

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE) R08-9 (D)
CHICAGO AREA WATERWAY SYSTEM) (Rulemaking – Water)
AND THE LOWER DES PLAINES RIVER:)
PROPOSED AMENDMENTS TO 35 ILL.)
ADM. CODE PARTS 301, 302, 303 and 304)

NOTICE OF FILING

TO: Mr. John T. Therriault	Ms. Marie E. Tipsord
Assistant Clerk of the Board	Hearing Officer
Illinois Pollution Control Board	Illinois Pollution Control Board
100 West Randolph Street	100 West Randolph Street
Suite 11-500	Suite 11-500
Chicago, Illinois 60601	Chicago, Illinois 60601
(VIA ELECTRONIC MAIL)	(VIA FIRST CLASS MAIL)

(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board **EXXONMOBIL'S PRE-FIRST NOTICE COMMENTS**, a copy of which is herewith served upon you.

Respectfully submitted,

EXXONMOBIL OIL CORPORATION,

Dated: April 30, 2014

By: /s/ Matthew C. Read
Matthew C. Read

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CERTIFICATE OF SERVICE

I, Matthew C. Read, the undersigned, hereby certify that I have served the attached **EXXONMOBIL'S PRE-FIRST NOTICE COMMENTS** upon:

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Assistant Clerk of the Board
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by depositing said documents in the United States Mail, postage prepaid, in Springfield,
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/s/ Matthew C. Read
Matthew C. Read

MOBO:041/Fil/ NOF-COS --Pre-First Notice Comments

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WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE) R08-9 (D)
CHICAGO AREA WATERWAY SYSTEM) (Rulemaking – Water)
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PROPOSED AMENDMENTS TO 35 ILL.)
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EXXONMOBIL'S PRE-FIRST NOTICE COMMENTS

NOW COMES EXXONMOBIL OIL CORPORATION (“ExxonMobil”), by and through its attorneys, HODGE DWYER & DRIVER, and pursuant to the March 6, 2014 Hearing Officer Order, submits the following Pre-First Notice Comments of ExxonMobil Oil Corporation on Illinois Environmental Protection Agency’s (“Illinois EPA” or “Agency”) proposed water quality standards for the Upper Dresden Island Pool (“UDIP”).

I. INTRODUCTION

Subdocket D was established to address water quality standards (“WQS”) and criteria.¹ WQS are driven in part by aquatic life uses (“ALU”), which were adopted by the Board in Subdocket C. *See id.* In Subdocket C, the Board signaled to participants that the UDIP, the stretch of water into which ExxonMobil discharges, is unique, and, in certain cases, justifies its own unique WQS. This finding, in addition to others related to the UDIP, offer the Board flexibility when adopting WQS and rules implementing WQS for the UDIP.

¹ Board Order, *In the Matter of Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and the Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code Parts 301, 302, 303 and 304*, R08-9 (Ill.Pol.Control.Bd. Mar. 18, 2010) (rulemaking hereinafter cited as “R08-9”).

At hearing and in written testimony, ExxonMobil documented conditions in the UDIP that warrant consideration when adopting WQS and regulatory relief mechanisms in Subdocket D. These conditions, in addition to technical feasibility issues and Illinois EPA implementation practices, highlight the need to scrutinize certain standards proposed by Illinois EPA and, where appropriate, adopt alternative proposed standards. In addition, these circumstances highlight the need for regulatory relief mechanisms so dischargers are not unnecessarily impacted. These issues are presented in more detail below.

To summarize, ExxonMobil begins by renewing its support for a separate subdocket created to address chloride. Next, ExxonMobil addresses Illinois EPA's proposed chloride standard for the UDIP. The record contains information that indicates that the chloride standard proposed by Illinois EPA will be exceeded during winter months due to the use of sodium chloride (salt) to deice roads in the area. Industrial sources and point source discharges are not the primary source of elevated chloride levels, and there is no immediate deicing replacement for salt. Therefore, the Board should consider adapting a standard that recognizes this use of the waterway and is still protective of the ALU or, in the alternative, adopt an appropriate relief mechanism that will allow time for Illinois EPA to address non-point source discharges, the actual cause of elevated chloride levels.

Next, ExxonMobil addresses the feasibility and implementation of Illinois EPA's proposed standard for mercury in the UDIP. Similar to chloride, non-point source discharges are the overwhelming source of mercury in surface water, as acknowledged by Illinois EPA. Specifically, atmospheric deposition is widely viewed as the primary

driver. Nevertheless, Illinois EPA currently lists the UDIP as impaired for mercury, which, according to Illinois EPA, prevents the opportunity for obtaining a mixing zone. Further, this impairment status is based on fish tissue data and not water column data. Complicating the situation for dischargers such as ExxonMobil, there is no known commercially available treatment process for municipal and industrial mercury dischargers that has been demonstrated in a full-scale application. Other states have acknowledged the ubiquitous nature of mercury in surface water and lack of treatment options and have provided dischargers with streamlined approaches for obtaining regulatory relief. ExxonMobil urges the Board to adopt a similar streamlined approach here.

Finally, if the Board adopts Illinois EPA's proposed thermal standards, upstream dischargers jeopardize ExxonMobil's ability to obtain a mixing zone for its relatively modest thermal discharge. Illinois EPA has not proposed a reliable procedure for addressing larger upstream thermal dischargers before imposing standards on downstream dischargers. In addition, standards proposed by Illinois EPA are not necessary to protect species in UDIP ALU Waters. As such, ExxonMobil respectfully requests that the Board adopt alternative thermal WQS and a regulatory relief mechanism for permitting large upstream thermal dischargers before requiring compliance from downstream dischargers.

Accordingly, ExxonMobil requests that the Board embrace the flexibility that it has given itself in Subdocket C to adopt WQS and regulatory relief and take into account the current conditions in the UDIP, technical feasibility, and implementation difficulties when adopting regulations in Subdocket D.

II. EXXONMOBIL'S RENEWED REQUEST TO CREATE SUBDOCKET FOR CHLORIDE

Illinois EPA filed a status update on January 31, 2014 explaining that it is prepared to move forward with post-hearing comments for all standards proposed in Subdocket D except for the chloride standard.² This status update was filed pursuant to the hearing officer's call for requests to stay the proceeding at the December 17, 2013 hearing. Illinois EPA noted that it is still in discussions with participants and United States Environmental Protection Agency ("USEPA") regarding chloride, so more time is needed to develop an approvable chloride standard. *Id.* Therefore, Illinois EPA asked that a new subdocket be reserved for the issue of chloride. *Id.* at 3. ExxonMobil filed a comment in support of a separate subdocket for the development of a chloride standard.³ In its comment, ExxonMobil noted its past participation in the development of a chloride standard, its concern with the currently proposed chloride standard, and its support for the creation of a subdocket for addressing the unique challenges associated with developing and implementing a standard given the significant seasonal chloride contributions from non-point sources associated with deicing. *Id.* at 2.

However, the Board declined to create a new subdocket to address chloride.⁴ The Board pointed to the length of the proceeding and numerous days of hearings. *Id.* at 2. The Board noted that there is already information in the record regarding chloride and that the last hearing dealt almost exclusively with chloride WQS. *Id.* The Board was

² Status for Subdocket D, R08-9 (D) at 2 (Ill.Pol.Control.Bd. Jan. 31, 2014).

³ ExxonMobil Oil Corporation's Comment in Support of a Separate Subdocket for the Development of a Chloride Standard, R08-9 (D) (Ill.Pol.Control.Bd. Jan. 31, 2014).

⁴ Board Order, R08-9 (D) at 1 (Ill.Pol.Control.Bd. Mar. 6, 2014).

unconvinced that a further delay is necessary, noting that it believes there is enough information in the record to proceed. *Id.* The Board also questioned what interim WQS for chloride would apply if a new subdocket was opened and discussions were allowed to continue. *Id.*

ExxonMobil respectfully disagrees with the Board's assessment of information in the record related to chloride. While the record in the R08-9 rulemaking is voluminous, the vast majority of the record addresses issues other than chloride. The Use Attainability Analysis ("UAA") viewed chloride as a parameter that met the General Use water quality standard.⁵ ExxonMobil and the Illinois Environmental Regulatory Group ("IERG") raised concerns related to chloride in Subdocket C, but the Board noted that the correct venue for the Board to consider such issues was Subdocket D.⁶ Hearings in Subdocket D began on July 29, 2013. At hearing on September 23, 2013, Illinois EPA witness Scott Twait acknowledged that there will be periods of non-compliance in the system due to deicing.⁷ Mr. Twait also explained that the USEPA was not willing to approve any of the standards considered by Illinois EPA up to that point. Sep. 23 Tr. at 77-78. ExxonMobil has reached out to Illinois EPA to address this issue in the context of Subdocket D. This issue takes on added significance since any chloride standard adopted by the Board will be the first chloride standard to apply to the UDIP.

⁵ Statement of Reasons, Attachment A – Lower Des Plaines River Use Attainability Analysis Final Report at 2-31 – 2-32 (Dec. 2003), R08-09 (Ill.Pol.Control.Bd. Oct. 26, 2007) (Attachment A hereafter cited as "UAA").

⁶ Opinion and Order, R08-9(C) at 14 (Ill.Pol.Control.Bd. Feb. 6, 2014).

⁷ Sep. 23, 2013 Transcript, R08-9(D) at 76-77 (Ill.Pol.Control.Bd. Sep. 23, 2013) (hereafter cited as "Sep. 23 Tr. at ___"); *see also* July 29, 2013 Transcript, R08-9(D) at 119 (where Mr. Twait explains that Illinois EPA would need to look at data to determine whether a waterway will be listed as impaired for chloride under Section 303(d) if the proposed standard is adopted) (hereinafter cited as "Jul. 29 Tr. at ___").

Given the recent refocus of this rulemaking on WQS and the recent testimony that reveals severe concerns with the feasibility and approvability of the proposed chloride standard, ExxonMobil respectfully requests that the Board reconsider its decision not to open a subdocket for chloride.

III. THE BOARD'S SUBDOCKET C FINDINGS

On February 4, 2014, the Board adopted a rule that designates a unique ALU for the UDIP, which is the stretch of the Lower Des Plaines River ("LDPR") into which ExxonMobil discharges.⁸ After initially proposing to designate the UDIP as General Use waters, the Board adopted a specific UDIP ALU, recognizing the unique conditions in the UDIP. *Id.* at 9-10.

"The UDIP ALU is defined as waters capable of maintaining, and having quality sufficient to protect, aquatic-life populations consisting of individuals of tolerant, intermediately tolerant, and intolerant types such as largemouth bass, bluntnose minnow, channel catfish, orangespotted sunfish, smallmouth bass, shorthead redhorse, and spottail shiner." *Id.* at 1-2. The Board also recognized that the UDIP "cannot fully meet the CWA goal." *Id.* at 2. In its Subdocket C Final Order, the Board also noted that if the Board believed the UDIP currently met the CWA aquatic life goal, then the Board would have designated UDIP as General Use waters. *Id.* at 10. The Board's decision makes clear that "the UDIP does not presently fully attain the CWA aquatic use goal." *Id.* at 10.

Such a finding allows the Board to consider conditions that are unique to the UDIP when adopting WQS in Subdocket D. This is consistent with the Board's previous findings in Subdocket C. Specifically, the Board recognized in proposed findings in Subdocket C that specific WQS may need to be adopted for the UDIP. *Id.* at 10. In its

⁸ Final Order, R08-9(C) at 1 (Ill.Pol.Control.Bd. Feb. 6, 2014) (hereinafter "Subdocket C Final Order").

First Notice Opinion and Order in Subdocket C, the Board proposed to designate the UDIP as General Use waters, but agreed to “examine water quality standards for UDIP in Subdocket D to ensure that the UDIP can meet the water quality standards applicable under the General Use standard.”⁹ In particular, the Board noted that, “particularly in the area of temperature, water quality standards may need to be adapted for the UDIP.” *Id.* On October 3, 2013, the Board issued its Second Notice Opinion and Order in Subdocket C and proposed to designate the aquatic life use for the UDIP as UDIP ALU, as requested by ExxonMobil and others in their comments on the Subdocket C First Notice.¹⁰

The numeric and narrative WQS for the UDIP ALU that are being considered in Subdocket D can therefore properly represent the unique, site-specific physical, chemical, and ecological conditions that are thoroughly documented in the extensive record for Subdocket C.¹¹ ExxonMobil encourages the Board to embrace the flexibility of its finding in Subdocket C.

IV. CHLORIDE STANDARD

Witnesses from Illinois EPA and industry agreed that, in the past, levels of chloride present in surface waters in the system exceeded Illinois EPA’s proposed chloride standard during winter months due to deicing roads with salt. Such non-point and non-industrial sources are the primary source of elevated chloride levels, and there is no immediate deicing replacement for salt. Reduction of chloride in the system will not occur in the immediate future and will need to be achieved through massive initiatives

⁹ First Notice Opinion and Order, R08-9(C) at 221 (Ill.Pol.Control.Bd. Feb. 21, 2013) (hereafter “Subdocket C First Notice”).

¹⁰ Second Notice Opinion and Order, R08-9(C) (Oct. 3, 2013) (hereafter “Subdocket C Second Notice”).

¹¹ Pre-Filed Testimony of Lial F. Tischler on Behalf of ExxonMobil Oil Corporation, R08-9(D) at 4 (Ill.Pol.Control.Bd. Nov. 22, 2013) (hereinafter cited as “Tischler PF Test. at ___”).

beyond the scope of the standard NPDES permitting process. Therefore, the Board should consider adopting a standard that recognizes this use of the UDIP and is still protective of the ALU or, in the alternative, adopt an appropriate relief mechanism for point source dischargers that will allow time for Illinois EPA to address non-point source impacts, which are the actual cause of elevated chloride levels.

In his pre-filed testimony, Mr. Tischler noted that the Proposed Clarifications Rule confirms USEPA's interpretation that 40 C.F.R. Part 131 authorizes states to establish site-specific water quality criteria for subcategorized aquatic life uses. Tischler PF Test. at 9. Mr. Tischler explained that the Board can establish chloride criteria that are protective of the existing and designated aquatic life use and still recognize the fact that the UDIP ALU waters have seasonal elevated concentrations of chloride that exceed the proposed criterion of 500 mg/L. *Id.* In short, the Board has flexibility on the type of standard it may adopt. ExxonMobil presents workable criteria below and comments on a proposed approach taken by Citgo Petroleum Corporation and PDV ("Citgo") below.

A. Setting an Appropriate Chloride Standard

Scott Twait's testimony on behalf of the Agency and James Huff's testimony on behalf of Citgo confirm that the use of salt to deice roadways for motorist safety in the Greater Chicago Metropolitan Area results in surface water chloride concentrations that periodically exceed 500 mg/L in the months from November through April.¹² Illinois EPA also acknowledged this in its Statement of Reasons.¹³ As noted by Mr. Tischler at

¹² September 23, 2013 Hearing Transcript, R08-09(D) at 34 (Ill.Pol.Control.Bd. Sept. 23, 2013) (hereafter Sept. 23, 2013 Tr.); July 29, 2013 Hearing Transcript, R08-9(D) at 117 (Ill.Pol.Control.Bd. July 29, 2013); Attachment 1, Pre-Filed Testimony of James E. Huff, P.E. for Citgo Petroleum Corporation and PDV Midwest, LLC, R08-9(C) (Ill.Pol.Control.Bd. Oct. 8, 2010).

¹³ Statement of Reasons, R08-9 at 76-77 (Ill.Pol.Control.Bd. Oct. 26, 2007) (hereafter cited as "SOR").

hearing, salt usage may be reduced, but there is currently no replacement for salt that is economically available and likely to be acceptable for deicing.¹⁴

The LDPR is an effluent dominated waterway. UAA at 1-8. As explained in the UAA, effluent flow constitutes more than 90% of low flow in the LDPR. *Id.* During winter, effluent discharges constitute nearly the entire low flow volume. *Id.*

There are no foreseeable alternatives to salt that would resolve runoff issues in the next 5-10 years. Dec. 17 Tr. at 58, 60. The waterways at issue in this rulemaking, and particularly the UDIP ALU waters are part of an urbanized watershed where large amounts of salt are used for deicing. Dec. 17 Tr. at 14. Mr. Tischler explained that a plan for reducing or replacing salt would be a long-term proposition. Dec. 17 Tr. at 14. Illinois EPA could not simply reduce limits in NPDES permits since the source of salt is from non-point sources. Load allocations would have to be distributed through a total maximum daily load (“TMDL”) process. As revealed at hearing, Illinois EPA’s resources for such an undertaking are limited, so meaningful reductions of chloride will likely only occur in the distant future.

In his pre-filed testimony, Mr. Tischler points to correspondence from USEPA introduced by the Metropolitan Water Reclamation District of Greater Chicago (“MWRDGC”) as one potential approach for addressing deicing activities. Tischler PF Test. at 10-11. Although the discussion there pertains specifically to a potential variance request related to dissolved oxygen (“DO”), USEPA acknowledges that there is an opportunity in that situation to potentially claim that a human-caused source of pollution (combined sewer overflows) prevents attainment of the DO criterion for a portion of the

¹⁴ Dec. 17, 1013 Transcript, R08-9 at 14 (Ill.Pol.Control.Bd. Dec. 17, 2013) (hereinafter cited as “Dec. 17 Tr. at ”).

CAWS.¹⁵ The “human-caused condition” is referring to the UAA factor at 40 C.F.R. § 131.10(g)(3): “Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.”

The same approach can be taken with chloride. In fact, USEPA acknowledged this in comments by noting that “[i]f Illinois wants to take the effects of deicing activities in the Chicago area into account in the water quality standards for the CCSC, Illinois could attempt to do so as part of the IPCB’s proceedings pertaining to aquatic life use designations and criteria....”¹⁶ Given the clear impact, the Board should adopt an aquatic life water quality criterion for chloride that is consistent with these current conditions, temporarily relying on the human-caused conditions UAA factor. This may be considered a temporary bridge to a permanent solution in the future.

Mr. Tischler also explained that an elevated chloride concentration can be consistent with a waterway meeting CWA Section 101(a) requirements and being protective of aquatic life use. Dec. 17 Tr. at 18. In pre-filed testimony, Mr. Tischler cited to chloride standards that other states have adopted and USEPA has approved that apply to water segments that have high aquatic life use but also elevated chloride concentrations. Tischler PF Test. at 11, Exhibit D. As explained at hearing, this approach makes sense for UDIP ALU waters since there is no low “natural” baseline of chloride levels for the effluent dominated waters and the existing aquatic life clearly is

¹⁵ *Id.* at 10 (citing Exhibit A to Report of Metropolitan Water Reclamation District of Greater Chicago and Environmental Groups Regarding Proposed Aquatic Life Designated Uses, R08-9(C and D) (Ill.Pol.Control.Bd. Jan. 9, 2013) (hereafter cited as “June 2012 USEPA Letter”).

¹⁶ Comments of United States Environmental Protection Agency submitted by Susan Hedman, Regional Director regarding CITGO Petroleum Corporation and PDV Midwest Refining, L.L.C. v. IEPA, PCB 12-94, R08-9(D) at 2 (Ill.Pol.Control.Bd. Mar. 19, 2013).

protected under the current regime. Dec. 17 Tr. at 19. The Board can revisit such a standard periodically. It could incrementally lower the chloride standard periodically provided the waterway isn't also limited by other conditions. Dec. 17 Tr. at 20.

As an alternative the Board could address chloride with a seasonal standard or annual standard. Dec. 17 Tr. at 53; Tischler PF Test. at 12. These types of standards are scientifically justified and take into account the elevated concentrations of chloride seen from November through April. Such standards could work in concert with salt reduction activities on area roads and incremental standard changes by the Board. *Id.* But since all dischargers have the potential to be impacted by elevated levels of chloride in the waterbody, it does not make sense to set an unachievable standard and have individual dischargers request variances. Dec. 17 Tr. at 21.

B. Citgo's Proposed Relief

In a comment filed with the Board, Citgo presented its "compromise regulatory proposal to address mixing zone issues."¹⁷ As proposed, the regulatory mechanism would amend 35 Ill. Admin. Code § 302.102 to allow a mixing zone in certain instances where the WQS is exceeded. In particular, a mixing zone would be allowed where the exceedance of the WQS is in a "Use B" waterway, the discharger uses an intake from that water body for supply of at least 50% of its process water (including cooling water) on an annual basis, and the chemical is exceeded in the water intake or the water body is listed as impaired. Until a total maximum daily load allocation is effective, the discharger would employ best management practices ("BMP") for the pollutant of concern during the times that the exceedance occurs and one of two demonstrations is made by the BMP

¹⁷ Proposed Regulatory Amendment for December 17, 2013 Hearing, R08-9 (Ill.Pol.Control.Bd. February 13, 2014).

plan: “(i) the BMP plan has as its objective to reduce the amount of the discharge of the pollutant of concern by the amount by which the discharger would exceed the allowable discharge during the exceedance in the receiving stream; or (ii) Compliance is determined by comparing the predicted concentration at the edge of the mixing zone as within the precision of the test method for the subject pollutant.”

ExxonMobil agrees with this approach in principle if it is coupled with a reasonable chloride WQS. However, ExxonMobil requests that the provision also be applied to UDIP ALU waters as well. As described above, the LDPR is effluent dominated, similar to Use B waters. Conditions throughout the Greater Chicago Metropolitan Area lead to exceedances of the proposed chloride standard of 500 mg/l. This is not unique to Use B waters. Therefore, other waterways such as the UDIP ALU waters should have access to such relief as well.

V. MERCURY STANDARD AND IMPLEMENTATION

Illinois currently lists UDIP ALU waters as impaired for mercury based on analysis of fish tissue samples.¹⁸ By doing so, Illinois EPA relies on data that is outdated and not reflective of water column conditions. This practice creates compliance concerns for dischargers to such impaired water bodies because of mixing zone implications. ExxonMobil is not currently aware of commercially available mercury treatment methods that have been demonstrated in full scale application to effluents from either municipal or industrial wastewaters that can meet Illinois EPA’s proposed human health standard for mercury of 12 ng/L at the end-of-pipe. Therefore, ExxonMobil is concerned about achieving compliance with the standard end-of-pipe in the event the Board adopts Illinois

¹⁸ Jul. 29 Tr. at 50; Illinois Integrated Water Quality Report and Section 303(d) List - 2012, available at <http://www.epa.state.il.us/water/tmdl/303d-list.html> (last accessed Nov. 7, 2013).

EPA's proposed mercury human health standard and no mixing zone is authorized.

Consistent with the approach in other states, ExxonMobil proposes regulatory relief from the proposed mercury standard in the form of a specific level of justification for receiving an adjusted standard.

At hearing, Illinois EPA witness Scott Twait explained Illinois EPA's use of fish tissue data to determine impairment for fish consumption under CWA Section 303(d). Jul. 29 Tr. at 50. He acknowledged that this process did not account for mercury actually present in the water column. Jul. 29 Tr. at 50. As explained by Mr. Twait: "Other than the fact that US EPA adopted 12 ng/l as the national criterion to protect – to prevent excess bioaccumulation of mercury in fish, there is no linkage between the fish-flesh action levels and the water quality standards." Sept. 23 Tr. at 74. The Illinois Department of Natural Resources and Illinois EPA have not collected side-by-side samples of fish tissue and water column data that can be used to translate between the two. Sept. 23 Tr. at 74-75. Mr. Twait explained that Illinois EPA would like to use water column data for mercury, but they don't have such data available. Jul. 29 Tr. at 51. He acknowledged, however, that the Agency has the ability to go out and collect the data. Jul. 29 Tr. at 114. Despite this, Mr. Twait clarified that the numeric WQS for mercury would be used for permitting purposes. Jul. 29 Tr. at 51.

At hearing, Mr. Twait noted that when a water body is listed as impaired for a given parameter, Illinois EPA typically would not allow a mixing zone for the parameter in that water body. Jul. 29 Tr. at 104. In the situation at hand for mercury where fish tissue data is used to determine compliance, there is no direct connection between the amount of mercury present in the water column and the ability of dischargers to obtain a

mixing zone from a water column- based standard.¹⁹ Further, fish tissue data on which the Agency basis impairment are from 1989, 1999, 2006, and 2008. Sep. 23 Tr. at 32. Mr. Twait himself admitted that 1989 data are not representative. Sep. 23 Tr. at 32. So such an impairment determination is based on data that is both irrelevant and outdated for purposes of determining whether a mixing zone is available.

Further complicating matters, the presence of mercury in surface waters is primarily due to sources other than point source discharges. As explained by Mr. Tischler in his pre-filed testimony, beginning with the Savannah River mercury TMDL, which found that 99 percent of the river loading was due to atmospheric deposition of mercury, states and USEPA have consistently found, with few exceptions, that impairment of water quality by mercury is caused by atmospheric deposition and not by point sources.²⁰ In his pre-filed testimony, Mr. Tischler pointed to a 2011 USEPA publication entitled *Mercury Maps* that supports his conclusion that only control of the atmospheric deposition of mercury would reduce fish tissue concentrations of mercury to acceptable levels in the vast majority of U.S. watersheds.²¹

Illinois EPA has acknowledged the severe impact of sources of mercury other than point source discharges. In Illinois rulemaking R06-25, addressing mercury control

¹⁹ This approach for determining whether dischargers may use a mixing zone to achieve compliance is not supported by the Illinois mixing zone provision. That provision only excludes mixing where “the *water quality standard for the constituent in question* is already violated *in the receiving water*.” 35 Ill. Admin. Code 302.102(b)(9) (emphasis added).

²⁰ Tischler PF Test. at 23 (citing TMDL for Total Mercury in the Middle/Lower Savannah River, GA, USEPA (Feb. 28, 2001), available at http://www.epa.gov/owow/tmdl/examples/mercury/ga_savfinal.pdf (last accessed Nov. 7, 2013)).

²¹ Tischler PF Test. at 23 (citing Mercury Maps, A Quantitative Spatial Link Between Air Deposition and Fish Tissue, USEPA, EPA-823-R01-009 (Sept. 2001), available at http://water.epa.gov/scitech/datait/models/maps/upload/2006_12_27_models_maps_report.pdf (last accessed Nov. 7, 2013)).

of emissions from large combustion sources, Ms. Marcia Willhite, Chief of the Illinois EPA Bureau of Water, testified as follows:

It was determined that the total of all wastewater dischargers to receiving streams and rivers in Illinois provide an average annual loading of 45 pounds of mercury per year. This, in comparison, was only 0.64% of the total annual emissions (2002) of mercury (7022 pounds per year), from coal-fired power plants in Illinois.²²

Ms. Willhite further testified that other states have realized large reductions in mercury levels in fish as a result of addressing mercury emissions:

From its experience over the last decade, Florida has concluded that reduction in local atmospheric emissions of mercury has led to >75 percent declines in the tissues of fish and wildlife in less than 15 years since peak deposition.

Id. at 24. In addition, at hearing, Illinois EPA conceded that resuspension may be occurring due to combined sewer overflows and stormwater runoff. Jul. 29 Tr. at 101-102.

Therefore, Illinois EPA may find that UDIP ALU waters are impaired for mercury due to fish tissue levels, even where water column levels do not exceed the human health standard and fish tissue levels are primarily attributable to sources other than industrial point source discharges. While allocations pursuant to the TMDL process may offer relief in the distant future, the process is long, and Illinois EPA has limited resources to engage in such undertakings. Therefore, Illinois EPA may set effluent limits equal to the applicable water quality criterion (i.e., no mixing zone allowances) when an NPDES permit is renewed following the Section 303(d) listing despite having no

²² Tischler PF Test. at 23 (citing Testimony of Marcia Willhite, *In the matter of: Proposed New 35 Ill. Adm. Code 225 Control of Emissions from Large Combustion Sources (Mercury)*, R06-25 at 3 (Apr. 27, 2006)).

immediate plan to address the waterway in the TMDL process or no actual water column data demonstrating that the mercury standard is in violation. Tischler PF Test. at 22.

Following promulgation of 35 Ill. Admin Code Part 225 regarding mercury air pollution controls, Illinois EPA has not ascertained whether or not fish tissue levels have attenuated in Illinois as is the case in Florida. Tischler PF Test. at 24. Relying on the NPDES program of point sources to try to remedy mercury impairments will have virtually no effect on the mercury impairment because the source of the mercury impairment is a non-point source – atmospheric deposition. Dec. 17 Tr. at 105.

Compounding the problem, ExxonMobil is not aware of a commercially available treatment process to treat mercury to levels below 12 ng/L. *See* Tischler PF Test. at 24. At hearing, Illinois EPA acknowledged that of the two industrial dischargers that the Agency has permitted with potential to exceed 12 ng/L in general use waters, one of the two facilities is complaining about having an unreasonable economic impact. Jul. 29 Tr. at 105-106.

Mr. Tischler testified to the need for relief given the circumstances surrounding mercury impairment designations, the proposed mercury WQS, and potential mixing zone implications. Tischler PF Test. at 22. Mr. Tischler noted that the situation with mercury is analogous to relief needed from nutrient standards, as indicated by USEPA in the Preamble to the Proposed Clarifications Rule. Dec. 17 Tr. at 25. Since non-point sources can't be directly regulated by the NPDES program, it may take years to implement non-point source controls for nutrients when you have a body of water that is impaired due to nutrients. *Id.* at 25-26.

Thus, some type of regulatory relief is needed. Other states have responded to this situation by adopting either statewide or water body variances for mercury (and in one case a statewide TMDL) to avoid assigning mercury WQBELs to NPDES permittees that are technically infeasible and economically unreasonable. Tischler PF Test. at 24. Exhibit E; Dec. 17 Tr. at 30-31. USEPA has approved these state approaches that require point sources to adopt BMPs for mercury control but do not impose infeasible numeric limits in NPDES permits. Tischler PF Test. at 24. These approaches have been based on the lack of viable end-of-pipe treatment and the fact that mercury is ubiquitous in surface water.²³

Mr. Tischler explained that there is an individual showing requirement for Illinois variances. Dec. 17 Tr. at 30. But, for example, in Ohio, if you can't comply with the mercury standard, you are given an interim goal limit that you must meet and certain requirements in terms of mercury minimization plans. If you meet those requirements, you are subject to the variance without going through an individual demonstration that shows that it is a potential specific hardship on you to try to comply with the standard. Dec. 17 Tr. at 30-31. Mercury minimization plans can identify sources of mercury such as mechanical equipment seals and instruments and plans that are in place to reduce the use of mercury containing devices, handling of fluorescent light bulbs and identifying all the potential sources of mercury and having a plan to figure out how to make sure that they don't contribute mercury to the discharge. Dec. 17 Tr. at 102.

Based on the same justification used in other states (i.e. lack of viable end-of-pipe treatment and ubiquitous nature of mercury in surface water), ExxonMobil proposes a

²³ 27 Ind. Reg. 2884 (Jun. 1, 2004); DOW 1.3.10 Mercury SPDES Permitting, Multiple Discharge Variance, and Water Quality Monitoring, New York State Department of Environmental Conservation (Oct. 2010).

streamlined regulatory relief mechanism for addressing mercury. Working within restrictions imposed by the Illinois Environmental Protection Act regarding variances and adjusted standards, ExxonMobil identified the adjusted standard mechanism as a feasible approach for addressing mercury discharges. ExxonMobil's adjusted standard approach provides a regulation-specific level of justification pursuant to 415 ILCS 5/28.1(b). The proposal is attached as Exhibit 1 to these comments.

VI. Temperature Criteria and Implementation

As Mr. Tischler explained, ExxonMobil's discharge has a relatively small impact on the temperature of the UDIP. *See e.g.* Dec. 17 Tr. at 42. As long as the waters receiving ExxonMobil's discharge meet the proposed thermal WQS and provide for a modest mixing zone, ExxonMobil expects to be able to comply with the proposed thermal standards applicable to UDIP ALU waters. However, upstream dischargers jeopardize ExxonMobil's ability to rely on a mixing zone. Current regulatory relief (the current adjusted standard AS 96-10) cannot be extended to waters that are the subject of this rulemaking. As revealed at hearing, Illinois EPA does not have a reliable mechanism for accommodating dischargers such as ExxonMobil that are downstream of large thermal dischargers. That is, there is no clear mechanism for timely bringing large upstream dischargers into compliance before WQS apply to downstream dischargers. In addition, standards proposed by Illinois EPA are not necessary to protect species in UDIP ALU Waters. As such, ExxonMobil respectfully requests that the Board adopt alternative thermal WQSs and a regulatory mechanism for permitting large thermal dischargers before requiring compliance from downstream dischargers.

A. Description of Upstream Impact and ExxonMobil Discharge

In his pre-filed testimony, Mr. Tischler described the Midwest Generation thermal discharges upstream of ExxonMobil that impact water temperatures in the UDIP.

Tischler PF Test. at 26-28. In particular, he described discharges from the Will County station into the CSSC and discharges from the two Joliet generating stations, Joliet 9 and Joliet 29, into the UDIP. Tischler PF Test. at 26. Thermal discharges from Joliet 9 and Joliet 29 flow into the UDIP approximately one-half mile downstream of the Brandon Road Lock and Dam and approximately seven miles upstream of the I-55 Bridge.

Tischler PF Test. at 26. The cooling water flows through these two systems average 315.5 million gallons per day ("MGD") and 1,073 MGD for Joliet 9 and Joliet 29, respectively. Tischler PF Test. at 26. Thus, the average cooling water flow entering the UDIP is 1,388 MGD. The seven day, 1 in 10 year low flow ("7Q10") for the river in the UDIP is 971 MGD (1,503 cubic feet per second ("cfs")), so the combined average once through cooling water flows for Joliet 9 and Joliet 29 are approximately 43 percent greater than the upstream river flow. Tischler PF Test. at 26. Under low flow conditions, the two power stations are actually recirculating a portion of their effluent to the UDIP back into their intakes, thus increasing the temperature of water that has already been heated by their systems. Tischler PF Test. at 26.

Mr. Tischler noted that during every month of the year, the river temperature in the lower seven miles of the UDIP and the entire five mile stretch of the Lower Dresden Island Pool ("LDIP") are a function of the thermal discharges from the two power stations. Tischler PF Test. at 27. Even with the existing temperature standards for the UDIP (35 Ill. Admin. Code 302.408) and LDIP (AS 96-10), which are essentially tailored

to the existing thermal discharges from the two power stations, Midwest Generation has needed additional relief in the form of provisional variances from the standards due to low flows in the river and extreme hot weather in 2011 and 2012, coupled with high customer demand for electricity.²⁴

Mr. Tischler also described ExxonMobil's thermal discharge. Tischler PF Test. at 28-30. The discharge channel enters the UDIP approximately 1,600 feet upstream of the I-55 Bridge, which is where the LDIP segment begins. Tischler PF Test. at 28. The once-through cooling water used in the Refinery is pumped from the UDIP at a location approximately 1,200 feet upstream of the discharge point. Tischler PF Test. at 29. Thus, the Refinery intake water temperature is governed by the thermal discharges of the two upstream power stations. The Refinery once-through cooling system and process effluent increase the thermal loading of the intake water by a maximum of 104 million British Thermal Units per hour ("MBTU/hr"). Tischler PF Test. at 29. By comparison, the two Midwest Generation power stations add about 7,000 MBTU/hr of heat load to the river when the supplemental cooling towers at Joliet 29 are not being used.²⁵

Preliminary modeling results, which are required by ExxonMobil's current NPDES Permit, indicate a maximum temperature rise above the intake water temperature for ExxonMobil at the I-55 Bridge of 0.4° F in the winter and 0.2° F in the summer. Tischler PF Test. at 30. Thus, in the absence of elevated intake temperatures, the Refinery is able to use the Illinois mixing provisions of 35 Ill. Admin. Code § 302.102 to

²⁴ Tischler PF Test. at 27 (citing Provisional Variance – Water, IEPA 12- 02 (July 27, 2011); Provisional Variance – Water, IEPA 13-3 (July 3, 2012); Provisional Variance – Water, IEPA 13-6 (July 12, 2012); Provisional Variance – Water, IEPA 13-10 (July 20, 2012); Provisional Variance – Water, IEPA 13-14 (Aug. 3, 2012)).

²⁵ Tischler PF Test. at 29 (citing Provisional Variance – Water, IEPA 13-3 (July 3, 2012)).

demonstrate compliance with existing UDIP and LDIP WQS. Tischler PF Test. at 30.

On the other hand, the Provisional Variance granted to Midwest Generation indicates that the Joliet 29 station raises the water temperature 12.4 °F and the Joliet 9 station raises the water temperature 10.7 °F.²⁶ A visual depiction of thermal dischargers into the UDIP is attached as Exhibit 2.

B. Proposed Temperature Standards

The Board indicated in both its Subdocket C First Notice and Subdocket C Second Notice that the UDIP ALU temperature standards would likely have to be adjusted to acknowledge the existing conditions.²⁷ In its Subdocket C Final Order, the Board found that the UDIP “cannot fully meet the CWA goal.” Subdocket C Final Order at 10.

In 2007 Illinois EPA proposed revised temperature standards for the UDIP at 35 Ill. Adm. Code § 302.408 which would establish a maximum temperature of 88.7° F and variable average temperatures for 17 separate periods during the year. This proposed standard was withdrawn by Illinois EPA in a motion to the Board on May 24, 2013 in response to the Board’s Subdocket C First Notice proposal to classify the aquatic life use for the UDIP as General Use waters.²⁸ Following the Board’s Subdocket C Second Notice, which proposed designating the UDIP as UDIP ALU, Illinois EPA proposed reinstating the thermal standards from its 2007 proposal, and incorporating revisions

²⁶ Provisional Variance – Water, IEPA 12- 02 (July 27, 2011).

²⁷ Subdocket C First Notice at 43; Subdocket C Second Notice at 221.

²⁸ Illinois Environmental Protection Agency’s Motion to Amend the Regulatory Proposal Filed in 2007, R08-9(D) (Ill.Pol.Control.Bd. May 24, 2013) (hereafter “Subdocket D Motion to Amend”).

(more stringent for most period averages) from its May 24, 2013 Subdocket D Motion to Amend and Subdocket C Comments.²⁹

As illustrated in Exhibit 2, Illinois EPA's proposed thermal standards for the UDIP would be substantially more restrictive than the General Use standards that apply downstream of I-55. Further, as illustrated in Exhibit 2, despite the two large power stations, the current proposal for the UDIP is substantially more stringent (Daily Maximum and summertime Period Averages) than the proposal for the upstream Use B Waters.

C. Options for Addressing Thermal Loadings in the UDIP

The Board has been presented with different options for adopting and implementing thermal WQSs. As described by ExxonMobil and acknowledged by Illinois EPA, under some of these approaches, smaller downstream dischargers are put in an untenable situation without a reasonable regulatory relief mechanism. Mr. Twait acknowledges that thermal sources downstream of major upstream thermal sources should not be expected to comply immediately with revised temperature standards for the UDIP. Sep. 23 Tr. at 41. As described below, Illinois EPA has considered a "cascading" implementation of the temperature standards, wherein the major upstream thermal sources would be addressed to assure compliance with the WQSs so that downstream thermal sources would not have to comply with temperature standards when the water upstream from them does not comply with those standards. But since no regulatory mechanism is firmly in place to implement such an approach, ExxonMobil recommends imposing a thermal demonstration requirement on major dischargers and delaying

²⁹ Comments of the Illinois Environmental Protection Agency on the Illinois Pollution Control Board's Subdocket C Second Notice Opinion and Order, R08-9(C) at 15-17 (Ill.Pol.Control.Bd. Nov. 4, 2013) (hereafter cited as "Illinois EPA Subdocket C Second Notice Comments").

compliance for other impacted dischargers until such a demonstration is made and its results are implemented.

The Board could take one of the following three approaches:

1. The Board could adopt the existing UDIP temperature standard (currently 35 Ill. Admin. Code § 302.408), which is less restrictive than the General Use standard.
2. The Board could adopt the General Use temperature standard, which would be compatible with the current LDIP standard. This action would require some form of relief such as the cascading implementation of the standard and inclusion of regulatory relief to prevent undue hardship to existing thermal sources that are downstream of thermal sources that dominate the river temperature regime.
3. The Board could adopt another set of UDIP ALU-specific temperature standards. This could include the standards proposed by Illinois EPA in Subdocket C Second Notice Comments or a scientifically supported alternative. This action would also require some form of relief such as the cascading implementation and inclusion of regulatory relief to prevent undue hardship to existing thermal sources that are downstream of thermal sources that dominate the river temperature regime.

Mr. Tischler described how the Board could justify adopting the existing temperature standards on the basis of protecting the existing indigenous aquatic life biota. Tischler PF Test. at 32. This option recognizes that the Board will have a continuing opportunity to revise the temperature standards in the future. Tischler PF Test. at 32; Dec. 17 Tr. at 31.

In the alternative, if the Board adopts the General Use temperature standards for the UDIP ALU, then the evidence in the record clearly shows that the standards will not be met on the date of adoption. But this option would also allow Illinois EPA to require the power stations on the UDIP to perform the demonstration required by the General Use standards at 35 Ill. Adm. Code § 302.211(f) which requires that:

The owner or operator of a source of heated effluent which discharges 150 megawatts (0.5 billion British thermal units per hour) or more shall demonstrate in a hearing before this Pollution Control Board (Board) not less than 5 nor more than 6 years after the effective date of these regulations or, in the case of new sources, after the commencement of operation, that discharges from that source have not caused and cannot be reasonably expected to cause significant ecological damage to the receiving waters. If such proof is not made to the satisfaction of the Board appropriate corrective measures shall be ordered to be taken within a reasonable time as determined by the Board.

This demonstration would need to be performed since it would apply for the first time to the UDIP. Based on this demonstration, Illinois EPA and the Board can determine if revised temperature standards for the UDIP ALU are necessary which would require "corrective measures" by the power stations or, in the alternative if the existing UDIP temperature standards are sufficiently protective. Tischler PF Test. at 33. If revised temperature standards are appropriate, they can be adopted in a future triennial review.

However, in the interim, this will place all thermal dischargers on the UDIP in jeopardy of receiving temperature limitations in NPDES permits in the next permit cycle that cannot be met immediately and would constitute an undue burden. In the case of thermal dischargers downstream of the Joliet power stations, such as the Refinery, if temperature limits incorporating General Use temperature standards (or stricter) were placed in their renewed permits, assuming that they could not be granted mixing zones because the river would be impaired for temperature, they would be faced with installing sufficient cooling to achieve the WQS end-of-pipe at great expense. Tischler PF Test. at 33. Illinois EPA acknowledges that a small downstream discharger may lose a mixing zone if upstream waters are not meeting WQSs due to a larger upstream discharger. Sep. 23 Tr. at 40-46.

Illinois EPA's witness, Mr. Twait, has acknowledged in testimony that it would be unfair or unwise to implement revised thermal standards in permits for downstream facilities with a thermal discharge before addressing larger upstream dischargers. Sep. 23 Tr. at 41. To address this concern, the Agency has considered a type of cascading implementation of the temperature standards that would address the major upstream thermal sources first. Sep. 23 Tr. at 40-41. However, Mr. Twait acknowledges that this approach raises some concerns. For example, different dischargers have different renewal application deadlines. Sep. 23 Tr. at 41. And it is not clear how an NPDES permit modification of a downstream discharger would further disrupt this process. Sep. 23 Tr. at 40-42, 48. Small dischargers downstream lose mixing zones if the upstream waters are not meeting the WQSs.

In addition, current regulatory relief extended to Midwest Generation will not relieve its generating stations from newly adopted standards in the UDIP. Once the Agency modifies the Midwest Generation NPDES permit, the WQS would have to be met at the edge of the mixing zone unless they were granted further relief. Jul. 29 Tr. at 36-37. There are three Midwest Generation operating stations to which 96-10 applies – Will County, Joliet 9, and Joliet 29. Jul. 29 Tr. at 38. The Will County station would have to meet the Use B temperatures outside of its mixing zone. Jul. 29 Tr. at 39. Presumably, the Joliet 9 and Joliet 29 stations would similarly have to meet UDIP thermal standards at the edge of their respective mixing zones when such standards are adopted.

Therefore, ExxonMobil is concerned that the existing regulatory authority to cascade implementation of temperature standards is unclear and imperfect. Although

compliance schedules are available for such WQBELs, these would be inadequate if the major upstream sources could not comply within the typical 3 to 5 year schedule allowed, which is probable in the case of the two Joliet power stations.

Because of this, if the Board elects to adopt UDIP ALU temperature standards that are either equal to the General Use standards, or otherwise more restrictive than the existing standards, such as those suggested by Illinois EPA in Subdocket C Second Notice Comments, then it should also build in regulatory relief for downstream dischargers. This could take the form of a demonstration such as that required by Section 302.211(f) *and* a clarification that until such a demonstration is made and implemented, other thermal dischargers that are impacted by such a discharger need only comply with previously-permitted limits. The following provides an example of such a provision:

The owner or operator of a source of heated effluent which discharges 150 megawatts (0.5 billion British thermal units per hour) or more shall demonstrate in a hearing before this Pollution Control Board (Board) not less than 5 nor more than 6 years after the effective date of these regulations or, in the case of new sources, after the commencement of operation, that discharges from that source have not caused and cannot be reasonably expected to cause significant ecological damage to the receiving waters. If such proof is not made to the satisfaction of the Board appropriate corrective measures shall be ordered to be taken within a reasonable time as determined by the Board. Until this demonstration is complete and necessary corrective measures are in place, dischargers impacted by thermal discharges from such existing sources must comply with water quality standards in place prior to the adoption of these regulations.

Single discharger variances are another alternative, but they would be cumbersome for all variance stakeholders (and Illinois EPA and the Board). These would require an individual hardship showing. Dec. 17 Tr. at 33. Given the interrelationship between thermal dischargers and multiple dischargers that

can potentially be impacted, a waterbody-wide regulatory mechanism in the WQS itself is most appropriate.

D. Basis for Temperature Criteria

The proposed summer UDIP temperature standards in the 2007 Illinois EPA proposal relied on a report by Yoder and Rankin that used a temperature “model” based on thermal effects data for freshwater fish to calculate average and maximum standards.³⁰ The Thermal Report provided temperature standard recommendations for three classes of resident aquatic species (“RAS”) reflecting fish that may inhabit a “modified use” water, which they assume is representative of the LDPR segments. These classes are: (1) modified use RAS 1; (2) modified use RAS 2; and (3) secondary contact/indigenous aquatic life. For each class of RAS, the Thermal Report provides temperature criteria for four proportions of the species: 100, 90, 75 and 50 percent. Table 3 in the Thermal Report was used to develop revisions to Illinois EPA’s proposed UDIP summer temperature standards.

The temperature standards recommendations used by Illinois EPA as the basis for the proposed summer criteria are described by Yoder and Rankin as the “survival (long term)” and “survival short term” maximum temperatures. SOR at 84-86. Illinois EPA proposed to use the “period average” and “daily maximum” temperatures for modified use RAS 2 at the 100 percent proportion of species from Table 3 in the Thermal Report as the summer UDIP temperature criteria.

³⁰ SOR at 80-87; SOR, Attachment GG (Temperature Criteria Options for the Lower Des Plaines River, Chris O. Yoder and Edward T. Rankin, Center for Applied Bioassessment and Biocriteria (Oct. 11, 2005)) as revised by SOR, Attachment HH (Letter from Chris O. Yoder to Toby Frevert) (Attachment GG and Attachment HH collectively cited as “Thermal Report”).

Illinois EPA's proposal uses a constant daily maximum temperature for the entire year and 17 period average temperature standards to represent seasonal variation. The period average temperatures for 13 "non-summer" periods were calculated using the least restrictive of the 75th percentile from data collected from MWRD effluent and the 90th percentile from data collected from the Route 83 station on the Cal-Sag Channel. The Cal-Sag Channel Route 83 station was selected because it was not directly influenced by thermal sources. Subdocket D Motion to Amend at 8.

Mr. Tischler described the following assumptions that Illinois made that underlie the proposed criteria in the SOR:

1. The modified RAS 2 species assemblage that consists of 27 species was used as the basis for the summer daily and period maximum temperatures. Note that the modified RAS 1 assemblage, which has one fewer fish species, gives the same temperatures.
2. The 100 percent proportion of RAS temperature standard was specified.
3. MWRD effluent and the Cal-Sag Channel Route 83 station is representative of the non-summer temperatures in the UDIP in the absence of the existing thermal loadings.

Tischler PF Test. at 36-37.

The first assumption, that the RAS 2 fish species assemblage is consistent with the modified ALU in the UDIP makes a substantial difference in the summer period average and daily maximum temperatures. Tischler PF Test. at 37. If Illinois EPA had chosen to use the secondary contact/indigenous species category in Yoder and Rankin's Table 3, which has 9 RAS in the data base, the daily maximum would be 1.6° F greater than the proposed value (90.3° F vs. 88.7° F) and the summer period average would be 1.6° F greater. Tischler PF Test. at 37. Given that neither Yoder and Rankin in their Thermal Report nor Illinois EPA in its SOR compared the RAS 2 species list with the

fish species actually present in the UDIP, the assumption that RAS 2 is more representative than the secondary contact/indigenous species class is unproven and may not be representative of the attainable UDIP ALU. Tischler PF Test. at 37.

An equally important assumption is whether to use the 100 percent proportion of the RAS as the basis for the selected summer temperature criteria or to use the 90 percent proportion. Tischler PF Test. at 37. This decision has about the same amount of result in terms of temperature increase as using the secondary contact/indigenous species class to select the summer temperature criteria. Tischler PF Test. at 37. The 90 percent RAS 2 daily maximum temperature criterion is 90.1° F compared to the 88.7° F at 100 percent. Tischler PF Test. at 37. There is a similar difference for the summer period average temperature. Tischler PF Test. at 37. Mr. Tischler noted that USEPA's guidance for developing water quality criteria for toxic chemicals uses a 95 percent protection level on the basis that:

Because aquatic ecosystems can tolerate some stress and occasional adverse effects, protection of all species at all times is not deemed necessary.³¹

However, the selection of a RAS consisting of 27 species was arbitrary as stated in the SOR: "...Des Plaines River between the Brandon Road Lock and Dam and the I-55 Bridge has incrementally more diverse aquatic life and higher quality habitat than the rest of the CAWS and Lower Des Plaines River."

Tischler PF Test. at 38 (citing SOR at 83). It could just as justifiably been based

³¹ Tischler PF Test. at 38 (citing Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and their Uses, Office of Research and Development, USEPA, PB85-227049 (Jan. 1985), available at http://water.epa.gov/scitech/swguidance/standards/criteria/current/upload/2009_01_13_criteria_85guidelines.pdf (last accessed Nov. 8, 2013)).

on the secondary contact/indigenous species class (9 species) or the 90 percent protection level of RAS 2 (24 species). Tischler PF Test. at 38.

With respect to the non-summer periods, the Board should require additional justification for use of temperature data from MWRD and the Cal-Sag Channel Route 83 station. Tischler PF Test. at 38. Specifically, the physical and hydrologic conditions of any upstream station that is unimpacted by local thermal sources should be comparable to corresponding conditions in the UDIP, which is an impounded pool. Tischler PF Test. at 38. Temperature regimes in impounded surface waters are strongly influenced by the physical and hydrologic characteristics of the impoundment and natural heating and cooling are substantially different from freely flowing rivers. Tischler PF Test. at 38. Establishing temperature criteria for an impounded surface water using data from a river site with higher stream velocities is not likely to result in representative temperature criteria for the impoundment. Tischler PF Test. at 38-39.

The selection of the 75th percentile/90th percentile as the basis for a maximum period average temperature is also too conservative as a limit. Tischler PF Test. at 39. USEPA's statistical basis for maximum monthly average permit limits is the 95th percentile.³² The 95th percentile assures that only one month out of every 20 months has a 50 percent probability of exceeding a limit strictly by chance. Tischler PF Test. at 39. In contrast, basing temperature maximum monthly (period) average limits on a 75th percentile of an ambient temperature distribution means that one month (period) out of every four has a 50 percent probability of exceeding the limit. Tischler PF Test. at 39.

³² Appendix E, Technical Support Document for Water Quality-based Toxics Control, USEPA, EPA/505/2-90-001 (Mar. 1991), available at http://water.epa.gov/scitech/datait/models/upload/2002_10_25_npdes_pubs_owm0264.pdf (last accessed Nov. 8, 2013).

Finally, as to the cold shock provision proposed by Illinois EPA, Mr. Twait explained that Illinois EPA does not have any knowledge of cold shock occurring. Jul. 29 Tr. at 176. Mr. Twait explained that USEPA requested a cold shock provision, and Agency did not think such a provision was necessary since there is no evidence of cold shock occurring. Jul. 29 Tr. at 190. Further, Mr. Twait is unaware how such provisions would be incorporated into a permit. Jul. 29 Tr. at 191. Therefore, a cold shock provision is not needed for the UDIP. However, if the Board chooses to adopt a cold shock provision, ExxonMobil requests that it limit applicability to facilities with large thermal impacts on the basis of a BTU threshold.

Therefore, ExxonMobil recommends that when the Board adopts temperature criteria for the UDIP ALU in Subdocket D that it considers each of the following factors:

1. The temperature standards should be based on protecting aquatic life that is representative of the existing uses of the UDIP. Selection of a list of fish species on an arbitrary assumption is not a scientific basis for setting a standard.
2. The temperature standards do not have to protect 100 percent of the species 100 percent of the time, as USEPA has recognized in guidelines for development of numeric water quality criteria.
3. It is not appropriate to base a maximum period temperature average (approximately equivalent to a maximum monthly average) on the 75th percentile (or 90th percentile) of ambient temperature data. This assumption results in period temperature averages that will be exceeded once in every four periods (or 10 periods for the 90th percentile) due to natural variation. The 95th percentile, which USEPA recommends for water quality criteria implementation, is more appropriate.
4. The Cold Shock provisions, as proposed by Illinois EPA in the Subdocket D Motion to Amend discussed at length at the July 29, 2013 public hearing should be removed from the proposed rule. The Illinois EPA was unable to substantiate that the Cold Shock phenomenon has ever occurred in Illinois. If not completely removed, the rule should include a Cold Shock threshold below which the provisions do not apply. ExxonMobil suggests a threshold of 0.5 billion British thermal units per hour (150 megawatts), which is the existing threshold in the

General Use WQS for conducting thermal demonstrations (*see* 35 Ill. Admin. Code § 302.211(f)).

VII. UDIP DISCHARGERS NEED CLEAR ACCESS TO REGULATORY RELIEF AND REGULATORY FLEXIBILITY

As described above, the UDIP is subject to significant non-point source impacts, atmospheric impacts, and upstream point source impacts. Some of these impacts, such as salt runoff from road deicing and atmospheric deposition of mercury, are not governed by NPDES permits and must be addressed by programs outside the typical NPDES permitting scheme. Therefore, some sources of contaminants may not be addressed in the next five to ten years, if they are addressed at all. Upstream dischargers introduced testimony that described the efforts necessary to attempt to comply with proposed thermal standards. *See* Pre-Filed Testimony of Ray E. Henry, R08-9(C) (Ill.Pol.Control.Bd. Feb. 1, 2011). The massive scope of such projects indicates that thermal compliance may not be achieved in the near future. At the same time, Illinois EPA has gathered limited ambient data in the UDIP, notably in the cases of mercury and thermal data. In the case of mercury, this has forced Illinois EPA to rely on outdated fish tissue data as a proxy for water column data.

In light of these circumstances, dischargers to the UDIP need clear access to regulatory relief and regulatory flexibility mechanisms. For example, when water column data do not indicate a water quality standard is violated, a mixing zone for dischargers should be available. Other measurements (i.e. fish tissue) should not prevent the availability of a mixing zone. Likewise, when a given point source discharger is not the primary cause of a water quality violation and contributes a relatively modest amount

of contaminant to a waterway, that discharger should be provided a path to a mixing zone, regardless of the compliance status of upstream dischargers.

Regulatory mechanisms must also allow for extended periods for attaining compliance. When non-point or atmospheric sources are the primary sources of water quality standard violations, impacts from point source dischargers should be addressed when non-point source impacts are addressed. To address point source dischargers sooner would result in an unnecessary use of resources that would provide little improvement and may not fit into a comprehensive plan for a waterway. In the meantime, relief in the form of a compliance schedule or a variance would be necessary to delay applicability of WQS. In certain cases, such relief may extend beyond five years. Similarly, extended relief periods may be necessary when upstream dischargers are unable to attain compliance in a timely manner. Extended relief periods such as these are consistent with USEPA's views in the Proposed Clarifications Rule. ExxonMobil urges the Board to strongly consider amending and clarifying regulatory relief and regulatory flexibility provisions to accommodate dischargers.

VIII. CONCLUSION

The record demonstrates that conditions in the UDIP warrant specific consideration by the Board when adopting WQS and regulatory relief mechanisms in Subdocket D. At hearing, ExxonMobil described upstream and atmospheric impacts that jeopardize ExxonMobil's ability to comply with WQS. In certain cases, these impacts are from non-point sources. Since there is no immediate remedy for these upstream impacts, ExxonMobil urges the Board to adopt WQS and regulatory relief mechanisms that recognize these impacts. In addition, ExxonMobil presented concerns related to

technical feasibility and Illinois EPA implementation practices that also require consideration before adopting new WQS and may require special regulatory relief. ExxonMobil urges the Board to utilize the flexibility provided in its Subdocket C ALU determination for the UDIP and adopt appropriate WQS and the necessary regulatory relief mechanisms.

ExxonMobil appreciates the opportunity to provide these comments, and it respectfully requests that the Board consider these comments in adopting revised WQS and incorporate ExxonMobil's suggested revisions.

Respectfully submitted,

EXXONMOBIL OIL CORPORATION,

Dated: April 30, 2014

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Exhibit 1

Section 302.413 Adjusted Standards for Mercury Dischargers

- a) Purpose. The purpose of this section is to specify the level of justification required of a petitioner, describe petition requirements, and describe discharge limits for an adjusted standard from the mercury standard at 35 Ill. Admin. Code § 302.407, pursuant to 415 ILCS 5/28.1 for dischargers to Upper Dresden Island Pool Aquatic Life Use Waters.
- b) Applicability.
 - 1) An adjusted standard shall be available for a period of five years, for a discharging facility that cannot meet the mercury water quality standard at 35 Ill. Admin. Code § 302.407. Adjusted Standards under this provision may be renewed.
 - 2) Applications for an adjusted standard under this provision must also meet the requirements of 35 Ill. Admin. Code § 104.406.
 - 3) An adjusted standard under this provision is only available to dischargers to Upper Dresden Island Pool Aquatic Life Use Waters.
- c) Definitions.
 - 1) The following definitions apply throughout this section:
 - A) "Facility" means any NPDES point source or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program. For a municipality, "facility" means a POTW.
 - B) "Pollutant minimization program" or "PMP" means a program developed by an adjusted standard applicant under this provision to identify and minimize the discharge of mercury into the environment.
 - C) "Pollutant minimization program plan" or "PMPP" means the plan for development and implementation of the PMP.
- d) Initial Adjusted Standard Application. The initial adjusted standard application must include all information, including the PMPP, required under (i) of this section, PMPP requirements. Applications to renew an adjusted standard shall comply with (g) of this section.

- e) Issuance of Adjusted Standard. If the adjusted standard application meets the requirements of this section, the Board shall grant the adjusted standard.
- f) Contents of Adjusted Standard. The adjusted standard shall include the requirements of the PMPP and any applicable interim discharge limitation.
- g) Renewal of Adjusted Standard.
 - 1) An applicant may apply for a renewal of the adjusted standard: one hundred eighty (180) days prior to the expiration of the existing adjusted standard.
 - 2) The Board may renew an initial adjusted standard if the applicant demonstrates that implementation of the PMPP has achieved progress toward the goal of reducing mercury from its discharge except as provided in subsection (4).
 - 3) A renewal application shall contain the following:
 - A) All information required for an initial adjusted standard application under (d) of this section, including revisions to the PMPP, if applicable.
 - B) A report on implementation of each provision of the PMPP.
 - C) An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the adjusted standard for the two (2) year period prior to the adjusted standard renewal application.
 - D) A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the Board according to h(2) of this section, based on the most recent two (2) years of representative sampling information from the facility.
 - 4) A PMPP must be revised if implementation of the original PMPP does not lead to demonstrable progress in minimizing the discharge of mercury. If the applicant can provide information, as part of a revision to a PMPP that demonstrates there is no known reasonable additional action that will reduce mercury, the PMPP may remain as previously approved.
 - 5) A renewal adjusted standard shall be issued in a timely manner and in accordance with the requirements for the issuance of an initial

adjusted standard under this section. If an applicant submits an application for a renewal adjusted standard at least one hundred eighty (180) days prior to the expiration of its NPDES permit, the existing adjusted standard shall remain in effect until the Board's decision on the renewal application.

h) Adjusted Standard Interim Discharge Limit.

- 1) The interim limit for mercury discharge for the duration of an adjusted standard shall be based on representative effluent data that have been analyzed using USEPA Method 1631 or any analytical method approved by the Agency and at 40 C.F.R. Part 136. The interim limit shall be expressed as the highest daily value for mercury from a data set that includes a minimum of six (6) daily values that are generally evenly spaced over the most recent twelve (12) to twenty-four (24) month period and representative of the four (4) seasons. The highest daily value will become the value for the interim limit. Compliance with the interim limit is achieved if the average of the measured effluent daily values over the rolling twelve (12) month period is less than the interim limit. An adjusted standard is not available to an applicant that requests an interim limit greater than thirty (30) ng/l (parts per trillion).
- 2) The interim discharge limit shall be evaluated upon receipt of a renewal adjusted standard application based upon available, valid, and representative data of the effluent levels for mercury collected and analyzed over the most recent two (2) year period. Data collection and analyses must be done according to USEPA Method 1631 or the alternate analytical method approved by the Agency.

i) Adjusted Standard Requirements.

- 1) A PMPP for a facility must be submitted with an application for an adjusted standard. The PMPP must contain the following:
 - A) Results of an inventory of potential uses and sources of mercury in all buildings and departments.
 - B) Preliminary identification of known mercury-bearing equipment, wastestreams, and mercury storage sites.
 - C) A list of planned activities to be conducted to eliminate or minimize the release of mercury to the water. The list of planned activities may consider technical and economic feasibility and must include, at a minimum, the following:

- i) A review of purchasing policies and procedures.
 - ii) Necessary training and awareness for facility staff.
 - iii) Evaluation of alternatives to the use of any mercury-containing equipment or materials.
 - iv) Other specific activities designed to reduce or eliminate mercury loadings.
 - D) For each activity specified in (C), the plan must contain the following:
 - i) The goal to be accomplished.
 - ii) A measure of performance.
 - iii) A schedule for action.
 - E) All available mercury monitoring data and any information on mercury in biosolids, if required by an NPDES permit or land application permit, for the two (2) year period preceding the adjusted standard application.
 - F) Identification of the resources and staff necessary to implement the PMPP.
 - G) Annual reports according to a schedule in the PMPP. Each annual report must describe the following:
 - i) The facility's progress toward fulfilling each of the requirements of the PMPP.
 - ii) The results of mercury monitoring.
 - iii) The steps taken to implement each planned activity developed under this subsection and subsection (2) to reduce or eliminate mercury from the facility's water.
- 2) In addition to subsection (1), a PMPP for a POTW must include the following:
- A) Results of a preliminary evaluation of possible mercury sources in the facility's influent and a plan and schedule for

providing the Board results of a complete evaluation. The evaluation shall include, at a minimum, the following:

- i) Medical facilities, for example, the following:
 - (a) Hospitals.
 - (b) Clinics.
 - (c) Nursing homes.
 - (d) Veterinary facilities.
 - ii) Dental clinics.
 - iii) Public and private educational laboratories.
 - iv) General industry and all SIUs.
 - v) Significant sources of residential and retail contributions of mercury, for example, the following:
 - (a) Heating, ventilation, and air conditioning contractors.
 - (b) Automobile and appliance repair.
 - (c) Veterinarians.
 - (d) Others specific to the community served.
- B) A list of planned activities designed to reduce or eliminate mercury loadings from the sources identified in subdivision (A).
- C) For each activity specified in subdivision (B), the plan must contain the following:
- i) The goal to be accomplished.
 - ii) A measure of performance.
 - iii) A schedule for action.

D) In addition to activities required under subsection (1)(C), activities must also include an education program for the facility employees and the public within the service area of the facility.

j) Transitional Mercury Effluent Limitation.

- 1) At the time a discharging facility applies for an adjusted standard under this section, and prior to a final determination of a request for an adjusted standard, the transitional effluent limitation shall be 30 ng/L.
- 2) If an adjusted standard under this section is denied, a discharger may request an individual variance.

Exhibit 2 - Proposed LDPR Temperature Standards and UDIP Power Station Thermal Loads

