	:	1408/ 0818: 1611	38592* D
3 adigm.88D	R	1		**See attached**	hM0S	:	1408/ 0818: 1611	38592* D

Client: City Water, Light & Power
Work Order: 21050932
Client Project: Ash Pond Monitoring Wells
Report Date: 28-Jun-21
Lab ID: 21050932-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 05/27/2021 11:48

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed Batch
FIELD ELEVATION MEASUREMENTS							
Bottom of well elevation	R	1		**552.63**	ft	:	1/ 0820818: : : 6' D 3859: / D
p eht- to water	R	./ s11		**7.82**	ft	:	1/ 0820818: : : 6' D 3859: / D
p eht- to water from meaugrinE hoint	R	1		**10.12**	ft	:	1/ 0820818: : : 6' D 3859: / D
c levation of Erogndwater ugrfaMe	R	1		**573.78**	ft	:	1/ 0820818: : : 6' D 3859: / D
A eaugrinE Point c levation	R	1		**583.90**	ft	:	1/ 0820818: : : 6' D 3859: / D
A eaugrinE Point HeiE- t L bove Sand y grfaMe	R	1		**2.30**	ft	:	1/ 0820818: : : 6' D 3859: / D
STANDARD METHODS 2130 B FIELD							
TgrbiditN	R	: s1		**1.8**	UT°	:	1/ 0820818: : : 6' D 3859: / D
STANDARD METHODS 2550 B FIELD							
Temheratgre	R	1		**56.3**	F,	:	1/ 0820818: : : 6' D 3859: / D
SW-846 9040B							
hHC, ield	R	: s11		**7.05**		:	1/ 0820818: : : 6' D 3859: / D
The LCS was outside of control limits for pH at 102.7%. The acceptable range is 98.57- 101.4 % recovery.							
SW-846 9050A							
y heMs µ ondgManMeC, ield	R	: s11		**801**	@n- ou0Mn 7 8/ µ	:	1/ 0820818: : : 6' D 3859: / D
STANDARD METHODS 2540 C (TOTAL) 1997, 2011							
Total p iuuolved y olidu	Uc SL P	81		**358**	mE0S	:	140180818: : *69: 385: 2/ *
SW-846 9036 (TOTAL)							
y glfate	Uc SL P	81		**53**	mE0S	8	140190818: : 26/ 1 385: D92
SW-846 9214 (TOTAL)							
, lgoride	Uc SL P	1s 1		**0.35**	mE0S	:	1401: 0818: : 56' 5 385: 2* D
SW-846 9251 (TOTAL)							
µ - loride	Uc SL P	:		**3**	mE0S	:	140180818: 8685 385: 24D
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)							
L rueniM	Uc SL P	1s18/ 1		**< 0.0250**	mE0S	:	140180818: : / 6' 4 : 22** :
Barigm	Uc SL P	1s118/		**0.0552**	mE0S	:	140180818: : / 6' 4 : 22** :
BerNligm	Uc SL P	1s111/		**< 0.0005**	mE0S	:	140180818: : / 6' 4 : 22** :
Boron	Uc SL P	1s1811		**< 0.0200**	mE0S	:	140180818: : / 6' 4 : 22** :
µ admigm	Uc SL P	1s1181		**< 0.0020**	mE0S	:	140180818: : / 6' 4 : 22** :
µ alMgm	Uc SL P	1s 11		**89.1**	mE0S	:	140180818: : / 6' 4 : 22** :
µ - romigm	Uc SL P	1s11/ 1		**< 0.0050**	mE0S	:	140180818: : / 6' 4 : 22** :
µ obalt	Uc SL P	1s11/ 1		**< 0.0050**	mE0S	:	140180818: : / 6' 4 : 22** :
Sead	Uc SL P	1s1: / 1		**< 0.0150**	mE0S	:	140180818: : / 6' 4 : 22** :
Sit- igm	Uc SL P	1s11/ 1		**0.0060**	mE0S	:	140180818: : / 6' 4 : 22** :
A olNbdengm	Uc SL P	1s1: 11		**< 0.0100**	mE0S	:	140180818: : / 6' 4 : 22** :
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)							
L ntimonN	Uc SL P	1s11: 1		**< 0.0010**	mE0S	/	1401: 0818: : 4694 : 22** 8
y elenigm	Uc SL P	1s11: 1		**< 0.0010**	mE0S	/	1401: 0818: : 4694 : 22** 8
T- alligm	Uc SL P	1s1181		**< 0.0020**	mE0S	/	1401: 0818: : 4694 : 22** 8
SW-846 7470A (TOTAL)							
A erMgrN	Uc SL P	1s11181		**< 0.00020**	mE0S	:	140180818: : : 6' 1 : 22* 2D
EPA 903.0/904.0, RADIUM 226/228							
3 adigm.884	R	1		**See attached**	hM0S	:	1408/ 0818: 1611 38592* D
3 adigm.88D	R	1		**See attached**	hM0S	:	1408/ 0818: 1611 38592* D

Client: City Water, Light & Power **Work Order:** 21080889

Client Project: Ash Pond Monitoring Wells **Report Date:** 28-Sep-21

Lab ID: 21080889-004 **Client Sample ID:** AP-4

Matrix: GROUNDWATER **Collection Date:** 08/24/2021 16:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed Batch
FIELD ELEVATION MEASUREMENTS							
Bottom of well elevation	3	1		**496.65**	ft	:	1/ 0820818: : 461R 985/ *22
Depth to water	3	-. s11		**5.69**	ft	:	1/ 0820818: : 461R 985/ *22
Depth to water from meaugrinE point	3	1		**8.85**	ft	:	1/ 0820818: : 461R 985/ *22
c levation of Erogndwater ugrfaMe	3	1		**548.21**	ft	:	1/ 0820818: : 461R 985/ *22
A eaugrinE Point c levation	3	1		**557.06**	ft	:	1/ 0820818: : 461R 985/ *22
A eaugrinE Point HeiEht L bove Sand y grfaMe	3	1		**3.16**	ft	:	1/ 0820818: : 461R 985/ *22
STANDARD METHODS 2130 B FIELD							
TgrbiditN	3	: s1		**93**	UT°	:	1/ 0820818: : 461R 985/ *22
STANDARD METHODS 2550 B FIELD							
Temperatgre	3	1		**63.1**	F,	:	1/ 0820818: : 461R 985/ *22
SW-846 9040B							
pHC, ield	3	: s11		**6.92**		:	1/ 0820818: : 461R 985/ *22
SW-846 9050A							
y peMs µ ondgManMeC, ield	3	: s11		**788**	@nhou0Mn 7 8. µ	:	1/ 0820818: : 461R 985/ *22
STANDARD METHODS 2540 C (TOTAL) 1997, 2011							
Total Diuuolved y olidu	Uc SL P	81		**494**	mE0S	:	1/ 0BR0818: : 2684 985/ *21
SW-846 9036 (TOTAL)							
y glfate	Uc SL P	: 1		**< 10**	mE0S	:	1/ 0' 10818: : . 611 985/ **/
SW-846 9251 (TOTAL)							
µ hloride	Uc SL P	:		**14**	mE0S	:	1/ 0840818: : / 66/ 985R8: 8
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)							
L rueniM	Uc SL P	1s18. 1		**< 0.0250**	mE0S	:	150I : 0818: : 26'. : / : *. 8
Barigm	Uc SL P	1s118.		**0.456**	mE0S	:	150I : 0818: : 26'. : / : *. 8
BerNligm	Uc SL P	1s111.		**< 0.0005**	mE0S	:	150I : 0818: : 26'. : / : *. 8
Boron	Uc SL P	1s1811		**0.0949**	mE0S	:	150I 80818: : 268: : / : *. 8
µ admigm	Uc SL P	1s1181		**< 0.0020**	mE0S	:	150I : 0818: : 26'. : / : *. 8
µ alMgm	Uc SL P	1s 11		**126**	mE0S	:	150I : 0818: : 26'. : / : *. 8
µ hromigm	Uc SL P	1s11. 1		**0.0068**	mE0S	:	150I : 0818: : 26'. : / : *. 8
µ obalt	Uc SL P	1s11. 1		**0.0050**	mE0S	:	150I : 0818: : 26'. : / : *. 8
Sead	Uc SL P	1s1: . 1		**< 0.0150**	mE0S	:	150I : 0818: : 26'. : / : *. 8
Sithigm	Uc SL P	1s11. 1		**0.0113**	mE0S	:	150I : 0818: : 26'. : / : *. 8
A olNbdengm	Uc SL P	1s1: 11		**< 0.0100**	mE0S	:	150I : 0818: : 26'. : / : *. 8
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)							
L ntimonN	Uc SL P	1s11: 1		**< 0.0010**	mE0S	.	150I / 0818: 8688 : / : *. *
y elenigm	Uc SL P	1s11: 1		**< 0.0010**	mE0S	.	150I / 0818: 8688 : / : *. *
Thalligm	Uc SL P	1s1181		**< 0.0020**	mE0S	.	150I 80818: 8861. : / : *. *
SW-846 7470A (TOTAL)							
A erMgrN	Uc SL P	1s11181		**< 0.00020**	mE0S	:	150I 80818: : 86. : / : 28:
EPA 903.0/904.0, RADIUM 226/228							
9 adigm-884	3	1		**See attached**	pM0S	:	150I: 0818: 1611 9855*/ 4
9 adigm-88/	3	1		**See attached**	pM0S	:	150I: 0818: 1611 9855*/ 4

Client: City Water, Light & Power **Work Order:** 21080889

Client Project: Ash Pond Monitoring Wells **Report Date:** 28-Sep-21

Lab ID: 21080889-005 **Client Sample ID:** AP-5

Matrix: GROUNDWATER **Collection Date:** 08/24/2021 16:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	3	1		**552.63**	ft	:	1/ 0820818: : 46 : 985/ *22	
Depth to water	3	-. s11		**11.89**	ft	:	1/ 0820818: : 46 : 985/ *22	
Depth to water from meaugrinE point	3	1		**14.19**	ft	:	1/ 0820818: : 46 : 985/ *22	
c levation of Erogndwater ugrfaMe	3	1		**569.71**	ft	:	1/ 0820818: : 46 : 985/ *22	
A eaugrinE Point c levation	3	1		**583.90**	ft	:	1/ 0820818: : 46 : 985/ *22	
A eaugrinE Point HeiEht L bove Sand y grfaMe	3	1		**2.30**	ft	:	1/ 0820818: : 46 : 985/ *22	
STANDARD METHODS 2130 B FIELD								
TgrbiditN	3	: s1		**5.0**	UT°	:	1/ 0820818: : 46 : 985/ *22	
STANDARD METHODS 2550 B FIELD								
Temperatgre	3	1		**63.1**	F,	:	1/ 0820818: : 46 : 985/ *22	
SW-846 9040B								
pHC, ield	3	: s11		**7.08**		:	1/ 0820818: : 46 : 985/ *22	
SW-846 9050A								
y peMs µ ondgManMeC, ield	3	: s11		**604**	@nhou0Mn 7 8. µ	:	1/ 0820818: : 46 : 985/ *22	
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Diuuolved y olidu	Uc SL P	81		**422**	mE0S	:	1/ 0RR0818: : 2684 985/ *21	
SW-846 9036 (TOTAL)								
y glfate	Uc SL P	81		**65**	mE0S	8	1/ 0840818: : / 6 R 985R8: :	
SW-846 9251 (TOTAL)								
µ hloride	Uc SL P	:		**5**	mE0S	:	1/ 0840818: : / 6 8 985R8: 8	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
L rueniM	Uc SL P	1s18. 1		**< 0.0250**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
Barigm	Uc SL P	1s118.		**0.0473**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
BerNligm	Uc SL P	1s111.		**< 0.0005**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
Boron	Uc SL P	1s1811		**< 0.0200**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
µ admigm	Uc SL P	1s1181		**< 0.0020**	mE0S	:	150IR0818: : 86 R : / : . 1/	
µ alMgm	Uc SL P	1s: 11	y	**77.8**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
µ hromigm	Uc SL P	1s11. 1		**< 0.0050**	mE0S	:	150IR0818: : 86 R : / : . 1/	
µ obalt	Uc SL P	1s11. 1		**< 0.0050**	mE0S	:	150IR0818: : 86 R : / : . 1/	
Sead	Uc SL P	1s1: . 1		**< 0.0150**	mE0S	:	150I * 0818: 56 . : / : 2. 8	
Sithigm	Uc SL P	1s11. 1		**0.0068**	mE0S	:	150IR0818: : 86 R : / : . 1/	
A olNbdengm	Uc SL P	1s1: 11		**< 0.0100**	mE0S	:	150IR0818: : 86 R : / : . 1/	
Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
L ntimonN	Uc SL P	1s111.		**< 0.0005**	mE0S	.	150 * 0818: : 464 : / : 44/	
y elenigm	Uc SL P	1s111.		**< 0.0005**	mE0S	.	150 * 0818: : 464 : / : 44/	
Thalligm	Uc SL P	1s11: 1		**0.0019**	mE0S	.	150 * 0818: : 464 : / : 44/	
SW-846 7470A (TOTAL)								
A erMgrN	Uc SL P	1s11181		**< 0.00020**	mE0S	:	150I80818: : 86 R : / : 28:	
EPA 903.0/904.0, RADIUM 226/228								
9 adigm-884	3	1		**See attached**	pM0S	:	1503: 0818: 1611 9855*/ 4	
9 adigm-88/	3	1		**See attached**	pM0S	:	1503: 0818: 1611 9855*/ 4	

Client: City Water, Light & Power **Work Order:** 21110022

Client Project: Ash Pond Monitoring Wells **Report Date:** 25-Jan-22

Lab ID: 21110022-005 **Client Sample ID:** AP-4

Matrix: GROUNDWATER **Collection Date:** 11/09/2021 13:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	0		**498.79**	ft	1	11/08/2021 1R510	* R0R1R:
3e9tD to water	6	ph-00		**3.91**	ft	1	11/08/2021 1R510	* R0R1R:
3e9tD to water from mea. srinu 9oint	6	0		**9.21**	ft	1	11/08/2021 1R510	* R0R1R:
glevation of urosndwater . srfaEe	6	0		**549.99**	ft	1	11/08/2021 1R510	* R0R1R:
c ea. srinu Point glevation	6	0		**559.20**	ft	1	11/08/2021 1R510	* R0R1R:
c ea. srinu Point HeiuDt Moove Aand LsrfaEe	6	0		**5.30**	ft	1	11/08/2021 1R510	* R0R1R:
STANDARD METHODS 2130 B FIELD								
TsrbiditS	6	1-0		**19**	y TN	1	11/08/2021 1R510	* R0R1R:
STANDARD METHODS 2550 B FIELD								
Tem9eratsre	6	0		**61.2**	U'	1	11/08/2021 1R510	* R0R1R:
SW-846 9040B								
9HF° ield	6	1-00		**6.75**		1	11/08/2021 1R510	* R0R1R:
SW-846 9050A								
L9eE- , ondsEtanEeF° ield	6	1-00		**892**	CmDo. /Em µ 2h,	1	11/08/2021 1R510	* R0R1R:
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 3i. . olved Lolid.	6	20		**494**	mu/A	1	11/12/2021 1h502	* R02@@@
SW-846 9036 (TOTAL)								
LsIfate	y gAMP	10		**< 10**	mu/A	1	11/1@2021 25R7	* R027R7
SW-846 9214 (TOTAL)								
° lsoride	y gAMP	0-10		**0.15**	mu/A	1	11/11/2021 11502	* R02h21
SW-846 9251 (TOTAL)								
, Dloride	y gAMP	1		**13**	mu/A	1	11/1@2021 25R7	* R027: :
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	y gAMP	0-02h0		**0.0305**	mu/A	1	11/12/2021 21510	14: 817
Barism	y gAMP	0-002h		**0.417**	mu/A	1	11/12/2021 21510	14: 817
BerSllism	y gAMP	0-000h		**< 0.0005**	mu/A	1	11/12/2021 21510	14: 817
Boron	y gAMP	0-0200		**0.0946**	mu/A	1	11/1@2021 1R51R	14: 817
, admism	y gAMP	0-0020		**< 0.0020**	mu/A	1	11/12/2021 21510	14: 817
, alEism	y gAMP	0-100		**117**	mu/A	1	11/12/2021 21510	14: 817
, Dromism	y gAMP	0-00h0		**< 0.0050**	mu/A	1	11/12/2021 21510	14: 817
, obalt	y gAMP	0-00h0		**< 0.0050**	mu/A	1	11/12/2021 21510	14: 817
Aead	y gAMP	0-01h0		**< 0.0150**	mu/A	1	11/12/2021 21510	14: 817
AitDism	y gAMP	0-00h0		**0.0079**	mu/A	1	11/12/2021 21510	14: 817
c olSbdensm	y gAMP	0-0100		**< 0.0100**	mu/A	1	11/12/2021 21510	14: 817
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
MntimonS	y gAMP	0-0010		**< 0.0010**	mu/A	h	11/14/2021 15h:	14: 817
Lelenism	y gAMP	0-0010		**< 0.0010**	mu/A	h	11/14/2021 15h:	14: 817
TDallism	y gAMP	0-0020		**< 0.0020**	mu/A	h	11/17/2021 R502	14: 817
CCV recovered outside the upper control limits for Se. Sample results are below the reporting limit. Data is reportable per the TNI standard.								
SW-846 7470A (TOTAL)								
c erEsrS	y gAMP	0-00020		**< 0.00020**	mu/A	1	11/1: /2021 1h5h0	14: 814
EPA 903.0/904.0, RADIUM 226/228								
* adismp22@	6	0		**See attached**	9Ei/A	1	01/14/2022 0500	* R0@R20
* adismp224	6	0		**See attached**	9Ei/A	1	01/14/2022 0500	* R0@R20

Client: City Water, Light & Power
Work Order: 21110022
Client Project: Ash Pond Monitoring Wells
Report Date: 25-Jan-22
Lab ID: 21110022-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 11/10/2021 16:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	0		**552.63**	ft	1	11/10/2021 1@601	* R0R1R
3e9tD to water	6	ph-00		**11.04**	ft	1	11/10/2021 1@601	* R0R1R
3e9tD to water from mea. srinu 9oint	6	0		**13.34**	ft	1	11/10/2021 1@601	* R0R1R
glevation of urosndwater . srfaEe	6	0		**570.56**	ft	1	11/10/2021 1@601	* R0R1R
c ea. srinu Point glevation	6	0		**583.90**	ft	1	11/10/2021 1@601	* R0R1R
c ea. srinu Point HeiuDt Moove Aand LsrfaEe	6	0		**2.30**	ft	1	11/10/2021 1@601	* R0R1R
STANDARD METHODS 2130 B FIELD								
TsrbiditS	6	1-0		**< 1.0**	y TN	1	11/10/2021 1@601	* R0R1R
STANDARD METHODS 2550 B FIELD								
Tem9eratsre	6	0		**56.8**	U	1	11/10/2021 1@601	* R0R1R
SW-846 9040B								
9HF° ield	6	1-00		**6.97**		1	11/10/2021 1@601	* R0R1R
SW-846 9050A								
L9eE- , ondsEtanEeF° ield	6	1-00		**780**	CmDo. /Em µ 2h,	1	11/10/2021 1@601	* R0R1R
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 3i. . olved Lolid.	6	20		**468**	mu/A	1	11/12/2021 1h502	* R02@@@
SW-846 9036 (TOTAL)								
LsIfate	y gAMP	20		**70**	mu/A	2	11/1@2021 25 h	* R027R7
SW-846 9214 (TOTAL)								
° lsoride	y gAMP	0-10		**0.30**	mu/A	1	11/11/2021 1150h	* R02h21
SW-846 9251 (TOTAL)								
, Dloride	y gAMP	2		**6**	mu/A	2	11/1@2021 25 h	* R027: :
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	y gAMP	0-02h0		**< 0.0250**	mu/A	1	11/12/2021 2151R	14: 817
Barism	y gAMP	0-002h		**0.0696**	mu/A	1	11/12/2021 2151R	14: 817
BerSllism	y gAMP	0-000h		**< 0.0005**	mu/A	1	11/12/2021 2151R	14: 817
Boron	y gAMP	0-0200		**< 0.0200**	mu/A	1	11/1@2021 1R522	14: 817
, admism	y gAMP	0-0020		**< 0.0020**	mu/A	1	11/12/2021 2151R	14: 817
, alEism	y gAMP	0-100		**94.2**	mu/A	1	11/12/2021 2151R	14: 817
, Dromism	y gAMP	0-00h0		**< 0.0050**	mu/A	1	11/12/2021 2151R	14: 817
, obalt	y gAMP	0-00h0		**< 0.0050**	mu/A	1	11/12/2021 2151R	14: 817
Aead	y gAMP	0-01h0		**< 0.0150**	mu/A	1	11/12/2021 2151R	14: 817
AitDism	y gAMP	0-00h0		**0.0090**	mu/A	1	11/12/2021 2151R	14: 817
c olSbdensm	y gAMP	0-0100		**< 0.0100**	mu/A	1	11/12/2021 2151R	14: 817
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
MntimonS	y gAMP	0-0010		**< 0.0010**	mu/A	h	11/14/2021 25 0	14: 817
Lelenism	y gAMP	0-0010		**< 0.0010**	mu/A	h	11/14/2021 25 0	14: 817
TDallism	y gAMP	0-0020		**< 0.0020**	mu/A	h	11/17/2021 R508	14: 817
CCV recovered outside the upper control limits for Se. Sample results are below the reporting limit. Data is reportable per the TNI standard.								
SW-846 7470A (TOTAL)								
c erEsrS	y gAMP	0-00020		**< 0.00020**	mu/A	1	11/1h/2021 1R522	14: 814
EPA 903.0/904.0, RADIUM 226/228								
* adismp22@	6	0		**See attached**	9Ei/A	1	01/14/2022 0500	* R0@R20
* adismp224	6	0		**See attached**	9Ei/A	1	01/14/2022 0500	* R0@R20

Client: City Water, Light & Power
Work Order: 22011434
Client Project: Ash Pond Monitoring Wells
Report Date: 16-Mar-22
Lab ID: 22011434-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 02/16/2022 10:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	1		**498.79**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
3e9tD to water	6	p2h11		**3.12**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
3e9tD to water from mea-. rins 9oint	6	1		**8.42**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
ulevation of sro. ndwater -. rfage	6	1		**550.78**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
E ea-. rins Point ulevation	6	1		**559.20**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
E ea-. rins Point HeisDt c bove Mand A. rfage	6	1		**5.30**	ft	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
STANDARD METHODS 2130 B FIELD								
T. rbiditL	6	8h1		**49**	STy	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
STANDARD METHODS 2550 B FIELD								
Tem9erat. re	6	1		**57.0**	NU	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
SW-846 9040B								
9H° Uield	6	8h11		**6.92**		8	1/ 08µ0/ 1/ / 81:12 * 51R252	
SW-846 9050A								
A9eghF ond. gtange° Uield	6	8h11		**1350**	, mDo-Qgm C / 2F	8	1/ 08µ0/ 1/ / 81:12 * 51R252	
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 3i- - olved Aolid-	6	/ 1		**496**	ms0M	8	1/ 08R0/ 1/ / 8/ :24 * 51R/ @R	
SW-846 9036 (TOTAL)								
A. lfate	SuMcP	81		**< 10**	ms0M	8	1/ 0/ / 0/ 1/ / / 1:12 * 51R712	
SW-846 9214 (TOTAL)								
Ul. oride	SuMcP	1h81		**0.14**	ms0M	8	1/ 08R0/ 1/ / 81:18 * 51R/ 58	
SW-846 9251 (TOTAL)								
F Dloride	SuMcP	7		**12**	ms0M	8	1/ 0/ 50/ 1/ / 85:77 * 51R752	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
c r- enig	SuMcP	1h1/ 21		**0.0306**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
Bari. m	SuMcP	1h11/ 2		**0.413**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
BerLlli. m	SuMcP	1h1112		**< 0.0005**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
Boron	SuMcP	1h1/ 11		**0.0954**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
F admi. m	SuMcP	1h11/ 1		**< 0.0020**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
F algi. m	SuMcP	1h811		**123**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
F Dromi. m	SuMcP	1h1121		**< 0.0050**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
F obalt	SuMcP	1h1121		**< 0.0050**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
Mead	SuMcP	1h1821		**< 0.0150**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
MtDi. m	SuMcP	1h1121		**0.0092**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
E olLbden. m	SuMcP	1h1811		**< 0.0100**	ms0M	8	1/ 0840/ 1/ / 82:27 84R48µ	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
c ntimonL	SuMcP	1h1181		**< 0.0010**	ms0M	2	150120/ 1/ / 5:5µ 84R48µ	
Aeleni. m	SuMcP	1h1181		**< 0.0010**	ms0M	2	1/ 0/ 20/ 1/ / 5:/ µ 84R48µ	
TDalli. m	SuMcP	1h11/ 1		**< 0.0020**	ms0M	2	1/ 0/ 20/ 1/ / 5:/ µ 84R48µ	
SW-846 7470A (TOTAL)								
E erg. rL	SuMcP	1h111/ 1		**< 0.00020**	ms0M	8	1/ 08R0/ 1/ / 87:/ µ 84R48R	
EPA 903.0/904.0, RADIUM 226/228								
* adi. mp/ / µ	6	1		**See attached**	9gi0M	8	150150/ 1/ / 1:11 * 5141Rµ	
* adi. mp/ / 4	6	1		**See attached**	9gi0M	8	150150/ 1/ / 1:11 * 5141Rµ	

Client: City Water, Light & Power
Work Order: 22011434
Client Project: Ash Pond Monitoring Wells
Report Date: 16-Mar-22
Lab ID: 22011434-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 02/16/2022 10:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	1		**552.63**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
3e9tD to water	6	p2h11		**10.11**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
3e9tD to water from mea-. rins 9oint	6	1		**12.41**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
ulevation of sro. ndwater -. rfage	6	1		**571.49**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
E ea-. rins Point ulevation	6	1		**583.90**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
E ea-. rins Point HeisDt c bove Mand A. rfage	6	1		**2.30**	ft	8	1/ 08µ0 1/ / 81:5R * 51R252	
STANDARD METHODS 2130 B FIELD								
T. rbiditL	6	8h1		**3.4**	STy	8	1/ 08µ0 1/ / 81:5R * 51R252	
STANDARD METHODS 2550 B FIELD								
Tem9erat. re	6	1		**54.7**	NU	8	1/ 08µ0 1/ / 81:5R * 51R252	
SW-846 9040B								
9H° Uield	6	8h11		**7.01**		8	1/ 08µ0 1/ / 81:5R * 51R252	
SW-846 9050A								
A9eghFond. gtange° Uield	6	8h11		**1010**	, mDo-Qgm C / 2F	8	1/ 08µ0 1/ / 81:5R * 51R252	
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 3i- - olved Aolid-	6	/ 1		**406**	ms0M	8	1/ 08R0 1/ / 8/ :24 * 51R/ @R	
SW-846 9036 (TOTAL)								
A. lfate	SuMcP	/ 1		**57**	ms0M	/	1/ 0/ / 0/ 1/ / / 1:52 * 51R712	
SW-846 9214 (TOTAL)								
Ul. oride	SuMcP	1h81		**0.33**	ms0M	8	1/ 08R0 1/ / 81:15 * 51R/ 58	
SW-846 9251 (TOTAL)								
FDloride	SuMcP	7		**< 4**	ms0M	8	1/ 0/ 50/ 1/ / 85:22 * 51R752	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
cr- enig	SuMcP	1h1/ 21		**< 0.0250**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Bari. m	SuMcP	1h11/ 2		**0.0505**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
BerLlli. m	SuMcP	1h1112		**< 0.0005**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Boron	SuMcP	1h1/ 11		**< 0.0200**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Fadmi. m	SuMcP	1h11/ 1		**< 0.0020**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Falgi. m	SuMcP	1h811		**87.2**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
FDromi. m	SuMcP	1h1121		**< 0.0050**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Fobalt	SuMcP	1h1121		**< 0.0050**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
Mead	SuMcP	1h1821		**< 0.0150**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
MtDi. m	SuMcP	1h1121		**0.0053**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
EolLbden. m	SuMcP	1h1811		**< 0.0100**	ms0M	8	1/ 0840/ 1/ / 82:2µ 84R48µ	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
cntimonL	SuMcP	1h1181		**< 0.0010**	ms0M	2	150120/ 1/ / 5:7/ 84R48µ	
Aeleni. m	SuMcP	1h1181		**< 0.0010**	ms0M	2	1/ 0/ 20/ 1/ / 5:57 84R48µ	
TDalli. m	SuMcP	1h11/ 1		**< 0.0020**	ms0M	2	1/ 0/ 20/ 1/ / 5:57 84R48µ	
SW-846 7470A (TOTAL)								
Eerg. rL	SuMcP	1h111/ 1		**< 0.00020**	ms0M	8	1/ 08R0 1/ / 87:/ @84R48R	
EPA 903.0/904.0, RADIUM 226/228								
* adi. mp/ / µ	6	1		**See attached**	9gi0M	8	150150/ 1/ / 1:11 * 5141Rµ	
* adi. mp/ / 4	6	1		**See attached**	9gi0M	8	150150/ 1/ / 1:11 * 5141Rµ	

Client: City Water, Light & Power
Work Order: 22051753
Client Project: Ash Pond Monitoring Wells
Report Date: 13-Jul-22
Lab ID: 22051753-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 05/31/2022 16:28

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	1		**498.79**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
9 eDtp to water	6	h/ -11		**3.78**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
9 eDtp to water from mea. srinu Doint	6	1		**9.08**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
glevation of urosndwater . srfaEe	6	1		**550.12**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
c ea. srinu Point glevation	6	1		**559.20**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
c ea. srinu Point Heiupt Moove Aand LsrfaEe	6	1		**5.30**	ft	2	1/ 0820 1: : 2R5 4	* 8281R3
STANDARD METHODS 2130 B FIELD								
TsrbiditS	6	2-1		**61**	y TN	2	1/ 0820 1: : 2R5 4	* 8281R3
STANDARD METHODS 2550 B FIELD								
TemDeratsre	6	1		**60.8**	U'	2	1/ 0820 1: : 2R5 4	* 8281R3
SW-846 9040B								
DHF° ield	6	2-11		**6.86**		2	1/ 0820 1: : 2R5 4	* 8281R3
SW-846 9050A								
L DeE- , ondsEtanEeF° ield	6	2-11		**829**	Cmpo. 0Em µ : / ,	2	1/ 0820 1: : 2R5 4	* 8281R3
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 9 i. . olved Lolid.	y g AMP	: 1		**516**	mu0A	2	1R01 : 0 1: : 2: 518	* 82: @@@
SW-846 9036 (TOTAL)								
LsIfate	y g AMP	21		**< 10**	mu0A	2	1R01@0 1: : 2353R	* 82: 7: @
SW-846 9214 (TOTAL)								
° Isoride	y g AMP	1-21		**0.15**	mu0A	2	1R0140 1: : 75B/	* 82: 7@8
SW-846 9251 (TOTAL)								
, ploride	y g AMP	2		**16**	mu0A	2	1R01@0 1: : 2353R	* 82: 782
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	y g AMP	1-1: / 1		**< 0.0250**	mu0A	2	1R0180 1: : 235 4	278: R@
Barism	y g AMP	1-11: /		**0.422**	mu0A	2	1R0180 1: : 235 4	278: R@
BerSIism	y g AMP	1-111/		**< 0.0005**	mu0A	2	1R0180 1: : 235 4	278: R@
Boron	y g AMP	1-1: 11		**0.0968**	mu0A	2	1R01R0 1: : 275/ 1	278: R@
, admism	y g AMP	1-11: 1		**< 0.0020**	mu0A	2	1R0180 1: : 235 4	278: R@
, alEism	y g AMP	1-211		**122**	mu0A	2	1R0180 1: : 235 4	278: R@
, promism	y g AMP	1-11/ 1		**< 0.0050**	mu0A	2	1R0180 1: : 235 4	278: R@
, obalt	y g AMP	1-11/ 1		**< 0.0050**	mu0A	2	1R0180 1: : 235 4	278: R@
Aead	y g AMP	1-12/ 1		**< 0.0150**	mu0A	2	1R0180 1: : 235 4	278: R@
Aitpism	y g AMP	1-11/ 1		**0.0092**	mu0A	2	1R0180 1: : 235 4	278: R@
c olSbdensm	y g AMP	1-1211		**< 0.0100**	mu0A	2	1R0180 1: : 235 4	278: R@
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
MntimonS	y g AMP	1-1121		**< 0.0010**	mu0A	/	1R0180 1: : : : 5B7	278: R@
Lelenism	y g AMP	1-1121		**< 0.0010**	mu0A	/	1R0180 1: : : : 5B7	278: R@
Tpallism	y g AMP	1-11: 1		**< 0.0020**	mu0A	/	1R0180 1: : : : 5B7	278: R@
SW-846 7470A (TOTAL)								
c erEsrS	y g AMP	1-111: 1		**< 0.00020**	mu0A	2	1R0180 1: : 2253 1	278: R7
EPA 903.0/904.0, RADIUM 226/228								
* adismh : R	6	1		**See attached**	DEi0A	2	1R0 40 1: : 1511	* 82388@
* adismh : 4	6	1		**See attached**	DEi0A	2	1R0 40 1: : 1511	* 82388@

Client: City Water, Light & Power
Work Order: 22051753
Client Project: Ash Pond Monitoring Wells
Report Date: 13-Jul-22
Lab ID: 22051753-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 05/31/2022 16:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	6	1		**552.63**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
9eDtp to water	6	h/ -11		**7.75**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
9eDtp to water from mea. srinu Doint	6	1		**10.05**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
glevation of urosndwater . srfaEe	6	1		**573.85**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
c ea. srinu Point glevation	6	1		**583.90**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
c ea. srinu Point Heiupt Moove Aand LsrfaEe	6	1		**2.30**	ft	2	1/ 0820 1: : 2R5/ * 8281R3	
STANDARD METHODS 2130 B FIELD								
TsrbiditS	6	2-1		**2.0**	y TN	2	1/ 0820 1: : 2R5/ * 8281R3	
STANDARD METHODS 2550 B FIELD								
TemDeratsre	6	1		**55.2**	U'	2	1/ 0820 1: : 2R5/ * 8281R3	
SW-846 9040B								
DHF° ield	6	2-11		**7.17**		2	1/ 0820 1: : 2R5/ * 8281R3	
SW-846 9050A								
LDeE- , ondsEtanEeF° ield	6	2-11		**513**	Cmpo. 0Em µ : / ,	2	1/ 0820 1: : 2R5/ * 8281R3	
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 9i. . olved Lolid.	y gAMP	: 1		**354**	mu0A	2	1R01: 0 1: : 2: 518 * 82: @@@	
SW-846 9036 (TOTAL)								
Lslfate	y gAMP	21		**35**	mu0A	2	1R01@0 1: : 235/ 3 * 82: 7: @	
SW-846 9214 (TOTAL)								
° lsoride	y gAMP	1-21		**0.38**	mu0A	2	1R0140 1: : 75@* 82: 7@@	
SW-846 9251 (TOTAL)								
, ploride	y gAMP	2		**2**	mu0A	2	1R01@0 1: : 235/ 3 * 82: 782	
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Mr. eniE	y gAMP	1-1: / 1		**< 0.0250**	mu0A	2	1R0180 1: : 23581 278: R@	
Barism	y gAMP	1-11: /		**0.0345**	mu0A	2	1R0180 1: : 23581 278: R@	
BerSllism	y gAMP	1-111/		**< 0.0005**	mu0A	2	1R0180 1: : 23581 278: R@	
Boron	y gAMP	1-1: 11		**0.0341**	mu0A	2	1R0180 1: : 23581 278: R@	
, admism	y gAMP	1-11: 1		**< 0.0020**	mu0A	2	1R0180 1: : 23581 278: R@	
, alEism	y gAMP	1-211		**74.3**	mu0A	2	1R0180 1: : 23581 278: R@	
, promism	y gAMP	1-11/ 1		**< 0.0050**	mu0A	2	1R0180 1: : 23581 278: R@	
, obalt	y gAMP	1-11/ 1		**< 0.0050**	mu0A	2	1R0180 1: : 23581 278: R@	
Aead	y gAMP	1-12/ 1		**< 0.0150**	mu0A	2	1R0180 1: : 23581 278: R@	
Aitpism	y gAMP	1-11/ 1		**< 0.0050**	mu0A	2	1R0180 1: : 23581 278: R@	
c olSbdensm	y gAMP	1-1211		**< 0.0100**	mu0A	2	1R0180 1: : 23581 278: R@	
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
MntimonS	y gAMP	1-1121		**< 0.0010**	mu0A	/	1R0180 1: : : : 53/ 278: R@	
Lelenism	y gAMP	1-1121		**< 0.0010**	mu0A	/	1R0180 1: : : : 53/ 278: R@	
Tpallism	y gAMP	1-11: 1		**< 0.0020**	mu0A	/	1R0180 1: : : : 53/ 278: R@	
SW-846 7470A (TOTAL)								
c erEsrS	y gAMP	1-111: 1		**< 0.00020**	mu0A	2	1R0180 1: : 2151 1 278: R7	
EPA 903.0/904.0, RADIUM 226/228								
* adismh : R	6	1		**See attached**	DEi0A	2	1R0 40 1: : 1511 * 82388@	
* adismh : 4	6	1		**See attached**	DEi0A	2	1R0 40 1: : 1511 * 82388@	

Client: City Water, Light & Power
Work Order: 22081061
Client Project: Ash Pond Monitoring Wells
Report Date: 11-Oct-22
Lab ID: 22081061-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 08/23/2022 14:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed Batch
FIELD ELEVATION MEASUREMENTS							
Bottom of well elevation	*	1		**498.79**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
9 eDtp to water	*	h- .11		**3.55**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
9 eDtp to water from measuring Doint	*	1		**8.85**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
Elevation of groundwater surface	*	1		**550.35**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
Measuring Point Elevation	*	1		**559.20**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
Measuring Point Heigpt Above Land Surface	*	1		**5.30**	ft	:	1/ 0820188 : 7577 R2: 3/ 2:
STANDARD METHODS 2130 B FIELD							
Turbidity	*	: .1		**41**	NTU	:	1/ 0820188 : 7577 R2: 3/ 2:
STANDARD METHODS 2550 B FIELD							
TemDerature	*	1		**59.9**	°F	:	1/ 0820188 : 7577 R2: 3/ 2:
SW-846 9040B							
DH, Field	*	: .11		**6.89**		:	1/ 0820188 : 7577 R2: 3/ 2:
SW-846 9050A							
SDec. Conductance, Field	*	: .11		**814**	µmpos0cm @8- C	:	1/ 0820188 : 7577 R2: 3/ 2:
STANDARD METHODS 2540 C (TOTAL) 1997, 2011							
Total 9 issolved Solids	NELAP	- 1		**540**	mg0L	8.-	1/ 0830188 : 85 2 R2: 323:
SW-846 9036 (TOTAL)							
Sulfate	NELAP	: 1		**< 10**	mg0L	:	1/ 02: 0188 : : 5 6 R2: 3766
SW-846 9214 (TOTAL)							
Fluoride	NELAP	1.: 1		**0.15**	mg0L	:	1/ 0210188 : 4511 R2: 3772
SW-846 9251 (TOTAL)							
Cploride	NELAP	:		**13**	mg0L	:	1/ 0860188 : 7573 R2: 326/
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)							
Arsenic	NELAP	1.18- 1		**0.0309**	mg0L	:	1/ 0860188 : 35 - : 63126
Barium	NELAP	1.118-		**0.392**	mg0L	:	1/ 0860188 : 35 - : 63126
Beryllium	NELAP	1.111-		**< 0.0005**	mg0L	:	1/ 0860188 : 35 - : 63126
Boron	NELAP	1.1811		**0.0927**	mg0L	:	1/ 0210188 : 2581 : 63126
Cadmium	NELAP	1.1181		**< 0.0020**	mg0L	:	1/ 0860188 : 35 - : 63126
Calcium	NELAP	1.: 11		**116**	mg0L	:	1/ 0860188 : 35 - : 63126
Cpromium	NELAP	1.11- 1		**< 0.0050**	mg0L	:	1/ 0860188 : 35 - : 63126
Cobalt	NELAP	1.11- 1		**< 0.0050**	mg0L	:	1/ 0860188 : 35 - : 63126
Lead	NELAP	1.1: - 1		**< 0.0150**	mg0L	:	1/ 0860188 : 35 - : 63126
Litpium	NELAP	1.11- 1		**0.0077**	mg0L	:	1/ 0860188 : 35 - : 63126
Molybdenum	NELAP	1.1: 11		**< 0.0100**	mg0L	:	1/ 0860188 : 35 - : 63126
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)							
Antimony	NELAP	1.11: 1		**< 0.0010**	mg0L	-	1/ 0210188 : / 581 : 63126
Selenium	NELAP	1.11: 1		**< 0.0010**	mg0L	-	1/ 0210188 : / 581 : 63126
Tpallium	NELAP	1.1181		**< 0.0020**	mg0L	-	1/ 0210188 : / 581 : 63126
SW-846 7470A (TOTAL)							
Mercury	NELAP	1.11181		**< 0.00020**	mg0L	:	1/ 0860188 : : 51: : 631- :
EPA 903.0/904.0, RADIUM 226/228							
Radiumh883	*	1		**See attached**	Dci0L	:	1608/ 0 8188 1511 R2: 68/ 3
Radiumh88/	*	1		**See attached**	Dci0L	:	1608/ 0 8188 1511 R2: 68/ 3

Client: City Water, Light & Power
Work Order: 22081061
Client Project: Ash Pond Monitoring Wells
Report Date: 11-Oct-22
Lab ID: 22081061-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 08/23/2022 15:08

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	1		**552.63**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
9 eDtp to water	*	h- .11		**12.05**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
9 eDtp to water from measuring Doint	*	1		**14.35**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
Elevation of groundwater surface	*	1		**569.55**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
Measuring Point Elevation	*	1		**583.90**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
Measuring Point Heigpt Above Land Surface	*	1		**2.30**	ft	:	1/ 0820188 : - 51/	R2: 3/ 2:
STANDARD METHODS 2130 B FIELD								
Turbidity	*	: .1		**< 1.0**	NTU	:	1/ 0820188 : - 51/	R2: 3/ 2:
STANDARD METHODS 2550 B FIELD								
TemDerature	*	1		**61.0**	°F	:	1/ 0820188 : - 51/	R2: 3/ 2:
SW-846 9040B								
DH, Field	*	: .11		**7.16**		:	1/ 0820188 : - 51/	R2: 3/ 2:
SW-846 9050A								
SDec. Conductance, Field	*	: .11		**577**	µmpos0cm @8- C	:	1/ 0820188 : - 51/	R2: 3/ 2:
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total 9 issolved Solids	NELAP	81		**488**	mg0L	:	1/ 0830188 : 85 2	R2: 323:
SW-846 9036 (TOTAL)								
Sulfate	NELAP	- 1		**66**	mg0L	-	1/ 02: 0188 : : 587	R2: 3766
SW-846 9214 (TOTAL)								
Fluoride	NELAP	1.: 1		**0.29**	mg0L	:	1/ 0210188 : 4518	R2: 3772
SW-846 9251 (TOTAL)								
Cploride	NELAP	:		**6**	mg0L	:	1/ 0860188 : 75- 4	R2: 326/
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	1.18- 1		**< 0.0250**	mg0L	:	1/ 0860188 : 35 /	: 63126
Barium	NELAP	1.118-		**0.0908**	mg0L	:	1/ 0860188 : 35 /	: 63126
Beryllium	NELAP	1.111-		**< 0.0005**	mg0L	:	1/ 0860188 : 35 /	: 63126
Boron	NELAP	1.1811		**< 0.0200**	mg0L	:	1/ 0210188 : 85- 7	: 63126
Cadmium	NELAP	1.1181		**< 0.0020**	mg0L	:	1/ 0860188 : 35 /	: 63126
Calcium	NELAP	1.: 11		**102**	mg0L	:	1/ 0860188 : 35 /	: 63126
Cpromium	NELAP	1.11- 1		**< 0.0050**	mg0L	:	1/ 0860188 : 35 /	: 63126
Cobalt	NELAP	1.11- 1		**< 0.0050**	mg0L	:	1/ 0860188 : 35 /	: 63126
Lead	NELAP	1.1: - 1		**< 0.0150**	mg0L	:	1/ 0860188 : 35 /	: 63126
Litpium	NELAP	1.11- 1		**0.0104**	mg0L	:	1/ 0860188 : 35 /	: 63126
Molybdenum	NELAP	1.1: 11		**< 0.0100**	mg0L	:	1/ 0860188 : 35 /	: 63126
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.11: 1		**< 0.0010**	mg0L	-	1/ 0210188 : / 534	: 63126
Selenium	NELAP	1.11: 1		**< 0.0010**	mg0L	-	1/ 0210188 : / 534	: 63126
Tpallium	NELAP	1.1181		**< 0.0020**	mg0L	-	1/ 0210188 : / 534	: 63126
SW-846 7470A (TOTAL)								
Mercury	NELAP	1.11181		**< 0.00020**	mg0L	:	1/ 0860188 : : 51/	: 631- :
EPA 903.0/904.0, RADIUM 226/228								
Radiumh883	*	1		**See attached**	Dci0L	:	1608/ 08188 1511	R2: 68/ 3
Radiumh88/	*	1		**See attached**	Dci0L	:	1608/ 08188 1511	R2: 68/ 3

Client: City Water, Light & Power
Work Order: 22110359
Client Project: Ash Pond Monitoring Wells
Report Date: 19-Dec-22
Lab ID: 22110359-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 11/08/2022 12:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**498.79**	ft	1	11/08/2022 12:51	R321096
Depth to water	*	-5.00		**3.52**	ft	1	11/08/2022 12:51	R321096
Depth to water from measuring point	*	0		**8.82**	ft	1	11/08/2022 12:51	R321096
Elevation of groundwater surface	*	0		**550.38**	ft	1	11/08/2022 12:51	R321096
Measuring Point Elevation	*	0		**559.20**	ft	1	11/08/2022 12:51	R321096
Measuring Point Height Above Land Surface	*	0		**5.30**	ft	1	11/08/2022 12:51	R321096
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**31**	NTU	1	11/08/2022 12:51	R321096
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**61.3**	°F	1	11/08/2022 12:51	R321096
SW-846 9040B								
pH, Field	*	1.00		**6.95**		1	11/08/2022 12:51	R321096
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**1210**	µmhos/cm @25C	1	11/08/2022 12:51	R321096
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**495**	mg/L	2.5	11/15/2022 7:07	R321202
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	11/23/2022 14:57	R321591
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.13**	mg/L	1	11/14/2022 15:02	R321052
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**14**	mg/L	1	11/23/2022 11:34	R321589
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**0.0270**	mg/L	1	11/14/2022 19:19	199975
Barium	NELAP	0.0025		**0.399**	mg/L	1	11/14/2022 19:19	199975
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	11/14/2022 19:19	199975
Boron	NELAP	0.0200		**0.102**	mg/L	1	11/16/2022 21:09	199975
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	11/14/2022 19:19	199975
Calcium	NELAP	0.100		**121**	mg/L	1	11/14/2022 19:19	199975
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	11/14/2022 19:19	199975
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	11/14/2022 19:19	199975
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	11/14/2022 19:19	199975
Lithium	NELAP	0.0500		**< 0.0500**	mg/L	1	11/14/2022 19:19	199975
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	11/14/2022 19:19	199975
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	11/15/2022 11:43	199975
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	11/15/2022 11:43	199975
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	11/15/2022 11:43	199975
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	11/11/2022 21:46	199972
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/06/2022 0:00	R322549
Radium-228	*	0		**See Attached**	pci/L	1	12/06/2022 0:00	R322549

Client: City Water, Light & Power **Work Order:** 22110359

Client Project: Ash Pond Monitoring Wells **Report Date:** 19-Dec-22

Lab ID: 22110359-006 **Client Sample ID:** AP-5

Matrix: GROUNDWATER **Collection Date:** 11/08/2022 12:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	11/08/2022 12:20	R321096
Depth to water	*	-5.00		**9.40**	ft	1	11/08/2022 12:20	R321096
Depth to water from measuring point	*	0		**11.70**	ft	1	11/08/2022 12:20	R321096
Elevation of groundwater surface	*	0		**572.20**	ft	1	11/08/2022 12:20	R321096
Measuring Point Elevation	*	0		**583.90**	ft	1	11/08/2022 12:20	R321096
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	11/08/2022 12:20	R321096
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	11/08/2022 12:20	R321096
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**56.3**	°F	1	11/08/2022 12:20	R321096
SW-846 9040B								
pH, Field	*	1.00		**7.16**		1	11/08/2022 12:20	R321096
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**805**	µmhos/cm @25C	1	11/08/2022 12:20	R321096
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**358**	mg/L	1	11/15/2022 7:07	R321202
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10	S	**36**	mg/L	1	11/23/2022 11:45	R321591
Matrix spike did not recover within control limits due to matrix interference.								
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.31**	mg/L	1	11/14/2022 15:05	R321052
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	11/23/2022 11:45	R321589
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Arsenic	NELAP	0.0250		**< 0.0250**	mg/L	1	11/14/2022 19:23	199975
Barium	NELAP	0.0025		**0.0420**	mg/L	1	11/14/2022 19:23	199975
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	11/14/2022 19:23	199975
Boron	NELAP	0.0200		**0.0450**	mg/L	1	11/16/2022 21:13	199975
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	11/14/2022 19:23	199975
Calcium	NELAP	0.100		**80.2**	mg/L	1	11/14/2022 19:23	199975
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	11/14/2022 19:23	199975
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	11/14/2022 19:23	199975
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	11/14/2022 19:23	199975
Lithium	NELAP	0.0500		**< 0.0500**	mg/L	1	11/14/2022 19:23	199975
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	11/14/2022 19:23	199975
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	11/15/2022 11:49	199975
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	11/15/2022 11:49	199975
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	11/15/2022 11:49	199975
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	11/11/2022 21:48	199972
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	11/25/2022 0:00	R322549
Radium-228	*	0		**See Attached**	pci/L	1	11/25/2022 0:00	R322549

ANDREWS ENGINEERING

3300 Ginger Creek Drive | 217.787.2334
Springfield, IL 62711

October 29, 2024

Mr. P.J. Becker
Environmental Health and Safety
City Water, Light and Power
3100 Stevenson Drive
Springfield, Illinois 62712

re: City Water, Light and Power – CCR Surface Impoundments
Background Concentration for Total Arsenic

Dear Mr. Becker:

Provided herein is the background concentration for total arsenic utilizing data from eight consecutive sampling events from wells AP-4 and AP-5. The calculation and data are provided in Attachment A. As shown, the Shapiro-Wilk test method was used to determine the data population normality. The statistic *W* was below both the lower 1% and 5% Critical Values and therefore the data was determined to be non-parametric. As such, the statistical background concentration is the highest of the data set (0.0375 mg/L). The laboratory reports with the total arsenic concentrations are provided in Attachment B.

The statistical method utilized for derivation of the total arsenic concentration is consistent with that used for calculation of the existing background concentrations. However, a certification from a qualified engineer is provided in Attachment C stating the statistical method for calculation of the total arsenic background concentration is appropriate for the subject data pursuant to 40 CFR Section 257.93(f)(6) and 35 Ill. Adm. Code Section 845.640(f)(2).

If you have any questions, please contact me at (217) 787-2334. Thank you.

Sincerely,

Brad Hunsberger

Brad Hunsberger, L.P.G.
Vice President

BJH:tsh

Enclosure

cc: Doug Mauntel – Andrews Engineering, Inc.

ATTACHMENT A

STATISTICAL CALCULATION

City Water, Light and Power

Power Plant Ash Impoundment

Background Calculations - Interwell Prediction Limits

40 CFR 257 Appendix IV Parameter, Total Arsenic

Summary

Well	Parameter	Units	7/7/23	10/26/23	2/22/24	4/25/24	5/13/24	6/12/24	7/26/24	8/12/24	Distribution[1]	Proposed Background Value
AP-4	Arsenic, total	ug/L	23.9	22.5	37.5	19.8	22.9	21.8	21.3	20.7	[2] Non-Parametric - Propose Highest Detected Concentration as Prediction Limit/Background	37.50
AP-5	Arsenic, total	ug/L	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1		

Notes:

1. Shapiro-Wilk method utilized to determine if the data set follows a normal distribution.
2. In accordance with Chapter 18.3 of the March 2009 Unified Guidance (Statistical Analysis of Groundwater at RCRA Facilities), the maximum detected concentration is utilized as the interwell prediction limit and proposed background when the dataset does not follow a normal distribution.

Shapiro-Wilk Normality Test

I	II	III	IV	V	VI
i	Result Min → Max	Result Max → Min	= III - II	Coefficients	= IV x V
1	1	37.5	36.5	0.5056	18.454
2	1	23.9	22.9	0.329	7.534
3	1	22.9	21.9	0.2521	5.521
4	1	22.5	21.5	0.1939	4.169
5	1	21.8	20.8	0.1447	3.010
6	1	21.3	20.3	0.1005	2.040
7	1	20.7	19.7	0.0593	1.168
8	1	19.8	18.8	0.0196	0.368
9	19.8	1	-18.8		0.000
10	20.7	1	-19.7		0.000
11	21.3	1	-20.3		0.000
12	21.8	1	-20.8		0.000
13	22.5	1	-21.5		0.000
14	22.9	1	-21.9		0.000
15	23.9	1	-22.9		0.000
16	37.5	1	-36.5		0.000
				b =	42.265

k = 8
S = 12.397

$W_{.05,16}$ = 0.887
$W_{.01,16}$ = 0.844

sqrt(16-1) 3.872983346
***W* = 0.7748**
FAIL

Coeffient Source (V): Table 10-2 of *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*, March 2009.

b = weighted sum of the differences between the most extreme observations.

k = n / 2

S = Standard Deviation of sample results

$W_{.05,16}$ and $W_{.01,16}$ Source: Table 10-3 of *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance March 2009*.

W = Shapiro-Wilk test statistic = $\left(\frac{b}{S\sqrt{n-1}}\right)^2$

ATTACHMENT B

LABORATORY REPORTS FOR ARSENIC DATA

August 16, 2023

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 23070002

Dear Eric Staley:

TEKLAB, INC received 15 samples on 7/7/2023 4:44:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23070002
Report Date: 16-Aug-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	25
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 23070002

Client Project: Ash Pond Monitoring Wells **Report Date:** 16-Aug-23

Abbr Definition

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power
Work Order: 23070002

Client Project: Ash Pond Monitoring Wells
Report Date: 16-Aug-23

Qualifiers

- Unknown hydrocarbon
B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit
E - Value above quantitation range
H - Holding times exceeded
I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits
M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit
R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits
T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Work Order: 23070002
Client Project: Ash Pond Monitoring Wells
Report Date: 16-Aug-23

Cooler Receipt Temp: 5.2 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 & Radium-228 analysis was performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23070002
Report Date: 16-Aug-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: City Water, Light & Power
Work Order: 23070002
Client Project: Ash Pond Monitoring Wells
Report Date: 16-Aug-23
Lab ID: 23070002-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 07/07/2023 11:42

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**492.46**	ft	1	07/07/2023 11:42	R332756
Depth to water	*	-5.00		**5.81**	ft	1	07/07/2023 11:42	R332756
Depth to water from measuring point	*	0		**8.95**	ft	1	07/07/2023 11:42	R332756
Elevation of groundwater surface	*	0		**546.65**	ft	1	07/07/2023 11:42	R332756
Measuring Point Elevation	*	0		**555.60**	ft	1	07/07/2023 11:42	R332756
Measuring Point Height Above Land Surface	*	0		**3.14**	ft	1	07/07/2023 11:42	R332756
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**16**	NTU	1	07/07/2023 11:42	R332756
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**70.5**	°F	1	07/07/2023 11:42	R332756
SW-846 9040B								
pH, Field	*	1.00		**6.86**		1	07/07/2023 11:42	R332756
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**875**	µmhos/cm @25C	1	07/07/2023 11:42	R332756
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**560**	mg/L	2.5	07/11/2023 10:30	R331470
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	07/24/2023 14:50	R333047
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.14**	mg/L	1	07/11/2023 13:03	R331398
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**13**	mg/L	1	07/24/2023 14:51	R333070
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.396**	mg/L	1	07/11/2023 18:33	208261
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	07/11/2023 18:33	208261
Boron	NELAP	0.0200		**0.0845**	mg/L	1	07/12/2023 20:36	208261
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	07/11/2023 18:33	208261
Calcium	NELAP	0.100	B	**132**	mg/L	1	07/11/2023 18:33	208261
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	07/11/2023 18:33	208261
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	07/11/2023 18:33	208261
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	07/11/2023 18:33	208261
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	07/11/2023 18:33	208261
Sample result(s) for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	07/12/2023 3:24	208261
Arsenic	NELAP	0.0010		**0.0239**	mg/L	5	07/12/2023 3:24	208261
Lithium	*	0.0030		**0.0078**	mg/L	5	07/17/2023 12:37	208261
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	07/12/2023 3:24	208261
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	07/12/2023 3:24	208261
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	07/11/2023 15:35	208286
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	07/24/2023 15:18	R335080
Radium-228	*	0		**See Attached**	pci/L	1	07/24/2023 15:18	R335080

Client: City Water, Light & Power
Work Order: 23070002
Client Project: Ash Pond Monitoring Wells
Report Date: 16-Aug-23
Lab ID: 23070002-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 07/07/2023 13:12

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	07/07/2023 13:12	R332756
Depth to water	*	-5.00		**11.78**	ft	1	07/07/2023 13:12	R332756
Depth to water from measuring point	*	0		**14.08**	ft	1	07/07/2023 13:12	R332756
Elevation of groundwater surface	*	0		**569.82**	ft	1	07/07/2023 13:12	R332756
Measuring Point Elevation	*	0		**583.90**	ft	1	07/07/2023 13:12	R332756
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	07/07/2023 13:12	R332756
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**1.7**	NTU	1	07/07/2023 13:12	R332756
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**55.0**	°F	1	07/07/2023 13:12	R332756
SW-846 9040B								
pH, Field	*	1.00		**7.16**		1	07/07/2023 13:12	R332756
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**653**	µmhos/cm @25C	1	07/07/2023 13:12	R332756
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**400**	mg/L	1	07/11/2023 10:30	R331470
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**43**	mg/L	1	07/24/2023 14:59	R333047
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.31**	mg/L	1	07/11/2023 13:06	R331398
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**4**	mg/L	1	07/24/2023 14:59	R333070
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.0461**	mg/L	1	07/11/2023 18:44	208261
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	07/11/2023 18:44	208261
Boron	NELAP	0.0200		**0.0323**	mg/L	1	07/15/2023 16:20	208261
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	07/11/2023 18:44	208261
Calcium	NELAP	0.100	BS	**96.3**	mg/L	1	07/11/2023 18:44	208261
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	07/11/2023 18:44	208261
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	07/11/2023 18:44	208261
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	07/11/2023 18:44	208261
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	07/11/2023 18:44	208261
Sample result(s) for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.								
Matrix spike control limits for are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	07/12/2023 3:41	208261
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	07/12/2023 3:41	208261
Lithium	*	0.0030		**0.0046**	mg/L	5	07/18/2023 8:56	208261
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	07/12/2023 3:41	208261
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	07/12/2023 3:41	208261
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	07/12/2023 8:24	208286
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	07/26/2023 16:09	R335080

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23070002
Report Date: 16-Aug-23

Carrier: Tracy Carroll

Received By: ANC

Completed by: Allison Colin
On: 10-Jul-23

Reviewed by: Ellie Hopkins
On: 10-Jul-23

Pages to follow: Chain of custody 3 Extra pages included 42

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 5.2
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☑	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

pH strip #90719. - acolin - 7/10/2023 9:09:38 AM

Additional nitric acid (90404) was needed in AP2 2L, AP3 2L, AP4 2L, AP8 2L, AP9 2L, AP10 2L, AP12 250 & 2L upon arrival at the laboratory. - acolin - 7/10/2023 9:09:41 AM

Samples collected on 7/7/23 were delivered to the laboratory on 7/7/23 at 1644 (on ice - 5.2C - LTG#1). pH strip #90719 - ERH 7/10/23

CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 23070002

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 5.2 °C GTG S
Preserved in: [ ] LAB [X] FIELD FOR LAB USE ONLY
LAB NOTES: pH-9719.Cert 7-6-23.

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
JCarroll

RESULTS REQUESTED
[✓] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers									INDICATE ANALYSIS REQUESTED												
				UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity								
23070002-001	RW-3	7/6/23 1223	Groundwater	1	2								✓	✓	✓	✓	✓	✓								
002	AP-1		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
005	AP-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
006	AP-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
007	AP-6	7/6/23 1330	Groundwater	1	2								✓	✓	✓	✓	✓	✓								
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
011	AP-10		Groundwater	1	2								✓	✓	✓	✓	✓	✓								

Relinquished By	Date/Time	Received By	Date/Time
Jeremy Carroll	7/6/23 1703		7-6-23 1730

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

7-6-23

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 23070002

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power

Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building

City/State/Zip: Springfield IL 62712

Contact: Eric Staley Phone: (217) 757-8610

Email: eric.staley@cwlp.com Fax:

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 5.2 °C

Preserved in: ☒ LAB ☐ FIELD FOR LAB USE ONLY #1

LAB NOTES: PH 90719

2L 2L 2L 2L 2L 2L 250+2L

Added HNO3(90404) to AP2, AP3, AP4, AP8, AP9, AP10, AP12

ANR 7/10/23

Client Comments:

*elevations, pH, conductivity, temperature

**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo

Quarterly monitoring

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No

Are these samples known to be hazardous? ☐ Yes ☑ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

PROJECT NAME/NUMBER

Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME

Justin Colp TCarroll

RESULTS REQUESTED

☑ Standard ☐ 1-2 Day (100% Surcharge)

☐ Other ____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
23070002-001	RW-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1	7/7/23 1108	Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2	1231	Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3	1316	Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4	7-7-23 1142	Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5	7-7-23 1312	Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6		Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7	7-7-23 1223	Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8	7/7/23 1039	Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9	7-7-23 1240	Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10	7/7/23 1147	Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
Teresa Carroll	7/7/23 1644		7/7/23 1644

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 23070002

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Gilp TCarroll

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
23070002-012	AP-11	7-7-23 / 1434	Groundwater	1	2								✓	✓	✓	✓	✓	✓
013	AP-12	" / 1416	Groundwater	1	2								✓	✓	✓	✓	✓	✓
014	AP-13	" / 1347	Groundwater	1	2								✓	✓	✓	✓	✓	✓
015	AP-14	" / 1121	Groundwater	1	2								✓	✓	✓	✓	✓	✓
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	7/7/23 1644	Allison Lee	7/7 1644

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

November 27, 2023

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 23101164

Dear Eric Staley:

TEKLAB, INC received 15 samples on 10/25/2023 5:15:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23101164
Report Date: 27-Nov-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	22
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 23101164

Client Project: Ash Pond Monitoring Wells **Report Date:** 27-Nov-23

Abbr Definition

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power

Work Order: 23101164

Client Project: Ash Pond Monitoring Wells

Report Date: 27-Nov-23

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Work Order: 23101164
Client Project: Ash Pond Monitoring Wells
Report Date: 27-Nov-23

Cooler Receipt Temp: 4.8 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 & Radium-228 analyses were performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23101164
Report Date: 27-Nov-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: City Water, Light & Power
Work Order: 23101164
Client Project: Ash Pond Monitoring Wells
Report Date: 27-Nov-23
Lab ID: 23101164-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 10/26/2023 14:06

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**492.46**	ft	1	10/26/2023 14:06	R338505
Depth to water	*	-5.00		**7.65**	ft	1	10/26/2023 14:06	R338505
Depth to water from measuring point	*	0		**10.79**	ft	1	10/26/2023 14:06	R338505
Elevation of groundwater surface	*	0		**544.81**	ft	1	10/26/2023 14:06	R338505
Measuring Point Elevation	*	0		**555.60**	ft	1	10/26/2023 14:06	R338505
Measuring Point Height Above Land Surface	*	0		**3.14**	ft	1	10/26/2023 14:06	R338505
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**8.8**	NTU	1	10/26/2023 14:06	R338505
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**66.4**	°F	1	10/26/2023 14:06	R338505
SW-846 9040B								
pH, Field	*	1.00		**6.99**		1	10/26/2023 14:06	R338505
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**866**	µmhos/cm @25C	1	10/26/2023 14:06	R338505
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**420**	mg/L	2.5	10/31/2023 10:26	R338603
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	10/30/2023 14:29	R338498
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.16**	mg/L	1	11/02/2023 15:00	R338693
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**14**	mg/L	1	10/30/2023 14:29	R338509
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.381**	mg/L	1	10/31/2023 17:50	213879
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	10/31/2023 17:50	213879
Boron	NELAP	0.0200		**0.0841**	mg/L	1	11/01/2023 12:57	213879
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	10/31/2023 17:50	213879
Calcium	NELAP	0.100		**118**	mg/L	1	10/31/2023 17:50	213879
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	10/31/2023 17:50	213879
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	10/31/2023 17:50	213879
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	10/31/2023 17:50	213879
Lithium	NELAP	0.0050		**0.0051**	mg/L	1	10/31/2023 17:50	213879
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	10/31/2023 17:50	213879
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	11/01/2023 11:03	213879
Arsenic	NELAP	0.0010		**0.0225**	mg/L	5	11/01/2023 11:03	213879
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	11/01/2023 11:03	213879
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	11/01/2023 11:03	213879
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	10/31/2023 14:47	213968
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	11/10/2023 0:00	R339727
Radium-228	*	0		**See Attached**	pci/L	1	11/10/2023 0:00	R339727

Client: City Water, Light & Power
Work Order: 23101164
Client Project: Ash Pond Monitoring Wells
Report Date: 27-Nov-23
Lab ID: 23101164-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 10/26/2023 14:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	10/26/2023 14:44	R338505
Depth to water	*	-5.00		**15.87**	ft	1	10/26/2023 14:44	R338505
Depth to water from measuring point	*	0		**18.17**	ft	1	10/26/2023 14:44	R338505
Elevation of groundwater surface	*	0		**565.73**	ft	1	10/26/2023 14:44	R338505
Measuring Point Elevation	*	0		**583.90**	ft	1	10/26/2023 14:44	R338505
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	10/26/2023 14:44	R338505
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**2.0**	NTU	1	10/26/2023 14:44	R338505
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**57.9**	°F	1	10/26/2023 14:44	R338505
SW-846 9040B								
pH, Field	*	1.00		**7.17**		1	10/26/2023 14:44	R338505
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**653**	µmhos/cm @25C	1	10/26/2023 14:44	R338505
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**396**	mg/L	1	10/31/2023 10:26	R338603
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**45**	mg/L	1	10/30/2023 14:38	R338498
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.37**	mg/L	1	11/02/2023 16:05	R338693
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**5**	mg/L	1	10/30/2023 14:37	R338509
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.0471**	mg/L	1	10/31/2023 18:12	213879
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	10/31/2023 18:12	213879
Boron	NELAP	0.0200		**0.0455**	mg/L	1	10/31/2023 18:12	213879
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	10/31/2023 18:12	213879
Calcium	NELAP	0.100		**90.7**	mg/L	1	10/31/2023 18:12	213879
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	10/31/2023 18:12	213879
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	10/31/2023 18:12	213879
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	10/31/2023 18:12	213879
Lithium	NELAP	0.0050		**< 0.0050**	mg/L	1	10/31/2023 18:12	213879
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	10/31/2023 18:12	213879
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	11/01/2023 11:37	213879
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	11/01/2023 11:37	213879
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	11/01/2023 11:37	213879
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	11/01/2023 11:37	213879
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	10/31/2023 14:50	213968
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	11/10/2023 0:00	R339727
Radium-228	*	0		**See Attached**	pci/L	1	11/10/2023 0:00	R339727

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 23101164
Report Date: 27-Nov-23

Carrier: Justin Colp
Received By: HAW

Completed by: Timothy W. Mathis
On: 26-Oct-23

Reviewed by: Ellie Hopkins
On: 27-Oct-23

Pages to follow: Chain of custody 3 Extra pages included 57

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	4.8	
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐	
Chain of custody present?	Yes ☑	No ☐				
Chain of custody signed when relinquished and received?	Yes ☑	No ☐				
Chain of custody agrees with sample labels?	Yes ☑	No ☐				
Samples in proper container/bottle?	Yes ☑	No ☐				
Sample containers intact?	Yes ☑	No ☐				
Sufficient sample volume for indicated test?	Yes ☑	No ☐				
All samples received within holding time?	Yes ☑	No ☐				
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐			
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐				
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.						
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑			
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑			
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐			
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑			

Any No responses must be detailed below or on the COC.

pH strip #90719 CET. - TMathis - 10/26/2023 12:47:39 PM

pH strip #90719. - amberdilallo - 10/27/2023 9:49:59 AM

Samples collected on 10/26/23 were delivered to the laboratory on 10/26/23 at 1707 (on ice - 2.6C - LTG1). - HW/ERH 10/27/23

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 23101164

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [x] ICE [ ] BLUE ICE [ ] NO ICE 4.8 °C CTL
Preserved in: [ ] LAB [x] FIELD FOR LAB USE ONLY
LAB NOTES: pH 9079-485 10-26-23
*TE SM 11/6/23

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [x] No
Are these samples known to be hazardous? [ ] Yes [x] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [x] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Colp

RESULTS REQUESTED
[x] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other ____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
23101164-001	RW-3	10-25-23 / 1235* 1234*	Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1		Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10		Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
J. Colp	10-25-23 1715	[signature]	10/25/23 1715

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

CTL 10-21-23

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 23101164

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 2 cl °C
Preserved in: ☐ LAB ☒ FIELD FOR LAB USE ONLY
LAB NOTES: 9079 10/27/23
XTE SAH 11/6/23

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Gb

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
23101164-001	RW-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1	10-26-23/ 1222	Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2	1305	Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3	* 133525	Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4	1406	Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5	1444	Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6	0909	Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7	10-26-23/ 1358	Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8	10-26-23/ 0930	Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9	10-26-23/ 1446	Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10	10-26-23/ 1243	Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
	10-26-23 17:07	Hannah NA	10/26/23 1707

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 23101164

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Gp

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
23101164-012	AP-11	10-26-23 / 1152	Groundwater	1	2								✔	✔	✔	✔	✔	✔
013	AP-12	1120	Groundwater	1	2								✔	✔	✔	✔	✔	✔
014	AP-13	1033	Groundwater	1	2								✔	✔	✔	✔	✔	✔
015	AP-14	1351	Groundwater	1	2								✔	✔	✔	✔	✔	✔
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
[signature]	10.26.23 17:05	[signature]	10/26/23 1707

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

Site Samping Event: CWLP- 4Q 2023
LIMS Workorder: 23101164
Technician(s): JC, BG

Groundwater Sampling Field Form- Groundwater Quality Parameters
CWLP- 4Q 2023

Well ID	Date	Time	DTW	Temp (deg C)	Temp (deg F)	pH (SU)	Sp Cond (µS/cm)	Sp Cond (µmhos/cm @25C)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-4	10/26/2023	14:00	10.79	19.3	66.7	7.51	826.2	826.2	3.93	21.58	-44.8
AP-4	10/26/2023	14:03	10.79	19.0	66.2	7.06	856.2	856.2	2.63	14.79	-68.6
AP-4	10/26/2023	14:06	10.79	19.1	66.4	6.99	865.9	865.9	1.78	8.84	-91.3

Site Samping Event: CWLP- 4Q 2023
LIMS Workorder: 23101164
Technician(s): JC, BG

Groundwater Sampling Field Form- Groundwater Quality Parameters
CWLP- 4Q 2023

Well ID	Date	Time	DTW	Temp (deg C)	Temp (deg F)	pH (SU)	Sp Cond (µS/cm)	Sp Cond (µmhos/cm @25C)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-5	10/26/2023	14:38	18.17	14.5	58.1	7.25	649.9	649.9	3.96	2.79	-2.9
AP-5	10/26/2023	14:41	18.17	14.4	57.9	7.20	649.3	649.3	3	2.62	-2.6
AP-5	10/26/2023	14:44	18.17	14.4	57.9	7.17	652.7	652.7	2.61	2.05	-2.3

March 18, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24010117

Dear Eric Staley:

TEKLAB, INC received 15 samples on 2/26/2024 6:45:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24010117
Report Date: 18-Mar-24

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	27
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 24010117

Client Project: Ash Pond Monitoring Wells **Report Date:** 18-Mar-24

Abbr Definition

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power
Work Order: 24010117
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Mar-24

Qualifiers

- Unknown hydrocarbon
B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit
E - Value above quantitation range
H - Holding times exceeded
I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits
M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit
R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits
T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Work Order: 24010117
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Mar-24

Cooler Receipt Temp: 3.3 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 & -228 analysis was performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power

Work Order: 24010117

Client Project: Ash Pond Monitoring Wells

Report Date: 18-Mar-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: City Water, Light & Power
Work Order: 24010117
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Mar-24
Lab ID: 24010117-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 02/23/2024 11:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**492.46**	ft	1	02/23/2024 11:21	R343702
Depth to water	*	-5.00		**5.90**	ft	1	02/23/2024 11:21	R343702
Depth to water from measuring point	*	0		**9.04**	ft	1	02/23/2024 11:21	R343702
Elevation of groundwater surface	*	0		**546.56**	ft	1	02/23/2024 11:21	R343702
Measuring Point Elevation	*	0		**555.60**	ft	1	02/23/2024 11:21	R343702
Measuring Point Height Above Land Surface	*	0		**3.14**	ft	1	02/23/2024 11:21	R343702
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**38**	NTU	1	02/23/2024 11:21	R343702
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**59.9**	°F	1	02/23/2024 11:21	R343702
SW-846 9040B								
pH, Field	*	1.00		**6.86**		1	02/23/2024 11:21	R343702
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**847**	µmhos/cm @25C	1	02/23/2024 11:21	R343702
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**520**	mg/L	2.5	02/26/2024 10:02	R343638
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**11**	mg/L	1	02/28/2024 16:56	R343726
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.16**	mg/L	1	02/26/2024 13:04	R343547
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**13**	mg/L	1	02/28/2024 16:56	R343732
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.390**	mg/L	1	02/27/2024 13:38	219154
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	02/27/2024 13:38	219154
Boron	NELAP	0.0200		**0.0871**	mg/L	1	02/27/2024 13:38	219154
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	02/27/2024 13:38	219154
Calcium	NELAP	0.100		**119**	mg/L	1	02/27/2024 13:38	219154
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	02/27/2024 13:38	219154
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	02/27/2024 13:38	219154
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	02/27/2024 13:38	219154
Lithium	NELAP	0.0050		**0.0076**	mg/L	1	02/27/2024 13:38	219154
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	02/27/2024 13:38	219154
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010	B	**< 0.0010**	mg/L	5	02/28/2024 16:03	219154
Arsenic	NELAP	0.0010		**0.0375**	mg/L	5	02/28/2024 16:03	219154
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/28/2024 16:03	219154
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/28/2024 16:03	219154
Contamination present in the MBLK for Sb. Sample results below the reporting limit are reportable per the TNI Standard.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/29/2024 17:17	219164
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/08/2024 0:00	R344494
Radium-228	*	0		**See Attached**	pci/L	1	03/08/2024 0:00	R344494

Client: City Water, Light & Power
Work Order: 24010117
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Mar-24
Lab ID: 24010117-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 02/22/2024 13:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	02/22/2024 13:44	R343702
Depth to water	*	-5.00		**13.65**	ft	1	02/22/2024 13:44	R343702
Depth to water from measuring point	*	0		**15.95**	ft	1	02/22/2024 13:44	R343702
Elevation of groundwater surface	*	0		**567.95**	ft	1	02/22/2024 13:44	R343702
Measuring Point Elevation	*	0		**583.90**	ft	1	02/22/2024 13:44	R343702
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	02/22/2024 13:44	R343702
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	02/22/2024 13:44	R343702
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**57.2**	°F	1	02/22/2024 13:44	R343702
SW-846 9040B								
pH, Field	*	1.00		**7.01**		1	02/22/2024 13:44	R343702
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**591**	µmhos/cm @25C	1	02/22/2024 13:44	R343702
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**434**	mg/L	1	02/23/2024 12:34	R343558
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**50**	mg/L	2	02/23/2024 13:11	R343641
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.28**	mg/L	1	02/23/2024 13:30	R343485
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	02/23/2024 13:06	R343643
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.0515**	mg/L	1	02/26/2024 19:04	219117
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	02/26/2024 19:04	219117
Boron	NELAP	0.0200		**0.0434**	mg/L	1	02/26/2024 19:04	219117
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	02/26/2024 19:04	219117
Calcium	NELAP	0.100		**96.7**	mg/L	1	02/26/2024 19:04	219117
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	02/26/2024 19:04	219117
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	02/26/2024 19:04	219117
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	02/26/2024 19:04	219117
Lithium	NELAP	0.0050		**< 0.0050**	mg/L	1	02/26/2024 19:04	219117
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	02/26/2024 19:04	219117
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/28/2024 3:24	219117
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	02/28/2024 3:24	219117
Selenium	NELAP	0.0010		**0.0011**	mg/L	5	02/28/2024 3:24	219117
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/28/2024 3:24	219117
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/23/2024 15:38	219103
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/08/2024 0:00	R344494
Radium-228	*	0		**See Attached**	pci/L	1	03/08/2024 0:00	R344494

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24010117
Report Date: 18-Mar-24

Carrier: Tracy Carroll

Received By: AMD

Completed by: Amber Dilallo
On: 22-Feb-24

Reviewed by: Ellie Hopkins
On: 27-Feb-24

Pages to follow: Chain of custody 6 Extra pages included 50

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 3.3
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

pH strip #90719. - amberdilallo - 2/22/2024 8:40:42 AM

Samples were received on 2/22/24 at 15:40 on ice [7.3C - LTG5]. pH strip #90719. Collection date per Tracy Carroll. - amberdilallo - 2/22/2024 4:41:18 PM

Samples were received on 2/23/24 at 13:07 on ice [6.7C - LTG#7]. pH strip #90719. Additional Nitric Acid (96331) preservative was needed for AP-4 & AP-14 upon arrival at the laboratory. - nickreed - 2/23/2024 2:35:40 PM

Samples were received on 2/26/24 at 18:45 on ice [5.3c - LTG5]. pH strip #90719. - amberdilallo - 2/27/2024 8:11:24 AM

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 3.3 °C
Preserved in: [ ] LAB [X] FIELD FOR LAB USE ONLY LTGS
LAB NOTES: 40719 SM 2/22/24

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER: Ash Pond Monitoring Wells
SAMPLE COLLECTOR'S NAME: TCarroll

RESULTS REQUESTED: [✓] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [ ] 3 Day (50% Surcharge)
BILLING INSTRUCTIONS:

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24010117-001	RW-3	2/21/24 1138	Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1	2/21/24 1341	Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8	2/21/24 1224	Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10	2/21/24 1436	Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	2/21/24 1715	[illegible]	2/21/24 1715

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 1 of 1 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 7.3 °C
Preserved in: ☐ LAB ☒ FIELD
FOR LAB USE ONLY
LAB NOTES: 9019 Dup Wapy

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring
Date per Tracy Carroll. SMM 2/22/24

PROJECT NAME/NUMBER: Ash Pond Monitoring Wells
SAMPLE COLLECTOR'S NAME: TCarrd

RESULTS REQUESTED: ☑ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ☐ 3 Day (50% Surcharge)
BILLING INSTRUCTIONS:

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	CIF SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24010117-001	RW-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2	2/22/24 1124	Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3	1203	Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4		Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5	1344	Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6	1540	Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7		Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8		Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9		Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10		Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	2/22/24 3:40	Emily Sackett	2/22/24 1540

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [x] ICE [ ] BLUE ICE [ ] NO ICE 6.7 °C 7
Preserved in: [x] LAB [ ] FIELD
FOR LAB USE ONLY
LAB NOTES: ph ✓ 9071a added HNO3 (96331) ES 2/23/24 to 2 liters

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [x] No
Are these samples known to be hazardous? [ ] Yes [x] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [x] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
TCarroll

RESULTS REQUESTED
[x] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24010117-001	RW-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1		Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4	2/23/24 1121	Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10		Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	2/23/24 1:07	Whitney Dunger	2/23/24 1:07

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
TCarrell

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers									INDICATE ANALYSIS REQUESTED												
				UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity								
24010117 01	AP-11		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
02	AP-12		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
03	AP-13		Groundwater	1	2								✓	✓	✓	✓	✓	✓								
04	AP-14	2/23/24 1025	Groundwater	1	2								✓	✓	✓	✓	✓	✓								
			Groundwater																							
			Groundwater																							
			Groundwater																							
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			Groundwater																							
			Groundwater																							
			Groundwater																							

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carrell	2/23/24 1:07	Whitney Lewis	2/23/24 1:35

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 5.3 °C
Preserved in: ☐ LAB ☑ FIELD FOR LAB USE ONLY LTG 5
LAB NOTES: 901A SM 2/27/24

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER: Ash Pond Monitoring Wells
SAMPLE COLLECTOR'S NAME: TCarroll

RESULTS REQUESTED: ☑ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ☐ 3 Day (50% Surcharge)
BILLING INSTRUCTIONS:

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24010117-001	RW-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2		Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4		Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5		Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6		Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7	2/26/24 1420	Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8		Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9	2/26/24 1350	Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10		Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	2/26/24 1845	[illegible]	2/26/24 1845

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24010117

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:
AP-11, AP-12 & AP-13 filtered per Tracy Carroll SM 2/27/24

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
TCarroll

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24010117 01	AP-11	2/26/24 1108	Groundwater	1	2								✔	✔	✔	✔	✔	✔
02	AP-12	1200	Groundwater	1	2								✔	✔	✔	✔	✔	✔
03	AP-13	1234	Groundwater	1	2								✔	✔	✔	✔	✔	✔
04	AP-14		Groundwater	1	2								✔	✔	✔	✔	✔	✔
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	2/26/24 1845	SM Dollins	2/26/24 1845

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Site Samping Event: CWLP Ash Pond- 1Q24
LIMS Workorder: 24010117
Technician(s): DC, JC, TC, BG

Groundwater Sampling Form- Groundwater Quality Parameters
CWLP- Ash Pond- 1Q 2024

Well ID	Date	Time	DTW	Temp (°C)	Temp (°F)	pH (SU)	Sp Cond (µS/cm)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-4	2/23/2024	11:12	9.04	15.5	59.9	6.86	848.3	0.58	24.99	-12.80
AP-4	2/23/2024	11:15	9.04	15.5	59.9	6.86	849.4	0.54	34.01	-29.30
AP-4	2/23/2024	11:18	9.04	15.5	59.9	6.86	848.1	0.52	28.31	-42.70
AP-4	2/23/2024	11:21	9.04	15.5	59.9	6.86	847.4	0.50	38.35	-53.30

Site Samping Event: CWLP Ash Pond- 1Q24
LIMS Workorder: 24010117
Technician(s): DC, JC, TC, BG

Groundwater Sampling Form- Groundwater Quality Parameters
CWLP- Ash Pond- 1Q 2024

Well ID	Date	Time	DTW	Temp (°C)	Temp (°F)	pH (SU)	Sp Cond (µS/cm)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-5	2/22/2024	13:35	15.95	14.1	57.4	7.07	590.0	2.93	2.05	62.70
AP-5	2/22/2024	13:38	15.95	13.9	57.0	7.04	589.9	2.61	1.74	63.20
AP-5	2/22/2024	13:41	15.95	13.8	56.8	7.03	589.2	2.38	1.04	63.60
AP-5	2/22/2024	13:44	15.95	14.0	57.2	7.01	590.8	2.26	0.66	63.70

May 02, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24042136

Dear Eric Staley:

TEKLAB, INC received 2 samples on 4/25/2024 1:40:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24042136
Report Date: 02-May-24

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	9
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 24042136

Client Project: Ash Pond Monitoring Wells **Report Date:** 02-May-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power
Work Order: 24042136
Client Project: Ash Pond Monitoring Wells
Report Date: 02-May-24

Qualifiers

- Unknown hydrocarbon
B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit
E - Value above quantitation range
H - Holding times exceeded
I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits
M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit
R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits
T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24042136
Report Date: 02-May-24

Cooler Receipt Temp: 16.4 °C

An employee of Teklab, Inc. collected the sample(s).

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24042136
Report Date: 02-May-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: City Water, Light & Power
Work Order: 24042136
Client Project: Ash Pond Monitoring Wells
Report Date: 02-May-24
Lab ID: 24042136-001
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 04/25/2024 10:49

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**0.0198**	mg/L	5	05/02/2024 4:34	222154

Client: City Water, Light & Power
Work Order: 24042136
Client Project: Ash Pond Monitoring Wells
Report Date: 02-May-24
Lab ID: 24042136-002
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 04/25/2024 11:33

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	05/02/2024 4:39	222154

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24042136
Report Date: 02-May-24

Carrier: Tracy Carroll

Received By: NR

Completed by: Paul Schultz
On: 26-Apr-24

Reviewed by: Ellie Hopkins
On: 26-Apr-24

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	16.4	
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐	
Chain of custody present?	Yes ☑	No ☐				
Chain of custody signed when relinquished and received?	Yes ☑	No ☐				
Chain of custody agrees with sample labels?	Yes ☑	No ☐				
Samples in proper container/bottle?	Yes ☑	No ☐				
Sample containers intact?	Yes ☑	No ☐				
Sufficient sample volume for indicated test?	Yes ☑	No ☐				
All samples received within holding time?	Yes ☑	No ☐				
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑			
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐				

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip #90719. WO - pschultz - 4/26/2024 8:42:33 AM

CHAIN OF CUSTODY

pg. ____ of ____ Work order # 2404236

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	City Water, Light & Power
Address:	3100 Stevenson Drive
City / State / Zip	Springfield, IL 62712
Contact:	Eric Staley
Phone:	(217) 757-8610
E-Mail:	eric.staley@cwlp.com
Fax:	

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE 16.4 °C LTG# 9

Preserved in: ☒ LAB ☒ FIELD

FOR LAB USE ONLY

Lab Notes: PW 90719 WD 4/25/24

Client Comments
As=0.001 mg/L (ICPMS)

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☐ No

Are these samples known to be hazardous? If yes, include details of the hazard. ☐ Yes ☐ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☐ Yes ☐ No

Project Name/Number	Sample Collector's Name
Ash Pond Monitoring Wells	Tracy Carroll

Results Requested
☐ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: HNO3	MATRIX: Groundwater	INDICATE ANALYSIS REQUESTED: As (T)
2404236-001	AP-4	4/25/24 1049	1	X	X
-002	AP-5	1133	1	X	X

Relinquished By	Date/Time	Received By	Date/Time
Tracy Carroll	4/25/24 1340	Nick Reed	4/25/24 1340

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 88767

July 15, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24050003

Dear Eric Staley:

TEKLAB, INC received 20 samples on 5/14/2024 2:39:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24050003
Report Date: 15-Jul-24

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Client: City Water, Light & Power **Work Order:** 24050003

Client Project: Ash Pond Monitoring Wells **Report Date:** 15-Jul-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power
Work Order: 24050003

Client Project: Ash Pond Monitoring Wells
Report Date: 15-Jul-24

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24050003
Report Date: 15-Jul-24

Cooler Receipt Temp: 12.1 °C

This report was revised on July 15, 2024 per Eric Staley's request to report the reanalysis of Cobalt for AP-11. Please replace report dated June 18, 2024 with this report. SAH 7/15/24

An employee of Teklab, Inc. collected the sample(s).

Radium-226 & -228 analysis was performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power

Client Project: Ash Pond Monitoring Wells

Work Order: 24050003

Report Date: 15-Jul-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2025	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2025	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville

Client: City Water, Light & Power **Work Order:** 24050003

Client Project: Ash Pond Monitoring Wells **Report Date:** 15-Jul-24

Lab ID: 24050003-005 **Client Sample ID:** AP-4

Matrix: GROUNDWATER **Collection Date:** 05/13/2024 13:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**492.46**	ft	1	05/13/2024 13:25	R347528
Depth to water	*	-5.00		**5.54**	ft	1	05/13/2024 13:25	R347528
Depth to water from measuring point	*	0		**8.68**	ft	1	05/13/2024 13:25	R347528
Elevation of groundwater surface	*	0		**546.92**	ft	1	05/13/2024 13:25	R347528
Measuring Point Elevation	*	0		**555.60**	ft	1	05/13/2024 13:25	R347528
Measuring Point Height Above Land Surface	*	0		**3.14**	ft	1	05/13/2024 13:25	R347528
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**24**	NTU	1	05/13/2024 13:25	R347528
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**63.0**	°F	1	05/13/2024 13:25	R347528
SW-846 9040B								
pH, Field	*	1.00		**6.83**		1	05/13/2024 13:25	R347528
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**588**	µmhos/cm @25C	1	05/13/2024 13:25	R347528
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**500**	mg/L	2.5	05/17/2024 10:40	R347497
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10	S	**< 10**	mg/L	1	05/21/2024 1:02	R347580
Matrix spike did not recover within control limits due to matrix interference.								
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.13**	mg/L	1	05/20/2024 13:50	R347555
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**13**	mg/L	1	05/21/2024 1:02	R347642
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.407**	mg/L	1	05/23/2024 13:19	223235
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	05/23/2024 13:19	223235
Boron	NELAP	0.0200		**0.0834**	mg/L	1	05/29/2024 13:27	223235
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	05/23/2024 13:19	223235
Calcium	NELAP	0.100		**123**	mg/L	1	05/23/2024 13:19	223235
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	05/23/2024 13:19	223235
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	05/23/2024 13:19	223235
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	05/23/2024 13:19	223235
Lithium	NELAP	0.0500		**< 0.0500**	mg/L	1	05/30/2024 10:45	223235
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	05/23/2024 13:19	223235
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	05/23/2024 22:45	223235
Arsenic	NELAP	0.0010		**0.0229**	mg/L	5	05/23/2024 22:45	223235
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	05/23/2024 22:45	223235
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	05/23/2024 22:45	223235
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	05/22/2024 16:26	223231
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	06/03/2024 0:00	R348779
Radium-228	*	0		**See Attached**	pci/L	1	06/03/2024 0:00	R348779

Client: City Water, Light & Power
Work Order: 24050003
Client Project: Ash Pond Monitoring Wells
Report Date: 15-Jul-24
Lab ID: 24050003-006
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 05/14/2024 9:54

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	05/14/2024 9:54	R347528
Depth to water	*	-5.00		**11.30**	ft	1	05/14/2024 9:54	R347528
Depth to water from measuring point	*	0		**13.60**	ft	1	05/14/2024 9:54	R347528
Elevation of groundwater surface	*	0		**570.30**	ft	1	05/14/2024 9:54	R347528
Measuring Point Elevation	*	0		**583.90**	ft	1	05/14/2024 9:54	R347528
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	05/14/2024 9:54	R347528
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**5.2**	NTU	1	05/14/2024 9:54	R347528
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**56.5**	°F	1	05/14/2024 9:54	R347528
SW-846 9040B								
pH, Field	*	1.00		**6.99**		1	05/14/2024 9:54	R347528
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**468**	µmhos/cm @25C	1	05/14/2024 9:54	R347528
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**405**	mg/L	2.5	05/17/2024 10:41	R347497
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**43**	mg/L	1	05/21/2024 1:39	R347580
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	05/20/2024 13:52	R347555
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	05/21/2024 1:39	R347642
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.0510**	mg/L	1	05/23/2024 13:35	223235
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	05/23/2024 13:35	223235
Boron	NELAP	0.0200		**0.0269**	mg/L	1	05/29/2024 13:28	223235
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	05/23/2024 13:35	223235
Calcium	NELAP	0.100		**94.1**	mg/L	1	05/23/2024 13:35	223235
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	05/23/2024 13:35	223235
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	05/23/2024 13:35	223235
Lead	NELAP	0.0150		**< 0.0150**	mg/L	1	05/23/2024 13:35	223235
Lithium	NELAP	0.0500		**< 0.0500**	mg/L	1	05/30/2024 10:47	223235
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	05/23/2024 13:35	223235
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	05/23/2024 22:51	223235
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	05/23/2024 22:51	223235
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	05/23/2024 22:51	223235
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	05/23/2024 22:51	223235
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	05/22/2024 19:07	223259
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	06/03/2024 0:00	R348779
Radium-228	*	0		**See Attached**	pci/L	1	06/03/2024 0:00	R348779

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24050003
Report Date: 15-Jul-24

Carrier: Daniel Crump
Received By: NR

Completed by: Paul Schultz
On: 10-May-24

Reviewed by: Ellie Hopkins
On: 14-May-24

Pages to follow: Chain of custody 6 Extra pages included 74

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	12.1
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip #96651. - pschultz - 5/10/2024 9:15:35 AM
Additional Nitric Acid (97737) was needed for sample T-2 upon arrival at the laboratory. - pschultz - 5/10/2024 9:15:38 AM

Samples were received on 5/10/2024 at 13:30 on ice [8.3C - LTG#7]. pH strip #96651. WO - pschultz - 5/10/2024 2:41:25 PM

Samples were received on 5/13/2024 at 16:10 on ice [19.3C - LTG#7]. pH strip #96651. NR - pschultz - 5/13/2024 4:45:02 PM
Additional Nitric Acid (97737) was needed for AR-10 upon arrival at the laboratory. NR - pschultz - 5/13/2024 4:45:05 PM

Samples were received on 5/14/2024 at 14:39 on ice [8.1C - LTG#7]. pH strip #96651. NR - pschultz - 5/14/2024 3:02:50 PM

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24050003

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 12.1 °C LT6#5
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES: pH/Cl ok's!
Added HNO_3 (9225) to T-2 955/10

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
TCarrell

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-001	RW-3	5/9/24 1212	Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2		Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4		Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5		Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6		Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7		Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8		Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9		Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10		Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
Daniel Crump	5-9 1635	Krista Reed	5/9/24 1635

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24050003

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power

Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building

City/State/Zip: Springfield IL 62712

Contact: Eric Staley Phone: (217) 757-8610

Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No

Are these samples known to be hazardous? ☐ Yes ☑ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 12.1 °C TGH

Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY

LAB NOTES:

Client Comments:

*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER

Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME

TCarroll

RESULTS REQUESTED

☑ Standard ☐ 1-2 Day (100% Surcharge)

☐ Other ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-012	AP-11	14:28 5/9/24 TE ~~5/10~~ 5/9/24	Groundwater	1	2								✔	✔	✔	✔	✔	✔
013	AP-12	5/9/24 13:14	Groundwater	1	2								✔	✔	✔	✔	✔	✔
014	AP-13	5/9/24 1350	Groundwater	1	2								✔	✔	✔	✔	✔	✔
015	AP-14	TE 5/9/24 5/22/24	Groundwater	1	2								✔	✔	✔	✔	✔	✔
016	T-1	11:10 5/9/24 ~~1428~~	Groundwater	1	2								✔	✔	✔	✔	✔	✔
017	T-2	5/9/24 1145	Groundwater	1	2								✔	✔	✔	✔	✔	✔
018	T-4		Groundwater	1	2								✔	✔	✔	✔	✔	✔
019	T-5		Groundwater	1	2								✔	✔	✔	✔	✔	✔
020	T-6		Groundwater	1	2								✔	✔	✔	✔	✔	✔
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
Daniel Crump	5-9-1635	Brian Koch	5/9/24 1635

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24050003

1-T6-7

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: ☒ ICE ☐ BLUE ICE ☐ NO ICE 8.3 °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES: pH Y 916657 5/10 JD

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

PROJECT NAME/NUMBER: Ash Pond Monitoring Wells
SAMPLE COLLECTOR'S NAME: Justin Gelp

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-001	RW-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
002	AP-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
003	AP-2		Groundwater	1	2								✔	✔	✔	✔	✔	✔
004	AP-3		Groundwater	1	2								✔	✔	✔	✔	✔	✔
005	AP-4		Groundwater	1	2								✔	✔	✔	✔	✔	✔
006	AP-5		Groundwater	1	2								✔	✔	✔	✔	✔	✔
007	AP-6	5-10-24 / 1013	Groundwater	1	2								✔	✔	✔	✔	✔	✔
008	AP-7		Groundwater	1	2								✔	✔	✔	✔	✔	✔
009	AP-8	5-10-24 / 1035	Groundwater	1	2								✔	✔	✔	✔	✔	✔
010	AP-9		Groundwater	1	2								✔	✔	✔	✔	✔	✔
011	AP-10		Groundwater	1	2								✔	✔	✔	✔	✔	✔

Relinquished By	Date/Time	Received By	Date/Time
J. Gelp	5-10-24 / 1330	[signature]	5/10/24 1330

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24050003

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 1.9.3 °C LTG-7
Preserved in: [X] LAB [ ] FIELD FOR LAB USE ONLY
LAB NOTES: Added HNO_3 (97737) to AR-10 96651 MM 5/13

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

PROJECT NAME/NUMBER	SAMPLE COLLECTOR'S NAME
Ash Pond Monitoring Wells	Justin Colp

RESULTS REQUESTED: [✓] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-001	RW-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1	5-13-24 / 1101	Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2	5-13-24 / 1153	Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3	5-13-24 / 1243	Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4	5-13-24 / 1325	Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5	~~5-13-24~~	Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10	5-13-24 / 1408	Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Daniel Crump	5-13-24 / 1610	Whitney Queen	5/13/24 1610

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24050003

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 4.0 °C LAB#1
Preserved in: [ ] LAB [X] FIELD FOR LAB USE ONLY
LAB NOTES: 9665 ma 5/14

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Gay

RESULTS REQUESTED
[✓] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-001	RW-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1		Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5	5-14-24 / 0954	Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7	5-14-24 / 1121	Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9	5-14-24 / 1145	Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10		Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
Daniel Crump	5-14-24 / 1439	[signature]	5/14/24 1439

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24050003

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Li Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Colp

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24050003-012	AP-11		Groundwater	1	2								✔	✔	✔	✔	✔	✔
013	AP-12		Groundwater	1	2								✔	✔	✔	✔	✔	✔
014	AP-13		Groundwater	1	2								✔	✔	✔	✔	✔	✔
015	AP-14	5-14-24 / 1038	Groundwater	1	2								✔	✔	✔	✔	✔	✔
016	T-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
017	T-2		Groundwater	1	2								✔	✔	✔	✔	✔	✔
018	T-4	5-14-24 / 1236	Groundwater	1	2								✔	✔	✔	✔	✔	✔
019	T-5	5-14-24 / 1103	Groundwater	1	2								✔	✔	✔	✔	✔	✔
020	T-6	5-14-24 / 1155	Groundwater	1	2								✔	✔	✔	✔	✔	✔
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
Daniel Gump	5-14-24 / 1439		5/14/24 1439

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Site Samping Event: CWLP- 2Q24
LIMS Workorder: 24050003
Technician(s): DC, JC, TC, BG, PY

Groundwater Sampling Field Forms- GW Quality Parameters
CWLP- Ash Ponds- 2Q 2024

Well ID	Date	Time	DTW	Temp (°C)	Temp (°F)	pH (SU)	Sp Cond (µmhos/cm @25C)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-4	5/13/2024	13:16	8.68	17.4	63.3	6.81	587.7	0.73	18.58	-112.0
AP-4	5/13/2024	13:19	8.68	17.3	63.1	6.82	588.2	0.52	19.29	-118.2
AP-4	5/13/2024	13:22	8.68	17.3	63.1	6.83	588.6	0.44	20.77	-121.0
AP-4	5/13/2024	13:25	8.68	17.2	63.0	6.83	588.1	0.40	23.97	-122.8

Site Samping Event: CWLP- 2Q24
LIMS Workorder: 24050003
Technician(s): DC, JC, TC, BG, PY

Groundwater Sampling Field Forms- GW Quality Parameters
CWLP- Ash Ponds- 2Q 2024

Well ID	Date	Time	DTW	Temp (°C)	Temp (°F)	pH (SU)	Sp Cond (µmhos/cm @25C)	ODO (mg/L)	Turbidity (NTU)	ORP (mV)
AP-5	5/14/2024	9:45	13.60	13.1	55.7	6.97	467.0	1.57	7.43	-60.2
AP-5	5/14/2024	9:48	13.60	13.8	56.8	6.97	466.2	1.00	6.39	-71.9
AP-5	5/14/2024	9:51	13.60	13.7	56.6	6.98	466.6	0.80	5.66	-70.7
AP-5	5/14/2024	9:54	13.60	13.6	56.5	6.99	468.0	0.71	5.17	-67.9

June 17, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24060964

Dear Eric Staley:

TEKLAB, INC received 2 samples on 6/12/2024 11:47:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24060964
Report Date: 17-Jun-24

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	9
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 24060964

Client Project: Ash Pond Monitoring Wells **Report Date:** 17-Jun-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: City Water, Light & Power
Work Order: 24060964
Client Project: Ash Pond Monitoring Wells
Report Date: 17-Jun-24

Qualifiers

- Unknown hydrocarbon
B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit
E - Value above quantitation range
H - Holding times exceeded
I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits
M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit
R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits
T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24060964
Report Date: 17-Jun-24

Cooler Receipt Temp: 16.5 °C

An employee of Teklab, Inc. collected the sample(s).

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24060964
Report Date: 17-Jun-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville

Client: City Water, Light & Power
Work Order: 24060964
Client Project: Ash Pond Monitoring Wells
Report Date: 17-Jun-24
Lab ID: 24060964-001
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 06/12/2024 9:56

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**0.0218**	mg/L	5	06/13/2024 14:55	224317

Client: City Water, Light & Power
Work Order: 24060964
Client Project: Ash Pond Monitoring Wells
Report Date: 17-Jun-24
Lab ID: 24060964-002
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 06/12/2024 10:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	06/13/2024 15:00	224317

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24060964
Report Date: 17-Jun-24

Carrier: Payton Yoch

Received By: NR

Completed by: Whitney Olinger
On: 12-Jun-24

Reviewed by: Ellie Hopkins
On: 12-Jun-24

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	16.5	
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐	
Chain of custody present?	Yes ☑	No ☐				
Chain of custody signed when relinquished and received?	Yes ☑	No ☐				
Chain of custody agrees with sample labels?	Yes ☑	No ☐				
Samples in proper container/bottle?	Yes ☑	No ☐				
Sample containers intact?	Yes ☑	No ☐				
Sufficient sample volume for indicated test?	Yes ☑	No ☐				
All samples received within holding time?	Yes ☑	No ☐				
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑			
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐				

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

3 day rush TAT per Eric Staley via email. - SAH/ERH 6/12/24

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 24060964

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	City Water, Light & Power		
Address:	3100 Stevenson Drive		
City / State / Zip	Springfield, IL 62712		
Contact:	Eric Staley	**Phone:**	(217) 757-8610
E-Mail:	eric.staley@cwlp.com	**Fax:**	

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 16.5 °C LTG# 7

Preserved in: [X] LAB [ ] FIELD

FOR LAB USE ONLY

Lab Notes: Added HNO_3 (9777) to AP-4 6/12 9665

Client Comments TAT per Eric Staley via email. SAH/ERH 6/12/24

As=0.001 mg/L (ICPMS)

Are these samples known to be involved in litigation? If yes, a surcharge will apply [ ] Yes [X] No

Are these samples known to be hazardous? If yes, include details of the hazard. [ ] Yes [X] No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. [X] Yes [ ] No

Project Name/Number	Sample Collector's Name
Ash Pond Monitoring Wells	Justin Colp

Results Requested

[ ] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [X] 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers HNO3	MATRIX Groundwater	INDICATE ANALYSIS REQUESTED As (T)
24060964001	AP-4	6-12-24 / 0956	1	X	X
-002	AP-5	6-12-24 / 1021	1	X	X

3 DAY

Relinquished By	Date/Time	Received By	Date/Time
	6-12-24 / 1147		6/12/24 1147

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 90257

August 01, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24072240

Dear Eric Staley:

TEKLAB, INC received 2 samples on 7/26/2024 12:52:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24072240
Report Date: 01-Aug-24

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	9
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 24072240

Client Project: Ash Pond Monitoring Wells **Report Date:** 01-Aug-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Definitions

Client: City Water, Light & Power
Work Order: 24072240
Client Project: Ash Pond Monitoring Wells
Report Date: 01-Aug-24

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24072240
Report Date: 01-Aug-24

Cooler Receipt Temp: 9.7 °C

An employee of Teklab, Inc. collected the sample(s).

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power

Client Project: Ash Pond Monitoring Wells

Work Order: 24072240

Report Date: 01-Aug-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2025	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2025	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville

Client: City Water, Light & Power
Work Order: 24072240
Client Project: Ash Pond Monitoring Wells
Report Date: 01-Aug-24
Lab ID: 24072240-001
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 07/26/2024 10:59

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**0.0213**	mg/L	5	07/31/2024 16:38	226348

Client: City Water, Light & Power
Work Order: 24072240
Client Project: Ash Pond Monitoring Wells
Report Date: 01-Aug-24
Lab ID: 24072240-002
Client Sample ID: AP-5
Matrix: GROUNDWATER
Collection Date: 07/26/2024 11:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	07/31/2024 16:43	226348

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24072240
Report Date: 01-Aug-24

Carrier: Tracy Carroll

Received By: AMD

Completed by: Amber Dilallo
On: 26-Jul-24

Reviewed by: Ellie Hopkins
On: 26-Jul-24

Pages to follow: Chain of custody [1] Extra pages included [8]

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	9.7	
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐	
Chain of custody present?	Yes ☑	No ☐				
Chain of custody signed when relinquished and received?	Yes ☑	No ☐				
Chain of custody agrees with sample labels?	Yes ☑	No ☐				
Samples in proper container/bottle?	Yes ☑	No ☐				
Sample containers intact?	Yes ☑	No ☐				
Sufficient sample volume for indicated test?	Yes ☑	No ☐				
All samples received within holding time?	Yes ☑	No ☐				
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑			
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐				

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip #96651. - amberdilallo - 7/26/2024 1:09:08 PM

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 24072240

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	City Water, Light & Power
Address:	3100 Stevenson Drive
City / State / Zip	Springfield, IL 62712
Contact:	Eric Staley
Phone:	(217) 757-8610
E-Mail:	eric.staley@cwlp.com
Fax:	

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE 9.7 °C LTG# 5

Preserved in: ☒ LAB ☒ FIELD

Lab Notes: Gleel Cm Mehta

FOR LAB USE ONLY

Client Comments
As=0.001 mg/L (ICPMS)

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☒ No

Are these samples known to be hazardous? If yes, include details of the hazard. ☐ Yes ☒ No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. ☒ Yes ☐ No

Project Name/Number	Sample Collector's Name
Ash Pond Monitoring Wells	TCarroll

Results Requested
☐ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: HNO3	MATRIX: Groundwater	INDICATE ANALYSIS REQUESTED: As (T)
24072240-001	AP-4	7.26.24 1059	1	X	X
-002	AP-5	" 1129	1	X	X

Relinquished By	Date/Time	Received By	Date/Time
Jeremy Carroll	7.26.24 1252	Amber Dillard	7/26/24 1452

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 91573

September 18, 2024

Eric Staley
City Water, Light & Power
3100 Stevenson Drive
2nd Floor Maintenance Building
Springfield, IL 62712
TEL: (217) 757-8610
FAX: (217) 757-8615

Illinois	100226
Illinois	1004652024-2
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Ash Pond Monitoring Wells **WorkOrder:** 24080242

Dear Eric Staley:

TEKLAB, INC received 20 samples on 8/13/2024 2:27:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Shelly A Hennessy

Shelly A. Hennessy
Project Manager
(618)344-1004 ex 36
SHennessy@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24080242
Report Date: 18-Sep-24

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	36
Chain of Custody	Appended

Client: City Water, Light & Power **Work Order:** 24080242

Client Project: Ash Pond Monitoring Wells **Report Date:** 18-Sep-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Definitions

Client: City Water, Light & Power
Work Order: 24080242
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Sep-24

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24080242
Report Date: 18-Sep-24

Cooler Receipt Temp: 12.1 °C

An employee of Teklab, Inc. collected the sample(s).

AP-3 well is damaged, will be collected at a later date.

Radium-226 & -228 analysis was performed by Summit Environmental Technologies, Inc. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: City Water, Light & Power

Work Order: 24080242

Client Project: Ash Pond Monitoring Wells

Report Date: 18-Sep-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2025	Collinsville
Illinois	IEPA	1004652024-2	NELAP	4/30/2025	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2025	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2025	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2025	Collinsville
Oklahoma	ODEQ	9978	NELAP	12/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2025	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2026	Collinsville
Kentucky	UST	0073		1/31/2025	Collinsville
Mississippi	MSDH			4/30/2025	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville
Missouri	MDNR	00930		10/31/2026	Collinsville

Client: City Water, Light & Power **Work Order:** 24080242

Client Project: Ash Pond Monitoring Wells **Report Date:** 18-Sep-24

Lab ID: 24080242-005 **Client Sample ID:** AP-4

Matrix: GROUNDWATER **Collection Date:** 08/12/2024 12:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**495.19**	ft	1	08/12/2024 12:35	R352005
Depth to water	*	-5.00		**7.69**	ft	1	08/12/2024 12:35	R352005
Depth to water from measuring point	*	0		**10.83**	ft	1	08/12/2024 12:35	R352005
Elevation of groundwater surface	*	0		**544.77**	ft	1	08/12/2024 12:35	R352005
Measuring Point Elevation	*	0		**555.60**	ft	1	08/12/2024 12:35	R352005
Measuring Point Height Above Land Surface	*	0		**3.14**	ft	1	08/12/2024 12:35	R352005
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**34**	NTU	1	08/12/2024 12:35	R352005
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**65.1**	°F	1	08/12/2024 12:35	R352005
SW-846 9040B								
pH, Field	*	1.00		**6.97**		1	08/12/2024 12:35	R352005
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**935**	umhos/cm @25C	1	08/12/2024 12:35	R352005
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**510**	mg/L	1	08/16/2024 9:56	R351892
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	08/20/2024 12:21	R352032
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	08/19/2024 9:42	R351930
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**15**	mg/L	1	08/20/2024 12:21	R352062
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.374**	mg/L	1	08/14/2024 17:18	227065
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	08/14/2024 17:18	227065
Boron	NELAP	0.0200		**0.0825**	mg/L	1	08/14/2024 17:18	227065
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	08/14/2024 17:18	227065
Calcium	NELAP	0.100	S	**118**	mg/L	1	08/14/2024 17:18	227065
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	08/14/2024 17:18	227065
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	08/14/2024 17:18	227065
Lead	NELAP	0.0075		**< 0.0075**	mg/L	1	08/14/2024 17:18	227065
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	08/14/2024 17:18	227065
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	08/15/2024 10:21	227065
Arsenic	NELAP	0.0010		**0.0207**	mg/L	5	08/14/2024 23:22	227065
Lithium	*	0.0030		**0.0072**	mg/L	5	08/14/2024 23:22	227065
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	08/14/2024 23:22	227065
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	08/14/2024 23:22	227065
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	08/14/2024 12:38	227054
LCS recovered outside upper control limits. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	09/16/2024 0:00	R353360

Client: City Water, Light & Power
Work Order: 24080242
Client Project: Ash Pond Monitoring Wells
Report Date: 18-Sep-24
Lab ID: 24080242-005
Client Sample ID: AP-4
Matrix: GROUNDWATER
Collection Date: 08/12/2024 12:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		**See Attached**	pci/L	1	09/16/2024 0:00	R353360

Client: City Water, Light & Power **Work Order:** 24080242

Client Project: Ash Pond Monitoring Wells **Report Date:** 18-Sep-24

Lab ID: 24080242-006 **Client Sample ID:** AP-5

Matrix: GROUNDWATER **Collection Date:** 08/12/2024 11:59

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Bottom of well elevation	*	0		**552.63**	ft	1	08/12/2024 11:59	R352005
Depth to water	*	-5.00		**15.04**	ft	1	08/12/2024 11:59	R352005
Depth to water from measuring point	*	0		**17.34**	ft	1	08/12/2024 11:59	R352005
Elevation of groundwater surface	*	0		**566.56**	ft	1	08/12/2024 11:59	R352005
Measuring Point Elevation	*	0		**583.90**	ft	1	08/12/2024 11:59	R352005
Measuring Point Height Above Land Surface	*	0		**2.30**	ft	1	08/12/2024 11:59	R352005
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**1.5**	NTU	1	08/12/2024 11:59	R352005
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**59.0**	°F	1	08/12/2024 11:59	R352005
SW-846 9040B								
pH, Field	*	1.00		**7.07**		1	08/12/2024 11:59	R352005
SW-846 9050A								
Spec. Conductance, Field	*	1.00		**767**	umhos/cm @25C	1	08/12/2024 11:59	R352005
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**422**	mg/L	1	08/16/2024 9:56	R351892
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**63**	mg/L	2	08/20/2024 12:34	R352032
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.32**	mg/L	1	08/19/2024 9:44	R351930
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	08/20/2024 12:29	R352062
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Barium	NELAP	0.0025		**0.0521**	mg/L	1	08/14/2024 17:23	227065
Beryllium	NELAP	0.0005		**< 0.0005**	mg/L	1	08/14/2024 17:23	227065
Boron	NELAP	0.0200		**0.0339**	mg/L	1	08/14/2024 17:23	227065
Cadmium	NELAP	0.0020		**< 0.0020**	mg/L	1	08/14/2024 17:23	227065
Calcium	NELAP	0.100		**96.3**	mg/L	1	08/14/2024 17:23	227065
Chromium	NELAP	0.0050		**< 0.0050**	mg/L	1	08/14/2024 17:23	227065
Cobalt	NELAP	0.0050		**< 0.0050**	mg/L	1	08/14/2024 17:23	227065
Lead	NELAP	0.0075		**< 0.0075**	mg/L	1	08/14/2024 17:23	227065
Molybdenum	NELAP	0.0100		**< 0.0100**	mg/L	1	08/14/2024 17:23	227065
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	08/15/2024 10:10	227065
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	08/14/2024 23:12	227065
Lithium	*	0.0030		**0.0062**	mg/L	5	08/14/2024 23:12	227065
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	08/14/2024 23:12	227065
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	08/14/2024 23:12	227065
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	08/14/2024 12:40	227054
LCS recovered outside upper control limits. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	09/16/2024 0:00	R353360
Radium-228	*	0		**See Attached**	pci/L	1	09/16/2024 0:00	R353360

Receiving Check List

http://www.teklabinc.com/

Client: City Water, Light & Power
Client Project: Ash Pond Monitoring Wells

Work Order: 24080242
Report Date: 18-Sep-24

Carrier: Justin Colp

Received By: PRS

Completed by: Amber Dilallo
On: 13-Aug-24

Reviewed by: Shelly A. Hennessy
On: 27-Aug-24

Pages to follow: Chain of custody 4 Extra pages included 60

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	12.1
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice	☐
Chain of custody present?	Yes ☑	No ☐			
Chain of custody signed when relinquished and received?	Yes ☑	No ☐			
Chain of custody agrees with sample labels?	Yes ☑	No ☐			
Samples in proper container/bottle?	Yes ☑	No ☐			
Sample containers intact?	Yes ☑	No ☐			
Sufficient sample volume for indicated test?	Yes ☑	No ☐			
All samples received within holding time?	Yes ☑	No ☐			
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐		
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐			

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

Samples were received on 8/12/24 at 1635 on ice [12.1C - LTG#9]. pH strip #96651. - amberdilallo - 8/13/2024 8:19:55 AM

Samples were received on 8/13/24 at 1427 on ice [3.7C - LTG#5]. pH strip #96651. - amberdilallo - 8/13/2024 3:24:03 PM

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24080242

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 12.1 °C LAG-9
Preserved in: [ ] LAB [X] FIELD FOR LAB USE ONLY
LAB NOTES: pH/9040/1
PS8113

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Li Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Hg Mo
Quarterly monitoring
*Damaged - to be collected @ later date SAH 8/14/24

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Justin Colp

RESULTS REQUESTED
[✓] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24080242-001	RW-3	8.12.24 1018	Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1	8.12.24 1119	Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2	8.12.24 1304	Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3 *		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4	8.12.24 1235	Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5	8.12.24 1159	Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6	8.12.24 1050	Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7	8.12.24 1352	Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8		Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9	8.12.24 1421	Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10		Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
J. Colp	8.12.24 1635	Paul Gaty	8/12/24 1635

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24080242

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE _____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Li Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME
Joshn Colp

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other _____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers									INDICATE ANALYSIS REQUESTED													
				UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity									
24080245 01	AP-11	8-12-24 1207	Groundwater	1	2								✓	✓	✓	✓	✓	✓									
013	AP-12	1302	Groundwater	1	2								✓	✓	✓	✓	✓	✓									
014	AP-13	1328	Groundwater	1	2								✓	✓	✓	✓	✓	✓									
015	AP-14		Groundwater	1	2								✓	✓	✓	✓	✓	✓									
016	T-1	1418	Groundwater	1	2								✓	✓	✓	✓	✓	✓									
017	T-2	1232	Groundwater	1	2								✓	✓	✓	✓	✓	✓									
018	T-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓									
019	T-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓									
020	T-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓									
			Groundwater																								
			Groundwater																								

Relinquished By	Date/Time	Received By	Date/Time
J Colp	8.12.24 1635	Paul Getty	8/12/24 1635

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CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 24080242

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 3.7 °C
Preserved in: [ ] LAB [X] FIELD FOR LAB USE ONLY
LAB NOTES: pH/alkal PS 8/13

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [✓] Yes [ ] No Permit on file

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Li Se Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME

RESULTS REQUESTED
[✓] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24080242-001	RW-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
002	AP-1		Groundwater	1	2								✓	✓	✓	✓	✓	✓
003	AP-2		Groundwater	1	2								✓	✓	✓	✓	✓	✓
004	AP-3		Groundwater	1	2								✓	✓	✓	✓	✓	✓
005	AP-4		Groundwater	1	2								✓	✓	✓	✓	✓	✓
006	AP-5		Groundwater	1	2								✓	✓	✓	✓	✓	✓
007	AP-6		Groundwater	1	2								✓	✓	✓	✓	✓	✓
008	AP-7		Groundwater	1	2								✓	✓	✓	✓	✓	✓
009	AP-8	8.13.24 1106	Groundwater	1	2								✓	✓	✓	✓	✓	✓
010	AP-9		Groundwater	1	2								✓	✓	✓	✓	✓	✓
011	AP-10	8-13-24 1043	Groundwater	1	2								✓	✓	✓	✓	✓	✓

Relinquished By	Date/Time	Received By	Date/Time
	8-13-24 1427		8/13/24 1427

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CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 24080242

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: City Water, Light & Power
Address: 3100 Stevenson Drive, 2nd Floor Maintenance Building
City/State/Zip: Springfield IL 62712
Contact: Eric Staley Phone: (217) 757-8610
Email: eric.staley@cwlp.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☑ Yes ☐ No Permit on file

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE ____ °C
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Client Comments:
*elevations, pH, conductivity, temperature
**Sb As Se Li Tl (ICPMS) Ba Be B Cd Ca Cr Co Pb Hg Mo
Quarterly monitoring

PROJECT NAME/NUMBER
Ash Pond Monitoring Wells

SAMPLE COLLECTOR'S NAME

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Field parameters*	Cl F SO4 TDS (T)	Metals (T)**	Radium-226	Radium-228	Field Turbidity
24080245	AP-11		Groundwater	1	2								✔	✔	✔	✔	✔	✔
013	AP-12		Groundwater	1	2								✔	✔	✔	✔	✔	✔
014	AP-13		Groundwater	1	2								✔	✔	✔	✔	✔	✔
015	AP-14	8-13-24 1119	Groundwater	1	2								✔	✔	✔	✔	✔	✔
016	T-1		Groundwater	1	2								✔	✔	✔	✔	✔	✔
017	T-2		Groundwater	1	2								✔	✔	✔	✔	✔	✔
018	T-4	8.13.24 1220	Groundwater	1	2								✔	✔	✔	✔	✔	✔
019	T-5	8.13.24 1132	Groundwater	1	2								✔	✔	✔	✔	✔	✔
020	T-6	8.13.24 1044	Groundwater	1	2								✔	✔	✔	✔	✔	✔
			Groundwater															
			Groundwater															

Relinquished By	Date/Time	Received By	Date/Time
	8-13-24 1427		8/13/24 1427

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ATTACHMENT C

PROFESSIONAL ENGINEER CERTIFICATION

ANDREWS ENGINEERING

3300 Ginger Creek Drive | 217.787.2334
Springfield, IL 62711

Professional Engineer Certification – Statistical Analysis Method for Calculation of Background Concentration for Total Arsenic

40 CFR § 257.93(f)(6)
35 I.A.C. § 845.640(f)(2)

In accordance with 40 CFR Section 257.93(f)(6) and Title 35 Illinois Administrative Code (35 I.A.C.) Part 845, Subpart F, Section 845.640(f)(2), the owner or operator of a coal combustion residual (CCR) unit must obtain a certification from a qualified professional engineer that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area.

This certification is based on the description of the statistical methods selected to derive the background concentration for total arsenic utilizing eight consecutive sampling events from background wells AP-4 and AP-5. The statistical method is the same method previously certified in the Statistical Analysis Plan and is consistent with that utilized for the derivation of the existing background concentrations

I, Douglas W. Mauntel, a qualified professional engineer in good standing in the State of Illinois, certify that the statistical methods described in this document, as supported by the Statistical Analysis Plan in the facility's Operating Record, are appropriate for evaluating the groundwater monitoring data for the CCR management area.

Signature: Douglas W. Mauntel

Illinois P.E. No: 062.054530

Date: 10/29/24

DOUGLAS W. MAUNTEL
062-054530
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

Expires 11/30/25

APPENDIX D:
STATISTICAL METHOD FOR DETERMINATION OF BACKGROUNDS

City Water, Light & Power
Springfield, Illinois

Statistical Method for Determination of Background Concentrations

February 2025

Prepared for:
City Water, Light & Power
3100 Stevenson Drive
Springfield, Illinois

ANDREWS ENGINEERING

3300 Ginger Creek Drive, Springfield, IL 62711 | 217.787.2334

ILLINOIS | MISSOURI | INDIANA

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3.5 Prediction Limit 3

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1. INTRODUCTION

The US Environmental Protection Agency (EPA) published the final rule for the management of Coal Combustion Residuals (CCR) on April 17, 2015. The CCR rule is formally promulgated in the U.S. Code of Federal Regulations, Title 40, Parts 257 and 261 (EPA, 2015) along with amendments to the rule published in July, 2018 (EPA, 2018) and August, 2020 (EPA, 2020). This rule is applicable to the CCR owned and operated by City Water, Light and Power (CWLP).

Pursuant to the 40 CFR §257.90(b)(1), a groundwater sampling and analysis program must be developed in accordance with 40 CFR, §257.93. The program must address the selection of statistical methods, and the selected statistical method(s) must be certified by a Qualified Professional Engineer.

1.1 OBJECTIVE AND PURPOSE

This Statistical Analysis Plan (Plan) describes the method(s) to be used in identifying a statistically significant increase (SSI) over the upgradient or background groundwater quality. This plan is an integral part of the Groundwater Monitoring Program. The Groundwater Monitoring Program contains additional information on the site-specific hydrogeology, groundwater monitoring system, sampling and analysis procedures, and reporting requirements

2. STATISTICAL METHOD

The statistical methods will evaluate if a statistically significant increase (SSI) of contaminant concentrations has occurred in groundwater samples when comparing a compliance monitoring sample analytical result with background (baseline) groundwater analytical results.

The chosen statistical methods will be in compliance with 40 CFR 257.93 and the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (EPA, March 2009). The primary software that will be used to conduct the statistical evaluations is the U.S.EPA's ProUCL (v. 5.2) software package. ProUCL was developed for analysis of environmental data sets with and without non-detect (ND) observations. ProUCL is a comprehensive statistical software package with statistical methods and graphical tools to address many environmental sampling and statistical issues. However, other statistical programs may be utilized as appropriate.

The requirements for statistical analysis of groundwater quality data collected under the CCR Rule are given in 40 CFR 257.93(f)-(h). The owner or operator of a CCR unit must select one of the statistical methods specified in the Section to evaluate the groundwater data. The methods include:

1. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures;
2. An ANOVA based on ranks followed by multiple comparisons procedures to identify significant evidence of contamination;
3. A tolerance or prediction interval procedure;
4. A control chart approach that gives control limits for each constituent; or
5. Another statistical test method that meets the performance standards specified by the CCR rule.

As groundwater monitoring progresses, the use of the selected statistical method will be subject to ongoing review. CWLP reserves the right to use other statistical tests in place of, or in addition to, the methods specified in this Plan if such methods are better suited for analysis of future results. Additionally, the methods in this Plan have been developed in accordance with the requirements of the CCR rule as published on April 17, 2015 (EPA, 2015), and as amended, and modifications to this Plan may occur if further revisions or amendments are made to the CCR rule. If test methods are changed this work plan will be revised, as appropriate, and its certification updated.

3. STATISTICAL ANALYSIS

Using the Unified Guidance and ProUCL, a preliminary statistical analysis was performed on the eight rounds of baseline groundwater quality data to assess the background constituent data and determine the most appropriate statistical method(s) for data analysis and comparisons. The following sections present a summary of the statistical analyses methodology.

3.1 DATA DISTRIBUTION TESTING

The pooled background data for each parameter were tested using statistical software (ProUCL v.5.2) to determine the underlying data distribution (normal, lognormal, or unknown/no discernable distribution). Data distribution testing was conducted using the Shapiro-Wilks test for datasets with less than or equal to 50 values. The data distribution tests were conducted at a 95 percent significance level.

If data were found to be normally or lognormally (test of lognormal transformed data) distributed at a 95 percent significance level, and the data contain less than or equal to 50 percent non-detects, parametric statistical methods are applied. If data were found to be not normally or lognormally distributed (unknown or no discernable distribution), or the data contain greater than 50 percent non-detects non-parametric statistical methods are applied.

3.2 OUTLIER TESTING

Prior to statistical analyses the background dataset was pooled and each parameter was screened for the existence of outliers using the Grubbs test. Outliers are defined as data points

that vary significantly from the mean value for that data set. Outliers may represent sampling error, contamination from surface run-off, analytical laboratory error, or anomalous site conditions. Outliers, if not removed from the data set, can erroneously increase the calculated background value and minimize the occurrence of an exceedances related to a release from a waste unit. Once a statistical outlier has been identified, the concentrations are evaluated to determine the cause. If a valid reason has been determined for the outlier, the data point will be removed from the data set. If no specific reason can be documented, the point will be considered representative and included in the analysis.

3.3 HANDLING OF NON-DETECTS (ND)

Non-detect (ND) values were handled according to the percentage of non-detects (%ND) present in the background sampling. The %ND was calculated for each parameter from the pooled background data of each well set. The data treatment was done according to the following criteria:

a) For 0% NDs, no adjustment is made to the values in the data set.
b) For under 15% NDs, the value of one-half (½) the reported Detection Limit (DL) was substituted for the ND value, and the mean and standard deviation were calculated using detected values along with the substituted ND values.
c) For 15-50% NDs, Kaplan-Meier was used to adjust the mean and standard deviation. The adjusted mean and standard deviation was then used to calculate the prediction limit.
d) For over 50% but not 100% NDs, the highest recorded concentration was substituted for the prediction limit.
e) For 100% NDs, the Practical Quantitation Limit (PQL) will be substituted for the ND value. The mean and standard deviation was calculated using the substituted ND values.

3.4 TOLERANCE OF PREDICTION INTERVAL PROCEDURE

The prediction limit for each parameter was calculated using the mean, standard deviation, and the appropriate t value. The statistical analysis uses a one-tailed test to determine an upper limit of significance. The upper prediction limit is the concentration for the probability that the constituent can be measured without constituting a statistical increase above the background. Any concentration found below this limit is regarded as falling within the normal statistical population.

3.5 PREDICTION LIMIT

The statistical procedure was conducted according to the following steps:

a) Calculate arithmetic mean - the arithmetic mean was calculated using the pooled data for each parameter.

The arithmetic mean (X_b) was calculated using the following equation:

$$X_b = \frac{X_1 + X_2 + \ldots + X_n}{n}$$

where: X_b = Mean background value
X_n = Individual background value for *n* sample
n = Number of background values

b) Calculate standard deviation - the standard deviation was calculated using the pooled data for each parameter.

The standard deviation was calculated using the following equation:

$$S_b = \sqrt{\frac{(X_1 - X_b)^2 + (X_2 - X_b)^2 + \cdots + (X_n - X_b)^2}{n - 1}}$$

where: S_b = Population standard deviation
X_n = Individual background value for *n* sample
X_b = Mean background value (1)
n = Number of background samples

c) Calculate the Upper Prediction Limit - the Upper Prediction Limit was calculated for each parameter using the mean (1), the standard deviation (2), the number of background samples, and the Student's t value.

The Student's t value σ, is determined by the facility permit whether it is σ = 0.05 (95% Confidence). The Student's t value also varies upon the number of background samples utilized in the calculations. For those parameters with 15% to 50% NDs, the Cohen Method was utilized to calculate the Prediction Limit. The methodology described in the Unified Guidance was used to calculate the Cohen Prediction Limit. The Upper Prediction Limit for the remaining parameters was calculated using the following equation:

$$PL = X_b \pm S_b \bullet t \bullet \sqrt{1 + \frac{1}{n}}$$

where: PL = Upper Prediction Limit (Upper and Lower for pH)
X_b = Mean background value (1)
S_b = Standard Deviation (2)
t = Student's t value at 0.05 significance
n = Number of background samples

4. REFERENCES

Andrews Engineering, Inc., 2025. Groundwater Monitoring Program, City Water, Light and Power, CCR Ash Impoundments, Springfield, Illinois.

Code of Federal Regulations (CFR), Title 40: Protection of the Environment. Part 257: Criteria for Classification of Solid Waste Disposal Facilities and Practices. Subpart D: Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance. EPA 530/R-09-007. March 2009.

USEPA. 2022. ProUCL: Statistical Software for Environmental Applications for Data Sets with and without Non-detect Observations. Version 5.2. https://www.epa.gov/land-research/proucl-software.

5. ENGINEERING CERTIFICATION

The owner or operator of a coal combustion residual (CCR) unit must obtain a certification from a qualified professional engineer that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area pursuant to 40 C.F.R. § 257.93(f)(6).

The engineering certification for the selected statistical method follows.

Professional Engineer Certification – Statistical Analysis Plan

40 CFR § 257.93(f)(6) Statistical Method Certification

In accordance with Title 40 Code of Federal Regulations (40 CFR) Part 257, Subpart D, Section 257.93(f)(6), the owner or operator of a coal combustion residual (CCR) unit must obtain a certification from a qualified professional engineer that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area.

This certification is based on the description of the statistical methods selected to evaluate groundwater as presented in the Statistical Analysis Plan, prepared for City Water, Light, and Power, and dated February 6, 2024. The procedures described in the plan will be used to establish background conditions and implement detection, assessment, and corrective action monitoring as necessary and required by 40 CFR §257.93-257.95. The Statistical Analysis Plan was prepared in accordance with the requirements of 40 CFR §257.93, with reference to the acceptable statistical procedures provided in USEPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (March 2009), and is intended to provide a logical process and framework for conducting the statistical analysis of the data obtained during groundwater monitoring. In accordance with 40 CFR §257.93(f), the statistical method chosen for analysis of groundwater monitoring data will initially be the prediction interval procedure or control chart approach for each Appendix III constituent, and either the tolerance interval or the prediction interval procedure for each Appendix IV constituent at this CCR unit per 40 CFR §257.93(f)(3), in which the interval is established from the background data and compared to the level of each Appendix III constituent in each compliance well, or a confidence interval for each Appendix IV constituent in each compliance well.

I, Karl W. Finke, a qualified professional engineer in good standing in the State of Illinois, certify that the statistical methods described in this document, as supported by the Statistical Analysis Plan in the facility's Operating Record, are appropriate for evaluating the groundwater monitoring data for the CCR management area.

Signature: Karl W. Finke

Illinois P.E. No: 062.068571

Date: 02/21/25



APPENDIX E:
GROUNDWATER SAMPLING AND ANALYSES PROCEDURES

City Water, Light & Power
Springfield, Illinois

Groundwater Sampling and Analysis Procedures

February 2025

Prepared for:
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ILLINOIS | MISSOURI | INDIANA

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ATTACHMENTS

Attachment 1: Monitoring Well Forms

1. INTRODUCTION

This Groundwater Sampling and Analysis Procedures (SAP) describes the methods and procedures to be used for conducting groundwater monitoring at the City Water, Light and Power (CWLP) CCR Units. This SAP is subject to periodic revision as circumstances and/or new regulations dictate. Revisions to the SAP must be approved by a qualified professional engineer before placed in effect. The most up-to-date version of the SAP shall be kept in the Operating Records for use by CWLP and subcontractor personnel.

1.1 OBJECTIVE AND PURPOSE

The objective of the groundwater monitoring program is to provide analytical data for groundwater collected from monitoring wells as required by the CCR Rule (40 CFR §257.90-257.98). The SAP describes the procedures and techniques associated with the following:

- Pre-field activities,
- Record keeping and chain-of-custody,
- Well assessment prior to purging,
- Groundwater sampling procedures,
- Decontamination and waste management,
- Sample packing and shipping,
- Analytical procedures, and
- Quality assurance.

The purpose of the sampling protocol described herein is to provide the basis for sampling consistency and scientific credibility in obtaining the desired analyses. Groundwater sampling will be conducted in general accordance with applicable procedures established in the RCRA Groundwater Monitoring: Technical Enforcement Guidance Document (TEGD) (EPA 530-R-93 001, November 1992 and subsequent updates).

2. PRE-FIELD ACTIVITIES

At the beginning of each groundwater monitoring event, the necessary field equipment will be obtained. Sampling equipment that may be needed for collecting representative sample of groundwater are:

- Temperature, pH, specific conductivity, dissolved oxygen, oxidation-reduction potential, and turbidity meters or multi-meter (2)
- Low flow or Micropurge bladder pumps
- Peristaltic pumps (2)
- Submersible pump (1), with flow controller
- Disposable bailers with spool of clean rope

- 100-foot Water level indicator probe (2)
- 3/16” (I.D.) silicon tubing (initial installation) for use with peristaltic pump.
  - Note – Have 5 feet on hand in case tubing replacement needed.
- 0.17” (I.D.) LDPE tubing (initial installation) for use with peristaltic pump.
  - Note – Have 200 – 300 feet on hand for in case tubing replacement needed.
- 3/8” (I.D.) LDPE tubing (initial installation) for use with peristaltic pump.
  - Note – Have 200 – 300 feet on hand for in case tubing replacement needed.
- Field logbooks (2), clipboards (2), black ink pens/pencils
- Powder-free nitrile gloves
- Graduated 5-gallon bucket (2)
- One sampling bottle kit per well, plus QA/QC samples, and extras in case of breakage
- Sample bottle labels, custody seals, and chain-of-custodies
- Waterproof marking pen for labeling sample bottles (pre-labeling of bottles is preferred)
- Sample coolers
- Ice for each cooler
- Distilled or de-ionized water – five gallons (quantity may vary)Scrub brush (or sponge) and spray wash bottles
- Phosphate–free cleaner (e.g., Liquinox)
- Box of large plastic garbage bags and paper towel rolls
- 5-gallon buckets with lids (8), for temporarily containerizing purge water and submersible pump decontamination, if necessary

Sampling personnel (CWLP personnel and/or subcontractors) must comply with all safety and health guidelines for the facility.

The levels of personal protective equipment (PPE) to be used for work tasks will be selected based on known or anticipated physical hazards, as well as the types, concentrations and exposure routes of contaminants that may be encountered on site. Currently, it is anticipated that work will be initially conducted in Level D PPE.

3. RECORD KEEPING AND CHAIN OF CUSTODY

This section of the SAP provides information on field recording, field instrument calibration and chain of custody procedures.

3.1 FIELD RECORDING

Documentation of activities associated with groundwater monitoring events will be recorded each day in a bound field logbook with hard cover, water resistant paper, and sequentially numbered pages. Documentation will be completed in waterproof, black or blue ink and written errors will be crossed out with a single line, initialed, and dated. The logbooks will remain on-site during use

and then will be stored off-site. Entries in the logbook will be chronological and will include, where applicable and appropriate, such information as the following:

- Date and times,
- Locations of particular events,
- Instrument calibrations,
- Weather (temperature and wind direction) and significant changes in climatic conditions that may affect monitoring activities or results, and
- Other information/observations pertinent to the well inspection, well gauging, and sampling event.

Each page of the field logbook will be signed by the person(s) making entries in the logbook.

Three separate field report forms have been developed as an extension to the field logbook. These include the following:

- Monitoring Well Inspection Record (Form 1),
- Monitoring Well Gauging Record (Form 2), and
- Monitoring Well Sampling Record (Form 3).

These forms (or equivalent) may be used for recording water level data, well purging volumes, and sampling data. The field report forms or logbook may include, but not be limited to the following:

- Names of members of the gauging or sampling team,
- Date and time,
- Specific activity being performed,
- Well identification,
- Sample identification number,
- Sample volume,
- Sampling method,
- Preservative type,
- Analyses to be performed, and
- Measured field water quality parameters and readings (when applicable).

3.2 FIELD INSTRUMENT CALIBRATION

The following meters/probes may be used to analyze groundwater samples in the field:

- Temperature and pH,
- Specific conductance (SC),
- Oxidation-reduction potential (ORP),

- Dissolved oxygen (DO), and
- Turbidity

The quality of data generated by these measurements will be verified through qualitative means, such as regular calibrations, compliance with operating instructions, and decontamination between uses. A calibration procedure establishes the relationship between a known calibration standard and the accuracy of a measurement made by an instrument according to that standard. Calibration indicates absolute physical or electronic calibration and is not to be confused with chemical standardization.

The calibration for field monitoring equipment will be checked in accordance with manufacturer's specifications, but at least daily. Instrument calibration may be checked prior to entering the site or in the field prior to use. The time, date and location of instrument calibration and verification will be recorded in the field data sheet or logbook. If an instrument is out of calibration, then the calibration will be performed as needed.

3.3 CHAIN-OF-CUSTODY

Possession of samples will be traceable from the time of sample collection through check-in at the laboratory. Documentation begins immediately following sample collection and proper labeling and is accomplished using a standard chain-of-custody form. This document traces possession of each sample from the time of collection through time of analysis. For the purpose of these procedures, a sample is considered in custody if it is:

- In sampler's physical possession;
- In view, after being in physical possession;
- Locked to prevent tampering, after having been in physical possession; or
- In a secured area, restricted to authorized personnel.

The chain-of-custody form contains the following information:

- Project number, site name, and company address;
- Number of samples;
- Preservatives used for sample collection;
- Sample description (e.g., water, etc.);
- Sample ID number;
- Date and time of sample collection;
- Number of containers for the sample;
- Name of sampler responsible for sample transmittal;
- Signatures of all persons involved in the chain-of-custody;
- Type of analysis requested;
- Requested turnaround time and level of quality control documentation; and
- Pertinent comments about sample or sample conditions.

This information is entered onto the chain-of-custody form. Upon receipt of samples, the analytical laboratory will initiate its own chain-of-custody procedures. The sampler shall be responsible for properly packaging and dispatching samples to the analytical laboratory. When transferring samples, the sampler shall sign and record the date and time on the first Relinquished By line on the chain-of-custody form. The person to whom custody is being transferred shall sign on the first Accepted By line of the chain-of-custody form, indicating that custody is being accepted by that person for all the samples listed on the sheet. When samples are shipped via courier, the chain-of-custody form is attached to the inside of the shipping container and the shipping container is sealed using tape. For subsequent transfers of custody, the succeeding Relinquish and Receipt lines are used. To reduce custody records, the number of custodians in the chain-of-custody is minimized.

The following record keeping items will supplement the chain-of-custody form:

- Field Logbook,
- Monitoring Well Sampling Record, and
- Sample Receipt Checklist (typically provided by the laboratory).

4. WELL ASSESSMENT PRIOR TO PURGING

This section of the SAP provides information about inspecting monitoring wells, gauging fluid levels, and weather conditions. To reduce potential cross contamination during fluid level measurements, one of the following two options are recommended:

1. Activities begin at the upgradient wells and then proceed to downgradient wells, with water that is potentially affected; or
2. Each well sampling team carries dedicated well gauging equipment (one set for potentially affected wells and one set for non-affected wells). The determination as to which equipment is used at a particular well should be based on historical data.

As required, PPE will be worn at all times during the performance of the described procedures.

4.1 MONITORING WELL INSPECTION

The sampling team shall perform a visual inspection of each monitoring well and record the results in the field logbook or on a Monitoring Well Inspection Record (Form 1). The inspection of each well will include the following:

- Inspecting the casing and cap for cracks, signs of deterioration, or tampering;
- Verifying the identification information on the well is correct and clearly visible;
- Determining whether the cap and monitoring well are secure (via locks, bolted vault covers, in addition to general facility security);

- Inspecting the well pad for cracks, signs of deterioration, erosion, settling, and/or animal and insect burrowing; and
- Where appropriate, inspecting any dedicated equipment for signs of cleanliness, structural integrity, and deterioration.

4.2 WATER LEVEL AND TOTAL DEPTH INFORMATION

The depth to groundwater (DTW) in each well will be measured at the beginning of each sampling event before undertaking any purging or sampling activities and will be recorded in the field log book or on a Monitoring Well Gauging Record (Form 2). The distance from the designated measuring point at the top-of-casing (TOC) to the water surface will be measured to the nearest 0.01-foot with an electric water level indicator. The DTW measurements will be taken from the TOC on the true north side of the well.

Total well depth measurements will be periodically obtained to determine the occurrence of siltation. The total well depth will be measured after the samples are taken to avoid unnecessary disturbance of the water column prior to sampling. Total well depths will be obtained for each sampling event for wells that are sampled by bailers or non-dedicated pumps. Total depth measurements will be obtained on an annual basis for wells that contain dedicated pumps. Total well depth measurements will be required in the event a well is damaged or modified (casing lowered or extended).

Total well depth will be measured by allowing the probe to drop to the bottom of the well and determining the depth where the tape becomes slack. The reading will be recorded to the nearest 0.01-foot. These measurements will be compared with previous measurements and the original well depth to determine if sediment has accumulated within the screened interval, (i.e., "silted in"). Wells which have sediment in the screened interval will be redeveloped.

In addition to the collection of groundwater elevation measurements at each of the groundwater monitoring wells and piezometers, surface water elevations in the adjacent surface water bodies will be collected each time groundwater elevations are measured. These surface water bodies include the following – Lake Springfield, Sugar Creek and the Clarification Pond. Historically, the Lakeside Ash Pond and the Dallman Ash Pond have exhibited the presence of surface water. However, as of October 13, 2023, all CCR and non-CCR waste streams ceased flowing into the Lakeside Ash Pond and Dallman Ash Pond and the surface water levels have significantly declined. At present, rainwater is the only water entering the CCR surface impoundments.

See Section 9.0 for equipment decontamination procedures, investigation-derived waste (IDW) management, and IDW sampling.

4.3 WEATHER CONDITIONS

Weather conditions at the time of gauging/sampling activities (e.g., precipitation, temperature, wind speed and direction) will be recorded in the field logbook or the Monitoring Well Sampling Record (Form 3).

5. GROUNDWATER SAMPLING PROCEDURES

This section of the SAP provides information about purging and sampling groundwater collected from monitoring wells. Micropurging will be the preferred method of sampling for all the monitoring wells at CWLP CCR unit groundwater monitoring wells.

As required, PPE will be worn at all times during the performance of the described procedures.

5.1 MICROPURGING OF WELLS

To establish a common point of reference, low-flow refers to the flow rate at which water enters the pump intake and is the rate that is imparted to the formation pore water in the immediate vicinity of the well screen. The pump intake should be set:

1. Just above the mid-point of the screened interval if the transmissive zone is thicker than the screened section and the water column is at or above the top of the screen; or
2. Mid-point of the transmissive interval when the screened section is greater than the thickness of transmissive zone.

Water level drawdown provides the best indication of the stress (drawdown) imparted by a given flow rate for a given hydrogeological situation. Flow rates during low-flow purging will be used to regulate drawdown to less than 0.1 meter (0.3 feet). While these flow rates will typically range between 0.1 to 0.5 liter/minute (L/min), the flow rate for an individual well may vary due to site-specific hydrogeology. For example, sand channel lenses may support flow rates of up to 1 L/min without causing drawdown greater than 0.3 feet. Alternatively, wells that screen clayey, silty layers may not produce groundwater at 0.1 L/min without having drawdown greater than 0.3 feet.

For monitoring wells with low water productivity that have drawdown greater than 0.3 feet, there are two possible situations:

- Drawdown is greater than 0.3 feet, but stabilizes at a level above the pump intake; or
- Drawdown continues to occur even at the slowest possible pumping rate.

For these situations, the following purging and sampling procedures will be followed and documented on the sampling record.

- If drawdown is greater than 0.3 feet, but stabilizes at a level above the pump intake; record water levels in well and continue to monitoring water quality indicator parameters until

those stabilize. Collect groundwater sample upon stabilization of water quality indicator parameters.

- If at the slowest possible pumping rate drawdown is greater than 0.3 feet and continues to drop pumping shall be halted when the water level reaches the middle of the screened interval at which time the water level shall be allowed recover to a minimum of 80% of the original water level before collecting a groundwater sample using the slowest possible pumping rate. If the water level drops to the bottom of the screened section before all sample bottles have been filled, allow the well to recovery to a minimum of 80% of the original water level before continuing to fill the remaining sample bottles. If possible, the well should be sampled no more than 24 hours after the completion of purging, regardless of the recovery.

Groundwater samples will be collected from the monitoring wells using the following low-flow (micropurge) procedures.

- Non-submersible peristaltic pump – Where DTW is less than 29 ft the well may be purged and sampled using a non-submersible a peristaltic pump. To purge and sample the well, insert clean disposable polyethylene tubing into the well casing with the intake placed at the appropriate depth discussed above. Remember to include enough slack in tubing to allow for drawdown of the water level to the bottom of screen. Silicon tubing will be connected to the polyethylene tubing and threaded through the pumping apparatus on the peristaltic pump.
- Submersible pump – Where DTW is greater than 29 ft the well may be purged and sampled using a submersible pump. To purge and sample the well, the submersible pump should be fitted with clean disposable polyethylene tubing and the tubing inserted into the well with the intake placed at the appropriate depth discussed above.
- If dedicated polyethylene and silicon tubing were utilized and left in the monitoring well from a previous groundwater sampling event, skip the first two bullets above. Before sampling, check tubing for any damage and replace as necessary using the above mentioned methodology.
- The selected pump will be used to purge groundwater at a low-flow rate, generally less than approximately 0.5 L/min (100-500 milliliter/min).
- The well should be pumped at a sustainable flow rate to allow the lowest drawdown of water level (see above) until water quality parameters stabilize or the water level drops below the bottom of the screened interval.
- Groundwater quality indicator parameters will be monitored during low-flow purging to determine stabilization. The water quality indicator parameters to be monitored and their stability criteria are identified on the Monitoring Well Sampling Record (Form 3).

Measurements of water quality indicator parameters will be recorded every 3 to 5 minutes until stabilization is achieved. These measurements, along with flow rate and depth to water, will be

recorded be recorded in the field log book or on a Monitoring Well Sampling Record (Form 3). Stabilization is achieved when at least 3 of the 5 parameters have stabilized for three successive readings. If the minimum three water quality indicator parameters do not stabilize within 45 minutes of low-flow purging, a groundwater analytical sample will be collected from the well. For the purposes of sample turbidity, if a turbidity less than 10 nephelometric (NTUs) cannot be achieved, then a secondary backup criteria be set at less than 10% change between the final three is acceptable.

See Section 9.0 for equipment decontamination procedures, IDW management, and IDW sampling.

5.2 SAMPLE COLLECTION

Groundwater will be collected from the well and transferred to the appropriate sampling containers in a manner that reduces the amount of exposure to the ambient environment. The sequence of sample collection will be as follows:

- Metals,
- Water Chemistry (cations, anions, TDS, pH, etc.), and
- Radioactive elements (if required).

All samples will be collected in clean, laboratory-supplied sample containers with the appropriate preservative for the analytical method.

Metals analysis will measure total recoverable metals, which captures both particulate and dissolved fractions. Groundwater samples will not be field filtered prior to analysis. Samples will be collected and analyzed for constituents identified in a given groundwater monitoring program's list of analytes. Any required preservatives will be added to the bottles by the laboratory prior to delivery to the sampling personnel.

A sample label will be affixed to each sample container. Complete the label on each sample container with the typical information:

- Project name,
- Sample identification (well ID),
- Date and time of collection,
- Sample type, requested analysis,
- Type of preservative (if any), and
- Sampler's initials.

Sampler shall record the sample ID, sampling procedure, date, and time of sample collection on the Monitoring Well Sampling Record (Form 3) or field log book. Sampler shall record the sample ID (well ID), time and date of collection, sample media, and specified analyses to be conducted

by the laboratory, if not already provided, on the chain-of-custody record. See Section 3.3 for details on sample custody information.

Sampler shall check that the sample container caps are tight; then place the filled sample containers into a sample cooler containing bagged ice in a manner to prevent breakage. The cooler will be packed with sufficient ice to maintain the proper preservation temperature. See Section 6.0 for details on sample packing and shipment.

After sampling is completed at a particular well, the tubing will be removed from the well and placed in an appropriate disposal container (See Section 9.0). The well will be secured before proceeding to the next well.

See Section 9.0 for equipment decontamination procedures, IDW management, and IDW sampling.

5.3 QUALITY CONTROL SAMPLING

Quality control (QC) and quality assurance (QA) samples will be collected and analyzed along with monitoring well samples to assess the variability introduced in sampling, handling, shipping, and analysis. The analytical program for the QC samples will follow the analytical program for the associated investigative samples. The following sample types will be collected.

- Blind Duplicate - One duplicate sample will be collected at each CCR Unit for each sampling event; a total of three blind duplicates will be collected per event. The blind duplicate will be analyzed for identical parameters as the monitoring well samples. The duplicate sample(s) will be collected from randomly selected wells; and will be labeled with an appropriate identification number other than the well number. The sample bottles for regular and duplicate analysis will be filled in alternate succession for each required analysis (e.g. fill the metals sample container, then the metals duplicate container). The identification number will be recorded in the field log book, or in a separate Monitoring Well Sampling Record (Form 3).
- Matrix Spike/Matrix Spike Duplicates (MS/MSDs) – One MS/MSD will be collected during each sampling event to test the potential effects of matrix interference on the laboratory results. To reduce the possible adverse impact to the laboratory equipment, wells selected for the MS/MSD samples will be those that historically have shown low or non-detect constituent concentrations (to the extent practical). The sample is collected as a triplicate (the original sample plus two additional sets). The matrix spike sample will be labeled with the well number followed by an “MS”. Similarly, the matrix spike duplicate will be labeled with the well number followed by “MSD”.
- Field Blank - One field blank sample will be collected for each sampling event. Field blank samples provide information about potential contamination of the samples during exposure to ambient conditions at the site during sample collection. Field blanks will be

prepared at a specified well site by pouring commercially-available distilled water into sample bottles and vials in the same quantities as the groundwater samples. The samples should be labeled appropriately and stored in the same manner as the groundwater samples.

- Equipment Blank – An equipment blank sample will be collected during the groundwater sampling event only if non-dedicated sampling equipment is used. After the non-dedicated equipment has been cleaned and rinsed (see Section 9.0 for decontamination procedures), distilled water will be passed over (e.g., poured over) the decontaminated equipment and the water will be collected in appropriate sample containers. The equipment blanks will be analyzed for the same suite of parameters as the monitoring well samples. Equipment blanks will not be collected if dedicated equipment is used for sample collection.

6. SAMPLE PACKING AND SHIPPING

Samples for chemical analyses will be placed into the correct laboratory-supplied sample containers, labeled appropriately, and immediately placed in a cooler with ice. The field sampler will document the appropriate information on the chain-of-custody form (see Section 3.3 for details). Prior to packing coolers and shipping to the laboratory, the outside surfaces of the sample containers will be cleaned if necessary (by wiping carefully with a paper towel) and repacked in the cooler. Sample containers will not be opened after they have been sealed. The containers will be placed inside a sealed plastic Ziploc-style bag and will then be placed in coolers containing sufficient ice (or packs of frozen gel) to maintain a sample temperature of approximately 4° C. Sample coolers should be lined with a new, large plastic trash bag to reduce the potential of melt water leaks. Care must be taken to avoid leakage of water from melted ice because overnight delivery service (e.g., FedEx) will not accept leaking coolers.

The sampler will be responsible for properly packaging and dispatching samples to the analytical laboratory. This responsibility includes using the proper shipping container, shipping labels, shipping papers, and filling out, dating, and signing the appropriate portion of the chain-of-custody form. Samples will be packed with cushioning material sufficient to reduce the potential for breakage of glass sample containers during transport. The chain-of-custody form will be placed inside a sealed plastic Ziploc-style bag and the bag placed inside the cooler on top of the cushioning material.

If a laboratory with a local or nearby field-service center is contracted to perform analytical services, samples and coolers will be transported directly to the laboratory service-center or to a secure drop-off location by field personnel on the same day as sampling. The insulated coolers containing groundwater samples will be delivered to or picked-up by the laboratory and signed over to the laboratory personnel in accordance with chain of custody procedures for storage and analysis.

If a distant laboratory is contracted to perform analytical services, then samples and coolers will be shipped via overnight delivery service (e.g., FedEx). Shipments will be accompanied by the chain-of-custody form and it will be sealed in an airtight, resealable plastic bag inside the cooler. The cooler will be taped shut with clear packaging tape and a tamper-evident custody seal will be attached across the lid. This seal will only be broken by the recipient at the laboratory.

7. ANALYTICAL PROCEDURES

Groundwater samples collected under the Detection Monitoring Program will be analyzed for the constituents in Appendix III to Part 257, including boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS). Groundwater samples collected under the Assessment Monitoring Program will be analyzed for the constituents listed in Appendix III to Part 257, including boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS) and for the constituents listed in Appendix IV to Part 257 including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium and radium 226 & 228 combined. IDW samples (further described in Section 9.0) will be analyzed for the constituents specified in Table. A NELAC-accredited laboratory will perform the groundwater analyses.

Groundwater analyses will be performed in accordance with the most recent edition of Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA SW 846), ASTM Standard Test Methods, or other EPA-approved methods. Detection limits will be those recommended for the procedure and analytical instrument specified.

8. QUALITY ASSURANCE

This section briefly summarizes the quality assurance measures during field and laboratory activities associated with groundwater monitoring.

8.1 FIELD QUALITY ASSURANCE

Sample collection will be conducted according to the procedures outlined in Section 5.2. These procedures are designed to minimize potential sources of contamination and include the following key elements:

- Using dedicated or disposable tubing for each well to reduce the potential for cross-contamination between wells.
- Completing purging using low-flow (micropurge) sampling techniques. If the screened water-bearing unit has low hydraulic conductivity that results in drawdown greater than the guidelines for low-flow sampling, the well should be allowed to recover to at least 80 percent of the static water level prior to sampling.

- Using duplicates, matrix spikes, matrix spike duplicates, field blanks, and equipment blank samples to assess potential cross-contamination during sample collection, transport, and analysis as well as providing a check on the data quality from the laboratory (see Section 5.3).
- Handling samples, preservatives, and sample containers carefully to minimize exposure time and potential for evaporative loss and/or airborne contamination.
- Using containerized ice whenever possible to maintain 4°C sample temperatures during transit and cushioning materials to minimize breakage.

8.2 LABORATORY QUALITY ASSURANCE

The laboratory documentation system will comply with the requirements of the USEPA analytical protocols, as appropriate. The laboratory will perform internal QC checks for the analytical method. Depending on the analytical method, the QC checks may include analyzing sample spikes, surrogate spikes, reference samples, laboratory control samples, storage blanks, and/or method blanks.

The laboratory will document internally that instrument and analytical QC criteria have been met. The data package will contain all of the information required to evaluate compliance with the analytical methods' required and recommended QC checks, instrument tuning, calibration, and sample analysis. If errors or deficiencies are identified in an analytical system, corrective actions are implemented to return the system to normal operation.

8.3 DATA REVIEW AND EVALUATION

A data validation will be performed to assess whether the dataset meet the project requirements in terms of following the appropriate analytical methods, sample locations, and sampling procedures. All sample collection procedures and laboratory reports will be reviewed to verify that the field and laboratory QA/QC requirements have been met.

The final reportable data, laboratory checklist, associated exception report(s), laboratory quality control data, and chain-of-custody will be reviewed in accordance with applicable EPA guidance, including, but not limited to the National Functional Guidelines for Inorganic Superfund Data Review (EPA 540-R-013-001), August 2014. Data precision and accuracy will be assessed based on control limits of 70-130% for laboratory control samples (except for antimony which will be assessed based on control limits of 50-150%) and 75-125% for spike sample analysis. A control limit of 20% for the relative percent difference (RPD) shall be used for original and duplicate sample values.

9. DECONTAMINATION AND WASTE MANAGEMENT

This section of the SAP provides information about equipment cleaning procedures and management of IDW during monitoring events.

9.1 EQUIPMENT DECONTAMINATION PROCEDURES

The decontamination of sampling equipment is necessary to reduce the potential for the spread of constituents to clean areas, to reduce exposure of personnel to constituents of concern, and to reduce the potential cross-contamination when equipment is used more than once. The water level indicator will be rinsed with deionized water between wells, or cleaned with Alconox® or other equivalent solution and rinsed with deionized water as necessary.

To reduce the potential for cross-contamination between monitoring wells during purging and sampling, well-dedicated or disposable equipment will be used to the extent practical. If non-dedicated pumps, discharge, and safety lines are used at a well, such equipment will be washed with non-phosphate detergent and distilled water solution, then rinsed with distilled water.

9.2 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

Common IDW from the groundwater sampling events are purge water, decontamination water, and trash (i.e., non-reusable plastic tubing, nitrile gloves, paper towels, etc.).

Well purge water will be discarded on the ground away from the well. Collection of purge water is not necessary. Collection of decontamination water is not necessary either and should be discarded in the same manner as the purge water.

Disposable equipment and supplies (i.e., domestic trash) will be placed in heavy duty plastic bags and the full bags placed in facility-designated receptacles. If it becomes necessary to place affected materials in a 55-gallon DOT-approved drum(s), then the drums will be labeled and secured. Further management of the drums and containerized waste will be handled by CWLP. Disposal may also occur at other receptacles managed by CWLP.

ATTACHMENT 1:
MONITORING WELL FORMS

FORM 1:
MONITORING WELL GAUGING RECORD

FORM 1

MONITORING WELL GAUGING RECORD
Groundwater Monitoring Program
City Water, Light, and Power
Springfield, Illinois

PROJECT INFORMATION
City Water, Light and Power
Springfield, Illinois
CCR Unit Groundwater Monitoring
Sampler(s):
Date:
Weather Conditions:

GAUGING RECORD
Measuring Pont: Top of Casing
Instrument ID:

Well ID	Depth To Water (ft)	Total Depth (ft)	Notes

FORM 2:
MONITORING WELL INSPECTION RECORD

FORM 2

MONITORING WELL INSPECTION RECORD
Groundwater Monitoring Program
City Water, Light, and Power
Springfield, Illinois

PROJECT INFORMATION	
City Water, Light and Power	
Springfield, Illinois	
CCR Unit Groundwater Monitoring	
Sampler:	Signature:
Company:	Date/Time:
WELL ID	
Stick-Up: ☐	
Flush-Mounted ☐	
Is the well site clear of weeds and debris? Comment:	Yes No
Has the grass been mowed? Comment:	Yes No
Are there bollards or protective barriers around the well? Comment:	Yes No
Is the well identification clearly visible and in good condition? Comment:	Yes No
Is the protective casing or vault in good condition? Comment:	Yes No
Is the protective casing (or vault) equipped with a protective cap? Comment:	Yes No
Does the well have a concrete pad? Comment:	Yes No
If yes, what is the condition of the pad? Comment:	Good Cracked Broken
What is the condition of the inner casing? Comment:	Good Cracked Broken
Does the inner casing have a cap? Comment:	Yes No
Is the well locked? Comment:	Yes No
If yes, what is the condition of the lock? Comment:	Yes No
Is the annulus between the inner and outer casing free of standing water? Comment:	Yes No
Is the survey measuring point marked on the TOC? Comment:	Yes No
Expected Depth of Well:	
Measured Depth of Well:	
General Observations:	

FORM 3:
MONITORING WELL SAMPLING RECORD

FORM 3

MONITORING WELL SAMPLING RECORD
Groundwater Monitoring Program
City Water, Light, and Power
Springfield, Illinois

PROJECT INFORMATION
City Water, Light and Power
Springfield, Illinois
CCR Unit Groundwater Monitoring
Well ID:
Well Diameter:
Sampler(s):
Date:
Weather Conditions:

INITIAL MEASUREMENT	
Measuring Pont: Top of Casing	Water Column Ht. (H1=D2-D1):
Measuring Point Elevation:	Max. Drawdown (D1+0.33 ft):
Depth to Water (D1):	DTW at 80% Rec. (D2-(0.8xH1):
Total Well Depth (D2):	Tubing Intake Depth:

PURGING RECORD								
Purge Method:				Instrument ID:				
Time (Hr:Mn)	**Pump Rate (mL/min)**	**DTW (ft below TOC)**	**Temp (°C)**	**pH (Std Units)**	**ORP (mV)**	**SC (mS/cm2)**	**DO (mg/L)**	**Turbidity (NTU)**
Stabilization Criteria		± 0.3 ft	-	± 0.1 Units	± 10 mV	± 3%	± 10%	± 10%
				Total groundwater purged (gallons):				

SAMPLING RECORD		
Analysis Requested	Container/Preservative	Sample Date/Time:
		Sampling Remarks:

NOTE: For the purposes of sample turbidity, if a turbidity less than 10 nephelometric turbidity units (NTUs) cannot be achieved, then a secondary, backup criteria be set at less than 10% change between the final three is acceptable.