

March 3, 2025

RECEIVED

MAR 10 2025

Department of Ecology
NWP - Richland

Daina McFadden
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland WA 99354

Dear Ms. McFadden: Following are comments on the Draft Supplemental Environmental Impact Statement for the Perma-Fix Northwest draft permit renewal. The comment period is February 6, 2025, to March 24, 2025.

1. The SEIS is inadequate to support renewal of the PFNW DW Permit. The PFNW permit renewal should be denied. I live nearby and I am concerned about the DOE's push to ship Hanford aqueous radioactive, mixed wastes so close the City of Richland water table and supply wells.
2. There are four alternatives in this draft SEIS, yet Ecology has already selected an alternative without benefit of public comment, by choosing the details of the previously released draft renewal of PFNW's dangerous waste permit. It would help to know at the outset which Ecology preferred in the SEIS. It seems odd to establish permit parameters without benefit of prior public comment.
3. SEIS Page 2. Section 1.3 reads like an advertisement. If PFNW is a "leading provider" what is its place in revenue compared to others? Objective evidence is needed. Much of this paragraph is not necessary, and in addition, Perma-Fix has been raising money from investors, not from profits, according to recent SEC filings. More stock has been offered, and Black Rock, Inc. now has a more than 5% stake in the company.
4. SEIS Page 4, Figure 2. This figure is out of date. It omits the large "Vicinity" apartment complex that has been present since 2021 just across Kingsgate Way from the Horn Rapids RV Park. The apartment complex has about 280 units, with residents apparently not included in the risk assessment. Also omitted is the adjacent Babe Ruth baseball complex.
5. Chapter 2, Figure 3. This Figure shows the Rail Loading Area (RLA) and the Truck Loading Area (TRA). However, the "Yard Area" used for transferring waste from the TLA to the Mixed Waste Building is not shown. Does it have secondary containment? What about the long distance between the RLA and the Mixed Waste Building? If waste transferred from railcars to containers is to be hauled over the

dirt, what protects the groundwater from spills? What is the maximum liquid amount in a container? What type of waste will it be?

6. Chapter 2, Figure 4. This figure omits the building legend from the referenced Part A Form, making it difficult to figure out what is going on (a legend should be added). Further, please compare Figure 4 to the Figure 2 Layout from the 1998 EIS (Enclosure No. 1). Of note is that pretty much NOTHING is the same. As a result, this SEIS should not be a supplement, but rather a stand-alone EIS.
7. Chapter 2, Page 11. LLW is treated in the MWNT Area. This waste contributes to stack emissions. Does DOH allow this? Doesn't DOH have different limits for LLW and MW?
8. The age of each facility is not described, although there have been removals and new construction since the 1998 EIS. How old is each part and what was the design life criterion for each? It matters because some areas have lost reliability due to age.
9. Chapter 2, Table 2 – this table has data only through 2019. What happened in 2020-2024? Complete information is needed, starting in 2009, when the first renewal application was submitted. Also, Table 2 should have the total curies of waste processed. The radioactivity matters especially for comparing current operations to the activity that was analyzed in the 1998 EIS. Annual Environmental Monitoring Reports submitted by PFNW to DOH show the following:

Year	Curies Processed	H-3 Ci Released	Perimeter ¹ mrem/yr
2013	362.82 (per manifest)	58.1	60
2014	266.62	126	97
2015	457.35	172	63
2016	524.08	0.316	54
2017	651.63	432 ²	35
2018	474.49	12.3	41
2019	690.35	8.87	45
2020	388.77	0.74	37
2021	2,240.4	1,270 ³	58
2022	543.1	7.22	77
2023	809.4	4.84	62

¹ Maximum dose rate above background at the PFNW fence line. Blamed variously on waste processed, waste stored, sky shine, and old equipment, for example.

² PFNW released 93% of the 463 Curies of Tritium Received in 2017.

³ PFNW released 62% of the 2,050 Curies of Tritium Received in 2021.

10. Chapter 2, page 14. This page omits the internationally shipped tritium drums received from Australia (ANSTO), which leaked on arrival at PFNW. See the NRC Event Report.
11. Chapter 2, Page 15. Table 3 omits data for 2020-2023.
12. Chapter 2, Page 15. Table 3 omits waste from generators other than Hanford. The total data should be provided. A quick search of the Mixed Waste Forecast from the publicly available Waste Information Management System (WIMS) shows waste is shipped to PFNW from the Idaho (DOE) Lab, Lawrence Livermore Lab, Los Alamos, Nuclear Fuel Services, Oak Ridge, Paducah, and PNNL. Further, the WIMS site projects rapidly increasing annual amounts of mixed waste to be sent to PFNW, starting with an inventory of 225 m³ (59,000 gallons) for 2024 and ending at **3,351 m³** (885,000 gallons) per year in 2028. The SEIS should evaluate an envelope of waste encompassing the total mass, volume, composition, and radioactivity to be received, plus a margin of safety.
13. Chapter 2, Page 16. This page says that TRU processing does not require a dangerous waste permit. How about TRU-Mixed waste (TRUM)? The text could be clarified.
14. Chapter 2, Page 17. This permit claims that passing TRU waste through the DW facilities does not create a mixed waste. However, DOE has previously argued that passing spent commercial nuclear fuel through a mixed waste hot cell at PNNL creates a mixed High-Level Waste. This was done specifically to dispose of commercial nuclear fuel to the WIPP site (where such disposal is prohibited). Ecology should ask DOE about the “sister rods” project, which accepted commercial spent fuel, “laundered it” by passing it through a hot cell, then renamed it HLW, and sent it to WIPP. Ecology should similarly declare TRU waste to be TRU-Mixed waste if the TRU passes through the MW facilities.
15. Chapter 2, Page 17. Table 4 shows annual quantities of TRU processed at PFNW going back to 2010. Ecology should require a row on this table to show the quantity of TRU that was analyzed in the original 1998 EIS, so that a reader could check to see if the new analysis covers the difference between 1998’s permissions and now. The 1998 EIS did not analyze TRU waste at all, according to page 4 of that report. The waste was LLW or LLMW only. The estimated radiological air emissions from all plutonium isotopes at PFNW in the 1998 EIS was 7.22×10^{-8} Curies per year per Table 2.2.2. It’s hard to imagine why TRU waste was allowed to be introduced to PFNW, since the City of Richland’s decision to allow the facility to be constructed did not include the quantities and concentrations eventually processed. Table 5 of the draft EIS should show the total curies of TRU and TRUM isotopes to be processed.

16. Chapter 2, Table 7. What code is used to identify the acetonitrile anticipated to be shipped in concentrate from ETF? What is the concentration expected in wt%? What prevents over-concentration of the acetonitrile?
17. Chapter 2, Page 21, Section 2.6. This section states that unsuitable waste is returned to a generator if a discrepancy is found on arrival at PFNW. Ecology should specifically define “unsuitable” so that non-conforming waste SHALL be returned to the generator. PFNW has a history of accepting and not returning non-conforming waste as described in the Hanford Challenge Report, “Risky Business at PFNW.” SEIS language and requirements should be clear.
18. Chapter 2, Page 22 – Section 2.6.1 refers to the current DWR Permit, Attachment CC, Rev 5. However, this document was not provided for public review, and it is not available on the internet. Ecology should make all SEIS references available for public review before ending this comment period. Ecology should extend the comment period appropriately so all references can be reviewed. WAC 197-11-620 requires Supplemental EIS’s to be prepared “in the same way as a draft and final EIS...” This means following WAC 197-11-400 to 197-11-600. WAC 197-11-425 (6) addresses inclusion of material in an EIS by implementation of WAC 197-11-635.

WAC 197-11-635 contains the following: “Incorporation by reference—Procedures. (1) Agencies should use existing studies and incorporate material by reference whenever appropriate. (2) *Material incorporated by reference (a) shall be cited, its location identified, and its relevant content briefly described; and (b) shall be made available for public review during applicable comment periods.*” Much of the information cited in the draft SEIS references is not appropriately identified and it is not publicly available. I would appreciate if Ecology will provide copies of all the SEIS references to the public. Please note that the original EIS public review included all copies of references in an “Administrative” record file located at the Richland Public library, and responses to comments on the original EIS review referred to the Administrative Record. The references should be provided.

19. Chapter 2, Page 22 – Section 2.6.1 calls out the “current DWR Permit”, Attachment BB Part A Form, **Rev. 4** (citing “Ecology and USEPA 2020”). However, the “current” DWR permit was Rev. 5 per Ecology’s response to a Public Records Request in September of 2019. Ecology responded to records request No. PDTS 53778 with a file for the PFNW Mixed Waste Facility Part A Form, **Rev 5.0**, dated July 12, 2013. Further, the SEIS Reference is to a letter “Ecology and USEPA 2020,” (20-NWP-0077) but letter 20-NWP-077, is NOT a copy of the current permit. Further, copies of letter 20-NWP-077 and its attachments contain only a response to comments and an approval form, with no part being the existing permit, and a Part A form is not included.

Again, all references should be provided for public review, including the current

permit, AND the citations should be reviewed to ensure they are accurate. The same comment applies to the first paragraph of Section 2.7.2 and in Section 2.7.3. The Part A form is at Rev 5, as far as the public knows. What is the configuration management for the PFNW Part A?

20. Chapter 2, Page 22 – Section 2.6.1. This section prohibits liquid waste received in larger than 55-gallon containers with a flash point below 100 degrees F. The acetonitrile brochure below states that mixtures of acetonitrile and water have low flash points. A mixture of 10 volume percent acetonitrile in water has a flash point of about 27 degrees C, which is about 81 degrees F. How will Ecology prevent DOE from sending concentrated acetonitrile? Acetonitrile is a toxicity and explosion hazard. Acetonitrile is incompatible with acids, bases, and nitrating agents. How much of these are in ETF brine? How well are the safety recommendations from the brochure below being followed?

https://www.ineos.com/globalassets/ineos-group/businesses/ineos-nitriles/she/2007_acetonitrile_brochure.pdf

21. Chapter 2, Page 23, Section 2.6.1. This section describes waste acceptance processes as described in a Letter from PFNW, (PFNW 2018a, 2018-LTR-1031). This letter is not available in the administrative records, and the public can't see it. Ecology should make ALL references for the SEIS available for public review. Further, the reliability of 2018-LTR-1031 is questionable, given that PFNW issued other letters after that that altered the scope. For example, PFNW issued Letter 2019-LTR-1028 on August 30, 2019, to request a "full and transparent environmental review" of ALL activities that PFNW proposes to undertake under the renewed permit, including 3 million gallons of mixed waste. Ecology should make all references in this matter available. Is PFNW planning for future expansions not addressed in this SEIS? Any referenced LETTER should be made part of the permit, as has been done by the DOH in their permit conditions. Future "scope creep" is not acceptable.
22. Chapter 2, Page 23, Section 2.6.2. This section references a LETTER, PFNW-2015, as the basis for inspection and chemical screening of waste. Again the letter is one of many, many letters describing scope of PFNW's DW Permit renewal application. A 2015 letter is old. It looks like this SEIS cherry-picks inputs from a host of conflicting letters. The actual procedures should be described. All letters should be released to the public and any references added to the permit as permit scope. Note that references from the original 1998 permit, including source terms, and calculations, have been lost. The City of Richland, for whom the original EIS was written, disposed of them. No one has a copy.
23. General – "Personal Communication" is not a valid EIS input. These references should be replaced. Personal communications that B. Wiegman "told us so" occur

on no fewer than 15 pages of the SEIS. The public doesn't even know where B. Wiegman works or with whom B. Wiegman was communicating. This is a violation of Quality assurance requirements. Anything conveyed by "personal communication" is not a commitment from PFNW, and it should therefore be documented and become a permit condition.

24. Page 32, Section 2.9.1 – This section refers to Ecology 2020d as the source of PFNW annual dangerous waste reports. However, Ecology is not the author of the reports, and the link in the reference section leads to a web site that is non-functional for the public. Ecology should place the actual annual reports where the public can see them and include reports after 2020.
25. Page 32, Section 2.9 PFNW anticipates barge and rail waste delivery. In Section 2.9.2, the PFNW plans are based, again on "personal communication" from B. Wiegman. There is no indication of any documentation. The person to whom B. Wiegman communicated is not identified. A quick search indicates that B. Wiegman may have been a PFNW employee, but is no longer employed there, and is most likely now employed by PNNL. If employed at PNNL, B. Wiegman can no longer speak for PFNW, and any further inputs on the SEIS could be seen as a conflict of interest, since PNNL is a PFNW client. All "personal communications" need to be replaced with actual documents.
26. Page 32, Section 2.9.2 – when actions are described by PFNW as "likely" or something PFNW "is interested in" such as no TRU or TRUM on railcars, or delivery by barge, what does that mean? Does that mean this will be prohibited in the DOH and DW permits? Does it mean it's not analyzed in the SEIS? Or will it be quietly added later without benefit of public review? "Likely" statements should be replaced with ARE or ARE NOT analyzed in the SEIS. Ecology should be very clear on the envelope of activities analyzed, and those outside the SEIS should therefore be prohibited.
27. Page 40, Section 2.10.1 Changes in Facility Design – Information appears to be missing. What changes have been made to off-gas and ventilation systems? To monitoring systems? To the fire protection system? What about the duct work that corroded and leaked? Was it replaced? What was the design life of the installed equipment and how much of that life is left? What process is used to verify integrity of aging equipment?
28. Page 41, Section 2.10.2 – This page cites Annual Dangerous Waste Reports, but these reports are not available to the public and the actual years analyzed were not provided. Starting in what year? What were the companion shipments of LLW? The context is needed. What about the total curies accepted? There's still a huge risk from fewer shipments, if they contain more concentrated chemicals and isotopes. How did the percentage of waste change for each major DW code? Organics?

Reactives? Toxics? Volatiles?

29. Pages 41/42, Section 2.10.3 – the available treatment capacity exceeds the 1998 EIS by a factor of 15. Why was this allowed? Where was the analysis and public review? Further, PFNW says it has the capacity to handle “**140,267 metric tons** (140,267 short tons)”. The same value is repeated for both units. Which is it? Assuming it is metric tons, and a density of 1 kg/L, this is about **37 million Gallons per year**. Is this what is being analyzed? How many curies of radioactivity in 37 million gallons? How many tons of specific chemical contaminants? This is an extreme amount of waste, which could be spilled to groundwater in Richland.
30. Pages 45/46, Section 2.11 – Richland’s population today is 65,656. 2019 data in the SEIS draft are out of date by 6 years. Further, EPA notes (per the EJ Screen Community Report) that 81 people live within a 1-mile ring centered on PFNW. The new 280 Unit apartment building at Kingsgate is omitted. City of Richland plans to add hydrogen storage (a definite adjacent hazard of explosion) are omitted. Impacts to the public are understated.
31. Page 47, Section 3.1.3 – this section also refers to Part A, Rev 4, and not Part A, Rev 5. This occurs on many pages. Ecology should make public the entire existing DW permit, since it is a hidden reference. And then the comment period should be extended.
32. Page 49, Section 3.2.1.1. This section details reductions in treatment capacities for PFNW equipment. The DW permit, if renewed, should contain the reduced capacities as permit conditions that are limitations on operations.
33. Page 50, Section 3.2.1.1. Increased capacity is requested by nearly a factor of 10 for puncturing aerosol cans. What’s in them? How are volatiles in those cans to be collected/treated? Does the off-gas system have enough capacity?
34. Page 52, Section 3.2.1.2. This section would allow macro-encapsulation to occur in the Truck Bay, which does not have even building ventilation to prevent fugitive emissions. The argument is provided that in the truck bay, macro-encapsulation will only be used on “closed containers” of debris. Is this supposed to be macro-encapsulation of the entire closed container? Presumably the closed containers will be verified to be sealed and then remain unopened. What prevents the encapsulation process from pressurizing a leaking container?
35. Page 53, Section 3.2.2. This section would allow in-container mixing of 580 cubic meters annually of liquid secondary DFLAW waste, including brines and acetonitrile. This is about 153,000 gallons per year. Ecology should establish the amount of liquid received as a limit in the DW permit. This amount creates a risk to

the groundwater, and it should be limited.

36. Page 56, Section 3.3.1. This section states that Geomelt[®] waste is “not combusted,” yet it oxidates the reactive metals. The Oxford Dictionary defines combustion as the rapid chemical combination of a substance with oxygen, involving production of heat and light. The impact to the waste is combustion, and it should be regulated as an incinerator. Further, the reference describing the Geomelt[®] “Off-gas System”, (PFNW 2021) is not available to the public, and its capabilities and limitations have not been provided in support of the SEIS. Where are the drawings and test result data? Again, B. Wiegman personal communication cannot substitute for design drawings, criteria, and IQRPE evaluations. What percent of the waste mix is glass former? What about the fire previously associated with this system?
37. Page 56, Section 3.3.1. This EIS cannot evaluate and provide an envelope for Geomelt[®], without the underlying data being available. Yet this data is put off for a permit application. Geomelt[®] should not get a “pass” without the requisite detailed input data to this EIS.
38. Page 57, Section 3.3.2. Geomelt[®] should NEVER be allowed to treat TRU waste, which could result in plutonium, americium, and other actinides being discharged in the gas phase (bypassing filters) and going up the stack. Again, B. Wiegman’s “expectations” from 2018 are hardly rigorous enough to support an EIS. Also, every PFNW “expects” or “expectation” item should be a permit limit.
39. Page 59, Section 3.3.4.1. Use of “B Wiegman Personal Communication” for defining Hanford and DOE Waste compositions is highly inappropriate. Documentation from each of the sites directly is needed. Further, DOE has an EIS record of decision to react the Hanford sodium for use in WTP Hanford tank waste processing. Each site should treat its own waste, onsite, to eliminate hazards. How about siting treatment equipment at each DOE site? That way, an appropriate risk and hazards analysis, and waste isolation, can occur.
40. Page 60, Section 3.4. The SEIS should reference and make available the actual closure plan, Rev 4, not the approval letter, which isn’t even available for public review. The lack of rigor in this SEIS qualifies the DW permit for non-renewal. DOH should cancel the radioactive materials and air licenses as well.
41. Page 61, Section 3.5.2. This section clearly states that impacts from a new Bulk Scale Liquid Treatment System are not analyzed in this EIS. Yet the text says that PFNW can submit a permit modification for it after permit renewal. Why? If it is not part of the SEIS operating envelope, it should be prohibited unless and until there is

another SEIS specific to Bulk Scale Liquid Treatment.

42. Page 62, Section 3.5.4. Perma-Fix Northwest submitted a request via Presentation Slides to the NRC for an exemption allowing up to 600 grams Pu-Equivalent TRU in August 2020. NRC was skeptical that PFNW was trying to use disposal-to-a-landfill exemptions to apply to a processing area. In landfill disposal it is not as likely that TRU materials could be re-combined, but at PFNW they most certainly can be recombined. As far as I know, NRC has rejected the exemption request, and it should be a prohibited activity. Further, PFNW was also trying to become exempt from Security Requirements for this material, further demonstrating their disregard for public safety.
43. Page 63, Chapter 4. The items incorporated by reference are out of date and do not include major changes, such as 280 new apartments at Horn Rapids, and Richland Planning to incorporate hazardous Hydrogen gas storage in the vicinity.
44. Page 72, Section 4.2.2. This section provides data for PFNW radioactive emissions and Hanford Site emissions only for calendar year 2018. This information is very misleading, due to the variability of emissions reported for each year. This SEIS should have a 10-year interval so that the mean and standard deviation can be published. Using tritium as an example, the 2018 data show releases of 0.123 Ci for PFNW and 82.5 Ci for the Hanford Site. Firstly, a check of the 2018 PFNW Environmental Report to DOH, Table 4.1.2, shows a release of **12.3 Ci** of tritium from PFNW, **not 0.123** (off by a factor of 100). PFNW further released 432 Ci of tritium in 2017 and 1270 Ci of tritium in 2021. The SEIS number is wrong, understated, and cherry-picked to be a low value. Was there a QA check of this draft SEIS? What other errors are present?

For Hanford, tritium emissions are also increasing in the 300 Area, from the PNNL 325 Building. Letter 24-ECD-0157, DOE NOC, December 4, 2024, shows that PNNL has potential abated tritium emissions to the 300 Area of 2,200 Curies per Year.

This SEIS would benefit from a larger analysis of tritium and other emissions for variability over time, and for the sum of like emissions from the 300 Area and PFNW, both of which expose the same population. Ecology and DOH should consider adding PFNW stacks to the Hanford Air Operating Permit to do this. Risks to the public are not being adequately addressed.

45. Page 74, Section 4.4. This section states that the area is not a suitable habitat for any wildlife or plant species, and that no sensitive species are known to be present. However, PFNW annual environmental reports contain prominent photographs of rabbits and flowers on the site. What review was performed in support of this EIS to justify “no change” since 1998? Where is the reference? Please note that the Table at Comment 9 shows dose rates at the perimeter of PFNW’s property. Rabbits and

wildlife, and people walking outside the fence line are exposed to a dose rate of up to 97 mrem per year without informed consent to receive these doses. PFNW notes in annual environmental reports that they employ onsite security officers to ensure the public does not “loiter” at the facility perimeter. However, PFNW has no legal basis to shoo people away when they are not on PFNW property. How do the adjacent property owners feel about PFNW doses passing through the perimeter fence onto their property without their consent? The wildlife living on the site, such as the rabbits, are exposed 24/7.

46. Page 75, Section 4.6.1. This section also presents exposure data for just the year 2018. However, the 2022 Environmental report from PFNW clearly states that its calculation method was in error for doses (the dose calculations included negative numbers for some emissions). As above, this evaluation should include multiple years, show the range and standard deviation. In 2022, the average annual external dose rate along the PFNW perimeter was 16 to 48 mrem per year. These data should be presented, since food (corn) storage is nearby. Please see the table of example doses at Comment No. 9.

In contrast, what is the maximum perimeter dose rate from the Hanford Site? I expect that if DOE kept its proposed waste onsite, there would be no change to the Hanford perimeter dose rate, and the doses at the PFNW perimeter could be removed during facility closure.

47. Page 76, Table 19. Table 19 shows employee doses for the years 2014 to 2018. This omits the highest doses which have occurred at PFNW. This is documented in the report “Risky Business at PFNW⁴,” which shows an employee overexposed to 100 REM in 2009. This reflects PFNW practices and far exceeds the average 61.2 mrem worker dose reported in the SEIS.

48. Page 77, Section 4.6.2. This section totals two MWF accidents in “past recent years.” Both are from 2019. The SEIS should address all accidents between the 1998 EIS and the present. The SEIS should also include accidents in the LLW Facilities as well. Root causes of accidents are not limited to one facility. Accidents at one facility can affect safety in other portions of the building. For a more comprehensive list, see “Risky Business at PFNW” per footnote 4. All “event reports” from the NRC should be listed as well.

49. Page 83, Chapter 5. This section states that there is uncertainty regarding how long PFNW will operate the Mixed Waste Facility. Why is this so? The original EIS

⁴ A copy of this report is located at <https://static1.squarespace.com/static/568adf4125981deb769d96b2/t/5fce533274a40730fbc928bf/1607357241336/2020+12.04+PermaFix+Report+updated.pdf>.

contained a response to comment that “the plant life is anticipated to be 20 years.” Why is the facility considered safe to operate now, which is well beyond the design life? What life extension evaluations and refurbishments have occurred? The original SEIS response to comments stated that “twenty years is a reasonable estimate for the MAXIMUM life of the facility.” This facility should be a candidate for immediate closure.

50. Page 84, Chapter 5. This chapter draws conclusions about impacts without defining the amounts of radionuclides and chemicals at risk and involved in accident analysis. The quantitative source terms should be provided in the SEIS text. Data supporting the 1998 SIES have been lost because the calculation was not preserved. That mistake should be corrected.

51. Page 84, Chapter 5, Water Resources – the results for water resources in the table state that continuous MWF operation would “not likely” affect both groundwater and surface water in the vicinity. This is an incorrect statement. A spill of incoming liquid waste or brine or other solution, including tritium, and acetonitrile, could easily contaminate groundwater above drinking water standards, as the depth to groundwater is only 10 feet. Incoming containers pass over areas that do not have secondary containment, and the facility is old and has not demonstrated that the joints in the existing secondary containment are sound. Spill accidents from deliveries of ALL waste should be analyzed, especially as the “new” operations are intended to include millions of gallons of contaminated liquid waste. If 55 gallons of the liquid waste is spilled and seeps to groundwater, how much water will be contaminated above drinking water standards before anyone can respond? Who drinks the resulting water, which drains towards Richland water intakes? Further, what is the purpose and risk of the underground injection well? The more waste received and the more concentrated this waste, the greater the risk. Where are the accident analysis calculations documented? What are the assumptions? Why can the public not see them?

52. Page 85, Chapter 5. The Geomelt® process has not been properly or thoroughly addressed in this SEIS. Geomelt® should be prohibited from having a dangerous waste permit unless and until another supplemental EIS is prepared.

53. Page 86, Chapter 5. This section states that the probability of a transportation accident is very low. However, the consequences of a resulting spill of aqueous mixed waste are very high, due to the consequences of contamination of groundwater just 10 ft away. Spill accidents should be analyzed for totes, trucks, at the maximum liquid volume and radioactivity.

54. Page 87, Section 5.1. This section contains a requirement for PFNW to have an owner-controlled boundary to protect the public from ionizing radiation. Contrary to this requirement, PFNW has dose rates at the surrounding fence line ranging up

to 97 mrem per year. PFNW relies on security personnel shooing people away from the fence. Intermittent Shooing of off-site members of the public is NOT a protective boundary. Shielding is needed to protect the public from direct radiation.

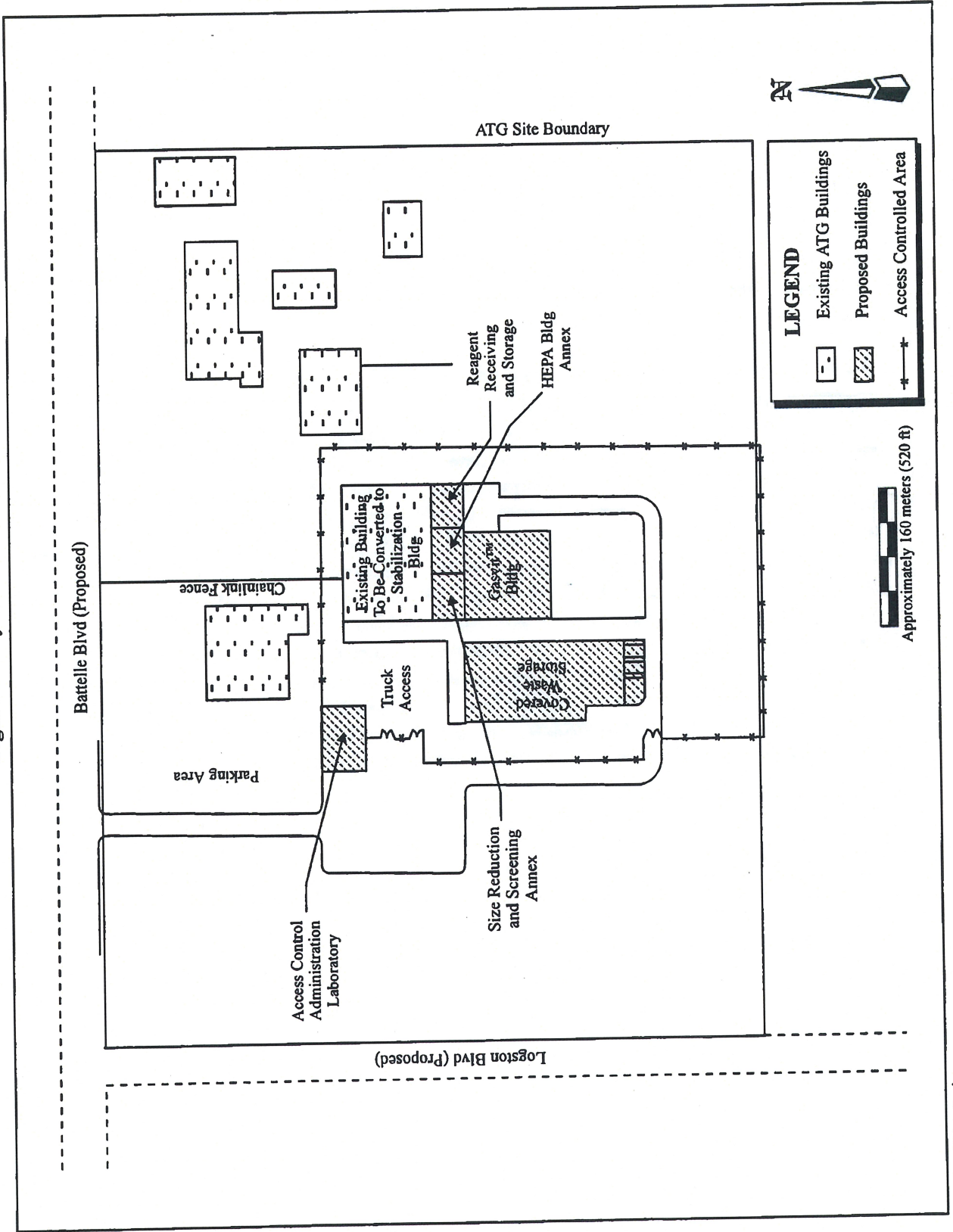
55. Page 87, Section 5.1. This section notes that PFNW was required to perform a causal analysis for two fires that occurred in 2019. The section calls for Ecology to review the causal analysis. After 6 years, this analysis should be complete, and Ecology's review of this and prior causal analyses should be included in this draft SEIS.
56. Page 94, Section 5.4.2. This section states that PFNW has a stormwater discharge well. This well creates a path to groundwater. No analysis is provided for what could spill to it or where it is located. Many areas of the PFNW compound do not have secondary containment, so a spill analysis is needed, especially due to the short distance to groundwater, at about **10 feet**. In contrast, DOE's WRAP facility, which performs similar work, has a water table depth 71 meters below surface level (**233 feet**). Spills are therefore more than 20 times riskier at PFNW, and DOE should consider keeping its liquid waste on the Hanford site. This would keep spills out of the North Richland Wellfield.
57. Page 99, Section 5.7.1.1. This section assumes that administrative control limits of 1.5 rem will protect workers from overexposure. Please see "Risky Business at PFNW," per footnote 4, which demonstrates that the administrative control limits are meaningless. Workers will be over-exposed unless the amount of waste received is limited to be "safe by design" and thoroughly enforced. WDOH was unable to prevent the overexposures. The entire history of over exposure at PFNW should be addressed as an accident analysis in this SEIS. WDOH inspection reports and Ecology inspection reports should be made available to the public.
58. Page 102, Section 5.7.2. This section claims that the DOE NEPA Supplement Analysis, EIS-0391-SA-3, evaluated DFLAW Secondary Waste accidents at the PFNW facility. No such comparison of new and old accidents was made. Instead, DOE relies on the WDOH and Ecology Permits. What EIS-0391-SA-3 says is "PFNW is currently in discussions with Ecology to renew PFNW's Dangerous Waste permit. Prior to sending secondary waste to PFNW, DOE would verify that the waste could be treated and stabilized within the terms and conditions of the PFNW permit." The SEIS says DOE NEPA evaluated PFNW accidents, and the DOE NEPA Document says Ecology will handle evaluated PFNW accidents via permit renewal. The DOE NEPA SA only evaluated transportation accidents in delivering DFLAW Secondary Waste to PFNW. Claiming it applies to PFNW operations is an unhelpful, circular argument, and no one has done the work. Further, Public review was prevented for the DOE NEPA SA. Ecology should not adopt the DOE NEPA SA for anything other than DOE transportation.

59. Page 103, Section 5.7.2. The rate of transfer error, waste release accidents is well above 0.01 per year (one every hundred years). Human accidents also occur more often than once each hundred years. This SEIS should evaluate actual transfer errors and waste releases. There have been leaking tritium drums, items that did not conform with the manifest, and spills that required removal of some of the concrete floors. The SEIS should look at the actual data. See Footnote 4, for example, and the complete set of NRC event reports. During one fire, the fire detection system was inoperable.
60. Page 105, Section 5.7.2.3. The spill evaluation is inadequate. 55 gallons is not the largest liquid container that could spill. Spill volumes could include Hanford Totes, liquid tanker truck loads, or railcars (for LLW). Any spill not analyzed should be prohibited, including by the DOH. Reference to a Savannah River Spill analysis is not relevant because no comparison is made to the composition of Savannah River Recycle Wastewater versus wastes shipped to PFNW. Further, Savannah River is 40 feet above the water table – 4 times farther than PFNW. This section should also indicate the concentrations achieved in Richland’s groundwater. Cleanup to drinking water standards will be very expensive. Given the track record at PFNW, the probability of spills is larger than stated.
61. Page 114, Section 5.9.3.1.2. This section claims the probability of release of TRUM is low because DOT requirements are met. However, leaky packages containing TRUM and Tritium and other wastes have arrived at PFNW, so we know the packaging doesn’t always work well. What are the actual leak statistics over the history of PFNW? How many leaky, drippy, non-conforming packages have arrived?
62. Page 123, Section 5.13. Despite noting that cumulative impacts from nearby facilities are potentially significant, the draft SEIS waves them away by relying on the DOH Permits. More data are needed. Please provide some quantitative data. The total risk to the public should be considered. For example, the nearby PNNL 325 Building submitted a Notice of Construction Application (Letter 24-ECD-0157, Appendix A), which increases the tritium potential abated emissions to 2,200 Curies per year. Looking at Comment #9 above, that will add to the up to 1,220 Curies released from PFNW in 2021. Some context is needed. How has Richland’s clean air become the dumping ground for tritium? Note that PFNW has proposed to DOH to treat even more tritium, including “flammable tritium (^3H) gas” produced from self-radiolysis of T_2O . Flammable Tritium gas is a dangerous waste. So far, DOH has not accepted the new tritium process, for which a scrubber that can collect up to 10,000 Curies of tritium is needed. (See the DOH references to the PFNW radioactive material permits). Actual and planned cumulative impacts should be provided quantitatively, so that the integrated risk can be evaluated by the nearby residents and businesses.

63. Of additional note is that this draft SEIS references the Port of Benton and City of Richland 2017 Rail Master Plan, but it ignores the 2017 City of Richland/Port of Benton North Horn Rapids Area Master Plan. This plan should be included. The North Horn Rapids Area Master Plan notes that there are deed restrictions on the nearby North Horn Rapids area acquired from the Department of Energy. This new property could also release isotopes up to radionuclide national emissions standards.
64. There is no specific discussion of PFNW's "proposal," yet there are three alternatives, no conclusion of preferred alternative, and hidden scope which has not been reviewed in this draft SEIS. What is Ecology's preferred course of action? Whatever DOE can bully you into? PFNW seeks to renew the existing permit AND then expand it as much as Ecology will allow. Yet the downside of Hanford radioactive mixed waste spills to the Richland groundwater is not evaluated. The cumulative impacts of follow-on piggybacking of new processes in the DW permit are ignored. It appears this SEIS is incomplete.
65. Chapter 6, References Section, pages 125-133. References to "personal communications" as a reference in any SEIS are not appropriate. Actual formal documentation is needed. No reference is provided for the radioactive emissions estimate (there was a calculations reference in the 1998 EIS, but no such calculation here). Without the two calculations you cannot tell the difference between the 1998 source term and the present source term. At least one reference is to a web page as it was in 2020, but the link is to today's web page, which is just an advertisement for PFNW. See "PFES 2020. Capabilities. Perma-Fix Environmental Services. Accessed January 15, 2020. Accessed at: <http://www.perma-fix.com/Capabilities.aspx>." A pdf of the actual page(s) is needed. The quality assurance for this SEIS is inadequate, and a QA review should be performed.

Enclosure 1
FEIS 1998

Figure 2. Layout of ATG Site

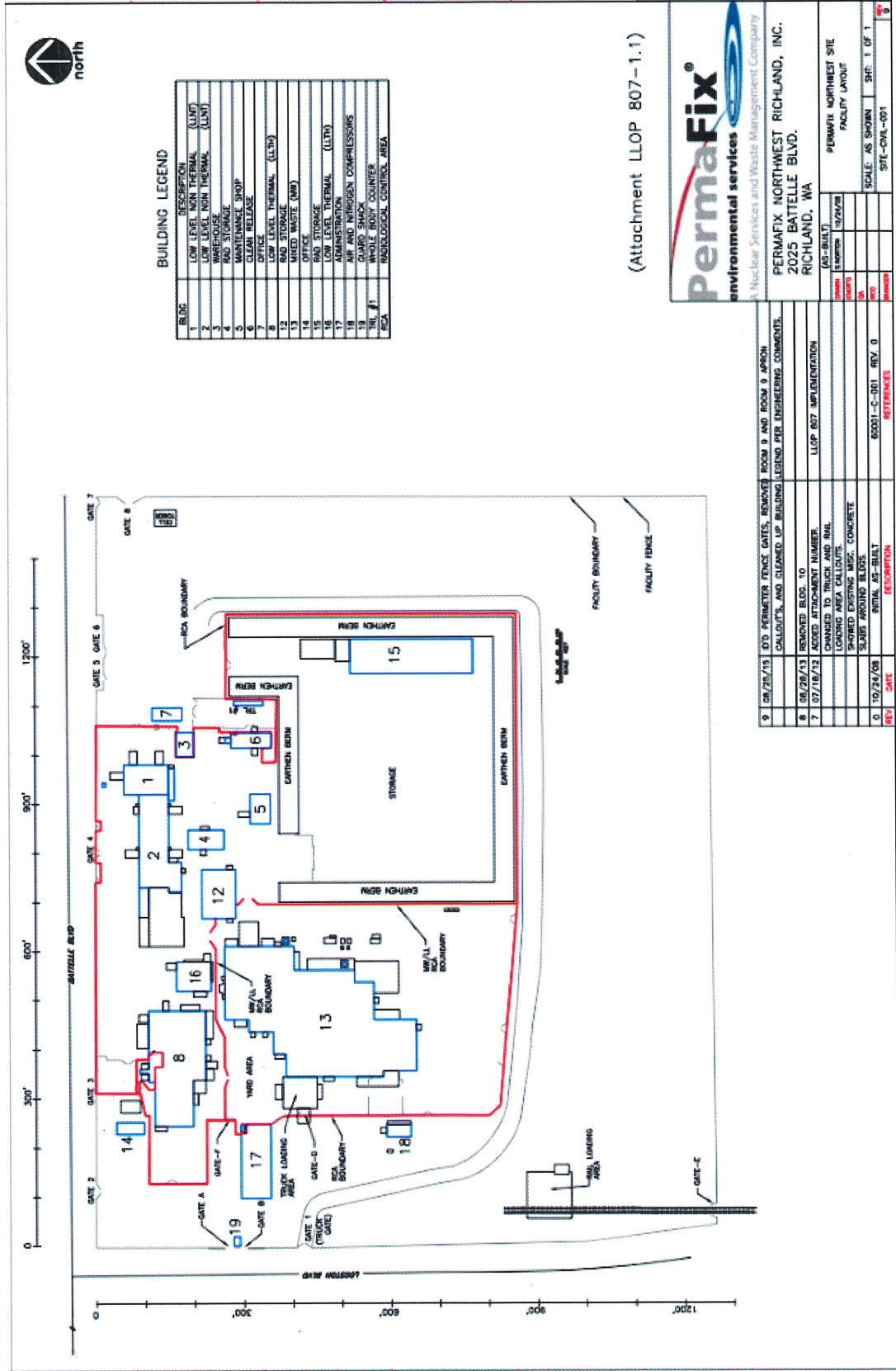


Mixed Waste Facility

2024 Looks A Lot

Different Now

Figure A-3 – Facility Plot Plan (SITE-CIVIL-001)



(Attachment LLOP 807-1.1)