Establishing NADP Data Minimum Reporting Levels

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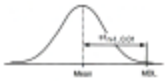
Data Management and Analysis Subcommittee
2002 Fall Technical Meeting

Data Minimum Reporting Levels



- Evaluation of data Minimum Reporting Levels (MRL) for chemical concentrations
  - MRL defines the smallest measured concentration of a particular compound that can be reliably reported using a given analytical method

Proposed Changes to Data Reporting Limits for the CAL

- The NADP has traditionally set MRLs at approximately the MDL values.
  - If MDL values did not vary significantly from year-to-year, MRLs were not changed.
- It is proposed to set the MRL at twice the LT-MDL.
  - Statistically balances chance of false positives and false negatives
  - LT-MDL determined from variability low concentration standard data (FR10) over a period of one-two years.

Issues to address

- Fix at MRL at 2xLT-MDL?
- How long of period for LT-MDL
- Long-term data stability?
- Include variability due to field operations?
- Data censoring
- Isopleth maps
- HAL data

NADP Data Systems Audit

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Purpose of Data Systems Audit

- Evaluate laboratory data systems
  - Field sample report forms
  - Data provided to Program Office
  - Data released to public on NADP web site
- Ensure correct data validation and verification procedures followed

1999 CAL Data Systems Audits

- Performed by Dr. John Robertson
- Looked for internal inconsistencies in CAL database
- Compared data in CAL database with Program Office database

Mercury Data Breakdown

- A ~20%: fully qualified with no problems
- B ~74%: valid data with minor problems, used for summary statistics
- C ~6%: invalid data, not used for summary statistics

Methyl Mercury Data Breakdown

- A ~7%
- B ~80%
- C ~13%
- Validation rules:
  - If all the subsamples are A, the composite is A
  - If at least 75% of the precip in the composite is from A or B subsamples, the composite is B
  - If less than 75% of the precip in the composite is from A or B subsamples, the composite is C

Proposal

- 6 mo study
- Mercury data
  - 20% audit (14 sites/wk)
  - Select 14 sites sequentially per week, comparing field forms, HAL data sent to Program Office, and data reported to data users
  - Hand calculations of first site each week
- Methyl mercury data
  - 100% audit