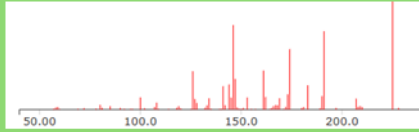


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**Condensed Technical Report Conclusions
for the Review of the
Joint Base Pearl Harbor-Hickam (JBPHH)
Interagency Team's Technical Memorandum on the
Lines of Evidence Evaluation of TPH Detections
Observed During Long-Term Monitoring**

Prepared for the Honolulu Board of Water Supply (BWS)

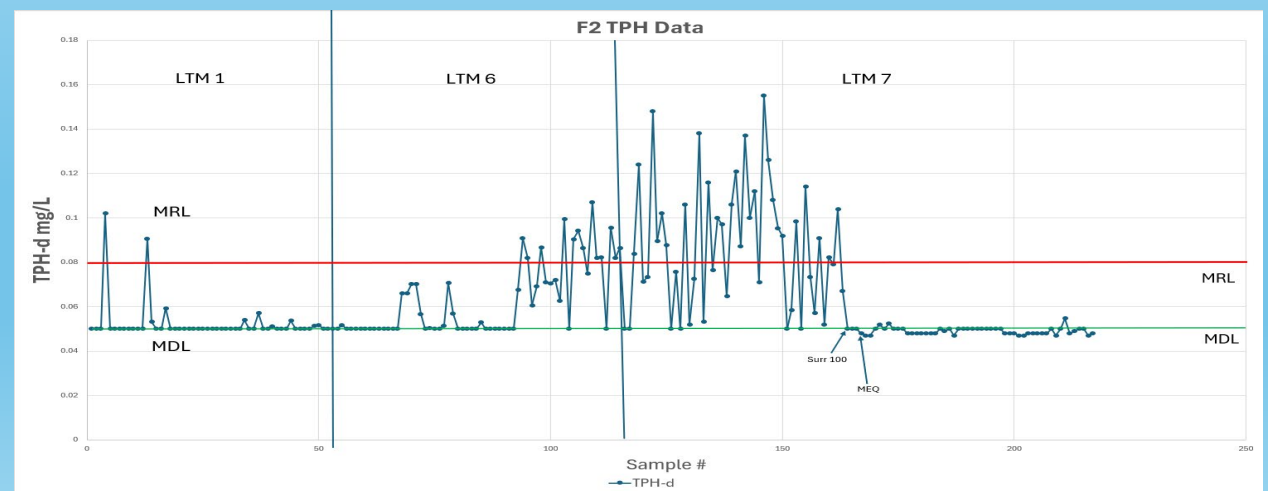
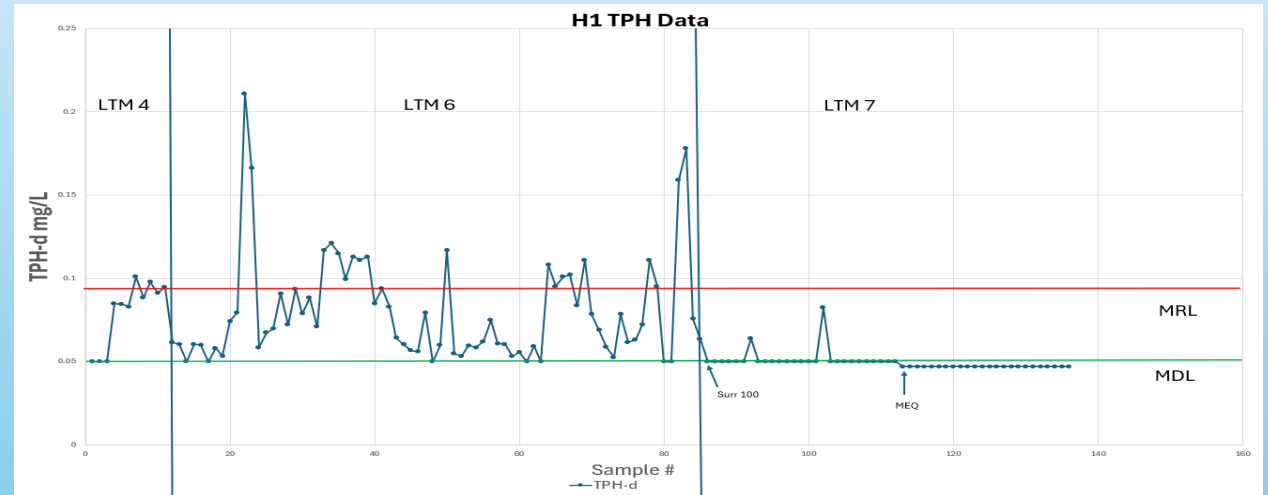
Tech Memo Review Conclusions

1. Authors assumed the flush of the Red Hill Shaft was 100% effective.
 - a. Assumed random TPH detects were due to laboratory method.
 - b. Did not discuss sampling intermediate points in the system or the discharge of untreated and contaminated water to open grassy areas.

Tech Memo Review Conclusions (cont.)

2. The authors claimed that the increased frequency of TPH detects had the same pattern for all zones, indicating a lab problem.

- Zones H1 and F2 do not have the same pattern for detections of TPH.
- Note LTM 6



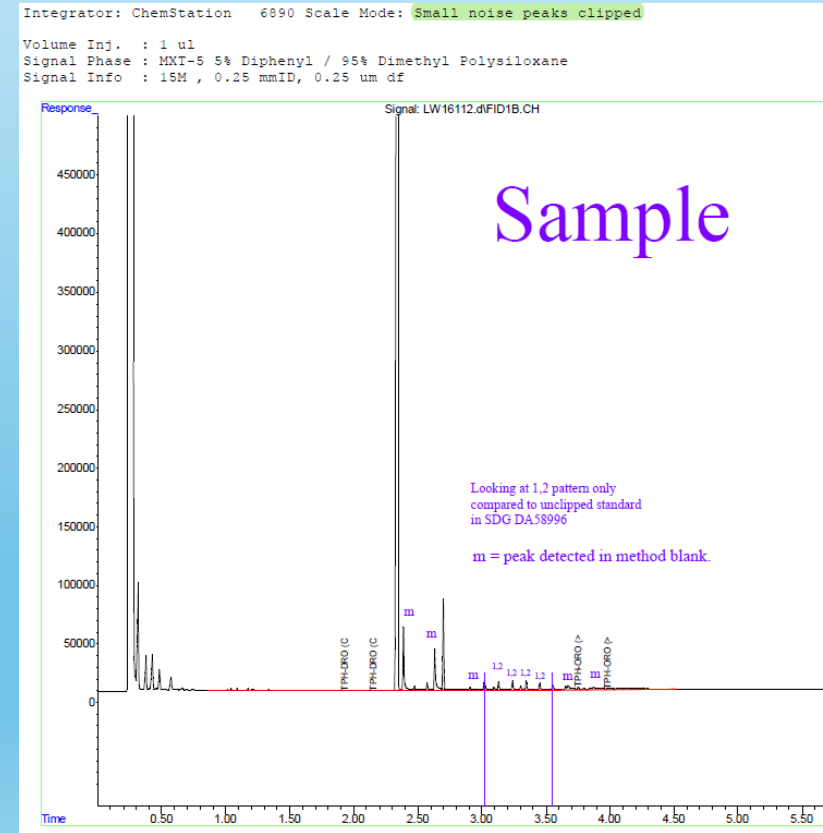
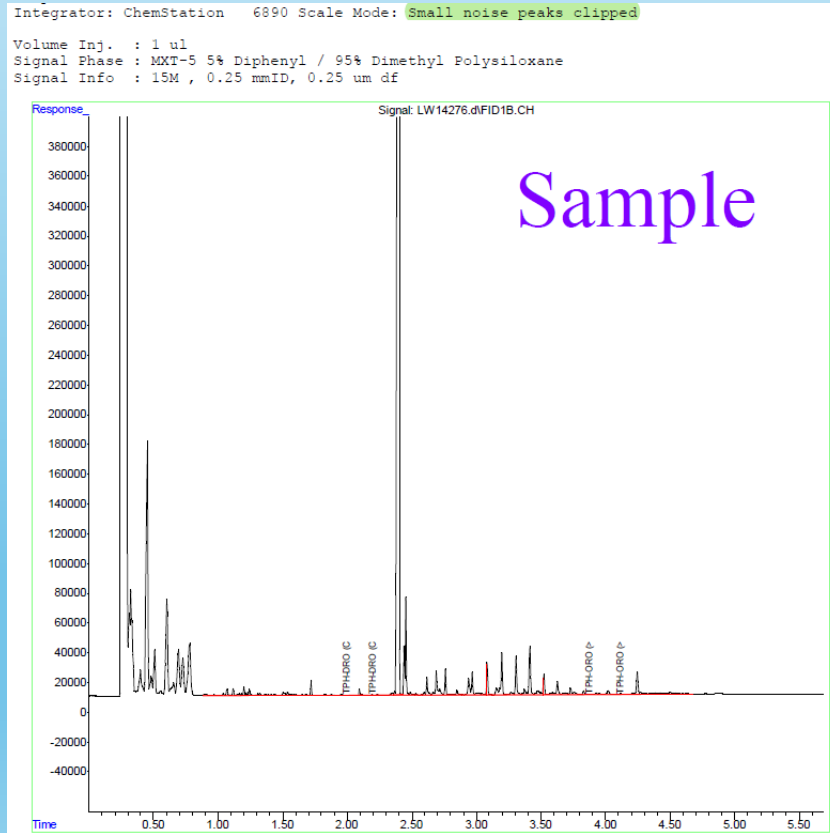
Tech Memo Review Conclusions (cont.)

3. The sample collection procedure was not appropriate for the project.
 - a. Hydrochloric acid was added to all samples.
 - b. The samples were not preserved with sodium thiosulfate.

4. There was no indication that the analytical method used (8015) was adjusted for low-level analysis, including:
 - a. Dedicated glassware and instrumentation.
 - b. Low-level concentration standards.

Tech Memo Review Conclusions (cont.)

5. In many instances, there were a lot of extraneous peaks interfering with the ability to see low-level peaks of interest.



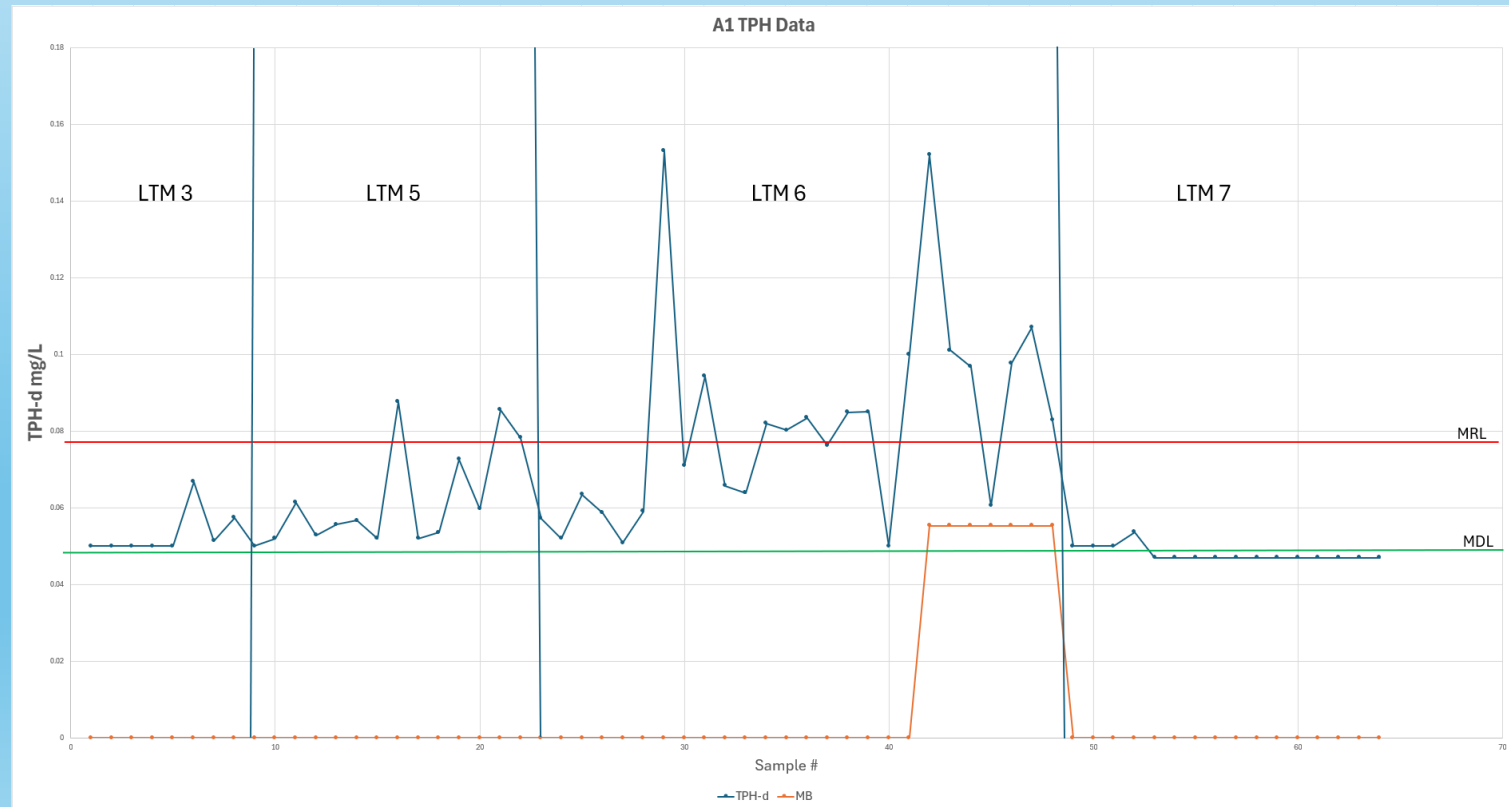
Tech Memo Review Conclusions (cont.)

6. The surrogate does react with chlorine; however:
 - a. The surrogate concentration was constant throughout the LTM period.
 - b. The frequency of TPH detections did not change with chlorine concentration.
7. Some of the peaks attributed to the presence of chlorine were also present in the method blanks.
8. A contaminated method blank does not prove that TPH is not present in the samples.

Tech Memo Review Conclusions (cont.)

9. The method blanks show that laboratory contamination does not appear to be a major cause for the increased frequency of TPH detections.

- 66 Samples analyzed in Zone A1
- One contaminated blank – affects 6 samples



Tech Memo Review Conclusions (cont.)

10. No field blanks were analyzed for TPH. Field contamination could not be evaluated.
11. The marker compounds that the SWARM team said were absent:
 - a. May not have been detectable at the low concentrations expected.
 - b. Were analyzed on different sample aliquots.
12. Data on how chlorine reacts with fuel is limited; it is difficult to know how the the presence of free chlorine affects low TPH concentrations.
13. Significant method modification could result in datasets that are not comparable. Significant differences in sample preparation should not result in comparable MDLs.

Method Compliance and Data Defensibility

1. The samples were not collected in compliance with EPA recommendations.
2. The data is technically not compliant or defensible.
3. The existing data was found to be very suspect and, thus, would be qualified as unusable for the purpose of proving the absence of TPH in the drinking water system.

Questions?