



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII  
726 MINNESOTA AVENUE  
KANSAS CITY, KANSAS 66101

AUG 5 1994

137920

Site:	MRP #15
ID#:	JAD98111761
Break:	3.4
Other:	WSP: Comments 8-5-94

Mr. Marshall Sonksen, P.E.  
Environmental Specialist  
Aluminum Company of America  
P.O. Box 3567  
Davenport, Iowa 52808



137920  
SUPERFUND RECORDS

Dear Mr. Sonksen:

The U.S. Environmental Protection Agency (EPA) has received Woodward-Clyde's letter dated July 27, 1994, addressing issues discussed in the July 21, 1994, conference call between Alcoa, EPA, Jacobs Engineering and Woodward-Clyde Consultants. The letter (attached for reference) accurately reflects our telephone conversation regarding the 1994 Fish Study issues. The 1994 Fish Sampling and Analysis Work Plan is approved by EPA contingent upon agreement between EPA and Alcoa regarding the use of interlaboratory precision QA data. As you are aware, the field activities for the 1994 fish study were initiated the week of August 1, 1994.

The RPD proposed by Alcoa for evaluating interlaboratory precision (112%) during the 1994 Fish Study is not adequate. Using split sample data from the 1992 Fish Study, the average interlaboratory RPD was 48%. Therefore, EPA believes that the QA objective for split sample precision should be evaluated against an RPD of 50%.


The interlaboratory split sample analysis should be utilized to assess bias and the impact of precision on the statistical decision process used at the site. Bias will indicate whether analytical results from either lab are consistently higher or lower than the other lab. Bias should also be evaluated for sample results in each concentration range of interest, 0-1 ppm, 1-2 ppm, and >2 ppm. If analytical bias is indicated in any of these concentration ranges, then the impact on statistical decisions will be discussed in the report.

Precision will be evaluated by calculating RPDs for all samples with detected PCB concentrations analyzed by both EPA and Alcoa labs. The QA objective for interlaboratory precision is 50%. The precision data will be evaluated by comparing the average precision for all split sample analyses with the objective of 50%. If the average RPD does not meet the objective, the contributing factors will be discussed.

The RPD for each sample pair will also be compared to the QA objective. If the RPD for a sample pair does not meet the QA objective, the impact of the low precision on the statistical decisions based on the sample will be discussed. If feasible, aliquots of the sample may be reanalyzed to provide additional information to explain the differences. Similarly, if a group of data (i.e., as defined by the time frame in which samples were analyzed or sample results in a given concentration range) are identified that have been impacted by low precision, then the impact on project objectives and statistical decisions will be discussed.

If you have any questions, please contact me at (913) 551-7489.

Sincerely,



James Colbert  
Remedial Project Manager  
Remedial Enforcement  
Section  
Superfund Branch  
Waste Management Division

Enclosure

cc: Jan Lydigsen, Jacobs  
John Olsen, IDNR  
Tom Long, Illinois Dept. of Public Health  
Jody Millar, U.S. Fish and Wildlife Service  
Clinton Beckert, U.S. Army Corps of Engineers

July 27, 1994

Mr. Marshall Sonksen  
Aluminum Company of America  
4879 State Street  
Riverdale, Iowa 52722

RE: Logistics for Sample Splits and Blind Duplicates  
WCC File No. 93N102

Dear Marshall:

We have discussed the logistics with Hazleton Laboratories for selection, preparation and submittal of split samples associated with the 1994 fish study. We have also included the approach we will use for blind sample preparation.

- Samples received by Hazleton Laboratories from the field will be appropriately logged and placed in a freezer to await processing.
- Sample homogenization (grinding) will begin only after EPA has notified Alcoa which samples they would like splits from.
- Immediately following sample homogenization, the homogenized sample will be split in up to three separate containers:
  - the primary sample that will be used by Hazleton for further processing and analysis;
  - a split of the sample, if requested by EPA; and
  - a second split of the sample which will be provided to Woodward-Clyde.
- The splits of the samples requested by EPA will either be placed in containers supplied by EPA or, if requested by EPA, containers will be supplied by Hazleton. In either case the sample splits will be shipped via overnight carrier to the EPA laboratory.
- Selected splits of the samples provided to Woodward-Clyde will be recoded and resubmitted to Hazleton Laboratories as blind laboratory duplicates.

**Woodward-Clyde**

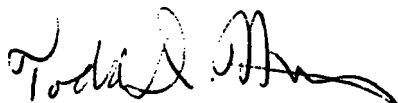
Mr. Marshall Sonksen

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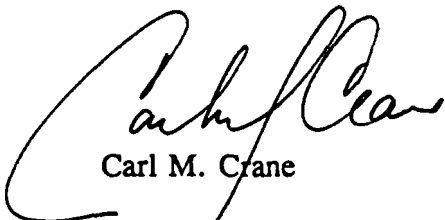
July 27, 1994

Please contact us at 615/790-0003 if you have any questions or need additional information.

Yours very truly,



Todd D. Hunt



Carl M. Crane

cc: James Colbert, EPA  
Richard Young, WCC

**RECEIVED**

JUL 28 1994

**SPFD BRANCH  
REGION VII**

July 27, 1994

Mr. Marshall Sonksen  
Aluminum Company of America  
4879 State Street  
Riverdale, Iowa 52722

RE: Intra and Interlaboratory Analytical  
Precision for the 1994 Fish Study  
WCC File No. 93N102

Dear Marshall:

Pursuant to the conference call between Alcoa, EPA, Jacobs Engineering and Woodward-Clyde Consultants on July 21, 1994, we are submitting information developed from data collected during the 1992 fish study to use for QA/QC purposes in the 1994 fish study. Blind duplicate sample data from the 1992 study were examined to develop intralaboratory precision guidelines. Split sample analyses were examined to develop interlaboratory precision guidelines. Blind sample and split sample analyses will be used to supplement other methods of evaluating precision such as matrix spike/ matrix spike duplicate analyses.

**INTRALABORATORY PRECISION - BLIND DUPLICATES**

"Blind duplicates" during the 1992 study were actually blind third replicates of the field duplicate samples. Thus, there are theoretically 2 analytical pairs for each sample when comparing with the blind duplicate: (1) the primary sample and the blind duplicate; and (2) the field duplicate of the primary sample and the blind duplicate. Relative Percent Differences (RPDs) were calculated for each pair as follows:

$$RPD = \frac{[x_1 - x_2]}{\bar{x}}$$

These data are summarized in Table 1. The RPDs were pooled and ranked from lowest to highest. The percentile distribution was then calculated as:

Mr. Marshall Sonksen

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July 27, 1994

$$\text{Percentile} = \frac{\text{Rank}}{(n+1)}$$

where n = the number of values in the data set.

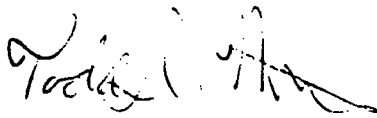
The ranked data and percentiles are presented in Table 2. The 90th percentile value (calculated by linear interpolation) was selected for use as a guideline to evaluate data during the 1994 study. The 90th percentile RPD value from the 1992 dataset is 50%. A blind duplicate-RPD of 50% or less will be used as an acceptable quality control limit during the 1994 study.

#### **INTERLABORATORY PRECISION - SPLIT SAMPLES**

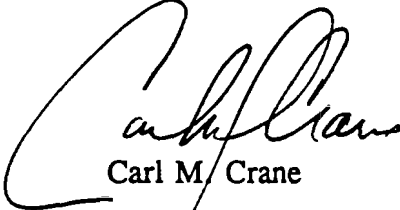
RPDs were also calculated and ranked for split samples analyzed during 1992 by WW Engineering (Alcoa's laboratory) and EPA's laboratory. These data are shown in Table 3 and Figure 2. A similar approach was used as described above for evaluation of split samples. The 90th percentile RPD value for the split sample data from the 1992 data set was 112%. A split sample RPD of 112% or less will be used as an acceptable quality control limit during the 1994 study.

Please contact us at 615/790-0003 if you have any questions or need additional information.

Yours very truly,



Todd D. Hunt



Carl M. Crane

cc: James Colbert, EPA  
Richard Young, WCC

AUG 5 1994

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WSTM/SPFD/REME/COLBERT/JDO/7672/94SAPPR.MRP/080594

REME  
Colbert

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Bunn

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8-5-94

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Smith

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8-5-94

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James Colbert  
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Waste Management Division

Enclosure

cc: Jan Lydigsen, Jacobs  
John Olsen, IDNR  
Tom Long, Illinois Dept. of Public Health  
Jody Millar, U.S. Fish and Wildlife Service  
Clinton Beckert, U.S. Army Corps of Engineers

bcc: Scott Pemberton