

**ANSWERS TO QUESTIONS FROM THE PUBLIC  
RECEIVED BY SCIO TOWNSHIP**

1. Does this mean that Gelman or EGLE can unilaterally ask the court to expand the Prohibition Zone (PZ) Boundary again with additional data?

**ANSWER: To expand the PZ, Gelman must convince the court “by clear and convincing evidence that there are compelling reasons that the proposed expansion is needed to prevent an unacceptable risk to human health.” These are very high burdens of proof and persuasion, and would require Gelman to prove the 1,4-dioxane could not be contained or pulled back. (Answered on September 24, 2020; see page 12 of the Legal Comments.)**

2. Is it true that if an area has dioxane greater than 7.2 ug/L, it is considered a compelling reason to expand the Prohibition Zone Boundary?

**ANSWER: Although finding 1,4-dioxane at a 7.2 ug/L level would require action to prevent individuals from getting their drinking water from wells with 1,4-dioxane in them, if any were in the area where the 1,4-dioxane were found, it is unlikely 1,4-dioxane will reach 7.2 ug/L outside the PZ boundary. Sentinel wells are in place and additional sentinel wells will be placed to detect 1,4-dioxane that might be traveling towards the PZ boundary, and action to prevent breach of the boundary is required if 1,4-dioxane reaches 7.2 ug/L at those sentinel wells. (Answered on September 24, 2020; see pp. 6 and 13 of the Legal Comments.)**

3. Can Gelman use a Mixing Zone-Based GSI, which will be much greater than the Generic GSI Cleanup Criterion of 280 ug/L to attain the GSI objective?

**ANSWER: Yes, that is an option for GSI compliance under Part 201 of the Michigan environmental statute. (Answered on September 24, 2020; see p. 7 of the Legal Comments.)**

4. Does the Fourth Amended CJ remove the Third Amended CJ Maple Road containment objective of preventing dioxane concentrations greater than the Generic GSI from migrating east of Maple Road?

**ANSWER: The 1,4-dioxane containment at 2800 ug/L at Maple Road is removed, but the line at Maple Road was not defined as being set at the GSI number. In addition, the 1,4-dioxane that has migrated east of Maple Road is below 2800 ug/L and that will not change. Although some 1,4-dioxane east of Maple Road is above 280 ug/L, it is not in locations where there is groundwater to surface water interface. The proposed Fourth Amended CJ imposes the new GSI level of 280 ug/L and prohibits any**

**groundwater to surface water interface in excess of that level. (Answered on September 24, 2020; see p. 7 of the Legal Comments.)**

5. Why the did Fourth Amended CJ not simply change the old EGLE 2800 ug/L Generic GSI to the updated EGLE 280 ug/L GSI ug/L?

**ANSWER: The Fourth Amended CJ does change the GSI to 280 ug/L and requires additional monitoring and remediation activity to comply with both the new GSI standard and the new drinking water standard of 7.2 ug/L. Simply changing the numbers in the existing CJ would have placed Gelman in instant violation of the CJ, even though the 1,4-dioxane levels are fully compliant under the existing CJ. Because of the characteristics of the plume, it is not feasible to retract or extract the currently compliant 1,4-dioxane levels from where they would be non-compliant under the new standards, simply changing the numbers and expecting compliance would be unrealistic.**

6. Should the Remedial Contingency Plan provide Gelman with the option of just expanding the Prohibition Zone Boundary to attain compliance, in lieu of taking an active remedial response to prevent the groundwater contamination from migrating beyond the existing Prohibition Zone Boundary?

**ANSWER: Gelman is required to take active remedial actions if dioxane concentrations in any sentinel well exceed 7.2 ug/L. (Answered on September 24, 2020; see p. 6 of the Legal Comments.)**

7. Can Institutional Controls and Land Use Restrictions be placed upon residential wells if the dioxane is greater than 7.2 ug/L so the homeowner cannot use their potable water well?

**ANSWER: If there is an exceedance in a residential well as defined in the CJ (1,4-dioxane exceeding 3.0 ug/L), the homeowner is provided initially with bottled water and ultimately a permanent alternative water supply, both paid for by Gelman. The requirement that Gelman provide an alternative water source is not considered an institutional control.**

8. Is Gelman only obligated to pay for a contaminated residential well to an alternate municipal water supply system and not be financially responsible for: taking of private property owner rights; follow up operation and maintenance of the water supply to the house; monthly water bills; increase in property taxes from a change in property Township status; or reduction in property value?

**ANSWER: The Fourth Amended CJ does not require Gelman to be financially responsible for any of these items. The Fourth Amended CJ does not limit any rights property owners might have or want to pursue with Gelman.**

9. The 4th Amended CJ objective for the extraction wells, other than the potential Park Lake Well, is to only “reduce the mass” migrating. Why did the 4th Amended CJ in the Eastern Area not develop a groundwater extraction system with the objective of halting the plume migration?

**ANSWER: The extraction wells in the Fourth Amended CJ are designed to help prevent migration of dioxane in excess of 7.2 ug/L past the PZ Boundary, to prevent the horizontal extent of the dioxane contamination in the Western Area, and to prevent groundwater to surface water interface in excess of 280 ug/L. In Larry Lemke’s opinion completely halting the plume migration is not technically feasible.**

10. Why does the 4th Amended CJ not protect in the Eastern Area receptors that are downgradient of the dioxane plume before the Huron River such as: Ann Arbor Charter Township residents who drink water from private water wells; residents in homes where the dioxane plume is near the surface, thereby, allowing for indoor vapor intrusion and flood basement exposure; and workers in a trench exposed to the dioxane shallow groundwater contamination near the surface?

**ANSWER: The Fourth Amended CJ requires Gelman to conduct a downgradient investigation regarding Eastern Area receptors. Although the downgradient investigation is an iterative process, the next phase required by the CJ is for Gelman to install monitoring well clusters at three key locations in the vicinity of West Park. The Fourth Amended CJ contains protective measures for residential wells, including a network of new delineation wells, a compliance monitoring plan, and provision of bottled water and long-term alternative water supply in the event of an exceedance.**

11. Does the 4th Amended CJ allow the Eastern Area Objectives of the Prohibition Zone Containment Objective and GSI Objective to be terminated by Gelman expanding the Prohibition Zone and applying a Mixing-Zone Based GSI?

**ANSWER: There is no provision in the Fourth Amended CJ which allows Gelman to terminate any objective by expanding the Prohibition Zone.**

12. Does the 4th Amended CJ allow for the termination of the Evergreen, Maple Road and Wagner Road extraction wells with attainment of the Eastern Area Objectives and not a specific dioxane ug/L performance level, see below CJ extract for the Wagner Road Wells?

**ANSWER: Gelman must demonstrate that Eastern Area objectives will be met before either reducing the extraction rate or terminating any of these extraction wells. The Fourth Amended CJ requires Gelman to provide EGLE with a written analysis with the data that supports its conclusion. The Intervenors have standing to invoke dispute**

**resolution with respect to any decision by EGLE to reduce the extraction rate or terminate any of these extraction wells.**

13. What study, data or reasoning was used by EGLE or Intervenors to analyze the potential impact of discharging dioxane into the lakes?

**ANSWER: Larry Lemke presented an analysis of the discharge to First Sister Lake in his presentation on September 24. The First Sister Lake and wetlands are a dynamic and interconnected system. It has been recommended that the County Drain Commissioner and City of Ann Arbor engineers should weigh in on this proposal. According to Larry Lemke, environmental monitoring and modeling are needed to support the project. Gelman has agreed to shut off the discharge into First Sister Lake when needed to prevent flooding, and Gelman will need to get an NPDES permit. The expectation is that contaminant levels in the discharge, hydraulic capacity of the receiving waters and wetlands issues will all be considered in the course of the NPDES permitting process.**

14. Similarly, what study, data or reasoning was used by EGLE or Intervenors to analyze the potential impact of the large water discharge into the wetlands near the lakes?

**ANSWER: See the answer to question 13 above.**

15. What are the “outs” available to Danaher under the proposed CJ, and what is the potential future impact of those “outs”?

**ANSWER: The CJ provides for termination of certain remediation actions if/when appropriate (no longer needed), but does not provide any “outs” for Gelman (Danaher is not the liable party). If Gelman were to stop complying with its obligations under the CJ and dispute resolution didn’t work to bring them back into compliance, the state could petition the court for an order compelling compliance. The government Intervenors also have continuing rights to go to court if the state weren’t pursuing compliance. (Answered on September 24, 2020; see p. 16 of the Legal Comments.)**

- 16-17. Is all of the dioxane removed and how deadly are the agents that would remove it? Or does this extraordinary flow simply add dioxane reinforced by other toxins to a small body of water in the center of Ann Arbor’s most pristine park? (NOTE: some questions referred to the 1,4-dioxane as “dioxin,” which is a different and more hazardous substance. We cannot tell if that reference was just a spell-checker induced typo, or a misunderstanding of what substance is in the Gelman plume. Anyone who thinks the Gelman plume contains dioxin can be assured it does not.)

**ANSWER: The discharge to First Sister Lake is of groundwater that will have been treated to remove most of the 1,4-dioxane, and will be pursuant to an NPDES permit issued by EGLE which would require dioxane levels in the discharge to be below the drinking water standard of 7.2 ppb.**

18. Why would it not be better to put this water in a pipe and take to where its addition would be more effectively diluted?

**ANSWER: The low levels of dioxane in the discharge would be the same whether the discharge is to First Sister Lake, Honey Creek, or any other area.**

19. Would the dilution of the First Sister Lake discharge take it to safe levels?

**ANSWER: The initial discharge of treated groundwater into First Sister Lake would be below the State drinking water standard and considered safe to discharge into the environment.**

20. What happens with [the trees used for phytoremediation], each presumably by then full of dioxane, die and collapse back into the soil and water they were cleaning?

**ANSWER: Much of the 1,4-dioxane drawn into the trees will have transpired into the air where it will be destroyed by exposure to oxygen and UV rays. Trees that have reached the end of their useful life for phytoremediation will be removed and disposed of properly, and will be replaced with new trees. Larry Lemke addressed these phytoremediation issues in his presentation on September 24.**

21. Why would Scio BoT agree to allow [Gelman] to be off the hook for total and complete cleanup?

**ANSWER: Aquifer restoration is not technically feasible, as stated by Larry Lemke in his presentation on September 24.**

22. Why would Scio BoT agree to Danaher demand not to ever solicit a US EPA, the Governor, or have the site listed on the national priorities list?

**ANSWER: The EPA is not considered to be a viable alternative as more fully addressed in the Legal Analysis, p. 21-23.**

23. If they do not uphold their agreement, what other resources do we have, other than to spend hundreds of thousands of dollars in court fees?

**ANSWER: See the answer to Question 15, above. (Answered on September 24, 2020; see p. 16 of the Legal Comments.)**

24. Why would Scio BoT agree to a release of claims to a company before the company has completely and thoroughly cleaned up the groundwater they contaminated?

**ANSWER: Scio Township is not fully releasing its claims because it has continuing rights against Gelman under the Dismissal Order as described in the Legal Issues Summary, p. 8.**

25. Why did our Scio BoT originally agree to seek to be a Superfund but changed their minds?

**ANSWER: As a result of a petition filed by Scio Township and others, the EPA conducted a Preliminary Assessment of the site for over a year and concluded that sufficient actions had been taken to prevent exposures to people via contaminated drinking water. EPA decided to refer the site to EGLE for further investigation and response actions and agreed to review quarterly reports prepared by EGLE for a year.**

26. How is Scio Township and our surrounding communities specifically benefiting from a settlement agreement which further pollutes (bromate by-product) our environment by allowing discharge water into an uncontaminated First Sister Lake with potential overflow into the residential neighborhood and potentially contaminating those undetected wells?

**ANSWER: Levels of dioxane in the First Sister Lake discharge are required by the NPDES permit to be below the state drinking water standard of 7.2 ppb and bromate concentrations must be under 10 ppb.**

27. Why is our Scio BoT not putting the best interests of our community's health as a top priority but instead settling for an agreement which seems to benefit the polluter?

**ANSWER: The main purpose of the CJ is to protect the health of the community with active measures to ensure that there are no unacceptable exposures to dioxane.**

28. On this note, perhaps you could also inform me why the Prohibition Zone does not cover the entire plume?

**ANSWER: The Prohibition Zone is only within the City where wells are prohibited so there is no risk of dioxane drinking water exposure. Residential wells remain a drinking water source outside of the Prohibition Zone and this institutional control is not appropriate for these areas.**

29. When and why is the acceptable level of 1,4 dioxane raised from 3.5 ppb I've seen in 2016 documents to 7.2 ppb for drinking?

**ANSWER: 3.5 ppb is the value EPA uses to represent 1 in 100,000 cancer risk level. EPA does not have an actual drinking water standard and 3.5 ppb has never been a state drinking water cleanup standard for dioxane.**

30. When were First and Second Sister Lake considered as a possible dumping area for extracted and chemically treated water with ozone/hydrogen peroxide method? Did anyone object? Share the discussion. (Multiple questions about the First Sister Lake Discharge follow.)

**ANSWER: The Intervenor cannot share settlement discussions due to the Confidentiality Order. The other questions about First Sister Lake Discharge are addressed above and were addressed by Larry Lemke in his September 24 presentation.**

31. Is Danaher responsible for cleanup with their purchase of Pall? Multiple questions follow regarding Danaher.

**ANSWER: Danaher has not been designated as a liable party under the CJ. Gelman is a second level subsidiary of Danaher, and its purchase of Pall/Gelman did not make it responsible for this remediation.**

32. What are the realistic possibilities of an EPA Superfund that might bring us to safer water levels in the longer run future?

**ANSWER: EPA will take much longer to act than the proposed settlement, or even litigation in state court, there is no basis to believe EPA will take the site, and there is no basis to believe EPA would require any different or additional actions by Gelman if it did take the site. In addition, if EPA did take the site, the Government Intervenor would not have a seat at the table as Gelman and EPA worked to develop a remediation plan. Under EPA control, the Government Intervenor also would not have direct ongoing rights to challenge changes to the Gelman requirements and actions. (Answered on September 24, 2020; see p. 21-23 of Legal Comments.)**

33. What will happen if not all Intervenor vote to approve the settlement/proposed CJ?

**ANSWER: (Answered on September 24, 2020; see p. 15 of the Legal Comments.)**

34. Generally, if the proposed CJ is approved, what rights will the State and Intervenor have against Danaher if (a) Danaher fails to comply with its obligations under the CJ or (b) significant problems occur, e.g., flooding near the discharge into the lakes, or damage to the wetlands near the lakes?

**ANSWER: Danaher has not been designated as a liable party under the CJ. If these questions are intended to refer to Gelman, see the answer to Question 15, above. (Also answered on September 24, 2020; see p. 16 of the Legal Comments.)**

35. If the proposed CJ is not approved, are the parties still bound under the current CJ?

**ANSWER: The current CJ remains in effect until amended or terminated. (Answered on September 24, 2020; see p. 18 of the Legal Comments.)**

36. If so, what are EGLE's expectations, generally, as to the spread and impact of dioxane contamination in that scenario, absent any action by the federal government?

**ANSWER: EGLE representatives should answer any questions about their expectations regarding the spread of the dioxane contamination.**

37. Why is the Scio BoT not pushing back harder on this resolution to do more? Why not reconsider this to be an EPA Superfund?

**ANSWER: Under the terms of the Court's Confidentiality Order, the Township cannot discuss what happened in the settlement negotiations. As for the EPA question, see the answer to Question 32, above. (Also answered on September 24, 2020; see pp. 21-23 of the Legal Comments.)**

38. Has an NPDES permit been denied here at the First Sister Lake or any of the Sister Lakes ever in the past?

**ANSWER: No, not to our knowledge.**

39. Apparently Gelman wants to use a cheaper, less effective method (ozone-hydrogen peroxide) which removes dioxane down to only a 7 ppb level instead. Why?

**ANSWER: The effectiveness of the ozone technology in removing 1,4-dioxane is similar to the UV technology and both are considered "best available technologies" by EGLE. The ozone technology has been shown to be more stable and less susceptible to background water chemistry issues that cause significant fluctuations in the performance of the UV treatment systems. For example, in order for UV to work on groundwater with the iron levels present at the site, the water needs to be pre-treated to get the iron to drop out so the ultraviolet light can get through the water. In order to do this, the pH of the water must be significantly lowered by adding large amounts of sulfuric acid, which is a corrosive chemical and potentially explosive. Following UV treatment, the pH must be raised back up to an acceptable level before the water can be released. This process involves treatment with a caustic chemical such as sodium hydroxide. These chemicals are hazardous and their delivery (via tanker**

**trucks), storage and use in residential areas or adjacent to environmentally sensitive natural areas is considered to be an unnecessary risk given the availability and reliability of the ozone technology. The ozone treatment process does not require the addition of any chemicals to pre-treat and post-treat the water to adjust the pH of the water. The ozone technology does produce low levels of bromate, but the discharge level is limited to 10 ppb, which is the MCL (Drinking water standard set by EPA).**

40. Have studies been done to show that the lake and Honey Creek can handle this additional water without flooding?
41. What happens when we have heavy rains, which have been happening and will continue to happen more frequently due to global warming?
42. What are the plans for flooding onto [First Sister Lake], especially in winter when the water will be discharged into the frozen surface of the lake, making flooding and freezing of the water on [First Sister Lake]?

**ANSWER 40-42: The CJ requires Gelman to temporarily shut down the Parklake extraction well to prevent flooding. See the answer to question 13, above. Larry Lemke also addressed some of these questions in his presentation on September 24.**

43. There has been a proposal to build a pipeline along M-14 to take all treated water to the Huron River downstream of the drinking water intake. What has happened to this idea?

**ANSWER: An answer cannot be provided due to the Court's Confidentiality Order.**

44. Why are we agreeing to let Gelman, the polluter, off the hook financially and in terms of responsibility?

**ANSWER: Gelman is not being let off the hook. To the contrary, the CJ requires immediate action by Gelman to better delineate the contamination and significantly increase the amount of dioxane removed from the groundwater. The CJ also has a financial assurance mechanism to ensure that Gelman is financially able to pay for all of the actions required by the CJ.**

45. Why would we allow this polluter to contaminate a lake and threaten the surrounding wetlands?

**ANSWER: The initial discharge of treated groundwater into First Sister Lake would be below the State drinking water standard and is considered safe to discharge into the environment.**

46. What will happen when there is natural 100-year storm event on top of the polluter's discharge?

**ANSWER: See the answers to questions 13 and 40-42, above.**

47. Why would the polluter be allowed to contaminate our protected lake and surrounding wetlands at flood levels and with 7-10 ppb dioxane?

**ANSWER: Levels of dioxane in the First Sister Lake discharge are required by the NPDES permit to be below the State drinking water standard of 7.2 ppb. As for the flooding issues, See the answers to questions 13 and 40-42, above. these were addressed by Larry Lemke in his presentation on September 24.**

48. What does it cost to place a pipe from Parklake to Gelman's central treatment plant on Wagner?

**ANSWER: If the pipe were placed in the Jackson Road and Wagner Road rights-of-way, that cost is estimated to be \$500,000 to \$1 million.**

49. Aren't the First and Second Sister Lakes a state and federal protected wetlands?

**ANSWER: Assuming the Lakes area is considered a wetland, it would be regulated under Part 303 of the Michigan Natural Resources and Environmental Protection Act. However, regulated activities in wetlands typically involve actions which damage or destroy the wetlands, such as placing of fill material, dredging, or draining the wetland. It is not clear that the discharge of water into a wetland which meets the drinking water standard would be considered a regulated activity. If not, then a permit under Part 303 would not be required. Nevertheless, the expectation is that wetlands issues will be considered in the course of the NPDES permitting process.**

50. Where will all this water go?

**ANSWER: First Sister Lake drains into a culvert under Wagner Road, with an outlet onto the Gelman property. Larry Lemke addressed this in his presentation on September 24.**

51. I thought that with the homes on wells on Lakeview Avenue, adjacent to Second Sister Lake, meant that this discharge into the Lake should be 3.4 ppb maximum if any? Why not treat it to 0 ppb then?

**ANSWER: Levels of dioxane in the First Sister Lake discharge are required by NPDES permit to be below the State drinking water standard of 7.2 ppb.**

52. The City just put in a \$300,000 rain garden on Parklake, which evidently will be unneeded now or under water?

**ANSWER: The Parklake rain garden is situated at an elevation higher than the First Sister Lake spill point elevation. Potentially higher lake levels are not expected to flood the rain garden, but they may impair its ability to function as originally designed. Larry Lemke addressed this in his presentation on September 24.**

53. The Lakes are at non-detect for dioxane presently, why would we let them put 7-10 ppb dioxane (plus the toxic by-product bromate) into the Lake?

**ANSWER: Levels of dioxane in the First Sister Lake discharge are required by the NPDES permit to be below the State drinking water standard of 7.2 ppb and bromate levels are required to be below 10 ppb.**

54. Where is the study to show this will work? Where is the contingency plan if it doesn't? Were tests done on the turbidity, temperature and outcome of the increase in water to this protected lake? What if the wetlands are converted to a lesser quality ecosystem after this process?

**ANSWER: Under the terms of the Court's Confidentiality Order, the discussions in the settlement negotiations cannot be disclosed. See the answers to questions 13 and 40-42, above. If the extraction well cannot be installed because a wetlands or other permit is denied, the CJ does not have a contingency plan either for an alternate discharge of the treated water, or to move the extraction well to another location where it could still extract 1,4-dioxane from the hot spot in the area of the Parklake parcel, and use an alternate discharge of the treated water.**