



November 19, 2021

Ms. Lisa Felice  
Michigan Public Service Commission  
7109 W. Saginaw Hwy.  
P. O. Box 30221  
Lansing, MI 48909

*Via E-Filing*

RE: MPSC Case N<sup>o</sup>: U-21090

Dear Ms. Felice:

The following is attached for paperless electronic filing:

**Rebuttal Testimony of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club;**

**Exhibits MEC-73C through MEC-77; and**

**Proofs of Service.**

*\*\*The confidential version has only been served on those with a signed NDC on file.*

Sincerely,

Christopher M. Bzdok  
[chris@envlaw.com](mailto:chris@envlaw.com)

xc: Parties to Case No. U-21090

**STATE OF MICHIGAN**  
**MICHIGAN PUBLIC SERVICE COMMISSION**

In the matter of the Application of **CONSUMERS** ) U-21090  
**ENERGY COMPANY** for Approval of an )  
Integrated Resource Plan under MCL 460.6t, certain ) ALJ Sally L. Wallace  
accounting approvals, and for other relief )  
)

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**PUBLIC**

**REBUTTAL TESTIMONY**

**OF**

**TYLER COMINGS**

**ON BEHALF OF**

**MICHIGAN ENVIRONMENTAL COUNCIL,  
NATURAL RESOURCES DEFENSE COUNCIL, AND SIERRA CLUB**

**November 19, 2021**

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Please state your name, business address, and position.**

3 A. My name is Tyler Comings. I am a Senior Researcher at Applied Economics Clinic, located  
4 at 1012 Massachusetts Avenue, Arlington, Massachusetts.

5 **Q. Are you the same Tyler Comings who submitted direct testimony in this case?**

6 A. Yes.

7 **Q. Please describe the positions of Staff and ABATE regarding the Company's plan to**  
8 **retire Campbell 3 in 2025.**

9 A. Neither party challenged the retirement of Campbell units 1 and 2 in 2025 but Staff and  
10 ABATE both raised concerns about the retirement of Campbell 3 in that year and the  
11 simultaneous acquisition of the CMS gas plants (DIG, Kalamazoo, and Livingston). Staff  
12 recommended that the Company perform additional analysis of the decision to retire  
13 Campbell unit 3 and conducted its own Aurora modeling to support this conclusion.<sup>1</sup>  
14 ABATE opposed the 2025 retirement of Campbell unit 3 and recommended that the  
15 Company remove this retirement as well as the acquisition of the CMS plants from its  
16 Proposed Course of Action (PCA).<sup>2</sup>

17 **Q. What is the purpose of your rebuttal testimony?**

18 A. My testimony responds to testimony from ABATE witnesses James Dauphinais and Brian  
19 Andrews, and Staff witnesses Jonathan DeCooman and Zachary Heidemann, regarding the

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<sup>1</sup> Direct Testimony of Jonathan J. DeCooman, pp. 26-27.

<sup>2</sup> Direct Testimony of James R. Dauphinais, p. 7.

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1 Company's decision to retire Campbell unit 3 in 2025. I first address ABATE's case for  
2 not retiring the unit in 2025. In the next section, I discuss Staff's Aurora modeling and new  
3 modeling from MNS witness George Evans that addresses Campbell unit 3. Finally, I  
4 discuss the many risks of delaying the Campbell unit 3 retirement decision to the next IRP.

5 **Q. What information did you review in preparing your rebuttal testimony?**

6 A. I reviewed the testimony, exhibits, workpapers, discovery responses, and modeling outputs  
7 provided by Staff and ABATE in their direct cases. I also reviewed modeling results  
8 provided by MNS witness George Evans that compared the cost impact of Staff's modeling  
9 to the resource portfolios presented in MNS's direct case.

10 **Q. Are you sponsoring any exhibits in this proceeding?**

11 A. Yes, I sponsor Exhibits MEC-73C to MEC-77:

12 MEC-73C: Company workpaper WP-NJK-3 CONFIDENTIAL

13

14 MEC-74: MEC-CE-543-Walz + MEC-CE-543-Kapala

15

16 MEC-75: U20963-ST-CE-454 + U20963-ST-CE-454-Breining\_ATT\_2 (excerpt)

17

18 MEC-76: NPDES Permit for J.H. Campbell Plant, Permit No. MI0001422  
19 (modified Sept. 30, 2021)

20

21 MEC-77: discovery responses U20963-MEC-CE-033, U20963-MEC-CE-655, and  
22 U21090-MEC-CE-540

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1 **Q. Please summarize your findings and recommendations.**

2 A. Based on my review of testimony from Staff and ABATE and modeling provided by MNS  
3 witness Evans, I conclude that:

4 **1. ABATE’s analysis of fixed cost savings from continued operation of Campbell**  
5 **3 is incomplete and should be ignored.** In an effort to support its position on  
6 Campbell 3, ABATE provides an analysis that merely compares changes in fixed  
7 costs from retirement versus continued operation of the unit. This analysis is  
8 incomplete, however, because it does not consider the variable costs and revenues  
9 of retiring or continuing to operate Campbell 3. ABATE should not draw a  
10 conclusion about the unit’s future based on this incomplete analysis, and neither  
11 should the Commission.

12 **2. Staff’s analysis should not be used to support continued operation of Campbell**  
13 **unit 3.** In raising concerns about the proposed retirement of Campbell 3, Staff  
14 conducted several Aurora modeling runs that assumed Campbell 3’s continued  
15 operation through 2039. But one should not draw a conclusion to continue operating  
16 the unit based on this modeling because the results under a more reasonable  
17 capacity value (50 percent of CONE) are lower and the modeling is overly  
18 optimistic on how much energy the unit will generate. Finally, MNS modeling  
19 shows savings from retiring Campbell 3 in 2025 even when not adjusting the  
20 unreasonably high generation at the unit.

21 **3. The Campbell 3 retirement decision should not be deferred to the next IRP.**  
22 Adopting ABATE’s and Staff’s recommendations would delay a decision about

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1 retiring Campbell 3 until the next IRP, which will likely be filed in 2024.<sup>3</sup> Because  
2 that IRP case would likely not conclude until 2025, delaying a decision would  
3 eliminate the possibility of a 2025 retirement. If the next IRP were filed in 2024,  
4 Campbell 3's earliest potential retirement date might not be until 2028. In addition,  
5 delaying a decision would also expose the Company's customers to substantial cost  
6 risk. If Campbell 3 does not retire by 2025, the unit would require additional capital  
7 costs such as separation costs and compliance costs with the Steam Electric Effluent  
8 Guidelines (SEEG). Those costs, which can be avoided if Campbell 3 retires in  
9 2025, are substantial. The separation and SEEG costs, standing alone, are projected  
10 to total nearly \$90 million, and Campbell 3 would also incur significant non-  
11 environmental capital costs. There is also a risk that the SEEG compliance costs  
12 could increase above the current estimate because the current SEEG requirements  
13 could become more stringent in the next couple years.

14 **II. ABATE DOES NOT MAKE THE CASE FOR CONTINUED OPERATION OF CAMPBELL 3.**

15 **Q. Did ABATE recommend delaying the retirement of Campbell 3 past 2025?**

16 A. Yes. ABATE recommended that the Commission deny Consumers' PCA, including the  
17 Company's plans to retire Campbell unit 3 in 2025 and acquire the CMS plants (DIG,  
18 Kalamazoo, and Livingston).<sup>4</sup>

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<sup>3</sup> Direct Testimony of Richard T. Blumenstock, p. 4.

<sup>4</sup> Dauphinais Direct, p. 7.

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1 **Q. Did ABATE provide an alternative portfolio to the PCA?**

2 A. Yes. ABATE presented its own alternative portfolio called the “ABATE Alternate Plan,”  
3 which differs from the PCA by continuing to operate Campbell 3 until 2039 (instead of  
4 retiring the unit in 2025) and acquiring only the Covert plant (instead of all four gas plants  
5 proposed by the Company).<sup>5</sup> ABATE did not attempt to model its plan in Aurora. Instead,  
6 witness Brian Andrews estimated the net present value of the revenue requirements  
7 (NPVRR) from the incremental fixed costs from the ABATE Alternate Plan compared to  
8 the PCA.<sup>6</sup> He used this comparison to conclude that ABATE’s plan “has the potential to  
9 save customers \$345 million” compared to the PCA.<sup>7</sup>

10 **Q. Is ABATE’s NPVRR analysis comparable to the NPVs resulting from Aurora**  
11 **modeling by other parties in this case?**

12 A. No, for three reasons. First, the NPV analyses conducted in Aurora all assume that the fixed  
13 costs of any of the gas plant acquisitions were fully depreciated by 2039—following  
14 Consumers’ Aurora methodology.<sup>8</sup> ABATE’s analysis focuses on Consumers witness  
15 Coker’s rate impact calculation, which assumed that the gas units are depreciated over a  
16 20-year period (i.e., extending past 2040).

17 Second, ABATE’s analysis includes the revenue requirements for the remaining book  
18 value of Campbell 3, which represent costs already invested at the plant and currently  
19 embedded in rates. Because these costs are “sunk” or unavoidable, they should not be

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<sup>5</sup> Dauphinais Direct, p. 21.

<sup>6</sup> Direct Testimony of Brian C. Andrews, p. 11.

<sup>7</sup> Andrews Direct, p. 15.

<sup>8</sup> AB-CE-455(d) (discussing Covert); AB-CE-456(d) (discussing CMS plants).



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1 included in a forward-looking resource decision. To that end, Aurora modeling by  
2 Consumers, Staff, and MNS in this case only included future costs at the Company’s  
3 fleet—not the remaining book value.

4 Third, Staff and MNS conducted modeling in Aurora of the PCA, and alternatives to that  
5 plan, in response to the Company’s own Aurora modeling. The NPVs reported in those  
6 analyses model all costs, including both fixed and variable costs. By contrast, ABATE  
7 assumed that “the variable costs of the two alternatives were the same” rather than conduct  
8 its own Aurora modeling.<sup>9</sup> For these reasons, the ABATE NPVRR calculation is not  
9 comparable to any of the Aurora modeling results presented in this case.

10 **Q. If a plan has higher incremental fixed costs does that mean the overall costs are**  
11 **higher?**

12 A. No, having higher fixed costs does not necessarily mean a plan is going to be more  
13 expensive once all costs are accounted for. In particular, if a coal unit is being replaced  
14 with solar, wind, or battery storage, then it is likely that the fixed costs alone are higher  
15 with replacement. This follows because the costs associated with those replacement  
16 resources are almost all fixed, whereas the coal unit has both fixed and variable costs. Solar  
17 and wind in particular have no variable costs – once built, those resources provide energy  
18 without incurring fuel costs. Battery storage has some variable costs associated with  
19 charging but also typically sells this energy back at higher priced or peak hours. All of  
20 these types of units also sell into the MISO wholesale energy market. By contrast,  
21 Campbell 3 has variable costs, the majority of which are the costs of the coal; but ABATE’s

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<sup>9</sup>Andrews Direct, p. 11.

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1 NPVRR calculation omitted such costs. A retirement analysis needs to account for all costs  
2 and revenues.

3 **Q. Does ABATE’s analysis show that its plan provides savings if all costs were included?**

4 A. No. ABATE attempted to draw this conclusion but its analysis does not include all of the  
5 costs that should be considered in making a resource planning decision; therefore, there is  
6 no conclusion to be drawn about the overall net costs (costs minus revenues) of its plan  
7 relative to the PCA. ABATE only estimated the incremental fixed costs of retirement  
8 versus continued operation of the unit and incorrectly assumed that the variable costs of  
9 the plans were the same. But this analysis is grossly incomplete because the variable costs  
10 (including fuel) are a large part of the costs of operating coal and gas units. Because  
11 ABATE’s plan assumes that Campbell 3 would continue operating through 2039, that plan  
12 omits a significant category of costs, i.e., Campbell 3’s fuel costs.<sup>10</sup>

13 **Q. Should ABATE’s NPVRR “savings” result have any sway over the Commission’s**  
14 **decision in this case?**

15 A. No. The analysis is half-baked by only looking at fixed costs. ABATE’s attempts to draw  
16 any meaningful conclusion from this incomplete analysis are misleading and should be  
17 ignored.

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<sup>10</sup> Under Consumers’ Alternate Plan, which also assumes Campbell 3’s operation through 2039, the Company projected that Campbell 3 would incur more than \$100 million of fuel costs annually. See Exhibit A-20 (STW-17), p. 3, line 3 (projection under AEO gas price forecast); *id.*, p. 6, line 3 (projection under CE gas price forecast).

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1 **III. STAFF’S MODELING SHOULD NOT BE USED TO JUSTIFY CONTINUED OPERATION OF**  
2 **CAMPBELL 3.**

3 **Q. Did Staff raise concerns about the Campbell 3 retirement and the acquisition of the**  
4 **CMS plants?**

5 A. Yes. Staff witness DeCooman recommended additional analysis of the Company’s  
6 decision to retire Campbell 3 in 2025.<sup>11</sup> Staff also recommended that the purchase of the  
7 CMS plants be removed from the PCA.<sup>12</sup>

8 **Q. Did Staff conduct its own Aurora modeling to support its recommendations?**

9 A. Yes. Staff conducted several Aurora runs that assumed Campbell 3’s continued operation  
10 through 2039. Staff stated that its alternative portfolios were not meant to be “reasonable  
11 build plans,” but instead addressed unit retirement decisions at Karn and Campbell and the  
12 proposed gas acquisitions.<sup>13</sup> Staff conducted modeling that included the retirement of Karn  
13 3 and 4 as well as the acquisition of the Covert plant from the PCA—concluding that its  
14 modeling supported those decisions.<sup>14</sup> But its plans omitted all three CMS plants and also  
15 tested 2031 retirement of Campbell 1 and 2 (instead of 2025) and 2039 retirement of  
16 Campbell 3 (instead of 2025). Staff concluded that its modeling supported the 2025  
17 retirement of Campbell 1 and 2.<sup>15</sup> Staff also reported the NPV results of its modeling,  
18 relative to the PCA, to argue that the retirement of Campbell 3 in 2025 is not necessarily

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<sup>11</sup> DeCooman Direct, pp. 26-27.

<sup>12</sup> Proudfoot Direct, pp. 12-13.

<sup>13</sup> Direct Testimony of Zachary C. Heidemann, p. 21.

<sup>14</sup> DeCooman Direct, p. 16.

<sup>15</sup> DeCooman Direct, p. 18.

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1           beneficial.<sup>16</sup> Staff does not take the stance that the unit should run until 2039 but its  
2           alternative plan for Campbell unit 3 assumes that retirement date from Consumers’  
3           Alternate Plan.<sup>17</sup>

4           Although Staff performed model runs that assumed Campbell 1 and 2 would operate  
5           through 2031, Staff modeled one portfolio that better isolated the impact of delaying  
6           Campbell 3’s retirement. I focus on this portfolio in the remainder of my testimony.<sup>18</sup> That  
7           portfolio assumed the 2023 retirement of Karn 3 and 4, the 2025 retirement of Campbell 1  
8           and 2, continuing operation of Campbell 3 through 2039, and acquisition of only the Covert  
9           gas plant, not the CMS plants. This portfolio is shown on page 3 of Staff Exhibit S-5.2.  
10          Staff witness DeCooman ran the portfolio 271\_07\_06 run under Consumers’ gas price  
11          (“CE gas”). He then compared the cost of this portfolio to the PCA, assuming a capacity  
12          value of 75 percent of CONE, and reported NPV savings of \$5 million under Consumers’  
13          forecast.<sup>19</sup>

14   **Q.     Does this mean that Staff’s portfolio would result in savings for ratepayers relative to**  
15   **the PCA?**

16   **A.     Not necessarily. As explained below, these savings estimates are overstated.**

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<sup>16</sup> Heidemann Direct, p. 25.

<sup>17</sup> Heidemann Direct, p. 24.

<sup>18</sup> The Aurora run IDs for this portfolio are 271\_07\_06 and 172\_07\_06.

<sup>19</sup> Exhibit S-5.3, pp. 1-2. Staff ran modeling under two gas price forecasts: the 271\_07\_06 run was under Consumers’ gas price (“CE gas”), and the 172\_07\_06 run was under the AEO gas price (“AEO gas”). Staff also reported savings of \$181 million under the AEO gas scenario. Comparisons of runs 271\_07\_06 (Staff CE gas plan) to 240\_12\_01 (PCA under CE gas) and 171\_07\_06 (Staff AEO gas plan) to 141\_07\_01 (Staff’s re-run of PCA under AEO gas). See also Heidemann Direct, pp. 23-24. Note: it appears that this exhibit mislabeled the run ID of the AEO gas run; as shown in the Heidemann testimony, the run ID is 172\_07\_06.

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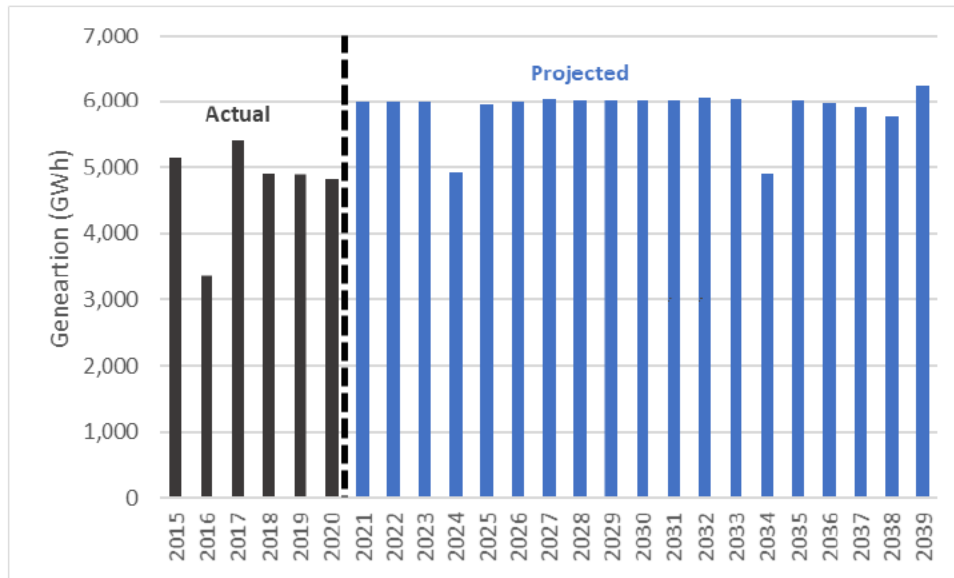
1 **Q. Do you agree with Staff’s focus on the cost of its plan versus the PCA under 75 percent**  
2 **CONE capacity value?**

3 A. No. Staff only reported these NPV savings assuming a capacity value of 75 percent of  
4 CONE. As I explained in my direct testimony, this capacity value is too high and 50 percent  
5 CONE level should be the primary value considered when evaluating the NPV of different  
6 resource portfolios.<sup>20</sup> Among other points, I showed that [[  
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**REBUTTAL TESTIMONY OF TYLER COMINGS**  
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1 through 2020 was only 4,748 GWh; this means that the unit is projected to run 24 percent  
2 more on average.<sup>24</sup>

3 **Figure 1: Historical and Projected Campbell 3 Generation (GWh)**<sup>25</sup>  
4



6 The overly optimistic projections for Campbell 3 operation lead the model runs to overstate  
7 the energy value of the unit, which makes the continued operation of the unit appear more  
8 attractive than it would be in reality.<sup>26</sup> If more reasonable operation levels at Campbell 3  
9 were modeled, that would increase the savings from retiring the unit in 2025.

<sup>24</sup> Exhibit S-4.9, Staff modeling run 271\_07\_06 (based on CE gas price forecast).

<sup>25</sup> Exhibit S-4.9, Staff modeling run 271\_07\_06.

<sup>26</sup> Part of this overly optimistic performance of the unit is likely driven by the [REDACTED]

[REDACTED] The Company has confirmed that the assumed 2020 heat rate used in the IRP modeling was lower than Campbell 3's actual heat rate in 2020. Ex MEC-74 (MEC-CE-543(a), (d)(i)).

In his rebuttal testimony, MNS witness George Evans identifies two additional factors that may be contributing to the inflated projection of Campbell 3's future generation.

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1 **Q. Did MNS conduct additional modeling of Staff’s portfolio to compare to the MNS**  
2 **plans?**

3 A. Yes. MNS Witness George Evans modeled the Staff portfolio (run ID 271\_07\_06 under  
4 Consumers’ gas price), but with the updated renewable and storage costs presented in our  
5 direct case—using NREL ATB 2020 instead of NREL ATB 2019 relied upon by  
6 Consumers and Staff.<sup>27</sup> This allowed us to compare the NPV of Staff’s portfolio to our  
7 plans. Our two initial plans included:

- 8 • **Capacity purchase plans**, which included the retirement of Campbell units  
9 1-3 in 2025, acquisition of Covert and Livingston plants (excluding DIG  
10 and Kalamazoo), the Company’s PCA battery storage buildout, expedited  
11 the solar PV from the PCA, and short-term capacity purchases in select  
12 years. These portfolios (under both CE Gas and AEO) are presented as  
13 “MNS Plan 1” on pages 1-2 of Exhibit MEC-49. Because the load forecasts  
14 used by Consumers were different for CE and AEO gas scenarios, our  
15 capacity purchase plans differed to meet the capacity requirements.
- 16 • **New build plans**, which included the same coal retirements, gas plant  
17 acquisitions, and expedited solar PV, but built new battery storage to fulfill  
18 capacity need rather than capacity purchases. These portfolios (under CE  
19 Gas and AEO) are presented as “MNS Plan 2” on pages 3-4 of Exhibit  
20 MEC-49. As with the capacity purchase plans, our new build plans also  
21 differed between CE and AEO gas scenarios in order to meet differing  
22 capacity requirements as modeled by Consumers.

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<sup>27</sup> See Comings Direct, pp. 50-52.

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1 Mr. Evans also addressed an apparent discrepancy in the Staff’s modeling of Karn unit 3,  
 2 which he explains in his testimony. Finally, Staff used the same load forecast and, by  
 3 extension, the same capacity requirement, for its CE gas and AEO gas portfolios. But  
 4 Staff’s approach to modeling the AEO gas is quite different from what Consumers modeled  
 5 in its direct case, and MNS’s direct testimony followed the approach taken by Consumers.  
 6 Both Consumers and MNS have different portfolios under AEO gas than CE gas and use  
 7 differing load forecasts. Thus, in order to allow direct comparisons between Staff’s  
 8 modeling and this rebuttal testimony, we only compared CE Gas portfolios as our AEO  
 9 portfolio was not comparable to Staff’s AEO portfolio.

10 **Q. Do MNS’s capacity purchase and new build plans provide savings when compared to**  
 11 **the Staff portfolio that continues operating Campbell 3?**

12 A. Yes. Under 50 percent CONE and CE gas price, our plans are lower-cost than Staff’s. The  
 13 results shown below in Figure 2 substantial savings for the capacity purchase plan across  
 14 all CONE values and marginal savings at 50 percent CONE for the new build plan.  
 15 Notably, this savings is conservative in that it does not address the overly optimistic  
 16 performance of Campbell 3 inherent in Staff’s modeling.

17 **Figure 2: Savings (Costs) Under the MNS Capacity Purchase Plan and New**  
 18 **Build relative to the Staff Portfolio that Retires Campbell in 2039 (\$mil NPV,**  
 19 **CE Gas)**  
 20

		100% CONE	75% CONE	50% CONE	25% CONE	0% CONE
BAU	Capacity Purchase	\$68	\$161	\$255	\$348	\$442
	New Build	-\$72	-\$29	\$15	\$59	\$102



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1   **Q.   Did MNS develop a new plan that excluded all CMS plants?**

2   A.   Yes. The new MNS plan (“New Build without CMS”) is similar to the “new build” plan  
3       but we removed the Livingston plant from our new build plan and replaced any new  
4       capacity need with ZRC purchases. Thus, the new plan included the same gas acquisition  
5       as Staff’s (i.e., only Covert), but ours retired Campbell 3 in 2025, whereas the Staff  
6       portfolio assumed Campbell 3 would operate until 2039. Mr. Evans then ran our new plan  
7       – which is presented as “MNS Plan 3” in Exhibit MEC-70– in Aurora under the CE gas  
8       scenario but with updated renewable and storage costs.

9   **Q.   Did you find that this new MNS plan – which omits all of the CMS plants – was**  
10   **cheaper than the Staff portfolio?**

11   A.   Yes, under the CE gas price, and assuming the 50 percent CONE capacity value, our plan  
12       was \$15 million cheaper than Staff’s portfolio. The savings increase as capacity value  
13       decreases. These savings when compared to the new build results above show that the  
14       Livingston plant has either marginally positive or negative value, depending on the  
15       capacity value. Indeed, at the 50 percent CONE level, removing the plant from our new  
16       build plan did not change the savings.

**REBUTTAL TESTIMONY OF TYLER COMINGS  
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**Figure 3: MNS New Build (without Livingston) Savings Compared to the Staff Portfolio that Retires Campbell 3 in 2039 (\$mil NPV, CE Gas)**

		100% CONE	75% CONE	50% CONE	25% CONE	0% CONE
BAU	New Build no CMS	-\$104	-\$44	\$15	\$75	\$135

**Q. Do these estimated savings incorporate Consumers’ “below the line” adjustments to account for costs associated with Campbell 3 retirement that were not included in Aurora by the Company?**

A. Yes. When Consumers compared the costs of its PCA to its own Alternate Plan (where Campbell 3 is retired in 2039 and there are no gas acquisitions), it incorporated “below the line” adjustments to account for costs associated with operating or retiring Campbell 3 (including transmission costs); these adjustments were not needed for most run comparisons since Campbell 3 was retired in 2025 in almost all runs.<sup>28</sup> However, Consumers also updated these adjustments in response to a discovery request. When this adjustment is incorporated, I calculate that a difference of \$50 million should be added to the MNS plan (or the PCA) but only when it is being compared to a portfolio that retires Campbell 3 in 2039 (such as Staff’s portfolio).<sup>29</sup>

**Q. Did Staff incorporate this “below the line” adjustment when it calculated its comparison?**

A. It does not appear so. Witness Evans re-ran one of the Staff portfolios in Aurora and was able to almost exactly match the net present value results without making any adjustment. This indicates that Staff did not incorporate the “below the line” adjustment. In presenting

<sup>28</sup> WP-STW-1, BelowLine PCA\_AP.

<sup>29</sup> U21090-MEC-CE-469-CONF(a); WP-STW-1 Utility Cost Compiler 2021 IRP PX v17 (Not Printed), BelowLine PCA\_AP tab.

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1           these NPV comparisons here, I made this adjustment (i.e., added a \$50 million cost to the  
2           MNS plans) to ensure an apples-to-apple comparison with the Staff portfolios.

3   **Q.    What do you conclude about Campbell 3 retirement given the model runs performed**  
4   **by Staff?**

5   A.    The results when isolating Campbell 3 2025 retirement show slight savings under 50  
6           percent CONE, which I previously testified was a more reasonable capacity value. I  
7           recognize that these savings are small but these results are conservative (i.e., erring in favor  
8           of a 2039 retirement date) for two reasons: First, as explained, Staff’s portfolio projected  
9           an unreasonably high generation level for Campbell 3, which makes the economics of the  
10          unit appear more favorable. We did not make any adjustments to correct for that. Second,  
11          there are additional costs and risks to continuing to operate Campbell 3, which I describe  
12          in the next section.

13 **Q.    Does the new MNS plan show that the Company could cost-effectively retire**  
14 **Campbell 3 in 2025 and not pursue the CMS plants?**

15 A.    Yes. The new MNS plan (“No Build without CMS”)<sup>30</sup> is the only one presented in this  
16          case that retires Campbell units 1-3 in 2025 and excludes the three CMS plants. Our latest  
17          modeling shows that this new plan is a viable, cost-effective path forward for  
18          Consumers—in addition to our original capacity purchase and new build plans (or a  
19          blend of those plans).

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<sup>30</sup> This is shown in Exhibit MEC-70 as MNS Plan 3.

**REBUTTAL TESTIMONY OF TYLER COMINGS  
U-21090**

1 **IV. THERE ARE BENEFITS OF MAKING THE CAMPBELL 3 DECISION NOW.**

2 **Q. Are you concerned that adopting ABATE and Staff's recommendations would delay**  
3 **the decision to retire Campbell 3?**

4 A. Yes. ABATE recommends against the Company's decision to retire the unit in 2025. Staff  
5 does not take a position on whether the unit should be retired in that year, but Staff witness  
6 DeCooman recommends that the Company conduct additional analyses of select retirement  
7 years. I am concerned that either recommendation would effectively delay the decision  
8 until the next IRP.

9 **Q. Are there risks to delaying the retirement decision based on Consumers' projections**  
10 **of capital costs needed at Campbell 3?**

11 A. Yes. Consumers has represented that it will file its next IRP in three years.<sup>31</sup> If the next  
12 IRP case is litigated in 2024-25, then the earliest possible retirement date for Campbell 3  
13 would likely be 2028. In the meantime, this unit will require additional capital investments,  
14 including those needed to separate Campbell 3 from Campbell 1 and 2, and those needed  
15 for compliance with U.S. EPA's Steam Electric Effluent Guidelines (SEEG). These  
16 investments could be avoided with a 2025 retirement; but if a decision is delayed three  
17 years, customers would incur these additional costs which would become stranded if the  
18 unit retired in 2028 or after.

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<sup>31</sup> Blumenstock Direct, p. 4.

**REBUTTAL TESTIMONY OF TYLER COMINGS**  
**U-21090**

1 **Q. Did ABATE or Staff make a compelling case against the 2025 retirement of Campbell**  
2 **3?**

3 A. No. As I discussed previously, ABATE’s recommendation was predicated on an  
4 incomplete analysis which neglected to analyze all of the costs and revenues required for  
5 a retirement analysis. Staff conducted several model runs of a portfolio that assumed the  
6 unit’s retirement in 2039. But when we compare our portfolios to Staff’s, our plan with the  
7 retirement of Campbell 3 in 2025 was lower-cost.

8 **Q. Why do you claim that Staff witness DeCooman’s recommendation for additional**  
9 **analysis of Campbell 3 retirement effectively delays the decision to the next IRP—in**  
10 **three years?**

11 A. Witness DeCooman does not explicitly state that the decision should be made in the next  
12 IRP, but my concern is that his call for additional analysis cannot be met within the timeline  
13 of this current case. Such analysis would likely not occur until the next IRP case, which  
14 would be filed in 2024 (and conclude in 2025). Thus, I am concerned that adopting the  
15 Staff’s recommendation effectively delays the retirement decision by three years, and by  
16 extension the retirement date itself.

17 **Q. Are there capital investments at Campbell 3 that could be avoided if the unit were to**  
18 **retire in 2025?**

19 A. Yes. New capital investments made at the unit will become stranded costs if the unit were  
20 to retire before 2039 following those expenditures. While capital investments already made  
21 at the unit are unavoidable or “sunk” at this point—the Company can avoid making further  
22 capital investments that will get added to rate base. Primarily, Consumers could avoid: 1)  
23 additional non-environmental capital investments in the unit; 2) the separation costs of

**REBUTTAL TESTIMONY OF TYLER COMINGS**  
**U-21090**

1 retiring the unit in a different year from Campbell 1 and 2; and 3) SEEG compliance costs.  
2 First, Consumers provided estimated capital, major maintenance and O&M costs  
3 associated with Campbell 3's retirement in 2025, 2032, and 2039.<sup>32</sup> This shows that the  
4 Company has considered one interim retirement date (2032) between the 2025 and 2039  
5 dates modeled in Aurora. Consumers' projection show that it would avoid \$98.4 million in  
6 capital costs (apart from SEEG compliance costs) by retiring in 2025 instead of 2032.<sup>33</sup> In  
7 addition to those, the Company estimates that Campbell 3 will incur \$64.1 million in  
8 separation costs if the unit retires at a later date than the other Campbell units.<sup>34</sup> Finally,  
9 the Company has estimated that \$24.1 million in costs would be incurred between 2022  
10 and 2025 to comply with SEEG requirements.<sup>35</sup> These SEEG costs – which are currently  
11 avoidable – will need to be incurred if a retirement decision is not made by 2023.<sup>36</sup>  
12 Altogether, these avoidable capital costs total approximately \$186.6 million. The

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<sup>32</sup> Exhibit A-50 (NJK-1) Revised.

<sup>33</sup> Exhibit A-50 (NJK-1) Revised, p. 1; Exhibit A-57 (NJK-8) Revised pp. 3, 6.

<sup>34</sup> Revised Direct testimony of Norman J. Kapala, p. 3, lines 17-18.

<sup>35</sup> Ex MEC-75 (U20963-ST-CE-454 + U20963-ST-CE-454-Breining\_ATT\_2). This cost estimate, which Consumers provided in its 2021 rate case, is the cost projection assuming that Campbell must meet SEEG requirements by 2025. Ex MEC-75, p. 2(U20963-ST-CE-454(c)). Although Consumers' initial rate case filing assumed a 2023 compliance date, EGLE recently agreed to extend the SEEG compliance deadline to 2025. See generally Ex MEC-76 (NPDES Permit for J.H. Campbell Plant, Permit No. MI0001422 (modified Sept. 30, 2021)).

Note: this SEEG cost estimate is somewhat lower than the projected costs shown in Exhibit A-23. I am citing this lower cost estimate based on my understanding that it reflects Consumers' current SEEG compliance strategy – which relies on the less stringent 2020 revised SEEG rule. See Ex. MEC-77 (U20963-MEC-CE-033(g), U20963-MEC-CE-655(b), U21090-MEC-CE-540).

<sup>36</sup> Ex MEC-76, p. 14 (requiring Consumers to select a final SEEG compliance pathway on or before December 31, 2023).

**REBUTTAL TESTIMONY OF TYLER COMINGS**  
**U-21090**

1           Company’s customers could be forced to bear these avoidable costs if the Commission  
2           delays a retirement decision until the next IRP.

3   **Q.    Could the SEEG compliance costs be higher than the \$24.1 million cost estimate**  
4   **provided by the Company in the 2021 rate case?**

5   A.    Yes. The estimate above assumes that Consumers only needs to comply with the 2020  
6   revised SEEG rule rather than a more stringent version of that rule—such as the 2015 rule  
7   (requireing “zero liquid discharge” of bottom ash transport water), or a future rule from the  
8   Biden EPA.<sup>37</sup> As discussed in the rebuttal testimony of MNS Witness Casey Roberts, EPA  
9   is reconsidering the 2020 rule, and the agency could tighten the SEEG requirements in a  
10   manner that affects Consumers’ compliance strategy for Campbell 3. If the Biden  
11   Administration produces a more stringent SEEG rule, the cost of SEEG compliance could  
12   increase above the current estimate. Consequently, approving Campbell 3’s 2025  
13   retirement in this case could avoid additional SEEG costs at Campbell 3.

14   **Q.    Are there any other regulatory risks to operating the unit past 2025?**

15   A.    Yes. These risks include the risk from carbon dioxide regulation, which would disfavor  
16   coal operations compared to lower-emitting sources. As I mentioned in my direct  
17   testimony, in my experience it has become more common for utilities to plan on a limitation  
18   of carbon dioxide in resource planning. In fact, I have reviewed or commented on at least

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<sup>37</sup> See Direct Testimony of Heather A. Breining, pp. 15-16, 17; see also Ex MEC-77, p. 3 (U20963-MEC-CE-655(b) – Supplemental) (“A zero liquid discharge system is not being implemented.”).

**REBUTTAL TESTIMONY OF TYLER COMINGS  
U-21090**

1 eleven IRPs in the past two years that modeled a carbon price.<sup>38</sup> Of course, I have not  
2 reviewed every IRP produced in the U.S. in the past two years so this list is far from  
3 comprehensive. Consumers' base and sensitivity modeling did not include a carbon price;  
4 the Company merely conducted a risk analysis using a carbon price on portfolios that were  
5 already fixed.<sup>39</sup> But even Consumers' limited analysis assumed a carbon price beginning  
6 in 2025. Moreover, as I discussed in my direct testimony, [[REDACTED]  
7 [REDACTED].]]<sup>40</sup> Continued  
8 operation a Campbell 3 carries additional risk that the unit's carbon emissions will be  
9 curbed in the future.

10 **V. CONCLUSION AND RECOMMENDATIONS**

11 **Q. Have your recommendations from direct testimony changed?**

12 A. Not at a broad level. I continue to recommend a portfolio that retires the Campbell units in  
13 2025 but removes the DIG and Kalamazoo plants from the PCA. In my direct testimony,  
14 the two plans I put forward included the Livingston plant acquisition.

15 Other parties' direct testimony--including Staff and ABATE--challenged all three CMS  
16 plants. In my rebuttal, I have proposed a plan that excludes Livingston; this plan addresses  
17 these parties' recommendations that all three CMS plants be excluded. I find that such a

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<sup>38</sup> These IRP and IRP updates were prepared by Ameren, Arizona Public Service, Entergy, Evergy, Indiana and Michigan Power, Minnesota Power, Otter Tail Power, Xcel Colorado, and Xcel Minnesota.<sup>39</sup> Exhibit A-24 (HAB-3), "CE Adjusted IHS Markit"; Munie Direct, pp. 10, 21.

<sup>39</sup> Exhibit A-24 (HAB-3), "CE Adjusted IHS Markit"; Munie Direct, pp. 10, 21.

<sup>40</sup> Comings Direct, p. 16, n. 33.



**REBUTTAL TESTIMONY OF TYLER COMINGS  
U-21090**

1 plan – one that retires Campbell 3 in 2025 and only includes the Covert acquisition – is  
2 also a viable option for Consumers.

3 **Q. Does this conclude your testimony?**

4 **A. Yes.**

**MEC-73C**

**CONFIDENTIAL EXHIBIT**

U21090-MEC-CE-543-Walz

Page 1 of 1

Question:

6. Refer to tab 7c of workpaper WP-STW-7 (2021 IRP Assumptions Book), and to U20963-MEC-CE-011\_ATT\_1 2nd Revised from Case U-20963.

- a. Please confirm that the projected heat rates for Campbell 3 presented in tab 7c of workpaper WP-STW-7 were used in the Company's IRP modeling.
  - i. If not confirmed, please provide the projected heat rates for Campbell 3 that were in the Company's IRP modeling. Please provide this data for each of the years 2020 through 2039.
- b. Please confirm that U20963-MEC-CE-011\_ATT\_1 2nd Revised includes the Company's most recent projection of Campbell 3's heat rate for each of the years 2021-25.
  - i. If not confirmed, please provide the Company's most recent projection of Campbell 3's heat rate for each of the years 2021-25.
- c. Please confirm that the projected heat rate for Campbell 3 in WP-STW-7 is lower than the projected heat rate in U20963-MEC-CE-011\_ATT\_1 2nd Revised for each of the years 2021 through 2025.
  - i. If not confirmed, please explain why not.
- d. Further refer to U20963-MEC-CE-010\_ATT\_1 2nd Revised from Case U-20963.
  - i. Please confirm WP-STW-7's projected heat rate for Campbell 3 in 2020 is lower than Campbell 3's actual 2020 heat rate.

Response:

6a. Confirmed



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Sara T Walz

November 15, 2021

Electric Supply Planning

U21090-MEC-CE-543-Kapala  
Page 1 of 1

Question:

6. Refer to tab 7c of workpaper WP-STW-7 (2021 IRP Assumptions Book), and to U20963-MEC-CE-011\_ATT\_1 2nd Revised from Case U-20963.
- a. Please confirm that the projected heat rates for Campbell 3 presented in tab 7c of workpaper WP-STW-7 were used in the Company's IRP modeling.
    - i. If not confirmed, please provide the projected heat rates for Campbell 3 that were in the Company's IRP modeling. Please provide this data for each of the years 2020 through 2039.
  - b. Please confirm that U20963-MEC-CE-011\_ATT\_1 2nd Revised includes the Company's most recent projection of Campbell 3's heat rate for each of the years 2021-25.
    - i. If not confirmed, please provide the Company's most recent projection of Campbell 3's heat rate for each of the years 2021-25.
  - c. Please confirm that the projected heat rate for Campbell 3 in WP-STW-7 is lower than the projected heat rate in U20963-MEC-CE-011\_ATT\_1 2nd Revised for each of the years 2021 through 2025.
    - i. If not confirmed, please explain why not.
  - d. Further refer to U20963-MEC-CE-010\_ATT\_1 2nd Revised from Case U-20963.
    - i. Please confirm WP-STW-7's projected heat rate for Campbell 3 in 2020 is lower than Campbell 3's actual 2020 heat rate.

Response:

- b. Not confirmed.
  - i. Below are the heat rates utilized for Campbell Unit 3 in the Company's 2022 PSCR Plan. The heat rate provided in U20963-MEC-CE-011\_ATT\_1 2nd Revised for 2021 reflects the Company's most current projection.  
  
2022-9.69  
2023-9.71  
2024-9.76  
2025-9.82  
2026-N/A
- c. Confirmed.
  - i. See response to subpart (c).
- d. i. Confirmed.



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Norman J. Kapala  
November 18, 2021

U20963-ST-CE-454

Page 1 of 2

Question:

1. Referencing page 10 of the direct testimony of witness Heather Breining, it is stated that the Company is requesting an extension of deadlines for compliance with the SEEG ruleset at its Campbell facility:

a. Is there any kind of established timeline for EGLE to consider and decide on the Company's request for an extension of the deadline for SEEG compliance?

i. If so, please provide the deadline for EGLE to make such a determination;

ii. If there is no established timeline for this decision by EGLE, has the Company received any correspondence or other updates from EGLE that provide additional information on the progress of this request?

iii. Will the determination of the deadline by EGLE impact both the anticipated scope and timing of the work needed for SEEG compliance?

b. One of the reasons provided for this extension request is to allow for "adequate planning and preparation of the Company's compliance with the rule." Previously the Company has stated that it does not anticipate the updated ruleset would require any changes to the design of its high recycle rate system.

i. Does the Company still anticipate no new design changes in response to the updated SEEG ruleset? What additional steps must be taken to ensure that the Company's currently planned design is compliant with these rules?

ii. Aside from the wastewater studies referenced in testimony, is the Company conducting, either itself or through a contracted 3rd party, any additional studies that may determine the requirements of its high recycle rate system to achieve SEEG compliance?

iii. If the Company has conducted or is currently conducting studies, either internally or through a contracted 3rd party, to further evaluate the compliance of its project designs with the final SEEG ruleset, please provide any study details/scope and results from these studies, or the anticipated completion date of such studies if results are not available.

c. Please provide a projection of total annual expenses incurred for SEEG compliance at Campbell for each year presented in this case and all future years until the deadline for compliance assuming:

i. The Company must achieve compliance by the currently established deadline of December 31, 2023;

ii. The Company is granted an extension of this compliance deadline until December 31, 2025.

Response:

a) A permit modification request was submitted on January 11, 2021. The draft permit is currently on public notice until May 14, 2021 and incorporates a compliance date of December 31, 2025.

b) The scope of work will not materially change based on EGLE's decision. To ensure compliance with the rule, the Company is collecting additional water samples throughout 2021 and completing a bench scale test scheduled to be completed in the second quarter of 2021, which will mimic the impact of cycling water through the system. In addition, the Company will be hiring a third party design engineer in June 2021 to start work on the conceptual engineering to determine water chemistry and heat impacts on the existing equipment, and completing calculations to support required blow down volume to meet maintain water chemistry. Conceptual design work is scheduled to be completed in November/December 2021. Please refer to Attachment 1 for a copy of the NPDES Permit modification request submitted on January 11, 2021. No other studies, other than the referenced wastewater studies, have been conducted.

U20963-ST-CE-454

Page 2 of 2

- c) Please refer to the Total Estimate Summary tab in WP-Breining-1 for the SEEG cost projections necessary for a 2023 compliance. Please refer to the Total Estimate Summary tab in Attachment 2 for the SEEG cost projections necessary for a 2025 compliance.



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HEATHER A. BREINING

April 26, 2021

Environmental Services

Ex: MEC-75 | Source: U-20963 st-ce-454 + ST-CE-454-Breining\_ATT\_2 (excerpt), Total Estimate Summary tab

Project ID: TBD  
 Construction Site: Campbell JH Plant

Description: JHC SEEG Modification

Estimator's Note(s)/Assumptions:

- 1) Estimate based on 5 year Project Schedule
- 2) Estimate includes AFUDC (Construction Duration longer than 6 months)
- 3) Estimate based on 2025 In-service Year
- 4) See Basis of Estimate for Complete list of Assumptions

**TOTAL ESTIMATE SUMMARY**

Cost Element	Description:	2021 Totals	2022 Totals	2023 Totals	2024 Totals	2025 Totals	Combined Estimate Total
5866000	Blowdown:	\$0	\$0	\$0	\$0	\$0	\$0
5101500	Cathodic:	\$0	\$0	\$0	\$0	\$0	\$0
5101500	Civil:	\$0	\$0	\$0	\$0	\$0	\$0
5101500	Mechanical:	\$0	\$683,100	\$0	\$0	\$0	\$683,100
5101500	Electrical:	\$0	\$0	\$0	\$0	\$0	\$0
5101500	I&C:	\$0	\$0	\$0	\$0	\$0	\$0
5101500	Minor Mats/Small Tools:	\$0	\$7,000	\$0	\$0	\$0	\$7,000
5101500	PCN Mtls:	\$0	\$0	\$0	\$0	\$0	\$0
5503500	Contractor Cost (Outside Services):	\$0	\$0	\$7,621,050	\$5,301,600	\$0	\$12,922,650
5508000	Contractor Cost-Other:	\$215,250	\$564,300	\$863,650	\$733,200	\$285,000	\$2,661,400
A1000	OM&C Direct Lbr:	\$0	\$0	\$8,720	\$8,960	\$9,200	\$26,880
A3000	Non Exempt Direct Lbr:	\$0	\$0	\$2,180	\$2,240	\$2,300	\$6,720
C1061	T&S Stores Lbr:	\$0	\$35,000	\$0	\$0	\$0	\$35,000
C1062	T&S Stores Non-Lbr:	\$0	\$14,000	\$0	\$0	\$0	\$14,000
5380000	Lab Services Lbr:	\$0	\$0	\$4,360	\$0	\$0	\$4,360
5390000	Lab Services NonLbr:	\$0	\$0	\$1,090	\$0	\$0	\$1,090
M1081	Legal:	\$0	\$0	\$0	\$0	\$0	\$0
M1034	Environmental:	\$0	\$0	\$0	\$0	\$0	\$0
N2034	Real Estate:	\$0	\$0	\$0	\$0	\$0	\$0
N2034	Real Estate Non Labor:	\$0	\$0	\$0	\$0	\$0	\$0
A3500	Engineering:	\$231,750	\$293,620	\$499,220	\$575,680	\$414,000	\$2,014,270
5210000	Fees and Permits:	\$6,000	\$0	\$0	\$0	\$0	\$6,000
5201200	General Travel-Other:	\$0	\$3,000	\$0	\$0	\$0	\$3,000
A1000	PCN OM&C Lbr:	\$0	\$0	\$0	\$0	\$0	\$0
5503500	PCN Contractor Lbr:	\$0	\$0	\$0	\$0	\$0	\$0
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>Totals</b>
	Total Project Direct Sub-Total	\$453,000	\$1,600,020	\$9,000,270	\$6,621,680	\$710,500	\$18,385,470
	<b>Total Project Contingency</b>	<b>\$22,650</b>	<b>\$77,551</b>	<b>\$449,959</b>	<b>\$331,084</b>	<b>\$35,525</b>	<b>\$916,769</b>
	Total Sub-Total	\$475,650	\$1,677,571	\$9,450,229	\$6,952,764	\$746,025	\$19,302,239
	Engineering & Supervision (E&S)	\$56,549	\$199,346	\$1,122,660	\$826,016	\$88,625	\$2,293,196
	Administrative & General (A&G)	\$71,831	\$119,833	\$390,108	\$338,350	\$125,605	\$1,045,727
	Pension	\$19,933	\$33,253	\$108,252	\$93,890	\$34,855	\$290,182
	Total Overheads	\$148,000	\$352,000	\$1,621,000	\$1,258,000	\$249,000	\$3,629,000
	AFUDC	\$0	\$0	\$631,727	\$1,158,836	\$0	\$1,790,563
	<b>Project Estimate Total</b>	<b>\$623,650</b>	<b>\$2,029,571</b>	<b>\$11,702,956</b>	<b>\$9,369,600</b>	<b>\$995,025</b>	<b>\$24,721,802</b>

Estimated Total Project Cost*:	\$24,721,802
Conceptual Est. Cost Range*:	\$ 17,305,261 - \$ 37,082,703
* Based on 0% Engineering Completed	
Range based on CE accuracy standard -30% / +50%	

INPUT	
11.880%	E&S
23.460%	(A&G) CECo Labor + E&S
6.510%	(Pension) CECo Labor + E&S
19.738%	Overheads as % of Direct Costs
	<b>Overheads Updated 11/3/2020</b>

**PERMIT NO. MI0001422**



**AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act, 33 U.S.C., Section 1251 *et seq.*, as amended; Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2019-06,

**Consumers Energy Company**  
One Energy Plaza  
Jackson, MI 49201

is authorized to discharge from the **Consumers Energy Company, J. H. Campbell Power Plant** located at

17000 Croswell St.  
West Olive, MI 49460

designated as **CECO-J H Campbell Power Plt**

to the receiving waters named Lake Michigan and the Pigeon River in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit is based on a complete application submitted on March 22, 2016, as amended through September 1, 2016; and a complete modification request submitted on January 11, 2021.

**This permit originally took effect on June 1, 2018. This modified permit takes effect on October 1, 2021.** The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its original effective date, the permit superseded National Pollutant Discharge Elimination System (NPDES) Permit No. MI0001422 (expiring October 1, 2016).

This permit and the authorization to discharge shall expire at midnight on **October 1, 2022**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application that contains such information, forms, and fees as are required by the Michigan Department of Environment, Great Lakes, and Energy (Department) by **April 4, 2022**.

**Issued:** May 29, 2018. Modified (major) September 30, 2021.

Original signed by Christine Alexander  
Christine Alexander, Manager  
Permits Section  
Water Resources Division



PERMIT NO. MI0001422

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## PERMIT FEE REQUIREMENTS

In accordance with Section 324.3120 of the NREPA, the permittee shall make payment of an annual permit fee to the Department for each October 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at <https://miwaters.deq.state.mi.us>. Payment shall be submitted or postmarked by January 15 for notices mailed by December 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after December 1.

**Annual Permit Fee Classification:** Industrial-Commercial Major

In accordance with Section 324.3118 of the NREPA, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at <https://miwaters.deq.state.mi.us>. Payment shall be submitted or postmarked by March 15 for notices mailed by February 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after February 1.

## CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Grand Rapids District Office of the Water Resources Division. The Grand Rapids District Office is located at State Office Building, Fifth Floor, 350 Ottawa Ave NW, Unit 10, Grand Rapids, Michigan, 49503-2341, Telephone: 616-356-0500, Fax: 616-356-0202.

## CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PERMIT NO. MI0001422

Page 3 of 45

**PART I**

**Section A. Limitations and Monitoring Requirements**

**1. Effluent Limitations, Monitoring Point 001A**

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 984.841 MGD of noncontact cooling water; intake screen backwash; low volume wastewater, which includes but is not limited to: boiler blowdown, boiler drainage, recirculating house service water, laboratory and sampling streams, and water from floor drains; bottom ash transport water; chemical metal cleaning wastewater; coal pile runoff; storm water; leachate retention pond water; reverse osmosis backwash and reject water; and groundwater seepage from ash ponds and the recirculation pond from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to Lake Michigan at Latitude 42.91164, Longitude -86.21269. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
Flow	(report)	(report)	MGD	---	---	---	Daily	Report Total Daily Flow
Total Residual Oxidant (TRO) – See Part I.A.1.g. <u>During Chlorination – No Bromine Use</u>								
Total Residual Chlorine (TRC) Discharge Time	---	---	---	---	(report)	min/day	Daily	Report Total Discharge Time
Continuous (greater than 160 min/day)	---	---	---	---	38	ug/l	Daily	Grab
Intermittent (less than/equal to 160 min/day)	---	---	---	<u>Daily Average</u> 200	<u>Instantaneous Maximum</u> 300	ug/l	Daily	Grab
<u>During Bromination – Alone or With Chlorine</u>								
Intermittent (less than/equal to 120 min/day)	---	---	---	(report)	50	ug/l	Daily	Grab
TRO Discharge Time	---	---	---	---	<u>Maximum Daily</u> 120	min/day	Daily	Report Total Discharge Time
Total Phosphorus (as P)	---	(report)	lbs/day	---	(report)	mg/l	Quarterly	Grab
Total Copper, see Part I.A.1.i.	---	---	---	---	(report)	mg/l	Daily	Grab
Total Iron, see Part I.A.1.i.	---	---	---	---	(report)	mg/l	Daily	Grab
EVAC (as amine)	---	---	---	---	78	ug/l	Every 2 Hrs During Discharge	Grab
Temperature								
Intake (Unit 3 intake)	---	---	---	(report)	(report)	°F	Daily	Continuous
Discharge	---	---	---	(report)	(report)	°F	Daily	Continuous
Outfall Observation	(report)	---	---	---	---	---	5X Weekly	Visual

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**Section A. Limitations and Monitoring Requirements**

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
pH	---	---	---	<u>Minimum Daily</u> 6.5	9.0	S.U.	2X Monthly	Grab

- a. **Narrative Standard**  
 The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Monitoring Location**  
 Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to Lake Michigan. Intake temperature monitoring shall be taken at the Unit 3 intake.
- c. **Outfall Observation**  
 Outfall observation shall be reported as "yes" or "no." The permittee shall report yes if this requirement was completed and no if this requirement was not completed. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department followed with a written report within 5 days detailing the findings of the investigation and the steps taken to correct the condition.
- d. **Quarterly Monitoring**  
 Quarterly samples shall be taken during the months of January, April, July, and October. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "\*"G" on the Discharge Monitoring Report (DMR).
- e. **Water Treatment Additives**  
 This permit does not authorize the discharge of water treatment additives without approval. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water treatment additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request for approval in accordance with Part I.A.6. of this permit.
- f. **Analytical Methods and Quantification Levels for Total Phosphorus and Total Copper**  
 The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Total Phosphorus and Total Copper shall be in accordance with Part II.B.2. of this permit. The quantification level for Total Phosphorus and Total Copper, shall be 10 ug/l and 1.0 ug/l, respectively, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval from the Department, the permittee may use alternate analytical methods (for parameters with methods specified in Title 40 of the Code of Federal Regulations (CFR), Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136).

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### Section A. Limitations and Monitoring Requirements

- g. **Total Residual Oxidant (Chlorine and Bromine) Requirements**  
Total Residual Oxidant (TRO) shall be analyzed in accordance with Part II.B.2. of this permit. TRO monitoring is only required during periods of chlorine or bromine use and subsequent discharge. The limitations specified in Part I.A.1. for the intermittent discharge of chlorine alone apply only when the discharge of chlorine alone is less than or equal to 160 minutes per day, otherwise the limitations for continuous discharge of chlorine alone apply. Authorization to discharge bromine alone or with chlorine is limited to 120 minutes per day at the limitations specified in Part I.A.1., with the additional requirement that any discharge of chlorine is further restricted to a concurrent discharge with bromine (no additional discharge of chlorine is authorized for that day).
- During the intermittent discharge of chlorine without bromine ("During Chlorination – No Bromine Use"), the daily average concentration reported for TRC shall be the average of the individual analytical results of a minimum of three (3) grab samples collected at equal intervals during a chlorine discharge event, with the additional limitation that no single sample may exceed 300 ug/l.
- During the intermittent discharge of bromine alone or with chlorine ("During Bromination – Alone or With Chlorine"), the daily average concentration reported for TRO shall be the average of the individual analytical results of a minimum of three (3) grab samples collected at equal intervals during a bromine, or bromine plus chlorine, discharge event, with the limitation that no single sample may exceed 50 ug/l of TRO.
- The permittee shall enter "\*G" on the Discharge Monitoring Report for the TRO discharge modes not being used.
- The permittee may use dehalogenation techniques to achieve the applicable TRO limitations, using sodium thiosulfate, sodium sulfite, sodium bisulfite, or other dehalogenating reagents approved by the Department. The quantity of the reagent(s) used shall be limited to 0.6 times the stoichiometric amount of TRO for sodium thiosulfate, 1.5 times the stoichiometric amount of TRO for sodium bisulfite, and 1.8 times the stoichiometric amount of TRO for sodium sulfite. The TRO samples taken to determine the amount of each chemical to add shall be taken upstream of dehalogenation.
- h. **Zebra Mussel Control Requirements**  
The discharge of EVAC (as amine) is restricted to no more than six (6) times per year, for no more than 12 hours per discharge event. The permittee shall notify the Department at least one (1) week prior to each discharge.
- The sampling procedure, preservation and handling, and analytical protocol for compliance monitoring for EVAC (as amine) shall be in accordance with the Acid Orange Method. The quantification level shall not exceed 50 ug/l for EVAC (as amine), unless higher levels are appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Other methods may be used upon approval from the Department. The highest value measured during the discharge event shall be reported. If the concentration in all samples is less than the quantification level, report "<" the quantification level used by the analyzing laboratory on the DMR.
- i. **Total Copper and Total Iron Monitoring**  
The monitoring requirements for total copper and total iron apply only when a discharge from the chemical treatment facility occurs through Monitoring Point 001A.
- j. **Temperature Monitoring**  
When the continuous temperature monitoring system is inoperative, the effluent daily maximum temperature may be reported on a single daily reading.

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**Section A. Limitations and Monitoring Requirements**

- k. Acid Cleaning  
 The periodic use of Muriatic acid for cleaning sodium hypochlorite injection systems nozzles is approved.
- l. Power Plants – Polychlorinated Biphenyls (PCB) Prohibition  
 The permittee shall not discharge any PCBs to the receiving waters of the state of Michigan as a result of plant operations.

**2. Effluent Limitations, Monitoring Point 001B (Ash Pond System Discharge)**

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 7.77 MGD of bottom ash transport water; chemical metal cleaning wastewater; coal pile runoff; low volume wastewater, which includes but is not limited to: boiler blowdown, boiler drainage, recirculating house service water, laboratory and sampling streams, reverse osmosis backwash and reject, and water from floor drains; storm water; leachate retention pond water; and groundwater seepage from ash ponds and recirculation pond from Monitoring Point 001B through Monitoring Point 001A and Outfall 001. Outfall 001 discharges to Lake Michigan at Latitude 42.91164, Longitude -86.21269. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
Flow	---	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Total Suspended Solids	---	---	---	30	50	mg/l	Monthly	Grab
Oil & Grease	---	---	---	15	20	mg/l	Annually	Grab
Total Copper, see Part I.A.2.a.	---	---	---	---	1.0	mg/l	Daily	Grab
Total Iron, see Part I.A.2.a.	---	---	---	---	1.0	mg/l	Daily	Grab

- a. Total Copper and Total Iron Limits  
 The limits and monitoring requirements for total copper and total iron apply only to the discharge from the chemical treatment facility when operating. The chemical treatment facility effluent shall not be mixed with any other waste stream prior to sampling for compliance monitoring. All samples shall be taken prior to discharge to the recirculation pond.
- b. Monitoring Location  
 Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to the Unit 2 condenser discharge channel.
- c. Annual Monitoring  
 Annual samples shall be taken during the month of April. If the facility does not discharge during this month, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "G" on the Discharge Monitoring Report (DMR).

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- d. Analytical Methods and Quantification Levels for Total Copper  
 The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Total Copper shall be in accordance with Part II.B.2. of this permit. The quantification level for Total Copper shall be 1.0 ug/l unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval from the Department, the permittee may use alternate analytical methods (for parameters with methods specified in Title 40 of the Code of Federal Regulations (CFR), Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136).

### 3. Effluent Limitations, Monitoring Point 001C (Plant Oil/Water Separator Discharge)

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 9.65 MGD of noncontact cooling water; low volume wastewater, which includes but is not limited to: boiler blowdown, recirculating house service water, laboratory and sampling streams, and water from floor drains; treated coal pile runoff; and storm water from Monitoring Point 001C through Monitoring Point 001A and Outfall 001. Outfall 001 discharges to Lake Michigan at Latitude 42.91164, Longitude -86.21269. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
Flow	---	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Total Suspended Solids	---	---	---	25	40	mg/l	Monthly	Grab
Oil & Grease	---	---	---	---	10	mg/l	Monthly	Grab

- a. Monitoring Location  
 Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to Units 1 & 2 intake channel.
- b. Monitoring Frequency Reduction for Oil & Grease  
 After the submittal of 12 months of data, the permittee may request, in writing, Department approval for a reduction in monitoring frequency for Oil & Grease. This request shall contain an explanation as to why the reduced monitoring is appropriate. Upon receipt of written approval and consistent with such approval, the permittee may reduce the monitoring frequency indicated in Part I.A.3. of this permit. The monitoring frequency for Oil & Grease shall not be reduced to less than Annually. The Department may revoke the approval for reduced monitoring at any time upon notification to the permittee.

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**4. Effluent Limitations, Monitoring Point 002A (Ash Pond Discharge)**

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 10.45 MGD of bottom ash transport water; economizer ash wastewater; chemical metal cleaning wastewater; coal pile runoff; low volume wastewater which includes but is not limited to: ion exchange wastewater, boiler blowdown, boiler drainage, recirculating house service water, laboratory and sampling streams, reverse osmosis backwash and reject water, and water from floor drains; storm water; and groundwater seepage from ash ponds and the recirculation pond from Monitoring Point 002A through Outfall 002. Outfall 002 discharges to the Pigeon River at Latitude 42.90292, Longitude -86.196033. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
Flow	(report)	(report)	MGD	---	---	---	2X Monthly	Report Total Daily Flow
Total Suspended Solids	---	---	---	30	50	mg/l	Monthly	Grab
Oil & Grease	---	---	---	15	20	mg/l	Annually	Grab
Total Copper, see Part I.A.4.f.	---	---	---	---	(report)	mg/l	Daily	Grab
Total Iron, see Part I.A.4.f.	---	---	---	---	(report)	mg/l	Daily	Grab
Total Arsenic	---	(report)	lbs/day	---	(report)	ug/l	Quarterly	Grab
Total Phosphorus (as P)	---	(report)	lbs/day	---	(report)	mg/l	Quarterly	Grab
Total Selenium	0.47	(report)	lbs/day	5.3	(report)	ug/l	Quarterly	Grab
EVAC (as amine), see Part I.A.4.h.	---	---	---	---	78	ug/l	See Permit Requirements	Grab
Outfall Observation	(report)	---	---	---	---	---	5X Weekly	Visual
				<b>Minimum Daily</b>				
pH	---	---	---	6.5	9.0	S.U.	2X Monthly	Grab

- a. **Narrative Standard**  
 The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Monitoring Location**  
 Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to discharge to the Pigeon River.
- c. **Outfall Observation**  
 Outfall observation shall be reported as "yes" or "no." The permittee shall report yes if this requirement was completed and no if this requirement was not completed. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended

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### Section A. Limitations and Monitoring Requirements

solids, or deposits) shall be reported within 24 hours to the Department followed with a written report within 5 days detailing the findings of the investigation and the steps taken to correct the condition.

- d. **Quarterly and Annual Monitoring**  
Quarterly samples shall be taken during the months of January, April, July, and October. Annual samples shall be taken during the month of April. If the facility does not discharge during these months, the permittee shall sample the next discharge occurring during the period in question. If the facility does not discharge during the period in question, a sample is not required for that period. For any month in which a sample is not taken, the permittee shall enter "G" on the Discharge Monitoring Report (DMR).
- e. **Water Treatment Additives**  
This permit does not authorize the discharge of water treatment additives without approval. Approval of water treatment additives is authorized under separate correspondence. Water treatment additives include any material that is added to water used at the facility or to a wastewater generated by the facility to condition or treat the water. In the event a permittee proposes to discharge water treatment additives, including an increased discharge concentration of a previously approved water treatment additive, the permittee shall submit a request for approval in accordance with Part I.A.6. of this permit.
- f. **Total Copper and Total Iron Monitoring**  
The monitoring requirements for total copper and total iron apply only when a discharge from the chemical treatment facility occurs through Monitoring Point 002A.
- g. **Analytical Methods and Quantification Levels for Total Arsenic, Total Copper, and Total Phosphorus**  
The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Total Arsenic, Total Copper, and Total Phosphorus shall be in accordance with Part II.B.2. of this permit. The quantification level for Total Arsenic, Total Copper, and Total Phosphorus shall be 1.0 ug/l, 1.0 ug/l, and 10 ug/l, respectively, unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval from the Department, the permittee may use alternate analytical methods (for parameters with methods specified in Title 40 of the Code of Federal Regulations (CFR), Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136).
- h. **Zebra Mussel Control Requirements**  
The discharge of EVAC (as amine) is restricted to no more than six (6) times per year, for no more than five (5) days per discharge event. The permittee shall notify the Department at least one (1) week prior to each discharge. Upon initiation of each EVAC treatment, samples shall be collected at Monitoring Point 002A at least once every three hours for a twelve (12) hour period. Once treatment is complete following the twelve (12) hour period, sampling will occur once daily the following day for five consecutive days to show that the concentration (as an amine) measured at Monitoring Point 002A is below detection (zero).  
  
The sampling procedure, preservation and handling, and analytical protocol for compliance monitoring for EVAC (as amine) shall be in accordance with the Acid Orange Method. The quantification level shall not exceed 50 ug/l for EVAC (as amine), unless higher levels are appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Other methods may be used upon approval from the Department. The highest value measured during the discharge event shall be reported. If the concentration in all samples is less than the quantification level, report "<" the quantification level used by the analyzing laboratory on the DMR.
- i. **Power Plants – Polychlorinated Biphenyls (PCB) Prohibition**  
The permittee shall not discharge any PCBs to the receiving waters of the state of Michigan as a result of plant operations.



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#### 5. Effluent Limitations, Monitoring Point 002C

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge a maximum of 1.092 MGD of chemical metal cleaning wastewater from Monitoring Point 002C through Monitoring Point 002A and Outfall 002. Outfall 002 discharges to the Pigeon River at Latitude 42.90292, Longitude -86.196033. Such discharge shall be limited and monitored by the permittee as specified below.

<u>Parameter</u>	<u>Maximum Limits for Quantity or Loading</u>			<u>Maximum Limits for Quality or Concentration</u>			<u>Monitoring Frequency</u>	<u>Sample Type</u>
	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>	<u>Monthly</u>	<u>Daily</u>	<u>Units</u>		
Flow	---	(report)	MGD	---	---	---	Monthly	Report Total Daily Flow
Total Copper, see Part I.A.5.a.	---	---	---	---	1.0	mg/l	Daily	Grab
Total Iron, see Part I.A.5.a.	---	---	---	---	1.0	mg/l	Daily	Grab

- a. **Total Copper and Total Iron Limits**  
 The limits and monitoring requirements for total copper and total iron apply only to the discharge from the chemical treatment facility when operating. The chemical treatment facility effluent shall not be mixed with any other waste stream prior to sampling for compliance monitoring. All samples shall be taken prior to discharge to the recirculation pond.
- b. **Monitoring Location**  
 Samples, measurements, and observations taken in compliance with the monitoring requirements above shall be taken prior to the Unit 2 condenser discharge channel.
- c. **Analytical Methods and Quantification Levels for Total Copper**  
 The sampling procedures, preservation and handling, and analytical protocol for compliance monitoring for Total Copper shall be in accordance with Part II.B.2. of this permit. The quantification level for Total Copper shall be 1.0 ug/l unless a higher level is appropriate because of sample matrix interference. Justification for higher quantification levels shall be submitted to the Department within 30 days of such determination. Upon approval from the Department, the permittee may use alternate analytical methods (for parameters with methods specified in Title 40 of the Code of Federal Regulations (CFR), Part 136, the alternate methods are restricted to those listed in 40 CFR, Part 136).

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#### 6. Request for Discharge of Water Treatment Additives

Prior to discharge of any water treatment additive, the permittee shall obtain written approval from the Department. Requests for such approval shall be submitted via the Department's MiWaters system. The MiWaters website is located at <https://miwaters.deq.state.mi.us>. Instructions for submitting such a request may be obtained at <http://www.michigan.gov/deqnpdes> (near the bottom of that page, click on one or both of the links located under the Water Treatment Additives banner). Additional monitoring and reporting may be required as a condition for the approval to discharge the additive.

A request to discharge water treatment additives shall include all of the following usage and discharge information for each water treatment additive proposed to be discharged:

- a. Safety Data Sheet (formerly known as Material Safety Data Sheet);
- b. the proposed water treatment additive discharge concentration with supporting calculations;
- c. the discharge frequency (i.e., number of hours per day and number of days per year);
- d. the outfall and monitoring point from which the product is to be discharged;
- e. the type of removal treatment, if any, that the water treatment additive receives prior to discharge;
- f. the product's function (i.e. microbiocide, flocculant, etc.);
- g. a 48-hour LC<sub>50</sub> or EC<sub>50</sub> for a North American freshwater planktonic crustacean (either *Ceriodaphnia sp.*, *Daphnia sp.*, or *Simocephalus sp.*); and
- h. the results of a toxicity test for one (1) other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of R 323.1057(2) of the Water Quality Standards. Examples of tests that would meet this requirement include a 96-hour LC<sub>50</sub> for rainbow trout, bluegill, or fathead minnow.

#### 7. Cold Shock Prevention

Cessation of thermal inputs to the receiving water by this facility shall occur gradually so as to avoid fish mortality due to cold shock during the winter months (November through March). The basis for this requirement is to allow fish associated with the discharge-heated mixing zone for Outfall 001 to acclimate to the decreasing temperature. The Department acknowledges that the permittee meets this condition based on the equipment and practices implemented at Outfall 001 identified in the application.

#### 8. Intake Screen Backwash, Outfall 001

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge intake screen backwash from Outfall 001 to Lake Michigan. The permittee shall collect and remove debris accumulated on intake trash bars and dispose of such material on land in an appropriate manner.

#### 9. Periodic/Temporary Rerouting of Combined Plant Discharge

The permittee is authorized to divert the combined flow from Units 1 & 2 and Unit 3 offshore intake structure under the following conditions: (a) for deicing when the intake water temperature falls below 36° F and intakes are at risk of becoming partially or completely restricted because of icing, (b) when Unit 3 is off line during a scheduled or unscheduled outage and the deepwater discharge pumps are turned off, or (c) for thermal treatment or control of zebra mussels and asiatic clams. The permittee is not required to provide any additional monitoring of this discharge because the effluent limitations and monitoring requirements for Outfall 001, for

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which monitoring/reporting shall be continued as usual during the diversion, will determine compliance with the applicable water quality standards and any other requirements.

#### 10. Cooling Water Intake Structures – Interim Approval

The federal rules promulgated by the United States Environmental Protection Agency (USEPA) in 40 CFR Parts 122 and 125 establishing the requirements of section 316(b) of the Clean Water Act for Existing Facilities took effect October 14, 2014. Beginning October 14, 2014, any facility covered by the rules requesting permit reissuance shall submit an application in accordance with the rules and shall be subject to the best technology available (BTA) standards for impingement mortality and entrainment as defined in the rules. In accordance with 40 CFR 125.95(a)(2), the Department approved the permittee's March 10, 2016, request for an alternate schedule for submission of the information required in 40 CFR 122.21(r). The alternate schedule for submission of the reports identified in the request for is set for April 30, 2018 (received).

The cooling water intake structure operated by the permittee has been evaluated using all available information relating to its location, design, construction, and capacity. At this time, the Department has made an **interim** determination that the cooling water intake structure represents BTA to minimize adverse environmental impact in accordance with section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326). The permittee shall at all times properly operate and maintain the cooling water intake structure and associated equipment to minimize adverse environmental impact. The permittee shall give advance notice to the Department of any planned changes in the location, design, operation, or capacity of the intake structure. If the Department determines that additional technologies or control measures are necessary to reduce the impact of impingement or entrainment, the Department may revise the requirements of this condition. Nothing in this permit shall either be construed to relieve the permittee from civil or criminal penalties for previous or future fish losses, or authorize take for the purposes of a facility's compliance with the Endangered Species Act.

#### 11. Facility Contact

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
  - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
  - for a partnership, a general partner,
  - for a sole proprietorship, the proprietor, or
  - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
  - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
  - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

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#### 12. Discharge Monitoring Report – Quality Assurance Study Program

The permittee shall participate in the Discharge Monitoring Report – Quality Assurance (DMR-QA) Study Program. The purpose of the DMR-QA Study Program is to annually evaluate the proficiency of all in-house and/or contract laboratory(ies) that perform, on behalf of the facility authorized to discharge under this permit, the analytical testing required under this permit. In accordance with Section 308 of the Clean Water Act (33 U.S.C. § 1318); and R 323.2138 and R 323.2154 of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, participation in the DMR-QA Study Program is required for all major facilities, and for minor facilities selected for participation by the Department.

Annually and in accordance with DMR-QA Study Program requirements and submittal due dates, the permittee shall submit to the Michigan DMR-QA Study Program state coordinator all documentation required by the DMR-QA Study. DMR-QA Study Program participation is required only for the analytes required under this permit and only when those analytes are also identified in the DMR-QA Study.

If the permitted facility's status as a major facility should change, participation in the DMR-QA Study Program may be reevaluated. Questions concerning participation in the DMR-QA Study Program should be directed to the Michigan DMR-QA Study Program state coordinator.

All forms and instructions required for participation in the DMR-QA Study Program, including submittal due dates and state coordinator contact information, can be found at <http://www.epa.gov/compliance/discharge-monitoring-report-quality-assurance-study-program>.

#### 13. Schedule of Compliance for Bottom Ash Transport Water

The permittee shall manage the discharge of bottom ash transport water (BATW) to surface waters of the state in accordance with EPA's Final Steam Electric Reconsideration Rule (Final Rule), effective October 13, 2020. This schedule of compliance (SOC) is based on two separate compliance pathways established by the Final Rule for BATW: the Cessation of Coal Burning Activities subcategory, and the implementation of an ELG-compliant technology. The permittee shall attain compliance with the Final Rule by completing the following requirements.

- a. On or before October 13, 2021, the permittee shall:
  - 1) submit a Notice of Planned Participation (NOPP) in the Cessation of Coal Burning Activities subcategory in accordance with 40 CFR §423.19 – if this compliance pathway is being considered, and/or
  - 2) submit an update on the feasibility evaluation to select an ELG-compliant technology – if this compliance pathway is being considered.
  
- b. On or before April 4, 2022, with the application for reissuance, the permittee shall submit a description of the ELG-compliant technology selected – if the ELG-compliant technology pathway is being considered.

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### Section A. Limitations and Monitoring Requirements

- c. On or before December 31, 2022, the permittee shall:
- 1) submit an annual progress report in accordance with 40 CFR §423.19 to ensure compliance under the Cessation of Coal Burning Activities subcategory – if this compliance pathway is being considered, and/or
  - 2) commence the engineering and design process for implementation of the selected ELG-compliant technology and submit a status report on this process – if this compliance pathway is being considered.
- d. On or before December 31, 2023, the permittee shall submit to the Department a report identifying the final pathway selected for compliance with the Final Rule: either the Cessation of Coal Burning Activities subcategory (including the annual progress report in accordance with 40 CFR §423.19), or the implementation of an ELG-compliant technology.
- e. On or before December 31, 2024, the permittee shall:
- 1) submit an annual progress report in accordance with 40 CFR §423.19 to ensure compliance under the Cessation of Coal Burning Activities subcategory – if this compliance pathway was selected, or
  - 2) continue construction of the selected ELG-compliant technology and submit a construction status report that includes a description of any impediments to final implementation by December 31, 2025 – if this compliance pathway was selected.
- f. On or before December 31, 2025, the permittee shall:
- 1) submit an annual progress report in accordance with 40 CFR §423.19 to ensure compliance under the Cessation of Coal Burning Activities subcategory – if this compliance pathway was selected, or
  - 2) submit an Initial Certification Statement in accordance with 40 CFR §423.19(c) and comply with the requirements set forth in Part I.A.14.b. of this permit – if the ELG-compliant technology pathway was selected.
- g. If the permittee selected the Cessation of Coal Burning Activities subcategory as the final pathway for compliance with the Final Rule, the permittee shall complete the following:
- 1) On or before December 31, 2026, the permittee shall submit an annual progress report in accordance with 40 CFR §423.19 to ensure compliance under the Cessation of Coal Burning Activities subcategory.
  - 2) On or before December 31, 2027, the permittee shall submit an annual progress report in accordance with 40 CFR §423.19 to ensure compliance under the Cessation of Coal Burning Activities subcategory.
  - 3) On or before December 31, 2028, the permittee shall comply with the requirements set forth in Part I.A.14.a. of this permit.

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## PART I

### Section A. Limitations and Monitoring Requirements

#### 14. Bottom Ash Transport Water Discharge Prohibition

- a. If the permittee has certified to the Department the intention to pursue the Cessation of Coal Burning Activities subcategory as set forth in Part I.A.13. of this permit, then the discharge of all BATW shall comply with the final effluent limitations set forth in Part I.A.2. and Part I.A.4. of this permit until no later than December 31, 2028, by which date the permittee shall cease discharge of newly generated BATW from any outfall and the discharge of previously generated BATW shall comply with the final effluent limitations set forth in Part I.A.2. and Part I.A.4. of this permit.
- b. Beginning December 31, 2025, the permittee is prohibited from discharging newly generated BATW from any outfall in accordance with 40 CFR 423.13(k)(1), except for those discharges to which paragraph (k)(2) applies. After December 31, 2025, any discharge volume of BATW shall be reduced or eliminated to the extent achievable using control measures that are technologically available and economically achievable in light of best industry practices. The total volume of BATW allowed to be discharged under (k)(2) shall be determined by the Department on a case-by-case basis and in no event shall such discharge exceed a 30-day rolling average of 10 percent of the primary active wetted bottom ash system volume. At least 180 days prior to the discharge of any newly generated BATW, the permittee shall submit to the Department all information required under 40 CFR 423.19(c) for reviews required under (k)(2).

The Department may modify or reissue this permit in accordance with applicable rules in order to establish the permit requirements set forth in the rules for 40 CFR Part 423, Steam Electric Power Generating Point Source Category.

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## PART I

### Section B. Storm Water Pollution Prevention

#### 1. Final Effluent Limitations and Monitoring Requirements

The permittee is authorized to discharge storm water associated with industrial activity, as defined under 40 CFR 122.26(b)(14)(i-ix), to the surface waters of the state. Such discharge shall be limited and monitored by the permittee as specified below.

- a. **Narrative Standard**  
The receiving water shall contain no turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits as a result of this discharge in unnatural quantities which are or may become injurious to any designated use.
- b. **Visual Assessment of Storm Water Discharges**  
To ensure that storm water discharges from the facility do not violate the narrative standard in the receiving waters, storm water discharges shall be visually assessed in accordance with this permit.
- c. **Implementation of Storm Water Pollution Prevention Plan**  
The permittee shall implement an acceptable Storm Water Pollution Prevention Plan (SWPPP) as required by this permit.
- d. **Certified Operator**  
The permittee shall have an Industrial Storm Water Certified Operator who has supervision over the facility's storm water treatment and control measures included in the SWPPP.

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### Section B. Storm Water Pollution Prevention

*The Storm Water Pollution Prevention Plan (SWPPP) is a written procedure to reduce the exposure of storm water to significant materials and to reduce the amount of significant materials in the storm water discharge. An acceptable SWPPP shall identify potential sources of contamination and describe the controls necessary to reduce their impacts in accordance with Part I.B.2. through Part I.B.8. of this permit.*

#### 2. Source Identification

To identify potential sources of significant materials that can pollute storm water and subsequently be discharged from the facility, the SWPPP shall, at a minimum, include the following:

- a. A site map identifying:
  - 1) buildings and other permanent structures;
  - 2) storage or disposal areas for significant materials;
  - 3) secondary containment structures and descriptions of the significant materials contained within the primary containment structures;
  - 4) storm water discharge points (which include outfalls and points of discharge), numbered or otherwise labeled for reference;
  - 5) location of storm water and non-storm water inlets (numbered or otherwise labeled for reference) contributing to each discharge point;
  - 6) location of NPDES-permitted discharges other than storm water;
  - 7) outlines of the drainage areas contributing to each discharge point;
  - 8) structural controls or storm water treatment facilities;
  - 9) areas of vegetation (with brief descriptions such as lawn, old field, marsh, wooded, etc.);
  - 10) areas of exposed and/or erodible soils and gravel lots;
  - 11) impervious surfaces (e.g., roofs, asphalt, concrete, etc.);
  - 12) name and location of receiving water(s); and
  - 13) areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the NREPA.
- b. A list of all significant materials that could pollute storm water. For each material listed, the SWPPP shall include each of the following descriptions:
  - 1) the ways in which each type of significant material has been, or has reasonable potential to become, exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, and vessels; contact with storage piles, contaminated materials, or soils; waste handling and disposal; deposits from dust or overspray; etc.);



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### Section B. Storm Water Pollution Prevention

- 2) identification of the discharge point(s) and the inlet(s) contributing the significant material to each discharge point through which the significant material may be discharged if released; and
- 3) an evaluation of the reasonable potential for contribution of significant materials to storm water from at least the following areas or activities:
  - a) loading, unloading, and other significant material-handling operations;
  - b) outdoor storage, including secondary containment structures;
  - c) outdoor manufacturing or processing activities;
  - d) significant dust- or particulate-generating processes;
  - e) discharge from vents, stacks, and air emission controls;
  - f) on-site waste disposal practices;
  - g) maintenance and cleaning of vehicles, machines, and equipment;
  - h) areas of exposed and/or erodible soils;
  - i) Sites of Environmental Contamination listed under Part 201 (Environmental Response) of the NREPA;
  - j) areas of significant material residues;
  - k) areas where animals (wild or domestic) congregate and deposit wastes; and
  - l) other areas where storm water may come into contact with significant materials.
- c. A listing of significant spills and significant leaks of polluting materials that occurred in areas that are exposed to precipitation or that discharge to a point source at the facility. The listing shall include spills that occurred over the three (3) years prior to the effective date of a permit authorizing discharge. The listing shall include the date, volume, and exact location of the release, and the action taken to clean up the material and/or prevent exposure to storm water or contamination of surface waters of the state. Any release that occurs after the SWPPP has been developed shall be controlled in accordance with the SWPPP and is cause for the SWPPP to be updated as appropriate within 14 calendar days of obtaining knowledge of the spill or loss.
- d. A determination as to whether its facility discharges storm water to a water body for which an EPA-approved Total Maximum Daily Load (TMDL) has been established. If so, the permittee shall assess whether the TMDL requirements for the facility's discharge are being met through the existing SWPPP controls or whether additional control measures are necessary. The permittee's assessment of whether the TMDL requirements are being met shall focus on the effectiveness, adequacy, and implementation of the permittee's SWPPP controls.
- e. A summary of existing storm water discharge sampling data (if available), describing pollutants in storm water discharges at the facility. This summary shall be accompanied by a description of the suspected source(s) of the pollutants detected.

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### Section B. Storm Water Pollution Prevention

#### 3. Nonstructural Controls

To prevent significant materials from contacting storm water at the source, the SWPPP shall, at a minimum, include each of the following nonstructural controls:

- a. Written procedures and a schedule for routine preventive maintenance. Preventive maintenance procedures shall describe routine inspections and maintenance of storm water management and control devices (e.g., cleaning of oil/water separators and catch basins, routine housekeeping activities, etc.), as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to the storm sewer system or the surface waters of the state. The routine inspection shall include areas of the facility in which significant materials have the reasonable potential to contaminate storm water. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.
- b. Written procedures and a schedule for good housekeeping to maintain a clean, orderly facility. Good housekeeping procedures shall include routine inspections that focus on the areas of the facility that have a reasonable potential to contaminate storm water entering the property. The routine housekeeping inspections may be combined with the routine inspections for the preventive maintenance program. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below.
- c. Written procedures and a schedule for **quarterly** comprehensive site inspections, to be conducted by the Industrial Storm Water Certified Operator. At a minimum, one inspection shall be performed within each of the following quarters: January-March, April-June, July-September, and October-December. The comprehensive site inspections shall include, but not be limited to, inspection of structural controls in use at the facility, and the areas and equipment identified in the routine preventive maintenance and good housekeeping procedures. These inspections shall also include a review of the routine preventive maintenance reports, good housekeeping inspection reports, and any other paperwork associated with the SWPPP. The permittee may request Department approval of an alternate schedule for comprehensive site inspections. A written report of the inspection and corrective actions shall be retained in accordance with Record Keeping, below, and the following shall be included on the comprehensive inspection form/report:
  - 1) Date of the inspection.
  - 2) Name(s), title(s), and certification number(s) of the personnel conducting the inspection.
  - 3) Precipitation information (i.e., a description of recent rainfall/snowmelt events).
  - 4) All observations relating to the implementation of control measures. Items to include if applicable:
    - a) updates on corrective actions implemented due to previously identified pollutant and/or discharge issues;
    - b) any evidence of, or the potential for, pollutants to discharge to the drainage system or receiving waters and the condition of and around the discharge point including flow dissipation measures needing maintenance or repairs;
    - c) any control measures needing maintenance or repairs; and
    - d) any additional control measures needed to comply with permit requirements.

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- 5) Any required revisions to the SWPPP resulting from the inspection.
- 6) A written certification stating the facility is in compliance with this permit and the SWPPP, or, if there are instances of noncompliance, they are identified.
- 7) Written procedures and a schedule for **quarterly** visual assessments of storm water discharges. At a minimum, one visual assessment shall be conducted within each of the following quarters: January-March, April-June, July-September, and October-December. These assessments shall be conducted as part of the comprehensive site inspection within one month of control measure observations made in accordance with 4), above. If the Department has approved an alternate schedule for the comprehensive site inspection, the visual assessment may likewise be conducted in accordance with the same approved alternate schedule.

The following are the requirements of the visual assessment. The permittee shall develop and clearly document, in writing, procedures for meeting these requirements:

- a) Within six (6) months of the effective date of this permit, the permittee shall develop written procedures for conducting the visual assessment and incorporate these procedures into the SWPPP. If Qualified Personnel rather than an Industrial Storm Water Certified Operator will collect storm water samples, these procedures shall include a written description of the training given to these personnel to qualify them to collect the samples, as well as documentation verifying that these personnel have received this training. The first visual assessment shall be conducted in conjunction with the next occurring comprehensive inspection. If changes resulting in altered drainage patterns occur at the facility, the permittee shall modify the procedures for conducting the visual assessment in accordance with the requirements of Keeping SWPPPs Current, below, and these modifications shall be incorporated into the SWPPP prior to conducting the next visual assessment.
- b) A visual assessment shall be conducted of a representative storm water **sample** collected **from each storm water discharge point**. Storm water samples shall be visually assessed for conditions that could cause a violation of water quality standards as defined in Water Quality Standards, below. The visual assessment shall be made of the storm water sample in a clean, clear glass or plastic container. Only an Industrial Storm Water Certified Operator shall conduct this visual assessment. Visual assessment of the storm water sample shall be conducted within 48 hours of sample collection.

Representative storm water samples shall be collected:

- (1) from each storm water discharge point identified as set forth under Source Identification, above. These samples may be collected by one or more of the following: an Industrial Storm Water Certified Operator; and/or an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the sample ("Qualified Personnel"); and/or an automated sampling device; and
- (2) within the first 30 minutes of the start of a discharge from a storm event and on discharges that occur at least 72 hours (3 days) from the previous discharge. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample shall be collected as soon thereafter as practicable, but not exceeding 60 minutes. In the case of snowmelt, samples shall be collected during a period with measurable discharge from the site.

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- c) A visual assessment shall be conducted of the storm water **discharge at each storm water discharge point**. (If an automated sampling device is used to collect the storm water sample, this requirement is waived). Either an Industrial Storm Water Certified Operator and/or Qualified Personnel may conduct this visual assessment. This visual assessment may be conducted directly – by someone physically present at the storm water discharge at each storm water discharge point; or it may be conducted indirectly – through the use of a visual recording taken of the storm water discharge at each storm water discharge point. Direct visual assessment shall be conducted at the same time that the storm water sample is collected. Indirect visual assessment shall be conducted using a visual recording taken of the storm water discharge at the same time that the storm water sample was collected.
- d) Visual assessments shall be documented. This documentation shall be retained in accordance with Record Keeping, below, and shall include the following:
- (1) sampling location(s) at the storm water discharge point(s) identified on the site map (see Source Identification, above);
  - (2) storm event information (i.e., length of event expressed in hours, approximate size of event expressed in inches of precipitation, duration of time since previous event that caused a discharge, and date and time the discharge began);
  - (3) date and time of the visual assessment of each storm water **discharge** at each storm water discharge point;
  - (4) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who conducted the visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this discharge point, this documentation requirement is waived;
  - (5) observations made during visual assessment of the storm water **discharge** at each storm water discharge point. If an automated sampling device was used to collect the storm water sample associated with this discharge point, this documentation requirement is waived;
  - (6) if applicable, any visual recordings used to conduct the visual assessment of the storm water **discharge** at each storm water discharge point;
  - (7) date and time of sample collection for each storm water **sample**;
  - (8) name(s) and title(s) of the Industrial Storm Water Certified Operator or Qualified Personnel who collected the storm water **sample**. If an automated sampling device was used to collect the storm water sample, the permittee shall document that, instead;
  - (9) date and time of the visual assessment of each storm water **sample**;
  - (10) name(s), title(s), and operator number(s) of the Industrial Storm Water Certified Operator(s) who conducted the visual assessment of each storm water **sample**;
  - (11) observations made during visual assessment of each storm water **sample**;

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- (12) full-color photographic evidence of the storm water **sample** against a white background;
  - (13) nature of the discharge (i.e., rainfall or snowmelt);
  - (14) probable sources of any observed storm water contamination; and
  - (15) if applicable, an explanation for why it was not possible to collect samples within the first 30 minutes of discharge.
- e) When adverse weather conditions prevent a visual assessment during the quarter, a substitute visual assessment shall be conducted during the next qualifying storm event. Documentation of the rationale for no visual assessment during a quarter shall be included with the SWPPP records as described in Record Keeping, below. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical such as drought or extended frozen conditions.
  - f) If the facility has two (2) or more discharge points that are believed to discharge substantially identical storm water effluents, the facility may conduct visual assessments of the discharge at just one (1) of the discharge points and report that the results also apply to the other substantially identical discharge point(s). The determination of substantially identical discharge points is to be based on the significant material evaluation conducted as set forth under Source Identification, above, and shall be clearly documented in the SWPPP. Visual assessments shall be conducted on a rotating basis of each substantially identical discharge point throughout the period of coverage under this permit.
- d. A description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills shall be identified in the SWPPP and made available to the appropriate personnel. The procedures shall identify measures to prevent spilled materials or material residues from contaminating storm water entering the property. The SWPPP shall include language describing what a reportable spill or release is and the appropriate reporting requirements in accordance with Part II.C.6. and Part II.C.7. The SWPPP may include, by reference, requirements of either a Pollution Incident Prevention Plan (PIPP) prepared in accordance with the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); a Hazardous Waste Contingency Plan prepared in accordance with 40 CFR 264 and 265 Subpart D, as required by Part 111 of the NREPA; or a Spill Prevention Control and Countermeasure (SPCC) plan prepared in accordance with 40 CFR 112.
  - e. Identification of areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion. Gravel lots shall be included. The SWPPP shall also identify measures used to control soil erosion and sedimentation.
  - f. A description of the employee training program that will be implemented on an annual basis to inform appropriate personnel at all levels of their responsibility as it relates to the components and goals of the SWPPP. The SWPPP shall identify periodic dates for the employee training program. Records of the employee training program shall be retained in accordance with Record Keeping, below.
  - g. Identification of actions to limit the discharge of significant materials in order to comply with TMDL requirements, if applicable.

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- h. Identification of significant materials expected to be present in storm water discharges following implementation of nonstructural preventive measures and source controls.

#### 4. Structural Controls

Where implementation of the measures required by Nonstructural Controls, above, does not control storm water discharges in accordance with Water Quality Standards, below, the SWPPP shall provide a description of the location, function, design criteria, and installation/construction schedule of structural controls for prevention and treatment. Structural controls may be necessary:

- a. to prevent uncontaminated storm water from contacting, or being contacted by, significant materials; or
- b. if preventive measures are not feasible or are inadequate to keep significant materials at the site from contaminating storm water. Structural controls shall be used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with water quality standards as identified in Water Quality Standards, below.

#### 5. Keeping SWPPPs Current

- a. The permittee and/or the Industrial Storm Water Certified Operator shall review the SWPPP annually after it is developed and maintain a written report of the review in accordance with Record Keeping, below. Based on the review, the permittee or the Industrial Storm Water Certified Operator shall amend the SWPPP as needed to ensure continued compliance with the terms and conditions of this permit. The written report shall be submitted to the Department on or before January 10<sup>th</sup> of each year.
- b. The SWPPP developed under the conditions of a previous permit shall be amended as necessary to ensure compliance with this permit.
- c. The SWPPP shall be updated or amended whenever changes at the facility have the potential to increase the exposure of significant materials to storm water, significant spills occur at the facility, or when the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Updates based on increased activity or spills at the facility shall include a description of how the permittee intends to control any new sources of significant materials, or respond to and prevent spills in accordance with the requirements of this permit (see Source Identification; Nonstructural Controls; and Structural Controls, above).
- d. The Department may notify the permittee at any time that the SWPPP does not meet minimum requirements of this permit. Such notification shall identify why the SWPPP does not meet minimum requirements of this permit. The permittee shall make the required changes to the SWPPP within 30 days after such notification from the Department or authorized representative and shall submit to the Department a written certification that the requested changes have been made.
- e. Amendments to the SWPPP shall be signed and retained on-site with the SWPPP pursuant to Signature and SWPPP Review, below.

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## PART I

### Section B. Storm Water Pollution Prevention

#### 6. Industrial Storm Water Certified Operator Update

If the Industrial Storm Water Certified Operator is changed or an Industrial Storm Water Certified Operator is added, the permittee shall provide the name and certification number of the new Industrial Storm Water Certified Operator to the Department. If a facility has multiple Industrial Storm Water Certified Operators, the names and certification numbers of all shall be included in the SWPPP.

#### 7. Signature and SWPPP Review

- a. The SWPPP shall be reviewed and signed by the Industrial Storm Water Certified Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP and associated records shall be retained on-site at the facility that generates the storm water discharge.
- b. The permittee shall make the SWPPP, reports, log books, storm water discharge sampling data (if collected), and items required by Record Keeping, below, available upon request to the Department. The Department makes the non-confidential business portions of the SWPPP available to the public.

#### 8. Record Keeping

The permittee shall maintain records of all SWPPP-related inspection and maintenance activities. Records shall also be kept describing incidents such as spills or other discharges that can affect the quality of storm water. All such records shall be retained for three (3) years. The following records are required by this permit (see Nonstructural Controls; and Keeping SWPPPs Current, above):

- a. routine preventive maintenance inspection reports;
- b. routine good housekeeping inspection reports;
- c. comprehensive site inspection reports;
- d. documentation of visual assessments;
- e. employee training records; and
- f. written summaries of the annual SWPPP review.

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## PART I

### Section B. Storm Water Pollution Prevention

#### 9. Water Quality Standards

At the time of discharge, there shall be no violation of water quality standards in the receiving waters as a result of the storm water discharge. This requirement includes, but is not limited to, the following conditions:

- a. In accordance with R 323.1050 of the Part 4 Rules promulgated pursuant to Part 31 of the NREPA, the receiving waters shall not have any of the following unnatural physical properties as a result of this discharge in quantities which are, or may become, injurious to any designated use: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits.
- b. Any unusual characteristics of the discharge (i.e., unnatural turbidity, color, oil film, floating solids, foams, settleable solids, suspended solids, or deposits) shall be reported within 24 hours to the Department, followed by a written report within five (5) days detailing the findings of the investigation and the steps taken to correct the condition.
- c. Any pollutant for which a level of control is specified to meet a TMDL established by the Department shall be controlled at the facility so that its discharge is reduced by/to the amount specified in the TMDL.



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## PART I

### Section B. Storm Water Pollution Prevention

#### 10. Prohibition of Non-Storm Water Discharges

Discharges of material other than storm water shall be in compliance with an NPDES permit issued for the discharge. Storm water shall be defined to include all of the following non-storm water discharges, provided pollution prevention controls for the non-storm water component are identified in the SWPPP:

- a. discharges from fire hydrant flushing;
- b. potable water sources, including water line flushing;
- c. water from fire system testing and fire-fighting training without burned materials or chemical fire suppressants;
- d. irrigation drainage;
- e. lawn watering;
- f. routine building wash-down that does not use detergents or other compounds;
- g. pavement wash waters where contamination by toxic or hazardous materials has not occurred (unless all contamination by toxic or hazardous materials has been removed) and where detergents are not used;
- h. uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- i. springs;
- j. uncontaminated groundwater;
- k. foundation or footing drains where flows are not contaminated with process materials such as solvents; and
- l. discharges from fire-fighting activities. Discharges from fire-fighting activities are exempted from the requirement to be identified in the SWPPP.

#### 11. Tracer Dye Discharges

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (R 323.1097 of the Michigan Administrative Code).

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## PART II

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

### Section A. Definitions

**Acute toxic unit (TU<sub>A</sub>)** means 100/LC<sub>50</sub> where the LC<sub>50</sub> is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

**Annual monitoring frequency** refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Authorized public agency** means a state, local, or county agency that is designated pursuant to the provisions of section 9110 of Part 91 of the NREPA to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

**Best management practices (BMPs)** means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

**Bioaccumulative chemical of concern (BCC)** means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

**Biosolids** are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

**Bulk biosolids** means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

**Certificate of Coverage (COC)** is a document, issued by the Department, which authorizes a discharge under a general permit.

**Chronic toxic unit (TU<sub>C</sub>)** means 100/MATC or 100/IC<sub>25</sub>, where the maximum acceptable toxicant concentration (MATC) and IC<sub>25</sub> are expressed as a percent effluent in the test medium.

**Class B biosolids** refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

**Combined sewer system** is a sewer system in which storm water runoff is combined with sanitary wastes.

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## PART II

### Section A. Definitions

**Daily concentration** is the sum of the concentrations of the individual samples of a parameter divided by the number of samples taken during any calendar day. If the parameter concentration in any sample is less than the quantification limit, regard that value as zero when calculating the daily concentration. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations (except for pH and dissolved oxygen). When required by the permit, report the maximum calculated daily concentration for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the Discharge Monitoring Reports (DMRs).

For pH, report the maximum value of any *individual* sample taken during the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs and the minimum value of any *individual* sample taken during the month in the “MINIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs. For dissolved oxygen, report the minimum concentration of any *individual* sample in the “MINIMUM” column under “QUALITY OR CONCENTRATION” on the DMRs.

**Daily loading** is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMRs.

**Daily monitoring frequency** refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Department** means the Michigan Department of Environment, Great Lakes, and Energy.

**Detection level** means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

**Discharge** means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

**EC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

#### **Fecal coliform bacteria monthly**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the “AVERAGE” column under “QUALITY OR CONCENTRATION” on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the “AVERAGE” column under “QUALITY OR CONCENTRATION” on the DMR.

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## PART II

### Section A. Definitions

#### **Fecal coliform bacteria 7-day**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**Flow-proportioned sample** is a composite sample with the sample volume proportional to the effluent flow.

**General permit** means a National Pollutant Discharge Elimination System permit issued authorizing a category of similar discharges.

**Geometric mean** is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

**Grab sample** is a single sample taken at neither a set time nor flow.

**IC<sub>25</sub>** means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

**Illicit connection** means a physical connection to a municipal separate storm sewer system that primarily conveys non-storm water discharges other than uncontaminated groundwater into the storm sewer; or a physical connection not authorized or permitted by the local authority, where a local authority requires authorization or a permit for physical connections.

**Illicit discharge** means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

**Individual permit** means a site-specific NPDES permit.

**Inlet** means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

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## PART II

### Section A. Definitions

**Interference** is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

**Land application** means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

**LC<sub>50</sub>** means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

**Maximum acceptable toxicant concentration (MATC)** means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

**Maximum extent practicable** means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

**MGD** means million gallons per day.

**Monthly concentration** is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

**Monthly loading** is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

**Monthly monitoring frequency** refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

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## PART II

### Section A. Definitions

**Municipal separate storm sewer** means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a publicly-owned treatment works as defined in the Code of Federal Regulations at 40 CFR 122.2.

**Municipal separate storm sewer system (MS4)** means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Federal Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

**National Pretreatment Standards** are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Federal Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

**No observed adverse effect level (NOAEL)** means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

**Noncontact cooling water** is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

**Nondomestic user** is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

**Outfall** is the location at which a point source discharge enters the surface waters of the state.

**Part 91 agency** means an agency that is designated by a county board of commissioners pursuant to the provisions of section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation activities under Part 615, Part 631, or Part 632 pursuant to the provisions of section 9115 of Part 91 of the NREPA.

**Part 91 permit** means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

**Partially treated sewage** is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's National Pollutant Discharge Elimination System permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

**Point of discharge** is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

**Point source discharge** means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

**Polluting material** means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

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## PART II

### Section A. Definitions

**POTW** is a publicly owned treatment work.

**Pretreatment** is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

**Public** (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

**Public body** means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

**Qualified Personnel** means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

**Qualifying storm event** means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

**Quantification level** means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

**Quarterly monitoring frequency** refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**Regional Administrator** is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

**Regulated area** means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

**Secondary containment structure** means a unit, other than the primary container, in which significant materials are packaged or held, which is required by State or Federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface or ground waters of this state.

**Separate storm sewer system** means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

**Significant industrial user** is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely

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## PART II

### Section A. Definitions

affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

**Significant materials** Significant Materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111 of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

**Significant spills and significant leaks** means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

**Special-use area** means secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water for which the Department determines monitoring is needed.

**Stoichiometric** means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

**Storm water** means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

**Storm water discharge point** is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

**SWPPP** means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

**Tier I value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

**Tier II value** means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

**Total maximum daily loads (TMDLs)** are required by the Federal Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

**Toxicity reduction evaluation (TRE)** means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

**Water Quality Standards** means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.



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## PART II

### Section A. Definitions

**Weekly monitoring frequency** refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

**WWSL** is a wastewater stabilization lagoon.

**WWSL discharge event** is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

**3-portion composite sample** is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

#### **7-day concentration**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the “MAXIMUM” column under “QUALITY OR CONCENTRATION” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

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## PART II

### Section A. Definitions

#### 7-day loading

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the “MAXIMUM” column under “QUANTITY OR LOADING” on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

**24-hour composite sample** is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

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## PART II

### Section B. Monitoring Procedures

#### 1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

#### 2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Federal Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations.** Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Section Manager of the Permits Section, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

#### 3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

#### 4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

#### 5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

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## PART II

### Section C. Reporting Requirements

#### 1. Start-up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

#### 2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website, located at <https://miwaters.deq.state.mi.us>, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20<sup>th</sup> day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

#### 3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10<sup>th</sup> (April 1<sup>st</sup> for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

#### 4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

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## PART II

### Section C. Reporting Requirements

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act (Act 96 of the Public Acts of 1987) for assurance of proper facility operation shall be submitted as required by the Department.

#### 5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

#### 6. Noncompliance Notification

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the NREPA, and related regulations and rules is required. All instances of noncompliance shall be reported as follows:

- a. **24-Hour Reporting**  
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. **Other Reporting**  
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

#### 7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from **out-of-state** dial 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

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## PART II

### Section C. Reporting Requirements

#### 8. Upset Noncompliance Notification

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset, shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

#### 9. Bypass Prohibition and Notification

- a. Bypass Prohibition  
Bypass is prohibited, and the Department may take an enforcement action, unless:
  - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
  - 3) the permittee submitted notices as required under 9.b. or 9.c. below.
- b. Notice of Anticipated Bypass  
If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. Notice of Unanticipated Bypass  
The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, use the following number: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

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## PART II

### Section C. Reporting Requirements

- d. **Written Report of Bypass**  
A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.
- e. **Bypass Not Exceeding Limitations**  
The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.
- f. **Definitions**
- 1) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
  - 2) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

### 10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

### 11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

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## PART II

### Section C. Reporting Requirements

#### 12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

#### 13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

#### 14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.



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## PART II

### Section C. Reporting Requirements

#### 15. Signatory Requirements

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Federal Act and the NREPA.

The Federal Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

#### 16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit.

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## PART II

### Section D. Management Responsibilities

#### 1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Federal Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

#### 2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

#### 3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

#### 4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

#### 5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

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## PART II

### Section D. Management Responsibilities

#### 6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a Publicly Owned Treatment Work (POTW), these facilities shall be approved under Part 41 of the NREPA.

#### 7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

#### 8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

#### 9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

#### 10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

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## PART II

### Section E. Activities Not Authorized by This Permit

#### 1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

#### 2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

#### 3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

#### 4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Federal Act except as are exempted by federal regulations.

#### 5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Federal Act.

#### 6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

U20963-MEC-CE-033  
Page 1 of 2

Question:

26. Refer to page 12, line 13 through page 13, line 7 of the Breining Direct Testimony.
- a. If the Company has a more detailed version of its SEEG compliance plan, please provide a copy of such plan.
  - b. Please produce the wastewater studies the Company conducted in 2020 to evaluate bottom ash (“BA”) transport water chemistry.
  - c. Please explain in detail the results of the preliminary testing that has allowed the Company to reduce its projected SEEG compliance costs by \$27 million. Please also produce the underlying data and reports used to support those results.
  - d. How long does the Company anticipate collecting data to characterize the bottom ash transport water at the Campbell site? Please also identify any costs associated with this data collection.
  - e. Please describe the Company’s estimated timeline for procuring contractors and equipment to design the closed loop system for Campbell.
  - f. Please provide a detailed explanation for how the Company calculated the costs associated with the procurement of contractors and equipment that will be used to design Campbell’s closed loop system. Please also provide the estimated cost of each phase of designing and constructing the closed loop system.
  - g. Further refer to page 8, lines 11-14. Under the Company’s current SEEG compliance plan, would the system installed at Campbell be a “zero-liquid discharge” system, or a system that could potentially “discharge up to 10% of the primary active wetted BA system volume on a 30-day rolling average”?
  - i. If the latter, has Consumers evaluated the additional cost that would be necessary to develop a zero-liquid discharge system? If yes, please identify the estimated cost for such a system.

Response:

- a. A Conceptual Design report is currently being prepared by Golder Associates and is not yet complete. The report is anticipated to be complete by mid-May. A copy can be provided upon request once finalized.
- b. The wastewater studies started in 2020 are ongoing through the end of 2021. We will continue to sample water streams once a month through 4<sup>th</sup> quarter of 2021. A bench scale test simulating cycles through the bottom ash will be complete in 2<sup>nd</sup> quarter of 2021. Please see U20963-MEC-CE-033-Breining\_ATT\_1 for the preliminary water quality testing results and findings.
- c. The wastewater studies completed in 2020, and continuing through 4<sup>th</sup> quarter of 2021, was performed at several locations along our discharge path, upstream of the NPDES outfall. In addition, compliance monitoring is conducted according to our NPDES permit and is compliant with our NPDES discharge limits. As part of the ongoing wastewater studies, samples were collected of the low volume miscellaneous wastewater (LVMW). Results to date show that the LVMW meets current NPDES discharge limits upstream of the NPDES outfall (average TSS 4.3 mg/L). As of now, SEEG allows discharge of the LVMW provided it meets the NPDES discharge limits at the outfall. The testing results show that we met the NPDES discharge limits, which allowed us to eliminate the need for installing a wastewater treatment plant on site, reducing our costs by \$27M. Preliminary water

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- quality testing results and findings are documented in the technical memorandum by Golder, dated February 18, 2021 "Conceptual Design and Modeling Basis Technical Memorandum".
- d. The wastewater studies started in June 2020 with current plans to collect data through December 2021. Cost for water sampling in 2021 is \$75,000.
  - e. The Company has prepared and sent out a request for proposal for engineering services to design the closed loop system in February 2021. The engineer of record is expected to be under contract by June of 2021. Based on the current December 2023 compliance deadline, the request for quote for a contractor to construct the system is scheduled to be issued June of 2022, with a contract in place September of 2022. Long lead time equipment would be procured early following completion of select design elements. The timing to procure long lead equipment will be determined after the engineer of record is under contract.
  - f. The Company has an internal cost estimating group that follows RS Means methods to calculate the cost estimate. The conceptual layout of equipment and piping was provided to our cost estimators, who then used the information to determine material quantities. Based on the quantity take offs, the estimator built out required construction equipment, staff and time required to complete the project, and applied appropriate rates from sources such as RS Means and Blue Book. Lastly, the estimator added our internal costs to the estimate. Design costs are estimated at \$2.3M and construction costs are estimated at \$20.4M. Please refer to (Breining\_WP\_1) for the SEEG cost estimate.
  - g. The proposed system will utilize the SEEG provision that allows discharge up to 10% of the primary active wetted BA system volume on a 30-day rolling average. This discharge is required in place to control water chemistry of the system and will be regulated through the NPDES site permit.
  - h. A zero liquid discharge system would require installation of a new bottom ash removal system such as a submerged flight conveyor, which would be installed below the existing boiler. This would necessitate removing the bottom half of the boiler and associated plant modifications. In 2014 a remote submerged flight conveyor was considered, and cost was estimated at \$65M, escalated to 2023 costs this would be \$85M. During the ongoing conceptual study, CEC considered other options to reuse the bottom ash water including as make up water in the JHC unit 3 SDA and for conditioning of fly ash. Using this water in either of those systems would displace recycled process water. In addition, the water demands of these systems are well under 10% of the water that the bottom ash tank system uses on a daily basis.



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HEATHER A. BREINING

April 9, 2021

U20963-MEC-CE-655(b) - Supplemental  
Page 1 of 1

Question:

20. Refer to your response to MEC-CE-33.

a. Once completed, please provide a copy of the Conceptual Design report currently being prepared by Golder Associates (i.e., the report expected to be finished in mid-May).

b. Further refer to your responses to MEC-CE-33(g) and 33(h).

i. If the zero liquid discharge system were implemented, which of the Campbell units would have the bottom half of its boiler removed?

ii. Please provide a copy of the 2014 cost estimate.

iii. Has the Company prepared a cost estimate for a zero liquid discharge system since 2014? If so, please provide that cost estimate and the date when it was created.

Supplemental Response:

b) A zero liquid discharge system is not being implemented. To install a zero liquid discharge system, all three J.H. Campbell units would require significant modification to the boiler in order to install a submerged flight conveyor. This would include removing the bottom of the boilers at each unit in order to gain the space necessary to install the equipment.

Refer to page 38 of Attachment 1 for the Bottom Ash Handling, Wet-to-Dry Conversion Technology Evaluation and Feasibility Study for the J.H. Campbell dry bottom ash cost estimate.



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HEATHER A. BREINING

June 3, 2021

U21090-MEC-CE-540  
Page 1 of 1

Question:

3. Refer to page 15, line 19 through page 20, line 2 of the Breining Direct Testimony, which states: "Per the 2020 SEEG Rule, [bottom ash] transport water at Campbell will need to be managed with a high recycle rate closed loop system. A discharge of BA purge water (blowdown stream) is allowable under certain conditions. The volume of BA purge water will be determined by EGLE but cannot exceed a 30-day rolling average of 10% of the primary active wetted BA system volume. The existing concrete tank system will be retrofitted as part of a high recycle rate closed loop system."

- a. Please confirm that, if the Campbell units do not retire in May 2025, the Company's current SEEG compliance plan would involve the installation of a "high recycle rate closed loop system," rather than a zero liquid discharge system. If not confirmed, please explain.
- b. Further refer to 86 Fed. Reg. 41801, 41802 (Aug. 3, 2021), which announces U.S. EPA's intention to consider "whether revisions to the 2020 Rule's requirements applicable to bottom ash transport water and the three subcategories, which are afforded less stringent limits than those otherwise applicable under the Rule, may be warranted." Has Consumers evaluated whether potential revisions to the 2020 Rule would impact its SEEG compliance plan?
  - i. If so, please explain the results of such evaluation and produce any related documents.

Response:

- a) It is confirmed. If any of the Campbell units are planned to operate beyond December 31, 2028, then the SEEG compliance plan would involve the installation of a high recycle rate closed loop system which must be operational by December 31, 2025.
- b) No, Consumers is operating under the existing SEEG regulations, which are currently in effect, and cannot speculate on potential revisions to the 2020 Rule. Wastewater sampling and studies conducted to date provides Consumers a better understanding of our bottom ash transport water and theoretically what happens when this water is recycled. This data places Consumers in a better position to pivot should any potential change in wastewater management occur.



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HEATHER A. BREINING  
November 15, 2021



STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **CONSUMERS** ) U-21090  
**ENERGY COMPANY** for Approval of an )  
Integrated Resource Plan under MCL 460.6t, certain ) ALJ Sally L. Wallace  
accounting approvals, and for other relief )  
)

**PUBLIC**

**PROOF OF SERVICE**

On the date below, an electronic copy of **Rebuttal Testimony of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club; and Exhibits MEC-73C through MEC-77** was served on the following:

Name/Party	E-mail Address
<b>Administrative Law Judge</b> Sally L. Wallace	<a href="mailto:wallaces2@michigan.gov">wallaces2@michigan.gov</a>
<b>Counsel for Consumers Energy Co.</b> Robert W. Beach Michael C. Rampe Gary A. Gensch, Jr. Ian F. Burgess Bret A. Totoraitis Anne M. Uitvlugt Theresa A. G. Staley	<a href="mailto:mpscfilings@cmsenergy.com">mpscfilings@cmsenergy.com</a> <a href="mailto:Robert.beach@cmsenergy.com">Robert.beach@cmsenergy.com</a> <a href="mailto:michael.rampe@cmsenergy.com">michael.rampe@cmsenergy.com</a> <a href="mailto:gary.genschjr@cmsenergy.com">gary.genschjr@cmsenergy.com</a> <a href="mailto:ian.burgess@cmsenergy.com">ian.burgess@cmsenergy.com</a> <a href="mailto:bret.totoraitis@cmsenergy.com">bret.totoraitis@cmsenergy.com</a> <a href="mailto:anne.uitvlugt@cmsenergy.com">anne.uitvlugt@cmsenergy.com</a> <a href="mailto:theresa.staley@cmsenergy.com">theresa.staley@cmsenergy.com</a>
<b>Counsel for Michigan Public Service Commission Staff</b> Spencer Sattler Amit Singh Benjamin Holwerda Nicholas Taylor Daniel Sonneveldt Lori Mayabb	<a href="mailto:sattlers@michigan.gov">sattlers@michigan.gov</a> <a href="mailto:singha9@michigan.gov">singha9@michigan.gov</a> <a href="mailto:holwerdab@michigan.gov">holwerdab@michigan.gov</a> <a href="mailto:taylorn10@michigan.gov">taylorn10@michigan.gov</a> <a href="mailto:sonneveldtd@michigan.gov">sonneveldtd@michigan.gov</a> <a href="mailto:mayabbl@michigan.gov">mayabbl@michigan.gov</a>
<b>Counsel for Attorney General</b> Celeste Gill	<a href="mailto:AG-ENRA-Spec-Lit@michigan.gov">AG-ENRA-Spec-Lit@michigan.gov</a> <a href="mailto:Gillc1@michigan.gov">Gillc1@michigan.gov</a>

<b>Counsel for ABATE</b> Michael J. Patwell Stephen A. Campbell James Fleming	<a href="mailto:mpattwell@clarkhill.com">mpattwell@clarkhill.com</a> <a href="mailto:scampbell@clarkhill.com">scampbell@clarkhill.com</a> <a href="mailto:jfleming@ClarkHill.com">jfleming@ClarkHill.com</a>
<b>Counsel for Cadillac Renewable Energy LLC, Genesee Power Partners Limited Partnership, Decker Energy- Grayling, LLC, Hillman Power Company, LLC Tondu Corporation, Viking Energy of Lincoln, LLC, Viking Power of McBain, LLC</b>  Thomas J. Waters Kathryn E. Glancy	<a href="mailto:tjw@runningwise.com">tjw@runningwise.com</a> <a href="mailto:kg@runningwise.com">kg@runningwise.com</a>
<b>Counsel for Midland Cogeneration Venture LP</b> John A. Janiszewski	<a href="mailto:jjaniszewski@dykema.com">jjaniszewski@dykema.com</a>
<b>Counsel for Energy Michigan Inc., Michigan Energy Innovation Business Council, Institute for Energy Innovation and Clean Grid Alliance</b> Laura Chappelle Timothy J. Lundgren	<a href="mailto:lchappelle@potomaclaw.com">lchappelle@potomaclaw.com</a> <a href="mailto:tlundgren@potomaclaw.com">tlundgren@potomaclaw.com</a>
<b>Counsel for Hemlock Semiconductor Corp.</b> Jennifer Utter Heston	<a href="mailto:jheston@fraserlawfirm.com">jheston@fraserlawfirm.com</a>
<b>Counsel for GLREA</b> Don L. Keskey Brian W. Coyer	<a href="mailto:donkeskey@publiclawresourcecenter.com">donkeskey@publiclawresourcecenter.com</a> <a href="mailto:bwcoyer@publiclawresourcecenter.com">bwcoyer@publiclawresourcecenter.com</a>
<b>Environmental Law &amp; Policy Center, Ecology Center, Union of Concerned Scientists, and Vote Solar</b> Margrethe M. Kearney Heather Vogel	<a href="mailto:mposedockets@elpc.org">mposedockets@elpc.org</a> <a href="mailto:mkearney@elpc.org">mkearney@elpc.org</a> <a href="mailto:hvogel@elpc.org">hvogel@elpc.org</a>
<b>Counsel for Wolverine Power Supply Cooperative, Inc.</b> Jason T. Hanselman Lauren E. Fitzsimons	<a href="mailto:jhanselman@dykema.com">jhanselman@dykema.com</a> <a href="mailto:LFitzsimons@dykema.com">LFitzsimons@dykema.com</a>

<b>Counsel for Michigan Electric Transmission Company</b> Richard Aaron	<a href="mailto:RAaron@dykema.com">RAaron@dykema.com</a>
<b>Mackinac Center for Public Policy</b> Jason Hayes Derk Wilcox	<a href="mailto:hayes@mackinac.org">hayes@mackinac.org</a> <a href="mailto:wilcox@mackinac.org">wilcox@mackinac.org</a>
<b>Urban Core Collective</b> Nicholas Leonard Andrew Bashi Mark Templeton Robert Weinstock	<a href="mailto:nicholas.leonard@glelc.org">nicholas.leonard@glelc.org</a> <a href="mailto:andrew.bashi@glelc.org">andrew.bashi@glelc.org</a> <a href="mailto:templeton@uchicago.edu">templeton@uchicago.edu</a> <a href="mailto:rweinstock@uchicago.edu">rweinstock@uchicago.edu</a> <a href="mailto:sgewirth@uchicago.edu">sgewirth@uchicago.edu</a> <a href="mailto:aclc_mpsc@lawclinic.uchicago.edu">aclc_mpsc@lawclinic.uchicago.edu</a>
<b>Michigan Public Power Agency</b> Peter H. Ellsworth Nolan J. Moody	<a href="mailto:pellsworth@dickinsonwright.com">pellsworth@dickinsonwright.com</a> <a href="mailto:nmoody@dickinsonwright.com">nmoody@dickinsonwright.com</a>
<b>Citizens Utility Board</b> Abigail Hawley	<a href="mailto:abbie@envlaw.com">abbie@envlaw.com</a>
<b>Other</b> Robert O'Meara	<a href="mailto:romeara@itctransco.com">romeara@itctransco.com</a>

The statements above are true to the best of my knowledge, information and belief.

OLSON, BZDOK & HOWARD, P.C.  
Counsel for MEC, NRDC, SC, CUB

Date: November 19, 2021

By: \_\_\_\_\_

Kimberly Flynn, Legal Assistant  
Karla Gerds, Legal Assistant  
Breanna Thomas, Legal Assistant  
Jill Smigielski, Legal Assistant  
Email: [kimberly@envlaw.com](mailto:kimberly@envlaw.com)  
[karla@envlaw.com](mailto:karla@envlaw.com)  
[breanna@envlaw.com](mailto:breanna@envlaw.com)  
[jill@envlaw.com](mailto:jill@envlaw.com)

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of  
**CONSUMERS ENERGY COMPANY** for  
Approval of an Integrated Resource Plan  
under MCL 460.6t, certain accounting  
approvals, and for other relief.

U-21090

ALJ Sally Wallace

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**CONFIDENTIAL**

**PROOF OF SERVICE**

On the date below, an electronic copy of **Confidential Rebuttal Testimony of Tyler Comings on behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club and Exhibit MEC-7C** was served on the following:

<b>Name/Party</b>	<b>E-mail Address</b>
<b>Counsel for Consumers Energy Co.</b> Robert W. Beach Michael C. Rampe Gary A. Gensch, Jr. Ian F. Burgess Bret A. Totoraitis Anne M. Uitvlugt Theresa A. G. Staley	<a href="mailto:mpscfilings@cmsenergy.com">mpscfilings@cmsenergy.com</a> <a href="mailto:Robert.beach@cmsenergy.com">Robert.beach@cmsenergy.com</a> <a href="mailto:michael.rampe@cmsenergy.com">michael.rampe@cmsenergy.com</a> <a href="mailto:gary.genschjr@cmsenergy.com">gary.genschjr@cmsenergy.com</a> <a href="mailto:ian.burgess@cmsenergy.com">ian.burgess@cmsenergy.com</a> <a href="mailto:bret.totoraitis@cmsenergy.com">bret.totoraitis@cmsenergy.com</a> <a href="mailto:anne.uitvlugt@cmsenergy.com">anne.uitvlugt@cmsenergy.com</a> <a href="mailto:theresa.staley@cmsenergy.com">theresa.staley@cmsenergy.com</a>
<b>Counsel for Michigan Public Service Commission Staff</b> Spencer Sattler Amit Singh Nicholas Taylor Bob Nichols	<a href="mailto:sattlers@michigan.gov">sattlers@michigan.gov</a> <a href="mailto:singha9@michigan.gov">singha9@michigan.gov</a> <a href="mailto:taylorl10@michigan.gov">taylorl10@michigan.gov</a> <a href="mailto:nicholsb1@michigan.gov">nicholsb1@michigan.gov</a>
<b>Counsel for Attorney General</b> Celeste Gill Amanda Churchill	<a href="mailto:Gillc1@michigan.gov">Gillc1@michigan.gov</a> <a href="mailto:churchillal@michigan.gov">churchillal@michigan.gov</a>

<b>Counsel for Cadillac Renewable Energy LLC, Genesee Power Partners Limited Partnership, Decker Energy- Grayling, LLC, Hillman Power Company, LLC Tondu Corporation, Viking Energy of Lincoln, LLC, Viking Power of McBain, LLC</b> Thomas J. Waters Kathryn E. Glancy	<a href="mailto:twaters@fraserlawfirm.com">twaters@fraserlawfirm.com</a> <a href="mailto:kg@runningwise.com">kg@runningwise.com</a>
<b>Counsel for Midland Cogeneration Venture LP</b> John A. Janiszewski	<a href="mailto:jjaniszewski@dykema.com">jjaniszewski@dykema.com</a>
<b>Counsel for Energy Michigan Inc., Michigan Energy Innovation Business Council, Institute for Energy Innovation and Clean Grid Alliance</b> Laura Chappelle Timothy J. Lundgren	<a href="mailto:lchappelle@potomaclaw.com">lchappelle@potomaclaw.com</a> <a href="mailto:tlundgren@potomaclaw.com">tlundgren@potomaclaw.com</a>
<b>Counsel for Hemlock Semiconductor Corp.</b> Jennifer Utter Heston	<a href="mailto:jheston@fraserlawfirm.com">jheston@fraserlawfirm.com</a>
<b>Counsel for Wolverine Power Supply Cooperative, Inc.</b> Jason T. Hanselman Lauren E. Fitzsimons Joseph Baumann	<a href="mailto:jhanselman@dykema.com">jhanselman@dykema.com</a> <a href="mailto:LFitzsimons@dykema.com">LFitzsimons@dykema.com</a> <a href="mailto:jbaumann@wpsci.com">jbaumann@wpsci.com</a>
<b>Counsel for Michigan Electric Transmission Company</b> Richard Aaron Olivia R.C.A Flower	<a href="mailto:RAaron@dykema.com">RAaron@dykema.com</a> <a href="mailto:oflower@dykema.com">oflower@dykema.com</a>
<b>Counsel for Mackinac Center for Public Policy</b> Derk Wilcox	<a href="mailto:wilcox@mackinac.org">wilcox@mackinac.org</a>
<b>Counsel for Michigan Public Power Agency</b> Peter H. Ellsworth Nolan J. Moody	<a href="mailto:pellsworth@dickinsonwright.com">pellsworth@dickinsonwright.com</a> <a href="mailto:nmoody@dickinsonwright.com">nmoody@dickinsonwright.com</a>
<b>Counsel for Urban Core Collective</b> Mark Templeton Robert Weinstock Simone Gewirth	<a href="mailto:templeton@uchicago.edu">templeton@uchicago.edu</a> <a href="mailto:rweinstock@uchicago.edu">rweinstock@uchicago.edu</a> <a href="mailto:sgewirth@uchicago.edu">sgewirth@uchicago.edu</a>

<b>Counsel for Environmental Law &amp; Policy Center, Ecology Center, Union of Concerned Scientists, and Vote Solar</b> Margrethe M. Kearney Heather Vogel	<a href="mailto:mpscdockets@elpc.org">mpscdockets@elpc.org</a> <a href="mailto:mkearney@elpc.org">mkearney@elpc.org</a> <a href="mailto:hvogel@elpc.org">hvogel@elpc.org</a>
<b>Counsel for GLREA and RCG</b> Don Keskey	<a href="mailto:donkeskey@publiclawresourcecenter.com">donkeskey@publiclawresourcecenter.com</a>

The statements above are true to the best of my knowledge, information and belief.

OLSON, BZDOK & HOWARD, P.C.  
Counsel for MEC, NRDC, and SC

Date: November 19, 2021

By: \_\_\_\_\_

Kimberly Flynn, Legal Assistant  
Karla Gerds, Legal Assistant  
Breanna Thomas, Legal Assistant  
Jill Smigielski, Legal Assistant  
420 E. Front St.  
Traverse City, MI 49686  
Phone: 231/946-0044  
Email: [kimberly@envlaw.com](mailto:kimberly@envlaw.com)  
[karla@envlaw.com](mailto:karla@envlaw.com)  
[breanna@envlaw.com](mailto:breanna@envlaw.com)  
[jill@envlaw.com](mailto:jill@envlaw.com)