Appendix N. Quality Assurance Team and Pre-Study Audit

dpr

Department of Pesticide Regulation

Paul E. Helliker
Director

MEMORANDUM

Gray Davis
Governor

Winston H. Hickox
Secretary, California Environmental Protection Agency

TO: Don Fitzell
Quality Assurance Section
Monitoring & Laboratory Division
Air Resources Board
1927 13th Street
Sacramento, California 95814

FROM: Randy Segawa, Senior Environmental Research Scientist Segawa
Environmental Monitoring and
Pest Management Branch

DATE: May 22, 2000

SUBJECT: RESULTS OF PRE-STUDY AUDIT OF UNIVERSITY OF CALIFORNIA DAVIS' TRACE ANALYTICAL LABORATORY

We received your results from the Quality Assurance audit team that conducted a pre-study evaluation of the University of California Davis' Trace Analytical Laboratory (TAL) on May 12, 2000, to evaluate the readiness of the laboratory to start analyzing samples from the Lompoc Phase II monitoring. Another outstanding job by the Quality Assurance (QA) team! In particular, thank you for fitting this activity into your busy schedules.

We will make the appropriate arrangements and changes, and respond to your findings before the start of monitoring. We were pleased to hear that, overall, you found that the lab's preparations and procedures appear to be in order. You identified the following questions to resolve before the start of sampling. Our answers follow each of the questions you posed.

1—It is unclear to TAL how samples will be shipped from Lompoc. If UPS is used, since UPS does not deliver samples on weekends, samples should be kept on dry ice by the Lompoc technician over the weekend and then shipped on the following Monday, to prevent the samples sitting somewhere in a UPS warehouse and getting warm.
DPR will ship samples overnight from Lompoc by FedEx.

2—It is unclear whether the primary samples for TAL and the duplicates for the Department of Food and Agriculture (DFA) lab will be sent to Sacramento or Davis in one chest, or a separate ice chest to each lab with separate chain of custody forms. If primary and duplicates are shipped together, the Lompoc technician should be instructed to group samples by lab with separate chain of custody forms, and clearly mark which samples are for which lab.
The primary samples for TAG and the duplicates for the DFA lab will be sent to Sacramento in separate ice chests, and each lab will have separate chain of custody forms. Staff from each laboratory will pick up its respective samples from the Sacramento airport.

3—Samples should be shipped in individual sealed plastic bags each containing a label for the individual sample.
The Lompoc technician will ship samples in individual sealed plastic bags each containing a label for the individual sample, as suggested.

4—Primary and back-up contacts at DPR should be identified, along with phone numbers, in the DPR Sampling and Analysis Plan.
DPR will make these changes.

5—The field technician should be instructed to use permanent ink on chain of custody forms, to avoid the smudging of ink due to the forms getting wet in the ice chests.
DPR will instruct the field technician to use permanent ink on chain of custody forms.

6—Upon shipping samples from Lompoc to Northern California, the Lompoc technician should be asked to fax a sample list to TAL at (530) 754-8556 and to DPR (and the DFA lab, if desired) to alert the TAL of the number of samples being shipped.
DPR will ask the Lompoc technician to fax a sample list to TAL and to DPR at (916) 324-4088 (and the DFA lab at (916) 262-1434) to alert the TAL, upon shipping samples from Lompoc, of the number of samples being shipped.

7—DPR should state in the Sampling and Analysis Plan and inform TAL how samples will be identified that will require analysis for oxydemeton-methyl.
Samples that require analysis for oxydemeton-methyl will be in separate plastic bags, labeled oxydemeton-methyl. DPR will state this in the Sampling and Analysis Plan and inform TAL.

8—TAL should provide DPR with final analytical standard operating procedures for incorporation by DPR in the Sampling and Analysis Plan.
TAL has provided DPR with final analytical standard operating procedures and DPR will incorporate them in the Sampling and Analysis Plan.

9—The TAL and DFA labs will exchange standards for the four pesticides that the DFA lab will analyze in duplicate samples. The date of the exchange of standards and a date by which the labs are to report results to DPR should be known to both labs. Once both labs report results of the analysis of the other lab's standards to DPR, DPR should provide these results to both labs and the QA team.
DPR has discussed this exchange of standards with both the TAL and the DFA lab. DPR, TAL and DFA labs have agreed that all three parties should know the date of the exchange of standards and a date by which the labs are to report results to DPR. DPR is in the process of scheduling the date of the exchange of standards, and the date by which labs are to report results

to DPR, and will provide all parties these dates. When DPR has both labs' report results of the analysis of the other lab's standards, DPR will provide these results to both labs and the QA team. This process will be described in the final Sampling and Analysis Plan.

If you have any questions or comments about these responses, please feel free to contact me by telephone at (916) 324-4137 or by e-mail at <rsegawa@cdpr.ca.gov>.

cc: Lynn Baker, ARB
Kathy Orr, DPR
Matt Plate, U.S. EPA
Susan Kegley, PAN
Cathy Cooper, CDFA
Matt Hengel, UCD TAL
Dave Vener, Xontech
Carissa Ganapathy, DPR
Pam Wofford, DPR
Madeline Brattesani, DPR
TAG members

Air Resources Board

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Winston H. Hickox
Agency Secretary

Gray Davis
Governor

MEMORANDUM

TO: Randy Segawa
Senior Environmental Scientist
Environmental Monitoring and Pest Management Branch
Department of Pesticide Regulation

FROM: Michael Miguel, Manager
Quality Assurance Section
Monitoring and Laboratory Division

DATE: June 12, 2000

SUBJECT: EVALUATION OF UC DAVIS LABORATORY PRIOR TO LOMPOC PHASE II MONITORING

On May 12, 2000, the Quality Assurance (QA) team completed its pre-monitoring, on-site evaluation of the Trace Analysis Laboratory (TAL) at the University of California, Davis. The QA team consisted of: Don Fitzell of the Air Resources Board (ARB), Mathew Plate of the United States Environmental Protection Agency (U.S. EPA), Kathy Orr of the Department of Pesticide Regulation (DPR), Susan Kegley of the Pesticide Action Network, and Lynn Baker of the ARB.

The team met with Matt Hengel, Mike McChesney, and Greg Hall of the TAL. Overall, the laboratory had all appropriate quality assurance/quality control (QA/QC) procedures in place. No significant deficiencies were observed. On May 15, 2000, Lynn Baker sent you an e-mail with several questions that needed to be resolved prior to the start of monitoring. On May 22, 2000, the QA team received your responses to these questions (attached). All questions were satisfactorily answered by the DPR. After the QA audit team further reviewed its notes, some members had additional observations that it felt should be brought to your attention. Those comments are listed below:

1) Due to the varying responses of the pesticides analyzed, the TAL does not have stringent, quantifiable QC criteria for such things as: calibration linearity, precision of duplicate samples, or instrument sensitivity. In future sampling plans the DPR should make clear those criteria sensitive to the study's goals and specify to the TAL corrective action required such as: qualifying the data, invalidating the data or re-analyzing samples/extracts when criteria are not met.

2) In some cases the pesticides being analyzed have a linear range which goes below the quantitation limit being reported. The TAL felt this was necessary due to the number of pesticides being analyzed at one time. If the DPR has interest in the lower levels of these pesticides or similar pesticides in future studies, the TAL should be notified prior to the start of the study.

3) The TAL reports a trapping efficiency recovery level of 37% for cycloate. The DPR should be aware that this could affect samples reported as trace (detected but not quantifiable) as well as reported values. As a result, a very conservative risk assessment should be considered regarding exposure to trace levels of cycloate.

4) Sample extracts are potentially left sitting for long periods at room temperature while awaiting analysis in autosampler trays. This is to accommodate analytical runs that are one to three days in length. The TAL intersperses detection limit checks throughout their analytical runs, including one at or near the end of the run. The DPR should be aware of this and any corrective action taken by the TAL due to pesticide degradation or solvent loss.

5) Most trapping efficiencies were determined from literature or previous in-house studies. Trapping efficiency studies were conducted for six pesticides for which no previous trapping efficiency data existed. All six pesticides were simultaneously fortified onto four replicate XAD-4 sampling tubes. The trapping efficiency study was conducted indoors. No breakthrough was detected. DPR should be aware that recovery studies have not been conducted for all of the target analytes simultaneously spiked to the same sampling tubes. Although this is not expected to pose a significant analytical problem, field spikes from Lompoc should address this potential shortcoming. In future studies, if the DPR is concerned with possible interaction between target pesticides, it should instruct the TAL that trapping efficiency studies be conducted for all target analytes simultaneously, and that such studies be conducted under representative or expected field conditions.

If you have questions regarding these comments, please call me at (916) 324-6191 or Don Fitzell at (916) 322-3892.

Attachment

cc: Matt Hengel, UC Davis
Don Fitzell, ARB-MLD
Mathew Plate, U.S. EPA Region IX
Kathy Orr, DPR
Susan Kegley, Pesticide Action Network
Lynn Baker, ARB-SSD

Winston H. Hickox
Agency Secretary

Air Resources Board

Alan C. Lloyd, Ph.D.
Chairman
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Gray Davis
Governor

MEMORANDUM

TO: Randy Segawa
Senior Environmental Scientist
Environmental Monitoring and Pest Management Branch
Department of Pesticide Regulation

FROM: Michael Miguel, Manager //s//
Quality Assurance Section
Monitoring and Laboratory Division

DATE: July 28, 2000

SUBJECT: PRELIMINARY REPORT OF SYSTEMS AUDIT OF UCD-TAL AND CDFA LABORATORIES

The purpose of this preliminary report is to provide a summary of the system audits' findings for the UC Davis Trace Analytical Laboratory (TAL) and the California Department of Food and Agriculture (CDFA) Center for Analytical Chemistry. This preliminary report will enable the Department of Pesticide Regulation (DPR) to modify procedures where necessary. A full report will be issued at a later date.

On July 24, 2000, the Quality Assurance team evaluated the UC Davis TAL, which is analyzing the ambient samples, and the CDFA laboratory in Sacramento, which is analyzing collocated samples for the Lompoc pesticide study.

Both laboratories were following accepted and agreed-upon procedures for analysis and quality assurance, including sample handling, instrument calibration, method validation, and documentation. As a result of the system audits, the audit team is informing the Department of Pesticide Regulation (DPR) of two issues:

1) At the UC Davis TAL, there is uncertainty for some pesticides reported as trace or not detected. The audit team will provide the DPR with recommended options regarding this issue. The recommendations will be included in the full audit report.

2) At the CDFA laboratory, at least two batches of samples have been received without dry ice present in the ice chest. Lynn Baker has already informed the DPR of this problem. The audit team recommends: a) the field technician place more dry ice in the chest for the CDFA lab and use a larger ice chest if

necessary, and b) include a trip blank and trip spike with the samples so recovery levels can be corrected if samples become too warm.

Other issues were discussed among the audit team, none of which would significantly affect data quality. These issues will be addressed in the full report.

cc: Cathrine Cooper, CDFA Laboratory
Matt Hengel, UC Davis
Susan Kegley, Pesticide Action Network
Mathew Plate, US EPA
Kathy Orr, DPR
Lynn Baker, ARB
Don Fitzell, ARB