Ex. 37

City Water, Light & Power
Coal Combustion Residuals Surface Impoundments

Annual Groundwater Monitoring and Corrective Action Report Year Ending December 31, 2022

January 2023

Prepared for:
City Water, Light & Power
201 E. Lake Shore Drive
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1. INTRODUCTION

In accordance with 35 Ill. Adm. Code 845.550(a)(3) provided herein is the Annual Groundwater Monitoring and Corrective Action Report for year ending December 31, 2022. Pursuant to Section 845.610(e)(1), the Annual Groundwater Monitoring and Corrective Action Report must be included as part of the annual consolidated report required by Section 845.550.

City Water, Light and Power (CWLP) owns and operates two (2) existing coal combustion residual (CCR) surface impoundments. 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. 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 lime softening ponds and a settling pond) totaling approximately 35.0 acres. 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.

Status of the Groundwater Monitoring and Corrective Action Programs

Pursuant to Section 610(e)(4), the annual report must provide an overview of the groundwater monitoring program and corrective action plan. The summary must:

A) Specify whether groundwater monitoring data shows a statistically significant increase over background concentrations for one or more constituents listed in Section 845.600;

Groundwater monitoring data for 2022 exhibits a statistically significant increase (SSI) over background concentrations for multiple constituents listed in Section 845.600.

B) Identify those constituents having a statistically significant increase over background concentrations and the names of the monitoring wells associated with the increase;

The constituents and wells that exhibit an SSI over background concentrations are:

Parameter	*AP-1*	*AP-2*	*AP-3*	*AP-4*	*AP-5*	*AP-6*	*AP-7*	*AP-8*	*AP-9*	*AP-10*	*AP-11*	*AP-12*	*AP-13*	*AP-14*	*RW-3*
Arsenic, total															*X*
Calcium, total	*X*	*X*										*X*		*X*	

C) Specify whether there have been any exceedances of the groundwater protection standards for one or more constituents listed in Section 845.600;

Groundwater monitoring data for 2022 exhibits a SSI of the groundwater protection standards (GWPS) for multiple constituents listed in Section 845.600.

D) Identify those constituents with exceedances of the groundwater protection standards in Section 845.600 and the names of the monitoring wells associated with the exceedance;

The constituents that exhibit an SSI of a GWPS are:

Parameter	*AP-1*	*AP-2*	*AP-3*	*AP-4*	*AP-5*	*AP-6*	*AP-7*	*AP-8*	*AP-9*	*AP-10*	*AP-11*	*AP-12*	*AP-13*	*AP-14*	*RW-3*
Boron, total	*X*	*X*	*X*							*X*				*X*	
pH		*X*										*X*			
Sulfate, total	*X*	*X*	*X*									*X*		*X*	
TDS	*X*	*X*										*X*		*X*	

E) Provide the date when the assessment of corrective measures was initiated for the CCR surface impoundment;

The assessment of corrective measures was initiated May 2021.

F) Provide the date when the assessment of corrective measures was completed for the CCR surface impoundment

An assessment of alternatives containing an assessment of corrective measures and closure alternatives analysis was completed and posted on the facility's CCR compliance website on October 25, 2021. A public meeting was held on December 2, 2021 to present the closure alternatives and corrective action analysis and to receive and respond to public comments. Based on the assessment of closure alternatives it has been determined that closure-in-place with a final cover system is most appropriate.

As provided in Section 845.660(e), the owner/operator may combine the corrective measures assessment and the closure alternatives analysis into one assessment of alternatives. The groundwater monitoring program has identified constituent concentrations in downgradient wells that require implementation of assessment of corrective measures. The facility anticipates conducting closure activities simultaneously with corrective action based on results from groundwater sampling and analyses.

G) Specify whether a remedy was selected under Section 845.670 during the current annual reporting period, and if so, the date of remedy selection; and

Pursuant to Section 845.710 closure of the surface impoundments may be completed by either:

- leaving the CCR in place and installing a final cover system, or;
- through removal of the CCR and decontamination of the surface impoundments.

At this time, CWLP has chosen closure in place with a final cover system as the most appropriate remedy. CWLP submitted a construction permit application for closure by installing a final cover system pursuant to Section 845.750 on February 1, 2022. This application is currently under review by the Illinois EPA.

H) Specify whether remedial activities were initiated or are ongoing under Section 845.780 during the current annual reporting period.

In April 2019, CWLP submitted notification of intent to comply with the Alternative Closure Requirements of 40 CFR 257.103(a) since no alternative disposal capacity is currently available. Since then, CWLP has shut down Dallman Units 31, 32 and 33. The lime sludge ponds associated with the water purification plant must be relocated and operational prior to completion of the closure at the Lakeside Ash Pond. CWLP began construction of the new lime sludge ponds in spring of 2022. It is anticipated the lime sludge ponds will be complete by October 2023, at that point closure of both the Dallman and Lakeside Ash Ponds can begin.

CWLP submitted a request to USEPA for approval of a site-specific alternative deadline in November 2020 to initiate closure pursuant to 40 CFR 257.103(f)(1). CWLP is requesting an extension to allow the Lakeside and Dallman ash ponds to continue to receive CCR and non-CCR waste streams in order to complete the retirements of Dallman Units 31, 32 and 33 and relocate the CWLP Drinking Water Purification Plant lime sludge ponds, which are currently located on the Lakeside Ash Pond. As of the end of 2022, USEPA had made no final determination on the request.

2. GROUNDWATER MONITORING PROGRAM

As required Section 845.650(a), CWLP prepared and placed into the facility record a Groundwater Monitoring Program for the CCR surface impoundments on October 28, 2021. The current monitoring network includes two upgradient wells (wells AP-4 and AP-5) and thirteen downgradient wells (AP-1A, AP-2R, AP-3, AP-6, AP-7, AP-8, AP-9, AP-10, AP-11, AP-12, AP-13, AP-14 and RW-3). Wells AP-7, AP-9, AP-11, AP-12 and AP-13 are compliance boundary wells. The well locations are depicted in Figure 2.

A Groundwater Monitoring System Certification has been provided for the Groundwater Monitoring Program, placed in the site record and uploaded to the facility Illinois CCR Compliance website - https://www.cwlp.com/IllinoisCCRCompliance.aspx.

The following sections of the report address the annual groundwater monitoring and corrective action report requirements outlined in Section 845(e)(2) and (3).

3. SECTION 845.610(E)(2): KEY ACTIONS, PROBLEMS ENCOUNTERED, AND KEY ACTIVITIES FOR 2022

3.1 Key Actions

The following items identify key actions that occurred in 2022 specifically related to the Groundwater Monitoring Program.

3.1.1 Assessment Monitoring

In accordance with Section 845.660(a) CWLP has initiated an assessment of corrective measures in response to the statistically significant increase (SSI) over background concentrations or the groundwater quality standards for one or more parameters listed in Section 845.600(a). Pursuant to Section 845.660(b), CWLP shall continue to monitor groundwater in accordance with the monitoring program as specified in Section 845.650.

Assessment monitoring, which includes all Section 845.600(a) parameters, calcium and turbidity, continued throughout 2022 for all wells in the groundwater monitoring system. The monitoring data is provided in Appendix C.

3.1.2 Assessment Monitoring Investigation

Pursuant to Section 845.650(d)(1), the nature and extent of affected groundwater must be determined such that potential remedies can be evaluated and selected, if necessary. Characterization of the nature and extent of affected groundwater is regulated pursuant to Section 845.650(d)(1)(A-D).

Seven wells were installed in February 2021 to augment the monitor well network and evaluate exceedances of the GWPSs, all in conformance with Section 845.650(d)(1). Wells AP-10 and AP-14 were installed along the west side of the impoundments and compliance boundary wells AP-9, AP-11, AP-12 and AP-13 were installed west of the creek.

GWPS exceedances have been consistently observed and confirmed in six downgradient wells (AP-1A, AP-2R, AP-3, AP-10, AP-14 and RW-3) and one compliance boundary well (AP-12) during the 2022 quarterly groundwater sampling events (see Table 1).

Pursuant to 35 Ill. Adm. Code 845.650(d) CWLP has submitted notification of the exceedances of the GWPS to the Illinois EPA and posting each notification to their Illinois EPA CCR Compliance web page (https://www.cwlp.com/IllinoisCCRCompliance.aspx).

An alternate source demonstration pursuant to 35 Ill. Adm. Code 845.650(e) was submitted to the Illinois EPA on September 12, 2022 to address the exceedances observed at monitoring well AP-12. The remaining exceedances (i.e., at wells AP-1A, AP-2R, AP-3, AP-10, AP-14 and RW-3) have been delineated pursuant to 35 Ill. Adm. Code 845.650(d)(1). The alternate source demonstration is currently under review by the Illinois EPA.

Assessment monitoring data collected for the 2022 quarterly sampling events are provided in tabular format in Appendix C. The data includes the sample dates and identifies the Section 845.600 parameters.

Assessment monitoring shall continue at the CWLP CCR surface impoundments pursuant to Section 845.660(b).

3.2 Assessment of Corrective Measures

As provided in Section 845.660(e), the owner/operator may combine the assessment of corrective measures and the closure analysis into one assessment of closure alternatives. The groundwater monitoring program has identified constituent concentrations in downgradient wells that require implementation of assessment of corrective measures. The facility anticipates conducting closure activities simultaneously with corrective action based on results from groundwater sampling and analyses. The assessment of corrective measures has been conducted pursuant to Section 845.660 and is incorporated into the assessment of alternatives pursuant to Section 845.660(e).

Pursuant to Section 845.700(b) the surface impoundments must either retrofit and/or close, which are the long term corrective measures. The closure alternative analysis was completed and posted to the facility website on October 25, 2021. A public meeting was held on December 2, 2021 to present the closure alternatives assessment and assessment of corrective measures and to receive and respond to public comments. Based on the assessment of closure alternatives it

has been determined that closure-in-place with a final cover system is most appropriate. Once the ash impoundments are capped, it will take approximately 13 years to achieve the groundwater protection standards.

Both of these assessments were submitted to the Illinois EPA on February 1, 2022 as part of the closure construction permit application prepared pursuant to Section 845.700(c), and containing a final closure plan in accordance with the application schedule under Section 845.700(h). This permit application is currently under review by the Illinois EPA,

3.3 Problems Encountered

All activities which occurred in 2022 are discussed in Section 3.1 and 3.2 above. No problems were encountered.

3.4 Key Activities for Upcoming Year (2023)

Assessment monitoring shall continue at the CWLP CCR surface impoundments pursuant to Section 845.660(b).

The lime sludge ponds associated with the water purification plant must be relocated and operational prior to completion of the closure at the Lakeside Ash Pond. CWLP began construction of the new lime sludge ponds in spring of 2022. It is anticipated that construction of the lime sludge ponds will be completed by October 2023, at that point closure of both the Dallman and Lakeside Ash Ponds can begin.

4. SECTION 845.610(E)(3)(A-F)

Additional requirements for the Annual Groundwater Monitoring and Corrective Action Report are detailed in Section 854.610(e)(3)(A-F). Each of the requirements is reproduced below along with the response.

A. A map, aerial image, or diagram showing the CCR surface impoundment, all background (or upgradient) and downgradient monitoring wells, including the well identification numbers, that are part of the groundwater monitoring program for the CCR surface impoundment, and a visual delineation of any exceedances of the groundwater protection standards.

Maps depicting the CCR surface impoundments, all background and downgradient monitoring wells and delineation of the identified exceedances of the groundwater protection standards are provided in Appendix A.

B. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.

No CCR surface impoundment monitoring wells were installed or decommissioned in 2022.

C. A potentiometric surface map for each groundwater elevation sampling event required by Section 845.650(b)(2).

Potentiometric surface maps for each of the monthly sampling events are provided in Appendix B.

As depicted on the potentiometric surface maps, groundwater generally flows radially from the CCR surface impoundment locations with an overall northerly groundwater flow.

D. In addition to all the monitoring data obtained under this Subpart, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, and the dates the samples were collected.

Pursuant to Section 845.650(b)(1), groundwater samples are collected on a quarterly basis. The analytical results for the parameters at Section 845.600(a), calcium, and turbidity for each of the quarterly groundwater sampling events are provided in Appendix C.

E. A narrative discussion of any statistically significant increases over background levels for the constituents listed in Section 845.600; and

Sampling and analyses has occurred at each of the wells listed above for the parameters identified in Section 845.600(a)(1) including calcium and turbidity (see Appendix C). The results of 2022 quarterly sampling indicate exceedance of the GWPSs for seven parameters: arsenic, boron, calcium, sulfate, pH and TDS. A summary table of the exceedances is provided as Table 1. The exceedances of the GWPSs for these parameters are discussed below.

Arsenic, total

The background for total arsenic (0.0724 mg/L) was exceeded at downgradient groundwater monitoring well RW-3 during the first, second, third and fourth quarter groundwater sampling events for 2022. The total arsenic concentrations at well RW-3 reported for the first, second, third and fourth quarter of 2022 were 0.178 mg/L, 0.138 mg/L, 0.11 mg/L and 0.142 mg/L, respectively.

Groundwater monitoring well AP-6 and compliance boundary well AP-7, installed at distances of 83 and 298 feet downgradient of RW-3, respectively have exhibited no exceedances of the groundwater protection standard for total arsenic.

Total arsenic concentrations at well RW-3 have historically been above the statistically derived background groundwater concentration with no upward or downward trend. The concentrations at this location appear to be related to some spatial variation. Total arsenic concentrations are typically low to non-detect (<0.025 mg/L) in other downgradient groundwater monitoring wells.

Boron, total

Total boron has historically been detected at all groundwater monitoring wells, except upgradient well AP-5, above the method detection limit (0.02 mg/L). Total boron exceeded the GWPS (2 mg/L) at downgradient groundwater monitoring wells AP-1A, AP-2R, AP-3 and AP-14 during each of the quarterly groundwater sampling events for 2022. At well AP-10 the total boron GWPS was exceeded for the second, third and fourth quarters of 2022.

For the first, second, third and fourth quarters of 2022 respectively, the concentrations of total boron in at well AP-1A were 22.3, 23.1, 22.1 and 21.4 mg/L; at well AP-2R were 4.68, 4.25, 4.32 and 4.08 mg/L; at well AP-3 were 16.7, 14.7, 14.8/3.52 and 14.6 mg/L. For the second, third and fourth quarters of 2022 at well AP-10 the concentrations were 3.58, 3.52 and 3.35 mg/L; and at well AP-14 were 23.1, 23.3, 21.8 and 21.3 mg/L, respectively.

Groundwater monitoring wells AP-9, AP-11, AP-12 and AP-13 are located adjacent to the impoundments but on the opposite bank of Sugar Creek. The analytical results for compliance

boundary wells AP-9, AP-11, AP-12 and AP-13 demonstrate that total boron groundwater concentrations exceeding the GWPS do not extend laterally beyond the limits of Sugar Creek.

The concentrations of total boron at wells AP-1A, AP-2R, AP-3, AP-10 and AP-14 have consistently been above the GWPS with no upward or downward trend.

Calcium, total

The calculated background for total calcium (176.63 mg/L) was exceeded at downgradient groundwater monitoring wells AP-1A, AP-2R, AP-12 and AP-14. For the first, second, third and fourth quarters of 2022 at well AP-1A the concentrations were 245, 243, 239 and 242 mg/L; at well AP-2R the concentrations were 265, 236, 241 and 248 mg/L; at well AP-12 the concentrations were 201, 287, 266 and 260 mg/L; and at well AP-14 the concentrations were 225, 215, 217 and 236 mg/L, respectively.

Total calcium concentrations at wells AP-1A, AP-2R, AP-12 and AP-14 are consistent with historical concentrations. There does not appear to be any upward or downward trend. It should be pointed out that the concentrations at AP-12, located on the bank of Sugar Creek opposite the CCR surface impoundment are consistently higher than the concentrations of calcium observed in monitoring wells located adjacent to the CCR surface impoundments. This supports the conclusion of the September 12, 2022 alternate source demonstration that the GWPS exceedances observed at compliance boundary well AP-12 are unrelated to the CCR surface impoundments. The September 12, 2022 alternate source demonstration is still under review by the Illinois EPA.

Sulfate, total

The groundwater protection standard for total sulfate (84.5 mg/L) was exceeded at downgradient groundwater monitoring wells AP-1A, AP-2R, AP-3, AP-12 and AP-14 during year 2022 groundwater sampling events. The respective concentrations for the first, second, third and fourth quarters of 2022 at well AP-1A were 732, 791, 753 and 777 mg/L; at well AP-2R were 583, 532, 545 and 643 mg/L; at well AP-12 were 402, 678, 607 and 691 mg/L; and at well AP-14 were 670, 681, 639 and 736 mg/L. At well AP-3 the GWPS standard was exceeded for the first, second and fourth quarters of 2022 with reported concentrations of 410, 408 and 444 mg/L, respectively.

Total sulfate concentrations at wells in wells AP-1A, AP-2R, AP-3, AP-12 and AP-14 are consistent with historical concentrations. There does not appear to be any upward or downward trend.

pH (Field)

The field measured water quality parameter pH was observed outside of the groundwater protection standard (6.5 to 9 pH units) at wells AP-2R and AP-12. At well AP-2R pH for the first, second and third quarters of 2022 were 6.43, 6.43 and 6.45, respectively. At well AP-12, the GWPS for pH was exceeded only during the second quarter of 2022 with a reported pH of 6.44.

The parameter pH has historically been reported at wells AP-2R just below the range of the statistically derived background pH range.

Total Dissolved Solids

Total dissolved solids (TDS) were reported at concentrations exceeding the groundwater protection standard (1200 mg/L) at downgradient monitoring wells AP-1A, AP-2R, AP-12 and AP-14 for the 2022 review period. TDS concentrations at AP-1A were 1490, 1550, 1550 and 1540

mg/L for the first, second, third and fourth quarters of 2022, respectively. At well AP-2R, TDS concentrations were 1310, 1270, 1360 and 1310 mg/L for the first, second, third and fourth quarters 2022, respectively. At well AP-12, the TDS concentrations reported for the second, third and fourth quarters of 2022 were 1600, 1540 and 1440 mg/L, respectively. At well AP-14, the TDS concentration reported for the first, second, third and fourth quarters of 2022 were 1240, 1340, 1390 and 1380 mg/L, respectively.

TDS concentrations in wells AP-1A and AP-2R have historically been elevated. TDS is the sum of the cations and anions in the water. TDS provides a qualitative measure of the amount of dissolved ions but not the nature or ion relationships. The elevated TDS in these wells is likely an indicator of the higher boron, calcium, chloride and sulfate concentrations detected in these wells.

The elevated TDS concentrations at compliance boundary well AP-12 are similarly attributed to elevated cation and anion concentrations in groundwater. However, the TDS concentrations at AP-12 do not appear to be attributed to the CCR surface impoundments but to offsite sources west of Sugar Creek.

F. Other information required to be included in the annual report as specified in 35 Ill. Adm. Code 845.Subpart F.

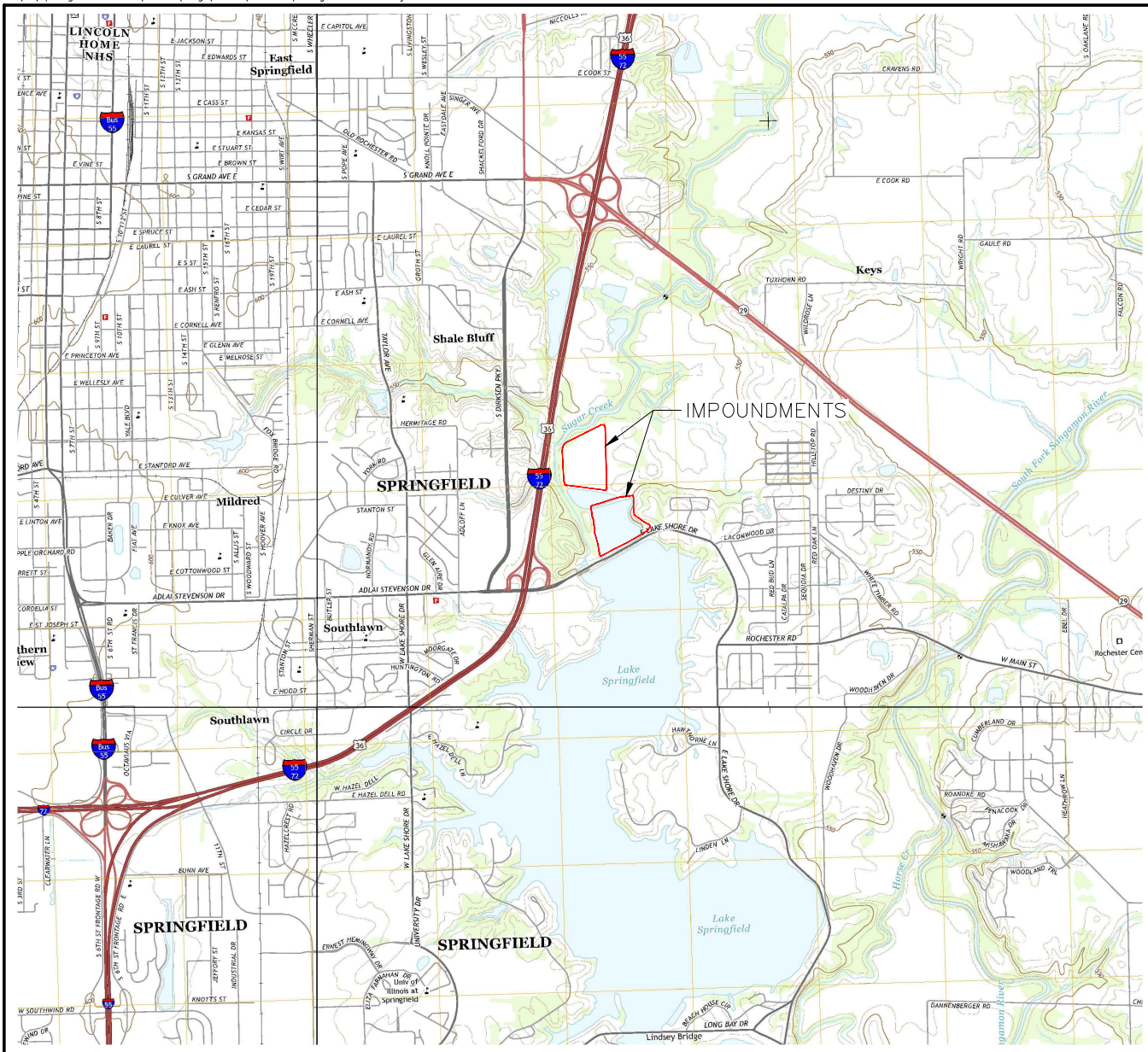
All applicable information has been provided in the narrative above.

5. CONCLUSION

This annual groundwater monitoring and corrective action report has been provided in accordance with Section 845.550(a)(3). The next annual report for monitoring year 2023 will be provided by January 31, 2024.

FIGURES

J:\S\Springfield CWLP\CWLP\dwg\2021\Site Map.dwg Tab: Layout1





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0 200 4000 8000

SCALE: IN FEET

NOTE:
BACKGROUND IMAGE COURTESY OF UNITED STATES GEOLOGICAL SURVEY.

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APPROVED BY: BJH | DESIGNED BY: BJH | DRAWN BY: MPN

SITE LOCATION

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

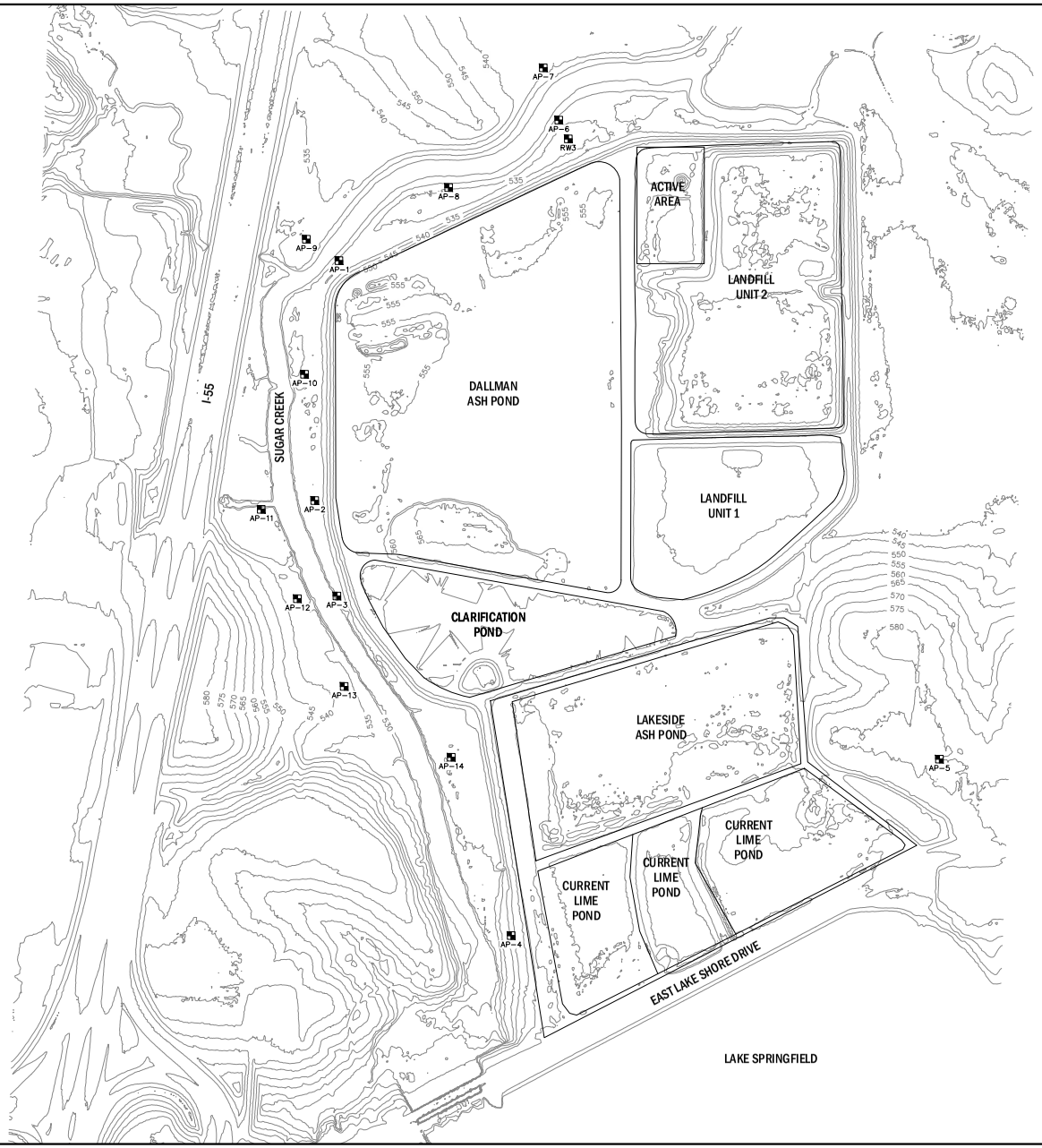
DATE: JANUARY 2023

PROJECT ID: 200387/0026

SHEET NUMBER:

FIGURE 1

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LEGEND

MONITORING WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).

N

0 200 400 800

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NO.	DATE	REVISION DESCRIPTION	BY

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

SITE DETAILS MAP

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

DATE: JANUARY 2023

PROJECT ID: 200387/0003

SHEET NUMBER:

FIG 2

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Tab: SITE DETAILS MAP Last Saved: January 24, 2023, by Ben Korpus Plotted: Tuesday, January 24, 2023 10:52:38 AM
J:\S\Springfield CMLP\CMLP Ash Pond\DWG\2022\PMAPS\Potentiometric Surface Maps.dwg

TABLE

City Water, Light and Power
Power Plant Ash Impoundment
2022 Groundwater Analytical Results Exceedance Summary Table

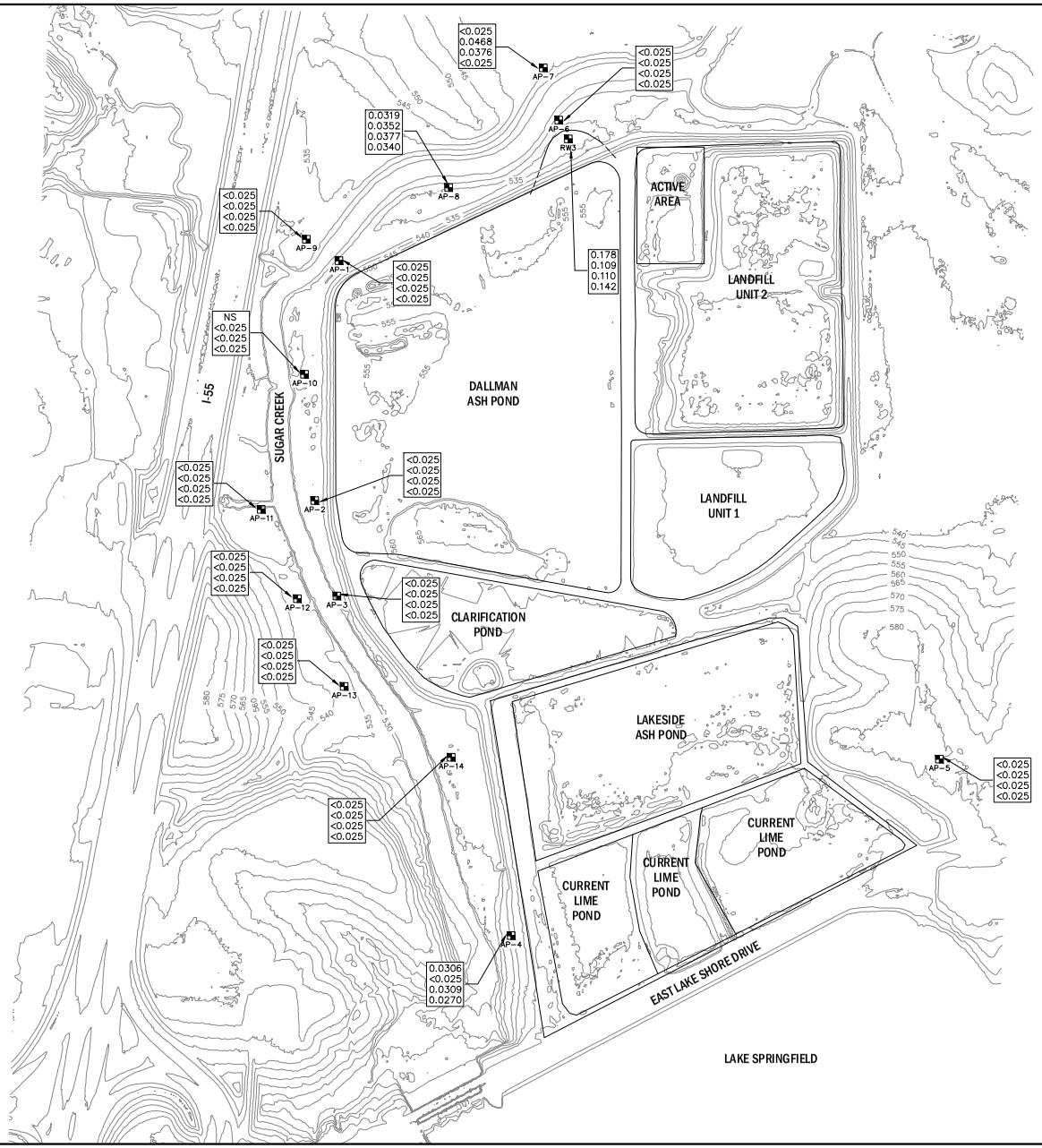
Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AW-3/RW-3	Arsenic, total	mg/l	0.01	0.0724	0.0724	0.178	0.109	0.11	0.142
AP-1	Boron, total	mg/l	2	0.787	2	22.3	23.1	22.1	21.4
AP-2	Boron, total	mg/l	2	0.787	2	4.68	4.25	4.32	4.08
AP-3	Boron, total	mg/l	2	0.787	2	15.8	14.7	14.8	14.6
AP-10	Boron, total	mg/l	2	0.787	2		3.58	3.52	3.35
AP-14	Boron, total	mg/l	2	0.787	2	23.1	23.3	21.8	21.3
AP-1	Calcium, total	mg/l	na	176.63	176.63	245	243	239	242
AP-2	Calcium, total	mg/l	na	176.63	176.63	265	236	241	248
AP-12	Calcium, total	mg/l	na	176.63	176.63	201	287	266	260
AP-14	Calcium, total	mg/l	na	176.63	176.63	225	215	217	236
AP-2	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.43	6.43	6.45	6.52
AP-12	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.53	6.44	6.56	6.6
AP-1	Sulfate, total	mg/l	400	84.5	400	732	791	753	777
AP-2	Sulfate, total	mg/l	400	84.5	400	583	532	545	643
AP-3	Sulfate, total	mg/l	400	84.5	400	410	408	384	444
AP-12	Sulfate, total	mg/l	400	84.5	400	402	678	607	691
AP-14	Sulfate, total	mg/l	400	84.5	400	670	681	639	736
AP-1	Total Dissolved Solids	mg/l	1200	597.94	1200	1490	1550	1550	1540
AP-2	Total Dissolved Solids	mg/l	1200	597.94	1200	1310	1270	1360	1310
AP-12	Total Dissolved Solids	mg/l	1200	597.94	1200	998	1600	1540	1440
AP-14	Total Dissolved Solids	mg/l	1200	597.94	1200	1240	1340	1390	1380

Notes:

1. The 35 Ill. Adm. Code 845.600 list requires Radium-226 and Radium-228 combined. The established MCL is for the combined parameters. However, these parameters require two separate analysis and have been reported separately by the analytical laboratory. The sum of the values has been provided and compared to the MCL.

APPENDIX A

2022 GWPS EXCEEDANCE MAPS



LEGEND

- MONITORING WELL
- Q1 – 02/16/2022
  Q2 – 05/31/2022
  Q3 – 08/23/2022
  Q4 – 11/8/2022
  DATA CALLOUTS
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. ARSENIC, TOTAL: BACKGROUND = 0.0724 mg/L
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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

ARSENIC GW EXCEEDANCE MAP 2022

PREPARED FOR

CITY WATER, LIGHT, ANS POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

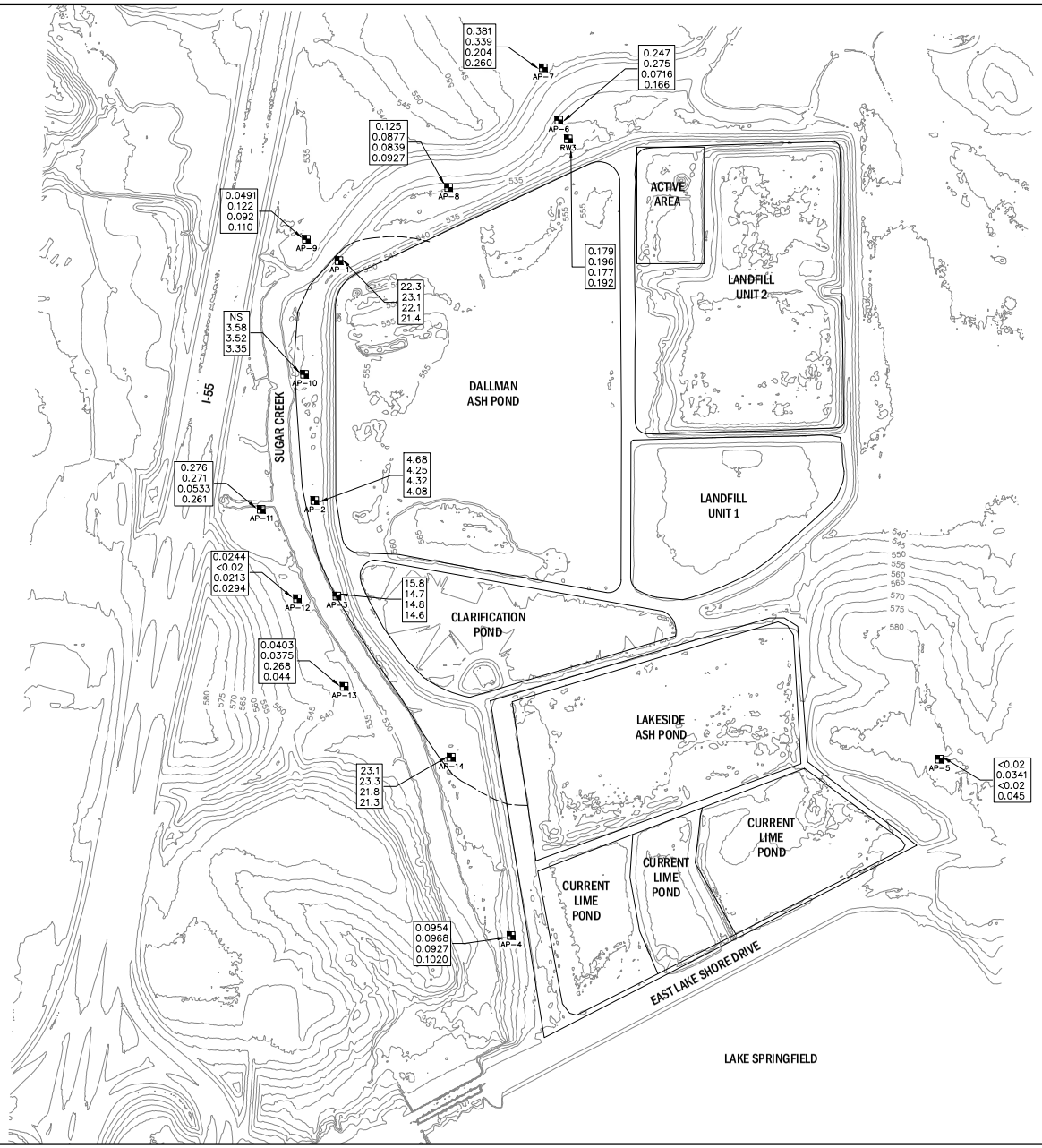
DATE: JANUARY 2023

PROJECT ID: 200387/0003

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LEGEND

- MONITORING WELL
- Q1 – 02/16/2022
  Q2 – 05/31/2022
  Q3 – 08/23/2022
  Q4 – 11/8/2022
  DATA CALLOUTS
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. BORON, TOTAL: GWPS = 2 mg/L
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

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

BORON GW EXCEEDANCE MAP 2022

PREPARED FOR

CITY WATER, LIGHT, ANS POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

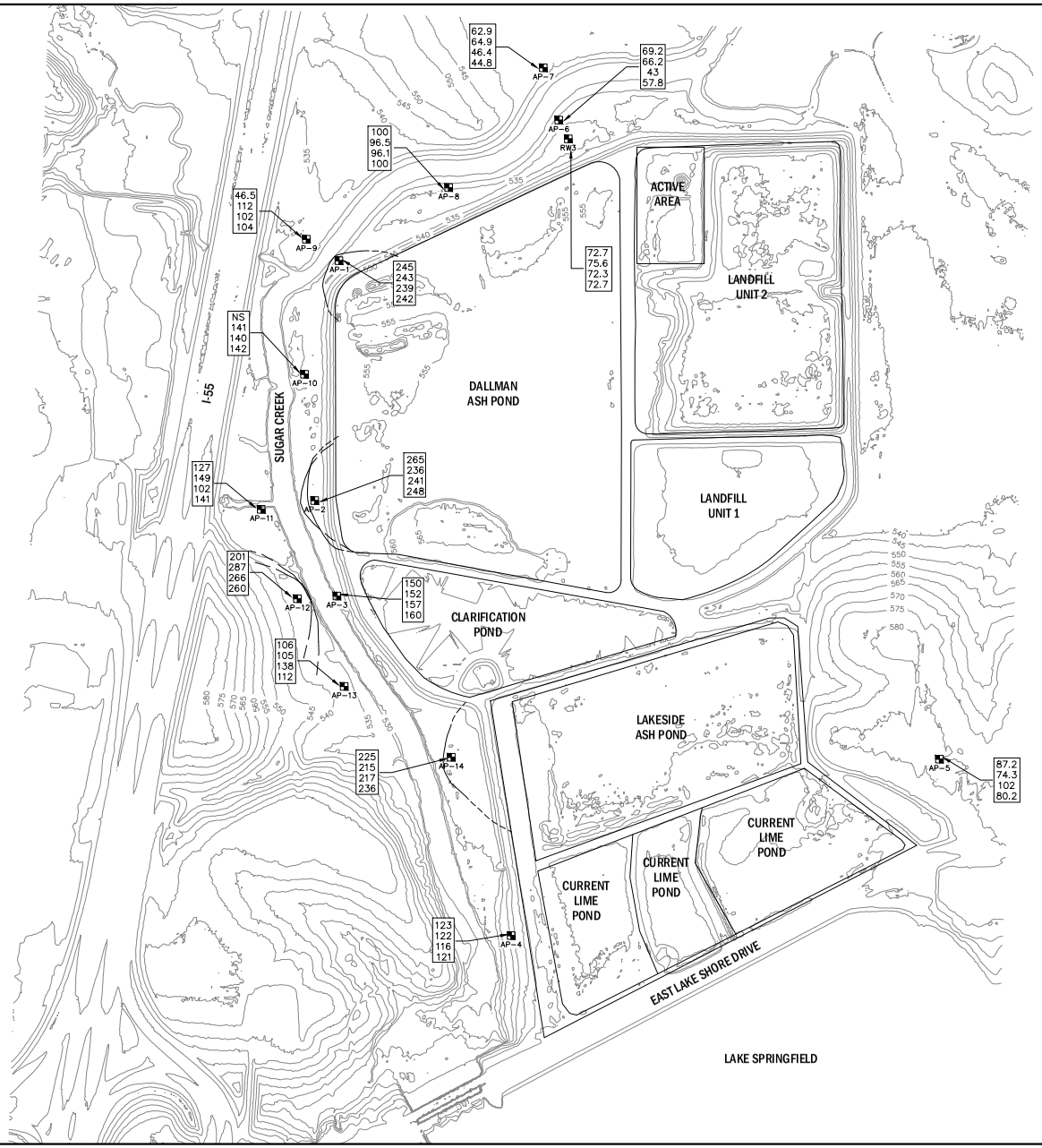
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LEGEND

- MONITORING WELL
- Q1 – 02/16/2022, Q2 – 05/31/2022, Q3 – 08/23/2022, Q4 – 11/8/2022: DATA CALLOUTS
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CALCIUM, TOTAL: BACKGROUND = 176.63 mg/L.
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

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CALCIUM GW EXCEEDANCE MAP 2022

PREPARED FOR
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SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

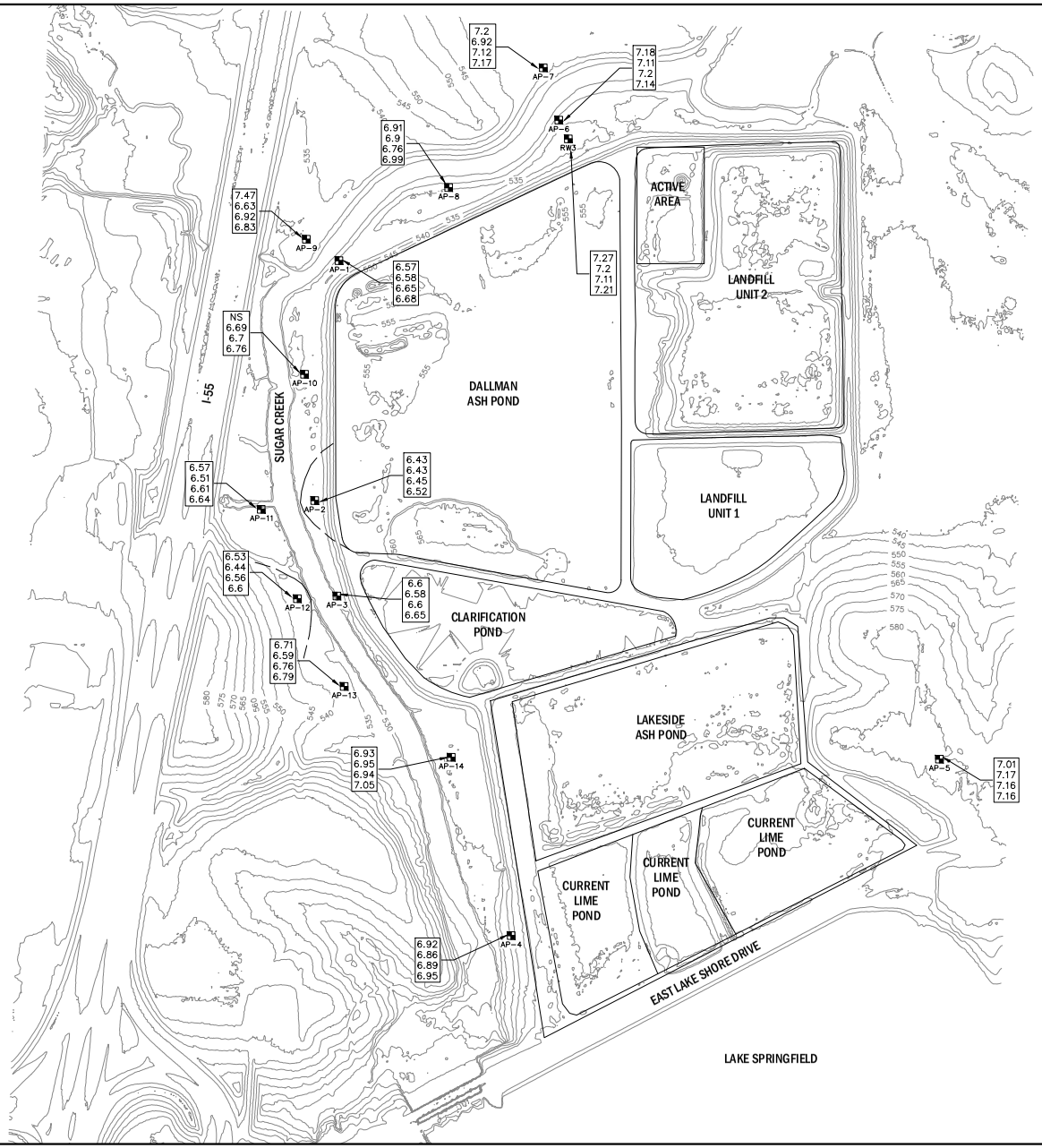
DATE: JANUARY 2023

PROJECT ID: 200387/0003

SHEET NUMBER: 3

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LEGEND

- MONITORING WELL
- Q1 – 02/16/2022, Q2 – 05/31/2022, Q3 – 08/23/2022, Q4 – 11/8/2022: DATA CALLOUTS
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. pH, TOTAL: GWPS = 6.5–9 UNITS
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

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pH GW EXCEEDANCE MAP 2022

PREPARED FOR

CITY WATER, LIGHT, ANS POWER

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS

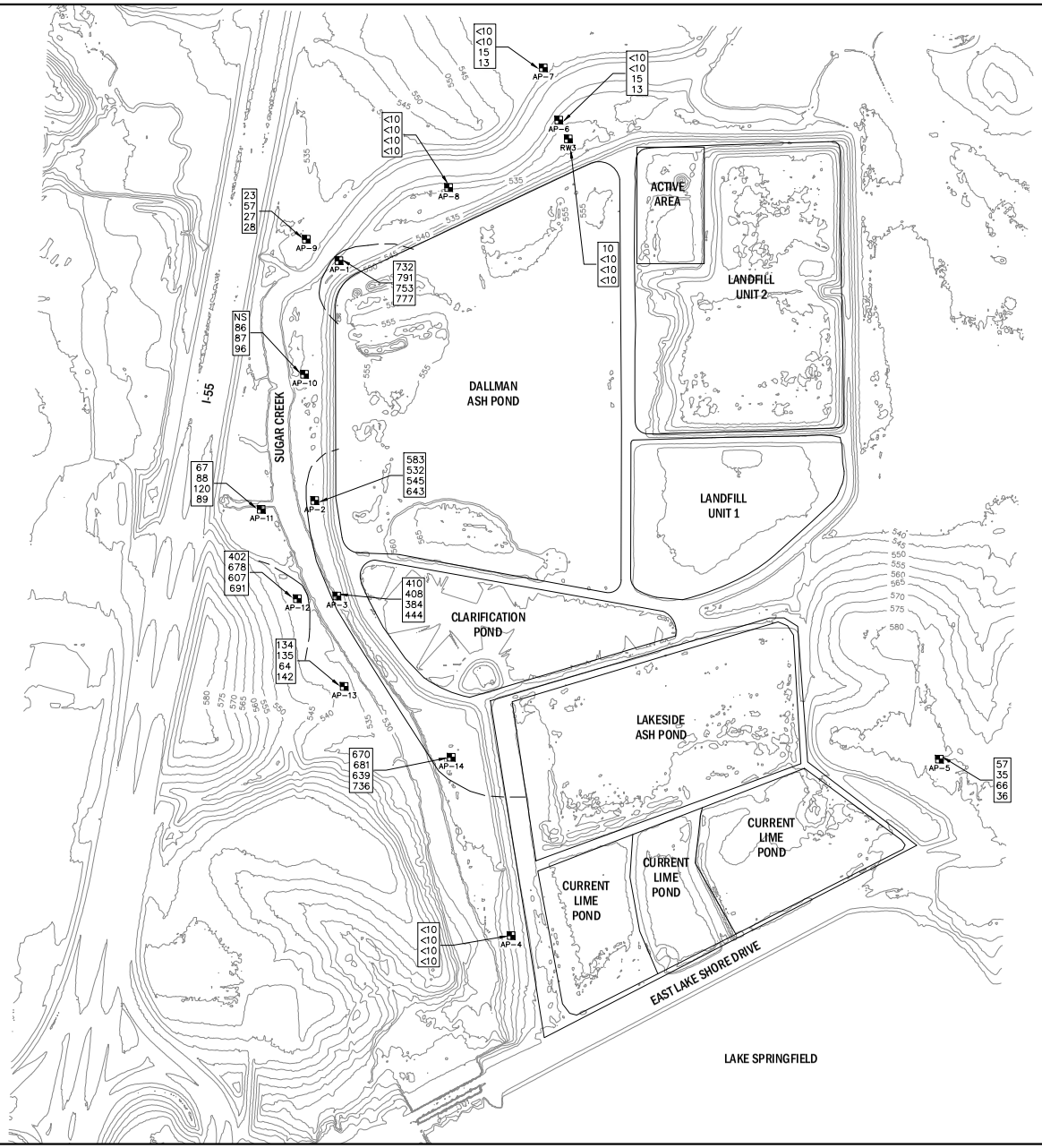
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PROJECT ID: 200387/0003

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LEGEND

- MONITORING WELL
- Q1 – 02/16/2022
  Q2 – 05/31/2022
  Q3 – 08/23/2022
  Q4 – 11/8/2022
  DATA CALLOUTS
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. SULFATE, TOTAL: GWPS = 400 mg/L
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

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SULFATE GW EXCEEDANCE MAP 2022

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

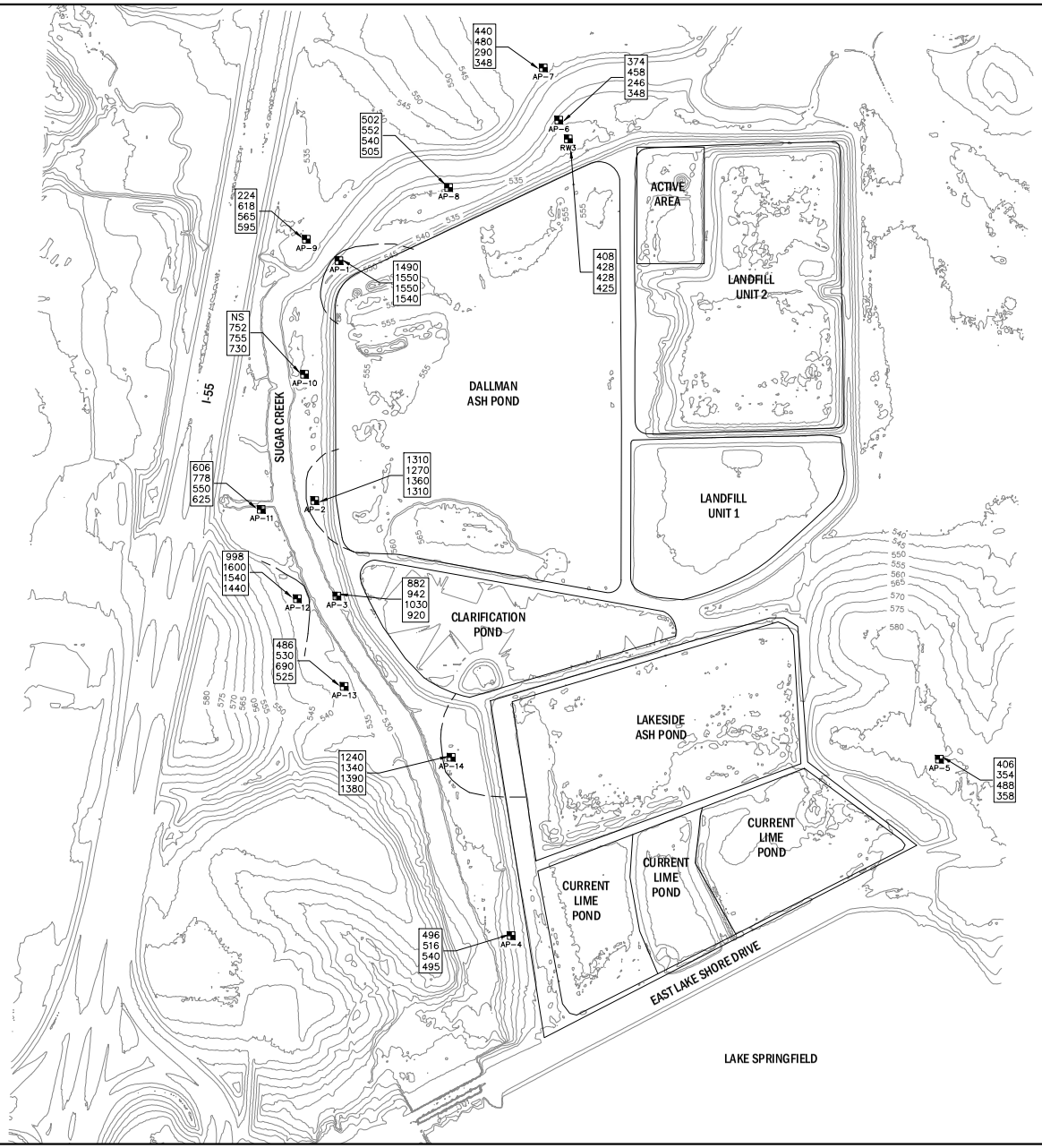
DATE: JANUARY 2023

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LEGEND

- MONITORING WELL
- DATA CALLOUTS
  - Q1 – 02/16/2022
  - Q2 – 05/31/2022
  - Q3 – 08/23/2022
  - Q4 – 11/8/2022
- GWPS ISOCONTOUR

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. TDS, TOTAL: GWPS = 1200 mg/L
3. NS = NOT SAMPLED

N

0 200 400 800

SCALE: IN FEET

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TOTAL DISSOLVED SOLIDS GW EXCEEDANCE MAP 2022

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

DATE: JANUARY 2023

PROJECT ID: 200387/0003

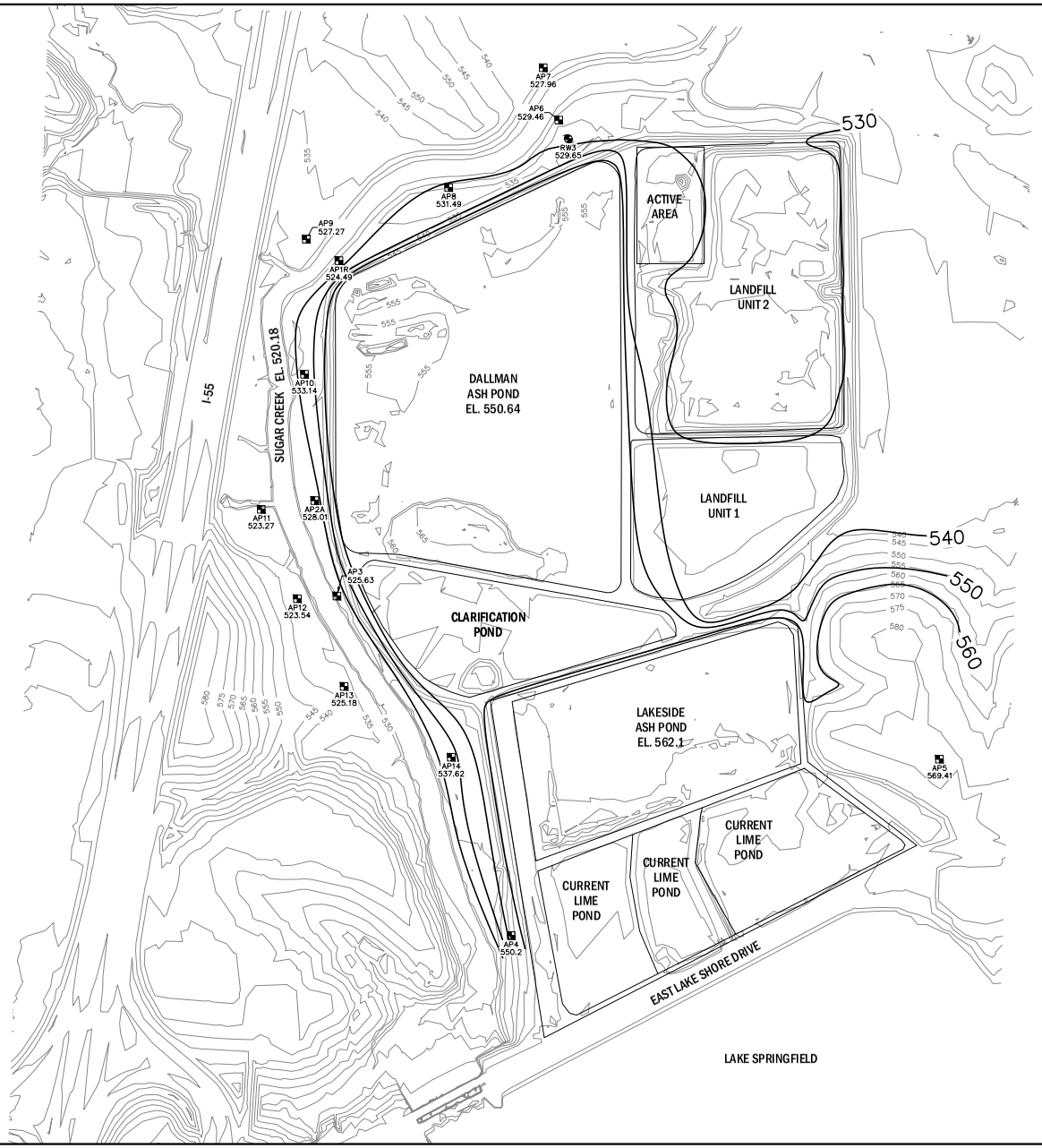
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APPENDIX B

2022 POTENTIOMETRIC SURFACE MAPS



LEGEND

- 550 — EXISTING GROUND CONTOURS
- —540— GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 1/31/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 1/28/2022.

N

0 200 400 800

SCALE: IN FEET

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APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: MKN

GROUNDWATER SURFACE MAP
JANUARY 31, 2022

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

DATE: JANUARY 2023

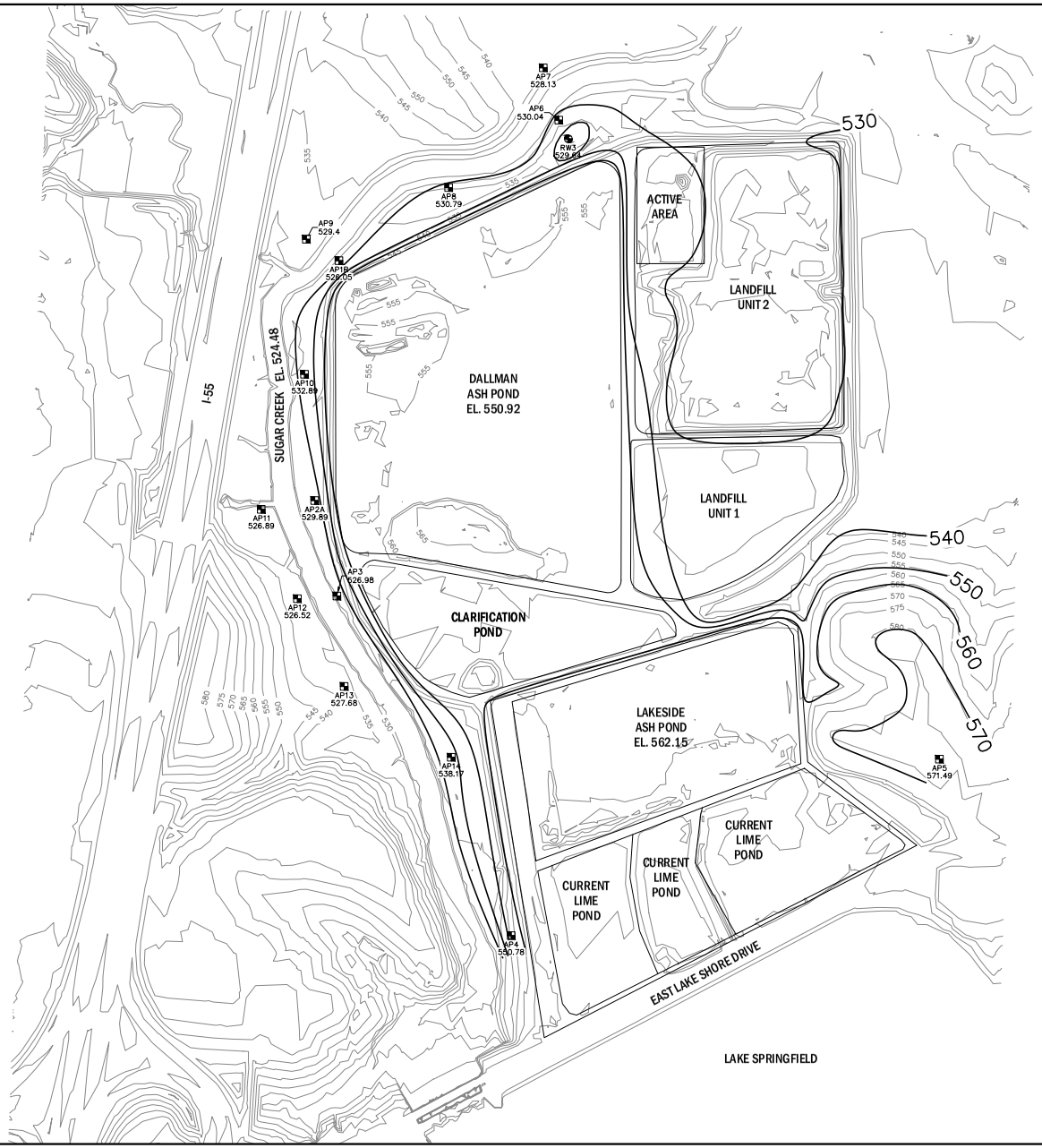
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SHEET NUMBER:

FIG. 1

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 2/16/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 2/16/2022.

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APPROVED BY: MTH | DESIGNED BY: MTH | DRAWN BY: MKN

GROUNDWATER SURFACE MAP
FEBRUARY 16, 2022

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

DATE: JANUARY 2023

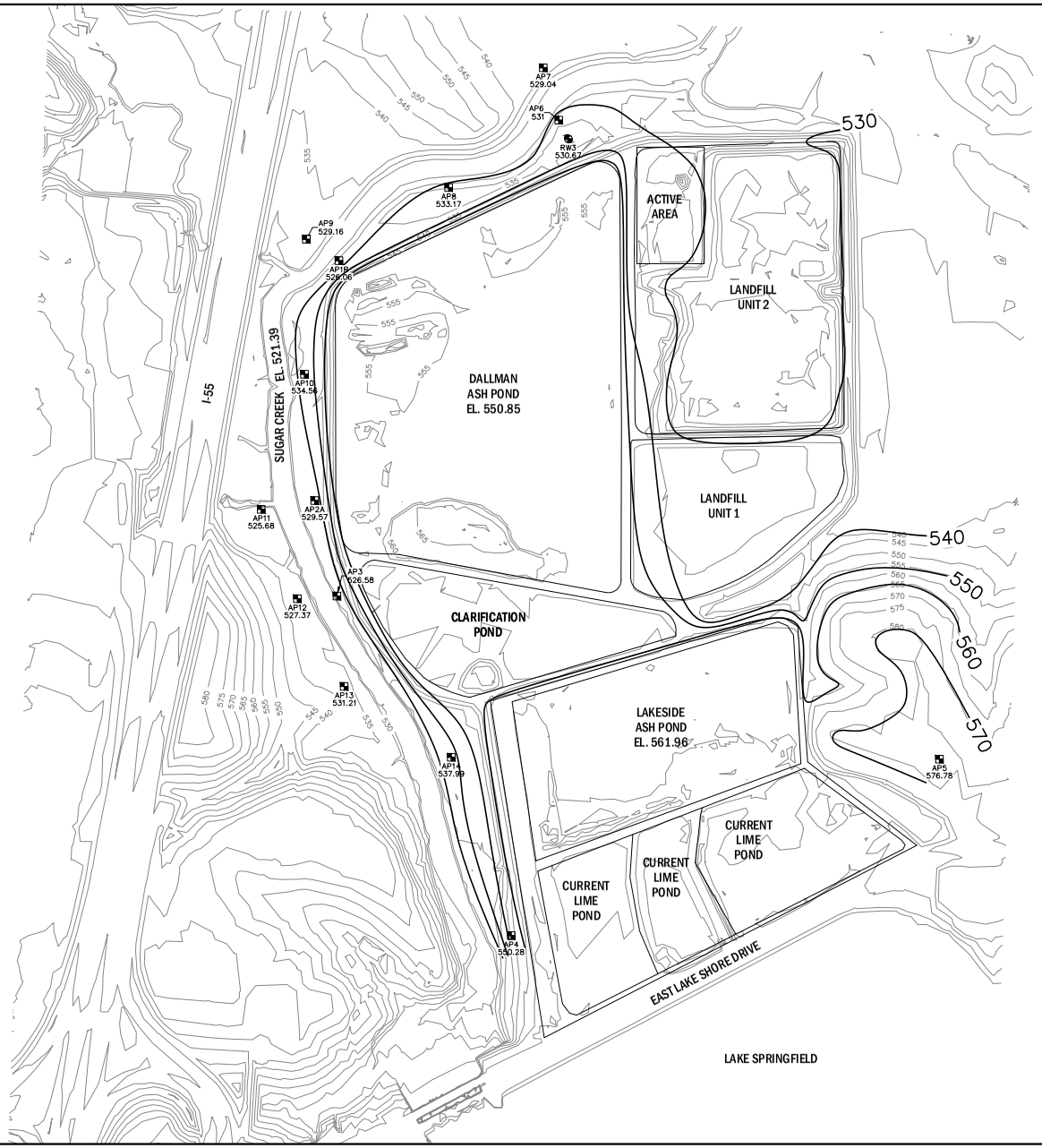
PROJECT ID: 220408/0008

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FIG. 2

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 3/29/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 3/29/2022.

N

0 200 400 800

SCALE: IN FEET

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

GROUNDWATER SURFACE MAP
MARCH 29, 2022

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

DATE: JANUARY 2023

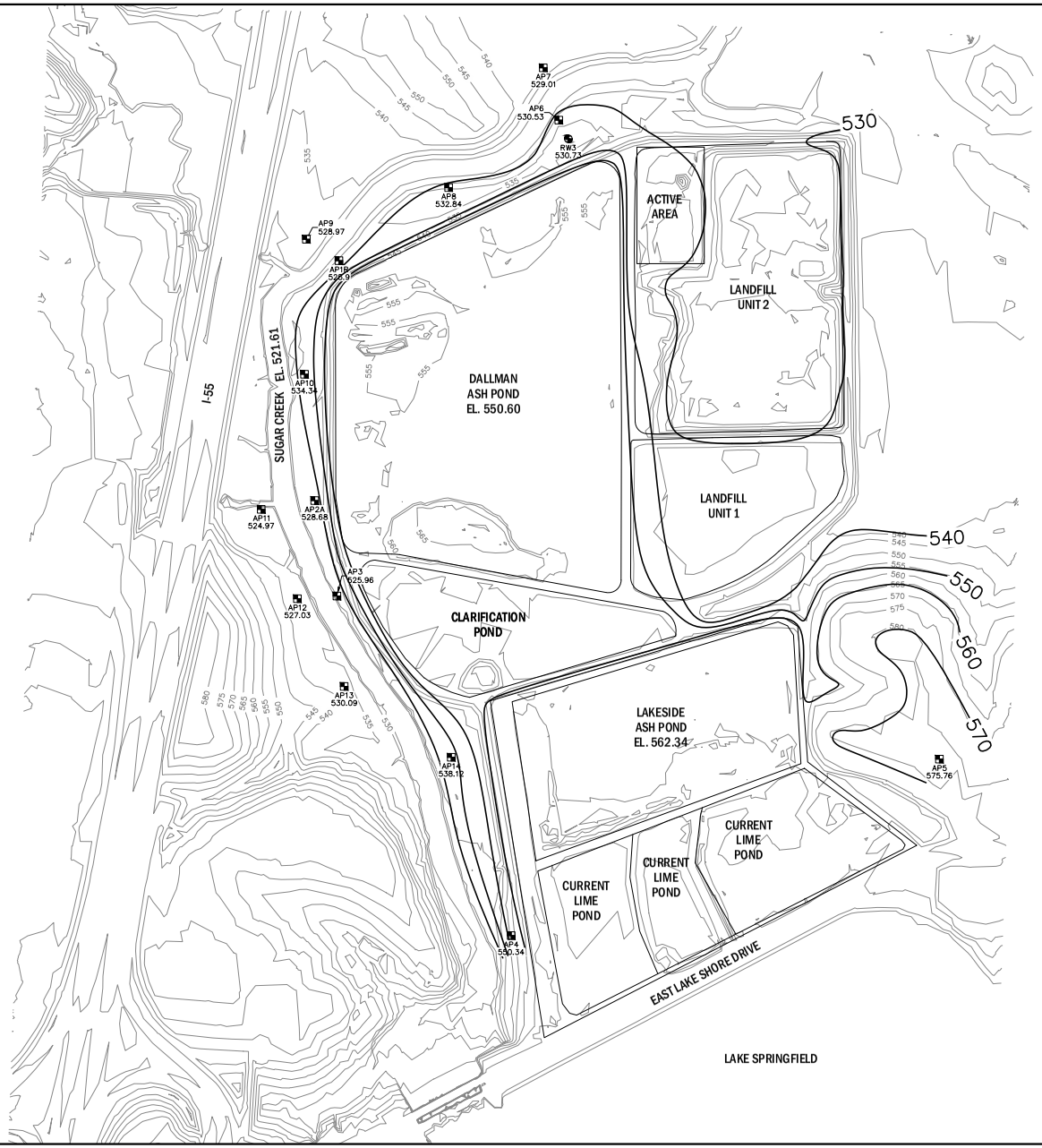
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 3

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 4/28/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 4/28/2022.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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GROUNDWATER SURFACE MAP
APRIL 26, 2022

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

DATE: JANUARY 2023

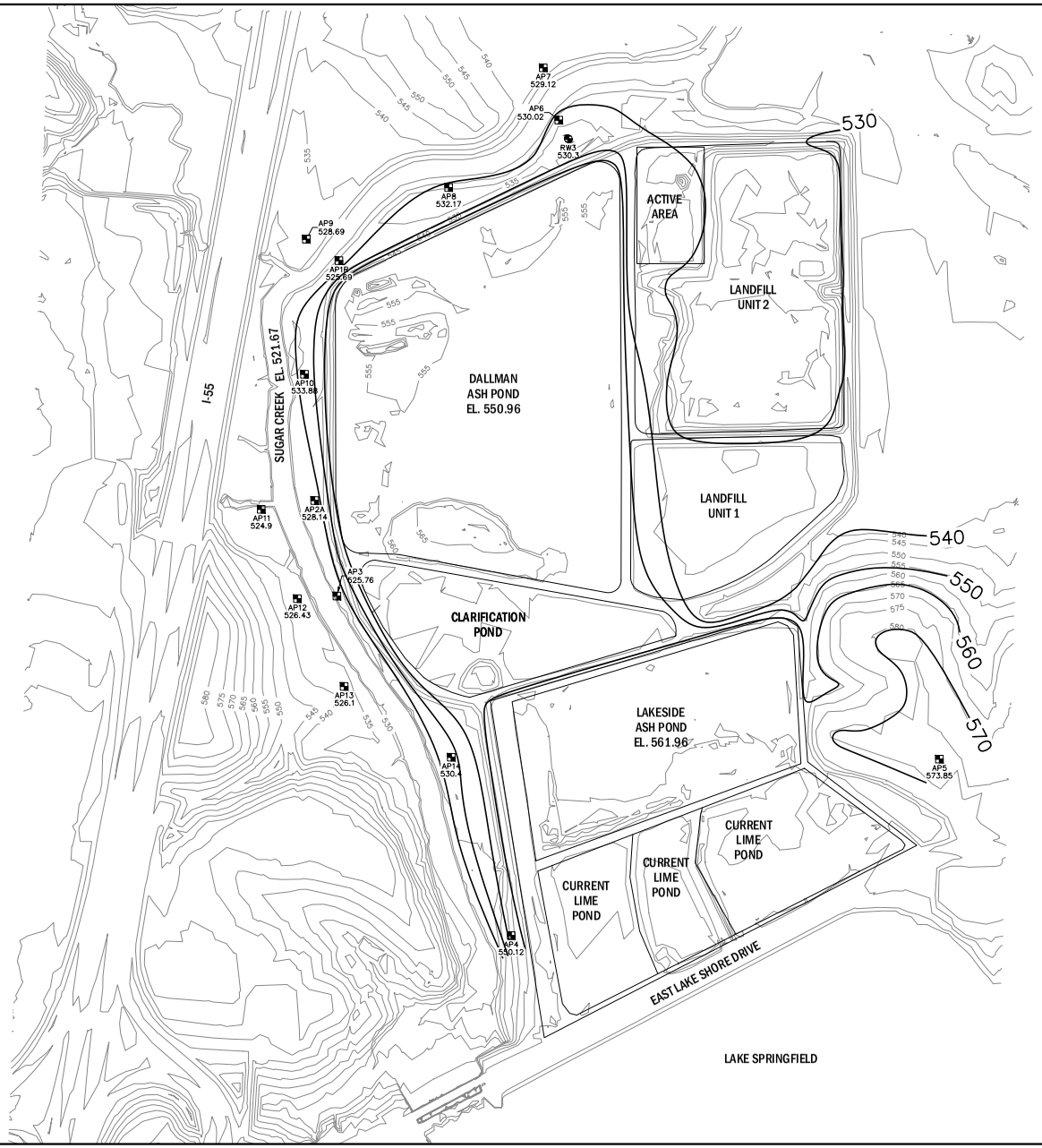
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FIG. 4

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 5/31/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 5/31/2022.

N

0 200 400 800

SCALE: IN FEET

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GROUNDWATER SURFACE MAP
MAY 31, 2022

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

DATE: JANUARY 2023

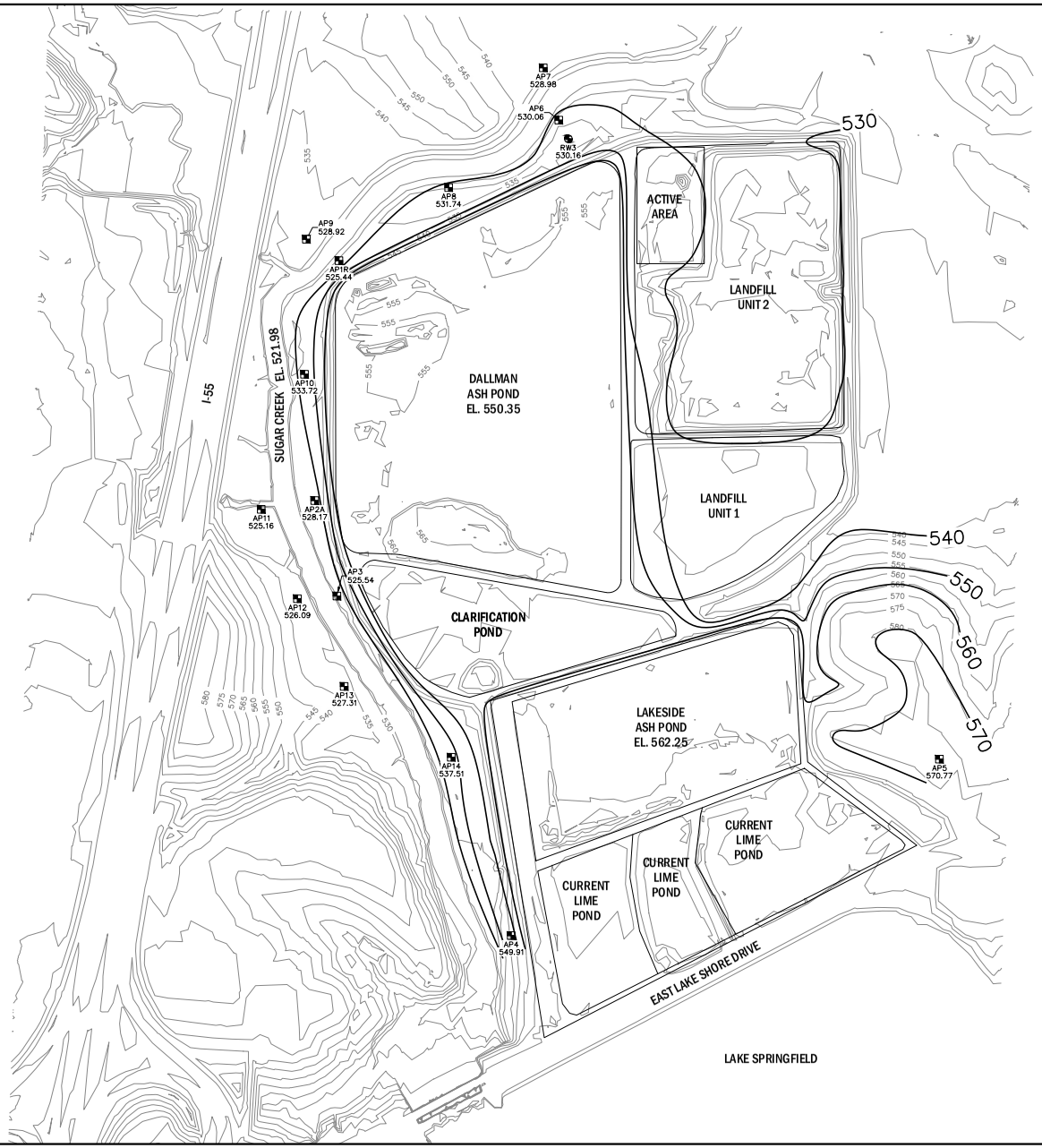
PROJECT ID: 220408/0008

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FIG. 5

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 6/30/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 6/30/2022.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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GROUNDWATER SURFACE MAP
JUNE 30, 2022

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

DATE: JANUARY 2023

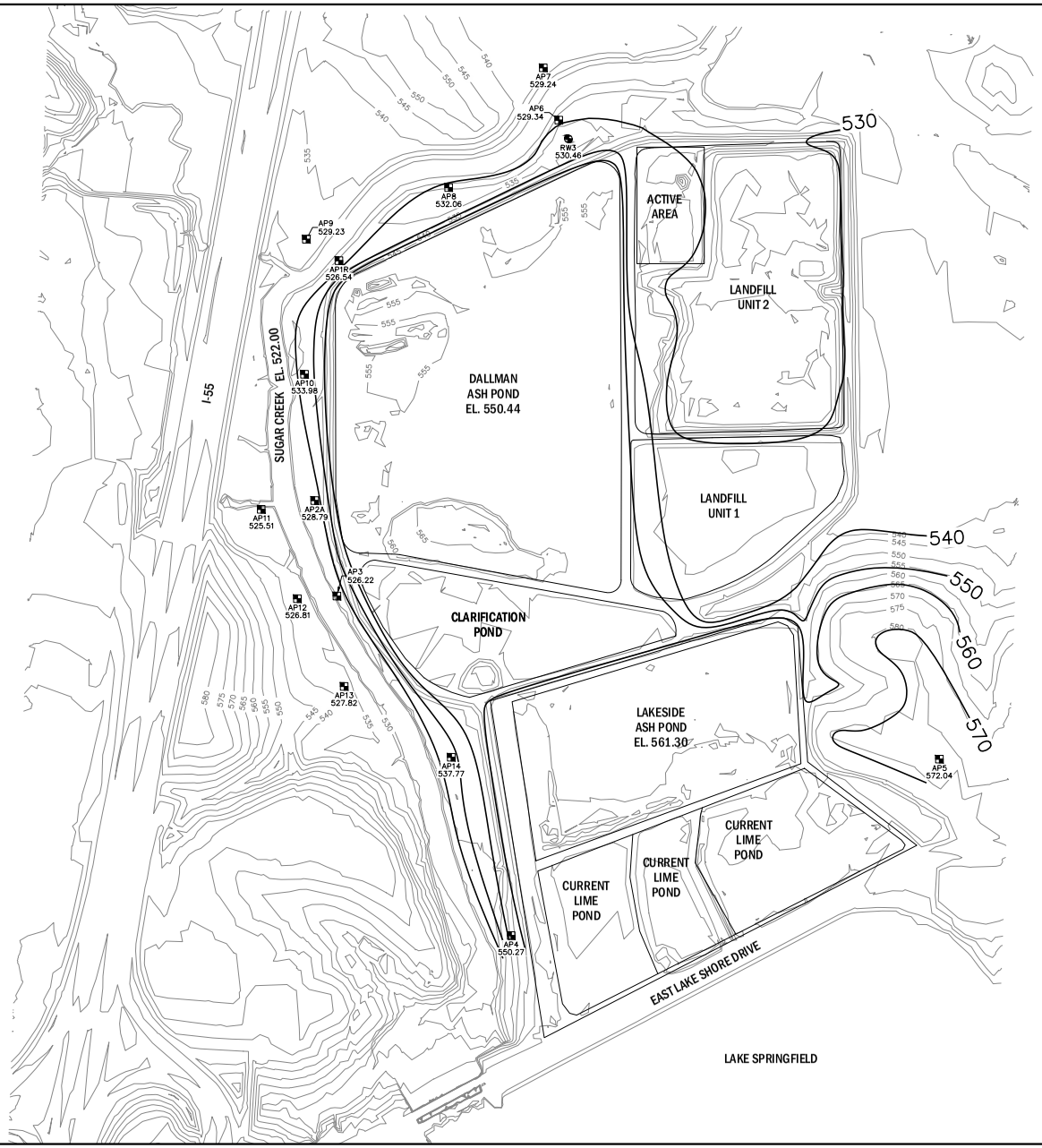
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FIG. 6

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 7/20/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 7/20/2022.

N

0 200 400 800

SCALE: IN FEET

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APPROVED BY: WTH | DESIGNED BY: WTH | DRAWN BY: BCK

GROUNDWATER SURFACE MAP
JULY 20, 2022

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

DATE: JANUARY 2023

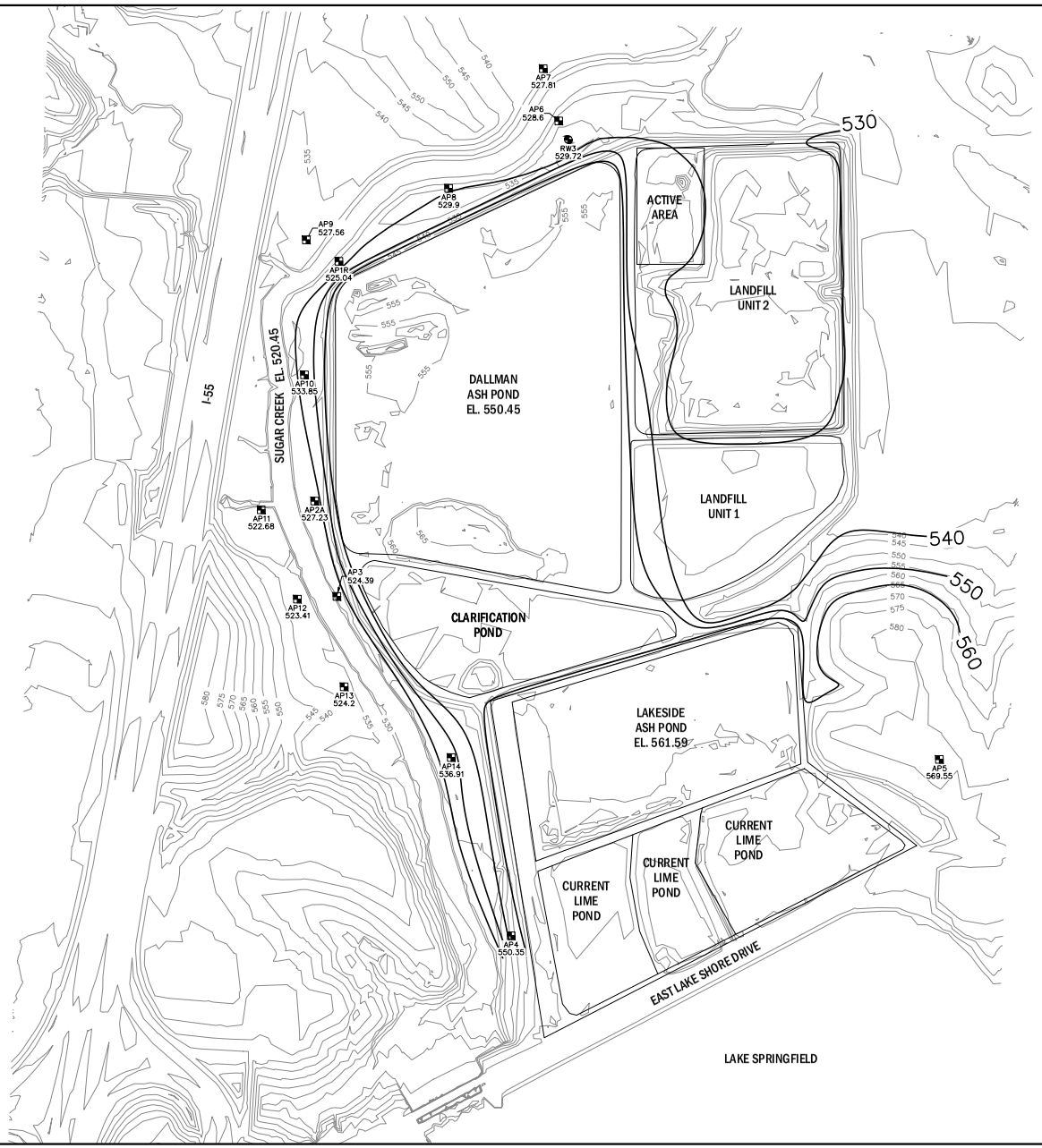
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 7

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 8/23/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 8/23/2022.

N

0 200 400 800

SCALE: IN FEET

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

GROUNDWATER SURFACE MAP
AUGUST 23, 2022

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

DATE: JANUARY 2023

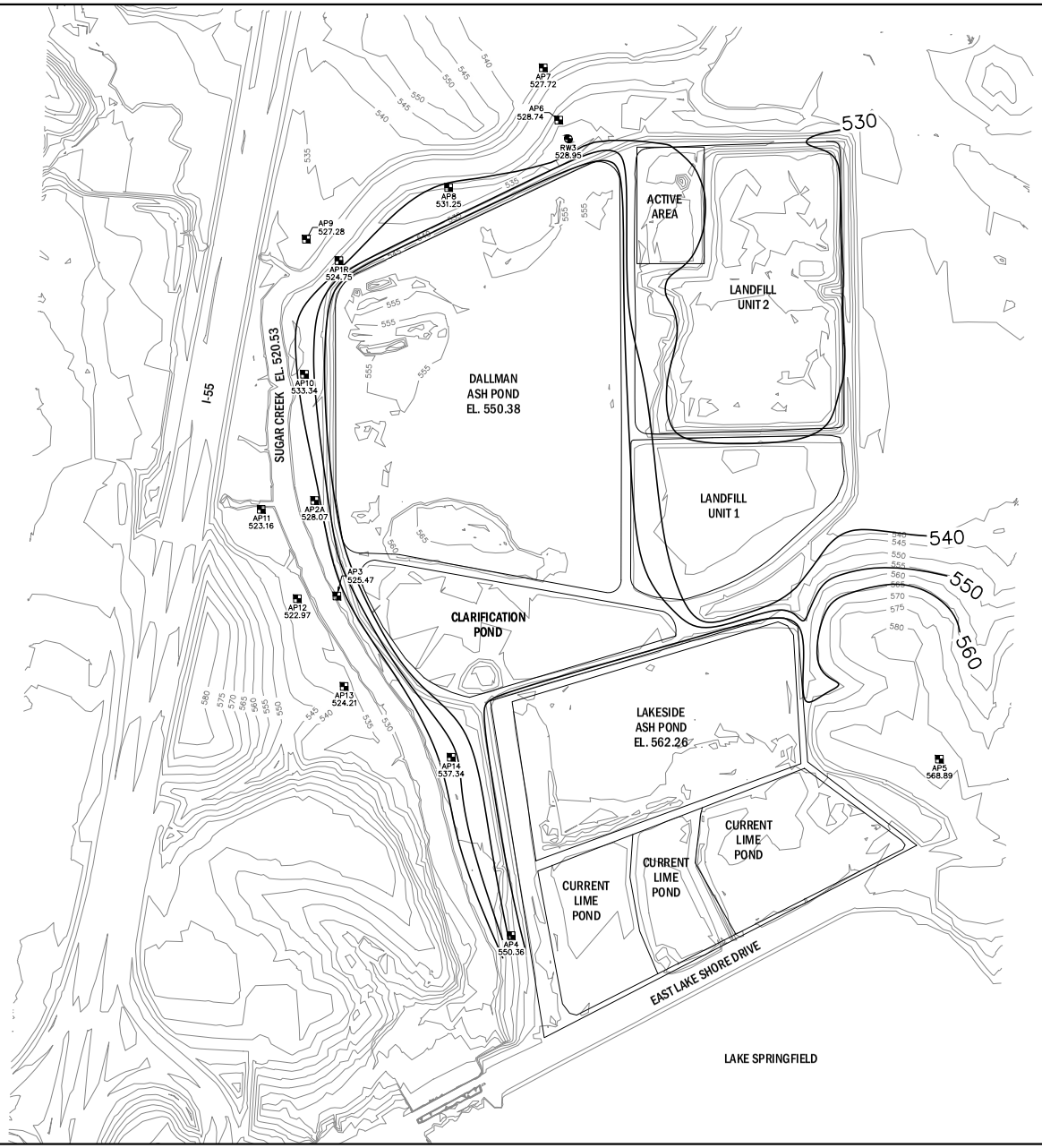
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 8

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Tab: Layout1 Last Saved: January 23, 2023, by Ben Karpus Plotted: Monday, January 23, 2023 3:19:09 PM
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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 9/30/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 9/30/2022.

N

0 200 400 800

SCALE: IN FEET

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

GROUNDWATER SURFACE MAP
SEPTEMBER 30, 2022

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

DATE: JANUARY 2023

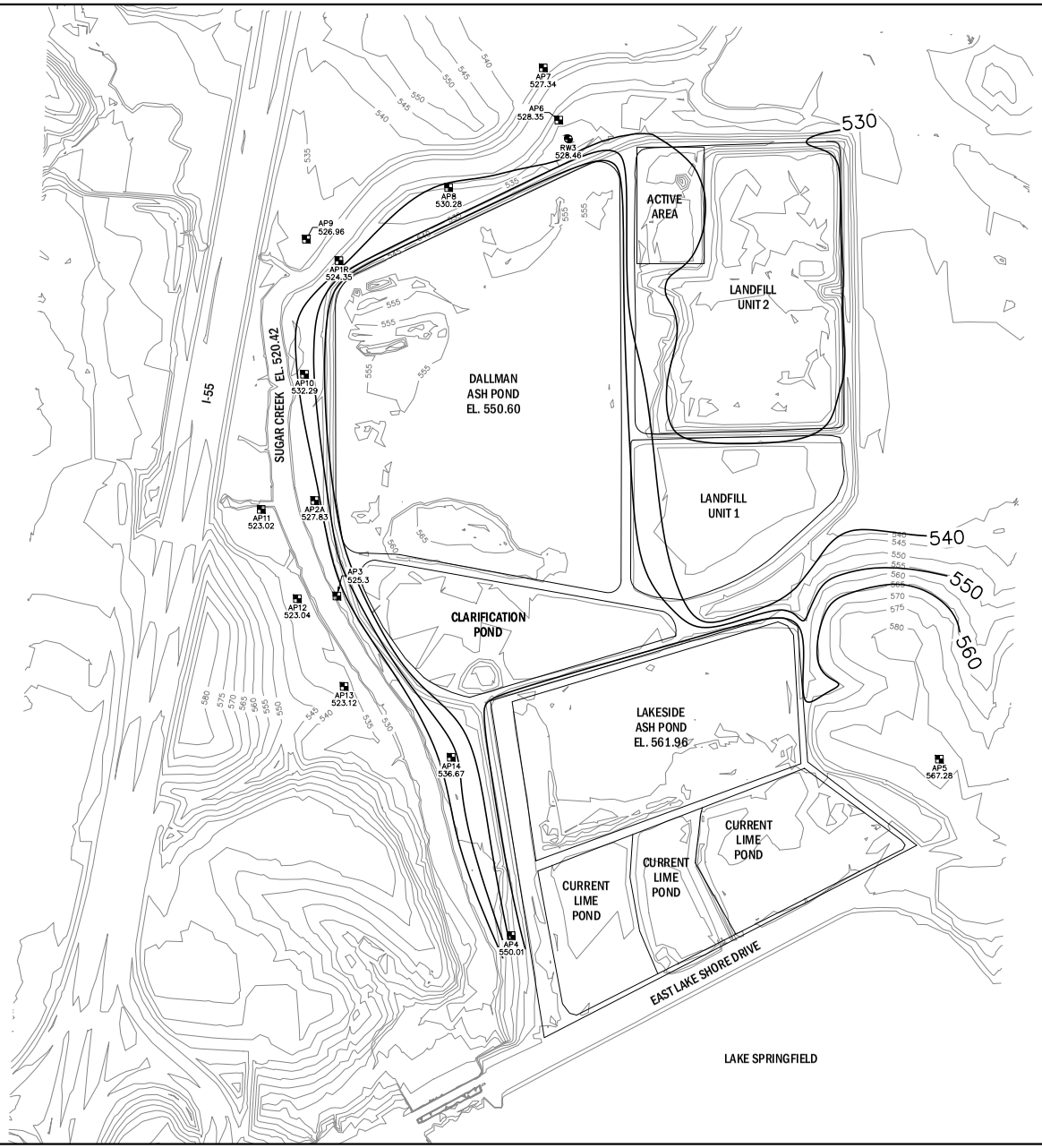
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 9

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J:\IS\Springfield CWLP\CWLP Ash Pond\DWG\2023\9-30-22.dwg



LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 10/28/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 10/28/2022.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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

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

GROUNDWATER SURFACE MAP
OCTOBER 26, 2022

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

DATE: JANUARY 2023

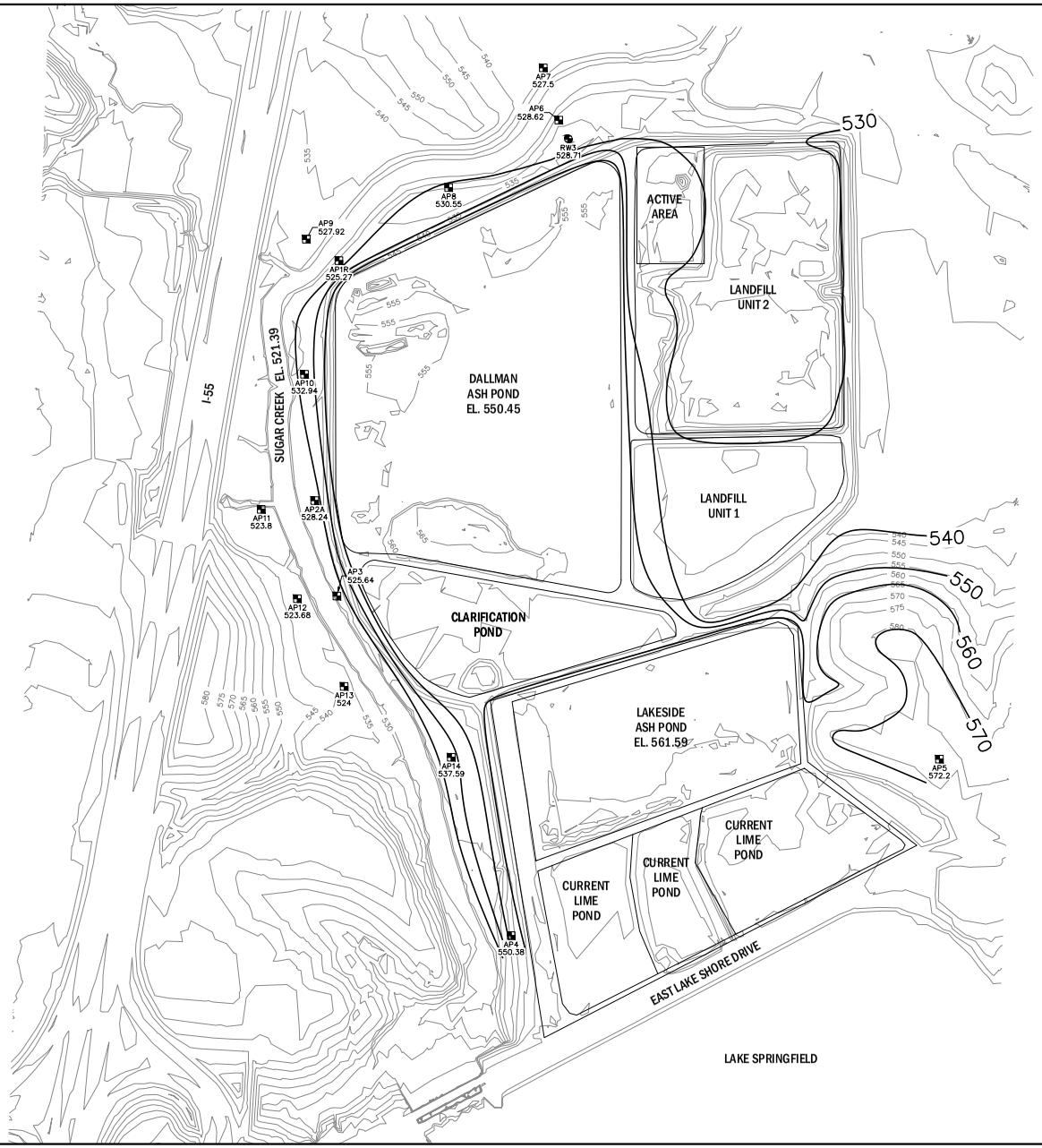
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 10

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LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 11/8/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 11/8/2022.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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

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

GROUNDWATER SURFACE MAP
NOVEMBER 8, 2022

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

DATE: JANUARY 2023

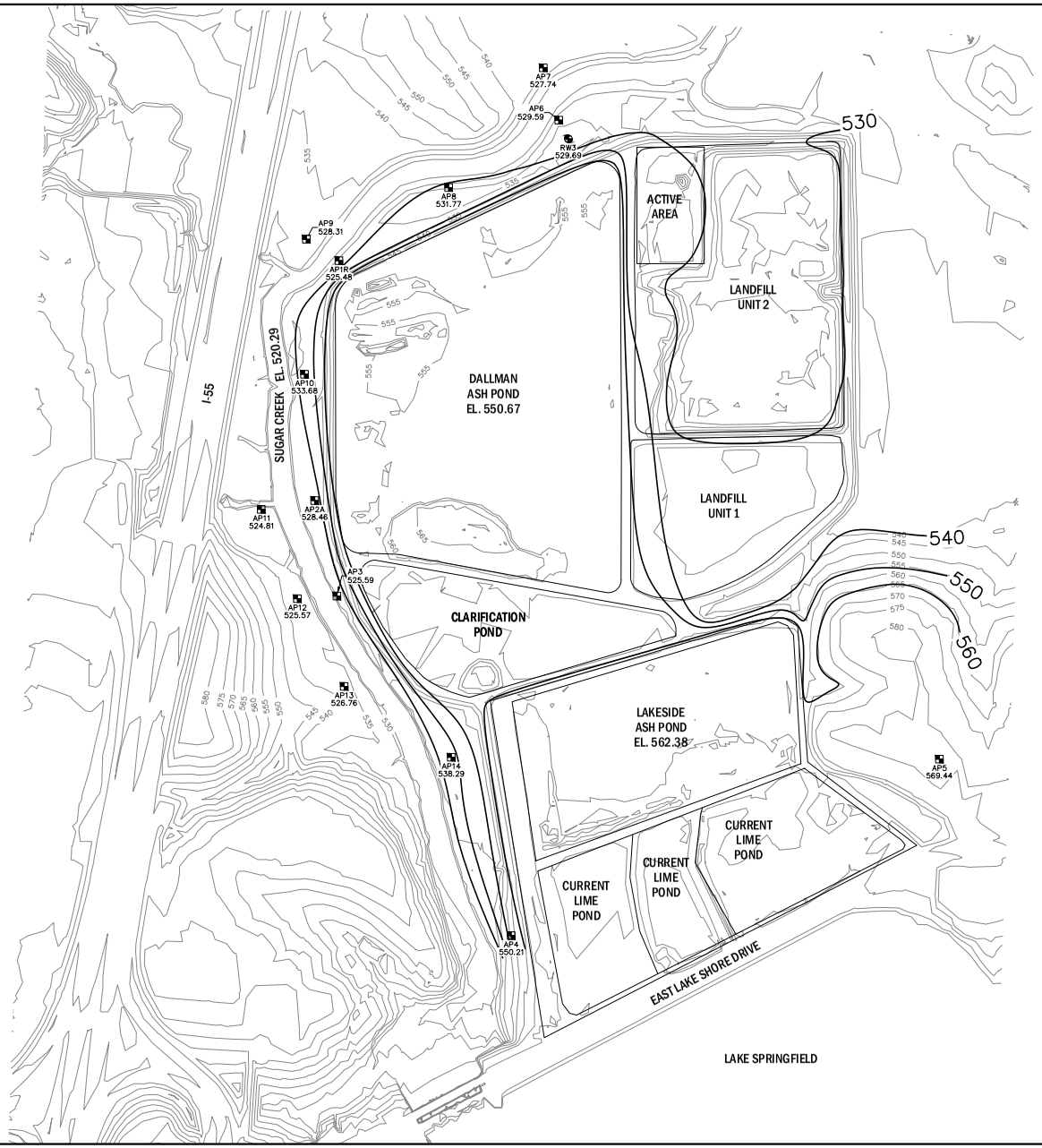
PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 11

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Tab: Layout1 Last Saved: January 23, 2023, by Ben Karpus Plotted: Monday, January 23, 2023 4:05:24 PM
J:\S\Springfield CWLP\CWLP Ash Pond\DWG\2023\11-8-22.dwg



LEGEND

- EXISTING GROUND CONTOURS
- GROUNDWATER CONTOURS
- CCR SURFACE IMPOUNDMENT WELL
- FGDS LANDFILL WELL

NOTES

1. LIDAR DATA DERIVED FROM USGS WEBSITE (FLIGHT DATE: OCTOBER 15, 2018).
2. CONTOUR INTERVAL SHOWN IS 10 FEET.
3. SAMPLING DATE: 12/20/2022.
4. SUGAR CREEK SURFACE WATER ELEVATION IS BASED ON USGS GAGE 05576250 FOR 12/20/2022.

N

0 200 400 800

SCALE: IN FEET

NO.	DATE	REVISION DESCRIPTION	BY

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

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

GROUNDWATER SURFACE MAP
DECEMBER 20, 2022

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

DATE: JANUARY 2023

PROJECT ID: 220408/0008

SHEET NUMBER:

FIG. 12

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APPENDIX C

2022 GROUNDWATER MONITORING RESULTS

City Water, Light and Power
Power Plant Ash Impoundment
2022 Groundwater Analytical Results Summary Table

Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-1	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-2	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-3	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-4	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-5	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-6	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-7	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AW-3/RW-3	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-8	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-9	Antimony, total	mg/l	0.006	0.016	0.016	0.0025	< 0.001	< 0.001	< 0.001
AP-10	Antimony, total	mg/l	0.006	0.016	0.016		< 0.001	< 0.001	< 0.001
AP-11	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-12	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-13	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-14	Antimony, total	mg/l	0.006	0.016	0.016	< 0.001	< 0.001	< 0.001	< 0.001
AP-1	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-2	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-3	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-4	Arsenic, total	mg/l	0.01	0.0724	0.0724	0.0306	< 0.025	0.0309	0.027
AP-5	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-6	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-7	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	0.0468	0.0376	< 0.025
AW-3/RW-3	Arsenic, total	mg/l	0.01	0.0724	0.0724	0.178	0.109	0.11	0.142
AP-8	Arsenic, total	mg/l	0.01	0.0724	0.0724	0.0319	0.0352	0.0377	0.034
AP-9	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-10	Arsenic, total	mg/l	0.01	0.0724	0.0724		< 0.025	< 0.025	< 0.025
AP-11	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-12	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-13	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-14	Arsenic, total	mg/l	0.01	0.0724	0.0724	< 0.025	< 0.025	< 0.025	< 0.025
AP-1	Barium, total	mg/l	2	5.24	5.24	0.277	0.309	0.246	0.285
AP-2	Barium, total	mg/l	2	5.24	5.24	0.0721	0.073	0.0751	0.0734
AP-3	Barium, total	mg/l	2	5.24	5.24	0.0802	0.0849	0.0883	0.0951
AP-4	Barium, total	mg/l	2	5.24	5.24	0.413	0.422	0.392	0.399
AP-5	Barium, total	mg/l	2	5.24	5.24	0.0505	0.0345	0.0908	0.042
AP-6	Barium, total	mg/l	2	5.24	5.24	0.119	0.141	0.066	0.135
AP-7	Barium, total	mg/l	2	5.24	5.24	0.125	0.13	0.119	0.13
AW-3/RW-3	Barium, total	mg/l	2	5.24	5.24	0.154	0.151	0.158	0.166
AP-8	Barium, total	mg/l	2	5.24	5.24	0.355	0.356	0.355	0.371
AP-9	Barium, total	mg/l	2	5.24	5.24	0.114	0.399	0.403	0.396
AP-10	Barium, total	mg/l	2	5.24	5.24		0.571	0.553	0.57

City Water, Light and Power
Power Plant Ash Impoundment
2022 Groundwater Analytical Results Summary Table

Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-11	Barium, total	mg/l	2	5.24	5.24	0.108	0.152	0.176	0.184
AP-12	Barium, total	mg/l	2	5.24	5.24	0.171	0.101	0.153	0.0701
AP-13	Barium, total	mg/l	2	5.24	5.24	0.119	0.161	0.307	0.26
AP-14	Barium, total	mg/l	2	5.24	5.24	0.0411	0.0343	0.0361	0.0438
AP-1	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-2	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-3	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-4	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-5	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-6	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-7	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AW-3/RW-3	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-8	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	< 0.0005	< 0.0005
AP-9	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	0.0006	0.0011
AP-10	Beryllium, total	mg/l	0.004	0.0164	0.0164		< 0.0005	< 0.0005	< 0.0005
AP-11	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	0.0005	0.0007
AP-12	Beryllium, total	mg/l	0.004	0.0164	0.0164	0.001	0.0005	0.0018	< 0.0005
AP-13	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	0.0016	0.0015
AP-14	Beryllium, total	mg/l	0.004	0.0164	0.0164	< 0.0005	< 0.0005	0.0009	< 0.0005
AP-1	Boron, total	mg/l	2	0.787	2	22.3	23.1	22.1	21.4
AP-2	Boron, total	mg/l	2	0.787	2	4.68	4.25	4.32	4.08
AP-3	Boron, total	mg/l	2	0.787	2	15.8	14.7	14.8	14.6
AP-4	Boron, total	mg/l	2	0.787	2	0.0954	0.0968	0.0927	0.102
AP-5	Boron, total	mg/l	2	0.787	2	< 0.02	0.0341	< 0.02	0.045
AP-6	Boron, total	mg/l	2	0.787	2	0.247	0.275	0.0716	0.166
AP-7	Boron, total	mg/l	2	0.787	2	0.381	0.339	0.204	0.26
AW-3/RW-3	Boron, total	mg/l	2	0.787	2	0.179	0.196	0.177	0.192
AP-8	Boron, total	mg/l	2	0.787	2	0.125	0.0877	0.0839	0.0927
AP-9	Boron, total	mg/l	2	0.787	2	0.0491	0.122	0.092	0.11
AP-10	Boron, total	mg/l	2	0.787	2		3.58	3.52	3.35
AP-11	Boron, total	mg/l	2	0.787	2	0.276	0.271	0.0533	0.261
AP-12	Boron, total	mg/l	2	0.787	2	0.0244	< 0.02	0.0213	0.0294
AP-13	Boron, total	mg/l	2	0.787	2	0.0403	0.0375	0.268	0.044
AP-14	Boron, total	mg/l	2	0.787	2	23.1	23.3	21.8	21.3
AP-1	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-2	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-3	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-4	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-5	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-6	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-7	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002

City Water, Light and Power
Power Plant Ash Impoundment
2022 Groundwater Analytical Results Summary Table

Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AW-3/RW-3	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-8	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-9	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-10	Cadmium, total	mg/l	0.005	0.0128	0.0128		< 0.002	< 0.002	< 0.002
AP-11	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-12	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-13	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-14	Cadmium, total	mg/l	0.005	0.0128	0.0128	< 0.002	< 0.002	< 0.002	< 0.002
AP-1	Calcium, total	mg/l	na	176.63	176.63	245	243	239	242
AP-2	Calcium, total	mg/l	na	176.63	176.63	265	236	241	248
AP-3	Calcium, total	mg/l	na	176.63	176.63	150	152	157	160
AP-4	Calcium, total	mg/l	na	176.63	176.63	123	122	116	121
AP-5	Calcium, total	mg/l	na	176.63	176.63	87.2	74.3	102	80.2
AP-6	Calcium, total	mg/l	na	176.63	176.63	69.2	66.2	43	57.8
AP-7	Calcium, total	mg/l	na	176.63	176.63	62.9	64.9	46.4	44.8
AW-3/RW-3	Calcium, total	mg/l	na	176.63	176.63	72.7	75.6	72.3	72.7
AP-8	Calcium, total	mg/l	na	176.63	176.63	100	96.5	96.1	100
AP-9	Calcium, total	mg/l	na	176.63	176.63	46.5	112	102	104
AP-10	Calcium, total	mg/l	na	176.63	176.63		141	140	142
AP-11	Calcium, total	mg/l	na	176.63	176.63	127	149	102	141
AP-12	Calcium, total	mg/l	na	176.63	176.63	201	287	266	260
AP-13	Calcium, total	mg/l	na	176.63	176.63	106	105	138	112
AP-14	Calcium, total	mg/l	na	176.63	176.63	225	215	217	236
AP-1	Chloride, total	mg/l	200	24.2	200	55	59	44	61
AP-2	Chloride, total	mg/l	200	24.2	200	36	35	34	34
AP-3	Chloride, total	mg/l	200	24.2	200	42	42	47	55
AP-4	Chloride, total	mg/l	200	24.2	200	12	16	13	14
AP-5	Chloride, total	mg/l	200	24.2	200	< 4	2	6	< 4
AP-6	Chloride, total	mg/l	200	24.2	200	35	38	25	31
AP-7	Chloride, total	mg/l	200	24.2	200	64	66	36	58
AW-3/RW-3	Chloride, total	mg/l	200	24.2	200	29	31	31	30
AP-8	Chloride, total	mg/l	200	24.2	200	26	28	27	26
AP-9	Chloride, total	mg/l	200	24.2	200	24	64	30	27
AP-10	Chloride, total	mg/l	200	24.2	200		29	28	28
AP-11	Chloride, total	mg/l	200	24.2	200	83	119	29	105
AP-12	Chloride, total	mg/l	200	24.2	200	113	162	143	147
AP-13	Chloride, total	mg/l	200	24.2	200	35	27	103	26
AP-14	Chloride, total	mg/l	200	24.2	200	49	52	59	65
AP-1	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-2	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-3	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005

City Water, Light and Power
Power Plant Ash Impoundment
2022 Groundwater Analytical Results Summary Table

Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-4	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-5	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-6	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-7	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AW-3/RW-3	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-8	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-9	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	0.0098	0.0119
AP-10	Chromium, total	mg/l	0.1	0.811	0.811		< 0.005	< 0.005	< 0.005
AP-11	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	0.0098	0.0158
AP-12	Chromium, total	mg/l	0.1	0.811	0.811	0.0253	0.0119	0.037	0.0073
AP-13	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	0.0369	0.0413
AP-14	Chromium, total	mg/l	0.1	0.811	0.811	< 0.005	< 0.005	< 0.005	< 0.005
AP-1	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-2	Cobalt, total	mg/l	1	0.297	0.297	0.0102	0.0089	0.0115	0.0111
AP-3	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	0.0054
AP-4	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-5	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-6	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-7	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AW-3/RW-3	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-8	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-9	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	0.0053	0.0056
AP-10	Cobalt, total	mg/l	1	0.297	0.297		< 0.005	< 0.005	< 0.005
AP-11	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	0.005	0.0061
AP-12	Cobalt, total	mg/l	1	0.297	0.297	0.0143	0.0077	0.0219	0.007
AP-13	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	0.0215	0.021
AP-14	Cobalt, total	mg/l	1	0.297	0.297	< 0.005	< 0.005	< 0.005	< 0.005
AP-1	Fluoride, total	mg/l	4	0.62	4	0.2	0.21	0.2	0.18
AP-2	Fluoride, total	mg/l	4	0.62	4	0.24	0.24	0.24	0.22
AP-3	Fluoride, total	mg/l	4	0.62	4	0.21	0.24	0.23	0.21
AP-4	Fluoride, total	mg/l	4	0.62	4	0.14	0.15	0.15	0.13
AP-5	Fluoride, total	mg/l	4	0.62	4	0.33	0.38	0.29	0.31
AP-6	Fluoride, total	mg/l	4	0.62	4	0.49	0.55	0.31	0.4
AP-7	Fluoride, total	mg/l	4	0.62	4	0.55	0.56	0.37	0.39
AW-3/RW-3	Fluoride, total	mg/l	4	0.62	4	0.47	0.49	0.48	0.43
AP-8	Fluoride, total	mg/l	4	0.62	4	0.29	0.31	0.3	0.27
AP-10	Fluoride, total	mg/l	4	0.62	4		0.35	0.34	0.3
AP-14	Fluoride, total	mg/l	4	0.62	4	0.28	0.3	0.29	0.26
AP-1	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-2	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-3	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015

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Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-4	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-5	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-6	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-7	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AW-3/RW-3	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.001	< 0.015	< 0.015
AP-8	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-9	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	0.0168	< 0.015	< 0.015
AP-10	Lead, total	mg/l	0.0075	0.638	0.638		< 0.015	< 0.015	< 0.015
AP-11	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	< 0.015	< 0.015
AP-12	Lead, total	mg/l	0.0075	0.638	0.638	0.0225	< 0.015	0.0228	< 0.015
AP-13	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	< 0.015	0.0163	0.0177
AP-14	Lead, total	mg/l	0.0075	0.638	0.638	< 0.015	0.0189	< 0.015	< 0.015
AP-1	Lithium	mg/l	0.04	0.05	0.05	0.0098	0.0096	0.0087	< 0.05
AP-2	Lithium	mg/l	0.04	0.05	0.05	0.0057	0.0056	0.0055	< 0.05
AP-3	Lithium	mg/l	0.04	0.05	0.05	0.0053	< 0.005	< 0.005	< 0.05
AP-4	Lithium	mg/l	0.04	0.05	0.05	0.0092	0.0092	0.0077	< 0.05
AP-5	Lithium	mg/l	0.04	0.05	0.05	0.0053	< 0.005	0.0104	< 0.05
AP-6	Lithium	mg/l	0.04	0.05	0.05	0.0071	0.0079	< 0.005	< 0.05
AP-7	Lithium	mg/l	0.04	0.05	0.05	0.009	0.0079	< 0.005	< 0.05
AW-3/RW-3	Lithium	mg/l	0.04	0.05	0.05	0.0066	0.0064	0.0064	< 0.05
AP-8	Lithium	mg/l	0.04	0.05	0.05	0.0068	0.0065	0.0065	< 0.05
AP-9	Lithium	mg/l	0.04	0.05	0.05	< 0.005	0.0073	0.0114	< 0.05
AP-10	Lithium	mg/l	0.04	0.05	0.05		0.01	0.0087	< 0.05
AP-11	Lithium	mg/l	0.04	0.05	0.05	< 0.005	< 0.005	0.017	< 0.05
AP-12	Lithium	mg/l	0.04	0.05	0.05	0.0257	0.0141	0.0331	< 0.05
AP-13	Lithium	mg/l	0.04	0.05	0.05	0.0134	0.0114	0.0299	< 0.05
AP-14	Lithium	mg/l	0.04	0.05	0.05	0.0074	0.0066	0.0063	< 0.05
AP-1	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-2	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-3	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-4	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-5	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-6	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-7	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AW-3/RW-3	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-8	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-9	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-10	Mercury, total	mg/l	0.002	0.0008	0.002		< 0.0002	< 0.0002	< 0.0002
AP-11	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-12	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-13	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002

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Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-14	Mercury, total	mg/l	0.002	0.0008	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
AP-1	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-2	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-3	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-4	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-5	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-6	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-7	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AW-3/RW-3	Molybdenum	mg/l	0.1	0.025	0.1	0.0103	0.0106	< 0.01	< 0.01
AP-8	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-9	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-10	Molybdenum	mg/l	0.1	0.025	0.1		< 0.01	< 0.01	< 0.01
AP-14	Molybdenum	mg/l	0.1	0.025	0.1	< 0.01	< 0.01	< 0.01	< 0.01
AP-1	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.57	6.58	6.65	6.68
AP-2	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.43	6.43	6.45	6.52
AP-3	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.6	6.58	6.6	6.65
AP-4	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.92	6.86	6.89	6.95
AP-5	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	7.01	7.17	7.16	7.16
AP-6	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	7.18	7.11	7.2	7.14
AP-7	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	7.2	6.92	7.12	7.17
AW-3/RW-3	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	7.27	7.2	7.11	7.21
AP-8	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.91	6.9	6.76	6.99
AP-9	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	7.47	6.63	6.92	6.83
AP-10	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0		6.69	6.7	6.76
AP-11	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.57	6.51	6.61	6.64
AP-12	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.53	6.44	6.56	6.6
AP-13	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.71	6.59	6.76	6.79
AP-14	pH (field)	units	6.5-9.0	6.76-7.63	6.5-9.0	6.93	6.95	6.94	7.05
AP-1	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	1.36	< 2	< 2	0.714
AP-2	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	< 2	< 2	0.431
AP-3	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	< 2	< 2	0.5046
AP-4	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	1.93	< 2	< 2	0.901
AP-5	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	1.45	< 2	< 0.1664
AP-6	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	1.2	< 2	2.138
AP-7	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	< 2	< 2	< 0.3621
AW-3/RW-3	Radium-226 + Radium-228	pCi/l	5	12.2	12.2	< 2	< 2	< 2	< 0.432
AP-8	Radium-226 + Radium-229	pCi/l	5	12.2	12.2	< 2	1.16	< 2	1.955
AP-9	Radium-226 + Radium-230	pCi/l	5	12.2	12.2	< 2	< 2	< 2	3.012
AP-10	Radium-226 + Radium-231	pCi/l	5	12.2	12.2		< 2	< 2	1.942
AP-11	Radium-226 + Radium-232	pCi/l	5	12.2	12.2	< 2	< 2	< 2	< -2.1708
AP-12	Radium-226 + Radium-233	pCi/l	5	12.2	12.2	< 2	1.46	3.44	2.215

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Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-13	Radium-226 + Radium-234	pCi/l	5	12.2	12.2	< 2	< 2	0 1.17	2.719
AP-14	Radium-226 + Radium-235	pCi/l	5	12.2	12.2	< 2	1.35	< 2	< 0.264
AP-1	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-2	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-3	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-4	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-5	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-6	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-7	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AW-3/RW-3	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.04	< 0.001	< 0.001
AP-8	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-9	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-10	Selenium, total	mg/l	0.05	0.0079	0.05		< 0.001	< 0.001	< 0.001
AP-11	Selenium, total	mg/l	0.05	0.0079	0.05	0.0056	< 0.001	< 0.001	< 0.001
AP-12	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-13	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-14	Selenium, total	mg/l	0.05	0.0079	0.05	< 0.001	< 0.001	< 0.001	< 0.001
AP-1	Sulfate, total	mg/l	400	84.5	400	732	791	753	777
AP-2	Sulfate, total	mg/l	400	84.5	400	583	532	545	643
AP-3	Sulfate, total	mg/l	400	84.5	400	410	408	384	444
AP-4	Sulfate, total	mg/l	400	84.5	400	< 10	< 10	< 10	< 10
AP-5	Sulfate, total	mg/l	400	84.5	400	57	35	66	36
AP-6	Sulfate, total	mg/l	400	84.5	400	< 10	< 10	15	13
AP-7	Sulfate, total	mg/l	400	84.5	400	< 10	< 10	15	13
AW-3/RW-3	Sulfate, total	mg/l	400	84.5	400	10	< 10	< 10	< 10
AP-8	Sulfate, total	mg/l	400	84.5	400	< 10	< 10	< 10	< 10
AP-9	Sulfate, total	mg/l	400	84.5	400	23	57	27	28
AP-10	Sulfate, total	mg/l	400	84.5	400		86	87	96
AP-11	Sulfate, total	mg/l	400	84.5	400	67	88	120	89
AP-12	Sulfate, total	mg/l	400	84.5	400	402	678	607	691
AP-13	Sulfate, total	mg/l	400	84.5	400	134	135	64	142
AP-14	Sulfate, total	mg/l	400	84.5	400	670	681	639	736
AP-1	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-2	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-3	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-4	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-5	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-6	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-7	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AW-3/RW-3	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-8	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002

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Well	Parameter	Units	35 IAC 845.600(a)(1)	Background AP-4 & AP-5	GWPS/ Background	2/16/2022	5/31/2022	8/23/2022	11/8/2022
AP-9	Thallium, total	mg/l	0.002	0.00556	0.0056	0.0032	< 0.002	< 0.002	< 0.002
AP-10	Thallium, total	mg/l	0.002	0.00556	0.0056		< 0.002	< 0.002	< 0.002
AP-11	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-12	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-13	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-14	Thallium, total	mg/l	0.002	0.00556	0.0056	< 0.002	< 0.002	< 0.002	< 0.002
AP-1	Total Dissolved Solids	mg/l	1200	597.94	1200	1490	1550	1550	1540
AP-2	Total Dissolved Solids	mg/l	1200	597.94	1200	1310	1270	1360	1310
AP-3	Total Dissolved Solids	mg/l	1200	597.94	1200	882	942	1030	920
AP-4	Total Dissolved Solids	mg/l	1200	597.94	1200	496	516	540	495
AP-5	Total Dissolved Solids	mg/l	1200	597.94	1200	406	354	488	358
AP-6	Total Dissolved Solids	mg/l	1200	597.94	1200	374	458	246	348
AP-7	Total Dissolved Solids	mg/l	1200	597.94	1200	440	480	290	348
AW-3/RW-3	Total Dissolved Solids	mg/l	1200	597.94	1200	408	428	428	425
AP-8	Total Dissolved Solids	mg/l	1200	597.94	1200	502	552	540	505
AP-9	Total Dissolved Solids	mg/l	1200	597.94	1200	224	618	565	595
AP-10	Total Dissolved Solids	mg/l	1200	597.94	1200		752	755	730
AP-11	Total Dissolved Solids	mg/l	1200	597.94	1200	606	778	550	625
AP-12	Total Dissolved Solids	mg/l	1200	597.94	1200	998	1600	1540	1440
AP-13	Total Dissolved Solids	mg/l	1200	597.94	1200	486	530	690	525
AP-14	Total Dissolved Solids	mg/l	1200	597.94	1200	1240	1340	1390	1380

Notes:

1. The 35 Ill. Adm. Code 845.600 list requires Radium-226 and Radium-228 combined. The established MCL is for the combined parameters. However, these parameters require two separate analysis and have been reported separately by the analytical laboratory. The sum of the values has been provided and compared to the MCL.