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)	)	R09-8 (Site Specific Rulemaking – 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)

Marie E. Tipsord
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(VIA FIRST CLASS MAIL)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board **PETITIONERS' POST-HEARING COMMENTS**, 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: January 29, 2009

By: /s/ Katherine D. Hodge
Their Attorney

Katherine D. Hodge
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)	)	R09-8 (Site Specific Rule – Water)

PETITIONERS' POST-HEARING COMMENTS

NOW COME the Petitioners, 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 hereby provide the Illinois Pollution Control Board ("Board") with the following post-hearing comments.

I. BACKGROUND

On August 29, 2008, Petitioners filed with the Board a Petition for Site Specific Rule ("Petition") pursuant to Sections 27 and 28 of the Illinois Environmental Protection Act ("Act") (415 ILCS 5/27 and 5/28), 35 Ill. Adm. Code § 102.210 and 35 Ill. Adm. Code § 102.202 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)"). As part of their initial filing, Petitioners also filed motions requesting the Board to waive the requirement for 200 signatures on its proposal and to expedite consideration of its request by, among other things, ordering immediate publication of the rules for first notice under the Illinois Administrative Procedure Act ("APA") (4 ILCS 100/1-1, *et seq.*).

On September 16, 2008, the Board issued its First Notice Opinion and Order accepting the proposal for hearing and granting Petitioners' Motion to Waive Requirement to Submit 200 Signatures and Motion for Expedited Review.

On September 19, 2008, the Hearing Officer issued a Hearing Officer Order, which scheduled a hearing in the matter for November 3, 2008, at 10:00 a.m., in Springfield ("November 3, 2008 Hearing").

On September 22, 2008, Petitioners filed Petitioners' Statement Addressing Section 102.210(c) in response to the Board's request for filing of the same.

On October 20, 2008, Petitioners submitted pre-filed testimony of the following witnesses to be presented at the November 3, 2008 Hearing: Dave Farris, Gregg Finigan, Doug Brown, Don Schilling, William Brown, Deborah Ramsey and Jeff Bushur.

On October 29, 2008, the Illinois Environmental Protection Agency ("Illinois EPA") filed the Pre-Filed Testimony of Robert Mosher, in which Robert Mosher discussed Petitioners' proposed Site Specific Rule and Illinois EPA's basis for agreement with the same.

The November 3, 2008 Hearing was held in Springfield, with representatives of Petitioners, Illinois EPA and Prairie Rivers Network ("PRN") in attendance. In response to questions at hearing, the Board requested that both Petitioners and Illinois EPA file additional information in support of the proposed Site Specific Rule.

On November 21, Petitioners filed Petitioners' Post-Hearing Document Submittal in response to the Board's request at the November 3, 2008 Hearing, and also as stated in the November 6, 2008 Hearing Officer Order ("November 6, 2008 Order"), for additional information. On December 3, 2008, Petitioners filed Petitioners' Additional Post-

Hearing Document Submittal, which consisted of an additional report that Petitioners voluntarily submitted to the Board after providing the same to PRN.

On November 24, 2008, Illinois EPA filed Illinois EPA's Post-Hearing Document Submittal in response to the Board's request for additional information at the November 3, 2008 Hearing, and also as stated in the November 6, 2008 Order.

On December 5, 2008, PRN filed Pre-Filed Questions Regarding R2009-008 ("PRN Pre-Filed Questions"), which PRN sought to have Petitioners address at the hearing scheduled for December 16, 2008 ("December 16, 2008 Hearing").

On December 12, 2008, Petitioners filed Petitioners' Motion Directed to the Hearing Officer to Strike Pre-Filed Questions or to Clarify ("Motion to Strike") and Petitioners' Motion Directed to the Hearing Officer to Exclude Witnesses of PRN ("Motion to Exclude Witnesses"). These motions were addressed during the December 16, 2008 Hearing, during which representatives of Petitioners, Illinois EPA and PRN were in attendance. As discussed in more detail below, with regard to Petitioners' Motion to Strike, while the Hearing Officer agreed with Petitioners' interpretation of the Hearing Officer's directive, as stated during the November 3, 2008 Hearing and in the November 6, 2008 Order, PRN was allowed to ask its questions in order to build as complete a record as possible for the Board. With regard to Petitioners' Motion to Exclude Witnesses, the Hearing Officer found that Petitioners' objection was moot as PRN did not present a witness at the December 16, 2008 Hearing. Thus, the Hearing Officer did not need to address the Motion to Exclude Witnesses any further.

The December 16, 2008 Hearing was also held in Springfield, with representatives of Petitioners, although not the full panel of witnesses present for the

November 3, 2008 Hearing, representatives of Illinois EPA and PRN in attendance. As discussed in more detail below, Petitioners' Motion to Strike and Motion to Exclude Witnesses were addressed at hearing. Also at hearing, Petitioners addressed as many of the PRN Pre-Filed Questions as was possible with the witnesses available at hearing. The remainder of the questions are answered in full below.

II. APPLICABLE STANDARD FOR PROMULGATION OF THE PROPOSED SITE SPECIFIC RULE

Section 27(a) of the Act provides the Board with the appropriate standard for promulgation of substantive regulations under the Act, including site specific rules:

> the Board shall take into account the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollution.

415 ILCS 5/27(a).

The Board has acknowledged the applicability of this standard in many of its previous cases regarding site specific relief. For example, the Board's Opinion and Order in In the Matter of: Petition of Acme Steel Company and LTV Steel Company From 35 Ill. Adm. Code 302.211 AS No. 94-8 (Ill.Pol.Control.Bd. July 7, 1995), although specifically discussing an adjusted standard, stated the following with regard to Section 27(a):

> The result of either an adjusted standard or a site-specific rule proceeding is the same (i.e., relief from a particular rule). In both a general rulemaking proceeding and a site-specific rulemaking proceeding, the Board, pursuant to Section 27 of the Act, is required to take the following factors into consideration: the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the case may be, and the technical feasibility and

> economic reasonableness of measuring or reducing the particular type of pollution. (See specifically, Section 27(a).)

In the Matter of: Petition of Acme Steel Company and LTV Steel Company From 35 Ill. Adm. Code 302.211 AS No. 94-8, 1995 Ill. ENV LEXIS 686, 3 (Ill.Pol.Control.Bd. July 7, 1995).

In addition, the Supreme Court of Illinois has also spoken as to the Board's duties under Section 27(a) of the Act. In the case of Granite City Division of National Steel Company, et al. v. Illinois Pollution Control Board, 155 Ill. 2d 149, 613 N.E.2d 719 (1993), the Supreme Court of Illinois stated the following:

> section 27(a) does not impose specific evidentiary requirements on the Board, thereby limiting its authority to promulgate only regulations that it has determined to be technically feasible and economically reasonable. Rather, section 27(a) requires only that the Board consider or take into account the factors set forth therein. The Board must then use its technical expertise and judgment in balancing any hardship that the regulations may cause to dischargers against its statutorily mandated purpose and function of protecting our environment and public health.

Granite City Division of National Steel Company, et al. v. Illinois Pollution Control Board, 155 Ill. 2d 149, 183, 613 N.E.2d 719, 734-35 (1993).

Therefore, in this case, the Board should utilize the standard set forth in Section 27(a) when determining whether to promulgate Petitioners' proposed Site Specific Rule. Petitioners urge the Board to approve the Site Specific Rule consistent with these Post-Hearing Comments and its obligations under Section 27(a) of the Act.

III. THE PROPOSAL

As explained more fully in Petitioners' proposal, during the November 3, 2008 Hearing and during the December 16, 2008 Hearing, through this proceeding, 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 EPA 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.

The proposed Site Specific Rule for an alternative water quality standard for boron is requested 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. CWLP's power plant is a critical power supply for the City of Springfield ("City") and surrounding communities. The proposed 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.

Petitioners' Petition and testimony offered at the hearings demonstrated 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 District's 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. The Petition and testimony offered at the hearings also demonstrated that alternatives to the

proposed 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 District's Spring Creek Plant discharge or have a negative impact on the current use of the receiving waters.

IV. DISCUSSION

A. November 3, 2008 Hearing

The following information was presented at the November 3, 2008 Hearing in direct testimony and in response to questions of the Board and PRN.

Petitioners presented seven witnesses at hearing: Dave Farris, CWLP's Environmental Health and Safety Manager; Gregg Finigan, CWLP's Superintendent of Production; Doug Brown, CWLP's Projects Director; Don Schilling, a Senior Associate Chemical Engineer with Burns & McDonnell ("Burns") in Kansas, City, Missouri, testifying on behalf of CWLP; William Brown, a Senior Project Manager with Crawford, Murphy & Tilly, Inc. ("CMT") in Springfield, testifying on behalf of the District; Deborah Ramsey, a Chemical Engineer with Hanson Professional Services, Inc. ("Hanson") in Springfield, testifying on behalf of CWLP; and Jeff Bushur, an Environmental Biologist with Hanson, testifying on behalf of CWLP.

Also present at hearing for CWLP and available to answer questions were Bill Murray, CWLP's Regulatory Affairs Manager, and Sue Corcoran, an Engineer in CWLP's Environmental Health and Safety Office. In addition, Carl Weilert, of Burns, was also available to answer questions on behalf of CWLP. Present at hearing for the District and available to answer questions were Gregg Humphrey, the Director and Engineer of the District; Jeff Slead, Operations Supervisor at the District's Spring Creek

Plant; John Drake, of CMT; and Justin Reichert, the District's attorney. Present at hearing for Illinois EPA and available to answer questions was Robert Mosher, Manager of the Bureau of Water, Water Quality Standards Unit. Finally, present at hearing to ask questions of Petitioners and Illinois EPA were Traci Barkley and Stacy James of PRN.

1. CWLP's Facility Operations

CWLP owns and operates two power stations, referred to as the V.Y. Dallman Power Station ("Dallman") and the Lakeside Power Station ("Lakeside"), and a potable water treatment plant at 3100 Stevenson Drive in Springfield. Pre-Filed Testimony of Dave Farris, In Support of Proposed Site Specific Rule at 2. These plants generate electricity for the residents and businesses in the City and provide potable water to the City and surrounding communities. Id. Approximately 186 people are employed at Dallman and Lakeside, and an additional 19 people are employed at the potable water treatment plant. Id. The facilities are staffed twenty-four hours per day, seven days per week. Id.

Dallman has an electric generating capacity of 352 megawatts and is comprised of three coal-fired units: Units 31, 32 and 33. Id. The Dallman units were placed into service in 1968, 1972 and 1978, respectively. Id. Units 31 and 32 are identical, each having 80 megawatts of generating capacity. Id. The cyclone boilers in Units 31 and 32 operate at 1,250 psig and 950°F. Id. Unit 33 includes a tangentially fired boiler and has a generating capacity of 192 megawatts. Id. Unit 33 operates at 2,400 psig and 1,000°F. Id. Each of the three Dallman units is equipped with a flue gas desulfurization system ("FGDS") that removes over 90 percent of the sulfur dioxide from the unit's flue gases. Id. Selective Catalytic Reduction ("SCR") air pollution control systems for nitrogen

oxides ("NO_x") removal were added to all three Dallman Units in 2003. Id. CWLP currently operates the SCRs during the ozone season (May 1 through September 30) to remove approximately 90 percent of NO_x from its air emissions at the Dallman units. Id. at 2-3. The SCRs will begin year-round operations in July 2009, to assist in control of the mercury emissions. Id. at 3.

Lakeside began operation in 1935. Id. Originally, there were eight boilers and seven turbine generators at Lakeside. Id. Only two boilers and two turbine generators are still in operation. Id. Boilers 7 and 8 are identical 33-megawatt cyclone coal-fired units. Id. Boiler 7-Turbine 6 went into operation in 1959, and Boiler 8-Turbine 7 began operation in 1964. Id. Both units operate at 850 psig and 900°F. Id. Lakeside will be retired in the near future. Id.

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

CWLP operates two ash ponds. Id. 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. Id. Dallman Ash Pond also receives wastewater treatment plant sludge and leachate collected from the scrubber sludge landfill adjacent to the ash ponds. Id. The south ash pond, known as Lakeside Ash Pond, has an earthen berm dividing it into an east and west portion. Id. The Lakeside fly ash and bottom ash sluice water is

normally discharged to the west portion of the Lakeside Ash Pond. Id. The east portion of the pond, referred to as Lakeside East Pond, receives lime sludge from the filter plant and miscellaneous water streams from Dallman, including the FGDS effluent water. Id. Flow rates into the ash ponds vary, but depend principally upon the generating units in service. Id.

A new electric generating unit, referred to as Dallman Unit 4, is currently under construction. Id. at 4. 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. Id. The new boiler will be equipped with low-NO_x combustion technology and the following air pollution control systems: SCR, a fabric filter, wet flue gas desulfurization, and a wet electrostatic precipitator. Id. Dallman Unit 4 will utilize a dry ash handling system. Id.

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

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. Id. The two major streams flowing into Lake Springfield are Sugar Creek and Lick Creek, which drain into the lake's upper end. Id. The majority of the consumptive use of lake water for the CWLP complex is ash sluicing water, accounting for 3.9 million gallons of lake water usage per day. Id. at 4-5. Supernatant from the two ash ponds, which receive a variety of materials, including miscellaneous water streams from Dallman and Lakeside and the FGDS effluent water, flows into a clarification pond, which also provides settling and neutralization, before it discharges into Sugar Creek under a NPDES permit issued by Illinois EPA. Id. at 5.

2. The District's Spring Creek Plant Operations and NPDES Permit

The District owns and operates the Sugar Creek Wastewater Treatment Plant ("Sugar Creek Plant") and the Spring Creek Plant in Springfield. Pre-Filed Testimony of William Brown, In Support of Proposed Site Specific Rule at 2. The Sugar Creek Plant was put into service in 1973, and treats wastewater and storm water from the southeast and eastern sections of the City and adjacent service areas. Id. The Spring Creek Plant was constructed in 1928, with major improvements in the 1930s. Id. It handles wastewater and storm water flows from the southwest, west and northern parts of the City and surrounding service areas. Id. The last major improvements to increase the capacity of the Spring Creek Plant were constructed in 1975. Id.

The population served by the Spring Creek Plant from 2000 U.S. Census data was 90,300 and increased just over one percent per year on average for the previous ten years.

Id. 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.

Id. at 2-3.

The Spring Creek Plant, which discharges its effluent into the Sangamon River at the confluence of Spring Creek and the Sangamon River, flows into a 72-inch diameter concrete pipe and is conveyed approximately 5,990 feet before discharging into the Sangamon River. Id. at 3. The 72-inch outfall sewer was constructed in 1973. Id. The 7-day 10-year low flow in the Sangamon River upstream of the Spring Creek Plant discharge is 54.8 cubic feet per second ("cfs") or 35.4 MGD. Id. The 7-day low flow observed by the Illinois State Water Survey ("ISWS") per its 2002 map of the Spring Creek Plant discharge is 17.5 cfs or 11.31 MGD. Id. The Spring Creek Plant has a

seasonal disinfection exemption that only requires disinfection for the months of May through October. Id.

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

On average, the discharge of the Spring Creek Plant 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. Id. at 4. 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. Id. This flow rate is based on the 7-day low flow presented on the 2002 ISWS map, the latest available. Id. Daily effluent flows as low as 9.29 MGD were observed during an atypically dry September 2007. Id.

The requirement for complete treatment of flows to the Spring Creek Plant is detailed in the District's NPDES permit (No. IL0021989), which expires July 31, 2009. Id. The District anticipates there will be changes in the current NPDES permit upon renewal. Id. By July 31, 2009, its current expiration date, construction of a new treatment plant should be underway, which will require modifications to the NPDES permit due to the increased hydraulic capacity. Id. The District has given consideration

for the reduction of ammonia nitrogen and total phosphorus to meet Illinois EPA requirements in their future treatment facilities. Id.

Based upon the 2006 plant influent data, the carbonaceous BOD_5 ("$CBOD_5$") concentration ranged from 157 to 214 milligrams per liter ("mg/L") with an average of 172 mg/L. Id. 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. Id. The TSS concentration has a range from 132 to 307 mg/L with an average of 198 mg/L for 2006. Id. With a removal rate of over 96 percent, the discharge to the receiving stream had only 7.3 mg/L of TSS on average. Id.

Although not designed for nitrification, through operational adjustments to the Spring Creek Plant, the District has been able to meet its seasonal NPDES permit requirements for ammonia nitrogen. Id. at 5. Data from 2006 shows a reduction in ammonia from an influent value of 12 mg/L to 1.38 mg/L in the tertiary effluent, which is over 88 percent removal. Id. At the present time, ammonia nitrogen loading is at the Spring Creek Plant's maximum capacity, but recommended plant improvements will be designed to provide ammonia nitrogen removal. Id.

Total phosphorus removal is not currently regulated by the Spring Creek Plant's 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. Id.

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. Id. Effluent leaves the Spring Creek Plant at a pH between 6.4 and 8.0, on average. Id.

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 stream. Id. 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 Spring Creek Plant's effluent would be 11.0 mg/L. Id. It is anticipated that the boron will not be significantly affected by or adversely affect the Spring Creek Plant's treatment process, and therefore the effluent boron concentration is expected to mirror the influent concentration. Id. Thus, the Spring Creek Plant's effluent maximum boron concentration is estimated to be 11.0 mg/L. Id. at 5-6. The boron concentration downstream in the Sangamon River is estimated to be approximately 4.5 mg/L under this scenario. Id. at 6.

The Spring Creek Plant consistently meets NPDES regulated parameters. Id. Pumping the CWLP FGDS wastewater to the Spring Creek Plant is not expected to have any effect on the Spring Creek Plant, other than the increase in boron concentration in the effluent. Id. While granting 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 this Site Specific Rule may enable CWLP to meet compliant levels in Sugar Creek. Id.

3. CWLP's Prior Relief from Boron Water Quality Standard

In a renewal to CWLP's NPDES permit issued in 1991, Illinois EPA placed a boron limit on discharges from the clarification pond. Pre-Filed Testimony of Dave Farris, In Support of Proposed Site Specific Rule at 5. 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). Id. On December 1, 1994, the Board granted CWLP an adjusted standard for boron of 11.0 mg/l for wastewater 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. Id. The adjusted standard included an alternative water quality standard for boron at the point of discharge from the District's Spring Creek Plant (Outfall 007) to 100 yards downstream of the confluence of the Sangamon River with Spring Creek. Id. Thus, an alternative water quality standard for boron already applies to portions of the surface waters at issue in this matter. Id.

From 1994, when the adjusted standard was granted, until May 2003, CWLP operated within general compliance of its NPDES permit (No. IL0024767). Id. 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. Id. at 5-6.

4. CWLP's Boron Mitigation Efforts

Historically, CWLP has been able to operate while meeting the adjusted boron standard in Sugar Creek. Pre-Filed Testimony of Gregg Finigan, In Support of Proposed Site Specific Rule at 3. However, since SCR air pollution control systems for removal of

NO_x were added to Dallman's three coal-fired units in 2003, CWLP has had difficulty complying with the adjusted standard for boron in Sugar Creek. Id. Apparently, trace ammonia concentrations from SCR operation results in increased boron solubility in CWLP's Dallman Ash Pond, increasing boron levels to CWLP's clarification pond. Id. 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. Id. 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. Id. 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 (FGDS treats the flue gas product of burning coal) and is not associated with the fly ash disposal system. Id.

Prior to April of 2003, Outfall 004 showed minimal excursions beyond the adjusted standard of 11.0 mg/L boron limitation. Id. at 4. In April 2003, CWLP put into service three SCR systems for NO_x removal at Dallman (on units 31, 32 and 33). Laboratory personnel were monitoring the ammonia concentrations (ammonia slip) in the ash systems and in the Dallman Ash Pond as part of the process control for the SCRs. Id. In addition, the chemistry staff was responsible for the NPDES monthly monitoring. Id. Bi-monthly samples for boron analysis from Outfall 004 were taken to Prairie Analytical. Id.

By May 2003, it was noticed that the boron concentration at Outfall 004 was increasing to nearly the 11.0 mg/L limitation. Id. Later, in May, 2003, the boron concentration at Outfall 004 exceeded the adjusted standard limitation, at about the same time the last SCR went into service. Id. At that point, CWLP was fairly certain that the increase in boron levels was a direct result of the operation of the SCRs, since the increased levels coincided with the start-up of each SCR unit. Id. Research was done on boron solubility and a direct connection was found with ammonia having an affinity for boron compounds, forming more chemically stable ammonia borohalogens. Id.

In August and September of 2003, CWLP began investigating the cause of the boron increase by checking all of the ash ponds, the clarification pond, and Outfall 004 wastewater streams, as well as the incoming streams to these bodies to determine the origin of the increased boron concentration. Id. at 4-5. This study was done in conjunction with Hanson (then known as Hanson Engineering). Id. During this extensive study of all of the wastewater streams feeding into Outfall 004 to Sugar Creek, it was determined that the boron levels in the Dallman Ash Pond had increased, but not to the levels that would have exceeded the adjusted standard of 11.0 mg/l. Id. However, CWLP was able to identify that the FGDS blowdown effluent stream contained excessive amounts of boron, from 16.4 to 837 mg/L. Id. This effluent was found to be 250,000 – 400,000 gallons per day being sent to the filter plant sludge ponds, which subsequently discharge supernatant to the Clarification pond, which flows to Outfall 004. Id.

This FGDS blowdown stream was present prior to the operation of the SCR systems. Id. The increased boron concentration in the Dallman Ash Pond, which is the major flow contributor to the Clarification pond and Outfall 004, resulting from the

operations of the SCRs and the ammonia effect on boron solubility, increased the boron level to the Clarification pond enough that the FGDS blowdown stream boron levels could not be diluted, even though it was only 10 percent of the ash pond flows. Id. Accordingly, while this proposal will not eliminate CWLP's need for the adjusted standard, it is the most reasonable approach for CWLP to meet it hereafter. Id.

5. Overview of CWLP's Consideration of Alternatives and Alternative Technologies

Over the past decade, CWLP, together with Burns, has investigated numerous alternatives to comply with the general water quality standard for boron in wastewater discharged from its power plant and determined that pumping its FGDS wastewater stream to the District's Spring Creek Plant for treatment is the only technologically feasible and economically reasonable alternative to address the boron exceedance problem in the wastewater stream. Pre-Filed Testimony of Doug Brown, In Support of Proposed Site Specific Rule at 2; *Technical Support Document for Site-Specific Boron Standard for the Springfield Metro Sanitary District Spring Creek Plant, Sangamon County, Illinois* ("TSD"), attached as Exhibit 1 to the Petition.

a. Conversion to Dry Ash Systems

CWLP considered conversion to a dry ash system; however, the FGDS wastewater proposed for transfer to the District's Spring Creek Plant is generated by the air pollution control system and would not be eliminated by modifying the power plant ash handling system, although CWLP's new Dallman Unit 4 will include dry fly ash and bottom ash handling systems. Pre-Filed Testimony of Doug Brown, In Support of Proposed Site Specific Rule at 2-3.

i. Dry Fly Ash

In 2005, Burns estimated that the installed equipment cost to convert all of CWLP's existing Dallman units to dry fly ash would be $10.2 million. Id. at 3. 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 customer. Id. However, conversion to dry fly ash would not address the boron generated by the air pollution control systems at issue. Id.

ii. Dry Bottom Ash

Burns also found that conversion of CWLP's 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. Id.

b. Treatment Options

CWLP also considered treatment options for the removal of boron from FGDS wastewater, which contains high concentrations of dissolved and suspended solids, such that less-expensive removal options that might otherwise be typical, would be ineffective in this case, 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. Id.

i. Brine Concentrator Followed by Spray Dryer

CWLP evaluated use of a brine concentrator ("BC") followed by a spray dryer. Such technology is comprised of mechanical evaporators that separate and recover water from the wastewater solution. Id. The most commonly used BCs use a vapor compressor to provide a self-sufficient supply of steam to heat up the wastewater slurry. Id. at 3-4. 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. Id. at 4. Due to high concentrations of total dissolved solids ("TDS") and chlorides, the materials that come in contact with these higher concentrates are normally made from high-grade stainless steels and the tubes from titanium, and are very expensive. Id. In addition, the vapor compressor and the slurry recirculation pumps consume a significant amount of electricity. Id. The concentrated bleed would then be fed into a spray dryer, where it would be completely dried to a solid form for disposal, in a chamber where hot air containing combusted natural gas would be injected, leaving behind the solids. Id.

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. Id. Burns initially opined that boron removal using dual train BC/dual train spray dryers had a capital cost of $8,222,000 and an annual operating cost of $798,539. Id.

ii. Reverse Osmosis Followed by Crystallizer and Spray Dryer

CWLP also considered reverse osmosis ("RO") followed by crystallizer and a spray dryer. Id. The RO process was considered as an alternative to the first stage

treatment, with mechanical evaporation to concentrate the wastewater. Id. In this case, 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. Id. Burns concluded that, because of the constituents in this FGDS blowdown, including high suspended solids, pretreatment would be necessary before the wastewater could be treated by an RO system. Id.

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. Id. at 5. Thus, following the lime soda softener, Burns considered a HERO system (a patented high efficiency RO system design). Id. But, HERO is still an RO system, so its recovery is limited by the osmotic pressure. Id.

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. Id. However, the cost of the HERO is generally less than that of a BC and consumes less electricity, but also has some disadvantages. Id. The BC option is more favorable than the HERO because it involves fewer components to operate. Id. Also, the chemical consumption as well as solids removal (requiring disposal) of the lime/soda softener is significant. Id. Finally, the energy consumption of the crystallizer is much higher than that of the spray dryer. Id. 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. Id. These values represent 2005 dollars. Id.

iii. Boron Pilot Project

In December 2005, based upon Burns' recommendation, CWLP entered into a contract with Aquatech to provide a Zero Liquid Discharge plant for the treatment of FGDS wastewater, consisting of two BCs followed by spray dryers, to treat the blowdown from the FGDS system at CWLP's plant. Id. The process energy would be developed by four vapor compressors that would consume 550 horsepower each. Id. The concentrated saltwater would be sent to a gas-fired spray dryer that would convert the solution into a powdered salt. Id. at 5-6. The solid salt would not be included with the Aquatech system, but instead would be taken to a landfill. Id. at 6. Ninety percent of the evaporated water would be condensed and could be recycled in various plant processes. Id.

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. Id. This led to the design of a pretreatment clarifier system to remove the suspended solids, expected to consist mainly of a clarifier and sand filter tanks. Id. 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 CMT for the pretreatment system. Id.

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. Id.

In September 2006, as the engineering progressed, 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. Id. 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. Id. There was relatively little expertise in this area, such that the design changed as it was engineered, and the project was considered a pilot project. Id. 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. Id. at 6-7.

CWLP initially investigated processing one to two 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 20 bags every 10 minutes. Id. at 7. 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. Id. Moreover, the byproduct would be considered a special waste according to chemical analysis of the projected waste byproduct. Id. 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. Id.

Additionally, the original scope of work and the associated cost increased several times, and became too high to proceed with the proposed BC system. Id. 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. Id. It was realized that the original Burns report had significantly underestimated the capital and operating costs of the BC option, by as much as 4 to 5 times. Id. How to dispose of the solid waste generated by the treatment system was never resolved. Id.

During the design of the pretreatment system, CMT was informed of the problems surrounding the BC option. Id. In September 2006, CWLP decided to pursue alternate options because of the dramatic cost increases and the design and operating issues encountered. Id. CWLP asked Burns to conduct a study on using evaporation ponds in conjunction with the BC option, or without them. Id. at 7-8. The study indicated that it was not feasible to use this method without forced evaporation methods, which would be too costly in conjunction with the costs to build the ponds. Id. at 8. In December 2006, CMT provided CWLP with a preliminary study on using the District's Spring Creek Plant as an alternate option. Id.

iv. Electrocoagulation

In response to a request from Illinois EPA in the spring of 2007, CWLP 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 separately by thin annular spaces, which dissolves the

electrodes. Id. The dissolved metal ions react with contaminants creating precipitates that are removed by filtration. Id. Metal plates of aluminum are the most effective for boron removal. Id.

Contaminant reduction occurs via flocculation/precipitation and adsorption. Id. Adsorption occurs when contaminants electrostatically adhere to the flocculated solids and are removed along with the precipitates. Id. 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. Id.

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. Id. Further, competing reactions from other FGDS wastewater constituents may dramatically lower boron removal. Id.

Burns was hired by CWLP to produce a letter of recommendation on the EC option. Id. at 9. CWLP supported the efforts with a small scale test on-site with a local supplier of EC equipment. Id. 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 wastewater much different from the FGDS wastewater. Id. Here, boron removal efficiency cannot be predicted due to lack of verified boron removal efficiencies in high boron and high TDS wastewater, such that

boron removal efficiency is expected to be dramatically decreased from theoretical estimates due to competing reactions in the EC process. Id. The on-site tests were stopped by the supplier due to his equipment being damaged by the aggressiveness of the FGDS wastewater. Id. The tests were unable to show any reliability of boron removal. Id.

c. Alternative Coal Source

CWLP also evaluated the use of western coal in place of Illinois coal. Id. In Burns' *Phase II SO_2 Compliance Study Report*, dated October 1998, switching the CWLP coal supply from Illinois coal to Power River Basin ("PRB") coal was evaluated. Id. PRB coal, mined in the western United States, is low-sulfur, low-boron coal, as compared to coal mined in Illinois. Id. Because CWLP does not have any reliable way to receive rail-delivered coal to the 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. Id. 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 plant. Id.

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. Id. at 10. Test burns revealed that installation of a limestone storage silo and feed system would also be needed. Id. 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. Id. Burns also noted that certain factors associated with PRB coal combustion, such as increased gas flow, ash particle size and fly ash/bottom ash split have influence on precipitator performance, such that it may make it impossible for CWLP to achieve continuous air compliance under all operating conditions burning PRB coal in the existing plant. Id.

After considering the *Phase II SO_2 Compliance Study Report*, CWLP decided to add a FGDS to Dallman Units 31 and 32. Id. Factors cited by CWLP in support of this decision include: 1) lowest cost long-term solution; 2) economic benefits for the City and the State of Illinois, such as burning Illinois coal, creating 100 coal mine related jobs, creating over $10 million in annual coal sales, and creating 200 to 250 construction related jobs; 3) CWLP has successfully operated and maintained a FGDS on Unit 33 for 19 years; 4) gypsum byproduct sales would be $3,000,000 per year; and 5) the State of Illinois had budgeted $12.5 million in Cost Sharing Funds to benefit Illinois jobs. Id.

Further, CWLP cited the following disadvantages of using PRB coal: 1) over $10 million leaving Illinois annually; 2) shipping delays; 3) major railway modifications; 5) boiler modifications; and 6) concerns about explosive dust. Id. at 11.

CWLP's decision to continue to burn Illinois coal is atypical of the utility industry. Id. 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. Id.

6. Proposed Solution and Economies Thereof

The District has contracted with CWLP to accept the FGDS wastewater stream, at a cost to CWLP of $100,000 per month, provided that its acceptance does not upset normal plant operations. Pre-Filed Testimony of Doug Brown, In Support of Proposed Site Specific Rule at 11. CWLP intends to treat the FGDS waste stream with conventional pretreatment processes for solids removal prior to pumping the wastewater to the District's Spring Creek Plant. Id. While laboratory jar tests have shown in some instances that a small percentage 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 by this treatment for purposes of calculating boron concentrations in this proceeding. Id.

CWLP proposes collecting the FGDS waste stream in a 250,000 gallon influent holding tank. Id. This tank will provide about 22 hours of holding time for the wastewater stream, anticipated to be approximately 187 gallons per minute ("gpm"). Id. Wastewater collected in the influent holding tank will be fed to a ClariCone™ solids contact clarifier with a 240 gpm capacity.

Operation of the patented ClariCone™ has been demonstrated at over 300 installations nationwide. Id. Mixing, tapered flocculation and sedimentation all take place within a completely hydraulically driven vessel. Id. The ClariCone™ maintains a dense, suspended, rotating slurry blanket that provides solids contact, accelerated floc formation and solids capture. Id. at 11-12. The conically shaped concentrator maximizes the slurry discharge concentration and allows plant personnel to visually monitor slurry

discharge. Id. at 12. The large mass of retained slurry and unique helical flow pattern in the ClariCone™ prevent short-circuiting and resists process upsets. Id.

As part of this project, a pumping station would be constructed near the Scrubber Building at the CWLP plant. Id. All sump and pump materials will be corrosion resistant. Id. 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 the City. Id. Standard sewer forcemain construction will be used. Id.

It is anticipated that up to four air release valves will be required. Id. Sealed and lined vaults will be used to minimize odors and corrosion. Id. Lining of the receiving manhole and sewer is anticipated. Id. 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. Id.

The pumping of the FGDS wastewater stream to the District's Spring Creek Plant will have a capital cost significantly lower than options investigated by CWLP. Id. 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. Id. The annual operating and maintenance ("O & M") cost of such treatment, which is estimated to be $1.6 million, is also anticipated to be significantly less than the other treatment options. Id. While some costs may remain fixed, other O & M costs will likely escalate. Id. 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. Id. at 12-13. In addition, the

pumping station will occupy significantly less space than other alternative technologies and no special or hazardous waste would be generated. Id. at 13.

The construction of the ClariCone™ and pumping station is currently in progress with an estimated completion date of March 2009. Id. The engineering design of the District forcemain by CMT was estimated to be completed in December 2008. Id. Construction is estimated to start in April 2009 and end by August 2009. Id. The bidding and construction schedule is dependent upon approval of this petition for the site specific rule. Id. The City Council will not authorize bidding or award for construction without Board approval here. Id.

Dallman Unit 4 is currently being constructed. Id. The project is 87 percent complete. Id. It is estimated that the unit will fire on coal for the first time around the summer of 2009. Id. CWLP's designs have always included the Dallman Unit 4 FGDS blowdown quantity. Id. Kiewit Black & Veatch (located in Springfield) have estimated the flow of the Dallman Unit 4 FGDS blowdown to be 70 gpm as a maximum and 36 gpm as a daily average. Id.

7. Calculations Supporting the Proposed Site Specific Rule

The proposed site specific water quality standard for boron would include an area of dispersion with boron concentrations ranging between 4.5 and 11.0 mg/L from the District's Spring Creek Plant Outfall 007 to 182 yards downstream in the Sangamon River; 4.5 mg/L in the Sangamon River from 182 yards downstream of the confluence of Salt Creek with the Sangamon River, a distance of 39.0 river miles; 1.6 mg/L in the Sangamon River 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 1.3 mg/L in the Illinois River from the confluence of the Illinois River with the Sangamon River to 100 yards downstream of the confluence of the Illinois River with the Sangamon River. Pre-Filed Testimony of Deborah Ramsey, In Support of Proposed Site Specific Rule at 3.

The proposed site specific water quality standard is based on a 7Q10 low-flow of 54.8 cfs having a boron concentration of 2.0 mg/L in the Sangamon River upstream of Spring Creek and a 7-day low flow of 17.5 cfs from the District's Spring Creek Plant having a boron concentration of 11.0 mg/L. Id. The 2.0 mg/L concentration in the Sangamon River is based on the adjusted standard granted to CWLP in 1994. Id. The increase in the Sangamon River flow at Spring Creek is mainly due to discharge from the District's Spring Creek Plant. Id. Based on the foregoing, the terms of the proposed site specific rule, as set forth in the TSD and the Petition, were developed. Id.

8. Characteristics of the Receiving Streams

The Sangamon River watershed comprises about 5,419 square miles, all of which lie in the central part of Illinois. Pre-Filed Testimony of Deborah Ramsey, In Support of Proposed Site Specific Rule at 4. Practically all of the area is tillable and, for the most part, is cultivated. Id. The Sangamon 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. Id. The total length of the Sangamon River is about 250 miles. Id. The whole length of the Sangamon River is characterized by a series of pools and shoals, including five impoundments in its basin. Id. Lake Decatur is the only lake located directly on the Sangamon River and is also the deepest portion of the river. Id.

A field survey conducted by Hanson in October 2007 to characterize the general features of the Sangamon River downstream of the CWLP plant discharge showed it to be a low gradient, meandering stream. Id. Results of this field survey were as follows. 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. Id. Three structures were identified in the survey that create riffle areas that are a source of oxygenation for the Sangamon River during low flow: a former dam immediately upstream of the Spring Creek confluence in the City, and two rock check dams located near Petersburg, Illinois. Id. According to the Illinois Streamflow Assessment Model, prepared by the ISWS in 2007, the mean flow at the confluence with Spring Creek was 2,120 cfs for the base period from 1948 to 1997. Id. During high flow periods, stream discharge can exceed 7,000 cfs at this location. Id.

There are eight NPDES permitted discharges to the Sangamon River from the confluence of the South Fork of the Sangamon River to the Illinois River. Id. These NPDES discharges include: Clear Lake Sand and Gravel Company; Lincoln Place Mobile Home Park; Riverton Sewage Treatment Plant; Illinois Department of Transportation, Interstate 55, Sangamon County North; SMSD, Spring Creek Plant; Pleasant Plains Water Treatment Plant; Petersburg Sewage Treatment Plant; and Petersburg Water Treatment Plant. Id. at 4-5. Other generally known uses of the Sangamon River include aquatic life habitat and recreation (boating, fishing, swimming). Id. at 5. The reach of the Sangamon River at issue in this site specific rulemaking is not reported as used for irrigation of agricultural land, golf courses, nurseries, etc. Id.

Water quality data including boron concentrations in the Sangamon River from Illinois EPA for 1999 through 2004 for three of the monitoring stations on the Sangamon River upstream and downstream of the confluence of Spring Creek were reviewed. Id. Stream discharge volumes in cfs from the United States Geological Survey National Water Information System were also reviewed. Id. The station at Riverton (closest downstream of the existing CWLP NPDES discharge location) had the highest total boron concentrations over the four-year period. Id. While total boron exceeded 1.0 mg/L in nine percent of the sampling events at this station, no boron value exceeded the adjusted standard of 2.0 mg/L of boron. Id. The mean boron concentration at Riverton was 0.394 mg/L over the five-year period from 1999 to 2004. Id.

The condition of four stream segments of the Sangamon River at issue show that all four are included on Illinois EPA's 2006 list of waters where uses are impaired, the 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). Id. All four segments are identified as impaired for the designated use of fish consumption; a potential cause of fish consumption impairment is polychlorinated biphenyls from an unknown source. Id. at 5-6. Three segments are identified as impaired for the designated use of primary contact recreation. Id. at 6. A potential cause of primary contact recreation impairment is fecal coliform from an unknown source. Id. Stream segment E-26 is identified as impaired for the designated use of aquatic life; potential causes of aquatic life impairment are boron, nitrogen, phosphorus, silver, TDS and TSS. Id. Potential sources of these impairments

are industrial and/or municipal point source discharges, on-site treatment systems, runoff, channelization, crop production, dams or impoundments, and streambank modifications/destabilization. Id.

9. Investigation of CWLP's FGDS Blowdown

A current Spring Creek Plant influent boron concentration of 0.25 mg/L was used to calculate the new concentration with the FGDS wastewater included in the flow steam. Pre-Filed Testimony of Deborah Ramsey, In Support of Proposed Site Specific Rule at 6. 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 Spring Creek Plant effluent would be 11.0 mg/L. Id. It is anticipated that the boron will not be significantly affected by nor adversely affect the Spring Creek Plant's treatment process and therefore the effluent boron concentration is expected to mirror the influent concentration. Id. Thus, the Spring Creek Plant's effluent maximum boron concentration is estimated to be 11.0 mg/L. Id. The boron concentration 182 yards downstream in the Sangamon River is estimated to be 4.5 mg/L under this scenario. Id.

The Spring Creek Plant is reported to consistently meet its NPDES regulated parameters. Id. Pumping the CWLP FGDS wastewater to the Spring Creek Plant is not expected to have any effect on the Spring Creek Plant, other than the increase in boron concentration in the effluent. Id. at 6-7. Reduction of the boron concentration in the wastewater stream anticipated for discharge by the District, in comparison to the concentration in CWLP's discharge, will not make its removal by the District any more feasible or economically reasonable than the removal alternatives studied by CWLP. Id.

at 6. 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 in Sugar Creek, rather, granting of this site specific rule should enable CWLP to meet complaint levels in Sugar Creek, as was typical prior to operation of the SCR. Id. The CWLP power plant is a crucial power supply for the City. Id. No adverse effects are anticipated to the aquatic life of the Sangamon River or the Illinois River as a result of the proposed site specific boron water quality standard; thus, the proposed site specific boron water quality standard is justified. Id.

10. Toxicological Effects of Boron

Hanson reviewed existing literature documenting boron's effects on various biota, although the primary focus of the TSD regarding potential effects from boron concerns freshwater biota. Pre-Filed Testimony of Jeff Bushur, In Support of Proposed Site Specific Rule at 5. The United States Environmental Protection Agency classifies boron as a Group D element, meaning that there is no human and animal evidence of boron carcinogenicity. Id. In mammals, while exposure to excessive boron may result in reduced growth rate, loss of body weight, and eye irritation, one study 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. Id. 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 kilogram of feed weight produce no adverse effects. Id. While boron rapidly accumulates in mallard tissues, it also is rapidly eliminated. Id. at 5-6. After boron was removed from the

mallards' diet, it was completely cleansed from the liver and blood within one day. Id. at 6.

Regarding tolerance ranges for some species of fish, one researcher studied the effects of boron compounds upon rainbow trout and guppies, and determined these compounds to be relatively non-toxic using 24-hour bioassay procedures. Id. In mosquito fish (*Gambusia affinis*), which are native to Illinois, using 96-hour bioassay procedures, no mortalities were observed in concentrations of boric acid up to 1,800 mg/L (315 mg B/L). Id. One study 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 of 12.17 mg/L of boron for freshly fertilized eggs of largemouth bass. Id. One study found the lowest-observed-effect concentrations for embryo-larval stages of channel catfish ranged from 1.0 to 25.9 mg B/L, depending on water hardness and boron compound administered, although a British Columbia literature review study of boron considered these low concentration toxicity levels to be outliers. Id.

Studies have found that amphibians respond to boron at concentrations similar to those for fish. Id. 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. Id.

Regarding plant life, boron is essential for the growth of plants. Id. However, excess boron is known to be phytotoxic. Id. Studies have shown that optimal growth in

plants occurs at 2 to 5 mg/L, while toxic effects are evident at 5 to 12 mg/L. Id. However, some species, such as citrus, stone fruits, and nut trees, are more sensitive. Id. at 6-7. No use of irrigation, however, has been reported for the reach of the Sangamon River at issue in this site specific rulemaking. Id. at 7. While toxic effects have been observed in aquatic plants at various concentrations, one blue green alga exhibited 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. Id. A British Columbia study found a lowest-observed-effect-level for growth of inhibition on a green alga of 12.3 mg B/L. Id.

Boron effects on aquatic life are highly species specific and vary depending on its life stage and environment. Id. 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. Id. 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. Id. Boron in natural water courses was found to be substantially less toxic to trout embryo-larval stages than in reconstituted lab water. Id. Wild, healthy trout in surface waters containing 13 mg/L of boron have been reported. Id. A 20-day no-observed-effect concentration of 18 mg/L of boron for rainbow trout embryos has also been reported. Id. Hanson has provided a table summarizing our literature search as it pertains to aquatic life in the Sangamon and Illinois Rivers at page 5-7 of the TSD. Id. A British Columbia government study considered two related studies which found low concentration boron toxicity levels for a variety of aquatic species to be outliers since the results could not be reproduced by other studies. Id. Similarly, it has been suggested that

the low-level effects observed in reconstituted laboratory water may not accurately predict the effects under natural water exposure conditions. Id. at 7-8. And, it is unlikely that boron is bioconcentrated significantly by organisms in water. Id. at 8.

As noted above, CWLP was granted an adjusted standard for boron in 1994. Id. Hanson's *Technical Support Document for Petition for Adjusted Boron Standards for Sugar Creek and the Sangamon River* (March 1994) ("1994 Hanson TSD"), which was attached as Exhibit 2 to the Petition in this proceeding, presented scientific evidence showing no detectable degradation to Sugar Creek receiving discharges having boron levels as high as 18 mg/L of boron. Bushur Pre-Filed Testimony at 8. The 1994 Hanson TSD demonstrated the toxicological effects of boron at varying concentrations on the biological community of an aquatic ecosystem. Id. 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. Id. Likewise, the Illinois River biological community would not be observably affected by the anticipated maximum boron concentration. Id.

To summarize, based on the reviews of existing toxicity studies, documents and reports, and the 1994 Hanson TSD, no adverse effects are anticipated to the aquatic life of the Sangamon River or the Illinois River as a result of the proposed site-specific standard. Id.

11. Illinois EPA Testimony

Prior to the Petitioners' initial filing with the Board, CWLP submitted draft proposals to Illinois EPA for review and comment. Prefiled Testimony of Robert Mosher

at 1. CWLP met with Illinois EPA staff on several occasions to discuss boron treatment and removal options. Id. at 1-2. Illinois EPA is in agreement with Petitioners that the Site Specific Rule is necessary, will cause no adverse impact to the environment, and meets the requirements of Sections 27 and 28 of the Act. Id. at 2. Illinois EPA has reviewed the findings of CWLP and agrees that boron cannot be removed without significant monetary and energy expenditures that are not technically feasible or economically reasonable. Id. at 4. Illinois EPA also agrees that the boron concentrations discharged will not cause aquatic life toxicity in the Sangamon River. Id. Moreover, human health will not be endangered because the boron in the Sangamon River will be diluted below any estimation of drinking water concern before it reaches the nearest public water supply intake, which is located approximately 185 miles downstream of the District's discharge. Id.

B. Information Included In Post-Hearing Document Submittals

During the November 3, 2008 Hearing, both the Board and PRN requested additional information from Petitioners and Illinois EPA in support of the proposed Site Specific Rule.

Petitioners included the following information in Petitioners' Post-Hearing Document Submittal:

1. Studies and evaluations that were referenced in the TSD and in the pre-filed testimony of Petitioners, including:

    a. Burns' *Phase II SO2 Compliance Study Report*;

    b. Burns' *New Generation Project Water Study*;

    c. Sargent and Lundy, LLC's *City Water Light & Power Dallman & Lakeside Station Water Conservation Study*; and

d. Burns' Letter to Douglas Brown, CWLP, regarding *Boron Removal Using Electrocoagulation*.

2. Data summarized by CMT that CWLP supplied to the District to demonstrate anticipated constituents in CWLP's FGDS wastewater stream;

3. The Intergovernmental Cooperation Agreement between CWLP and the District;

4. A summary in table format of boron mitigation options considered

5. Coordinates for the affected stream segments; and

6. A corrected version of Table 6-2 of the TSD.

Illinois EPA included the following information in Illinois EPA's Post-Hearing Document Submittal:

1. Ambient water quality monitoring and intensive basin survey data for total boron within Sugar Creek, segment EOA-01, from 1999 through 2007;

2. Ambient water quality monitoring and intensive basin survey data for total boron within the Sangamon River, segment E-26, from 1999 through 2007; and

3. Discharge Monitoring Report data for CWLP Outfall 004 from January 2002 through September 2008.

This additional information, together with the testimony of Petitioners and Illinois EPA at hearing, clearly supports Petitioners' proposed Site Specific Rule.

C. December 16, 2008 Hearing

On December 5, 2008, PRN filed twenty-nine (29) Pre-Filed Questions, which it sought to have Petitioners and Illinois EPA answer during the December 16, 2008 Hearing. On December 12, 2008, Petitioners filed their Motion to Strike and their Motion to Exclude Witnesses. In the Motion to Strike, Petitioners stated that the PRN

Pre-Filed Questions failed to comply with the Hearing Officer's directive, as stated at the close of the November 3, 2008 Hearing and in the November 6, 2008 Order. See Petitioners' Motion to Strike at 1 (Dec. 12, 2008). Petitioners stated in their Motion to Strike that during the November 3, 2008 Hearing, the Hearing Officer's intent for scheduling the December 16, 2008 Hearing was to fulfill the statutory obligations of Section 27(b) of the Act and to address the Board's request made to the Department of Commerce and Economic Opportunity to conduct an economic impact study. Petitioners also stated in their Motion to Strike that the other purpose for the December 16, 2008 Hearing was to address any questions on the additional material filed by Petitioners and Illinois EPA after the November 3, 2008 Hearing. Thus, Petitioners argued that the scope of the December 16, 2008 Hearing was limited to those issues only, pursuant to the Hearing Officer's directive, as stated at the close of the November 3, 2008 Hearing and in the November 6, 2008 Order.

At hearing, although the Hearing Officer agreed with Petitioners' interpretation of her directive, PRN was allowed to ask its questions in order to build as complete a record as possible for the Board.

Petitioners' full team of witnesses that were present at the November 3, 2008 Hearing were unable to attend the December 16, 2008 Hearing due to scheduling conflicts and their previous understanding that the December 16, 2008 Hearing was to be held for the limited purposes of addressing economic issues and questions on the additional material only. Nevertheless, CWLP's Bill Murray, Dave Farris and Doug Brown were available to answer questions on behalf of CWLP, and the District's Gregg Humphrey was available to answer questions on behalf of the District.

While Petitioners' witnesses addressed a majority of the PRN Pre-Filed Questions during the December 16, 2008 Hearing, they were not able to address every question at that time. For those questions that Petitioners committed to answering in their Post-Hearing Comments, the following answers are provided:

PRN Pre-Filed Question No. 1 –

As originally filed, Question 1 specifically stated that it was derived from review of the Final Environmental Impact Statement ("EIS") for the proposed dam and reservoir also known as Hunter Lake. PRN stated in Question 1 that the EIS for the proposed Hunter Lake project references that nearly 3.3 MGD are lost from CWLP's unlined ash ponds due to evaporation and seepage into the ground, from which PRN assumes that the seepage would drain toward groundwater and Sugar Creek and would contribute to increased boron. From this assumption, PRN inquired whether such seepage from the ponds is causing violations of applicable groundwater standards, and if so, why the ponds are not lined.

The EIS for the Hunter Lake project is not in the record of or in evidence in this regulatory proceeding and the assumptions drawn are based on crude estimates developed for another purpose. CWLP is neither aware of any such seepage or that groundwater is impacted by the ash ponds, and has no quantitative or qualitative data or analyses of same. The ash ponds were designed and constructed consistent with standard industry practice at the time, and CWLP knows of no regulation or other law requiring that the ash ponds be lined retroactively.

PRN Pre-Filed Question No. 4 –

Question 4 requested data characterizing the quality of the groundwater beneath and adjacent to the ash ponds. As stated above, CWLP does not collect such data for this purpose.

PRN Pre-Filed Question No. 9 –

Question 9 asked what must be added or removed to prevent corrosion. As previously stated in the record, the pipes, tanks and towers on the CWLP-controlled portion of the project are being constructed of materials to accommodate the characteristics of this waste stream, such that corrosion is not an issue.

PRN Pre-Filed Question No. 10 –

Question 10 asked what treatment, besides dilution, could be expected from the Spring Creek Plant's process for the pollutants present in the FGDS wastewater. Boron, chlorides, sulfates and some other inorganics will pass through the Spring Creek Plant with little or no reduction in concentration. The metals will likely oxidize in the aerobic digesters and end up in the sludge. This was confirmed by the District's Jeff Slead, based on current analyses of the Spring Creek Plant's wastewater and sludge.

PRN Pre-Filed Question No. 11 -

Question 11 asked how the District's Spring Creek Plant will be able to meet the proposed adjusted standard of 11 mg/L for boron when sufficient water may not be available for dilution, using a severe drought as one example, and as another example, a set of speculative conditions that are not in evidence in the record of this proceeding involving future reductions through water conservation. The proposed Site Specific Rule utilizes 7Q10 as determined by the ISWS in the calculation, and thus, is based upon demonstrated drought conditions and utilizes actual inflow rates reflective of water conservation practices and reductions already made. Asking Petitioners to assume facts not in the record in proposing a water quality standard, such as the example PRN presents, would be speculative, at best.

Nevertheless, the District has submitted a permit application to Illinois EPA that requests an increase in the Spring Creek Plant's rated capacity and effluent flow, which implies that they are not anticipating a sustained reduction in base flow. Petitioners have reviewed effluent flows from the Spring Creek Plant over a period from 2004 through 2007. Monthly flows in these four years ranged from 11.8 MGD to a peak flow of over 50 MGD. Modeling for the proposed Site Specific Rule was performed using a Spring Creek Plant effluent flow of 11.3 MGD, which is the 7-day low-flow period through the Spring Creek Plant. This is typically the minimum number used by Illinois EPA in developing permit limits. During the 2007 drought, daily effluent flows from the Spring Creek Plant as low as 9.29 MGD were observed in September 2007. Assuming low flows were to occur while CWLP was discharging the proposed 450 mg B/L stream to the Spring Creek Plant, CWLP would reduce the flow rate of the proposed plant effluent proportionally during the period when the District flow was low.

PRN Pre-Filed Question No. 12 –

Question 12 asked for explanation of how the holding tanks' capacity of 22 hours would be sufficient to meet NPDES permit limits and water quality standards. The question appears to assume that 100 percent of the proposed CWLP discharge would be directed to the holding tanks, when in fact, the pumps conveying the stream have a variable speed drive so that the pump rate can be

varied. For example, assume that the Spring Creek Plant flow drops to 9.29 MGD as it did in September 2007. CWLP can reduce the flow of the proposed plant effluent stream to 80 percent of the normal 187 gpm rate; that is, pumping about 150 gpm and retaining about 37 gpm. Then, a 250,000 gallon holding tank would have about 4.7 days of capacity. History of Spring Creek Plant operations shows that low flows observed during drought conditions do not last for several consecutive days, hence the 7-day low flow number of 11.3 MGD.

PRN Pre-Filed Question No. 14 –

Question 14 asked for explanation of how the proposed adjusted standard for boron would be protective of catfish residing in the segments for which the adjusted standards would be applied. As discussed in Section 5.4 of the TSD, Birge and Black (1977) reported chronic toxicity effects on channel catfish embryos at concentrations below the proposed adjusted standards. However, no adverse effects are anticipated from the proposed adjusted standards for the following reasons. The Ministry of Water, Land and Air Protection of British Columbia considered the Birge and Black study as an outlier since no other studies could reproduce the same results. Reconstituted water was used as the experimental medium in the Birge and Black study and not natural waters, which several studies found to be substantially less toxic when used as the experimental medium. The 2003 catfish survey of the Sangamon River at Riverside Park/Rochester section by the Illinois Department of Natural Resources ("IDNR") reported a robust catfish population in light of the 2.0 mg B/L adjusted standard. In addition, low-flow in the Sangamon River typically occurs during the late summer and fall months, while catfish spawn from May to July with fry hatching in about one week.

PRN Pre-Filed Question No. 15 –

Question 15 asked for identification of the location and length segments of the river proposed for the adjusted standard that have been surveyed for aquatic plants and a description of the nature of the area where macrophyte surveys were conducted. As discussed in Section 3.1.2, page 3-5 of the TSD, Hanson conducted a field survey by canoe of three areas of the Sangamon River on October 30, 2007, to characterize the general features of the Sangamon River. These areas included from the boat launch at Riverside Park to about 1000 ft downstream of the confluence of Spring Creek and the Sangamon River (about 1 mile), about 1,000 ft north of the Illinois Route 123 bridge at Petersburg to about 1,000 ft south of the bridge (about 2,000 ft), and from about 500 ft northeast of the Illinois Route 97 bridge at Oakford to about 500 ft southwest of the bridge (about 1,000 ft). The river flow was low during the field visit with an approximate 70 cfs discharge at the Riverton U.S. Geological Survey Gage Station. Although the field survey was a general characterization of the river and not specifically for the purpose of conducting a macrophyte survey, no aquatic macrophytes were observed within the river flow.

PRN Pre-Filed Question No. 16 –

Question 16 asked whether, beside the survey conducted at Illinois EPA's AWQMN stations, including E-24, E-25 and E-26, any additional information was reviewed in terms of the presence, identification and density of plants within the Site Specific Rule segment. IDNR's Division of Ecosystems and Environment was contacted for information regarding 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 (Section 3.2.5 and Appendix C of the TSD). Reported sensitive plant resources within approximately one mile of the Sangamon River were the blazing star, decurrent false aster, and prairie spiderwort; all whose habitat is not riverine.

PRN Pre-Filed Question No. 17 –

Question 17 asked for a description of the types of habitat that are available for fish residing in the affected segments of the Sangamon River. In general, the Sangamon River provides riverine habitat in the form of pools and shoals. Intermittent riffles typically occur during periods of low flow, as was observed during Hanson's field survey on October 30, 2007. IDNR reported during fishing surveys in 2003 that the Lower Sangamon River provides submerged logs, brush piles and deep pools along the stream margins.

PRN Pre-Filed Question No. 18 –

Question 18 asked whether a wetland survey had been completed for segments within and adjacent to Spring Creek and the Sangamon River for which the adjusted standard is proposed, and whether any wetlands had been identified in those segments. Hanson did not conduct any wetland surveys of the Sangamon River or Spring Creek during the preparation of the TSD. Based on the U.S. Fish and Wildlife Service National Wetlands Inventory mapping, wetland areas generally occur in the adjacent riparian and floodplain areas of the Sangamon River. These areas consist mostly of temporarily or seasonally flooded forested wetlands. Other wetland types depicted generally include temporarily or seasonally flooded emergent and scrub/shrub wetlands. Further discussion can be found in Section 3.1.2, page 3-5 of the TSD.

PRN Pre-Filed Question No. 19 –

Question 19 asked whether the agencies, including the ISWS, Illinois State Geological Survey, Illinois EPA, IDNR, Illinois Department of Agriculture, U.S. Army Corps of Engineers, Soil and Water Conservation District and several University of Illinois extension units, were asked about existing irrigation as a use or the potential for future irrigation. Hanson requested information from the above-listed agencies on all known water uses (discharges, water intakes,

irrigation, etc.) of the Sangamon River from its confluence with the South Fork of the Sangamon River to its confluence with the Illinois River.

PRN Pre-Filed Question No. 26 –

Question 26 was generally addressed by CWLP's Doug Brown in both his Pre-Filed Testimony and testimony at hearings. PRN's additional question at the December 16, 2008 Hearing, extrapolated from a report discussing alternatives to delivering PRB coal to the City's generating station, attempting to connect the discussion in that report on that issue to another report that discussed the technical and economic feasibility of converting all of the City's ash handling systems from wet to dry methods. The extrapolation or attempted connection cannot be made because the issues and considerations are separate and distinct.

PRN Pre-Filed Question No. 29 –

Question 29 asked of the cost to decommission the ash ponds, based upon an apparent assumption that groundwater is impacted by the ponds at that location, so as to reduce boron levels in Sugar Creek to below 1 mg/L. CWLP has not conducted such an assessment to identify what steps or costs would be required or incurred to decommission the ash ponds. Thus, any estimates would only be unreasonably speculative, at best.

V. SITE SPECIFIC RELIEF FROM SECTION 302.208(g) IS PROPER

As is evident from the above discussion, Petitioners have worked closely with each other and Illinois EPA over the course of the last several years to address CWLP's boron issue. Throughout this proceeding, and as summarized in the Boron Mitigation Options Table filed as Attachment G of Petitioners' Post-Hearing Document Submittal, Petitioners have demonstrated 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 District's 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. Petitioners have also demonstrated that alternatives to the proposed 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 District's Spring Creek Plant discharge or have a negative impact on the current use of the receiving waters. Thus, site specific relief from Section 302.208(g) is proper.

VI. PROPOSED LANGUAGE

Petitioners propose a Site Specific Rule that provides 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.

VII. CONCLUSION

WHEREFORE, based upon all the evidence that has been presented to the Illinois Pollution Control Board, the requirements of Sections 27 and 28 of the Act (415 ILCS 5/27 and 5/28), 35 Ill. Adm. Code § 102.210 and 35 Ill. Adm. Code § 102.202 have been

satisfied in this proceeding. City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District, therefore, respectfully request that the Illinois Pollution Control Board adopt the proposed Site Specific Rule. City of Springfield, Illinois, Office of Public Utilities, City Water, Light and Power and Springfield Metro Sanitary District also respectfully ask the Illinois Pollution Control Board to expeditiously proceed to APA second notice in this matter.

Respectfully submitted,

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

and

SPRINGFIELD METRO SANITARY
DISTRICT,

Date: January 29, 2009

By: /s/ Katherine D. Hodge
Their Attorneys

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

CWLP:002/Fil/Post-Hearing Comments

CERTIFICATE OF SERVICE

I, Katherine D. Hodge, the undersigned, certify that I have served the attached PETITIONERS' POST-HEARING COMMENTS, 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

Joey Logan-Wilkey, Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
joey.loganwilkey@illinois.gov

via electronic mail on January 29, 2009; and upon:

Matthew Dunn, Chief
Environmental Bureau
Office of the Attorney General
69 West Washington Street, 18th Floor
Chicago, Illinois 60602

Marie E. Tipsord
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601

Bill Richardson, Chief Legal Counsel
Illinois Department of Natural Resources
One Natural Resources Way
524 S. Second Street
Springfield, Illinois 62702-1271

Michael D. Mankowski
Assistant Attorney General
Office of the Attorney General
500 South Second Street
Springfield, Illinois 62706

by depositing said documents in the United States Mail, postage prepaid, in Springfield, Illinois on January 29, 2009.

By: /s/ Katherine D. Hodge
Katherine D. Hodge

CWLP:002/Filings/ NOF-COS – Post-Hearing Comments