



Minnesota Pollution Control Agency

November 4, 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Scott A. Glass, Code 18610
Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Naval Industrial Reserve Ordnance Plant Superfund Site

Dear Mr. Glass:

Please find enclosed a copy of a memorandum from Luke Charpentier to me, dated October 27, 1997, regarding two audits of the Brown & Root Environmental mobile laboratory conducted this summer. The audits and their findings are for the Remedial Investigation/Feasibility Study of Operable Unit 3 of the Naval Industrial Reserve Ordnance Plant Superfund Site, which is being conducted pursuant to the Federal Facility Agreement, dated March 27, 1991, between the Minnesota Pollution Control Agency, the U.S. Environmental Protection Agency, and the U.S. Navy.

Also please find enclosed a copy of Luke Charpentier's memorandum to me, dated June 23, 1997, and Mark Sladic's e-mail message to Luke Charpentier, dated August 6, 1997. These documents were cited in Luke Charpentier's memorandum of October 27, 1997.

If you have any questions regarding this letter, please contact me at (612) 296-7818.

Sincerely,

David N. Douglas
Project Manager
Response Unit I
Site Response Section
Ground Water and Solid Waste Division

DND:ch

Enclosures

cc: Thomas Bloom, U.S. Environmental Protection Agency



Minnesota Pollution Control Agency

Date: October 27, 1997

To: Dave Douglas, Project Manager
Site Response Section
Ground Water and Solid Waste Division

From: Luke Charpentier, QA/QC Coordinator 
Managers Office
Ground Water and Solid Waste Division

Phone: 296-8445

Subject: Conclusion of the Brown & Root Mobile Environmental Laboratory Audit

This memo documents the final conclusion of the two audits done (in July and August of 1997) of the Brown & Root (B&R) Environmental mobile laboratory. The memo is structured to match the July 23rd memo to Dave Douglas, emails (from August 6th), and general discussion of the mobile laboratory.

<u>Item #</u>	<u>Comment</u>
1.	The solvent container was labeled in the second visit to the mobile laboratory. No further comment needed.
2.	The issue of one versus two chemist on site was not agreed upon by the Navy. If two chemists had been on site I believe the backlog causing the wait on the MDL study, reprocessing the data, and audit issues would have been resolved in a timely manner.
3.	Calibration standard purity was found to be acceptable.
4.	Surrogate compounds were not used as I recommended. Instead internal standards were used and the recovery of the standard was "looked at" according to the chemist for B&R. Surrogates should always be used with any kind of organic analysis when the data will be used as final data.

5. The contamination problems were present throughout the project, but not at the levels seen in the early chromatograms. A number of compounds had much higher reporting limits due to the contamination, but this was unavoidable due to the instrumentation problems.
6. I believe that the cassette recorder was fixed and that this issue is resolved.
7. The MDL study was conducted many weeks after analyses began. The B&R chemist stated this was done because the instrument "settles down" in time and therefore the MDL study would be better. I pointed out to the chemist that the MDL study would not be reflective of the true conditions of the instrument during earlier analyses. (Note that the reporting limits were a factor above the detection limits so this should not greatly affect reported data.)
8. A number of the compounds identified in the QAPjP were not analyzed for by B&R. Navy stated that these compounds were not of concern on site. Mark Sladic and I met during the second audit in August and agreed upon the list of compounds that were not critical to the project and therefore were not analyzed for.
9. The limits used were 50 to 150% which is still considered too wide by MPCA staff. The data validation step shall therefore flag all data that is outside of this range.
10. The gases were secured upon the second audit in August.
11. The method number was placed on the reports.
12. The reporting limits (PQLs) were based upon the lowest standard analyzed for and therefore this issue is resolved.
13. The calibration curves used had 3 to 5 standards, depending on the compound. In my opinion, the compounds that were most critical, with exception of Vinyl Chloride, were sufficiently calibrated for. (The acceptability of the calibration is separate issue.)
14. The acceptability of the initial and continuing calibration was the core of the problems MPCA staff had with the mobile laboratory data. In my opinion the data was substandard for any mobile laboratory doing Superfund work in Minnesota. Unfortunately, the problems with the calibration were not apparent until after the data was reprocessed. The data is usable, flagged as "J", but can not be used as "final" data as it should.

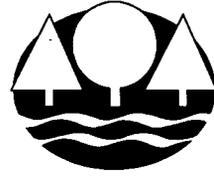
15. The hood issue was not settled as no ventilation system was employed. This was a safety issue and not a QA issue.
16. The information not received by the chemist is the fault of the MPCA staff.
17. I am not sure if the trap was removed or how the problem was corrected, but Acetone was analyzed for. The problem was therefore corrected.
18. The volatile analyses were done incorrectly per EPA guidance (which is new). I did not observe the sampling method used, but the sampling jars I saw in the refrigerator were neither zero headspace containers nor was methanol used. A low bias on the light volatile compounds can be expected due to the method of sampling used.

The following information is in reference to the email message sent by me to Mark Sladic on August 6, 1997 discussing issues that were agreed upon by Mark and I during the second field visit I made in August with Paul Estuesta (during the partnering meeting). Mark did subsequently agree to the list as being accurate

1. The written changes referenced in Comments 1 and 2 were never received. The information requested included the number of compounds that could fail the CCAL prior to a new ICAL being performed and the number of compounds that could fail %RSD prior to a new ICAL being performed.
2. Items 3 through 8 were covered in the mobile laboratory data packet received from B&R.
3. Item 4 is of particular interest as this led to the email message of September 12, 1997 that had numerous issues with the calibration and continuing calibration (ICAL and CCAL respectively). The concerns I had were brought forward to George Schupp and Ida Levin of EPA in the email dated August 8, 1997. My concerns subsequently proved to be valid to the EPA Region V QA Staff.

CONCLUSION:

The data received from the mobile laboratory can only be considered as screening data, used to estimate what is present and at roughly what concentration. Care must be taken in using the data for anything other than this due to the issues that were raised in the two MPCA staff audits.



**Minnesota Pollution Control Agency
DRAFT COMMENTS**

Date: July 23, 1997

To: Dave Douglas, Project Manager
Site Response Section
Ground Water and Solid Waste Division

From: Luke Charpentier, QA/QC Coordinator
Managers Office
Ground Water and Solid Waste Division

Phone: 296-8445

Subject: NIROP Mobile Laboratory Review

The mobile laboratory located at the NIROP site was audited at the request of Dave Douglas (Project Manager, MPCA) for the purpose of verifying the operations met the QAPjP. The following problems were observed while auditing the afternoon of July 22, 1997:

1. The solvent waste container was not labeled.
2. Only one chemist is on-site. There is no backup and therefore no one to review all the data being generated. This can be a major problem as data is hand entered into a spread sheet for reporting. Additionally, if the chemist becomes ill or incapacitated over the work period, the entire project will be in effect, shut down. (NOTE: Brown and Root has stated repeatedly that TWO CHEMISTS would be on site.)
3. The calibration standards used are questionable as no purity information was given in the tracability information and this is a relatively unknown company. In defense of the chemist, she was using a check standard (but of only a limited number of compounds) from a reputable firm.
4. Surrogate compounds must be used in the analyses to verify the samples are running correctly.

5. There are major contamination problems that obscure quantitation of three compounds, Carbon Tetrachloride, Chloroform, and 1,1,1-Trichloroethane. The peaks caused by the contamination are extremely large.
6. The backup cassette tape is broken and therefore all electronic storage is on floppy diskette.
7. No MDL study has been conducted. This is due to all the problems with calibration and contamination.
8. The calibration of 7-22 that is to be used for quantitation of the first batch of samples was missing many of the low level standards for Chloromethane, Vinyl Chloride, Bromomethane, Methylene Chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, and 1,2-Dichloroethane. The following compounds were not calibrated; Acetone, Carbon Disulfide, cis- and trans-1,2-Dichloroethene, 2-Butanone, Chloroform, Benzene, 4-Methyl-2-Pentanone, Toluene, 2-Hexanone, Chlorobenzene, Ethylbenzene, m,p-Xylene, o-Xylene, Styrene, and Bromoform.
9. The control limits used for matrix spikes and matrix spike duplicates (MS/MSD) were 50 to 150% recovery. These are unacceptably wide. The limits should be 70 - 120%.
10. The gases are not secured in the trailer, which is a potential safety hazard.
11. The method number should appear on the reports.
12. There may be lack of agreement concerning Practical Quantitation Limits (PQL). PQLs are what shall be reported and therefore this issue must be clear. MPCA's definition is a PQL equals a level 2 to 10 times the MDL (40 CFR 136, Appendix B) that a laboratory can report at with a high degree of accuracy. However, the chemist stated that at times a PQL could be less than a MDL. This is impossible if the MDLs are correctly done. Therefore, Brown and Root will be responsible for verifying that the reported MDLs and PQLs are realistic and correct.
13. If from the GC in the mobile laboratory is being used as final data (for example on soils at a depth of greater than twelve feet) a five point calibration for each compound is essential. If the data is for screening purposes and decisions are not to be made with the data that affect clean up or any formulation or modeling, then a three point calibration curve is adequate.
14. The chemist is apparently unsure of the %RSD and %D allowable for the calibration. The software being used, was not giving the information it should making calibration verification extremely difficult. The %RSD stated in the SOP is 35% for each compound and the %D will be <25% (for the CCVS) for all compounds.

15. There is no hood. This can be a major problem if a "hot" sample is found (which is expected) AND methanol should be in a hood.

16. The chemist is not receiving information previously given to Brown and Root. When questioned about issues in the SOP review done last week, she was unaware of any comments! Additionally, the fax machine in the trailer is broken.

17. The chemist stated that a water trap is present on the system to protect the PID. This is a problem because she is getting nearly no recovery on the ketones.

18. An additional comment that I am adding after speaking to George Schupp of Region V EPA, is that the samples are in 4oz jars that are not preserved. Therefore the sampling of the volatiles, as it is being conducted, will cause the inherent loss of the light volatiles (e.g. Chloromethane, Vinyl Chloride, etc.).

Conclusion: Until the above issues are corrected, specifically the calibration, contamination, a MDL/PQL study, and agreement to calibration requirements, the mobile laboratory will produce unacceptable data. The chemist on site is very good, but she is faced with software problems, contamination problems, unfamiliar equipment, questionable calibration standards, no hood, lack of information, moreover, an entire refrigerator of samples that have not been analyzed yet. She stated that she is very worried that the holding times will not be met for a number of the samples. Therefore, we strongly recommend that NAVY: 1.) Send all VOA samples to Lauck immediately to avoid holding time issues 2.) Immediately halt sampling until all problems are resolved.

Douglas, David

From: Mark Sladic[SMTP:BBRK365@barms045.b-r.com]
Sent: Wednesday, August 06, 1997 3:39PM
To: Douglas, David
Cc: Charpentier, Luke; Daneen Resnick; Scott A Glass
Subject: RE: So we are on the same sheet of music

Dave: I believe this list provided by Luke to be accurate - I'll send it to our field crew. On our end, we did indicate to Luke that we intended to respond more quickly than we have. Although it is our problem and not yours, what has happened is this: Deb (our GC operator) requested we send out an assistant so that she could focus on these necessary responses while not slipping on project items. We thought we had a candidate lined up, but that fell apart yesterday while I was out of town and by today we should have someone else committed to show up yet this week.

As intended, and as previously stated, we believe the GC is providing data suitable for the intended usages, but that we do need to provide MPCA with the necessary support for this statement. As I previously discussed this situation with Scott, I have copied him on this note.

We appreciate your patience. Thanks.

From: Charpentier, Luke
To: 'Mark Sladic'
Cc: Douglas, David
Subject: So we are on the same sheet of music
Date: Wednesday, August 06, 1997 8:33AM

>
>Dave,
>Just so you are aware of what the handwritten notes I gave you represent, the
>following is required of the Brown and Root laboratory to be submitted to the
>Agency on Monday...
>
>1. A written addendum to the SOP that states the number of compounds that
>can fail the %D criteria (for the CCVS) stated in the B&R SOP prior to
>requiring a full ICAL be performed.
>
>2. A written addendum to the SOP that states the number of compounds that
>can fail the %RSD criteria for the ICAL that would require corrective action
>and a new ICAL be performed.
>
>3. A written explanation of the changes that are made to standard
>calibration requirements by the HP software loaded on the PC used for data
>manipulation for the B&R GC.
>
>4. A calibration table (similar to the CLP ICAL table) showing the RRFs and
>%RSD for the compounds being analyzed at NIROP. Included in this submission
>should also be the reprocessed standard chromatograms and reports. The ICAL
>for 11 July and the CCVS for 29 July were requested.
>
>5. A statement from B&R as to the purity and usability of the standards
>being used to calibrate the instrument. (This is NOT critical to be turned
>in on Monday.)
>
>6. The Method Detection Limit study for volatiles. This follows the
>requirements stated in 40 CFR 136 Appendix B. This may not arrive until Wed
>or so as this takes a number of days to process. Calculated MDL shall also
>be submitted (although I could do this from processed data myself, it would
>just take a while).
>
>7. I also asked for select (if not all) the chromatograms and data reports,
>reprocessed, to go with the ICAL and CCVS on the 11th and 29th of July
>respectively.

