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July 3, 2013

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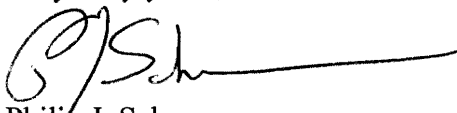
RE: Final Federal RCRA Permit, ESSROC Cement Corporation  
Logansport, Indiana, IND 005 081 542

To Whom It May Concern:

Enclosed please find ESSROC's petition for review of the above-captioned RCRA permit. In accordance with your letter dated June 5, 2013, we are enclosing one original petition signed with blue ink and five copies, marked as copies. We have also sent a copy of the petition to EPA Region V.

Please call if you should have any questions.

Very truly yours,



Philip J. Schworer

PJS:mdl  
Enclosures

cc: U.S. Environmental Protection Agency, Region 5

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**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C.**

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ENVIR. APPEALS BOARD

\_\_\_\_\_  
In re: ESSROC Cement Corporation )  
RCRA Permit No. 005 081 542 )  
\_\_\_\_\_) RCRA Appeal No. \_\_\_\_\_

**PETITION FOR REVIEW**

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## INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), ESSROC Cement Corporation (“ESSROC”/“the Petitioner”) hereby petitions for review of the final Resource Conservation and Recovery Act (“RCRA”) Permit (“Permit”) issued by the U.S. Environmental Protection Agency (“EPA”) to ESSROC on June 5, 2013. A copy of the Permit is attached hereto as Exhibit 1. The Permit authorizes the continued operation of cement kilns at ESSROC’s Logansport, Indiana facility. ESSROC petitions for a review of the annual mercury feed rate limitation listed in the Permit and for a review of the risk assessment that led to that limitation.

Through this permitting action, EPA is wielding novel authority in novel ways. In 2005, EPA limited its authority to require expensive risk assessments in RCRA permitting to situations involving a change in operations or circumstances at the facility—not because of change in guidance or a difference in opinion regarding an earlier risk assessment. 40 C.F.R. § 270.10(I)(1). Yet that is why EPA ordered a revised site specific risk assessment here. In addition, while EPA has the authority to impose permitting terms and conditions in RCRA permits based on risk assessments, it must do so with valid consideration of all relevant information to the administrative record. 40 C.F.R. § 124.18. Here, that did not occur, and EPA avoided consideration of several important pieces of relevant information without any corresponding explanation. And finally, EPA must exercise its authority to impose additional permitting terms and conditions in a way that is not overly restrictive and based on sound methodology. 40 C.F.R. § 270.32(b)(3). Here, EPA imposed an annual mercury feed rate limit in ESSROC’s Permit that resulted from methodology that ignored site-specific factors and current guidance, and did so without additional considerations and approaches. It therefore goes far beyond what is necessary to protect human health and the environment, and narrows

the allowable mercury feed rate to less than a tenth of what ESSROC's previous permit required.

Accordingly, ESSROC respectfully requests that the Board review the annual mercury feed rate limitation in its Permit and remand the Permit back to EPA.

### **THRESHOLD PROCEDURAL REQUIREMENTS**

ESSROC satisfies the threshold requirements for the filing of a petition for review under 40 C.F.R. Part 124. This petition is filed within 30 days of EPA's issuance of the Permit on June 5, 2013. 40 C.F.R. § 124.19(a). In addition, ESSROC participated in the public comment period for the draft permit, and disputed the risk assessment and methodology behind the mercury feed rate limitation at issue here. See *ESSROC's Comments on the Draft Permit*, Admin. R. 43-44 ("*Comments*"), Oct. 10, 2012 and April 11, 2013; 40 C.F.R. §§ 124.13, 124.19(a). EPA responded to these comments, but as explained in greater detail below, EPA's response was incomplete and erroneous. *Responsive Summary*, Admin. R. 45 ("*Response*"), June 2013, pp. 1-13; 40 C.F.R. § 124.19(a)(4)(ii). Thus, the Board has jurisdiction to hear ESSROC's request for review. *Id.* § 124.19.

### **STATUTORY FRAMEWORK AND FACTUAL BACKGROUND**

#### **I. Statutory Framework**

##### **a. RCRA and the Clean Air Act**

The Permit, and therefore this Petition, implicate both RCRA and the Clean Air Act. RCRA governs the "owners and operators of facilities for the treatment, storage, or disposal of hazardous waste," better known as "TSDs." 42 U.S.C. § 6294(a). In particular, Section 3005(a) of RCRA directs EPA to "promulgate regulations requiring each person owning or operating an existing [TSD] or planning to construct a new [TSD] to have a permit issued pursuant to this

section.” *Id.* § 6925(a). Each permit issued to a TSD must “contain such terms and conditions as [the permitting authority] determines necessary to protect human health and the environment.” *Id.* § 6925(c)(3).

Because TSDs can also emit air pollutants, EPA’s jurisdiction over TSDs under RCRA overlaps with its jurisdiction to regulate hazardous air pollutants from hazardous waste combustors (“HWCs”) under the Clean Air Act, 42 U.S.C. § 7412(d). See 40 C.F.R. Part 63, Subpart EEE (“HWC MACT”); see discussion at *Cement Kiln Recycling Coalition v. U.S. EPA*, 493 F.3d 207, 212 (D.C. Cir. 2007). Due to this overlap, Congress enacted 42 U.S.C. § 6905(b)(1), which requires EPA to integrate the Clean Air Act requirements into RCRA permits. *Id.*

In an effort to satisfy RCRA’s demand that TSD permits contain conditions necessary to protect human health and the environment, *id.* § 6925(c)(3), EPA began requiring that all HWCs undergo site-specific risk assessments (“SSRAs”) in 1993. *Cement Kiln Recycling Coalition*, 493 F.3d at 212-213. The mandatory SSRAs served to assess whether additional terms and conditions were appropriate to include in the HWC RCRA permits. *Id.* After years of rulemaking and ensuing litigation, in 2005, EPA issued revised MACT standards for HWCs, which EPA agreed were generally “protective of human health and the environment” for RCRA purposes. 70 Fed. Reg. 59,402, at 59,504 (Oct. 12, 2005). However, EPA also promulgated rules in 2005 that allowed the agency to require SSRAs on a case-by-case basis, and to impose additional permit terms and conditions based on the results of the SSRAs. 40 C.F.R. §§ 270.10(l), 270.32(b)(3).

These two rules govern the two main issues in this Petition: 1) whether EPA can order a revised SSRA; and 2) the scope of EPA’s discretion as to whether additional RCRA permit



terms and conditions are appropriate for facilities that undergo SSRAs. The authority at issue that allows EPA to require SSRAs on a case-by-case basis states the following:

(l) If the Director concludes, based on one or more of the factors listed in paragraph (l)(1) of this section that compliance with the standards of 40 CFR part 63, subpart EEE alone may not be protective of human health or the environment, the Director shall require the additional information or assessment(s) necessary to determine whether additional controls are necessary to ensure protection of human health and the environment. This includes information necessary to evaluate the potential risk to human health and/or the environment resulting from both direct and indirect exposure pathways. The Director may also require a permittee or applicant to provide information necessary to determine whether such an assessment(s) should be required.

(1) The Director shall base the evaluation of whether compliance with the standards of 40 CFR part 63, subpart EEE alone is protective of human health or the environment on factors relevant to the potential risk from a hazardous waste combustion unit, including, as appropriate, any of the following factors:

...

(viii) Adequacy of any previously conducted risk assessment, given any subsequent changes in conditions likely to affect risk; and

(ix) Such other factors as may be appropriate.

40 C.F.R. § 270.10(l). EPA's authority to order additional permitting terms on the basis of an SSRA comes from 40 C.F.R. § 270.32(b)(3), which states:

If, as the result of an assessment(s) or other information, the Administrator or Director determines that conditions are necessary in addition to those required under 40 CFR parts 63, subpart EEE, 264 or 266 to ensure protection of human health and the environment, he shall include those terms and conditions in a RCRA permit for a hazardous waste combustion unit.

**b. Guidance Governing Site-Specific Risk Assessments**

EPA published final guidance to accompany the 2005 rulemaking, which EPA relied upon in this permitting matter, the Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities, or HHRAP. Sept. 2005, EPA 530-R-05-006, Admin. R. 47.d; see *Cement Kiln Recycling Coalition*, 493 F.3d at 214 (citing 70 Fed. Reg. at 59,512-59,513). EPA relied upon engineering and modeling based on the HHRAP and then utilized the following

equation in this permitting in an effort to quantify additional permit terms and conditions that the Agency believed were necessary for the Permit:

$$(MAF/0.00220462) \times (1-SRE) \times (HIPEM) \times (1/8760) = 0.25$$

MAF = annual feed rate limit of mercury (pounds per year)

SRE = System removal efficiency for mercury

HIPEM = Hazard quotient (“HQ”) value per gram/hour mercury emission rate

8760 = Unit conversion factor from one year to hours

0.25 = Acceptable HQ risk value

0.00220462 = Unit conversion factor from grams to pounds

See *Annual Hg Feed Rate Limit Memo (“Hg Memo”)*, Admin. R. 39, June 28, 2012, pp. 2-3.

HIPEM depends on two factors: 1) the “hazard quotient” that is calculated by the risk model; and 2) the mercury emission rate used in the risk model (i.e., in this case the hazardous waste combustor MACT mercury emission rate). *Id.* The HQ is dependent on the cumulative daily intake for a constituent, divided by the reference dose, with a series of conversion factors and other set variables. HHRAP, Appendix C, Table C-1-8. The following inputs are not in dispute in this Petition: the hazardous waste combustor MACT mercury emission rate for ESSROC of 14.004 grams per hour, the system removal efficiency for mercury for ESSROC of 0.6984, and the EPA-established acceptable benchmark for an HQ risk value of 0.25. *Hg Memo*, at pp. 2-3. What *is* in dispute in this Petition is the derivation of the proper HQ used by EPA. The basic equation specific to ESSROC therefore is the following:

$$(MAF/0.00220462) \times (1-0.6984) \times (HQ/14.004) \times (1/8760) = 0.25$$

To calculate MAF, this equation is equivalent to the following:

$$MAF = ((0.25)(8760)/(0.3016)(HQ/14.004))0.00220462, \text{ or}$$

$$\text{MAF} = 224.1809 / \text{HQ}$$

EPA calculated an HQ of 2.55, which resulted in the MAF of 87.91 that exists in the Permit. *Id.* As explained in greater detail below, however, EPA erred in the methodology used to calculate 2.55 as the appropriate hazard quotient.

HHRAP explains that there are many equations with a multitude of variables that go into the calculation of the HQ for each constituent in the evaluation. See HHRAP, Page 7-6. When mercury is evaluated under HHRAP, three sensitive variables in the HQ calculations are the methylmercury bioaccumulation factor for fish, the fish consumption rate, and the mercury methylation rate within the water body being evaluated. *Response*, pp. 9-13. In brief, the bioaccumulation factor for fish is the ratio of the methyl mercury concentration in fish to the methyl mercury concentration in the water body being evaluated, taking into consideration uptake by fish from water and sediments as well as from fish consuming various foods and other fish. HHRAP Appendix A-2, p. A-2-31. The mercury methylation rate within the water body is a measure of the amount of divalent mercury within the water body that is converted to methyl mercury. HHRAP Chapter 2. The consumption rate is intended to represent a more reasonable or plausible scenario. 2005 HHRAP 6.2.4.3. Because 100 percent of a receptor's dietary fish may not originate from the surface water body near the combustion facility, the percentage of locally caught fish is also a variable for exposure. EPA erred by failing to properly account for this variable for exposure. Correcting the errors in the methodology conducted by EPA results in an HQ that eliminates the need for further adjustments under 40 C.F.R. § 270.32(b)(3).

## II. Factual Background

ESSROC manufactures Portland cement at its Logansport, Indiana facility. Permit Application, May 9, 2008, Admin. R. 1 (“Application”), p. 2-1. The facility was required to perform risk assessment studies based on the onset of EPA’s 1994 National Combustion Strategy and starting with its initial RCRA Part B permitting process. See Revised Mercury Sensitivity Analysis, February 17, 2010, Admin. R. 27; Application at pp. 2-2 – 2-3. The facility first conducted a risk assessment when it entered into the Part B permitting process in 1998. *Comprehensive Risk Assessment for the Cement Kiln Operations at the ESSROC Cement Corporation in Logansport, Indiana*, March 2003, Admin. R. 48.d, p. 10. Risk assessors were hired and a detailed protocol was written and submitted to EPA for review and approval, and the study was conducted based on the approved protocol. *Id.* ESSROC first started their risk assessment at Logansport in 1998 with the submittal of the risk assessment work plan. *Id.* The initial permit for and initial risk assessment for that site included mercury emission rates that were based on a trial burn testing in March 1999. *Id.* ESSROC’s original RCRA permit was issued final in 2003. *Hazardous Waste Management Facility Permit*, Signed September 30, 2003, Effective November 7, 2003.

On May 9, 2008, ESSROC submitted a renewal application for a RCRA permit to EPA Region 5. See *Application*. As part of the permitting process, EPA eventually required a second risk assessment to be performed for the Logansport facility, despite its earlier risk assessment conclusions. See *Risk Assessment Report*, June 19, 2012, Admin. R. 38. EPA erroneously calculated a MAF based on a feed rate limit of 87.91 lb/year of mercury. The calculated HWC MACT MAF was 1,793.4 lb/year, and if ESSROC’s proposed changes to EPA’s risk analysis are included, the risk based annual mercury feed rate limit would have been

2,131.98 lbs / year. *Id.*; *Response*, p. 9. Considering that the risk-based limit (2,131.98) was greater than the HWC MACT allowable (1,793.4), no omnibus limit was warranted. EPA erred by refusing to accept this risk assessment finding.

Instead of issuing the draft permit without an omnibus limit, EPA issued a draft that contained a mercury limit of 89.17 lb/year that is the subject of this Petition. *Permit*, Admin. R. 1. ESSROC submitted comments to the draft permit that challenged the mercury feed rate limit on three grounds, which collectively, had been discussed since 2008 with EPA as part of ESSROC's justification that no risk assessment repeat was warranted, and which are now the subject of this Petition. *Comments*, Admin. R. 43-44. ESSROC disputed the mercury feed rate limitation that EPA had calculated, disputing the hazard quotient that EPA had calculated to assess the limitation. *Id.* There should not have been a limit in the first place, had plausible site-specific scenarios been utilized by EPA. As an accommodation, ESSROC instead offered a facility limit of 896.7 pounds per year, which is half of the HWC MACT and the MAF from the revised acceptable risk assessment limit. *Id.* EPA refused to accept ESSROC's offer of accommodation and issued the permit as final, with the 89.17 MAF limit, on June 5, 2013. *Responsive Summary*, Admin. R. 45; *Permit*, Admin. R. 46.

### **III. Standard of Review**

Pursuant to 40 C.F.R. §124.19(a), the Board grants review of a petition if it appears from the petition that the permit condition that is at issue is based on (1) a clearly erroneous finding of fact or conclusion of law, or (2) involves an important policy consideration which the Board, in its discretion, should review. *In re: Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 332, 2002 WL 257698, \*9 (E.A.B. Feb. 20, 2002). The Board determines "whether the approach ultimately adopted by the Region is rational in light of all information in the record."

*Id.* at \*10. Under this standard, the Board’s review of EPA’s decision to issue the Permit is clearly warranted.

### ISSUES ON WHICH REVIEW IS SOUGHT

**I. EPA erred as a matter of law in requiring a second Site-Specific Risk Assessment to be performed for the ESSROC facility.**

EPA committed error when it required a second SSRA to be conducted for the Logansport facility during the permitting process, which resulted in a skewed methodology and substantially lower annual mercury feed rate limitation. As mentioned, EPA had moved from a mandatory SSRA model to an arrangement by which EPA could only require SSRAs on a case-by-case basis. See *Cement Kiln Recycling Coalition*, 493 F.3d at 213 (citing 40 C.F.R. § 270.10(l)(1)). EPA’s authority to order SSRAs on a case-by-case basis is therefore limited to the occurrence of one or more factors listed in 40 C.F.R. § 270.10(l)(1). One of those factors, which is applicable to a facility that has already performed risk assessment, is the “[a]dequacy of any previously conducted risk assessment, *given any subsequent changes in conditions likely to affect risk...*” *Id.* § 270.10(l)(1)(viii) (emphasis added). As indicated by the preamble to the rulemaking, “changes in condition” refer to operational changes at the facility or changes in the surrounding circumstances of a facility. See 70 Fed.Reg. at 59504-59505.

By contrast, here there were no operational changes or changes in surrounding circumstances at Logansport that would have warranted a revised risk assessment. Rather, EPA sought a second SSRA due to perceived weakness in the initial SSRA and the erroneous determination that more recent guidance warranted a redo of the previous EPA-approved risk assessment. Admin. R. 10, January 22, 2009 letter from Jae Lee Regarding Risk Assessment Update Request / Essroc Cement Company / IND 005 081 542. The circumstances relied upon

by EPA do not qualify as a “subsequent change[] in conditions likely to affect risk” and EPA lacked the authority to require a second SSRA.

There is an additional factor that may allow EPA to order SSRAs, and that is “such other factors as may be appropriate.” 40 C.F.R. § 270.10(l)(1)(ix). However, this factor does not apply to ESSROC. EPA confirmed in the preamble that repeat SSRAs are inappropriate, except under the specific circumstances listed in § 270.10(l)(1)(viii). 70 Fed.Reg. at 59504-59505. In the preamble, EPA states that “the Agency generally does not expect that facilities that have conducted risk assessments will have to repeat them.” 70 Fed.Reg. at 59504-59505. The entire discussion is lengthy in the preamble but bears reprinting here:

Before discussing factors that may lead permit authorities to consider whether or not to conduct an SSRA, it should be noted that the Agency generally does not expect that facilities that have conducted risk assessments will have to repeat them. As we explained in the 1999 final rule preamble, changes to comply with the MACT standards should not cause an increase in risk for the vast majority of facilities given that the changes will likely be the addition of pollution control equipment or a reduction in the hazardous waste being burned. . . Instances where a facility may need to repeat a risk assessment would be related to changes in conditions that would likely lead to increased risk. For example, if the only changes at a facility relate to the exposed population (a new housing development is constructed within a few square miles of the source), what was once determined to be protective under a previous risk assessment may now be beyond acceptable levels. Another example would be where a hazardous waste burning cement kiln that previously monitored hydrocarbons in the main stack elects to install a mid-kiln sampling port for carbon monoxide or hydrocarbon monitoring to avoid restrictions on hydrocarbon levels in the main stack. Thus, the stack hydrocarbon emissions may increase. . . In such situations, we would anticipate that the risk assessment would not have to be entirely redone. It may be as limited as collecting relevant new data for comparison purposes, leading to a decision not to repeat any portion of a risk assessment. Or, it may be more inclusive such that modifications would be made to specific inputs to or aspects of the risk assessment using data from a previous risk assessment, risk burn or comprehensive performance test. In recognition of this, we have added an additional factor to the list of factors at § 270.10(l)(1) to indicate that a previously conducted risk assessment would be relevant in evaluating changes in conditions that may lead to increased risk.

*Id.* Throughout this discussion in the preamble, EPA refers to the few situations where additional permit limits may be necessary, but mostly describes those few situations for non-cement units where the MACT standards are less stringent than the previous RCRA standards.

*Id.* ESSROC's situation clearly falls outside of what EPA envisioned when it added that previous SSRAs could be revisited.

The decision to require a second SSRA had significant implications on the operations at the Logansport facility. ESSROC was expecting to continue operating under the HWC MACT as assessed and accepted by EPA in 2003. However, EPA's decision to order a second SSRA resulted in permitting decisions that, at best, erroneously applied the most conservative assumptions possible for key parameters, and at worst, avoided the most recent and site-specific information available to the agency. Although EPA bore the cost for modeling, this work required ESSROC to also hire consultants to gather site specific information, perform testing, and prepare multiple documents describing our previous risk assessment to EPA and documenting the use of non-default factors, and trying to help point EPA to the previous effort of risk assessment. Admin. R. 1, 15, 27, and 43.

ESSROC challenged EPA's absolute reliance on the risk assessment results, without consideration of reasonable assumptions and site specific information as allowed in the guidance, in the public comments. *Comments*, Admin. R. 43-44. Nonetheless, EPA relied on the SSRA when circumstances never allowed it in the first place.

**II. EPA erred by failing to consider all relevant information in its decision to issue the permit with an overly restrictive MAF rate limit.**

Under the Administrative Procedure Act ("APA"), an agency determination must be invalidated where it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706; *Tourus Records, Inc. v. Drug Enforcement Admin.*, 259



F.3d 731, 736 (D.C. Cir. 2001). This requires the agency to, at a minimum, “examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” *Id.* (internal citations omitted).

The Board has held EPA to a similarly demanding requirement regarding completeness of the administrative record. See *In re: Environmental Disposal Systems, Inc.*, 12 E.A.D. 254, 2005 WL 2206804, \*18 (E.A.B. Sept. 6, 2005) (“Permitting authorities have an affirmative duty to inquire into and consider all relevant facts pertaining to the specific statutory and regulatory criteria established for each permit program, and they must ensure they have developed an adequate record upon which to make a reasoned permit decision”) (internal quotations and citations omitted). More specifically to this situation, the Board has remanded a mercury feed rate limitation when EPA failed to expend the time and effort needed to adequately explore and document its analyses of the permitting criteria. *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 1997 WL 732000, \*\*19-21 (E.A.B. Nov. 14, 1997).

Here, ESSROC corresponded with EPA for several years regarding the site specific risk assessment, including the appropriate fish consumption rate. For example ESSROC provided information regarding site specific fish consumption to EPA through an email dated September 9, 2011. A copy of the email is attached hereto as Exhibit 2. The email is not identified in the administrative record. Additionally, EPA failed to include a June 27, 2003 internal memorandum from Mario M. Mangino to Jae Lee regarding the 2003 risk assessment. A copy of the memo is attached hereto as Exhibit 3. ESSROC will supplement this petition if additional documents are identified that were not included in the administrative record.

Where, as here, supporting information is found to be lacking in the administrative record, the proper remedy is to remand the decision back to the agency to ensure that any

permitting decision is based upon a complete record. Such is the case here and ESSROC respectfully requests that the Permit be remanded to EPA.

**III. EPA erred as a matter of fact and law in its establishment of the annual mercury feed rate limit found in ESSROC's RCRA permit.**

Even if the Board reaches the merits of the SSRA, ESSROC respectfully requests that it review and remand EPA's methodology regarding the annual mercury feed rate limitation in the Permit. A mercury feed rate limitation that is "overly restrictive" or "the product of a defective methodology" may serve as a proper basis for the Board's review. See *In re: Ross Incineration Servs., Inc.*, 5 E.A.D. 813, 1995 WL 302362, \*5 (E.A.B. Apr. 21, 1995). EPA erred here on two distinct grounds: 1) its basis for the calculation of the methylmercury bioaccumulation rate; and 2) its basis for the calculation of the fish consumption rate.

**A. EPA erred in its basis of the methylmercury bioaccumulation factor.**

EPA made significant mistakes regarding the methylmercury bioaccumulation factor, or "BAF," for fish. The agency relied upon a BAF that ignored the agency's most recent guidance on the topic, and therefore assessed a BAF that was far too large. As stated earlier, the methylmercury bioaccumulation factor is the ratio of the methyl mercury concentration in fish to the methyl mercury concentration in the water body being evaluated, taking into consideration uptake by fish from water and sediments as well as from fish consuming various foods and other fish. This factor, in combination with the dissolved phase water concentration, is used to estimate the contaminant concentration in fish in the water body being evaluated. The contaminant concentration in fish, along with the fish consumption rate and fraction of fish that is contaminated, is then used to determine the contaminant intake from fish. The total contaminant intake (i.e., from fish, beef, pork, milk, poultry, eggs, drinking water, soil, and vegetables) is then directly used in the calculation of the hazard quotient for the specific

constituent using the exposure duration, exposure frequency, reference dose, averaging time and units conversion factors. Given the species of fish available for catch from the lakes at France Park, EPA and ESSROC agreed to utilize a bioaccumulation factor that represented a mixture of Trophic Level 3 and 4 fish for the analysis (i.e., an average value between Trophic 3 and Trophic 4). EPA recommended a methylmercury BAF of  $4.05E+06$  L/kg, to represent a mixture of fish being taken from lakes at France Park. More specifically, this involved a mixture of BAFs for Trophic Level 4 Fish, which was  $6.8E+06$  L/kg, and BAFs from Trophic Level 3 fish, which was  $1.6E+06$ , resulting in the average of BAF of  $4.05E+06$  L/kg mentioned above. *1997 Mercury Study Report to Congress*, Dec. 1997, EPA-452/R-97-003, Admin. R. 47.n.

ESSROC does not dispute the methodology of averaging BAFs from different trophic level fish to appropriately represent available fish from the lakes at France Park. However, ESSROC does dispute EPA's reliance on outdated guidance. U.S. EPA's most recent guidance document recommended a Trophic Level 4 BAF of  $2.7E+06$  L/kg and a Trophic Level 3 BAF of  $6.8E+05$  L/kg. *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion*, April 2010, EPA 823-R-10-001; referenced in *Response* at pp. 11-12. Averaging these two figures results in a BAF of  $1.69E+06$  L/kg, which is considerably lower than the BAF of  $4.05E+06$  L/kg relied upon by EPA. Moreover, EPA's response to ESSROC's comments was inadequate on this point. EPA effectively relied on guidance that has been superseded in its calculation of the methylmercury bioaccumulation factor. *In re Rohm and Haas Co.*, 9 E.A.D. 499, 2000 WL 1481387, \*11 (E.A.B. Oct. 5, 2000) (declining to follow superseded guidance in analysis). Thus, EPA committed clear legal and factual error that warrants review by this Board.

**B. EPA erred in its determination of the fish consumption rate.**

Determining the risk from fish consumption helps to assess concentrations of chemicals of potential concern. See HRRAP, Section 5.7, p. 5-60. But EPA's assessment of the fish consumption rate at Logansport presumed only the most conservative of the default rates, applying 0.00125 kg/kg BW-day (87.5 g/day) for an adult fisher and 0.00088 kg/kg BW-day (13.2 g/day) for a child fisher. *Response*, pp. 10-11; HHRAP, Appendix C, Table C-1-4, p. C-15. In addition, EPA assumed that all fish consumed were from the model's predicted most contaminated water body. *Response*, pp. 10-11. In response, ESSROC, through numerous submissions, provided site-specific information that warranted reductions from the most conservative, default amounts. EPA erred by ignoring this site-specific information in its assessment of the fish consumption rate, which overstated the hazard quotient and therefore reduced the mercury feed rate limitation in ESSROC's permit to a level that is far below what is needed to protect human health and the environment.

Permitting based on a site-specific risk assessment is more accurate if, somewhat intuitively, the agency considers "site-specific" information. See *In re Ash Grove Cement Co.* 1997 WL 732000, \*\*13-14. This is consistent with the overall layout of HHRAP. The introductory chapter of the guidance provides the roadmap to completing a risk assessment for a facility. HHRAP, Figure 1-1, p. 1-10. The schematic is divided into a risk assessment portion and a risk management portion. *Id.* The former predicts the risk; the latter asks whether the predicted level of risk is acceptable. *Id.* If the predicted level of risk is not acceptable, the schematic suggests several options, one of which is to use site-specific information to reevaluate the predicted risk. *Id.*

EPA missed a critical "interim step" in the risk assessment. HHRAP provides that "If the initial risk estimates (coupled with any other related factors) indicate that the risks are at or above a

level that may pose a risk to human health or the environment, then additional information might be added to the risk assessment (e.g. site-specific information that's more representative of the actual exposure settings). Additional iterations of the risk assessment could then be performed. This iterative process enables you to determine if the risks identified in the earlier assessment accurately represent the situation at a given combustion facility.” HHRAP p. 1-12, Example 2. As discussed in greater detail below, proper application of the interim step would have yielded an acceptable HQ.

Elsewhere in HRRAP, EPA recommends using the default assumptions presented in HHRAP to estimate risk initially, but recommends using more extensive site-specific data and even a more rigorous modeling effort if the modeled risk is too high. HHRAP, p. 2-55. Section 5.8 of HHRAP specifically addresses the use of default values versus site-specific data in the risk analysis. HHRAP, Section 5.8, p. 5-87. The guidance specifically notes that many default parameter values recommended for use in the evaluation are not site-specific and, after performing an initial assessment using the default values, using more site-specific values may provide a more representative estimate of risk. *Id.*

EPA's central methodology error was failing to consider the underlying uncertainties/assumptions behind the default fish consumption rates presented in HHRAP. The default consumption rate of fish for an adult fisher used in HHRAP, which EPA relied upon, is 0.00125 kg/kg-day, which is 87.5 g/day. As presented in ESSROC's comments to the draft permit, based on the consumption data presented in the Mercury Study Report to Congress (140 g/day is equivalent to 340 meals/year), this default consumption rate is equivalent to 212 meals/year, or about 18 meals/month (roughly a meal every other day with an occasional additional one consumed for good measure). The uncertainties and assumptions behind this default, as well as the fact-specific information provided by ESSROC, show that such a figure is representative of a high-end fish consumer, not a casual consumer or recreational consumer.

According to HHRAP, “[t]he default intake rates [for fish consumption] do not represent long behavior patterns, which is the focus of the exposure assessments used to support chronic health effects...” HHRAP, Appendix C, Table C-1-4, p. C-15. As ESSROC stated to EPA, the lakes surrounding Logansport are small, not stocked to maintain available fish levels, and freeze over in the winter months. *Comments*, pp. 3-5. While it is possible that a fisher could utilize the lakes for a short period (maybe up to a few years) as the source of his/her fish for consumption, the lakes are not capable of maintaining a high level of fishing for consumption over the 30-year study period. *Id.* Simply put, since the lakes are small and not stocked, the desirable fish will be “fished out” in a short period of time, whereby a fisher would look elsewhere for fish to consume.

EPA’s response to ESSROC’s comments was insufficient. EPA did review each of ESSROC’s documented recommendations to reduce the fish consumption and/or the fraction of contaminated fish consumed. However, EPA’s response ignores several undisputed facts: 1) the nearby park has a daily entrance fee for fishing; 2) the lakes are small and are not stocked to maintain the available levels of fish for catch over the study timeframe; 3) one of the two lakes is closed to fishing in the summer months (i.e., the most productive period of the year for catching fish); 4) the lakes are known to freeze over in the winter months, thereby requiring ice fishing techniques that are less productive in terms of catch; 5) testimonials that fish from the lakes are unlikely to be used as a primary food source; 6) testimonials that the lakes are unlikely to be able to support sustained high levels of fishing for food over the study period; 7) EPA had previously accepted lower consumption rates [7.15 g/day (1.4 meals / month) typical and 32 g/day (6.4 meals / month) hi-end] versus [87.5 g/day (17.7 meals / month )] to represent local fishing habits in the EPA-approved 2003 risk analysis, and 8) EPA had previously accepted

lower fractions of contaminated fish consumed (i.e., 0.25 for high-end consumer and 0.1 for typical consumer) versus the default 1.0 represents local fish consumption habits in the EPA-approved 2003 risk analysis.

The combination of applying more representative factors for BAF, methylation and fish consumption, when compared to all three being used at the HHRAP 2005 conservative value, would derive a sufficiently protective HQ, even if not all factors are adjusted. As shown in the summary table attached hereto as Exhibit 4, the revised consumption rates on their own, for typical or hi-end fishers, or the combination of almost any two parameters where one of them is consumption-related, derives a protective HQ result. Once a protective HQ is calculated, as was conducted by EPA in the post-risk assessment results in 2003, no additional mercury limitation is necessary. Each cell in the table represents the combination of the vertical and horizontal adjustment factor together for that column and row. Where both vertical and horizontal parameters are the same, the result includes applying only that factor by itself. The table presents worst case scenarios only (i.e. Fisher Adult) and is provided for illustration purposes only.

Instead of making the analysis presented in the summary table to determine that the SSRA yielded an acceptable HQ and that no additional mercury limitation was necessary, EPA erroneously limited the mercury emission rate and corresponding feed rate to a level substantially below the industry's regulatory limit found in HWC MACT.

**CONCLUSION AND RELIEF REQUESTED**

For the foregoing reasons, ESSROC respectfully requests that the Board review the annual mercury feed rate limitation in its Permit and remand the Permit back to EPA.

Dated: July 3, 2013

Respectfully submitted,



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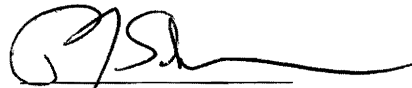
## **LIST OF EXHIBITS**

1. Final Federal RCRA Permit Number IND 005 081 542 (June 5, 2013).
2. Email correspondence from Dan Carney (consultant to ESSROC) to Chris Lambesis (EPA) dated September 9, 2011.
3. Memo dated June 27, 2003 from Mario M. Mangino to Jae Lee
4. Summary table applying interim step to fish consumption variable to the SSRA

**STATEMENT OF COMPLIANCE WITH WORD LIMITATION**

I hereby certify that this Petition for Review, including all relevant portions, contains less than 40,000 words.

Dated: July 3, 2013



Philip J. Schworer

## CERTIFICATE OF SERVICE


I hereby certify, pursuant to the Rules of the Environmental Appeals Board of the U.S. Environmental Protection Agency, that the foregoing was sent by United Parcel Service (UPS) to be filed at the following address:

U.S. Environmental Protection Agency  
Clerk of the Board  
Environmental Appeals Board  
Colorado Building  
1341 G Street NW, Suite 600  
Washington, D.C. 20005

A copy of the petition was also sent by UPS to the following address:

U.S. Environmental Protection Agency  
Region 5  
RCRA Branch (LR-8J)  
77 West Jackson Boulevard  
Chicago, IL 60604

Dated: July 3, 2013

  
Philip J. Schworer

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