BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08-_____ (Site Specific Rule – Water)

NOTICE OF FILING

TO: Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board an ENTRY OF APPEARANCE OF KATHERINE D. HODGE, ENTRY OF APPEARANCE OF CHRISTINE G. ZEMAN, PETITION FOR SITE SPECIFIC RULE, MOTION TO WAIVE REQUIREMENT TO SUBMIT 200 SIGNATURES, and MOTION FOR EXPEDITED REVIEW, copies of which are herewith served upon you.

Respectfully submitted,

CITY OF SPRINGFIELD, ILLINOIS,
OFFICE OF PUBLIC UTILITIES,
CITY WATER, LIGHT AND POWER

and

SPRINGFIELD METRO SANITARY DISTRICT,

Date: August 29, 2008

By: /s/ Christine G. Zeman
One of Their Attorneys

Katherine D. Hodge
Christine G. Zeman
HODGE DWYER ZEMAN
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08- _____ (Site Specific Rule – Water)

ENTRY OF APPEARANCE OF KATHERINE D. HODGE

NOW COMES Katherine D. Hodge, of the law firm HODGE DWYER ZEMAN, and hereby enters her appearance in this matter on behalf of City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District.

Respectfully submitted,

By: /s/ Katherine D. Hodge
One of Their Attorneys

Date: August 29, 2008

Katherine D. Hodge
HODGE DWYER ZEMAN
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

CWLP:002/Filings/EOA - KDH

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08- _____ (Site Specific Rule – Water)

ENTRY OF APPEARANCE OF CHRISTINE G. ZEMAN

NOW COMES Christine G. Zeman, of the law firm HODGE DWYER ZEMAN, and hereby enters her appearance in this matter on behalf of City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District.

Respectfully submitted,

By: /s/ Christine G. Zeman
One of Their Attorneys

Date: August 29, 2008

Christine G. Zeman
HODGE DWYER ZEMAN
3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

CWLP:002/Filings/EOA - CGZ

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08- _____ (Site Specific Rule – Water)

PETITION FOR SITE SPECIFIC RULE

NOW COMES the City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power ("CWLP") and Springfield Metro Sanitary District ("District" or "SMSD") (collectively "Petitioners"), by and through their attorneys, HODGE DWYER ZEMAN, and pursuant to 415 ILCS 5/27 and 5/28, and 35 Ill. Adm. Code §§ 102.202 and 102.210, hereby petition the Illinois Pollution Control Board ("Board") for a Site Specific Rule. This change would authorize an alternative water quality standard for boron according to the terms and conditions outlined herein.

I. PROPOSED SITE SPECIFIC RULE

Petitioners are seeking a Site Specific Rule to establish an alternative water quality standard for boron from the point of discharge at Outfall 007 from the District's Spring Creek Sanitary Treatment Plant ("Spring Creek Plant") to the Sangamon River, to its confluence with the Illinois River, and in the Illinois River 100 yards downstream from the confluence with the Sangamon River. The general use water quality standard for boron, which is set forth in Section 302.208(g), is 1.0 mg/L. 35 Ill. Adm. Code § 302.208(g). While the Board's effluent regulations require, at Section 304.105, that discharge [from the District] not cause an applicable water quality standard to be

exceeded, the Board has not adopted an effluent standard for boron. Similarly, Illinois Environmental Protection Agency ("IEPA" or "Agency") has not imposed an effluent limit for boron at Outfall 007 in the District's National Pollutant Discharge Elimination System ("NPDES") Permit. See, 35 Ill. Adm. Code § 304.105.

As explained more fully below, this Site Specific Rule for an alternative water quality standard for boron is requested to enable the SMSD Spring Creek Plant to accept a pretreated industrial effluent stream from CWLP's power station. Operation of the air pollution control systems at CWLP's power plant causes elevated concentrations of boron in a plant effluent stream that is proposed to be transferred to the SMSD Spring Creek Plant. CWLP's power plant is a critical power supply for the City of Springfield and surrounding communities; the site specific water quality standard for boron is necessary to enable CWLP to operate its power plant in compliance with its NPDES Permit and State and Federal air pollution regulations.

This petition will demonstrate that treatment to the general boron water quality standard of 1.0 mg/L is neither technically feasible nor economically reasonable for the portion of the Sangamon River to which the Spring Creek Plant discharges, to its confluence with Salt Creek, and in the Illinois River 100 yards downstream of its confluence with the Sangamon River. This petition will also demonstrate that alternatives to this Site Specific Rule would have significant economic impact on CWLP and its customers (including City residents) and that its grant is not expected to harm the aquatic life in the waters downstream of the Spring Creek Plant discharge or have a negative impact on the current use of the receiving waters.

As proposed, the Site Specific Rule requested by Petitioners would provide as follows:

> Section 303.XXX Springfield Metro Sanitary District Spring Creek Treatment Plant Boron Discharge
>
> The general use water quality standard for boron set forth in Section 302.208(g) shall not apply to waters of the state that receive discharge from Outfall 007 of the Spring Creek Treatment Plant located at 3017 North 8th Street, Springfield, Illinois, owned by the Springfield Metro Sanitary District. Boron levels in such waters must meet the water quality standard for boron as set forth in this section:
>
> 1. 11.0 mg/L in an area of dispersion within the Sangamon River from Outfall 007 to 182 yards downstream from the confluence of Spring Creek with the Sangamon River;
>
> 2. 4.5 mg/L from 182 yards downstream of the confluence of Spring Creek with the Sangamon River to the confluence of Salt Creek with the Sangamon River, a distance of 39.0 river miles;
>
> 3. 1.6 mg/L from the confluence of Salt Creek with the Sangamon River to the confluence of the Sangamon River with the Illinois River, a distance of 36.1 river miles; and
>
> 4. 1.3 mg/L in the Illinois River from the confluence of the Illinois River with the confluence of the Sangamon River to 100 yards downstream of the confluence of the Illinois River with the Sangamon River.

As explained more fully herein, these boron levels in the receiving waters of the State are expected to be protective of aquatic life, human health, and the environment.

I. STATEMENT OF FACTS

A. CWLP Facility Description

1. CWLP owns and operates two power stations, referred to as the V.Y. Dallman Power Station and the Lakeside Power Station, and a potable water treatment plant at 3100 Stevenson Drive, Springfield, Sangamon County, Illinois. These plants

generate electricity for the residents and businesses in Springfield and provide potable water to Springfield and surrounding communities. Approximately 186 people are employed at the power generating stations and an additional 19 people are employed at the water treatment plant. The facilities are staffed twenty-four hours per day, 7 days per week. (Ex. 1, p. 2-1.)

2. CWLP's Dallman Power Station has an electric generating capacity of 352 megawatts and is comprised of three coal-fired units: Units 31, 32, and 33. The Dallman units were placed into service in 1968, 1972, and 1978, respectively. Units 31 and 32 are identical, each having 80 megawatts of generating capacity. The cyclone boilers in Units 31 and 32 operate at 1,250 psig and 950°F. Unit 33 includes a tangentially-fired boiler and has a generating capacity of 192 megawatts. Unit 33 operates at 2,400 psig and 1,000°F. Each of the three Dallman units are equipped with a flue gas desulfurization system ("FGDS") that removes over 90 percent of the sulfur dioxide from the unit's flue gases. Selective Catalytic Reduction ("SCR") air pollution control systems for nitrogen oxides ("NOx") removal were added to all three Dallman Units in 2003. CWLP currently operates the SCRs during the ozone season (May 1 through September 30) to remove approximately 90 percent of NOx from its air emissions at the Dallman units. The SCRs will begin year-round operations in July 2009, to assist in control of the mercury emissions. (Ex. 1, p. 2-1.)

3. The Lakeside Power Station began operation in 1935. Originally, there were eight boilers and seven turbine generators at the Lakeside plant. Only two boilers and two turbine generators are still in operation. Boilers 7 and 8 are identical 33-megawatt cyclone coal-fired units. Boiler 7-Turbine 6 went into operation in 1959 and

Boiler 8-Turbine 7 began operation in 1964. Both units operate at 850 psig and 900°F. The Lakeside Power Station will be retired in the near future. (Ex. 1, pp. 2-1, 2.)

4. Total coal consumption at the CWLP facility averages 1.1 million tons per year. The ash handling practices at CWLP are typical for a coal-fired power plant. Bottom ash and fly ash from all existing units are sluiced to ash ponds. The raw lake water used for sluicing is obtained from the once-through cooling water systems for generator condensers. Three separate ash transport systems serve Dallman Units 31 and 32, Dallman Unit 33, and Lakeside. (Ex. 1, p. 2-2.)

5. CWLP operates two ash ponds. Typically, the Dallman fly ash and bottom ash sluice water is pumped to the north ash pond, which is commonly known as the Dallman Ash Pond. Dallman Ash Pond also receives wastewater treatment plant sludge and leachate collected from the scrubber sludge landfill adjacent to the ash ponds. The south ash pond, known as Lakeside Ash Pond, has an earthen berm dividing it into an east and west portion. The Lakeside fly ash and bottom ash sluice water is normally discharged to the west portion of the Lakeside Ash Pond. The east portion of the pond, referred to as Lakeside East Pond, receives lime sludge from the filter plant and miscellaneous water streams from the Dallman Power Station including the FGDS effluent water. Flow rates into the ash ponds vary, but depend principally upon the generating units in service. (Ex. 1, p. 2-9.)

6. A new electric generating unit referred to as Dallman Unit 4 is currently under construction. The Dallman Unit 4 will include a coal-fired boiler with a rated capacity of about 2,440 million Btu/hour and a steam turbine-generator with a nominal capacity of 250 megawatts. The new boiler will be equipped with low-NO_x combustion

technology and the following air pollution control systems: selective catalytic reduction, a fabric filter, wet flue gas desulfurization, and a wet electrostatic precipitator. Dallman Unit 4 will utilize a dry ash handling system. (Ex. 1, p. 2-2.)

7. CWLP's water treatment plant has a capacity of 48 million gallons per day ("MGD"). A conventional lime-softening/filtration/disinfection process is employed to produce potable water. Five clarifiers and 12 filters in the treatment process remove sediment and particulate matter from the raw lake water. Thickened sludge from the clarifiers and backwash water from the filters is discharged to ash ponds located north of Spaulding Dam. The volume of sludge and backwash water discharged to the ash pond system varies and is dependent upon production volume and raw water characteristics. During periods of warm weather, powdered activated carbon ("PAC") is added to the incoming lake water for control of various pesticides and herbicides. The PAC also assists with taste and odor control. The majority of the PAC is removed in the clarifiers and disposed in the ash ponds. (Ex. 1, pp. 2-2, 3.)

8. Lake Springfield, a 4,224-acre reservoir constructed in 1934 by impoundment of Sugar Creek with Spaulding Dam, supplies the cooling water for the CWLP complex, which is also the primary source of potable water for the City and surrounding communities. The two major streams flowing into the lake are Sugar Creek and Lick Creek, which drain into its upper end. The majority of the consumptive use of lake water for the CWLP facility is ash sluicing water, accounting for 3.9 million gallons of lake water usage per day. Supernatant from the two ash ponds, which receive a variety of materials, including miscellaneous water streams from the Dallman Power Station and

the FGDS effluent water, flows into a clarification pond, which also provides settling and neutralization, before it discharges into Sugar Creek. (Ex. 1, pp. 2-3, 2-9.)

B. CWLP's Adjusted Standard for Boron

9. CWLP's NPDES Permit IL0024767, issued December 5, 2001, regulates 16 outfalls at the CWLP facility. Outfalls 001 through 011 apply to process discharges at CWLP. Outfalls 012 through 016 apply to storm water runoff from the industrial site. Outfalls 003, 004, and 016 discharge into Sugar Creek; all others discharge into Lake Springfield. Discharge from Outfall 003 consists mainly of potable water and raw water collected from various equipment drains, floor drains and roof drains at the Lakeside Power Station. The drainage is routed from the power plant through an underground pipe that outfalls into the Sugar Creek channel near the east side of the spillway at Spaulding Dam. Discharge from Outfall 003 contains high concentration of boron, the result of contact with accumulations of ash in the discharge area. Effluent from the Ash Clarification Pond discharges into Sugar Creek through Outfall 004, which also contains high concentration of boron. NPDES Permit IL0024767, reissued September 29, 1993, required CWLP to limit and monitor the concentrations of boron in Outfalls 003 and 004 to Sugar Creek. The permit limit for boron was 1.0 mg/L, with compliance to be achieved by December 14, 1994. (Ex. 1, pp. 2-9, 2-11.)

10. On May 4, 1994, CWLP filed a petition with the Board seeking an adjusted standard from the Board's water quality standard for boron that was, at that time, found at 35 Ill. Adm. Code 302.208(e). On December 1, 1994, the Board granted CWLP an adjusted standard for boron of 11.0 mg/L for process discharges into Sugar Creek (Outfalls 003 and 004) with downstream decreases in the receiving waterways until

compliance was reached with the general water quality standard of 1.0 mg/L. The adjusted standard included an alternative water quality standard for boron at a point of discharge from SMSD's Spring Creek Plant (Outfall 007) to 100 yards downstream of the confluence of the Sangamon River with Spring Creek. Thus, an alternative water quality standard for boron already applies to portions of the surface waters at issue in this Petition, as follows:

> The City of Springfield, Office of Public Utilities, City Water, Light and Power's (CWLP) facility which discharges to Sugar Creek to 100 yards downstream of the confluence of the Sangamon River with Spring Creek in the Northeast Quarter of Section 10, in Springfield Township, Sangamon County, is hereby granted a partial adjusted standard from 35 Ill. Adm. Code 304.105. Pursuant to this grant, 35 Ill. Adm. Code 304.105 does not apply to discharges from Outfalls 003 and 004 as regards boron concentrations that are less than or equal to:
>
> 1. 11.0 mg/1 for boron from CWLP's Outfall 003 at Spaulding Dam on Sugar Creek to its confluence with the discharge of the Springfield Metro Sanitary District's Sugar Creek Plant Outfall 008 in the Northeast Quarter of Section 31, Clear Lake Township, Sangamon County;
>
> 2. 5.5 mg/1 for boron from the discharge of said sanitary district plant outfall on Sugar Creek to its confluence with the South Fork of the Sangamon River; and
>
> 3. 2.0 mg/1 for boron from the confluence of Sugar Creek and the South Fork of the Sangamon Rivers to 100 yards downstream of the confluence of the Sangamon River with Spring Creek in the Northeast Quarter of Section 10, Springfield Township, Sangamon County.

Petition of the City of Springfield, Office of Public Utilities for an Adjusted Standard From 35 Ill. Adm. Code 302.208(e), AS 94-9, Opinion and Order of Board (Ill.Pol.Control.Bd. Dec. 1, 1994).

11. Historically, CWLP has been able to operate while meeting the adjusted boron standard in Sugar Creek. However, since SCR air pollution control systems for NOx removal were added to the three Dallman Units in 2003, CWLP has had difficulty complying with the adjusted standard for boron in Sugar Creek. The SCRs operate during the ozone season, from May through September 30. Apparently, trace ammonia concentrations from SCR operation results in increased leaching of boron and/or increased boron solubility in the Dallman Ash Pond, increasing boron levels to the clarification pond. The increased boron levels from the Dallman Ash Pond are below the adjusted standard, but when the boron content of the FGDS blowdown is added to the clarification pond, the boron concentration at Outfall 004 exceeds the adjusted standard in Sugar Creek. Although trace ammonia concentrations are also found in the gas stream to the FGDS, the effect on the boron concentration in the FGDS blowdown cannot be quantified since many other operational variables within the FGDS process result in a wide range of boron levels in the blowdown stream. Conversion to a dry fly ash system will not eliminate this high boron FGDS effluent, since it is generated by the air pollution control equipment and is not associated with the fly ash disposal system. (Ex. 1, pp. 2-11, 12.)

C. <u>Proposed CWLP Discharge to SMSD</u>

12. CWLP proposes that, in lieu of discharging the FGDS effluent water to the ash pond system, the wastewater be collected, pretreated and pumped to the SMSD Spring Creek Plant for treatment. This waste stream is estimated to have an average flow rate of 187 gallons per minute ("gpm") or about 270,000 gallons per day ("gpd") and a boron concentration of 450 mg/L. This estimated average flow includes FGDS effluent

water from Dallman Unit to 31, 32 and 33 and Dallman Unit 4. Specifically, CWLP proposes constructing two 250,000 gallon holding tanks and a ClairCone™ solids contact clarifier, with a 240 gpm capacity to pretreat the waste stream prior to pumping the water to the Spring Creek Plant for treatment. The ClairCone™ is designed to allow mixing, flocculation, and sedimentation to take place within a completely hydraulically-driven vessel. The conically shaped concentrator maximizes the FGDS blowdown discharge concentration and allows plant personnel to visually monitor FGDS blowdown discharge. The pretreatment is not expected to significantly reduce the boron concentration, but will significantly reduce solids sent to the Spring Creek Plant. The ClairCone™ will recycle solids back to the FGDS process. (Ex. 1, p. 2-12.)

D. SMSD Spring Creek Plant Description

13. SMSD owns and operates the Spring Creek Plant and Sugar Creek Wastewater Treatment Plant. The Sugar Creek Plant was put into service in 1973 and treats wastewater and storm water from the southeast and eastern sections of Springfield and adjacent service areas. The Spring Creek Plant was constructed in 1928 with major improvements in the 1930s. It handles wastewater and storm water flows from the southwest, west and northern parts of Springfield and surrounding service areas. The last major improvements to increase the capacity of the Spring Creek Plant were constructed in 1973. (Ex. 1, p. 2-12, 13.)

14. The population served by the Spring Creek Plant from 2000 U.S. Census data was 90,300 and has increased just over one percent per year on average for the previous ten years. It is an activated sludge treatment plant that provides treatment and

removal of biological oxygen demand ("BOD"), total suspended solids ("TSS"), ammonia and bacteria, and consists of the following main unit processes:

1. Screening for large solids removal;
2. Grit removal for removing heavier sand and grit particles;
3. Primary clarifiers for removing solids and biological matter;
4. Aeration tanks for the main biological treatment process;
5. Secondary clarifiers for removing the remaining fine solids particles; activated sludge is returned from these clarifiers to the aeration tanks;
6. Disinfection, performed on a seasonal basis from May through October;
7. Anaerobic sludge digestion to stabilize primary and secondary waste sludge, which is then stored; biosolids are land applied when weather permits; and
8. Excess flow clarifiers to provide primary treatment during high flow storm events.

15. The Spring Creek Plant, which discharges its effluent into the Sangamon River at the confluence of Spring Creek and the River, flows into a 72-inch diameter concrete pipe and is conveyed approximately 5,990 ft before discharging into the river. The 72-inch outfall sewer was constructed in 1973. The 7-day 10-year low flow in the Sangamon River upstream of the Spring Creek discharge is 54.8 cubic feet per second (cfs) or 35 MGD. The 7-day low flow observed by the Illinois State Water Survey ("ISWS") per its 2002 map at the Spring Creek Plant discharge is 17.5 cfs or 11.31 MGD. The Spring Creek Plant has a seasonal disinfection exemption that only requires disinfection for the months of May through October. (Ex. 1, Section 2.5.)

E. Spring Creek Plant Operation

16. The Spring Creek Plant operates 24 hours per day, seven days per week. The Plant is staffed by 7 full-time operators from 7 a.m. to 11 p.m. There is a separate maintenance crew on site 8 hours per day, 5 days per week. It has an average design capacity of 20 MGD. Monthly flows in 2004 through 2006 have ranged from 11.8 MGD to peak flow over 50 MGD. The design maximum flow of the plant is currently 50 MGD, which is greater than the 2005 peak of 49 MGD, but 49 MGD puts the plant at 98 percent of its rated maximum capacity. (Ex. 1, p. 2-15.)

17. On average Plant discharge is less than the 7-day 10-year low flow of the receiving stream, the Sangamon River, which is 54.8 cfs or 35.4 MGD. A Spring Creek Plant 7-day low flow of 11.31 MGD has been used for calculating the boron concentration under the scenario for the proposed Site Specific Rule. This flow rate is based on the 7-day low flow presented on the 2002 ISWS map, the latest available. Daily effluent flows as low as 9.29 MGD were observed in September 2007. (Ex. 1, pp. i, 2-15.)

18. The requirement for complete treatment of flows to the Spring Creek Plant are detailed in the SMSD's NPDES Permit No. IL0021989 ("Spring Creek Plant NPDES Permit"), in Appendix A of Ex. 1. SMSD anticipates there will be changes in the current NPDES permit after it expires July 31, 2009. At that time, construction should be underway for construction of a new treatment plant which will require NPDES permit modifications due to increased hydraulic capacity. The SMSD has given consideration to ammonia nitrogen and total phosphorus requirements for the future. (Ex. 1, pp. 2-15, 2-18.)

19. Based upon the 2006 plant influent data, the carbonaceous BOD_5 concentration range from 157 to 214 milligrams per liter ("mg/L") with an average of 172 mg/L. The $CBOD_5$ removal after primary, secondary and tertiary treatment is about 98 percent, for an average effluent $CBOD_5$ of approximately 3 mg/L. The TSS concentration has a range from 132 to 307 mg/L with an average of 198 mg/L for 2006. With a removal rate of over 96 percent, the discharge to the receiving stream had only 7.3 mg/L of TSS on average. (Ex. 1, p. 2-18.)

20. Although not designed for nitrification, through operational adjustments to the plant, the SMSD has been able to meet their seasonal NPDES requirements for ammonia nitrogen. Data from 2006 shows a reduction of ammonia from an influent value of 12 mg/L to 1.38 mg/L in the tertiary effluent, which is over 88 percent removal. At the present time, ammonia nitrogen loading is at the plant's maximum capacity, but recommended plant improvements will be designed to provide ammonia nitrogen removal. (Ex. 1, p. 2-18.)

21. Total phosphorus removal is not currently regulated by the Spring Creek Plant NPDES Permit, so influent and effluent data values are not available, but plant expansion recommendations will take into account phosphorus removal requirements expected in the next permit renewal cycle. (Ex. 1, p. 2-18.)

F. Anticipated Spring Creek Plant Discharge

22. The temperature of the wastewater leaving the Spring Creek Plant varied from a low of 50°F to a high of 78°F in 2006. Effluent leaves the plant on average at a pH between 6.4 and 8.0. (Ex. 1, p. 2-19.)

23. A current plant influent boron concentration of 0.25 mg/L was used as background to calculate the new concentration with the FGDS wastewater included in the flow steam. Based on the 7-day low effluent flow of 11.31 MGD per ISWS, combined with the FGDS wastewater at 0.27 MGD of added flow and a boron concentration of 450 mg/L, the maximum boron concentration of the Plant effluent would be 11.0 mg/L. It is anticipated that the boron will not be significantly affected by or adversely affect the Plant's treatment process. and therefore the effluent boron concentration is expected to mirror the influent concentration. Thus. the Plant's typical effluent maximum boron concentration is estimated to be 11.0 mg/L. The boron concentration downstream in the Sangamon River is estimated to be 4.5 mg/L under this scenario. (Ex. 1, p. 2-19.)

24. The Plant consistently meets NPDES regulated parameters. In summary, pumping the CWLP FGDS wastewater to the SMSD Spring Creek Plant is not expected to have any effect on the Plant, other than the increase in boron concentration in the effluent. While granting of this Site Specific Rule will not reduce, with any level of certainty, the need for the previously-granted 11.0 mg/L adjusted standard for boron, rather, granting of this Site Specific Rule should enable CWLP to meet compliant levels in Sugar Creek, as was typical prior to operation of the SCR. (Ex. 1, p. 2-19.)

G. History of CWLP's Boron Mitigation Efforts

25. From 1994 when the adjusted standard was granted until May 2003, CWLP operated within general compliance of its NPDES Permit IL0024767, set forth in Appendix B of Exhibit 1. However, beginning in May 2003, CWLP began experiencing boron exceedances (above 11.0 mg/L) at Outfall 004, coinciding with the testing and start of SCR air pollution control systems. (Ex. 1, p. 2-11.)

26. Subsequent to a meeting with IEPA in July 2003, CWLP committed to further investigation of the process chemistry and interaction of the constituent waste streams; it investigated the component effluent streams of Outfall 004, to identify the streams with high boron content. CWLP used both internal resources and those of Hanson Professional Services. Inc. ("Hanson") to conduct this investigation. The investigation demonstrated that the FGDS blowdown, or the scrubber return water, which is generated from de-watering the scrubber solids (gypsum), was a primary culprit in causing high boron levels in the ash pond. Levels above 500 mg/L were identified in this waste stream. The FGDS blowdown is a means to remove chlorides and other contaminants that would otherwise buildup in the system and cause a corrosive environment in the stainless steel towers. This involves the daily release of approximately 200,000 gallons of FGDS blowdown liquid at the average daily rate of 100 gpm. CWLP remained in correspondence with IEPA concerning the investigation and its progress in identifying problem areas.

27. On November 25, 2003, CWLP received a violation notice ("VN") from IEPA (VN W-2003-00471). CWLP responded to the VN on January 12, 2004. In its written response, CWLP explained that it had retained Hanson to investigate the causes of the boron exceedances, and would continue to work with Hanson to characterize the waste streams of Outfall 004 with the SCRs in operation, and after they had been shut down following the ozone season. On February 11, 2004, IEPA accepted CWLP's Compliance Commitment Agreement ("CCA") and required CWLP to present a report to IEPA by March 15, 2004, which it met.

28. CWLP submitted findings to IEPA of additional investigative sampling, which confirmed that a highly significant contributor of boron to Outfall 004 was the FGDS blowdown waste stream, or scrubber return water from the gypsum de-watering system. Around July 2004, CWLP proposed to IEPA a multi-pronged approach to solving the boron exceedance issue, including a proposal to engineer and design a treatment facility for the FGDS wastewater stream, with a target operational date of the 2005 ozone season, but CWLP discovered that due to the complexity of the chemistry of the waste stream, implementation could not be achieved prior to the 2005 ozone season. Therefore, additionally in the interim, for the remainder of the 2004 ozone season, CWLP committed to continuously operate the Lakeside sluice pumps which discharge into the ash ponds and ultimately through Outfall 004, so as to provide additional flow for Outfall 004, in an attempt to minimize the effect of the FGDS wastewater stream.

29. In February 2005, CWLP retained Burns & McDonnell ("Burns") to perform a wastewater treatment study for existing and new generation facilities. The study investigated the availability and feasibility of wastewater treatment options. A significant portion of the study identified potentially feasible boron removal options. Burns recommended to CWLP to pursue a brine concentration/spray dryer system for treatment of wastewater from CWLP facilities and specifically, the identified FGDS wastewater stream. CWLP then retained Burns to design the wastewater treatment facility.

30. In December 2005, CWLP entered into a contract with Aquatech to provide the equipment and technology for the wastewater treatment process. The proposed Aquatech FGDS wastewater stream treatment process was basically a large

evaporator, referred to as a Brine Concentrator ("BC"), which was designed to boil the liquid down to a concentrated salt-water solution. The process energy would be developed by four vapor compressors that consume 550 horsepower each. The concentrated saltwater would be sent to a gas-fired Spray Dryer ("SD") that would convert the solution into a powdered salt. The solid salt would not be included with the Aquatech system, but instead would be taken to a landfill. Ninety percent of the evaporated water would be condensed and could be recycled in various plant processes.

31. In February 2006, while CWLP and Burns began working with Aquatech on the engineering, it was discovered that the Aquatech system would have to be supplemented with a pretreatment system to remove suspended solids from the system, to prevent scale from forming in the evaporators and preheaters. This lead to the design of a pretreatment clarifier system to remove the suspended solids, expected to consist mainly of a clarifier and sand filter tanks. The pretreatment system would be used to separate the solids and return them to the scrubber for reuse. At that point in the project, CWLP retained Crawford, Murphy & Tilley, Inc. ("CMT") for the pretreatment system.

32. In April 2006, after months of evaluation, the system had grown to the extent that the annual natural gas costs would be a considerable expense, and it was difficult to find a feasible location for the boron removal plant.

33. In September 2006, as the engineering progressed, it became apparent that the use of the BC/SD absorber to treat this type of waste stream would be a unique application of this technology. Burns and Aquatech encountered issues that required significant changes in the project on a fairly regular basis, because the technology was unproven and a BC had not been used to treat an FGDS wastewater stream. There was

relatively low expertise in this area, such that the design changed as it had been engineered, and the project was considered a pilot project. For example, the equipment, typically used for cooling tower blowdown treatment in combustion turbine power plant applications, was a much different application due to the heavier dissolved solids loading present in the FGDS wastewater stream.

34. CWLP initially investigated processing 1 to 2 bags an hour to dispose of the waste byproduct material out of the spray dryer, but soon learned that the material densities were such that the number of bags to unload increased to 2 bags every 10 minutes. CWLP then considered a conveyor and truck trailer removal arrangement, requiring excessive costs in trucking and landfill fees, due to the increase in volume of the waste byproduct. Moreover, the byproduct would be considered a special waste according to chemical analysis of the projected waste byproduct. The byproduct was also hydroscopic, meaning it would quickly soak up moisture in an open environment, turning into a sticky, mud-like substance, posing yet additional issues with trucks and landfills that had not yet been addressed.

35. Because of dramatic cost escalations and operating issues, CWLP asked Burns to study removing the SD from the back end of the BC and send the concentrated waste stream out of the BC to an evaporation pond that would be constructed in CWLP's existing Lakeside Ash Ponds, which it later learned was not feasible without forced evaporation methods, which, with the costs of building the evaporation ponds, would be exceedingly costly.

36. By October 2006, CWLP formally requested to amend the project implementation schedule and the CCA by six months to further study other approaches to

the complex problem, submitting the idea of using the Spring Creek Plant as an alternative method for treating the FGDS blowdown stream. CWLP retained CMT to review this alternative; thereafter, CWLP determined it was in the City's best interest to further explore this option, meeting with the District numerous times to discuss it.

II. STATEMENT OF PURPOSE AND EFFECT OF PROPOSAL

A. Nature of the Receiving Stream

1. Historical Flow, Uses and Boron Concentrations in the Receiving Stream

37. The Sangamon River watershed comprises approximately 5,419 square miles, all in central Illinois and practically all of it tillable and generally cultivated. The River originates in central McLean County, east of Bloomington, flowing such that it is joined by Salt Creek, its largest tributary, and then joins the Illinois River north of Beardstown. Its total length is about 250 miles. The length of the Sangamon River is characterized by a series of pools and shoals, with five (5) impoundments in its basin, including Lake Decatur, which is the only lake located directly on the Sangamon River, as well as being the deepest portion. (Ex. 1, p. 3-2.)

38. A field survey in fall, 2007, to characterize the general features of the Sangamon River downstream of the CWLP power plant discharge showed it to be a low gradient, meandering stream. The lower section below the confluence of the Salt Creek appears to have been channelized in the past, and has scoured out a wider floodway in the sandier soils. Three structures have created riffle areas that are a source of oxygenation for the River during low flow: a former dam immediately upstream of the Spring Creek confluence in Springfield, and two rock check dams. According to the Illinois

Streamflow Assessment Model (ISWS, 2007) the mean flow at the confluence with Spring Creek was 2,120 cfs for the base period from 1948 to 1997. During high flow periods, stream discharge can exceed 7,000 cfs at this location. (Ex. 1, pp. 3-5, 6.)

39. Sugar Creek empties into the South Fork of Sangamon River four miles east of Springfield and approximately seven miles northeast of Outfalls 003 and 004 of the CWLP Plant. Above these outfalls is the spillway for Spaulding Dam. Sugar Creek is a series of pools and riffles, and its flow is primarily the outflow of Lake Springfield. The Creek also receives the discharge from CWLP's Outfalls 003 and 004 and the discharge from the SMSD's Sugar Creek plant, about 2 1/2 miles below Spaulding Dam which is about 10 MGD.

40. There are eight (8) NPDES permitted discharges to the Sangamon River from the confluence of the South Fork of the Sangamon River to the Illinois River (Ex. 1, Table 3-1, p. 3-7). Other generally known uses of the Sangamon River include aquatic life habitat and recreation (boating, fishing, swimming). The reach of the Sangamon River at issue in this site specific rulemaking is not used for irrigation of agricultural land, golf courses, nurseries, etc. (Ex. 1, pp. 3-6, 3-9.)

41. Water quality data for boron levels in the Sangamon River from the IEPA for 1999 – 2004 for three of the monitoring stations that comprise the pertinent sections of the River, and stream discharge volumes in cfs from the United States Geological Survey ("USGS") were reviewed. (*See* Ex. 1, Figures 4-1, 4-2, 4-3 and Appendix D.) The station at Riverton closest downstream of the CWLP NPDES discharge locations had the highest total boron concentrations over the four-year period. (Ex. 1, p. 4-2.) While total boron exceeded 1.0 mg/L in nine percent of the sampling events, no boron value

exceeded the adjusted standard of 2.0 mg/L of boron, with 0.394 mg/L the mean boron concentration at Riverton from 1999-2004. (Ex. 1, pp. 4-2, 3, 4, 5 and 6.)

2. Current Water Quality Generally

42. The condition of four stream segments of the Sangamon River at issue show that all four are included on IEPA's 2006 Section 303(d) list: the Sangamon River from the South Fork of the Sangamon River to Spring Creek (E-26), the Sangamon River from Spring Creek to Richland Creek (E-04), the Sangamon River from Richland Creek to Salt Creek (E-24), and the Sangamon River from Salt Creek to the Illinois River (E-25). (Ex. 1, p. 3-9.)

43. All four segments are identified as impaired for the designated use of fish consumption, due to polychlorinated biphenyls ("PCBs") from an unknown source. Three are identified as impaired for the designated use of primary contact recreation, a potential cause being fecal coliform from an unknown source. Stream segment E-26 is identified as impaired for the designated use of aquatic life, potential causes being boron, nitrogen, phosphorus, silver, total dissolved solids, and total suspended solids, from potential sources such as industrial and municipal point source discharges, on-site treatment systems, runoff, channelization, crop production, dams or impoundments, and streambank modifications/destabilization. (Ex. 1, pp. 3-9, 3-11.)

3. Aquatic and Fisheries data

44. Assessments of the ecological health of streams, rivers, and lakes are often determined by the composition of the aquatic macroinvertebrate communities, with macroinvertebrate data generally interpreted by examining community structure, taxa richness, and use of the Macroinvertebrate Biotic Index ("MBI"). Low values indicate

good stream conditions and water quality; high values indicate a degraded stream and reduced water quality. (Ex. 1, Section 3.2.3.)

45. The IEPA in cooperation with the IDNR conducted Intensive Basin Surveys of the Lower Sangamon River basin in 1996 and 2003. IEPA conducted sampling at several stations, including the Sangamon River near Riverside Park (E-50) in 1996, but changed the sampling location to Riverton (E-26) in 2003. Exhibit 1, Table 3-3 provides the macroinvertebrate species from the Sangamon River stations during the surveys, along with macroinvertebrate data from Station E-16 located at Roby, Illinois, for comparison to a location upstream of the South Fork/Sugar Creek confluence with the Sangamon River. According to IEPA personnel, due to different sampling methodology for the 1996 and 2003 surveys, community comparisons between the years are not reliable (Ex. 1, Section 3.2.3).

46. Based on the MBI scores, all four IEPA stations of the Sangamon River fully supported aquatic life, except for the upstream station at Roby in 2003, which MBI score indicated moderate impairment of aquatic life use. Station E-50 (Riverton) in 1996 had the lowest MBI score, evidencing the highest quality of the four stations surveyed. (Ex. 1, p. 3-13.)

47. Fisheries surveys of the Lower Sangamon River Basin were conducted by the IDNR in 1996 and 2003. Exhibit 1, Table 3-4 lists the fish species collected from each of the sampling locations, and provides the number of species and designated scores using the Index of Biotic Integrity ("IBI") and Revised IBI ("RIBI"), including fish data from the upstream station located at Roby, Illinois for a comparison to fisheries quality

upstream of the South Fork/Sugar Creek confluence with the Sangamon River. (Ex. 1, p. 3-17.)

48. The fish species collected at the Sangamon River stations were common for Midwestern streams relative to stream size, and none are present on the state or federal endangered or threatened species list. The total number of fish and the number of fish species collected were relatively equal. Based on the IBI scores, the three Sangamon River stations were relatively equal in 1981-82 and 2003 sampling dates. Based on the 1996 and 2003 RIBI scores, three stations of the Sangamon River were moderately impaired for aquatic life use (fair quality fisheries), while the station at Oakford in 2003 had an RIBI score indicating full support of aquatic life use and good resource quality. The two upstream stations, E-50/26 (Riverside Park/Riverton) and E-16 (Roby), had lower RIBI scores than the other downstream stations surveyed. (Ex. 1, Section 3.2.4.)

49. Subsequently, the IBI was adapted for use in Illinois through the Biological Steam Characterization ("BSC"), a five-category stream quality classification based primarily on the attributes of lotic fish communities. Based on the latest publication of the BSC (IEPA, 1996), the reach of the Sangamon River which includes Sangamon County is classified as Moderate Aquatic Resources (Class C Streams), which is defined as a fishery consisting of predominantly bullheads, sunfish, and carp. (Ex. 1, p. 3-21.)

50. Because the Sangamon River provides an important commercial and recreational resource through catfish fishing, the IDNR conducted a catfish survey of the Lower Sangamon River in 2003, which concluded that both channel catfish and flathead catfish appear to maintain very good populations, in both numbers of fish and size ranges.

The 2003 catfish survey determined that channel and flathead catfish populations were robust, especially at the Riverside Park/Riverton section of the Sangamon River. (Ex. 1, Section 3.2.4)

4. Threatened and Endangered Species and Natural Areas

51. Information from IDNR on aquatic threatened and endangered species and natural areas of the Sangamon River from its confluence with the South Fork of the Sangamon River to the Illinois River was reviewed. The Illinois Natural Heritage Database listed observed occurrences in the Sangamon River of the lake sturgeon (*Acipenser fulvescens*), a state endangered fish which inhabits large lakes and rivers, and the redspotted sunfish (*Lepomis miniatus*) a state threatened fish which is found in Illinois only in extreme southern Illinois and in bottomland lakes and streams in the sand region of other counties. However, the only record for the lake sturgeon, which does not reproduce in the Sangamon River, was one individual taken in Menard County in 1996. While the redspotted sunfish was observed in the Sangamon River at its confluence with the Illinois River in Cass County, it is extremely rare in the Lower Sangamon River basin area, and appears to have been isolated from other populations of its species for a long period. (Ex. 1, pp. 3-22, 23.)

B. <u>The Proposed Site Specific Rule Would Have No Anticipated Toxicological Effects</u>

52. Boron is an element that is widespread in the environment, and is widely distributed in surface and groundwater. Most boron that occurs in the fresh water aquatic environment is due to the relatively high water solubility of all boron compounds, especially boron-containing laundry products and sewage, while another, although very

localized, source of boron to the aquatic environment is coal ash. Many commercially-mined coal seams contain significant concentrations of boron. Of the total boron in coal, most may be lost to the atmosphere upon combustion, though more than 50 percent of the boron found in coal ash is readily water soluble. (Ex. 1, pp. 5-1, 2.)

1. Toxicological Effects of Boron

53. As explained in Exhibit 1, Section 5.0, the primary focus regarding potential effects from boron concerns early stages of aquatic species. For example, the U.S. EPA classifies boron as a Group D element, meaning that there is no human and animal evidence of boron carcinogenicity. In mammals, while exposure to excessive boron may result in reduced growth rate, loss of body weight, and eye irritation, studies found no overt signs of toxicosis in one mammal species exposed to 120 mg/L of boron, nor at 300 mg/L of boron when consumed via drinking water. Toxic effects of boron in birds have been exclusively studied in ducks and chickens, with results of chronic feeding studies using mallards demonstrating that diets containing 13 mg of boron per kg of feed weight produce no adverse effects. While boron rapidly accumulates in mallard tissues, it also is rapidly eliminated. After boron was removed from the mallards' diet, it was completely cleansed from the liver and blood within one day. (Ex. 1, Section 5.2.2.)

54. Tolerance ranges for some species of fish show that boron compounds upon amphipods, rainbow trout, and guppies, for example, were determined to be relatively non-toxic using 24-hour bioassay procedures. In mosquito fish (*Gambusia affinis*), which are native to Illinois, using 96-hour bioassay procedures, mortalities were observed in concentrations of boric acid up to 1,800 mg/L (315 mg/L calculated as boron). Other studies indicated that 30 and 33 mg/L of boron are "safe" levels for game

fish species such as the largemouth bass and bluegill, though one study reported an 11-day lowest-observed-effect concentration ("LOEC") of 12.17 mg/L of boron for freshly fertilized eggs of a species of largemouth bass. (Ex. 1, pp. 5-4, 5.) Effects of boron on freshwater aquatic vertebrates applicable to the Sangamon River and the Illinois River are summarized in Table 5-1 of Exhibit 1.

55. Amphibians respond to boron at concentrations similar to those for fish. While some boron compounds were found to be more toxic to embryos and larvae than to adult amphibians, no effects occurred on embryos of Fowler's toad (*Bufo fowleri*) until 53 mg/L of boron was applied, while leopard frog (*Rana pipiens*) embryos suffered 100 percent lethality or teratogenesis in water treated with boron compounds at levels of 200 and 300 mg/L of boron, respectively. (Ex. 1, p. 5-6.)

56. Effects of boron on freshwater aquatic invertebrates applicable to the Sangamon River and Illinois River are summarized in Table 5-1 at Exhibit 1. (See, also, Ex. 1, Section 5.2.4.)

57. Boron is essential for the growth of plants, such that optimal growth in plants occurs at 2 to 5 mg/L, while toxic effects are evident at 5 to 12 mg/L for sensitive species such as citrus, stone fruits, and nut trees. No use for irrigation, however, has been reported for the reach of the Sangamon River at issue in this site specific rulemaking. While toxic effects have been observed in aquatic plants at various concentrations, the blue green alga exhibits no adverse effects with respect to cell growth or organic constituents at 50 mg/L of boron and significant adverse effects at greater than 100 mg/L over a 72-hour exposure. Effects of boron on freshwater aquatic plants applicable to the

Sangamon River and the Illinois River are summarized in Table 5-1 of Exhibit 1. (See, also, Ex. 1, Section 5.2.5.)

2. No Anticipated Adverse Effects to Aquatic Organisms

58. Boron effects on aquatic life are highly species specific and vary depending on its life stage and environment. Studies show that early stages are more sensitive to boron than later ones, and that administering boron in natural water is less toxic than in reconstituted lab water. Of the species and life stages investigated, the early life stages of rainbow trout, not present in the Sangamon River, appear to be most sensitive to boron. Trout embryo-larval stages exposed to boron in natural water courses was found to be substantially less toxic than in reconstituted lab water. Wild, healthy trout in surface waters containing 13 mg/L of boron have been reported. A 20-day NOEC of 18 mg/L of boron for rainbow trout embryos has also been reported. Therefore, the low-level effects observed in reconstituted laboratory water may not accurately predict the effects under natural water exposure conditions. And, it is unlikely that boron is bioconcentrated significantly by organisms in water. (Ex. 1, Section 5.4.)

59. CWLP was granted an adjusted stream standard for boron in 1994. The *Technical Support Document for Petition for Adjusted Boron Standards for Sugar Creek and the Sangamon River* (Hanson Engineers Incorporated, March 1994) presented scientific evidence showing no detectable degradation to Sugar Creek receiving discharges having boron levels as high as 18 mg/L of boron. The 1994 Hanson study demonstrates the toxicological effects of boron at varying concentrations on the biological community of an aquatic ecosystem. Overall, the results indicate that the Sangamon River biological community would not be observably affected by the

anticipated maximum boron concentration of 4.5 mg/L downstream, or by the maximum boron concentration of 11.0 mg/L in the area of dispersion. Likewise, the Illinois River biological community would not be observably affected by the anticipated maximum boron concentration. (Ex. 1, pp. 5-16, 17.)

60. Petitioners also note that the Board has previously granted relief from the water quality standard for boron up to 15.0 mg/L. See Section 303.352, 35 Ill. Adm. Code § 303.352 and In the Matter of: The Proposed Amendments to Rule 203.1 of the Water Pollution Regulations, R76-18, March 16, 1978. And, Illinois Power was granted an adjusted standard allowing up to 9.9 mg/L for boron for 310 feet upstream of its outfall to the Kaskaskia River. In the Matter of Petition of Illinois Power Company (Baldwin Power Plant) for Adjusted Standard from 35 Ill. Adm. Code § 302.208 and 35 Ill Adm. § 304.105 Regarding the Parameter Boron, AS 96-1, May 2, 1996.

C. No Alternative Technology is Technologically Feasible or Economically Reasonable

61. As explained above regarding CWLP's boron mitigation efforts, while CWLP has investigated numerous alternatives over the last decade, pumping CWLP's FGDS wastewater stream to the Spring Creek Plant is the only technologically feasible and economically reasonable alternative to address the boron exceedance problem in the wastewater stream. Alternatives to the pretreatment of the FGDS wastewater stream, expected to have an average flow rate of 187 gpm, and a boron concentration of 450 mg/L, are discussed in Exhibit 1, Section 6.0, which also notes that there are currently no known commercially-demonstrated processes for treating a wastewater stream with a similar boron concentration. (Ex. 1, p. 6-1.)

62. Specifically, CWLP has considered the following:

- Conversion to a dry ash system;
  - however, the FGDS wastewaters proposed for transfer to the SMSD Spring Creek Plant are generated by the air pollution control system, and would not be eliminated by modifying the power plant ash handling system, although the new Dallman Unit 4 will include dry fly ash and bottom ash handling systems.

  - Burns estimated that the installed equipment cost to convert all existing Dallman units to dry fly ash would be $10.2 million. With added operational costs due to additional equipment and operations, along with collected ash disposal, Burns calculated the 2005 net present value of conversion to dry fly ash as $19.5 million, with a 2008 net present value of $24.5 million, for a cost of $368 per electric service, which would not address the boron generated by the air pollution control system at issue here.

  - Burns found that conversion of Dallman Units 31 and 32 to a dry bottom ash system is not feasible, and that while conversion of Dallman Unit 33 is technically feasible, due to space limitations, lack of industry experience and negative cost-benefit ratio, converting Dallman Unit 33 is not favored.

- Use of western coal in place of Illinois coal;

- Treatment options for the removal of boron from FGDS wastewaters, which contain high concentrations of dissolved and suspended solids, such that less-expensive removal options that might otherwise be typical, would be inefficient here, but could nevertheless range from $6.1 million to $9.2 million for capital costs and from $0.80 million per year to $14 million per year in annual operating and maintenance costs, such that the present value of the treatment alternatives range from $22 million to $254 million:

  - Burns found that reverse osmosis ("RO") would have poor recovery and would require pretreatment;

  - Burns found that application of selective media, such as ion exchange resin or activated carbon would require frequent regeneration or media changeout;

- Burns found that chemical precipitation would be ineffective because of the relatively low concentration of boron compared to its solubility in the wastewater stream.

(Ex. 1, pp. 6-3, 5, 6.)

1. Brine Concentrator ("BC") followed by Spray Dryer

63. Mechanical evaporators that separate and recover water from the wastewater solution, the most commonly used BC use a vapor compressor to provide a self-sufficient supply of steam to heat up the wastewater slurry. The heated wastewater evaporates and generates steam that is compressed and used for reheating the wastewater slurry, which is then recirculated in a vertically mounted tube bundle. Due to high concentrations of TDS and chlorides, the wetted materials are normally made from high-grade stainless steels and the tubes from titanium, and are very expensive. In addition, the vapor compressor and the slurry recirculation pumps consume a significant amount of electricity. The concentrated bleed would then be fed to a spray dryer, where it is completely dried to a solid form for disposal, in a chamber where hot air containing combusted natural gas is injected, leaving behind the solids. (Ex. 1, pp. 6-6, 7.)

64. Burns concluded that to accommodate periodic maintenance, and possible variation in the incoming wastewater flow rate, dual trains of the BC/spray dryer units would be needed, each designed for 50 percent of the maximum capacity required. Burns initially opined that boron removal using dual train BCs/dual train spray dryers had a capital cost of $8,222,000 and an annual operating cost of $798,539. (Ex. 1, p. 6-7.)

2. Reverse Osmosis followed by Crystallizer and Spray Dryer

65. Burns also considered an RO process as an alternative to the first stage treatment, with mechanical evaporation to concentrate the wastewater. Here, however, due to the high concentrations of dissolved constituents in the FGDS blowdown stream, high recovery is impossible due to the osmotic pressure and the pressure limitation of commercially available RO membranes. Burns concluded that because of the constituents in this FGDS blowdown, including high suspended solids, pretreatment would be necessary before the water could be treated by an RO system. (Ex. 1, pp. 6-7, 8.)

66. To address the problems caused by these constituents, it was determined, for example, that when concentrated in the RO system at neutral or acid pH, silica concentrations may exceed its solubility and cause a scaling problem on the RO membranes, and that boron may crystallize to form boric acid, a waxy substance that could also foul up the RO membranes. Thus, following the lime soda softener, Burns considered a HERO system (a patented high-pH RO system design). But, HERO is still an RO system, so its recovery is limited by the osmotic pressure. (Ex. 1, p. 6-8.)

67. Due to the limitation of the recovery of the HERO, the size of the crystallizer is much larger and more expensive than the spray dryer included after the BC. However, the cost of the HERO is generally less than that of a BC and consumes less electricity, but also has some disadvantages. The BC option is more favorable than the HERO because it involves fewer components to operate. Also, the chemical consumption as well as solids removal (requiring disposal) of the lime/soda softener is significant. Finally, the energy consumption of the crystallizer is much higher than that

of the spray dryer. Burns opined that boron removal in FGDS water using a lime/soda softener followed by dual train HERO systems had a capital cost of $6,120,000 and an annual operating cost of $1,118,649. (Ex. 1, p. 6-8.) These values represent 2005 dollars. This report significantly underestimated the capital and operating costs of the BC option, by as much as 4-5 times.

3. Electrocoagulation

68. In response to a request from the IEPA, Burns evaluated boron removal using electrocoagulation ("EC"), a method of treating wastewater with electricity to cause contaminants to become destabilized and precipitate, consisting of metallic electrode plates separated by thin annular spaces, which dissolves the electrodes. The dissolved metal ions react with contaminants creating precipitates that are removed by filtration. Metal plates of aluminum are the most effective for boron removal. (Ex. 1, p. 6-9.)

69. Contaminant reduction occurs via flocculation/precipitation and adsorption. Adsorption occurs when contaminants electrostatically adhere to the flocculated solids and are removed along with the precipitates. But adsorption of boron on aluminum flocculants has been reported to be only 20 percent of available boron, when adsorption is not inhibited by other contaminants such as chlorides and sulfates, both of which exist in the FGDS wastewater in high concentrations. (Ex. 1, p. 6-9.)

70. Targeting boron specifically for removal by EC in the FGDS wastewater is difficult because boron is known to exist in at least six pH dependent species in water, such that 50 to 60 percent of the boron will be in the boric acid form, which is difficult to remove by most available technologies. Further, competing reactions from other FGDS wastewater constituents may dramatically lower boron removal. (Ex. 1, p. 6-9.)

71. Burns opined that removal of boron in FGDS wastewater would require a capital cost of $9,207,000 and annual operating costs of $14,074,000, concluding that economically, EC is not recommended for FGDS wastewater due to high capital and operating costs relative to low boron removal efficiencies, based on assumptions extrapolated from studies performed on wastewaters much different from the FGDS wastewater. Here, boron removal efficiency cannot be predicted due to lack of verified boron removal efficiencies in high boron and high TDS wastewaters, such that boron removal efficiency is expected to be dramatically decreased from theoretical estimates due to competing reactions in the EC process. (Ex. 1, p. 6-10.)

4. Boron Pilot Project

72. In December 2005, CWLP entered into a contract with Aquatech to provide a Zero Liquid Discharge ("ZLD") plant for the treatment of FGDS wastewater, consisting of two BC's followed by spray dryers, to treat the blowdown from the FGDS system at the power plant. However, it became apparent that the use of a BC/spray dryer system to treat the FGDS blowdown was a unique application of this technology, such that the relative inexperience in this application translated into design changes as engineering of the system progressed. Additionally, the original scope of work and the associated cost increased several times, and became too high to proceed with the proposed BC system. At the time the system was abandoned, the capital cost had risen to $40 million and the annual operating and maintenance cost had risen to $3.7 million. How to dispose of the solid waste generated by the treatment system was never resolved. (Ex. 1, p. 6-12.)

5. Use of Non-Illinois Coal

73. In Burns' *Phase II SO_2 Compliance Study Report* (Burns & McDonnell, October 1998), switching the CWLP coal supply from Illinois coal to Power River Basin ("PRB") coal was evaluated. PRB coal, mined in the western United States, is low-sulfur, low-boron coal as compared to coal mined in Illinois. Because CWLP does not have any reliable way to receive rail-delivered coal to the power plant, and the plant site is not large enough for unit train coal deliveries, major modifications would be required to enable limited rail unloading of PRB coals. Two alternatives to on-site rail delivery were identified by CWLP during this study, both involved unloading the trains at an off-site facility and trucking the coal to the CWLP power plant. (Ex. 1, p. 6-1.)

74. Modifications would include retrofitting existing hammer mills to accommodate the finer grade PRB coal, and installation of dust control systems, including enclosures of truck dump operations to reduce dust emissions during unloading operations. Test burns revealed that installation of a limestone storage silo and feed system would also be needed. Burns also identified 13 areas of concern for operation of existing equipment and systems to burn PRB coal, including, for example, the capacity of the forced draft and the induced draft fans, the coal feeder, the bowl mill and the exhauster, potential cyclone modifications and addition of cyclone slag flux agents, as well as modifications to the ash handling systems. Burns also noted that factors associated with PRB coal combustion may make it impossible for CWLP to achieve continuous air compliance under all operating conditions burning PRB coal in the existing power plant. (Ex. 1, pp. 6-1, 2.)

75. After considering the *Phase II SO_2 Compliance Study Report*, CWLP decided to add a FGDS to Dallman Units 31 and 32. Factors cited by CWLP in support of this decision include:

- Lowest cost long term solution;
- Economic benefits for Springfield and the State of Illinois;
  - Burn Illinois coal
    - 100 coal mine related jobs
    - $10M+ in annual coal sales
  - 200 to 250 construction related jobs
- CWLP has successfully operated and maintained a FGDS on Unit 33 for 19 years;
- Gypsum byproduct sales would be $3,000,000/year; and
- The State of Illinois has budgeted $12.5M in Cost Sharing Funds to benefit Illinois jobs.

Further, CWLP cited the following disadvantages of using PRB Coal:

- Over $10M leaving Illinois annually;
- Shipping delays;
- Major railway modifications;
- Boiler modifications; and
- Concerns about explosive dust.

(Ex. 1, pp. 6-2, 3.)

76. CWLP's decision to continue to burn Illinois coal is atypical of the utility industry. Although Illinois has an abundance of bituminous coal, only 13.5 percent, or 7.5 million tons, of the coal used by Illinois utilities and industrial users in 2005 was mined in Illinois, according to the Office of Coal Development. (Ex. 1, p. 6-3.)

6. Proposed Pretreatment of Water for Transfer to SMSD

77. SMSD has contracted with CWLP to accept the FGDS wastewater stream, at a cost to CWLP of $100,000/month, provided that its acceptance does not upset normal Plant operations. CWLP intends to treat the FGDS waste stream with conventional pretreatment processes for solids removal prior to pumping the wastewater to the SMSD Plant. While laboratory jar tests have shown in some instances that ten percent of the boron in the wastewater can be removed with solids settling, the jar test results have not been consistent; thus, CWLP is not claiming any boron removal for purposes of calculating boron concentrations in this proceeding. (Ex. 1, p. 6-13.)

78. CWLP proposes collecting the FGDS waste stream in a 250,000 gallon influent holding tank. This tank will provide about 22 hours of holding time for the waste stream, anticipated to be approximately 187 gpm. Wastewater collected in the influent holding tank will be fed to a ClariCone™ solids contact clarifier with a 240 gpm capacity. (Ex. 1, p. 6-13.)

79. Operation of the patented ClariCone™ has been demonstrated at over 300 installations nationwide. Mixing, tapered flocculation and sedimentation all take place within a completely hydraulically driven vessel. The ClariCone™ maintains a dense, suspended, rotating slurry blanket that provides solids contact, accelerated floc formation and solids capture. The conically shaped concentrator maximizes the slurry discharge concentration and allows plant personnel to visually monitor slurry discharge. The large mass of retained slurry and unique helical flow pattern in the ClariCone™ prevent short-circuiting and resists process upsets. (Ex. 1, p. 6-13.)

80. As part of this project, a pumping station would be constructed near the Scrubber Building at the CWLP facility. All sump and pump materials will be corrosion resistant. A forcemain would be constructed from the pumping station to a sanitary sewer in the Spring Creek Plant sub-area, generally southwest of Bergen Park in Springfield. Standard sewer forcemain construction will be used.

81. It is anticipated that up to four air release valves will be required. Sealed and lined vaults will be used to minimize odors and corrosion. Lining of receiving manhole and sewer is anticipated at a minimum. CWLP will install, operate and maintain one or more chemical feed sites or stations as deemed necessary by the District to control odors and corrosion. (Ex. 1, p. 6-14).

82. The pumping of the FGDS wastewater stream to the Spring Creek Plant will have a capital cost significantly lower than options investigated by CWLP. The estimated capital cost of the pretreatment system, including the pipeline to transfer the pretreated FGDS wastewater and chemical feed system(s) to control odor to the Plant, is $15.5 million. The annual operating and maintenance ("O & M")cost of such treatment is also anticipated to be significantly less than the other treatment options, which is estimated to be $1.6 million. While some costs may remain fixed, some O & M costs will likely escalate. Using a $10,000 per year escalation factor, a pretreatment life of 30 years, and an interest rate of 8 percent, this equates to a present value of $36,100,000, a present value per electric service of $544. (Ex. 1, p. 6-14.) In addition, the pumping station will occupy significantly less space than other alternative technologies and no special or hazardous waste product would be generated.

D. Other Similar Persons' or Sites' Ability to Comply With the General Rule

83. The Board has noted in Adjusted Standards and Site-Specific Rule proceedings regarding boron, that meeting the water quality standard for boron is problematic for utilities and industry using Illinois coal. In the adjusted standard proceeding of Illinois Power referenced above, the Board states:

> The Board originally adopted the present boron General Use Water Quality Standard in 1972 (see March 7, 1972 order consolidated R70-8, R71-14, and R71-20). The Board reasoned that the adopted level of 1.0 mg/L was based on evidence that higher levels can harm irrigated crops and although 100% irrigation is unlikely in Illinois, the uncontrolled discharge of large quantities of boron was clearly undesirable. The 1.0 mg/L numerical value for the boron General Use Water Quality Standard has not changed since its adoption.
>
> The Board has previously granted relief from the boron water quality standard for discharges from the ash ponds at other power plants[5]. In each case the Agency observed that boron concentrations in excess of the 1.0 mg/L water quality standard are inherent to ash ponds at power plants and other facilities that burn Illinois coal. (Cite omitted.) As a result, the Agency was persuaded, as it is here, that (1) the conditions under which the boron would have an adverse impact on the environment were not present and (2) the methods available to achieve the water quality standard are neither technically feasible or economically reasonable. (Cite omitted.)
>
> [5]See the Illinois Power Wood River Generating Station, In the Matter of: the Proposed Amendments to Rule 203.1 of the Water Pollution Regulations, R76-18, March 16, 1978; Jefferson Smurfit Corporation in Alton, In the Matter of: Petition of Jefferson Smurfit Corporation for an Adjusted Standard from 35 Ill. Adm. Code 304.105 and 302.208, AS 92-3, December 17, 1992; the Southern Illinois Power Company Marion Power Station, In the Matter of: Petition of Southern Illinois Power Cooperative (Marion Power) for Adjusted Standards from 35 Ill. Adm. Code 302.208(e), AS 92-10, July 1, 1993; and the City of Springfield's' Power Plant, In the Matter of: Petition of the City of Springfield, Office of Public Utilities for An Adjusted Standard from 35 Ill. Adm. Code 302.208(e), AS 94-9, December 1, 1994.

Opinion and Order of the Board, In the Matter of: Petition of Illinois Power Company (Baldwin Power Plant) for Adjusted Standard From 35 Ill. Adm. Code 302.208 and 35 Ill.

Adm. Code 304.105 Regarding the Parameter Boron, AS 96-1 (Ill.Pol.Control.Bd. May 2, 1996), page 5.

84. At present, to Petitioners' knowledge, there is no other Illinois power plant or utility burning Illinois coal with the same air pollution control equipment or SCR, which is believed the current cause of CWLP's boron exceedances. While Petitioners believe that two (2) permits have been issued by the IEPA for the development and construction of power plants utilizing Illinois coal, planning to install and utilize similar air pollution controls, neither facility/site is yet operational from which comparisons can be made. And, as noted, there are currently no known commercial processes utilized to remove boron concentrations of the magnitude here. (Ex. 1, p. ii.)

E. **Economic Impact of the Proposed Site Specific Rule**

85. As noted above, grant of this Site Specific Rule is necessary in light that there is no technologically feasible and economically reasonable treatment or other alternative. Implementing this Site Specific Rule is estimated will cost CWLP $15.5 million in capital costs to develop the system to pretreat and transport the wastewater stream from CWLP's power plant to SMSD's Spring Creek Plant. Total annual operating and maintenance costs are estimated will be $1.6 million. Including annual escalation in some costs and interest, it equates to a present value of $36,100,000, or $544 per electric service. The costs to implement this proposal, with little to no adverse impact on the environment, are well-below the costs of the other alternatives considered, none of which have been shown to be effective. Thus, while not only effective, this proposal will substantially save CWLP (and its customers) in comparison to the alternatives, with no adverse impact on the environment.

III. SYNOPSIS OF TESTIMONY

Petitioners will call several individuals to testify in support of the facts set forth in this Petition and requested relief, including the following:

A. Deborah Ramsey

Deborah Ramsey, of Hanson Professional Services, Inc. will testify regarding, among other things, the derivation of and calculations supporting the proposed site specific water quality standard for boron; the condition of the receiving streams; the historical flow and boron data for the receiving streams; the entities presently discharging to the affected water segments, as well as the entities using water downstream; and the investigation of the FGDS blowdown as it relates to boron and its chemistry.

B. Jeff Bushur

Jeff Bushur, of Hanson Professional Services, Inc. will testify regarding, among other things, a description of the available data concerning the toxicological effects of boron, especially to aquatic life; the conditions of the receiving streams and the potential effects of boron on the water downstream from the Spring Creek Plant discharge; and bioassessments of the receiving stream. Mr. Bushur will testify that the proposed site specific standard for boron based upon the 7-day low flow conditions can be granted without any anticipated adverse effects to either aquatic life uses or other known uses of the Sangamon River, and that the Illinois River biological community would not be observably affected by the anticipated maximum boron concentration under this scenario.

C. **William Brown**

William Brown, of Crawford, Murphy & Tilley, Inc. will testify regarding the SMSD's Spring Creek Plant operations; the Plant's NPDES Permit and effluent data; the beneficial impact of SMSD's operations to the City; and the economic impact of the proposed rule on SMSD.

D. **Gregg Finigan**

Gregg Finigan of Springfield City Water, Light & Power will testify regarding CWLP's power plant operations and CWLP's consideration of alternatives and alternative technologies as it relates to the chemistry at issue.

E. **David Farris, Sue Corcoran or Doug Brown**

David Farris, Sue Corcoran or Doug Brown, of Springfield City Water, Light & Power will testify regarding CWLP's NPDES permit and the limits therein; CWLP's boron mitigation efforts; CWLP's consideration of alternatives and alternative technologies, including switching to non-Illinois coal (and their economic impacts); the economic benefit of the CWLP power plant to the City of Springfield and surrounding areas; and the economies of the site-specific standard as proposed.

F. **Burns Witnesses**

Testimony will be presented by Don Schilling regarding Burns' study that included review of boron treatment technologies, the alternatives considered, their relative effectiveness here and their costs. Other Burns personnel will testify regarding Burns' Phase II study, which included an assessment of potential utilization of western coal at CWLP's plant, and what would be required for CWLP to switch from Illinois coal (and its cost) as well as its assessment of the FGDS for the Dallman units.

IV. MOTION FOR WAIVER OF SIGNATURE REQUIREMENT

In a separate Motion filed simultaneous with this Petition, Petitioners respectfully request that the Board waive the requirement, set forth at 35 Ill. Adm. Code § 102.202(f), that a petition for rulemaking be signed by at least 200 persons.

V. EXHIBITS

The following exhibits are included by Petitioners in support of the Site Specific Rule proposed, and are hereby made a part of this Petition:

1. *Technical Support Document for Site-Specific Boron Standard for the Springfield Metro Sanitary District Spring Creek Plant, Sangamon County, Illinois* (Hanson Professional Services Inc. August 2008).

2. *Technical Support Document for Petition for Adjusted Boron Standards for Sugar Creek and the Sangamon River* (Hanson Engineers, Inc. March 1994).

VI. CONSISTENCY WITH FEDERAL LAW

The Board has previously recognized that it has the authority and broad discretion, consistent with federal law, to adopt water quality and effluent standards that do not adversely affect the designated uses of a water body. *In re* Petition of Exelon Generation Company for an Adjusted Standard from 35 Ill. Adm. Code § 302.208, AS 03-1 (June 19, 2003; In the matter of: Site Specific Rule for City of Effingham Treatment Plant Fluoride Discharge, 35 Ill Adm. Code 304.233, R03-11 (July 24, 2003).

> Generally, states must adopt water quality standards which protect the designated use of interstate and intrastate waters. 33 U.S.C. § 1313(c) (1998). The Board has adopted the water quality standards at 35 Ill. Adm. Code § 302.203 in compliance with federal law. States may also revise water quality standards. 40 C.F.R. § 131.4 (1998).
>
> * * *

> The Board has stated previously that federal directives give it "broad discretion in determining the appropriate standard of control to apply to discharges from water treatment plants". In re Site Specific Exception to Effluent Standards for the Illinois American Water Company, East St. Louis Treatment Plant (February 2, 1989), R85-11, slip op. at 10.

In the Matter of Petition of Illinois American Water Company's Alton Public Water Supply Replacement Facility, AS 99-66, 2000 WL 141967 at *25 (Ill. Pol.Control.Bd. Sept. 7, 2000). Further, as referenced above, the Board has previously granted a Site Specific Rule change from the water quality standard for boron up to 15 mg/L. In the Matter of: The Proposed Amendments to Rule 203.1 of the Water Pollution Regulations, R76-18, March 16, 1978.

Thus, the Board has the authority, pursuant to the broad discretion provided it pursuant to federal directives, to determine that the site specific water quality standard requested by Petitioners is the appropriate standard of control to be applied for boron, and will be protective of the portions of the water bodies identified above.

VII. CONCLUSION

Petitioners respectfully request that the Board grant the site specific relief requested herein. As demonstrated above, meeting the existing water quality standard for boron is neither technically feasible nor economically reasonable for CWLP. Alternatives would have a severe negative economic impact on CWLP and its customers, the residents and businesses of the City of Springfield, without any commensurate benefit to the environment. The requested rule is not expected to harm the aquatic life in the Sangamon River, and no adverse impact on aquatic life in the Illinois River is anticipated from the grant of the requested Site Specific Rule.

This Petition satisfies the requirements of Section 102.202 and Section 102.210 of the Illinois Administrative Code, in that it: details the language of the proposed Site Specific Rule; states facts in support of the proposal, including environmental, technical and economic justification; demonstrates that requiring compliance with the existing boron water quality standard is neither technically feasible nor economically reasonable; describes the research and studies relied upon under the rule; discusses details of the operations and facilities of CWLP and the Spring Creek Plant; demonstrates that the requested relief is consistent with federal law; and includes a synopsis of testimony to be presented at hearing.

WHEREFORE, Petitioners, City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District respectfully request that the Board grant the site specific relief requested herein.

CITY OF SPRINGFIELD, ILLINOIS,
OFFICE OF PUBLIC UTILITIES,
CITY WATER, LIGHT AND POWER

and

SPRINGFIELD METRO SANITARY
DISTRICT,

Date: August 29, 2008

By: /s/ Christine G. Zeman
One of Their Attorneys

Katherine D. Hodge
Christine G. Zeman
HODGE DWYER ZEMAN
3150 Roland Avenue
P.O. Box 5776
Springfield, Illinois 62705
(217) 523-4900

CWLP:002/Fil/Site Specific Rule Petition – clean – 8.06.08

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08-_____ (Site Specific Rule – Water)

MOTION TO WAIVE REQUIREMENT TO SUBMIT 200 SIGNATURES

NOW COMES the City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power ("CWLP") and Springfield Metro Sanitary District ("District") (collectively "Petitioners"), by and through their attorneys, HODGE DWYER ZEMAN and request the Illinois Pollution Control Board ("Board") to waive the requirement, under 35 Ill. Adm. Code § 102.202(g), to submit 200 signatures with their Petition for Site Specific Rule ("Petition") stating as follows:

1. CWLP owns and operates two power stations that generate electricity for the residents and businesses in Springfield, Illinois, and provide potable water for the residents of Springfield and surrounding communities.

2. The District owns and operates two wastewater treatment plants, including the Spring Creek Sanitary Treatment Plant ("Spring Creek Plant") which handles wastewater and storm water flows from a portion of Springfield and surrounding service areas.

3. Attached to this Motion is the Petition, in which Petitioners are seeking a Site Specific Rule to establish an alternative water quality standard for boron from the point of discharge at Outfall 007 from the District's Spring Creek Plant to the Sangamon

River, to its confluence with the Illinois River, and in the Illinois River 100 yards downstream from the confluence with the Sangamon River. The general use water quality standard for boron, which is set forth at 35 Ill. Adm. Code § 302.208(g), is 1.0 mg/L.

4. Petitioners are requesting an alternative water quality standard for boron to enable the District's Spring Creek Plant to accept a pretreated industrial effluent stream from CWLP's power station. Operation of the air pollution control systems at CWLP's power plant causes elevated concentrations of boron in a plant effluent stream that is proposed to be transferred to the District's Spring Creek Plant.

5. The Board has waived signature requirements for site specific rulemaking petitions in the past, including recently in In the Matter of: Petition of Central Illinois Light Company (E.D. Edwards Generating Station) for a Site-Specific Air Regulation: 35 Ill. Adm. Code 214.561, R02-21; In the Matter of: Site Specific Rule for City of Effingham Treatment Plant Fluoride Discharge, 35 Ill. Adm. Code 304.233, R03-11; and In the Matter of: Proposed Site Specific Regulation Applicable to Ameren Energy Generating Company, Elgin, Amending 35 Ill. Adm. Code Part 901, R04-11.

6. Granting this Motion is in the public interest of the citizens of the Springfield area. CWLP's power plant is a critical power supply for Springfield and surrounding communities. The site specific water quality standard for boron is necessary to enable CWLP to operate its power plant in compliance with its National Pollutant Discharge Elimination System Permit and State and Federal air pollution regulations.

WHEREFORE, Petitioners, City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District, through their

attorneys, respectfully request the Illinois Pollution Control Board to waive the requirement to submit 200 signatures in support of its Petition for Site Specific Rule.

Respectfully submitted,

CITY OF SPRINGFIELD, ILLINOIS,
OFFICE OF PUBLIC UTILITIES,
CITY WATER, LIGHT AND POWER

and

SPRINGFIELD METRO SANITARY
DISTRICT,

By: /s/ Christine G. Zeman
One of Their Attorneys

Date: August 29, 2008

Katherine D. Hodge
Christine G. Zeman
HODGE DWYER ZEMAN
3150 Roland Avenue
P.O. Box 5776
Springfield, Illinois 62705
(217) 523-4900

CWLP:002/Filings/Motion to Waive Requirement to Submit 200 Signatures

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PROPOSED SITE SPECIFIC RULE FOR CITY OF SPRINGFIELD, ILLINOIS, OFFICE OF PUBLIC UTILITIES, CITY WATER, LIGHT AND POWER AND SPRINGFIELD METRO SANITARY DISTRICT FROM 35 ILL. ADM. CODE SECTION 302.208(g)	)	R08-_____ (Site Specific Rule – Water)

MOTION FOR EXPEDITED REVIEW

NOW COME the City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power ("CWLP") and Springfield Metro Sanitary District ("District") (collectively "Petitioners"), by and through their attorneys, HODGE DWYER ZEMAN, and pursuant to 35 Ill. Adm. Code § 101.512, hereby request the Illinois Pollution Control Board ("Board") to expedite review of Petitioners' Petition for Site Specific Rule ("Petition"). In support of this Motion for Expedited Review ("Motion"), Petitioners state as follows:

1. As set forth in the Petition, Petitioners seek a Site Specific Rule to establish an alternative water quality standard for boron other than that found at 35 Ill. Adm. Code § 302.208(g) ("Section 302.208(g)").

2. Section 302.208(g) contains the general use water quality standard for boron, which is 1.0 mg/L.

3. Specifically, Petitioners seek a Site Specific Rule to establish an alternative water quality standard for boron from the point of discharge at Outfall 007 from the District's Spring Creek Sanitary Treatment Plant ("Spring Creek Plant") to the Sangamon River, to its confluence with the Illinois River, and in the Illinois River 100 yards downstream from the confluence with the Sangamon River.

4. The purpose of Petitioners' proposed Site Specific Rule is to enable the District's Spring Creek Plant to accept a pretreated industrial effluent stream from CWLP's power plant. Operation of the air pollution control systems at CWLP's power plant causes elevated concentrations of boron in a plant effluent stream that is proposed to be transferred to the District's Spring Creek Plant.

5. Simultaneously with this Motion, Petitioners are filing a Petition that more fully describes the purpose and effect of the proposed Site Specific Rule.

6. Petitioners seek to have the proposed Site Specific Rule adopted as soon as possible because CWLP's power plant is a critical power supply for the City of Springfield and surrounding communities; the site specific water quality standard for boron is necessary to enable CWLP to operate its power plant in compliance with its NPDES Permit and with State and Federal air pollution regulations.

7. The proposed Site Specific Rule may be sent to First Notice without a decision being reached on the merits of the proposal by the Board. See, for example: In The Matter Of: Revisions to Water Quality Standards for Total Dissolved Solids in the Lower Des Plaines River ExxonMobil Oil Corporation 2006 Ill. ENV LEXIS 167 (Ill. ENV 2006); In The Matter Of: Proposed Site Specific Regulation Applicable to Ameren Energy Generating Company, Elgin 2003 Ill. ENV LEXIS 667 (Ill. ENV 2003); and In The Matter Of: Petition Of W.R. Grace & Company - Connecticut, and the Illinois EPA For Site-Specific Air Regulation, 1997 Ill. ENV LEXIS 717 (Ill. ENV 1997).

8. Therefore, Petitioners request that the Board proceed to First Notice under the Illinois Administrative Procedure Act, 5 ILCS 100/1-1, *et seq.*, without reaching a decision on the merits, by accepting the Site Specific Rule language proposed by

Petitioners in their Petition only for purposes of First Notice. An electronic version of the Petition, including the language proposed by Petitioners for the Site Specific Rule, has been filed with the Board to facilitate the Board moving expeditiously to First Notice in this rulemaking.

9. Petitioners also request that the requisite public hearing be scheduled as soon as possible in accordance with Section 28(a) of the Illinois Environmental Protection Act, 415 ILCS 5/28(a), and that such a hearing serve also as the hearing that may be required during First Notice under Section 5-40(b) of the Illinois Administrative Procedure Act, 5 ILCS 100/5-40(b).

10. Petitioners believe the information necessary for the Board to proceed to First Notice in this rulemaking, and schedule a public hearing, is contained in the Petition. If more information is needed, Petitioners will fully cooperate to expeditiously provide the same to the Board and its hearing officer.

11. Petitioners make this Motion fully recognizing that the Board proceeding to First Notice under the Illinois Administrative Procedure Act at this time is unusual. However, time is of the essence due to the schedule of activities for this project that was filed by CWLP with the Illinois Environmental Protection Agency ("IEPA") as a Compliance Commitment Agreement ("CCA"). In support of this statement and consistent with Section 101.512(a), Petitioners attach hereto copies of CWLP's correspondences to IEPA dated October 5, 2006 and July 12, 2007, which includes the project schedule, and IEPA's correspondence to CWLP dated October 4, 2007, extending the CCA completion date. (See Group Exhibit A.)

12. The IEPA has been contacted and has no disagreement with the proposed Site Specific Rule and this Motion for Expedited Review.

13. The Petitioners will be materially prejudiced if this motion is denied, including because time is of the essence due to the schedule of activities for this project on which CWLP's CCA is based, and because some activities to implement the transfer of CWLP's effluent stream cannot commence unless and until the Board grants Petitioners' Site Specific Rule change.

14. As required by 35 Ill. Adm. Code § 101.512, this Motion is accompanied by an affirmation attesting that the facts cited herein are true.

WHEREFORE, for the above and foregoing reasons, City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District hereby respectfully request the Illinois Pollution Control Board to expedite review in this matter. In the alternative, Petitioners respectfully request that the Board nevertheless send the proposed Site Specific Rule to First Notice without the Board reaching a decision on the merits of the proposal.

Respectfully submitted,

CITY OF SPRINGFIELD, ILLINOIS,
OFFICE OF PUBLIC UTILITIES,
CITY WATER, LIGHT AND POWER

and

SPRINGFIELD METRO SANITARY
DISTRICT,

Date: August 27, 2008

By: /s/ Christine G. Zeman
One of Their Attorneys

Katherine D. Hodge
Christine G. Zeman
HODGE DWYER ZEMAN

3150 Roland Avenue
Post Office Box 5776
Springfield, Illinois 62705-5776
(217) 523-4900

AFFIDAVIT

STATE OF ILLINOIS)
) SS.
COUNTY OF SANGAMON)

William A. Murray, being first duly sworn on oath, affirms that, based upon appropriate inquiry, the facts set forth in the Motion for Expedited Review above are true and correct.

William A. Murray
Regulatory Affairs Manager
City Water, Light & Power
Office of Public Utilities
Room 400 Municipal Center East
800 East Monroe Street
Springfield, Illinois 62757
(217) 789-2116

Subscribed and sworn to before me
this 27 day of August, 2008.

Notary Public

"OFFICIAL SEAL"
Ma nker
Nota Illinois
My Commission Exp. 07/21/2009

CWLP:002/Fil/Motion for Expedited Review

MOTION FOR EXPEDITED REVIEW

Group Exhibit A

OFFICE OF PUBLIC UTILITIES
CITY OF SPRINGFIELD, ILLINOIS
TIMOTHY J. DAVLIN, MAYOR
R. TODD RENFROW, GENERAL MANAGER

October 5, 2006

Illinois Environmental Protection Agency
Bureau of Water – CAS #19
Attention: Beverly Booker
P.O. Box 19276
Springfield, IL 62794-9276

Re: Violation Notice W2003-0471
Facility ID: IL0024767

Dear Ms. Booker:

On Tuesday, October 3, 2006, City Water, Light and Power (CWLP) met with representatives from IEPA Bureau of Water to discuss the current status of the boron mitigation project in response to violation notice W2003-0471 at CWLP's ash pond discharge (outfall 004). CWLP formerly requests to amend the project implementation schedule and compliance commitment agreement (CCA) outlined in a letter to you dated March 28, 2005 and updated in correspondence dated April 7, 2006.

As discussed in our meeting with the agency, the use of a brine concentrator and spray dryer absorber to treat this type of waste stream is a very unique application of this technology. The consulting engineer and vendor continue to encounter issues that require significant changes in the project on a fairly regular basis. These issues have resulted in this project generating orders of magnitude more solid waste than the initial engineering calculations had predicted. Additionally, the cost of this solution has expanded to many times the original engineering estimate of approximately $13 million (as outlined in our March 28, 2005 correspondence with the Agency).

Based on the above, CWLP is requesting a period of six months or until April 9, 2007 to fully evaluate all our alternatives for this boron mitigation project. As noted above, CWLP arrived at the brine concentrator spray dryer absorber option based on feasibility and cost assumptions that are no longer valid. Alternative mitigation techniques will be fully evaluated during this six month period to identify the appropriate means of boron mitigation at outfall 004.

Sincerely,

S. David Farris, CIH, CSP
Environmental Health and Safety Manager

SDF/kaw

OFFICE OF PUBLIC UTILITIES
CITY OF SPRINGFIELD, ILLINOIS
TIMOTHY J. DAVLIN, MAYOR
R. TODD RENFROW, GENERAL MANAGER

July 12, 2007

Illinois Environmental Protection Agency
Bureau of Water – CAS #19
Attn: Beverly Booker
P.O. Box 19276
Springfield, IL 62794-9276

RE: Violation Notice W2003-0471
Facility ID: IL0024767

Dear Ms. Booker:

City Water, Light & Power (CWLP) is formally requesting to amend its Compliance Commitment Agreement (CCA) outlined in a letter to you dated March 28, 2005, and subsequently updated in April and October 2006. This amended CCA is in reference to Violation Notice W2003-0471 for exceedances of CWLP's boron limit of 11 mg/l at the ash pond discharge, Outfall 004.

CWLP has met with IEPA on an ongoing basis to discuss this violation notice and most recently met on June 13, 2007, regarding reaching compliance with boron at Outfall 004. At this meeting, CWLP committed to submitting a revised CCA by July 16, 2007.

CWLP is proposing corrective action involving the treatment of 250,000 gallons per day of the highest boron bearing waste stream which eventually discharges to Outfall 004. By removal of this particular high boron stream, CWLP expects the remaining streams that flow through 004 to be in compliance with the 11 mg/l limit.

This corrective action will require the engineering and construction of a treatment system at CWLP's Power Plant and of a force sewer main from the Power Plant to the existing sewer collection system. To implement this corrective action, an intergovernmental agreement must be formulated and executed between the City and the Springfield Metro Sanitary District (SMSD).

This 250,000 GPD stream coming from the Flue Gas Desulfurization (FGD) blow down will be pretreated at the CWLP Power Plant location at 3100 Stevenson Drive. This pretreatment will remove FGD solids from the liquid stream by use of a claricone-type clarifier with the addition of ionic and/or cationic polymers to further treat this stream. This treatment will result in reduced concentrations of metals and dissolved contaminants along with an anticipated reduction in boron levels. Additional pH adjustment is planned to assist in the above removal process.

After the pretreatment process at the Utility, this stream will be sent via a force main to the SMSD sewer line located at Eastdale Avenue, adjacent to Bergen Park. The waste stream will travel to the SMSD Spring Creek Facility where it will undergo further treatment by SMSD. It is anticipated that a reduction in boron levels will be obtained from the SMSD sludge treatment process. As part of this Corrective Action Plan, SMSD and CWLP will jointly apply for a site specific water quality standard at the Spring Creek Facility from the Illinois Pollution Control Board.

CWLP's intention is to accomplish those tasks necessary to obtain the site specific standard and allow acceptance of this stream by SMSD on a parallel path with construction of our pretreatment facility. Steps involved in the CWLP/SMSD plan include finalizing the intergovernmental agreement, submission of an application to the SMSD for an industrial waste stream, filing of the joint petition with the Illinois Pollution Control Board, with required technical support, for the site specific standard and consultation with IEPA regarding its position on the proposed site specific standard.

Attached you will find a schedule for engineering and construction of CWLP's pretreatment facility for your review. If you should have any questions concerning this schedule or other parts of this CCA, please do not hesitate to contact myself or Sue Corcoran, of my staff, at 217-757-8610.

Sincerely,

S. David Farris, CIH, CSP
Environmental Health & Safety Manager

SDF/SC/gj

The new schedule to be submitted as a Compliance Commitment Agreement for this is listed below.

Engineering	
Pretreatment	September 2007
Bid Pretreatment System	November 2007
Award Pretreatment System	February 2008
Pipeline System Design	March 2008
Obtain Rights of Way for Pipeline	April 2008
Bid Pipeline System	May 2008
Pretreatment System Contractor Mobilizes	May 2008
Award Pipeline System	June 2008
Install Pipeline System	November 2008
Fabrication of Claricone & Field Erected Tanks	December 2008
Erect Claricone and Field Erected Tanks	March 2009
Coat Field Erected Tanks	May 2009 (temperature dependent)
Commissioning	July 2009
System Operational	August 2009

CAFO 650. cy: Bill Rue Dave
1. Didn't reference July letter
2. Didn't comment on Current Approach

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 – (217) 782-3397
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 – (312) 814-6026

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

217/785-1896

CERTIFIED MAIL # 7007 0220 0000 0152 1713
RETURN RECEIPT REQUESTED

October 4, 2007

Mr. Davis S. Farris
Environmental Affairs
Springfield CWLP
7th & Monroe
Springfield, IL 62757

Re: IL0024767, SPRINGFIELD CWLP CITY OF - Extension Request Granted
Violation Number: W-2003-00471

Dear Mr. Farris:

This letter is in response to your October 10, 2006 request for an extension for one or more dates contained in the Compliance Commitment Agreement (CCA) for Violation Notice W-2003-00471. The following identifies the CCA events that have been extended as requested:

CCA Commitment	Old CCA Event Due	New CCA Extended Due Date
Return to compliance with Boron limits	April 9, 2007	August 9, 2009

Failure to fully comply with each of the commitments and the schedules for achieving each commitment as contained in the CCA, and this subsequent extension; may, at the sole discretion of the Illinois EPA, result in referral of this matter to the Office of the Attorney General, the State's Attorney of Sangamon County, or the United States Environmental Protection Agency.

If you have any questions, please call me at the telephone number referenced above. Alternatively, you may contact me via email at George.Lambert@illinois.gov.

Sincerely,

Michael S. Garretson, Manager
Compliance Assurance Section
Bureau of Water

RECEIVED
OCT - 5 2007
ENVIRONMENTAL HEALTH & SAFETY

CERTIFICATE OF SERVICE

I, Christine G. Zeman, the undersigned, certify that I have served the attached ENTRY OF APPEARANCE OF KATHERINE D. HODGE, ENTRY OF APPEARANCE OF CHRISTINE G. ZEMAN, PETITION FOR SITE SPECIFIC RULE, MOTION TO WAIVE REQUIREMENT TO SUBMIT 200 SIGNATURES, and MOTION FOR EXPEDITED REVIEW, upon:

Mr. John Therriault
Assistant Clerk of the Board
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601

Albert F. Ettinger, Esq.
for Prairie Rivers Network
c/o Environmental Law and Policy Center
35 East Wacker Drive
Suite 1300
Chicago, Illinois 60601
aettinger@elpc.org

via electronic mail on August 29, 2008; and upon:

Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield. Illinois 62794-9276

Division Chief of Environmental Enforcement
Office of the Attorney General
188 West Randolph St., 20th Floor
Chicago. Illinois 60601

Office of Legal Services
Illinois Department of Natural Resources
524 S. Second Street
Springfield, Illinois 62701-1787

by depositing said documents in the United States Mail, postage prepaid, in Springfield, Illinois on August 29, 2008.

By: /s/ Christine G. Zeman
Christine G. Zeman

CWLP.002/Filings/ NOF-COS – Petition and Motion