BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
	)	
SIERRA CLUB,	)	
	)	
	)	
Complainant,	)	
	)	PCB No- -
v.	)	[*For Board use only*]
	)	
ILLINIOS POWER GENERATING COMPANY, ILLINOIS POWER RESOURCES GENERATING, LLC, ELECTRIC ENERGY, INC., and VISTRA ENERGY CORPORATION,	)	
	)	
Respondents.	)	

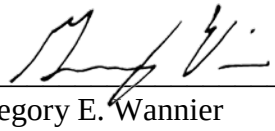
NOTICE OF ELECTRONIC FILING

To: Attached Service List

PLEASE TAKE NOTICE that on December 18, 2018, I electronically filed with the Clerk of the Illinois Pollution Control Board ("Board") a formal COMPLAINT and ENTRY OF APPEARANCE, copies of which are served on you along with this notice. You may be require to attend a hearing on a date set by the Board. Failure to file an answer to this Complaint within 60 days may have severe consequences. Failure to answer will mean that all allegations in this Complaint will be taken as if admitted for purposes of this proceeding. If you have any questions about this procedure, you should contact the hearing office assigned to this proceeding, the Clerk's Office or an attorney.

Dated: December 18, 2018

Respectfully Submitted,



Gregory E. Wannier
Bridget M. Lee
2101 Webster St., Ste. 1300
Oakland, CA 94612
(415) 977-5646
greg.wannier@sierraclub.org
bridget.lee@sierraclub.org

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
	)	
SIERRA CLUB,	)	
	)	
	)	
Complainant,	)	
	)	PCB No- -
v.	)	[*For Board use only*]
	)	
ILLINIOS POWER GENERATING COMPANY, ILLINOIS POWER RESOURCES GENERATING, LLC, ELECTRIC ENERGY, INC., and VISTRA ENERGY CORPORATION,	)	
	)	
Respondents.	)	

ENTRY OF APPEARANCE

Faith E. Bugel hereby enters her appearance on behalf of Sierra Club in the above-captioned case.

Respectfully Submitted,

Faith E. Bugel

Faith E. Bugel
Attorney at Law
IL Bar No. 6255685
1004 Mohawk Lane
Wilmette, IL 60091
fbugel@gmail.com
(312) 282-9119

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the Matter of:	)	
	)	
SIERRA CLUB,	)	
	)	
	)	
Complainant,	)	
	)	PCB No- -
v.	)	[*For Board use only*]
	)	
ILLINIOS POWER GENERATING COMPANY, ILLINOIS POWER RESOURCES GENERATING, LLC, ELECTRIC ENERGY, INC., and VISTRA ENERGY CORPORATION,	)	
	)	
Respondents.	)	

COMPLAINT

Complainant Sierra Club hereby alleges as follows:

FACTUAL BACKGROUND

1. Illinois Power Generating Company, Illinois Power Resources Generating, LLC, and Electric Energy, Inc. (collectively, "Direct Owners"), are subsidiary companies of Vistra Energy Corporation ("Vistra"), each of which owns and operates one of three coal-fired power plants in Illinois (collectively, the "Power Plants") where constituents of coal ash have contaminated, and continue to contaminate, groundwater.

2. Previously, the Direct Owners were subsidiary companies of Dynegy Inc. ("Dynegy"); on April 9, 2018, Dynegy formally merged with Vistra, and as a result of that merger, Dynegy has ceased to exist as a separate corporate entity.

3. The Power Plants were also all previously owned by Ameren Corp.; they were acquired by Dynegy in 2013, as part of a transaction in which Ameren sold off its entire merchant generation fleet in Illinois to Dynegy.

Groundwater Contamination at IPG's Coffeen Power Station Site

4. Illinois Power Generating Company ("Genco"), a wholly owned subsidiary of Vistra, owns and operates the Coffeen Power Station ("Coffeen"), a coal-burning power plant located just south of Coffeen, Illinois, in Montgomery County, on the banks of Coffeen Lake, and in the Coffeen Lake Watershed.

5. Since the mid-1960s, Genco has stored and disposed of coal ash and other coal combustion waste in onsite repositories, including, but not limited to, two unlined ash ponds, a landfill, and two gypsum management facility ponds, and continues to store or dispose of coal ash and other coal combustion waste in these ponds and landfill.

6. Between 2010 and 2017, Genco sampled groundwater from a network of monitoring wells around the Coffeen ash disposal units. The locations of the groundwater monitoring wells sampled during that time period are depicted on maps included in Genco groundwater monitoring reports for Coffeen, attached hereto as Exhibits A-1 through A-8.

7. Results of the groundwater monitoring from 2010 through 2017[1] at Coffeen show concentrations of arsenic, beryllium, boron, cadmium, chloride, chromium, fluoride, iron, lead, manganese, sulfate, thallium, total dissolved solids ("TDS"), and zinc that exceed Illinois Class I groundwater quality standards ("GQSs"). *See* Violations of Illinois Class I Groundwater Quality Standards at Coffeen, attached hereto as Exhibit D.

8. In addition, results of groundwater monitoring at Coffeen show concentrations of alkalinity, ammonia, calcium, magnesium, potassium, and sodium that exceed site-specific standards set by IEPA.

[1] Upon information and belief, Genco is continuing to sample groundwater at Coffeen pursuant to the requirements of the federal coal ash combustion residuals rule, 40 C.F.R. Part 257; but Complainant does not have access to results of sampling more recent than November 2017.

9. A June 24, 2012 notice of violation from Illinois Environmental Protection Agency, attached hereto as Exhibit G, identifies the groundwater underlying the Coffeen site as meeting the definition of Class I, potable resource groundwater.

Groundwater Contamination at IPRG's E.D. Edwards Generation Plant Site

10. Illinois Power Resources Generating, LLC ("IPRG"), a wholly owned subsidiary of Vistra, owns and operates the E.D. Edwards Generation Plant ("Edwards"), a coal-burning power plant located in Hollis Township, Illinois, in Peoria County, on the western bank of the Illinois River, and in the Illinois River Watershed.

11. Since the early 1960s, IPRG has stored and disposed of coal ash and other coal combustion waste in onsite repositories, including, but not limited to, an unlined pond (the Edwards Ash Pond) containing more than 130 million cubic feet of waste,[2] and continues to store or dispose of coal ash and other coal combustion waste at the site.

12. Between 2010 and 2012, and then between 2015 and 2017, IPRG sampled groundwater from a network of monitoring wells around the Edwards Ash Pond. The locations of the groundwater monitoring wells sampled during those time periods are depicted on maps included in IPRG groundwater monitoring reports for Edwards, attached hereto as Exhibits B-1 and B-2.

13. Results of the groundwater monitoring from 2010 through 2012 and 2015 through 2017[3] at Edwards show concentrations of arsenic, barium, beryllium, boron, chloride, chromium, iron, lead, manganese, sulfate, thallium, and TDS that exceed

[2] IPRG August 29, 2017 dam inspection report, *available at* https://www.luminant.com/ccr/#ed-edwards.

[3] Upon information and belief, IPRG is continuing to sample groundwater at Edwards pursuant to the requirements of the federal coal ash combustion residuals rule, 40 C.F.R. Part 257; but Complainant does not have access to results of sampling more recent than November 2017.

Illinois Class I groundwater quality standards. *See* Violations of Illinois Class I Groundwater Quality Standards at Edwards, attached hereto as Exhibit E.

14. In addition, results of groundwater monitoring at Edwards show concentrations of calcium that exceed site-specific standards.

15. A March 19, 2013 hydrogeological assessment[4] prepared for Ameren identifies the groundwater underlying the Edwards site as meeting the definition of Class I, potable resource groundwater.

Groundwater Contamination at EEI's Joppa Steam Plant Site

16. Electric Energy, Inc. ("EEI"), an 80 percent-owned subsidiary of Vistra, owns and operates the Joppa Steam Plant ("Joppa"), a coal-burning power plant located in Joppa, Illinois, in Massac County, on the northern bank of the Ohio River, and in the Bayou Creek-Ohio River Watershed.

17. Since the 1970s, IPG has stored and disposed of coal ash and other coal combustion waste in onsite repositories, including, but not limited to, an unlined pond containing more than 120 million cubic feet of waste[5] and a dry landfill, and continues to store or dispose of coal ash and other coal combustion waste in these units.

18. Between 2011 and 2013, and then between 2015 and 2017, EEI sampled groundwater from a network of monitoring wells around the Joppa ash disposal units. The locations of the groundwater monitoring wells sampled during those time periods are depicted on maps included in EEI groundwater monitoring reports for Joppa, attached hereto as Exhibits C-1, C-2, and C-3.

[4] Natural Resource Technology, Inc., Phase 1 Hydrogeological Assessment Report: Coal Combustion Product Impoundment, E.D. Edwards Energy Center, Peoria, Illinois (Mar. 19, 2013).

[5] IPG August 29, 2017 dam inspection report, *available at* https://www.luminant.com/ccr/#joppa.

19. Results of groundwater monitoring at Joppa from 2011 through 2013 and 2015 through 2017[6] show concentrations of arsenic, boron, iron, lead, and sulfate that exceed Illinois Class I and Class II groundwater quality standards, and concentrations of beryllium, chromium, and manganese that exceed Class I standards only. *See* Violations of Illinois Class I Groundwater Quality Standards at Joppa and Violations of Illinois Class II Groundwater Quality Standards at Joppa, attached hereto as Exhibits F-1 and F-2.

20. In addition, results of groundwater monitoring at Joppa show concentrations of calcium that exceed site-specific standards.

21. A July 23, 2013 hydrogeological assessment[7] prepared for EEI and Ameren identifies the groundwater underlying the Joppa site as meeting the definition of Class II groundwater.

Pollutants and Applicable Groundwater Standards

22. The results of groundwater monitoring conducted at the Power Plants, reveal exceedances of Illinois Class I Groundwater Quality Standards, 35 Ill. Admin. Code § 620.410, for: arsenic, beryllium, boron, chromium, iron, lead, manganese, and sulfate. *See* Exhibits D, E, and F-1.

23. The results of groundwater monitoring conducted at Joppa reveal exceedances of Illinois Class II Groundwater Quality Standards, 35 Ill. Admin. Code § 620.420, for: arsenic, boron, iron, lead and sulfate. *See* Exhibit F-2.

[6] Upon information and belief, EEI is continuing to sample groundwater at Joppa pursuant to the requirements of the federal coal ash combustion residuals rule, 40 C.F.R. Part 257; but Complainant does not have access to results of sampling more recent than November 2017.

[7] Natural Resource Technology, Inc., Phase 1 Hydrogeological Assessment Report: Coal Combustion Product Impoundments, Joppa Generating Station, Joppa, Illinois (July 23, 2013).

24. In addition, exceedances of site-specific groundwater standards for alkalinity, ammonia, calcium, magnesium, potassium, and sodium were revealed through monitoring at the Power Plants.

25. Many of the contaminants found at elevated concentrations in the groundwater beneath the Power Plants are recognized constituents of coal ash.[8] Boron, calcium, fluoride, sulfate, and TDS are primary indicators of coal ash impacts to groundwater.[9]

26. The pollutants listed in this complaint, when present at the concentrations found in Respondents' groundwater wells at the Power Plants, make the groundwater unusable. Many of these contaminants are toxic and have been found at concentrations that present a human health risk. They are also dangerous to aquatic ecosystems, which is a significant concern to the extent that contaminated groundwater is migrating into adjacent surface water bodies.

27. Antimony is listed as a toxic pollutant, 40 C.F.R. § 401.15, and is associated with reduced lifespan, decreased blood glucose, and altered cholesterol in rodents, and with vomiting and cardiac and respiratory effects in humans.[10]

28. Arsenic is known to cause multiple forms of cancer in humans and is also associated with non-cancer health effects of the skin and the nervous system.[11]

---

[8] *See, e.g.*, U.S. EPA, Human and Ecological Risk Assessment of Coal Combustion Wastes at 2-4 (Draft, April 2010) (listing coal combustion waste constituents), *available at* http://earthjustice.org/sites/default/files/library/reports/epa-coal-combustion-waste-risk-assessment.pdf.

[9] *Id.* at 4-11; 80 Fed. Reg. 21,302, 21,342 (identifying boron, calcium, fluoride, sulfate, and TDS as "indicator parameters . . . known to be leading indicators of releases of contaminants associated with [coal combustion residuals]").

[10] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Antimony, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=6.

[11] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Arsenic, inorganic, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=278; U.S. Agency for Toxic

Groundwater that exceeds Illinois GQSs for arsenic is highly toxic; based on current U.S. EPA risk estimates, the cancer risk associated with drinking water at 0.05 mg/L, the Illinois Class I GQS for arsenic, is greater than 2 in 1,000. The risk at 0.2 mg/L, the Class II GQS, is 1 in 100.[12]

29. Barium can cause gastrointestinal disturbances and muscular weakness. Ingesting large amounts, dissolved in water, can change heart rhythm and can cause paralysis and possibly death. Barium can also cause increased blood pressure.[13]

30. Drinking water containing beryllium in excess of the maximum contaminant level of 4 parts per billion can lead to intestinal lesions, according to EPA. Beryllium in drinking water may also pose a cancer risk in humans.[14] Beryllium is a toxic pollutant, 40 C.F.R. § 401.15.

31. Oral exposure to boron has led to developmental and reproductive toxicity in multiple species. Specific effects include testicular degeneration, reduced sperm count, reduced birth weight, and birth defects.[15] The EPA has established a child health advisory of 3 mg/L for boron, close to the Illinois Class I and Class II GQS of 2 mg/L.[16]

Substances and Disease Registry (ATSDR), Toxicological Profile for Arsenic (Aug. 2007), *available at* https://www.atsdr.cdc.gov/toxprofiles/tp2.pdf.

[12] Derived from U.S. EPA Integrated Risk Information System Chemical Assessment Survey: Arsenic, Inorganic, 14, *available at* https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/ 0278_summary.pdf (listing a drinking water unit risk of 5E-5 per ug/L).

[13] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Barium and Compounds, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=10.

[14] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Beryllium and compounds, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=12.

[15] *See, e.g.*, U.S. EPA, Toxicological Profile of Boron and Compounds 60-61 (June 2004); U.S. EPA Integrated Risk Information System Chemical Assessment Survey: Boron and Compounds at 36-41, *available at* https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/ 0410_summary.pdf.

[16] *See, e.g.*, U.S. EPA, 2012 Edition of the Drinking Water Standards and Health Advisories at 8 (April 2012). *available at* https://rais.ornl.gov/documents/2012_drinking_water.pdf.

32. Chronic exposure to cadmium, a toxic pollutant, 40 C.F.R. § 401.15, can result in kidney disease and obstructive lung diseases such as emphysema. Cadmium may also be related to increased blood pressure (hypertension) and is a possible lung carcinogen. Cadmium affects calcium metabolism and can result in bone mineral loss and associated bone loss, osteoporosis, and bone fractures.[17]

33. Chloride renders water unusable by imparting a salty taste; to prevent this the EPA has set a secondary drinking water regulation of 250 mg/L, close to the Illinois Class I and Class II GQS of 200 mg/L.[18]

34. Chromium is an odorless and tasteless metallic element, and most commonly comes in two forms: trivalent chromium, and hexavalent chromium.[19] Although some trivalent chromium is an important dietary element, hexavalent chromium is a known human carcinogen, and high levels of exposure through drinking water can cause oral ulcers, diarrhea, vomiting, and other signs of agitation.[20] Since 1991, the U.S. EPA has enforced a federal drinking water standard of 0.1 mg/l, which is the same as the Illinois Class I standard. U.S. EPA also determined that chromium should be regulated based on total chromium, including trivalent chromium, because the two forms of chromium can convert back and forth depending on conditions in the water or even inside the human body.[21]

---

[17] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Cadmium, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=141.

[18] *See, e.g.*, U.S. EPA, Secondary Drinking Water Regulations: Guidance for Nuisance Chemicals, http://water.epa.gov/drink/contaminants/secondarystandards.cfm.

[19] *See, e.g.*, U.S. EPA, Chromium in Drinking Water, https://www.epa.gov/dwstandardsregulations/chromium-drinking-water.

[20] *See, e.g.*, U.S. EPA, Toxicological Review of Hexavalent Chromium 7 (Aug. 1998), *available at* https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0144tr.pdf.

[21] *See, e.g.*, U.S. EPA, Chromium in Drinking Water, *supra* note 19.

35. Cobalt is possibly carcinogenic to humans. Short-term exposure of rats to high levels of cobalt in the food or drinking water resulted in effects on the blood, liver, kidneys, and heart. Longer-term exposure of rats, mice, and guinea pigs to lower levels of cobalt in the food or drinking water results in effects on the same tissues (heart, liver, kidneys, and blood) as well as the testes, and also caused effects on behavior. Sores were seen on the skin of guinea pigs following skin contact with cobalt for 18 days.[22]

36. Exposure to fluoride has been linked to tooth discoloration and skeletal problems when ingested.[23]

37. Iron renders water unusable by imparting a rusty color and a metallic taste and causing sedimentation and staining; to prevent these effects the EPA has set a secondary drinking water regulation of 0.3 mg/L.[24]

38. Lead is known to be toxic to the nervous system, and is particularly associated with effects on childhood neurobehavioral development at very low doses. Lead is also classified by the EPA as a "probable human carcinogen."[25] The EPA Action Level for lead in drinking water is 0.015 mg/L.[26] This is unlikely to represent a "safe" level of exposure—the EPA has noted, for example, that there may be no threshold for

[22] *See, e.g.*, World Health Org., International Agency for Research on Cancer, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol. 86 (2006), *available at* https://monographs.iarc.fr/wp-content/uploads/2018/06/mono86.pdf.

[23] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Fluorine, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=53.

[24] U.S. EPA, Secondary Drinking Water Regulations, *supra* note 18.

[25] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Lead and Compounds (Inorganic), https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=277.

[26] *See, e.g.*, U.S. EPA, National Primary Drinking Water Regulations, Basic Information about Lead in Drinking Water, https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

lead toxicity.[27] Groundwater concentrations of lead above the Illinois Class I GQS, 0.0075 mg/L, are unsafe in drinking water.

39. Manganese is also known to be toxic to the nervous system.[28] The EPA has not updated its assessment of manganese toxicity in 16 years, so EPA standards and advisories may not reflect the latest scientific knowledge concerning effects on childhood neurological development,[29] and the EPA Lifetime Health Advisory for manganese—0.3 mg/L—may not be adequately health-protective. In any event, manganese concentrations greater than 0.05 mg/L render water non-potable by discoloring the water, giving it a metallic taste, and causing black staining.[30] Groundwater with manganese above the Illinois Class I GQS—0.15 mg/L—is unfit for human consumption and is potentially toxic.

40. Selenium is an essential element, but it is also a toxic pollutant, 40 C.F.R. § 401.15, and excess exposure can cause a chemical-specific condition known as selenosis, with symptoms that include hair and nail loss.[31]

41. High concentrations of sulfates in drinking water impart a salty taste and can cause diarrhea; to protect against these effects, the U.S. EPA has established a health-

[27] *See, e.g.*, U.S. EPA Integrated Risk Information System Chemical Assessment Survey: Lead and Compounds (Inorganic) at 2, *available at* https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0277_summary.pdf.

[28] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Manganese, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=373.

[29] *See, e.g.*, G.A. Wasserman et al., Water manganese exposure and children's intellectual function in Araihazar, Bangladesh. 114 Envtl. Health Persp. 124 (2006).

[30] U.S. EPA, Secondary Drinking Water Regulations, *supra* note 18.

[31] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Selenium and compounds, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=472.

based advisory of 500 mg/L.[32] Groundwater with sulfate concentrations above the Illinois Class I and Class II GQS of 400 mg/L is therefore unsuitable for human consumption.

42. Thallium is known to cause neurotoxicity, and is also associated with developmental and reproductive toxicity and other adverse health effects.[33] The Illinois Class I GQS and the U.S. EPA MCL are both 0.002 mg/L.[34]

43. Total dissolved solids (TDS) is a measure of multiple dissolved chemicals, and high TDS is generally associated with hardness, staining, salty taste, and deposits.[35] Groundwater with TDS above the Illinois Class I and Class II GQS, 1,200 mg/L, is unsafe as drinking water.

44. Zinc is a toxic pollutant, 40 C.F.R. § 401.15, and according to the U.S. Agency for Toxic Substances and Disease Registry, ingesting high levels of zinc may cause stomach cramps, nausea, and vomiting. Ingesting high levels of zinc for several months may cause anemia, damage the pancreas, and decrease levels of high-density lipoprotein cholesterol.[36]

45. Finally, many of the contaminants associated with coal ash are known to bioaccumulate in aquatic ecosystems causing tissue damage and other effects in fish and amphibians. One review, for example, noted that "the combined effects of multiple accumulated elements may lead to numerous changes in individuals that could

[32] *See, e.g.*, U.S. EPA, Drinking Water Advisory: Consumer Acceptability Advice and Health Effects Analysis on Sulfate (Feb. 2003), https://www.epa.gov/sites/production/files/2014-09/documents/support_cc1_sulfate_healtheffects.pdf.

[33] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Thallium, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=1012.

[34] U.S. EPA, National Primary Drinking Water Regulations, https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations.

[35] U.S. EPA, Secondary Drinking Water Regulations, *supra* note 18.

[36] *See, e.g.*, U.S. EPA, Integrated Risk Information System: Zinc and Compounds, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?&substance_nmbr=426.

compromise individual fitness or health," and provided several examples of coal ash-contaminated sites where the health of individuals and communities in aquatic ecosystems has been severely impaired.[37]

PARTIES

46. Sierra Club is the nation's oldest and largest grassroots environmental organization. Sierra Club is an incorporated, not-for-profit organization with headquarters located at 2101 Webster Street, Suite 1300, Oakland, CA 94612. Sierra Club's Illinois Chapter office is located at 70 East Lake Street, Suite 1500, Chicago, IL 60601. Sierra Club's mission is to preserve, protect, and enhance the natural environment. Sierra Club has more than 782,000 members, including approximately 30,000 members in Illinois.

47. Upon information and belief, Illinois Power Generating Company ("Genco") is a wholly owned subsidiary of Vistra (through intermediaries) that owns and operates three coal plants in Illinois, including Coffeen. Upon information and belief, Genco is based in Houston, Texas.

48. Upon information and belief, Illinois Power Resources Generating ("IPRG") is a wholly owned subsidiary of Vistra (through intermediaries), which owns and operates multiple coal plants in Illinois, including Edwards. IPRG is based in Houston, Texas.

49. Upon information and belief, Electric Energy, Inc. ("EEI") is an eighty-percent owned subsidiary of Vistra (through intermediaries) that owns and operates the Joppa coal plant in southern Illinois. EEI is based in Joppa, Illinois.

[37] C.L. Rowe et al., *Ecotoxicological implications of aquatic disposal of coal combustion residues in the United States: A review*, 80 Envtl. Monitoring and Assessment 207, 242 (2002); *see also* A.D. Lemly and J.P. Skorupa, Wildlife and the coal waste policy debate: Proposed rules or coal waste disposal ignore lessons from 45 years of wildlife poisoning, 46 Envtl. Sci. Tech. 46 (2012).

50. Vistra Energy Corporation ("Vistra") is a multi-million dollar energy company based in Dallas, Texas, that is the ultimate corporate parent for Genco, IPRG, and EEI.

LEGAL BACKGROUND

51. The Illinois Environmental Protection Act prohibits "the discharge of any contaminants into the environment . . . so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources," 415 ILCS 5/12(a), and prohibits the deposition of "any contaminants upon the land in such place and manner so as to create a water pollution hazard." 415 ILCS 5/12(d).

52. "Water pollution" is defined as the "alteration" or "discharge of any contaminant into any waters of the State, as will or is likely to create a nuisance or render such waters harmful or detrimental or injurious to public health, safety or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate uses, or to livestock, wild animals, birds, fish, or other aquatic life." 415 ILCS 5/3.545.

53. "Waters" of the State is defined to include "all accumulations of water, surface and underground, natural, and artificial, public and private, or parts thereof, which are wholly or partially within, flow through, or border upon this State." 415 ILCS 5/3.550.

54. Section 620.115 provides that "No person shall cause, threaten or allow a violation of the [Environmental Protection Act], the [Illinois Groundwater Protection Act] or regulations adopted by the Board thereunder, including but not limited to this part." 35 Ill. Admin. Code § 620.115.

55. Section 620.301(a) provides that "No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that: 1) Treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or 2) An existing or potential use of such groundwater is precluded." 35 Ill. Admin. Code § 620.301.

56. Section 620.405 prohibits "the release of any contaminant to groundwater so as to cause a groundwater quality standard set forth in this Subpart to be exceeded." 35 Ill. Admin. Code § 620.405.

57. The Illinois Administrative Code establishes different groundwater quality standards for Class I and Class II groundwater. 35 Ill. Admin. Code § 620.410, 620.420.

58. Section 620.410 establishes Class I GQSs that cannot be exceeded in potable resource groundwater. 35 Ill. Admin. Code § 620.410. "Potable resource groundwater" is defined as:

> Groundwater located 10 feet or more below the land surface and within: (1) The minimum setback zone of a well which serves as a potable water supply and to the bottom of such well; (2) Unconsolidated sand, gravel or sand and gravel which is 5 feet or more in thickness and that contains 12 percent or less of fines . . . ; (3) Sandstone which is 10 feet or more in thickness, or fractured carbonate which is 15 feet or more in thickness; or (4) Any geologic material which is capable of a: (A) sustained groundwater yield, from up to a 12 inch borehole, of 150 gallons per day or more from a thickness of 15 feet or less; or (B) Hydraulic conductivity of 1 x 10(-4) cm/sec or greater using one of the following test methods or its equivalent: (i) Permeameter; (ii) Slug test; or (iii) Pump test.

59. 35 Ill. Admin. Code § 620.210(a). The definition of Class I groundwater specifically excludes: Class III "special resource groundwater," Class IV "other groundwater," which includes groundwater in a zone of attenuation; and groundwater in a "groundwater management zone." 35 Ill. Admin. Code § 620.210; *see also* 35 Ill. Admin. Code §§ 620.230, 620.240, 620.250.

60. Section 620.420 establishes Class II GQSs that cannot be exceeded in general resource groundwater. 35 Ill. Admin. Code § 620.420. "General resource groundwater" is defined as "groundwater which does not meet the provisions of . . . Class I . . . Class III . . . or . . . Class IV" and "groundwater which is found by the Board, pursuant to the petition procedures set forth in Section 620.260, to be capable of agricultural, industrial, recreational or other beneficial uses." 35 Ill. Admin. Code § 620.220. Groundwater in a zone of attenuation must meet Class II GQSs. 35 Ill. Admin. Code § 620.440(b).

61. The Illinois Class I and Class II GQSs for contaminants identified in this complaint are as follows:

Chemical	Class I GQS (mg/L) (35 Ill. Admin. Code § 620.410)	Class II GQS (mg/L) (35 Ill. Admin. Code § 620.420)
Antimony	0.006	0.024
Arsenic	0.01	0.2
Barium	2	2
Beryllium	0.004	0.5
Boron	2	2
Cadmium	0.005	0.05
Chloride	200	200
Chromium	0.1	1.0
Cobalt	1	1
Fluoride	4	4
Iron	5	5
Lead	0.0075	0.10
Manganese	0.15	10
Selenium	0.05	0.05
Sulfate	400	400
Thallium	0.002	0.02
Total Dissolved Solids (TDS)	1,200	1,200
Zinc	5	10

COUNT I: WATER POLLUTION AT COFFEEN

62. Paragraphs 1 to 61 are realleged and incorporated herein by reference.

63. Genco, through its disposal and storage of coal ash at Coffeen, has discharged contaminants into the environment and thereby caused water pollution in violation of 415 ILCS 5/12(a) and (d), and 35 Ill. Admin. Code §§ 620.115, 620.301(a), and 620.405.

64. Specifically, between 2010 and 2017, contamination from Genco's coal ash disposal and storage at Coffeen caused at least 411 exceedances of Illinois Class I Groundwater Quality Standards for arsenic, beryllium, boron, cadmium, chloride, chromium, fluoride, iron, lead, manganese, sulfate, thallium, TDS, and zinc. *See* Exhibit D; 35 Ill. Admin. Code § 620.410.

COUNT II: WATER POLLUTION AT EDWARDS

65. Paragraphs 1 to 61 are realleged and incorporated herein by reference.

66. IPRG, through its disposal and storage of coal ash at Edwards has discharged contaminants into the environment and thereby caused water pollution in violation of 415 ILCS 5/12(a) and (d), and 35 Ill. Admin. Code §§ 620.115, 620.301(a), and 620.405.

67. Specifically, between 2010 and 2012, and between 2015 and 2017, contamination from IPRG's disposal and storage of coal ash at Edwards caused at least 124 violations of Illinois Class I Groundwater Quality Standards for arsenic, barium, beryllium, boron, chloride, chromium, iron, lead, manganese, sulfate, thallium, and TDS. *See* Exhibit E; 35 Ill. Admin. Code § 620.410.

COUNT III: WATER POLLUTION AT JOPPA

68. Paragraphs 1 to 61 are realleged and incorporated herein by reference.

69. EEI, through its disposal and storage of coal ash at Joppa, has discharged contaminants into the environment and thereby caused water pollution in violation of 415 ILCS 5/12(a) and (d), and 35 Ill. Admin. Code §§ 620.115, 620.301(a), and 620.405.

70. Specifically, between 2011 and 2013, and between 2015 and 2017, contamination from EEI's disposal and storage of coal ash at Joppa caused at least 94 exceedances of Illinois Class I Groundwater Quality Standards for arsenic, beryllium, boron, chromium, iron, lead, manganese, and sulfate. *See* Exhibit F-1; 35 Ill. Admin. Code § 620.410.

71. In the alternative, between 2011 and 2013, and between 2015 and 2017, contamination from EEI's disposal and storage of coal ash at Joppa caused at least 28 exceedances of Illinois Class II Groundwater Quality Standards for arsenic, boron, iron, lead and sulfate. *See* Exhibit F-2; 35 Ill. Admin. Code § 620.420.

RELIEF REQUESTED

WHEREFORE, Complainant respectfully requests that the Pollution Control Board enter an order against Respondents that:

A. DECLARES that Respondents have violated the Illinois Environmental Protection Act's prohibitions on groundwater pollution at their Coffeen, Edwards, and Joppa sites.

B. IMPOSES civil penalties, pursuant to 415 Ill. Comp. Stat. 5/42.

C. ORDERS Respondents, pursuant to 415 Ill. Comp. Stat. 5/33, to:

    i. Cease and desist from causing or threatening to cause water pollution,

ii. Modify their coal ash and coal combustion residual waste disposal and storage practices so as to avoid future groundwater contamination, and

iii. Remediate the contaminated groundwater so that it meets applicable Illinois Groundwater Quality Standards; and

D. GRANTS other such relief as the Board deems just and proper.

Respectfully submitted the 18th of December, 2018,

/s/ Greg Wannier

Gregory E. Wannier
Bridget M. Lee
2101 Webster St., Ste. 1300
Oakland, CA 94612
(415) 977-5646
greg.wannier@sierraclub.org
bridget.lee@sierraclub.org

Faith E. Bugel
1004 Mohawk
Wilmette, IL 60091
(312) 282-9119
fbugel@gmail.com

Attorneys for Sierra Club

EXHIBIT A-1 – A-8

EXHIBIT A: Maps of groundwater monitoring wells at Genco's Coffeen Power Station.

Excerpted from:

2017 Annual Groundwater Monitoring and Corrective Action Report – Coffeen Coal Ash Pond No. 1 (January 31, 2018)

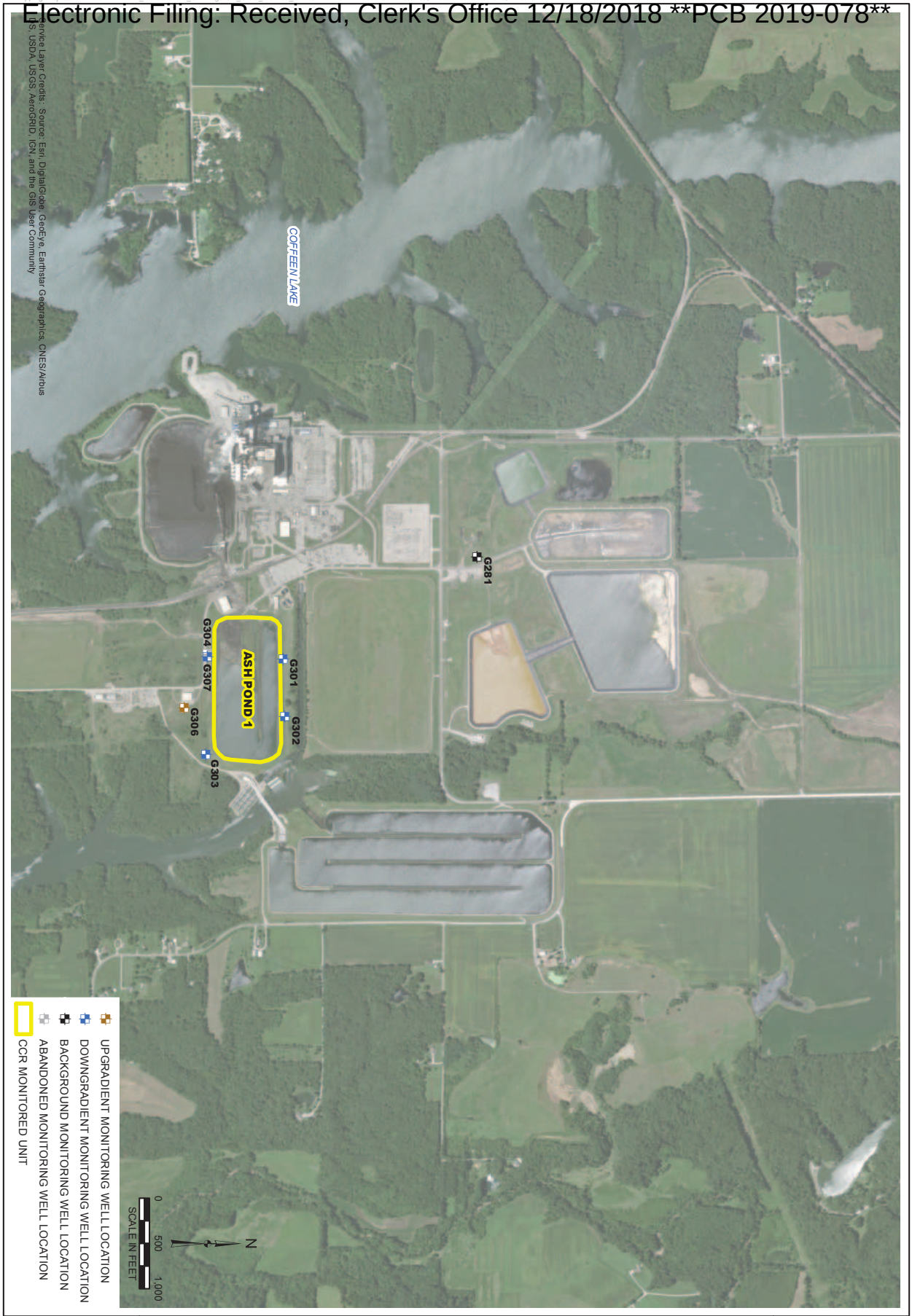
2017 Annual Groundwater Monitoring and Corrective Action Report – Coffeen Coal Ash Pond No. 2 (January 31, 2018)

2017 Annual Groundwater Monitoring and Corrective Action Report – Coffeen GMF Gypsum Stack Pond (January 31, 2018)

2017 Annual Groundwater Monitoring and Corrective Action Report – Coffeen GMF Recycle Pond (January 31, 2018)

2017 Annual Groundwater Monitoring and Corrective Action Report – Coffeen Landfill (January 31, 2018)

Site Characterization and Groundwater Monitoring Plan for CCP Impoundments – Coffeen Power Station (November 2009)

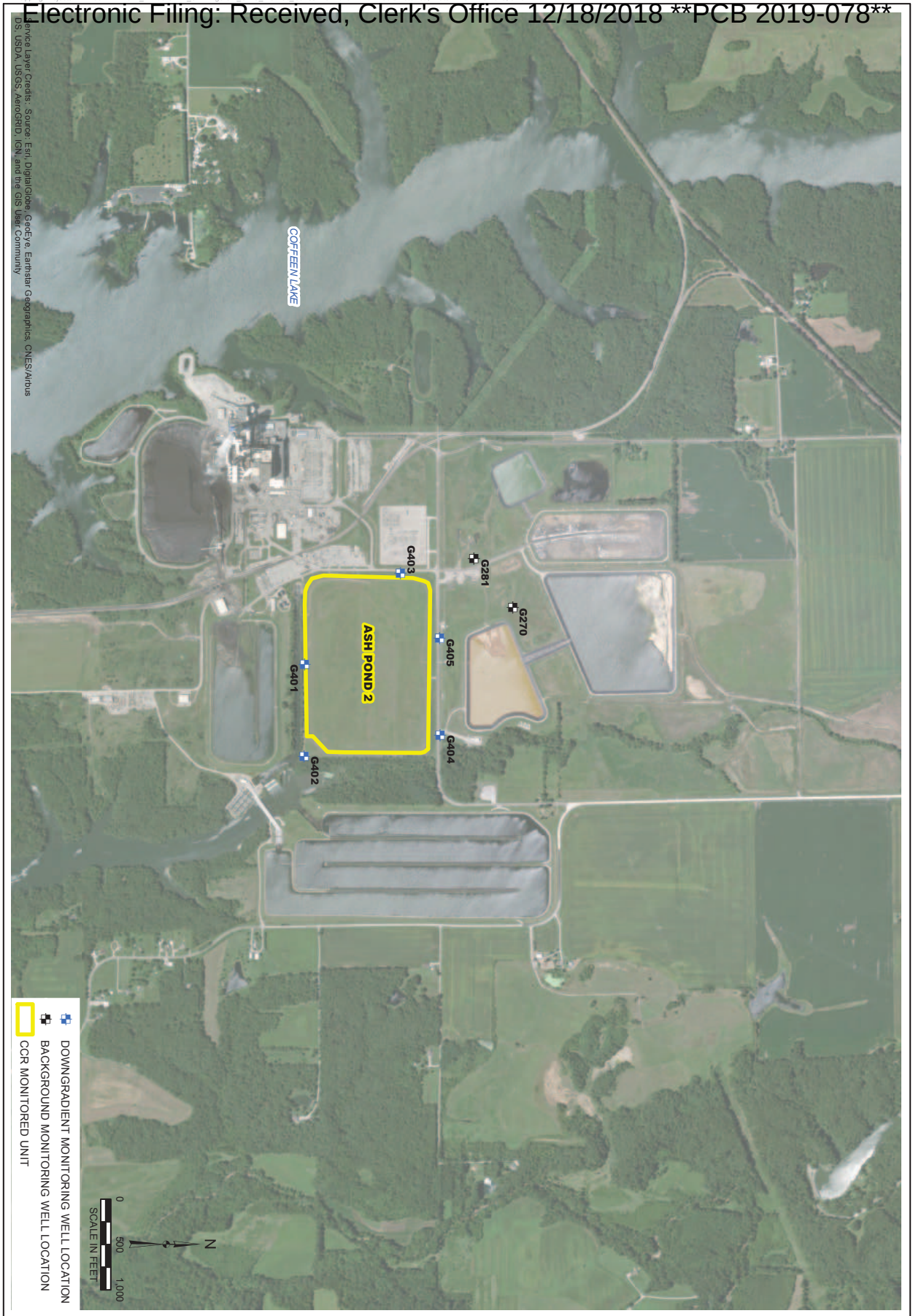


GROUNDWATER SAMPLING WELL LOCATION MAP
COFFEEN ASH POND NO. 1
UNIT ID: 101

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/17/18

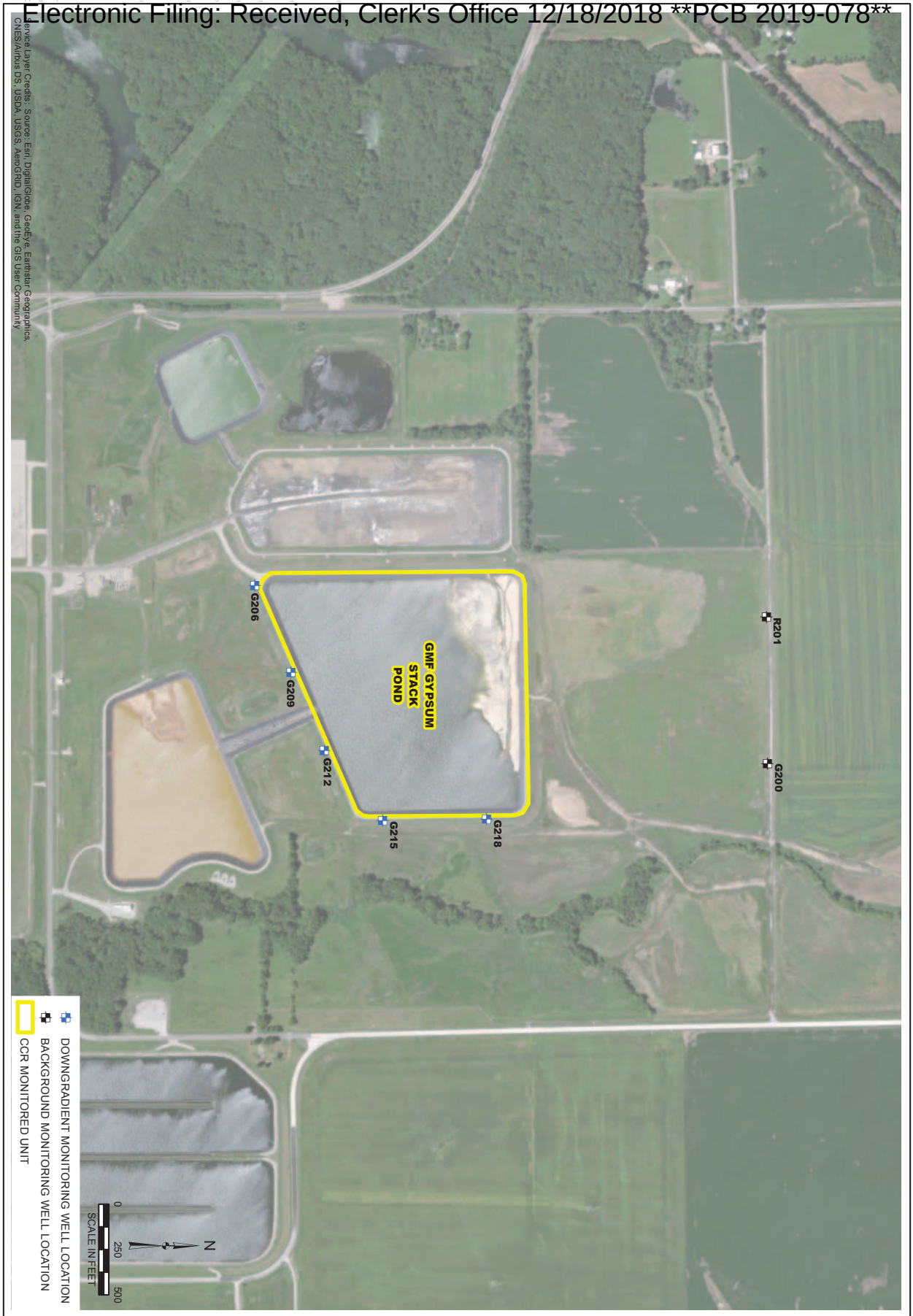


GROUNDWATER SAMPLING WELL LOCATION MAP
COFFEEN ASH POND NO. 2
UNIT ID: 102

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/25/18



GROUNDWATER SAMPLING WELL LOCATION MAP
COFFEEN GMF GYPSUM STACK POND
UNIT ID: 103

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

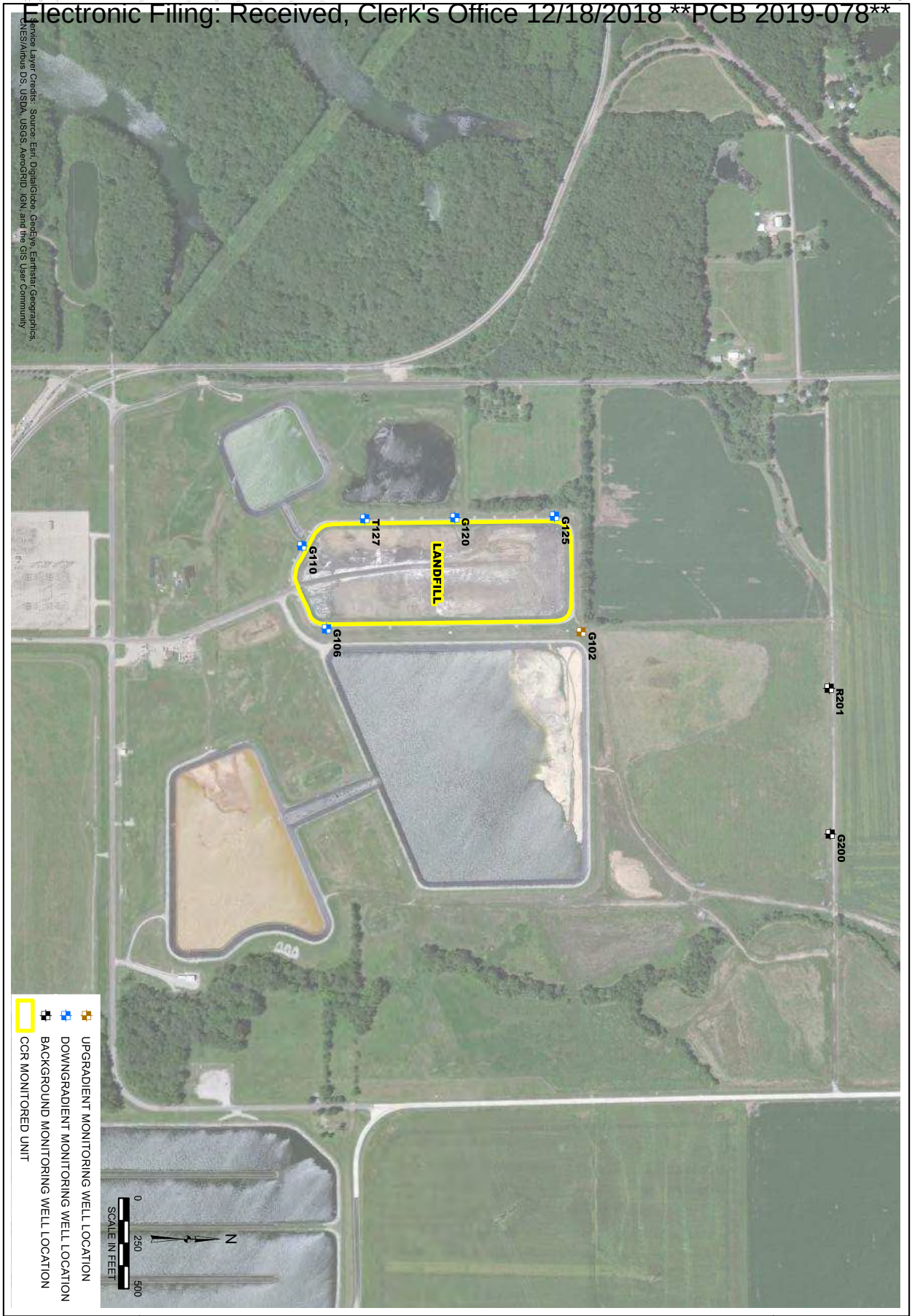
DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/25/18

GROUNDWATER SAMPLING WELL LOCATION MAP
COFFEEN GMF RECYCLE POND
UNIT ID: 104

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/25/18



PROJECT N : 67719

FIGURE N : 1

GROUNDWATER SAMPLING WELL LOCATION MAP
COFFEEN LANDFILL
UNIT ID: 105

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
COFFEEN POWER STATION
COFFEEN, ILLINOIS

DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/25/18

Note: Well locations are approximate; adjustments may be necessary based on field conditions.

RAPPS
Engineering & Applied Science, Inc.

821 S. DURKIN DR. • SPRINGFIELD, IL 62704 • (217) 787-2118
P.O. BOX 925 • CARBONDALE, IL 62903 • (618) 521-0574

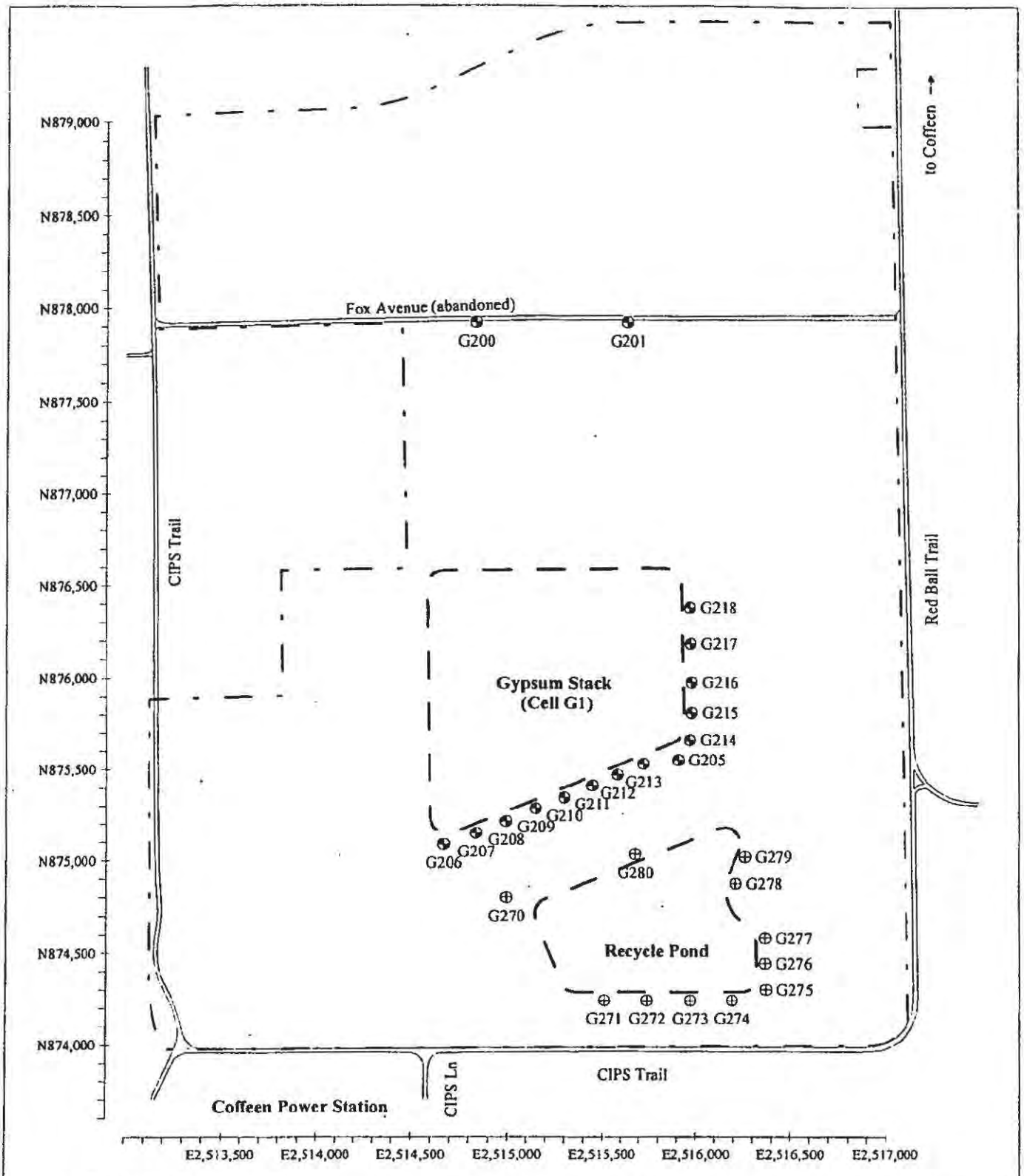
ILLINOIS PROFESSIONAL DESIGN FIRM No. 184-001130

FIGURE 9

PROPOSED WELL LOCATIONS

AMERENENERGY GENERATING COMPANY
COFFEEN POWER STATION
MONTGOMERY COUNTY, ILLINOIS

PROJECT: SA09035 DRAWING: WELLS DATE: 11/09



EXPLANATION

Site Boundary

Limits of Liner

SCALE: 1 inch = 700 feet

HANSON

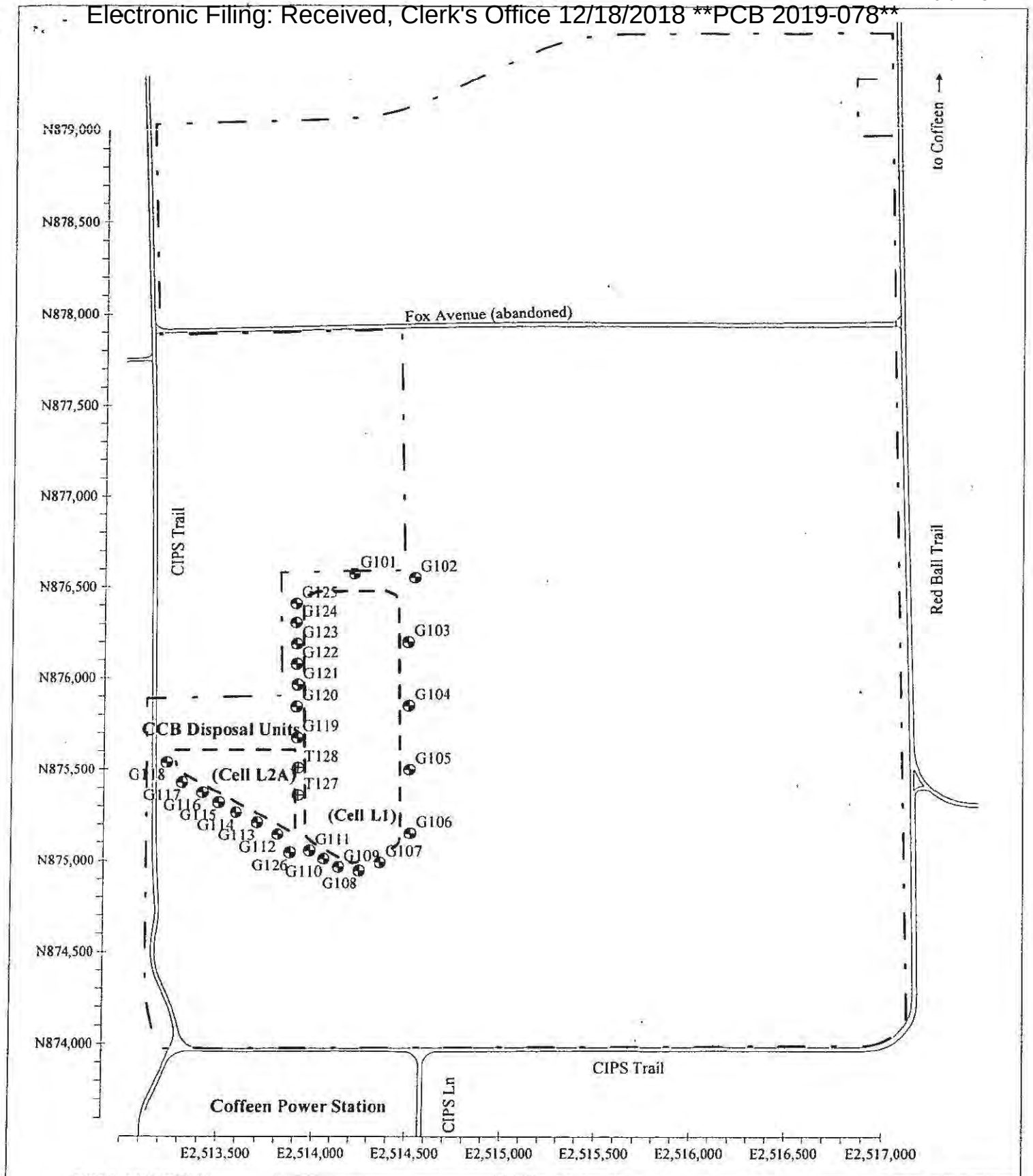
Hanson Professional Services Inc.

Proposed Groundwater Monitoring Location Map

CCB MANAGMENT FACILITY
COFFEEN POWER STATION
MONTGOMERY COUNTY, ILLINOIS

HANSON NO. 05S3004A

FIGURE 8-1



EXPLANATION

Site Boundary

Approx. Limits of Liner

SCALE: 1 inch = 700 feet

HANSON

Hanson Professional Services Inc.

Proposed Groundwater Monitoring Location Map

CCB LANDFILL
COFFEEN POWER STATION
MONTGOMERY COUNTY, ILLINOIS

HANSON NO. 05S3004A

FIGURE 10-1

EXHIBIT B-1 – B-2

EXHIBIT B: Maps of groundwater monitoring wells at IPRG's E.D. Edwards Generation Plant

Excerpted from:

2017 Annual Groundwater Monitoring and Corrective Action Report – Edwards Ash Pond (January 31, 2018)

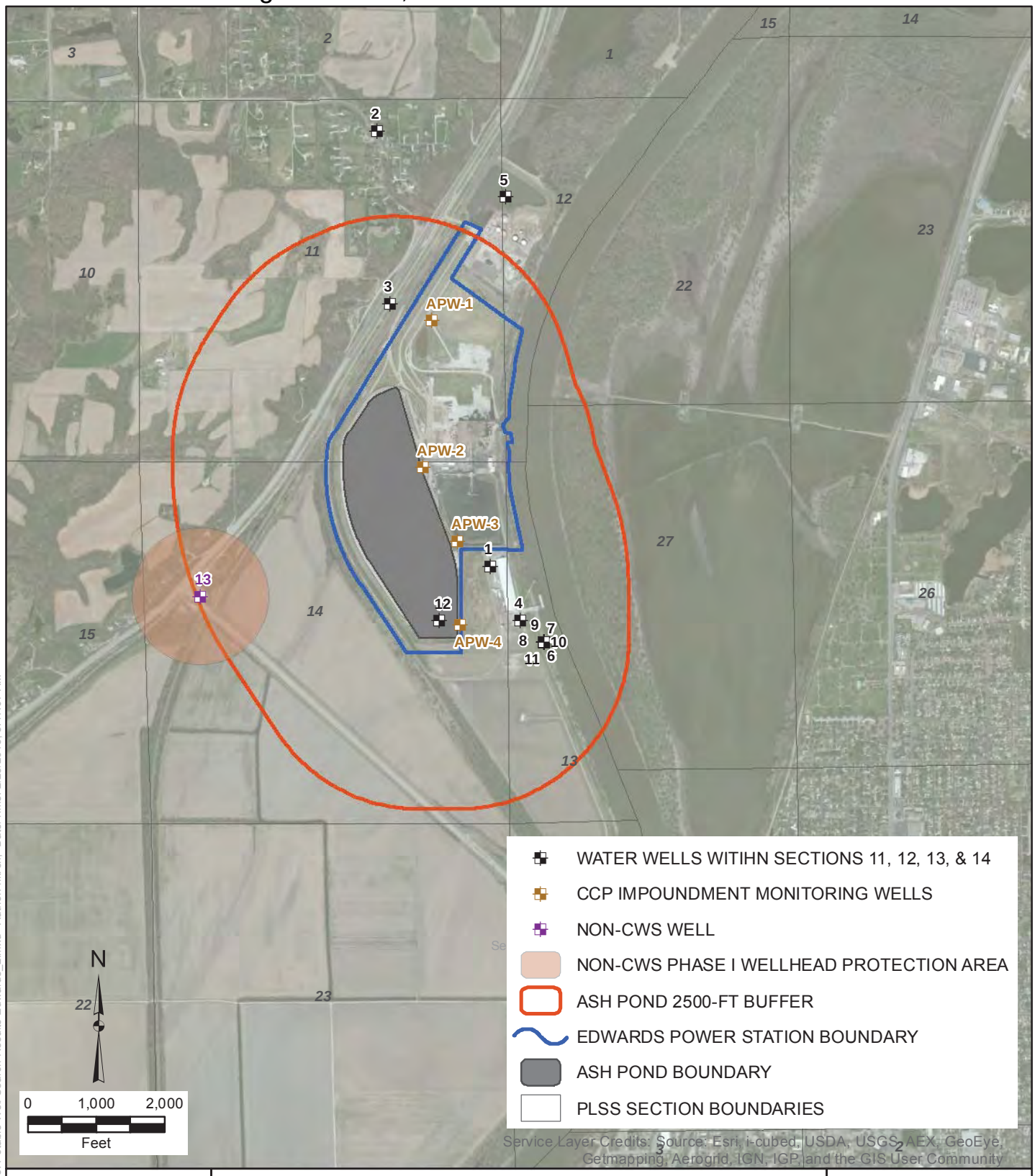
Phase I Hydrogeological Assessment Report – Coal Combustion Product Impoundment E.D. Edwards Energy Center (March 19, 2013) (map version included in Site-Specific Rule for the Closure of Ameren Company Ash Ponds: Proposed New 35 Ill. Adm. Code 840, Subpart B, Technical Support Documents, Filed on 04/09/2013 in Illinois PCB Case No. R2013-019)

GROUNDWATER SAMPLING WELL LOCATION MAP
EDWARDS ASH POND
UNIT ID: 301

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
EDWARDS POWER STATION
BARTONVILLE, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 12/11/17
REVIEWED BY/DATE:
KLT 12/11/17
APPROVED BY/DATE:
SJC 1/24/18



Y:\Mapping\Projects\2121212\MXD\Fig 3. Potable Well Search Results-Edwards_2.mxd Author: nkron; Date/Time: 2/28/2013, 8:47:07 AM

DRAWN BY/DATE:
NDK 2/12/13
REVIEWED BY/DATE:
TDC 2/12/13
APPROVED BY/DATE:
BRH 2/14/13

WELL SEARCH RESULTS

PHASE I HYDROGEOLOGIC ASSESSMENT
AMEREN ENERGY RESOURCES GENERATING
E.D. EDWARDS PLANT
PEORIA COUNTY, ILLINOIS

PROJECT NO: 2122

FIGURE NO: 3

NATURAL RESOURCE TECHNOLOGY

EXHIBIT C-1 – C-3

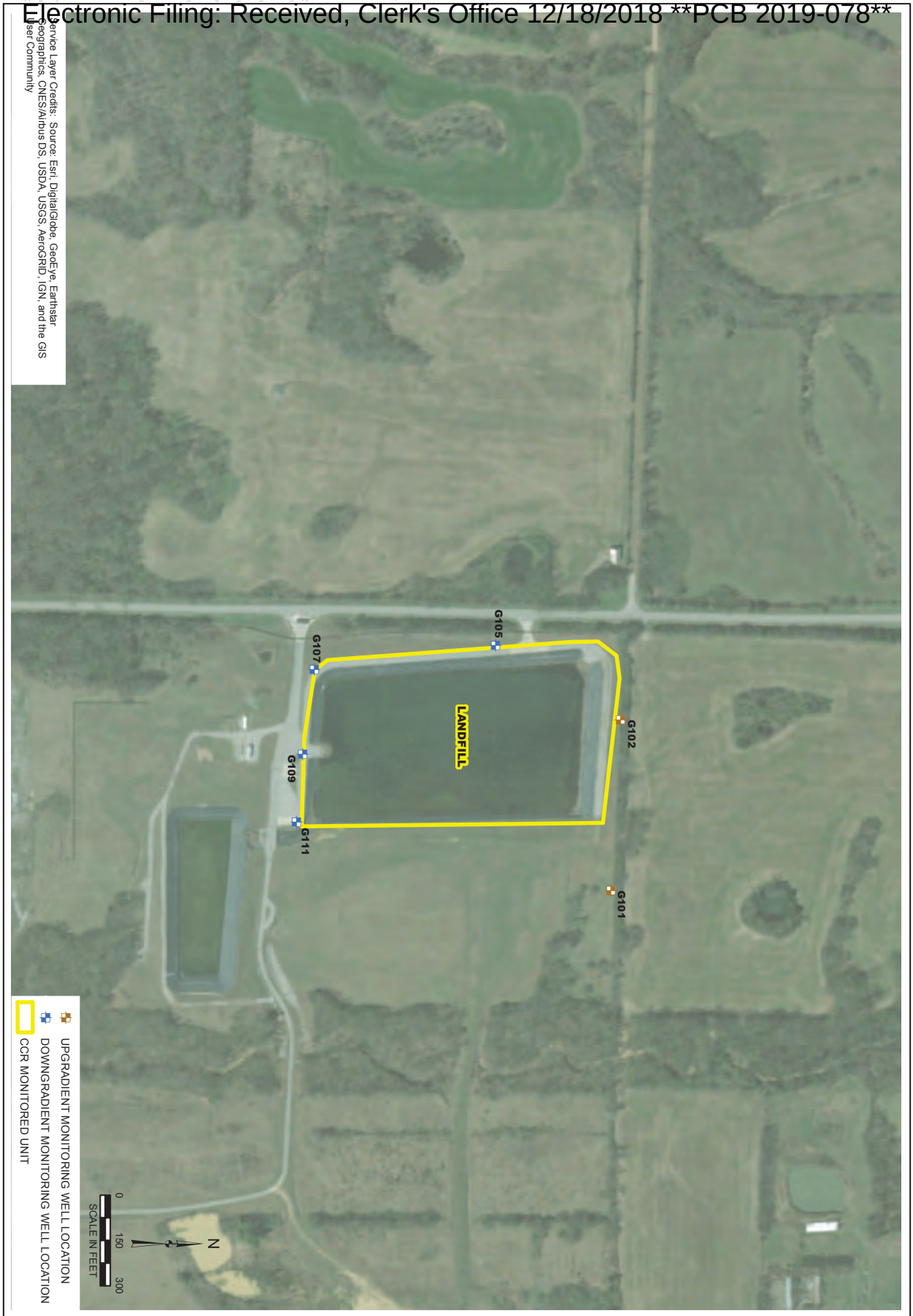
EXHIBIT C: Maps of groundwater monitoring wells at EEI's Joppa Steam Plant.

Excerpted from:

2017 Annual Groundwater Monitoring and Corrective Action Report – Joppa East Ash Pond (January 31, 2018)

2017 Annual Groundwater Monitoring and Corrective Action Report – Joppa Landfill (January 31, 2018)

Groundwater Monitoring Report – Second Quarter 2012 – Electric Energy Inc., Joppa, Illinois (June 5, 2012)



GROUNDWATER SAMPLING WELL LOCATION MAP
JOPPA LANDFILL
UNIT ID: 402

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
JOPPA POWER STATION
JOPPA, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 1/8/18
REVIEWED BY/DATE:
KLT 1/8/18
APPROVED BY/DATE:
SJC 1/25/18

GROUNDWATER SAMPLING WELL LOCATION MAP
JOPPA EAST ASH POND
UNIT ID: 401

2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
JOPPA POWER STATION
JOPPA, ILLINOIS

PROJECT NO: 67719
FIGURE NO: 1

DRAWN BY/DATE:
SDS 1/8/18
REVIEWED BY/DATE:
KLT 1/8/18
APPROVED BY/DATE:
SJC 1/25/18

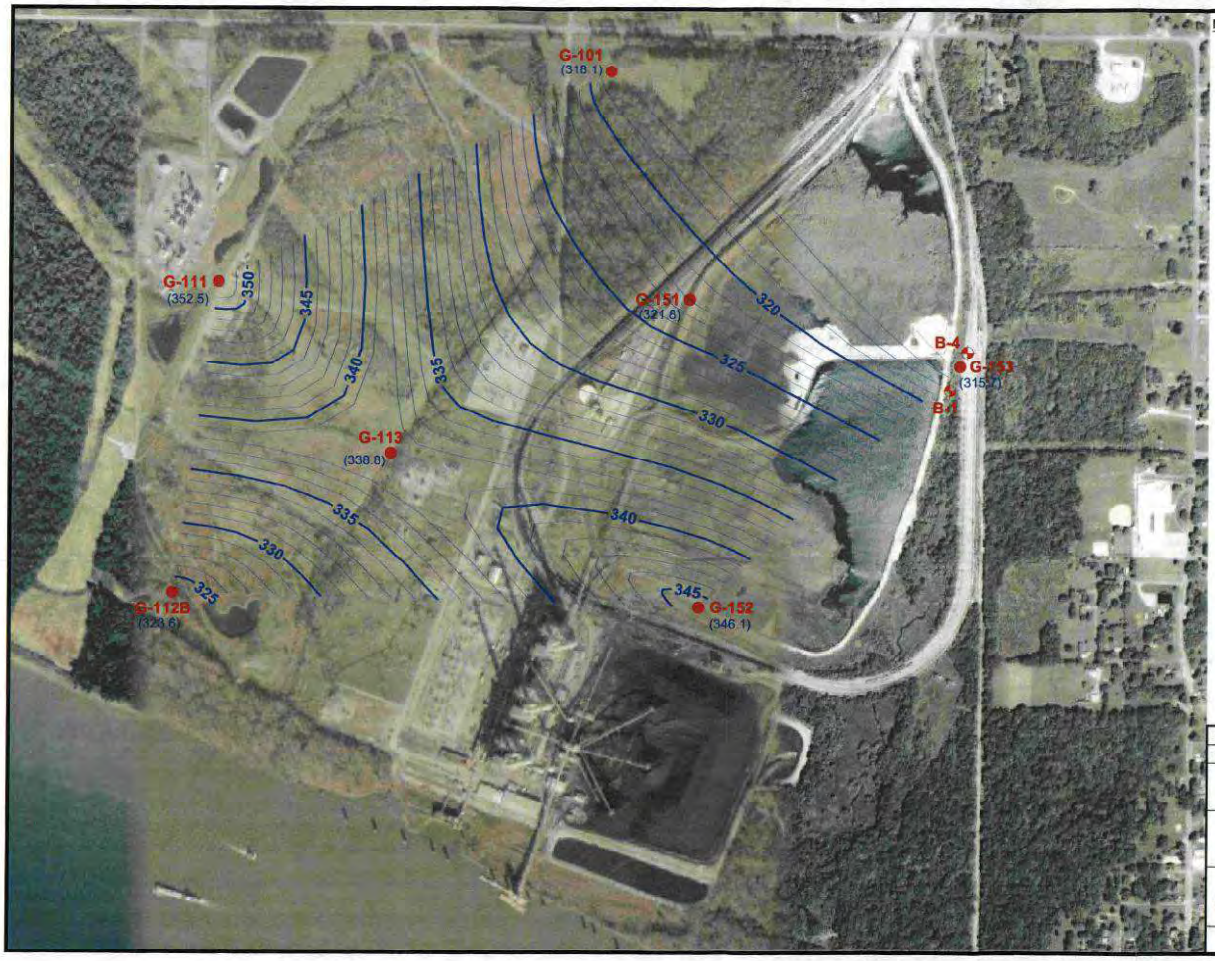


EXHIBIT D

EXHIBIT D: Violations of Illinois Class I groundwater standards at Genco's Coffeen Power Station. This table does not include pH violations.

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
1	G215	Arsenic	0.11	0.01	11/24/2015
2	G215	Arsenic	0.013	0.01	7/30/2016
3	G215	Arsenic	0.012	0.01	2/18/2017
4	G215	Arsenic	0.036	0.01	5/22/2017
5	G215	Arsenic	0.044	0.01	7/15/2017
6	G303	Arsenic	0.013	0.01	11/20/2015
7	G303	Arsenic	0.018	0.01	2/19/2017
8	G307	Arsenic	0.041	0.01	5/17/2017
9	G307	Arsenic	0.012	0.01	7/13/2017
10	G401	Arsenic	0.046	0.01	2/16/2017
11	G401	Arsenic	0.034	0.01	5/17/2017
12	G401	Arsenic	0.068	0.01	7/13/2017
13	G402	Arsenic	0.024	0.01	11/21/2015
14	G402	Arsenic	0.027	0.01	2/22/2016
15	G402	Arsenic	0.023	0.01	5/19/2016
16	G402	Arsenic	0.012	0.01	11/17/2016
17	G402	Arsenic	0.011	0.01	7/13/2017
18	G405	Arsenic	0.014	0.01	11/21/2015
19	L202	Arsenic	0.07	0.01	4/8/2015
20	R201	Arsenic	0.033	0.01	11/14/2012
21	X201	Arsenic	0.074	0.01	1/13/2012
22	G401	Beryllium	0.0046	0.004	7/13/2017
23	R201	Beryllium	0.0067	0.004	2/12/2016
24	APW-2	Boron	7.16	2	12/1/2010
25	APW-2	Boron	7.2	2	1/26/2011
26	APW-2	Boron	6.7	2	5/4/2011
27	APW-2	Boron	6.3	2	7/27/2011
28	APW-2	Boron	6.3	2	7/28/2011
29	APW-2	Boron	8.1	2	11/11/2011
30	APW-2	Boron	7.4	2	1/25/2012
31	APW-2	Boron	7	2	5/22/2012
32	APW-2	Boron	8.1	2	7/23/2012
33	APW-3	Boron	2.07	2	12/1/2010
34	APW-3	Boron	2.5	2	1/26/2011
35	APW-3	Boron	2.1	2	1/25/2012
36	APW-4	Boron	3.54	2	12/1/2010
37	APW-4	Boron	3.8	2	1/26/2011

38	APW-4	Boron	3.9	2	5/4/2011
39	APW-4	Boron	3.2	2	7/25/2011
40	APW-4	Boron	3.2	2	7/28/2011
41	APW-4	Boron	3.9	2	11/11/2011
42	APW-4	Boron	3.6	2	1/25/2012
43	APW-4	Boron	3.3	2	5/22/2012
44	APW-4	Boron	3.8	2	7/23/2012
45	G275	Boron	3.7	2	11/14/2012
46	G275	Boron	3.9	2	11/14/2012
47	G301	Boron	2.3	2	11/20/2015
48	G301	Boron	2.4	2	2/23/2016
49	G301	Boron	2.6	2	5/20/2016
50	G301	Boron	2.9	2	8/15/2016
51	G301	Boron	2.4	2	11/17/2016
52	G301	Boron	2.4	2	2/16/2017
53	G301	Boron	2.1	2	5/17/2017
54	G301	Boron	2.3	2	7/12/2017
55	G301	Boron	2.3	2	10/26/2017
56	G302	Boron	2.1	2	2/23/2016
57	G302	Boron	2.5	2	5/20/2016
58	G303	Boron	2.5	2	2/23/2016
59	G303	Boron	2.4	2	5/20/2016
60	G303	Boron	2.5	2	10/26/2017
61	G304	Boron	2.3	2	11/20/2015
62	G304	Boron	2.4	2	2/23/2016
63	G304	Boron	2.6	2	5/20/2016
64	G306	Boron	2.3	2	5/19/2016
65	G306	Boron	2.7	2	7/1/2016
66	G306	Boron	2.4	2	8/16/2016
67	G306	Boron	2.6	2	9/29/2016
68	G306	Boron	2.7	2	11/16/2016
69	G306	Boron	2.7	2	2/19/2017
70	G306	Boron	2.5	2	5/17/2017
71	G306	Boron	2.9	2	7/13/2017
72	G306	Boron	3.1	2	10/27/2017
73	G307	Boron	2.1	2	8/16/2016
74	G307	Boron	2.2	2	9/29/2016
75	G307	Boron	2.1	2	11/16/2016
76	G307	Boron	2.2	2	7/13/2017
77	G307	Boron	2.1	2	10/27/2017
78	G401	Boron	3.3	2	11/21/2015

79	G401	Boron	3.4	2	2/22/2016
80	G401	Boron	3.5	2	5/19/2016
81	G401	Boron	4.1	2	8/1/2016
82	G401	Boron	4	2	11/17/2016
83	G401	Boron	3.7	2	2/16/2017
84	G401	Boron	3.2	2	5/17/2017
85	G401	Boron	3.6	2	7/13/2017
86	G401	Boron	4.4	2	10/27/2017
87	G402	Boron	6.6	2	11/21/2015
88	G402	Boron	5.7	2	2/22/2016
89	G402	Boron	6.3	2	5/19/2016
90	G402	Boron	7.4	2	8/2/2016
91	G402	Boron	6.9	2	11/17/2016
92	G402	Boron	4.6	2	2/16/2017
93	G402	Boron	5.8	2	5/17/2017
94	G402	Boron	6.8	2	7/13/2017
95	G402	Boron	7.3	2	10/27/2017
96	G404	Boron	2.1	2	11/21/2015
97	G404	Boron	3.2	2	8/2/2016
98	G404	Boron	3.4	2	11/22/2016
99	G404	Boron	2.8	2	2/18/2017
100	G404	Boron	5.5	2	7/14/2017
101	G404	Boron	5.8	2	10/28/2017
102	G405	Boron	17	2	11/21/2015
103	G405	Boron	16	2	2/15/2016
104	G405	Boron	15	2	5/18/2016
105	G405	Boron	17	2	8/2/2016
106	G405	Boron	13	2	11/22/2016
107	G405	Boron	12	2	2/18/2017
108	G405	Boron	4	2	5/16/2017
109	G405	Boron	15	2	7/14/2017
110	G405	Boron	11	2	10/28/2017
111	L202	Boron	5.3	2	4/8/2015
112	X201	Boron	18	2	1/13/2012
113	G401	Cadmium	0.01	0.005	2/16/2017
114	G401	Cadmium	0.01	0.005	5/17/2017
115	G401	Cadmium	0.019	0.005	7/13/2017
116	X201	Cadmium	0.012	0.005	1/13/2012
117	G121	Chloride	230	200	11/10/2011
118	G121	Chloride	270	200	3/14/2012
119	G121	Chloride	260	200	5/24/2012

120	G121	Chloride	410	200	7/24/2012
121	G121	Chloride	350	200	11/14/2012
122	G121	Chloride	310	200	3/19/2013
123	G121	Chloride	270	200	5/22/2013
124	G121	Chloride	290	200	7/24/2013
125	G121	Chloride	290	200	10/15/2013
126	G121	Chloride	270	200	2/2/2014
127	G121	Chloride	230	200	5/13/2014
128	G122	Chloride	210	200	5/22/2013
129	G122	Chloride	240	200	7/24/2013
130	G122	Chloride	240	200	5/13/2014
131	G122	Chloride	250	200	4/8/2015
132	G205	Chloride	350	200	11/14/2012
133	G205	Chloride	350	200	11/14/2012
134	X201	Chloride	1400	200	1/13/2012
135	G307	Chromium	0.11	0.1	5/17/2017
136	G401	Chromium	0.16	0.1	7/13/2017
137	T128	Fluoride	4.2	4	11/10/2011
138	APW-2	Iron	13	5	5/22/2012
139	G205	Iron	5.5	5	11/14/2012
140	G212	Iron	6.3	5	11/15/2012
141	G213	Iron	7.5	5	11/15/2012
142	G279	Iron	34	5	11/14/2012
143	G102	Lead	0.0079	0.0075	2/9/2017
144	G102	Lead	0.0097	0.0075	7/9/2017
145	G109	Lead	0.0085	0.0075	4/8/2015
146	G110	Lead	0.0089	0.0075	8/4/2016
147	G110	Lead	0.0093	0.0075	7/14/2017
148	G200	Lead	0.01	0.0075	11/23/2015
149	G200	Lead	0.018	0.0075	2/12/2016
150	G280	Lead	0.012	0.0075	11/24/2015
151	G307	Lead	0.068	0.0075	5/17/2017
152	G307	Lead	0.02	0.0075	7/13/2017
153	G401	Lead	0.075	0.0075	2/16/2017
154	G401	Lead	0.057	0.0075	5/17/2017
155	G401	Lead	0.098	0.0075	7/13/2017
156	G402	Lead	0.015	0.0075	11/21/2015
157	G402	Lead	0.018	0.0075	2/22/2016
158	G402	Lead	0.015	0.0075	5/19/2016
159	G402	Lead	0.0079	0.0075	11/17/2016
160	G402	Lead	0.01	0.0075	7/13/2017

161	G405	Lead	0.0085	0.0075	11/21/2015
162	APW-2	Manganese	0.418	0.15	12/1/2010
163	APW-2	Manganese	0.53	0.15	5/4/2011
164	APW-2	Manganese	0.41	0.15	7/27/2011
165	APW-2	Manganese	0.41	0.15	7/28/2011
166	APW-2	Manganese	0.4	0.15	11/11/2011
167	APW-2	Manganese	0.73	0.15	1/25/2012
168	APW-2	Manganese	0.44	0.15	5/22/2012
169	APW-2	Manganese	0.4	0.15	7/23/2012
170	APW-2	Manganese	0.4	0.15	11/11/2012
171	APW-3	Manganese	0.866	0.15	12/1/2010
172	APW-3	Manganese	0.44	0.15	1/26/2011
173	APW-3	Manganese	0.85	0.15	5/4/2011
174	APW-3	Manganese	0.84	0.15	7/28/2011
175	APW-3	Manganese	0.8	0.15	11/11/2011
176	APW-3	Manganese	0.37	0.15	1/25/2012
177	APW-3	Manganese	0.76	0.15	5/22/2012
178	APW-3	Manganese	0.56	0.15	7/23/2012
179	APW-3	Manganese	0.866	0.15	11/11/2012
180	APW-4	Manganese	0.78	0.15	12/1/2010
181	APW-4	Manganese	0.24	0.15	1/26/2011
182	APW-4	Manganese	0.81	0.15	5/4/2011
183	APW-4	Manganese	0.74	0.15	7/25/2011
184	APW-4	Manganese	0.74	0.15	7/28/2011
185	APW-4	Manganese	0.67	0.15	11/11/2011
186	APW-4	Manganese	0.46	0.15	1/25/2012
187	APW-4	Manganese	0.83	0.15	5/22/2012
188	APW-4	Manganese	0.77	0.15	7/23/2012
189	APW-4	Manganese	0.67	0.15	11/11/2012
190	G109	Manganese	0.68	0.15	4/8/2015
191	G123	Manganese	0.4	0.15	5/13/2014
192	G123	Manganese	0.41	0.15	4/8/2015
193	G200	Manganese	0.25	0.15	11/14/2012
194	G213	Manganese	0.19	0.15	11/15/2012
195	G215	Manganese	0.34	0.15	11/15/2012
196	G215	Manganese	0.31	0.15	11/15/2012
197	G216	Manganese	0.35	0.15	11/15/2012
198	G216	Manganese	0.23	0.15	11/15/2012
199	G217	Manganese	0.23	0.15	11/15/2012
200	G217	Manganese	0.24	0.15	11/15/2012
201	G218	Manganese	0.25	0.15	11/15/2012

202	G218	Manganese	0.25	0.15	11/15/2012
203	G273	Manganese	0.16	0.15	11/14/2012
204	G275	Manganese	0.28	0.15	11/14/2012
205	G275	Manganese	0.32	0.15	11/14/2012
206	G279	Manganese	0.42	0.15	11/14/2012
207	L202	Manganese	1.7	0.15	4/8/2015
208	R201	Manganese	0.27	0.15	11/14/2012
209	R201	Manganese	0.38	0.15	11/14/2012
210	X201	Manganese	6.3	0.15	1/13/2012
211	APW-2	Sulfate	833	400	12/1/2010
212	APW-2	Sulfate	840	400	1/26/2011
213	APW-2	Sulfate	840	400	5/4/2011
214	APW-2	Sulfate	650	400	11/11/2011
215	APW-2	Sulfate	840	400	1/25/2012
216	APW-2	Sulfate	1100	400	5/22/2012
217	APW-2	Sulfate	840	400	7/23/2012
218	APW-2	Sulfate	650	400	11/11/2012
219	APW-3	Sulfate	761	400	12/1/2010
220	APW-3	Sulfate	810	400	1/26/2011
221	APW-3	Sulfate	940	400	5/4/2011
222	APW-3	Sulfate	980	400	11/11/2011
223	APW-3	Sulfate	761	400	11/11/2011
224	APW-3	Sulfate	830	400	1/25/2012
225	APW-3	Sulfate	980	400	5/22/2012
226	APW-3	Sulfate	950	400	7/23/2012
227	APW-3	Sulfate	761	400	11/11/2012
228	APW-4	Sulfate	600	400	12/1/2010
229	APW-4	Sulfate	670	400	1/26/2011
230	APW-4	Sulfate	650	400	5/4/2011
231	APW-4	Sulfate	750	400	7/25/2011
232	APW-4	Sulfate	750	400	7/28/2011
233	APW-4	Sulfate	450	400	11/11/2011
234	APW-4	Sulfate	680	400	1/25/2012
235	APW-4	Sulfate	730	400	5/22/2012
236	APW-4	Sulfate	770	400	7/23/2012
237	APW-4	Sulfate	450	400	11/11/2012
238	G271	Sulfate	440	400	11/14/2012
239	G271	Sulfate	420	400	11/23/2015
240	G271	Sulfate	440	400	2/16/2016
241	G271	Sulfate	540	400	5/12/2016
242	G271	Sulfate	440	400	8/5/2016

243	G271	Sulfate	430	400	2/11/2017
244	G273	Sulfate	500	400	11/14/2012
245	G273	Sulfate	630	400	11/14/2012
246	G273	Sulfate	420	400	11/24/2015
247	G273	Sulfate	550	400	2/16/2016
248	G273	Sulfate	520	400	5/12/2016
249	G273	Sulfate	440	400	11/21/2016
250	G273	Sulfate	470	400	2/15/2017
251	G274	Sulfate	420	400	11/14/2012
252	G274	Sulfate	420	400	11/14/2012
253	G275	Sulfate	830	400	11/14/2012
254	G275	Sulfate	950	400	11/14/2012
255	G279	Sulfate	520	400	11/24/2015
256	G279	Sulfate	610	400	2/16/2016
257	G279	Sulfate	570	400	8/3/2016
258	G279	Sulfate	720	400	11/22/2016
259	G279	Sulfate	700	400	2/15/2017
260	G279	Sulfate	730	400	7/18/2017
261	G279	Sulfate	870	400	11/4/2017
262	G301	Sulfate	700	400	11/20/2015
263	G301	Sulfate	740	400	2/23/2016
264	G301	Sulfate	710	400	5/20/2016
265	G301	Sulfate	740	400	8/15/2016
266	G301	Sulfate	800	400	11/17/2016
267	G301	Sulfate	790	400	2/16/2017
268	G301	Sulfate	650	400	5/17/2017
269	G301	Sulfate	760	400	7/12/2017
270	G301	Sulfate	680	400	10/26/2017
271	G302	Sulfate	480	400	11/20/2015
272	G302	Sulfate	530	400	2/23/2016
273	G302	Sulfate	440	400	5/20/2016
274	G302	Sulfate	450	400	11/17/2016
275	G302	Sulfate	430	400	2/16/2017
276	G302	Sulfate	460	400	7/12/2017
277	G303	Sulfate	860	400	11/20/2015
278	G303	Sulfate	700	400	2/23/2016
279	G303	Sulfate	700	400	5/20/2016
280	G303	Sulfate	830	400	8/15/2016
281	G303	Sulfate	870	400	11/17/2016
282	G303	Sulfate	860	400	2/19/2017
283	G303	Sulfate	780	400	5/17/2017

284	G303	Sulfate	860	400	7/13/2017
285	G303	Sulfate	600	400	10/26/2017
286	G304	Sulfate	1000	400	11/20/2015
287	G304	Sulfate	1100	400	2/23/2016
288	G304	Sulfate	1000	400	5/20/2016
289	G306	Sulfate	700	400	5/17/2017
290	G307	Sulfate	1000	400	8/16/2016
291	G307	Sulfate	1000	400	9/29/2016
292	G307	Sulfate	1000	400	11/16/2016
293	G307	Sulfate	1100	400	2/19/2017
294	G307	Sulfate	940	400	5/17/2017
295	G307	Sulfate	1300	400	7/13/2017
296	G307	Sulfate	980	400	10/27/2017
297	G401	Sulfate	2300	400	11/21/2015
298	G401	Sulfate	2500	400	2/22/2016
299	G401	Sulfate	2200	400	5/19/2016
300	G401	Sulfate	2100	400	8/1/2016
301	G401	Sulfate	3400	400	11/17/2016
302	G401	Sulfate	3900	400	2/16/2017
303	G401	Sulfate	2000	400	5/17/2017
304	G401	Sulfate	2100	400	7/13/2017
305	G401	Sulfate	2000	400	10/27/2017
306	G402	Sulfate	1200	400	11/21/2015
307	G402	Sulfate	1000	400	2/22/2016
308	G402	Sulfate	960	400	5/19/2016
309	G402	Sulfate	890	400	8/2/2016
310	G402	Sulfate	1100	400	11/17/2016
311	G402	Sulfate	1100	400	2/16/2017
312	G402	Sulfate	960	400	5/17/2017
313	G402	Sulfate	1000	400	7/13/2017
314	G402	Sulfate	1000	400	10/27/2017
315	G405	Sulfate	1700	400	11/21/2015
316	G405	Sulfate	1700	400	2/15/2016
317	G405	Sulfate	1800	400	5/18/2016
318	G405	Sulfate	1600	400	8/2/2016
319	G405	Sulfate	1400	400	11/22/2016
320	G405	Sulfate	1300	400	2/18/2017
321	G405	Sulfate	680	400	5/16/2017
322	G405	Sulfate	1600	400	7/14/2017
323	G405	Sulfate	1300	400	10/28/2017
324	L202	Sulfate	3400	400	4/8/2015

325	X201	Sulfate	7500	400	1/13/2012
326	APW-2	TDS	1810	1200	12/1/2010
327	APW-2	TDS	1600	1200	1/26/2011
328	APW-2	TDS	1700	1200	5/4/2011
329	APW-2	TDS	1600	1200	7/27/2011
330	APW-2	TDS	1600	1200	7/28/2011
331	APW-2	TDS	1600	1200	11/11/2011
332	APW-2	TDS	1600	1200	1/25/2012
333	APW-2	TDS	1600	1200	5/22/2012
334	APW-2	TDS	1700	1200	7/23/2012
335	APW-3	TDS	1760	1200	12/1/2010
336	APW-3	TDS	1800	1200	1/26/2011
337	APW-3	TDS	1800	1200	5/1/2011
338	APW-3	TDS	1800	1200	5/4/2011
339	APW-3	TDS	2100	1200	7/28/2011
340	APW-3	TDS	2100	1200	7/29/2011
341	APW-3	TDS	2000	1200	11/11/2011
342	APW-3	TDS	1760	1200	11/11/2011
343	APW-3	TDS	1900	1200	1/25/2012
344	APW-3	TDS	2000	1200	5/22/2012
345	APW-3	TDS	2000	1200	7/23/2012
346	APW-4	TDS	1300	1200	5/4/2011
347	APW-4	TDS	1300	1200	7/25/2011
348	APW-4	TDS	1300	1200	7/28/2011
349	APW-4	TDS	1300	1200	11/11/2011
350	APW-4	TDS	1300	1200	5/22/2012
351	APW-4	TDS	1400	1200	7/23/2012
352	G275	TDS	1600	1200	11/14/2012
353	G279	TDS	1400	1200	2/16/2016
354	G279	TDS	1300	1200	8/3/2016
355	G279	TDS	1300	1200	11/22/2016
356	G279	TDS	1500	1200	2/15/2017
357	G279	TDS	1600	1200	7/18/2017
358	G279	TDS	1600	1200	11/4/2017
359	G301	TDS	1400	1200	11/17/2016
360	G303	TDS	1700	1200	11/20/2015
361	G303	TDS	1400	1200	2/23/2016
362	G303	TDS	1400	1200	5/20/2016
363	G303	TDS	1600	1200	8/15/2016
364	G303	TDS	1900	1200	11/17/2016
365	G303	TDS	1700	1200	2/19/2017

366	G303	TDS	1900	1200	5/17/2017
367	G303	TDS	1500	1200	7/13/2017
368	G303	TDS	1300	1200	10/26/2017
369	G304	TDS	1500	1200	11/20/2015
370	G304	TDS	1400	1200	2/23/2016
371	G304	TDS	1300	1200	5/20/2016
372	G307	TDS	1500	1200	8/16/2016
373	G307	TDS	1300	1200	9/29/2016
374	G307	TDS	1600	1200	11/16/2016
375	G307	TDS	1500	1200	2/19/2017
376	G307	TDS	1500	1200	5/17/2017
377	G307	TDS	1300	1200	7/13/2017
378	G307	TDS	1400	1200	10/27/2017
379	G401	TDS	3000	1200	11/21/2015
380	G401	TDS	3000	1200	2/22/2016
381	G401	TDS	2800	1200	5/19/2016
382	G401	TDS	2900	1200	8/1/2016
383	G401	TDS	3200	1200	11/17/2016
384	G401	TDS	3000	1200	2/16/2017
385	G401	TDS	3000	1200	5/17/2017
386	G401	TDS	2600	1200	7/13/2017
387	G401	TDS	2900	1200	10/27/2017
388	G402	TDS	1700	1200	11/21/2015
389	G402	TDS	1700	1200	2/22/2016
390	G402	TDS	1500	1200	5/19/2016
391	G402	TDS	1500	1200	8/2/2016
392	G402	TDS	1700	1200	11/17/2016
393	G402	TDS	1700	1200	2/16/2017
394	G402	TDS	1700	1200	5/17/2017
395	G402	TDS	1600	1200	7/13/2017
396	G402	TDS	1700	1200	10/27/2017
397	G405	TDS	2400	1200	11/21/2015
398	G405	TDS	2500	1200	2/15/2016
399	G405	TDS	2200	1200	5/18/2016
400	G405	TDS	2200	1200	8/2/2016
401	G405	TDS	2100	1200	11/22/2016
402	G405	TDS	1800	1200	2/18/2017
403	G405	TDS	1300	1200	5/16/2017
404	G405	TDS	2100	1200	7/14/2017
405	G405	TDS	2000	1200	10/28/2017
406	L202	TDS	7400	1200	4/8/2015

407	X201	TDS	9600	1200	1/13/2012
408	G271	Thallium	0.0021	0.002	5/20/2017
409	G109	Zinc	42	5	4/8/2015
410	L202	Zinc	6	5	4/8/2015
411	R104	Zinc	70	5	8/12/2014

EXHIBIT E

EXHIBIT E: Violations of Illinois Class I groundwater standards at IPRG's E.D. Edwards Generation Plant. This table does not include pH violations.

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
1	AW-05	Arsenic	0.013	0.01	2/17/2016
2	AW-05	Arsenic	0.028	0.01	5/17/2016
3	AW-05	Arsenic	0.013	0.01	5/8/2017
4	AW-05	Arsenic	0.029	0.01	7/19/2017
5	AW-06	Arsenic	0.032	0.01	7/20/2017
6	AW-08	Arsenic	0.011	0.01	11/10/2016
7	AW-08	Arsenic	0.017	0.01	5/8/2017
8	AW-08	Arsenic	0.016	0.01	7/19/2017
9	AW-09	Arsenic	0.018	0.01	11/10/2015
10	AW-09	Arsenic	0.046	0.01	2/17/2016
11	AW-09	Arsenic	0.025	0.01	7/22/2016
12	AW-09	Arsenic	0.02	0.01	11/11/2016
13	AW-09	Arsenic	0.031	0.01	7/20/2017
14	AW-10	Arsenic	0.097	0.01	2/18/2016
15	AW-10	Arsenic	0.04	0.01	5/18/2016
16	AW-10	Arsenic	0.018	0.01	11/11/2016
17	AW-11	Arsenic	0.011	0.01	11/9/2015
18	AW-11	Arsenic	0.014	0.01	2/18/2016
19	AW-11	Arsenic	0.021	0.01	11/11/2016
20	AW-11	Arsenic	0.014	0.01	5/9/2017
21	AW-11	Arsenic	0.025	0.01	7/20/2017
22	AW-10	Barium	6.3	2	2/18/2016
23	AW-10	Barium	3.4	2	5/18/2016
24	AW-11	Barium	2.5	2	7/20/2017
25	AW-08	Beryllium	0.014	0.004	5/17/2016
26	AW-09	Beryllium	0.007	0.004	2/17/2016
27	AW-10	Beryllium	0.015	0.004	2/18/2016
28	AW-05	Boron	2.7	2	7/21/2016
29	AW-05	Boron	2.8	2	11/10/2016
30	AW-05	Boron	5.9	2	7/19/2017
31	AW-05	Boron	7.6	2	11/1/2017
32	APW-1	Chloride	270	200	9/26/2012
33	AW-05	Chloride	280	200	11/9/2015
34	AW-05	Chloride	290	200	5/17/2016
35	AW-05	Chloride	570	200	7/21/2016
36	AW-05	Chloride	300	200	11/10/2016
37	AW-05	Chloride	420	200	7/19/2017

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
38	AW-05	Chloride	650	200	11/1/2017
39	AW-09	Chromium	0.2	0.1	2/17/2016
40	AW-10	Chromium	0.45	0.1	2/18/2016
41	APW-1	Iron	6	5	3/30/2011
42	APW-1	Iron	9.7	5	6/29/2011
43	APW-1	Iron	7.4	5	9/29/2011
44	APW-1	Iron	8.9	5	12/6/2011
45	APW-1	Iron	7.7	5	3/28/2012
46	APW-1	Iron	7.4	5	6/26/2012
47	APW-1	Iron	12	5	9/26/2012
48	APW-2	Iron	7.5	5	9/29/2011
49	APW-2	Iron	7.7	5	12/6/2011
50	APW-2	Iron	8.9	5	9/26/2012
51	APW-3	Iron	11	5	6/29/2011
52	APW-3	Iron	16	5	9/29/2011
53	APW-3	Iron	12	5	12/6/2011
54	APW-3	Iron	6.4	5	3/28/2012
55	APW-3	Iron	10	5	6/26/2012
56	APW-3	Iron	15	5	9/26/2012
57	APW-4	Iron	8.7	5	3/28/2012
58	APW-4	Iron	12	5	6/26/2012
59	AW-05	Lead	0.011	0.0075	2/17/2016
60	AW-05	Lead	0.018	0.0075	5/17/2016
61	AW-05	Lead	0.023	0.0075	5/8/2017
62	AW-05	Lead	0.046	0.0075	7/19/2017
63	AW-06	Lead	0.014	0.0075	7/22/2016
64	AW-06	Lead	0.019	0.0075	7/20/2017
65	AW-09	Lead	0.038	0.0075	11/10/2015
66	AW-09	Lead	0.11	0.0075	2/17/2016
67	AW-09	Lead	0.036	0.0075	7/22/2016
68	AW-09	Lead	0.0097	0.0075	11/11/2016
69	AW-09	Lead	0.024	0.0075	7/20/2017
70	AW-10	Lead	0.27	0.0075	2/18/2016
71	AW-10	Lead	0.035	0.0075	5/18/2016
72	AW-10	Lead	0.022	0.0075	11/11/2016
73	AW-11	Lead	0.0099	0.0075	11/9/2015
74	AW-11	Lead	0.026	0.0075	2/18/2016
75	AW-11	Lead	0.049	0.0075	11/11/2016
76	AW-11	Lead	0.024	0.0075	5/9/2017

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
77	AW-11	Lead	0.05	0.0075	7/20/2017
78	APW-1	Manganese	1.45	0.15	12/14/2010
79	APW-1	Manganese	1.45	0.15	12/14/2010
80	APW-1	Manganese	1.5	0.15	3/30/2011
81	APW-1	Manganese	1.7	0.15	6/29/2011
82	APW-1	Manganese	1.5	0.15	9/29/2011
83	APW-1	Manganese	1.8	0.15	12/6/2011
84	APW-1	Manganese	1.7	0.15	3/28/2012
85	APW-1	Manganese	1.7	0.15	6/26/2012
86	APW-1	Manganese	2.3	0.15	9/26/2012
87	APW-2	Manganese	0.885	0.15	12/14/2010
88	APW-2	Manganese	0.885	0.15	12/14/2010
89	APW-2	Manganese	0.77	0.15	3/31/2011
90	APW-2	Manganese	0.77	0.15	6/29/2011
91	APW-2	Manganese	0.75	0.15	9/29/2011
92	APW-2	Manganese	0.73	0.15	12/6/2011
93	APW-2	Manganese	0.22	0.15	3/28/2012
94	APW-2	Manganese	0.51	0.15	6/26/2012
95	APW-2	Manganese	0.64	0.15	9/26/2012
96	APW-3	Manganese	0.664	0.15	12/14/2010
97	APW-3	Manganese	0.664	0.15	12/14/2010
98	APW-3	Manganese	0.55	0.15	3/31/2011
99	APW-3	Manganese	0.56	0.15	6/29/2011
100	APW-3	Manganese	0.56	0.15	9/29/2011
101	APW-3	Manganese	0.65	0.15	12/6/2011
102	APW-3	Manganese	0.44	0.15	3/28/2012
103	APW-3	Manganese	0.49	0.15	6/26/2012
104	APW-3	Manganese	0.48	0.15	9/26/2012
105	APW-4	Manganese	1.19	0.15	12/14/2010
106	APW-4	Manganese	1.19	0.15	12/14/2010
107	APW-4	Manganese	2	0.15	3/31/2011
108	APW-4	Manganese	1.8	0.15	6/29/2011
109	APW-4	Manganese	1.3	0.15	9/29/2011
110	APW-4	Manganese	1.2	0.15	12/6/2011
111	APW-4	Manganese	2.1	0.15	3/28/2012
112	APW-4	Manganese	1.8	0.15	6/26/2012
113	APW-4	Manganese	0.98	0.15	9/26/2012
114	APW-3	Sulfate	401	400	12/14/2010
115	APW-3	Sulfate	401	400	12/14/2010

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
116	AW-05	Sulfate	470	400	7/19/2017
117	APW-1	TDS	1,810.00	1200	12/14/2010
118	APW-1	TDS	1810	1200	12/14/2010
119	APW-1	TDS	1,300.00	1200	9/26/2012
120	AW-05	TDS	1700	1200	7/21/2016
121	AW-05	TDS	1300	1200	11/10/2016
122	AW-05	TDS	1300	1200	7/19/2017
123	AW-05	TDS	1600	1200	11/1/2017
124	AW-10	Thallium	0.0023	0.002	2/18/2016

EXHIBIT F-1 – F-2

EXHIBIT F-1: Violations of Illinois Class I groundwater standards at EEI's Joppa Steam Plant. This table does not include pH violations.

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
1	G101	Arsenic	0.0166	0.01	12/22/2015
2	G-101	Arsenic	0.025	0.01	3/15/2011
3	G-101	Arsenic	0.025	0.01	6/16/2011
4	G-101	Arsenic	0.025	0.01	9/13/2011
5	G-101	Arsenic	0.025	0.01	11/29/2011
6	G-101	Arsenic	0.025	0.01	2/14/2012
7	G-101	Arsenic	0.025	0.01	5/15/2012
8	G107	Arsenic	0.0651	0.01	12/22/2015
9	G109	Arsenic	0.055	0.01	12/22/2015
10	G-111	Arsenic	0.025	0.01	3/15/2011
11	G-111	Arsenic	0.25	0.01	6/16/2011
12	G-111	Arsenic	0.025	0.01	9/13/2011
13	G-111	Arsenic	0.025	0.01	11/29/2011
14	G-111	Arsenic	0.025	0.01	2/14/2012
15	G-111	Arsenic	0.025	0.01	5/15/2012
16	G-111	Arsenic	0.025	0.01	8/7/2012
17	G-112b	Arsenic	0.037	0.01	3/15/2011
18	G-112b	Arsenic	0.025	0.01	6/16/2011
19	G-112b	Arsenic	0.058	0.01	9/13/2011
20	G-112b	Arsenic	0.054	0.01	11/29/2011
21	G-112b	Arsenic	0.058	0.01	2/14/2012
22	G-112b	Arsenic	0.066	0.01	5/15/2012
23	G-112b	Arsenic	0.06	0.01	8/7/2012
24	G-113	Arsenic	0.025	0.01	3/15/2011
25	G-113	Arsenic	0.025	0.01	6/16/2011
26	G-113	Arsenic	0.025	0.01	9/13/2011
27	G-113	Arsenic	0.025	0.01	11/29/2011
28	G-113	Arsenic	0.025	0.01	2/14/2012
29	G-113	Arsenic	0.025	0.01	5/15/2012
30	G-113	Arsenic	0.025	0.01	8/7/2012
31	G-151	Arsenic	0.025	0.01	3/16/2011
32	G-151	Arsenic	0.025	0.01	6/17/2011
33	G-151	Arsenic	0.025	0.01	9/13/2011
34	G-151	Arsenic	0.025	0.01	11/29/2011
35	G-151	Arsenic	0.025	0.01	2/14/2012
36	G-151	Arsenic	0.025	0.01	5/15/2012

Exhibit F-1
Joppa Class I Violations

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
37	G-152	Arsenic	0.025	0.01	3/16/2011
38	G-152	Arsenic	0.025	0.01	6/17/2011
39	G-152	Arsenic	0.025	0.01	9/13/2011
40	G-152	Arsenic	0.025	0.01	11/29/2011
41	G-152	Arsenic	0.025	0.01	2/14/2012
42	G-152	Arsenic	0.025	0.01	5/15/2012
43	G-152	Arsenic	0.025	0.01	8/7/2012
44	G-153	Arsenic	0.025	0.01	3/16/2011
45	G-153	Arsenic	0.025	0.01	6/17/2011
46	G-153	Arsenic	0.025	0.01	9/13/2011
47	G-153	Arsenic	0.025	0.01	11/29/2011
48	G-153	Arsenic	0.025	0.01	2/14/2012
49	G-153	Arsenic	0.025	0.01	5/15/2012
50	G107	Beryllium	0.011	0.004	12/22/2015
51	G109	Beryllium	0.0042	0.004	12/22/2015
52	G-112b	Boron	4.4	2	3/15/2011
53	G-112b	Boron	3.48	2	6/16/2011
54	G-112c	Boron	3.3	2	3/7/2013
55	G-112c	Boron	3.1	2	4/17/2013
56	G-112c	Boron	3.1	2	5/14/2013
57	G-152	Boron	11	2	3/16/2011
58	G-152	Boron	11.1	2	6/17/2011
59	G-152	Boron	12	2	9/13/2011
60	G-152	Boron	11	2	11/29/2011
61	G-152	Boron	11	2	2/14/2012
62	G-152	Boron	11	2	5/15/2012
63	G-152	Boron	11	2	8/7/2012
64	G107	Chromium	0.216	0.1	12/22/2015
65	G109	Chromium	0.117	0.1	12/22/2015
66	G-112b	Iron	53	5	3/15/2011
67	G-112b	Iron	44.7	5	6/16/2011
68	G-112b	Iron	75	5	9/13/2011
69	G-112b	Iron	68	5	11/29/2011
70	G-112b	Iron	71	5	2/14/2012
71	G-112b	Iron	77	5	5/15/2012
72	G-112b	Iron	62	5	8/7/2012
73	G101	Lead	0.024	0.0075	12/22/2015
74	G102	Lead	0.0081	0.0075	12/22/2015

Exhibit F-1
Joppa Class I Violations

#	Well	Pollutant	Sample Value (mg/l)	Class I GW Std (mg/l)	Collection Date
75	G107	Lead	0.142	0.0075	12/22/2015
76	G109	Lead	0.0689	0.0075	12/22/2015
77	G109	Lead	0.0086	0.0075	3/16/2016
78	G-112c	Lead	0.04	0.0075	4/17/2013
79	G-112b	Manganese	5.5	0.15	3/15/2011
80	G-112b	Manganese	5.13	0.15	6/16/2011
81	G-112b	Manganese	4.6	0.15	9/13/2011
82	G-112b	Manganese	4.3	0.15	11/29/2011
83	G-112b	Manganese	4.7	0.15	2/14/2012
84	G-112b	Manganese	4.5	0.15	5/15/2012
85	G-112b	Manganese	4.2	0.15	8/7/2012
86	G-112c	Manganese	0.18	0.15	3/7/2013
87	G-112c	Manganese	0.17	0.15	4/17/2013
88	G-152	Sulfate	731	400	3/16/2011
89	G-152	Sulfate	593	400	6/17/2011
90	G-152	Sulfate	570	400	9/13/2011
91	G-152	Sulfate	565	400	11/29/2011
92	G-152	Sulfate	605	400	2/14/2012
93	G-152	Sulfate	572	400	5/15/2012
94	G-152	Sulfate	451	400	8/7/2012

EXHIBIT F-2: Violations of Illinois Class II groundwater standards at EEI's Joppa Steam Plant. This table does not include pH violations.

#	Well	Pollutant	Sample Value (mg/l)	Class II GW Std (mg/l)	Collection Date
1	G-111	Arsenic	0.25	0.2	6/16/2011
2	G-112b	Boron	4.4	2	3/15/2011
3	G-112b	Boron	3.48	2	6/16/2011
4	G-112c	Boron	3.3	2	3/7/2013
5	G-112c	Boron	3.1	2	4/17/2013
6	G-112c	Boron	3.1	2	5/14/2013
7	G-152	Boron	11	2	3/16/2011
8	G-152	Boron	11.1	2	6/17/2011
9	G-152	Boron	12	2	9/13/2011
10	G-152	Boron	11	2	11/29/2011
11	G-152	Boron	11	2	2/14/2012
12	G-152	Boron	11	2	5/15/2012
13	G-152	Boron	11	2	8/7/2012
14	G-112b	Iron	53	5	3/15/2011
15	G-112b	Iron	44.7	5	6/16/2011
16	G-112b	Iron	75	5	9/13/2011
17	G-112b	Iron	68	5	11/29/2011
18	G-112b	Iron	71	5	2/14/2012
19	G-112b	Iron	77	5	5/15/2012
20	G-112b	Iron	62	5	8/7/2012
21	G107	Lead	0.142	0.1	12/22/2015
22	G-152	Sulfate	731	400	3/16/2011
23	G-152	Sulfate	593	400	6/17/2011
24	G-152	Sulfate	570	400	9/13/2011
25	G-152	Sulfate	565	400	11/29/2011
26	G-152	Sulfate	605	400	2/14/2012
27	G-152	Sulfate	572	400	5/15/2012
28	G-152	Sulfate	451	400	8/7/2012

EXHIBIT G

W1350150004 0004
08

Exhibit G
Coffeen Notice of Violations

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
PAT QUINN, GOVERNOR JOHN J. KIM, INTERIM DIRECTOR

217/785-0561

June 27, 2012

CERTIFIED MAIL # 7010 2780 0002 1163 7148
RETURN RECEIPT REQUESTED

Mr. John C. Pozzo
Managing Supervising Engineer
1 Ameren Plaza
1901 Chouteau Ave.
St. Louis, Mo 63103

Re: Violation Notice: Ameren; Coffeen Generating Station
Identification No.: 6287
Violation Notice No.: W-2012-00064

Dear Mr. Pozzo:

This constitutes a Violation Notice pursuant to Section 31(a)(1) of the Illinois Environmental Protection Act ("Act"), 415 ILCS 5/31(a)(1), and is based upon a review of available information and an investigation by representatives of the Illinois Environmental Protection Agency ("Illinois EPA").

The Illinois EPA hereby provides notice of alleged violations of environmental laws, regulations, or permits as set forth in Attachment A to this notice. Attachment A includes an explanation of the activities that the Illinois EPA believes may resolve the specified alleged violations. Due to the nature and seriousness of the alleged violations, please be advised that resolution of the violations may also require the involvement of a prosecutorial authority for purposes that may include, among others, the imposition of statutory penalties.

A written response, which may include a request for a meeting with representatives of the Illinois EPA, must be submitted via certified mail to the Illinois EPA within 45 days of receipt of this letter. If a meeting is requested, it shall be held within 60 days of receipt of this notice. The response must include information in rebuttal, explanation, or justification of each alleged violation and a statement indicating whether or not the facility wishes to enter into a Compliance Commitment Agreement ("CCA") pursuant to Section 31(a) of the Act. If the facility wishes to enter into a CCA, the written response must also include proposed terms for the CCA that includes dates for achieving each commitment and may include a statement that compliance has been achieved for some or all of the alleged violations. The proposed terms of the CCA should contain sufficient detail and must include steps to be taken to achieve compliance and the necessary dates by which compliance will be achieved.

ID: 6287 Ameren, Coffeen Generating Station
VN W-2012-00064

The Illinois EPA will review the proposed terms for a CCA provided by the facility and, within 30 days of receipt, will respond with either a proposed CCA or a notice that no CCA will be issued by the Illinois EPA. If the Illinois EPA sends a proposed CCA, the facility must respond in writing by either agreeing to and signing the proposed CCA or by notifying the Illinois EPA that the facility rejects the terms of the proposed CCA.

If a timely written response to this Violation Notice is not provided, it shall be considered a waiver of the opportunity to respond and meet, and the Illinois EPA may proceed with referral to a prosecutorial authority.

Written communications should be directed to:

Illinois EPA – Division of Public Water Supplies
Attn: Andrea Rhodes, CAS #19
P.O. BOX 19276
Springfield, IL 62794-9276

All communications must include reference to this Violation Notice number, W-2012-00064.

Questions regarding this Violation Notice should be directed to Andrea Rhodes at 217/785-0561.

Sincerely,

Michael Crumly
Manager, Compliance Assurance Section
Division of Public Water Supplies
Bureau of Water

Attachments

CASE ID: 2012-007

ATTACHMENT A

AMEREN, COFFEEN GENERATING STATION, ID:6287
VIOLATION NOTICE NO. W-2012-00064:

A review of information available to the Illinois EPA indicates the following on-going violations of statutes, regulations, or permits. Included with each type of violation is an explanation of the activities that the Illinois EPA believes may resolve the violation.

Groundwater Quality

No person shall cause, threaten or allow the release of any contaminant to a resource groundwater such that: treatment or additional treatment is necessary to continue an existing use or to assure a potential use of such groundwater; or an existing or potential use of such groundwater is precluded. No person shall cause, threaten or allow the release of any contaminant to groundwater so as to cause a groundwater quality standard to be exceeded. Ameren must take actions to mitigate existing contamination and prevent the continuing release of contaminants into the environment.

Violation Description

Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well APW-2 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	7.4 mg/l	2.0 mg/l	01/25/2012
Boron	8.1 mg/l	2.0 mg/l	11/11/2011
Boron	6.3 mg/l	2.0 mg/l	07/28/2011
Boron	6.7 mg/l	2.0 mg/l	05/04/2011
Boron	7.2 mg/l	2.0 mg/l	01/26/2011
Boron	7.16 mg/l	2.0 mg/l	12/01/2010
Manganese	0.730 mg/l	0.150 mg/l	01/25/2012
Manganese	0.40 mg/l	0.150 mg/l	11/11/2011
Manganese	0.410 mg/l	0.150 mg/l	07/28/2011
Manganese	0.530 mg/l	0.150 mg/l	05/04/2011
Manganese	0.418 mg/l	0.150 mg/l	12/01/2010
Sulfate	840 mg/l	400 mg/l	01/25/2012
Sulfate	650 mg/l	400 mg/l	11/11/2011
Sulfate	840 mg/l	400 mg/l	05/04/2011
Sulfate	840 mg/l	400 mg/l	01/26/2011
Sulfate	833 mg/l	400 mg/l	12/01/2010
TDS	1600 mg/l	1200 mg/l	01/25/2012
TDS	1600 mg/l	1200 mg/l	11/11/2011
TDS	1600 mg/l	1200 mg/l	07/28/2011

ATTACHMENT A

AMEREN, COFFEEN GENERATING STATION, ID:6287
VIOLATION NOTICE NO. W-2012-00064:

Violation Description
APW-2 continued

Parameter	Sample Value	GW Standard	Collection Date
TDS	1700 mg/l	1200 mg/l	05/04/2011
TDS	1600 mg/l	1200 mg/l	01/26/2011
TDS	1810 mg/l	1200 mg/l	12/01/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

Violation Description
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well APW-3 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	2.1 mg/l	2.0 mg/l	01/25/2012
Boron	2.5 mg/l	2.0 mg/l	01/26/2011
Boron	2.07 mg/l	2.0 mg/l	12/01/2010
Manganese	0.37 mg/l	0.150 mg/l	01/25/2012
Manganese	0.866 mg/l	0.150 mg/l	11/11/2011
Manganese	0.84 mg/l	0.150 mg/l	07/28/2011
Manganese	0.85 mg/l	0.150 mg/l	05/04/2011
Manganese	0.44 mg/l	0.150 mg/l	01/26/2011
Manganese	0.866 mg/l	0.150 mg/l	12/01/2010
Sulfate	830 mg/l	400 mg/l	01/25/2012
Sulfate	761 mg/l	400 mg/l	11/11/2011
Sulfate	940 mg/l	400 mg/l	05/04/2011
Sulfate	810 mg/l	400 mg/l	01/26/2011
Sulfate	761 mg/l	400 mg/l	12/01/2010
TDS	1900 mg/l	1200 mg/l	01/25/2012
TDS	1760 mg/l	1200 mg/l	11/11/2011
TDS	2100 mg/l	1200 mg/l	07/28/2011
TDS	1800 mg/l	1200 mg/l	05/04/2011
TDS	1800 mg/l	1200 mg/l	01/26/2011
TDS	1760 mg/l	1200 mg/l	12/01/2010

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

ATTACHMENT A

AMEREN, COFFEEN GENERATING STATION, ID:6287
VIOLATION NOTICE NO. W-2012-00064:

Violation Description

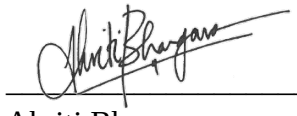
Operations at ash impoundments have resulted in violations of the Groundwater Quality Standards at monitoring well APW-4 for the following constituents:

Parameter	Sample Value	GW Standard	Collection Date
Boron	3.6 mg/l	2.0 mg/l	01/25/2012
Boron	3.9 mg/l	2.0 mg/l	11/11/2011
Boron	3.2 mg/l	2.0 mg/l	07/25/2011
Boron	3.9 mg/l	2.0 mg/l	05/04/2011
Boron	3.8 mg/l	2.0 mg/l	01/26/2011
Boron	3.54 mg/l	2.0 mg/l	12/01/2010
Manganese	0.460 mg/l	0.150 mg/l	01/25/2012
Manganese	0.670 mg/l	0.150 mg/l	11/11/2011
Manganese	0.740 mg/l	0.150 mg/l	07/25/2011
Manganese	0.81 mg/l	0.150 mg/l	05/04/2011
Manganese	0.240 mg/l	0.150 mg/l	01/26/2011
Manganese	0.78 mg/l	0.150 mg/l	12/01/2010
Sulfate	680 mg/l	400 mg/l	01/25/2012
Sulfate	450 mg/l	400 mg/l	11/11/2011
Sulfate	750 mg/l	400 mg/l	07/25/2011
Sulfate	650 mg/l	400 mg/l	05/04/2011
Sulfate	670 mg/l	400 mg/l	01/26/2011
Sulfate	600 mg/l	400 mg/l	12/01/2010
TDS	1300 mg/l	1200 mg/l	11/11/2011
TDS	1300 mg/l	1200 mg/l	07/25/2011
TDS	1300 mg/l	1200 mg/l	05/04/2011

Rule/Reg. Section 12 of the Act, 415 ILCS 5/12, 35 Ill. Adm. Code 620.115, 620.301, 620.401, 620.405, and 620.410.

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Notice of Electronic Filing, Complaint, and Entry of Appearance were served to all parties of record listed below by USPS Certified Mail, Return Receipt Requested on December 18th, 2018.



Akriti Bhargava
Litigation Assistant
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5629
akriti.bhargava@sierraclub.org

To:

Clerk of Illinois Pollution Control Board
James R. Thompson Center
100 W. Randolph Street
Suite 11-500
Chicago, IL 60601

Illinois Power Resources Generating LLC
601 Travis Street
Suite 1400
Houston, TX 77002

Electric Energy Incorporated
2100 Portland Road
Joppa, IL 62953-0165

Vistra Energy Corporation
655 Sierra Drive
Irving, TX 75039