



**Rocky Mountain
Remediation Services, L.L.C.**
... protecting the environment

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ORRES. CONTRC October 11, 1999

99-RF-04055

UTGOING LTR. N
DOE ORDER #5480.2

99-RF-04055

DIST.	LT	N	John W. Whiting
Crawford, A. C.			779 Cluster PBS Manager
Hammick, J. C.	X		Kaiser-Hill Company, L.L.C.
Hickman, M. E.	X		Rocky Flats Environmental Technology Site
Crowe, S.			
Guthrie, C. L.			
Korenko, M. K.			
Dieter, T. J.	X		TRANSMITTAL OF BUILDING 779 FINAL SURVEY REPORT FOR B779 B-ANNEX - MEH-100-99
Jenkins, Ken			
Miller, J.			
Cronin, R. D.			
Hughes, F.	X		The purpose of this correspondence is to transmit the enclosed changes to the Final Survey Report for B-Annex, Building 779, for your information and dissemination to the State and DOE.
Trice, K.	X		
Wolf, K. Z.			
Zbryk, K. O.	X		
Whiting, J.			Enclosed are six copies of the changed pages for the Final Survey Report for the Building 779, B-Annex and a copy of the letter from J. Barroso to J. W. Whiting with information regarding an error in the surface media data summary spreadsheets, JBB-012-99, <i>Building 779, Final Survey Report</i> , October 11, 1999.
Bracken, G.			
Walker-Lembke			
Schommer, R.	X	X	Please change out the appropriate pages.
Grube, M.			
Amundson, R			
Zachary, M			If you have any questions, please contact M. Grube, extension 2863.
Voelz, B.			
Schweinsberg			
Whiting, J.(7)			

DOC Control

for Mark E. Hickman

CORRES CONTROL
Adm Rcrd/080 X X
TRAFFIC
PATS/T130G
CLASSIFICATION: 779 Cluster Closure Project
UCNI
UNCLASSIFIED
CONFIDENTIAL as
SECRET

AUTHORIZED CLAs: encl:
SIGNATURE: _____) copies of FCR
NA _____ | copy of JBB-012-99
Date: _____

IN REPLY TO RFP

TION ITEM STAT
 PARTIAL/OPE
 CLOSED

LTR APPROVALS:
Manager _____

G. & TYPIST INITI
ras

RF-46469 (Rev. 6/94)



ADMIN RECCRD

IA-B779-A-00111

1/7



Rocky Mountain
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INTEROFFICE MEMORANDUM

DATE: October 11, 1999

TO: J. W. Whiting, Kaiser-Hill, B130, X7592

FROM:  B. Barroso, B779 Radiological Safety, T779A, X8451

SUBJECT: BUILDING 779, FINAL SURVEY REPORT – JBB-012-99

This memo is to inform you of an error in the surface media data summary spreadsheets that was discovered during the input of media data for the Admin Closeout Radiological Survey Report. An investigation ensued due to the fact that the same spreadsheets were used for the Annex B and Building 729 Closeout Radiological Survey Reports.

The investigation revealed surface media data results presented in the B779 Annex B Closeout Radiological Survey Report for Survey units 77901, 77902, 77903, and 77904 are erroneous. The basic parameters in the surface media spreadsheets include the surface area of the sample, the sample weight and the analytical lab results expressed in activity per weight. Based on these three parameters, the spreadsheet converts the data to activity in dpm per 100 cm².

The spreadsheet was inadvertently changed and was calculating the dpm/100cm² for every sample based on the media sample weight from the first sample in the spreadsheet. The spreadsheet was corrected to calculate the surface activity with the correct sample weights.

When the spreadsheets were corrected, one media sample (# 18) on the floor in survey unit 77904 exceeded the total alpha DCGL_w of 100 dpm/100 cm² (117.9 dpm/100 cm²). An investigation was performed at the elevated data point location. Eight additional media samples, total activity measurements, and removable activity measurements were obtained to bound the 1 m² surrounding the contamination. The average of the nine samples (including the original) was approximately 34.0 dpm/100 cm², which is less than the DCGL_w. The corrected report will be presented in Revision 1 of the Annex B Closeout Radiological Survey Report.

The investigation of the surface media data for B729 revealed that the spreadsheets were correct and no data errors existed.

The corrective action to be taken to ensure data quality is not affected in the future will be to complete the attached "Software Quality Control Checklist Verification of Calculations" form provided by RMRS Quality Assurance prior to the dissemination of any additional final survey reports.

JBB

Cc with attachments:

File

T. J. Dieter

M. L. Grube

J. C. Hamrick

K. E. Harrawood

M. E. Hickman

T. L. Vaughn



**Software Quality Control
Checklist
Verification of Calculations**

Final Status Surveys
Bldg 779 Cluster

Check List for - Title: Verification of Calculations used in Computerized Spreadsheets & Databases

REQUIREMENTS: *Kaiser-Hill Team Quality Assurance Program, Rev. 8, 3/99*

ASSESSMENT ITEMS

Engineering/Calculations

FINAL REPORT (Title & date: _____)

Are all equations, that support final status survey decisions, stated in the report?.....Y / N

SPREADSHEET/DBASE (FILE NAME {e.g., "Workbook", if EXCEL} & date): _____)

Individual Work Sheets (within the "Workbook" listed above)

- Title: _____

Are all equations listed in the report, that were used in spreadsheet software, accurately written within the spreadsheets?.....Y / N

In general terms, list the types of algorithms used (e.g., unit conversion of pCi/g to dpm/100cm²): _____

Are inputs, as defined in equations referenced above, clearly defined & labeled by parameter?.....Y / N

Inputs (list of): _____

Are outputs (results of the calculations) as defined in the equations above, clearly defined and labeled by parameter?.....Y / N

Outputs (list of): _____

COMMENTS

INDEPENDENT REVIEW

By: _____ / _____ / _____

Print Name

Signature

Verification Date

RESPONSE TO IVC COMMENTS
ON
Closeout Radiological Survey Report for Building 779, Annex B

No.	C/I	Location	Comment	Response
1.	I	Page 9 of 25 (and others)	In the third paragraph, it states that efficiencies of the SCM/SIMS are determined with the Pu-238 source. Why has RFETS chosen to use a source of similar alpha energy when the activity is several orders of magnitude higher than the DCGLs when a NIST-traceable Pu-239 source having an activity much closer to the DCGLs is available?	<p>At the request of the IVC, a test was performed to verify that the SCM/SIMS system was capable of quantifying the lower activity Pu-239 source, and demonstrated the comparability between the IVC detectors and the SCM/SIMS system.</p> <p>The SCM/SIMS results and the IVC results were (on average) within $\pm 1\%$.</p> <p>In addition, the Building 779 final survey team believes that a small-area source is more appropriate for calibration, given that the typical geometry of contamination in Building 779 is small-area (typically particle contamination).</p>
2.	I	Page 11 of 25 (and others)	Several times on this page, and on others, the Data Quality Assessment is referred to as Attachment F, when in fact it is Attachment H.	Corrected.
3.	I	Page 12 of 25	In the first paragraph, it states that Quality Control surveys of the SCM/SIMS are performed with the high activity Pu-238 source. This source has an activity of approximately 200,000 dpm. Why has RFETS chosen not to use the Pu-239 source for Quality Control surveys since the Pu-239 source has an activity of approximately 2000 dpm? Quality Control surveys, as a best management practice, should be accomplished with a source of activity as close to the activity of interest as possible. 2000 dpm is significantly closer to the DCGLs than is 200,000 dpm.	See response to comment 1.

4.	I	Page 16 of 25	<p>In the third paragraph, it states that “Readings that approach an investigation level...are averaged...” If readings that only <i>approach</i> an investigation level are averaged, how does RFETS determine which ones to average? What is the real trigger value for averaging? Should this state that readings that <i>reach</i> an investigation level are averaged?</p>	Text reworded to "readings that meet an investigation level..."
5.	I	Att. G, Page 1 of 2	<p>The fourth paragraph states that “Approximately 6 to 10 failures (QC source check indicated the data was not acceptable) occurred during the course of the Annex B surveys. This data was discarded, and the corresponding QC data is not presented on these charts.”</p> <ul style="list-style-type: none"> • Does Millenium not record the exact number of QC failures? If so, why does this give an approximate number? If not, why not? All failures should be recorded and analyzed for programmatic concerns. • When it states that “This data was discarded...” does that mean that the QC data was discarded, or the actual survey data was discarded? • Why are the failures not presented in the charts? 	<p>The exact number of QC failures that occurred during the course of the Annex B survey was 4. This number was determined by reviewing the QC database that contains information on every QC check that has been performed. All failures are, in fact, recorded and analyzed for programmatic concerns.</p> <p>In order for a final survey to be validated, it must be bounded by acceptable QC checks. If the QC data that occurred prior to or following a survey indicates a failure, the survey is not utilized as a final survey. The data is not discarded, but is not used for final survey.</p> <p>QC failures are not presented in the chart because only those QC checks that bound valid survey data is presented in the final survey (i.e., only QC checks that support the final survey data are presented).</p>
6.	I	Att. H, Page 4 of 8	<p>In the second paragraph, it states that “Two consecutive measurements not within the ∇20% tolerance envelope required corrective action prior to the instrument’s use.”</p> <ul style="list-style-type: none"> • If any was taken, what 	The second paragraph will be reworded to state "If two out of the three measurements taken during a QC check were not within the \pm 20% tolerance envelope, surveys bounded by the QC check were not

			<p>corrective action was required or implemented?</p> <ul style="list-style-type: none"> • How many failures of this type were there? • Why are two <i>consecutive failures considered to be a problem worthy of corrective actions</i> but two failures with a passing one in between is considered to be okay? 	<p>utilized for final survey.</p> <p>Survey data bounded by QC check failures were not utilized for the final survey report.</p> <p>As stated in the response to Comment 5, there were four such QC failures during the course of the Annex B survey.</p> <p>As stated above, the failure criteria for a QC check is any two out of three measurements that meet the acceptance criteria.</p>
7.	I	Att. H, Page 4 of 8	<p>In the last paragraph, it states that “Accuracy of radiological surveys is satisfactory based on RFETS-programmatic annual calibrations that establish instrument efficiencies for all instrumentation used on this project.” Is <i>all</i> radiological instrumentation used on this project, e.g., the SCM/SIMS, calibrated as a part of the RFETS-programmatic annual calibration program? If not, this statement should be revised.</p> <p>Later in the same paragraph, it states that “full-scale multi-point calibrations” were accomplished “prior to implementation of survey instruments in the field.” Is this the case with the SCM/SIMS? If not, recommend revising this paragraph.</p> <p>NOTE: This section seems to ignore calibration of the SCM/SIMS, and only addresses the Electra instruments. Why is the calibration of the SCM/SIMS not addressed here?</p>	<p>The paragraph will be revised as follows: “Accuracy of all radiological surveys is satisfactory based on implementation of protocols covering calibrations (at least annual) and periodic checks (at least daily). All instrumentation except the SCM/SIMS is controlled through (RFETS) site-specific procedures (e.g., RSPs), whereas the SCM/SIMS is controlled through the subcontractor’s (Millennium Services Inc.) QAP. All protocols that control instrumentation accuracy are included in the reference section, and may be referenced through the site document control system (site documents) or in the 779 Project File (Millennium QAP).”</p> <p>The last paragraph will be revised to include only portable survey instrumentation.</p>