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CH2M HILL Mound, Inc.
1075 Mound Road
P.O. Box 750
Miamisburg, OH 45343-0750

CH2MHILL

SMO-482/06
August 10, 2006

Mr. Don Pfister, Director
Miamisburg Closure Project
U. S. Department of Energy
175 Tri-County Parkway
Springdale, OH 45246

MIAMISBURG
LOG J-0192
CODE 6441.153

ATTENTION: Paul Lucas

**SUBJECT:** **Contract No. DE-AC24-03OH20152:** Deliverable #36 Building Data Package; Section C.2.1.2 Facility Transfer; Final Status Report T Building Survey Units # various (see below), Final

Dear Mr. Pfister:

Attached are the following Final documents for your records:

- Final Status Report, T Building Survey Units # 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12. 1C-21, SYS-PRS 227, SYS-PRS 228, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339
- Final Status Report, T Building Survey Units # 1S-10 and SYS-PRS 340

If you or members of your staff have any questions regarding the documents, or if additional support is needed, please contact Dave Rakel at 937-865-4203.

Sincerely,

Michael D. Ebben
Site Manager

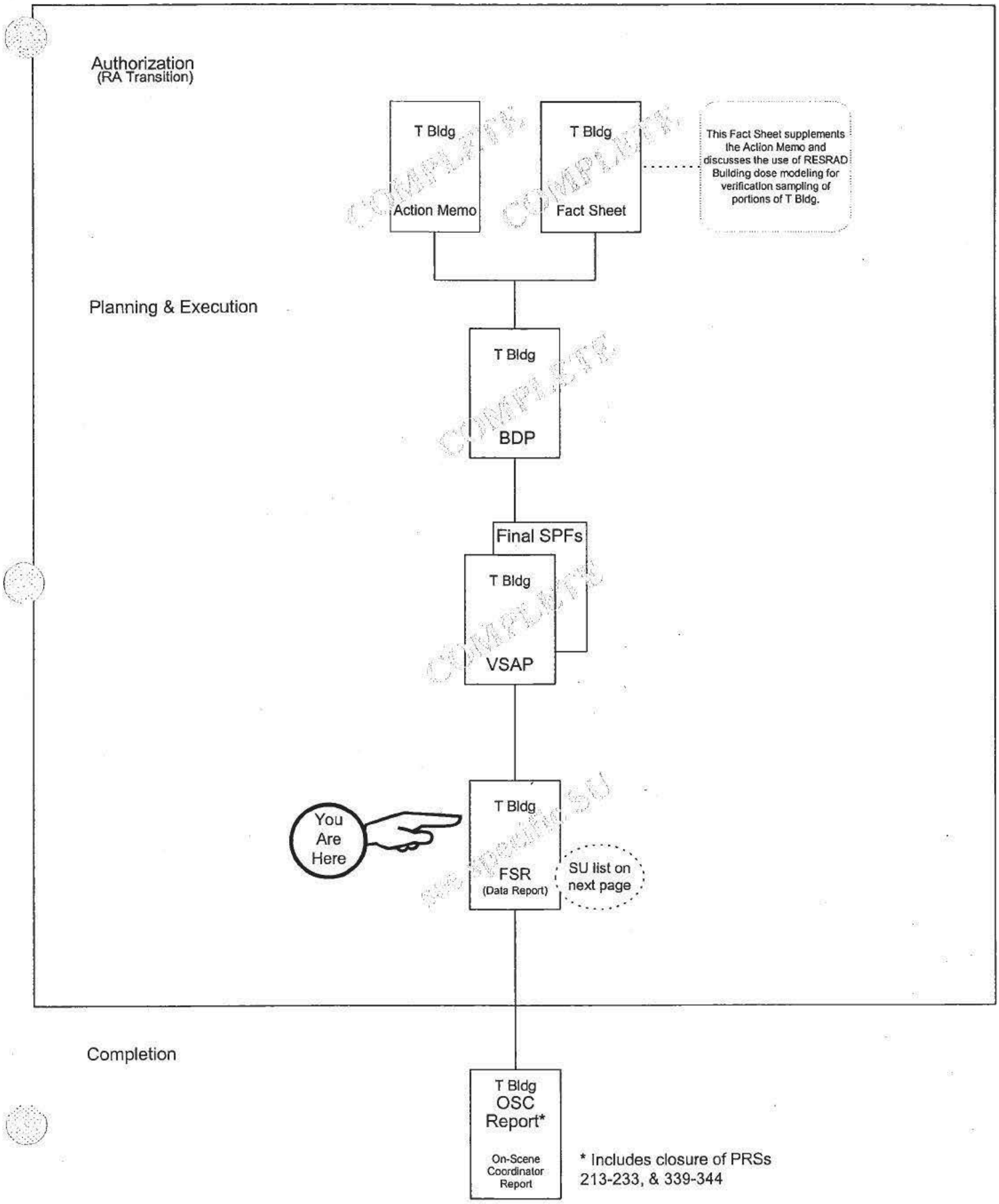
ME/jg

Enclosures
cc: T. Fischer, USEPA, (1) w/attachments
B. Nickel, OEPA, (1) w/attachments
S. Helmer, ODH, (1) w/attachments
J. Crombie, ODH, (1) w/attachments
M. Wojciechowski, Tetra Tech, (1) w/attachs
G. Gorsuch, DOE/MCP, (1) w/attachments
G. Desai, DOE/HQ, (1) w/attachments
ER Records, CH2M Hill, (1) w/attachments
DCC (1) w/attachments
M. Ebben, CH2M Hill, w/o attachments
K. Armstrong, CH2M Hill, w/o attachments
D. Rakel, CH2M Hill, w/o attachments
D. Kramer, CH2M Hill, w/o attachments
C. Kline, CH2M Hill, w/o attachments
S. Barr, CH2M Hill, w/o attachments
S. Brindle, CH2M Hill, w/o attachments
file, CH2M Hill, w/o attachments

# Final Status Survey Report – Final
# T Building
# Survey Unit #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, 1C-21, SYS-PRS 227, SYS-PRS 228, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339

| | | | |
|---|---|---|---|
| Prepared by: | Mary Sizemore / Mary Sizemore | Date: | 7-27-06 |
| Reviewed by: | Robert Coblentz/ RM Coblentz | Date: | 7-28-06 |
| Approved by: | Ken Armstrong / K.L. Armstrong | Date: | 7-28-06 |

# T Building & PRSs 213-233, & 339-344

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T Building, Final Status Report, Survey Unit - You Are Here

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| 1C-06 |
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## Attachments

Attachment A – T Building Contaminants of Concern and Surface Release Criteria
Attachment B – Direct and Removable Activity Graphs
Attachment C - Retrospective Power Curves
Attachment D - Data Analysis Worksheets
Attachment E - Survey Plan Forms (T-01, T-05, and T-11)
Attachment F - Summary of Attached Radiological Survey Data Sheets

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## 1.0 Historical Overview

T Building is a heavily reinforced subterranean concrete structure. Construction was completed in 1948. The two main floors are compartmentalized into three general areas (bays) by two 30-inch thick reinforced concrete firewalls. T Building contains more than 200 rooms and 20 corridors. The Core Team authorized the Removal Action via the T Building Action Memorandum (Reference 1) due to radiological contamination from various missions and projects in the building. A complete list of contaminants of concern (COCs) is provided in Attachment A.

Associated building structures include two exhaust airshafts, which each historically were attached to a two-hundred-foot tall brick and mortar exhaust stack. The exhaust stacks have been demolished. The building has three towers along the north wall, one at each end and one at the center. The end towers contain stairways, passenger elevators, airshafts for intake ventilation air, and pedestrian entrances at grade level. The middle tower was used for providing intake ventilation air.

## 1.1 Survey Unit Overview

SU#'s 1C-07, 1C-08, 1C-09, 1C-10 (Room 48), SU# 1C-11 (Room 57), SU# 12 (Room 58) and SU# 1C-21 are located in the Center Bay on the 1st floor of T Building. These rooms have residual volumetric floor contamination. SU# SYS-PRS 227 (Sump 7), SU# SYS-PRS 228 (Sump 8), SU# SYS-PRS 229 (Sump 10), SU# SYS-PRS 230 (Sump 11) and SU# SYS-PRS 339 (Sump 9) were located in the Room 48. SU# SYS-PRS 228 (Sump 8) was located in the southeast corner of Room 48. These rooms and sumps were used for polonium processing during the 1950's and 1960's. There were seven (7) elevators originally located in Room 48. In the early 1970's, the area was decommissioned and decontaminated to the extent that was practical. During this decommissioning event a concrete cap was poured in these rooms that varied from four to twelve inches in depth. The cap covered the areas 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, and 1C-21 and increased in depth from east to west. The level of contamination has been reduced significantly by removing the cap and floor in rooms 48 (1C-07, 1C-08, 1C-09, 1C-10), 57 (1C-11), and 59 (1C-21) and emptying the sump and elevator pits, however residual bulk contamination remains in the building floor. The major contaminants of concern (COCs) are Bi-210m and Co-60. Other radionuclides that have been identified in the area at much lower concentrations include Bi-207, Ag-108m, and Cs-137.

Survey unit classifications are based on historical records, a survey report entitled Mound Site Radionuclides by Location (Reference 2), the T Building White Paper (Reference 3), interviews with past and present building managers, and previous and past radiological data. A table listing contaminants of concern is given in Attachment A.

The sumps were high-risk sumps that supported the polonium operations. The sumps were taken out of service, went through D&D operations and were backfilled with rubble. Later the sumps were emptied of fill material, and then the removed along with their steel liners and disposed of as radioactive waste. The drainpipes associated with the sumps were removed and disposed of as radioactive waste along with the fill material surrounding the drainpipes. The elevators were taken out of service, went through D&D operations and were backfilled with rubble. The elevator pits were emptied of debris at the time of survey.

The room surfaces were free of dirt, insulation, and loose paint at the time of survey. The rooms were completely emptied prior to final status survey, doors were locked and/or access was restricted using barricades. This Final Status Survey Report (FSSR) documents completion of the survey and evaluation of the survey data.

## 2.0 Survey Objectives

The objective of the T Building Verification Sampling and Analysis Plan (VSAP) (Reference 4) was to determine whether or not the residual radioactivity on the building surfaces in T Building meets the surface release criteria. This was to be accomplished by measuring the fixed and removable contamination on building surfaces and systems. Residual radioactivity levels were evaluated versus established release criteria provided in the Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, Appendix A Surface and Volumetric Release Criteria for Building Disposition (hereafter referred to as 'Mound 2000', Reference 5). The survey data were compared to the release criteria of Mound 2000, using methods defined in Reference 6. The surface release criteria stated as the allowable total residual surface contamination in the Mound 2000 are the Derived Concentration Guidelines (DCGL's) for building release. The specific survey objectives were outlined on the Survey Plan Forms (SPFs) located in Attachment E.

The T Building VSAP does not specifically address treatment of volumetric contamination, since volumetric contamination was not anticipated to be present to the extent that has now been discovered. A licensed civil engineer from an approved engineering company, LBJ, has determined that further removal of the existing volumetric contamination could weaken the building structure. Treatment of volumetric contamination is addressed in Mound 2000, where radiation doses to future building occupants are restricted to the established dose limit of 15 mrem/yr, excluding naturally occurring radioactive materials (NORM). The RESRAD-Build (Reference 9 computer code has been used to compute the maximum potential doses to future building occupants using both the Building Occupancy model and the Building Renovation model as described in Appendix A of Mound 2000 (Reference 5). Potential doses have been computed based on the data collected from the verification survey and from additional volumetric sampling. The specific survey objectives were outlined on the Survey Plan Forms (T-01 and T-11) located in Attachment E.

## 2.1 Survey Design

The Type I error denoted by alpha ($\alpha$) was set at 0.05 and the Type II error denoted by beta ($\beta$) was set at 0.01. The number of data points was determined by calculating the relative shift, denoted by delta/sigma ($\Delta/\sigma$), from the Derived Concentration Guideline Limit (DCGL) value, the lower bound of the gray region (LBGR), and the standard deviation denoted by sigma ($\sigma$) of the contaminant in the survey unit ($\Delta/\sigma$ = DCGL-LBGR/$\sigma$). For this survey plan, the LBGR was set at 50% of the $DCGL_w$ (average concentration over a wide area). The standard deviation was determined to be 17-dpm/100cm$^2$ based on previous surveys and the relative shift was calculated was 2.94. The required number of data points (N = 20) per survey unit was obtained from Table 5.5 Reference 6.

The SU sample locations within T Building were named based on which floor elevation and bay they occupied. The designated SUs on each floor were sub-categorized into 'north',

'central', and 'south' areas, corresponding to the three bays split by the firewalls within the building. The general naming convention follows: XY-ZZ-#

| | | | |
|---|---|---|---|
| where: | X | = | building floor elevation |
| | Y | = | bay |
| | ZZ | = | SU number |
| | # | = | floor/lower wall (1) or upper wall/ceiling (2) designator |

followed by a letter designator

| | | |
|---|---|---|
| D | = | Drain |
| V | = | Vent |
| U | = | Utility |
| J | = | Judgmental |
| S | = | Static |

For example:

| | |
|---|---|
| 1C-01-1S = | 1st floor, center bay, SU# 1, floor & lower wall survey unit, static |
| 2N-05-2V = | 2nd floor, north bay, SU# 5, upper wall & ceiling survey unit, vent |

The numerical indices restart in each bay of each floor.

Systems within T Building were named based on the PRS number associated with them or were assigned a unique ID number. Examples are: SYS-PRS 215 (for PRS 215) and SYS-10 (Breathing Air System).

Statistical survey data point locations were selected within the survey unit using a triangular grid pattern with a randomly selected starting point. The Visual Sample Plan (VSP) computer program (Reference 7) was used for this purpose. (For any areas designated as Class 3, only judgmental survey data point locations are required.)

Professional judgment (biased) surveys were performed to supplement the statistical survey data, but were not combined with the statistical data. Judgmental survey data were compared directly to the release criteria.

Statistical volumetric samples locations were selected on the floor within the survey unit using a triangular grid pattern with a randomly selected starting point. The Visual Sample Plan (VSP) computer program (Reference 7) was used for this purpose. Judgmental locations were selected at elevated measurements on the floor and composited with the statistical volumetric samples locations to ensure the maximum amount of volumetric contamination was collected. Different depths of core drilling were conducted to determine the extent of contamination.

## 2.2 Survey Data

The gross alpha and beta fixed-point measurements were compared to their respective guideline values. Graphical representations of the average and maximum direct and removable activity for alpha, beta, and tritium are shown in Attachment B. Retrospective power curves for direct and removable activity measurements provided in Attachment C

show that the survey design had sufficient power (probability) to meet DQO's for this survey plan.

Direct alpha and beta scans were performed on 100% of the floors. Walls and ceilings were scanned in accordance with the SPF (Attachment E).

The sumps were removed. Gamma scans were performed on 100% of the areas previously occupied by the sumps. The drains associated with Class 1 sumps were removed. Gamma scans were performed on 100% of the areas previously occupied by the elevators.

The ventilation systems are separate survey units, however as part the room surveys, vent covers are surveyed. Direct measurements and smears are taken directly on the vent cover. If activity on the vent cover appears to be elevated, the vent cover is removed and disposed of as radioactive waste and the interior of the immediate ventilation system is then surveyed as far as can be reached from the open vent. This survey consists of direct measurements for gross alpha and beta activity and smears for removable alpha, beta, and tritium contamination.

The utility systems are separate survey units, however as part the room surveys, utility drops and utility systems are surveyed. The survey for utility drops consists of removing any utility drop covers to expose the interior of the utility line. This survey consists of direct measurements for alpha and beta and smears for alpha, beta, and tritium. The survey for utility systems in rooms, such as fire water systems, is performed by taking direct measurements for gross alpha and beta activity and smears for removable alpha, beta, and tritium contamination on the exterior surfaces of the utility system.

The instruments selected for this survey were gas flow proportional detectors. Alpha/beta fixed point measurements were made using the Ludlum 2350-1 data logger with a 43-68 hand-held probe. This instrument was also used for scanning walls and small areas. Large area scanning was performed using the Ludlum 2350-1 with 43-37 floor probe and/or the SHONKA Surface Contamination Monitor (SCM). The scanning instruments were set to alarm at 75% of the applicable guideline values, $DCGL_{EMC}$, (elevated measurement comparison) for the most restrictive alpha emitter and most difficult to detect beta emitter. Instrument calibration and source check data were documented in accordance with Mound procedures.

Loose surface contamination was measured by smearing an area of 100 $cm^2$ at each data point. Smears were submitted to an onsite laboratory, where they were counted for tritium and gross alpha/beta activity. Removable tritium contamination was measured by liquid scintillation counting of the smears. Smear results were not combined with the statistical data but compared directly to the removable surface release criteria.

General area exposure rate measurements were performed using a Micro Rem meter to ensure that the average level of gamma radiation did not exceed the background level by more than 20 micro-R/hr.

Volumetric samples were collected at both statistical survey data point locations and at elevated judgmental locations on the floor in accordance with SPF T-11 (Attachment E). Core samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models. Core samples were collected from drilling 1" holes from the surface to 15 cm. Additional core samples were collected from drilling 1" holes from 15 cm to 30 cm in the highest elevated area to determine the depth of contamination.

Survey data was documented on the Radiological Survey Data Sheets (RSDS) provided in Attachment F. The RSDS maps are not engineered drawings and may not be to scale. These maps were used for general information purposes only. The dxf. file maps that were imported into VSP were engineered drawings.

Due to the presence of residual volumetric contamination in the floor in this survey unit, the RESRAD-Build computer code (Reference 9) was used to assess potential radiation dose to future building occupants. Both random and biased sample data were collected. Doses were computed using both the building occupancy scenario (office worker) and the building renovation scenario, as required in Mound 2000.

The building occupancy scenario was used to evaluate potential radiation dose to future office worker personnel that might reside in one of the rooms where residual bulk contamination is present. In this scenario, the office worker was positioned in the center of the room at a distance of 1 meter above the source (contaminated concrete floor). The exposure duration was set to 1 year, per NUREG/CR-5512 PNL-7994, Vol. 1, Residual Radioactive Contamination from Decommissioning, Technical Basis for Translating Contamination Levels to Annual Total Dose Equivalent, Final Report (Reference 10). The input parameters and assumptions used in the RESRAD-Build computer model were reviewed and concurred upon by the regulators and are provided in Attachment D, along with a computer printout of the results.

The building renovation scenario was used to evaluate potential dose to a construction worker involved in some future building renovation. In this scenario, the source (contaminated concrete floor) was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was only 6 months, per NUREG/CR-5512 (Reference 10). The computed dose under this scenario represents the maximum annual dose to a construction worker. The input parameters and assumptions used in the RESRAD-Build computer model were reviewed and concurred upon by the regulators and are provided in Attachment D, along with a computer printout of the results. The calculated dose is for rooms 48, 57, 58 and 59 only and does not include the dose contribution from surrounding areas or sources. The dose contribution from surrounding areas or sources is provided in Attachment D.

## 2.3 Quality Control

Quality Control (QC) measurements will be taken in accordance with Mound procedures (Reference 8) and results evaluated and documented in the T Building Final Status Survey Report.

## 2.4 Conclusion

The objective of the VSAP was to determine whether or not the residual radioactivity of the surfaces of building materials associated with T Building satisfy the surface release criteria established by Mound 2000 (Reference 5) and documented in the T Building VSAP (Reference 4). This is accomplished by comparing the survey data to the surface release criteria in accordance with MARSSIM (Reference 6). This objective has been met for the drains, vents, utilities, walls, and ceilings in these survey units.

Dose to future building occupants from residual contamination in building footer in Rooms 48, 57 and 59 and floor of Room 58 has been shown to be less than 15 mrem/yr, in accordance with Mound 2000. The dose contribution from surrounding areas or sources is provided in Attachment D. The maximum dose to any future building occupant is less than 15 mrem/yr when considering the collective dose from all from surrounding areas or sources in T-Building.

## 3.0 References


1. Action Memorandum T Building Removal Action, Final CH2M Hill Mound, June 2003.
2. MD-22153, Mound Site Radionuclides by Location, March 2001.
3. CH2M Hill Mound Inc. White Paper: T Building, Structural History and Process History Summary Background Document, November 2002.
4. T Building Verification Sampling and Analysis Plan, Final, October 2004.
5. Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, BWXT of Ohio, February 1999.
6. NUREG 1575, Rev. 1, August 2000, Multi-Agency Radiation Survey and Site Investigation Manual, (MARSSIM).
7. Visual Sample Plan, Pacific Northwest Laboratory.
8. MARSSIM Implementing Procedures, Field Quality Control for Building Contamination Surveys, MD-80046, Op. 402.
9. RESRAD-Build Computer code, Argonne National Laboratory
10. NUREG/CR-5512, PNL-7994, Vol. 1, Residual Radioactive Contamination from Decommissioning, Technical Basis for Translating Contamination Levels to Annual Total Dose Equivalent, Final Report.

# Attachment A

## T Building Contaminants of Concern

## and

## Surface Release Criteria

# Attachment A
# T Building Contaminants of Concern

| Radionuclide | Name | Half Life | Principal Decay Emissions |
|---|---|---|---|
| H-3 | Tritium | 12.3 yr | $\beta_{max}$ (0.0185 MeV) |
| Co-60 | Cobalt-60 | 5.3 yr | $\beta_{max}$ (0.318 MeV)<br>$\gamma$ (1.332, 1.173 MeV) |
| Sr/Y-90 | Strontium-90<br>Yttrium-90 | 28.8 yr<br>2.67d | $\beta_{max}$ (0.546 MeV)<br>$\beta_{max}$ (2.281 MeV) |
| Ag-108m | Silver-108m (metastable) | 127 yr | $\gamma$ (0.434, 0.614, 0.723 MeV) |
| Cs-137 | Cesium-137 | 30.07 yr | $\beta_{max}$ (0.514 MeV)<br>$\gamma$ (0.662 MeV) from Ba-137m |
| Bi-207 | Bismuth-207 | 33.7 yr | $\gamma$ (0.569, 1.063 MeV) |
| Bi-210m | Bismuth-210m | 3.0E6 yr | $\alpha$ (4.910, 4.949 MeV)<br>$\gamma$ (0.266, 0.305 MeV) |
| Po-209 | Polonium-209 | 103 yr | $\alpha$ (4.866 MeV) |
| Ra-226 | Radium-226 | 1599 yr | $\alpha$ (4.784, 4.602 MeV)<br>$\gamma$ (0.1862 MeV) |
| Ac-227 | Actinium-227 | 21.7 yr | $\alpha$ (several from progeny)<br>$\beta_{max}$ (0.043 MeV) |
| Th-230 | Thorium-230 | 7.7E4 yr | $\alpha$ (4.621, 4.688 MeV) |
| U-234 | Uranium- 234 | 2.47E5 yr | $\alpha$ (4.77, 4.72 MeV) |
| U-235 | Uranium-235 | 7.04E8 yr | $\alpha$ (4.364, 4.396 MeV)<br>$\gamma$ (0.144, 0.184 MeV) |
| U-238 | Uranium-238 | 4.47E9 yr | $\alpha$ (4.197, 4.147 MeV) |
| Pu-238 | Plutonium-238 | 87.75 yr | $\alpha$ (5.456, 5.499 MeV) |
| Pu-239 | Plutonium-239 | 2.41E4 yr | $\alpha$ (4.858 MeV) |
| Pu-240 | Plutonium-240 | 6.58E3 yr | $\alpha$ (5.17, 5.12 MeV) |
| Pu-241 | Plutonium-241 | 13.2 yr | $\beta_{max}$ (0.021 MeV) |
| Pu-242 | Plutonium-242 | 3.79E5 yr | $\alpha$ (4.90, 4.86 MeV) |
| Am-241 | Americium-241 | 432.7 yr | $\alpha$ (5.486, 5.443 MeV)<br>$\gamma$ (0.0595 MeV) |

# Attachment A

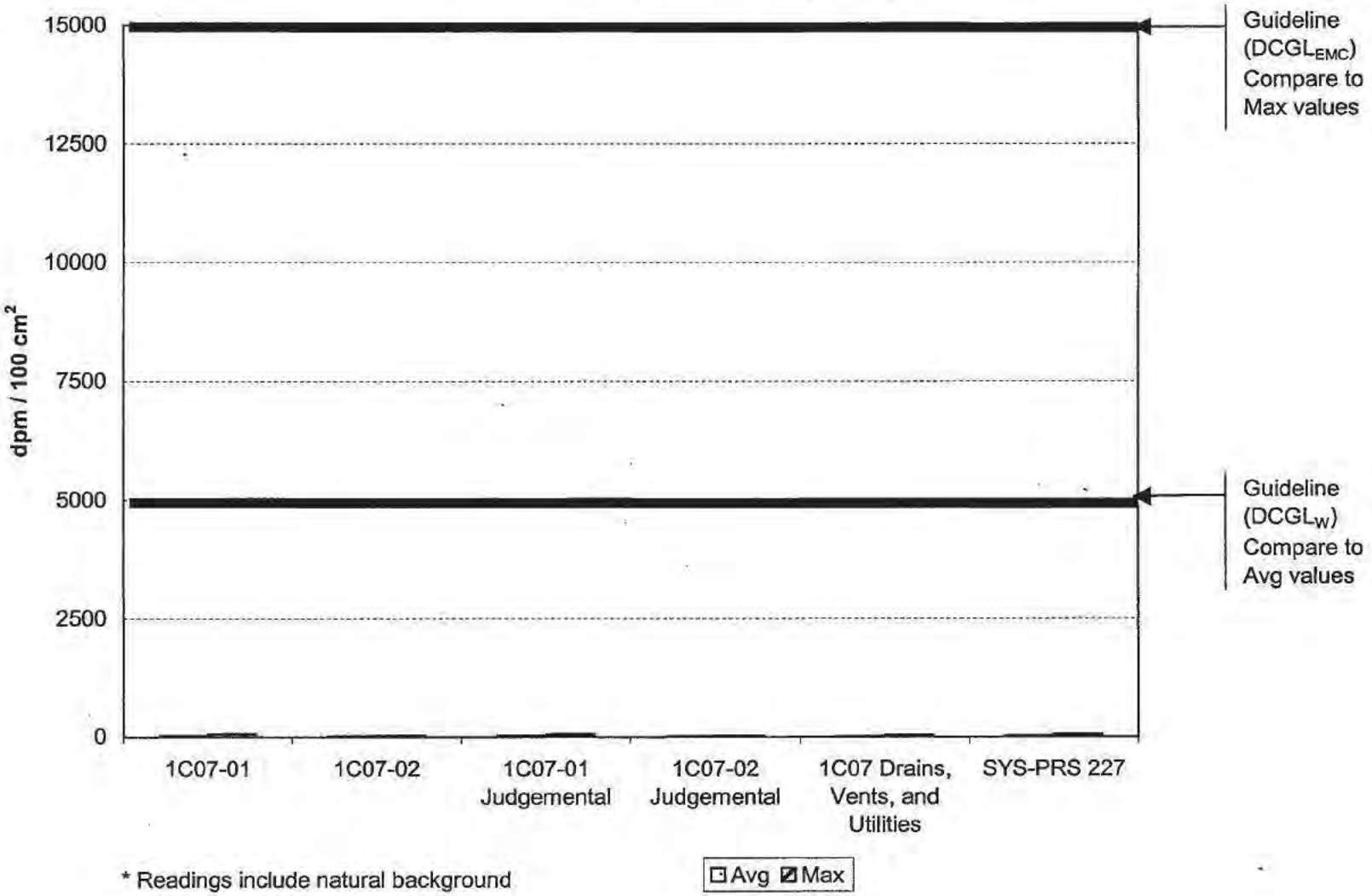
## Surface Release Criteria

| Allowable Total Residual Surface Contamination (dpm/100 $cm^2$)[1] | | | |
|---|---|---|---|
| **Radionuclides**[2] | **Average**[3,4] **($DCGL_W$)** | **Maximum**[5,6] **($DCGL_{EMC}$)** | **Removable**[6] |
| **Group 1:** Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129 | 100 | 300 | 20 |
| **Group 2:**Th-natural, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133 | 1,000 | 3,000 | 200 |
| **Group 3:** U-Natural, U235, U238 and associated decay products, alpha emitters | 5,000 | 15,000 | 1,000 |
| **Group 4:** Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous[7] fission) except Sr-90 and others listed above. Includes mixed fission products containing Sr-90. | 5,000 | 15,000 | 1,000 |
| Tritium | N/A | N/A | 10,000 |

Note: Refer to Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach, Table 1, "Surface Contamination Guidelines", page A-3 for specific information on surface contamination guidelines and additional notes (Reference 5).

# Attachment B
# Direct and Removable Activity Graphs

**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**




* Readings include natural background

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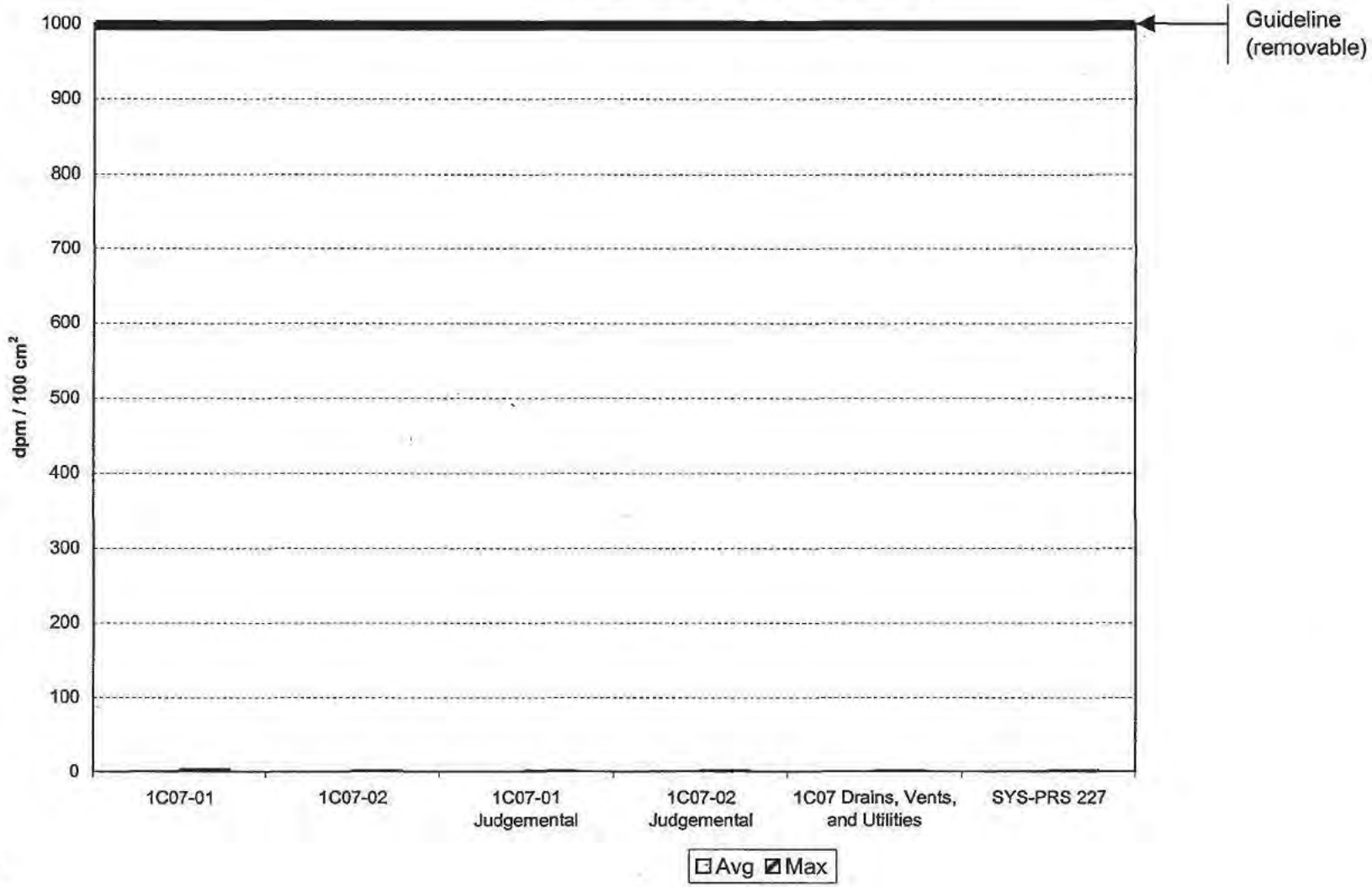
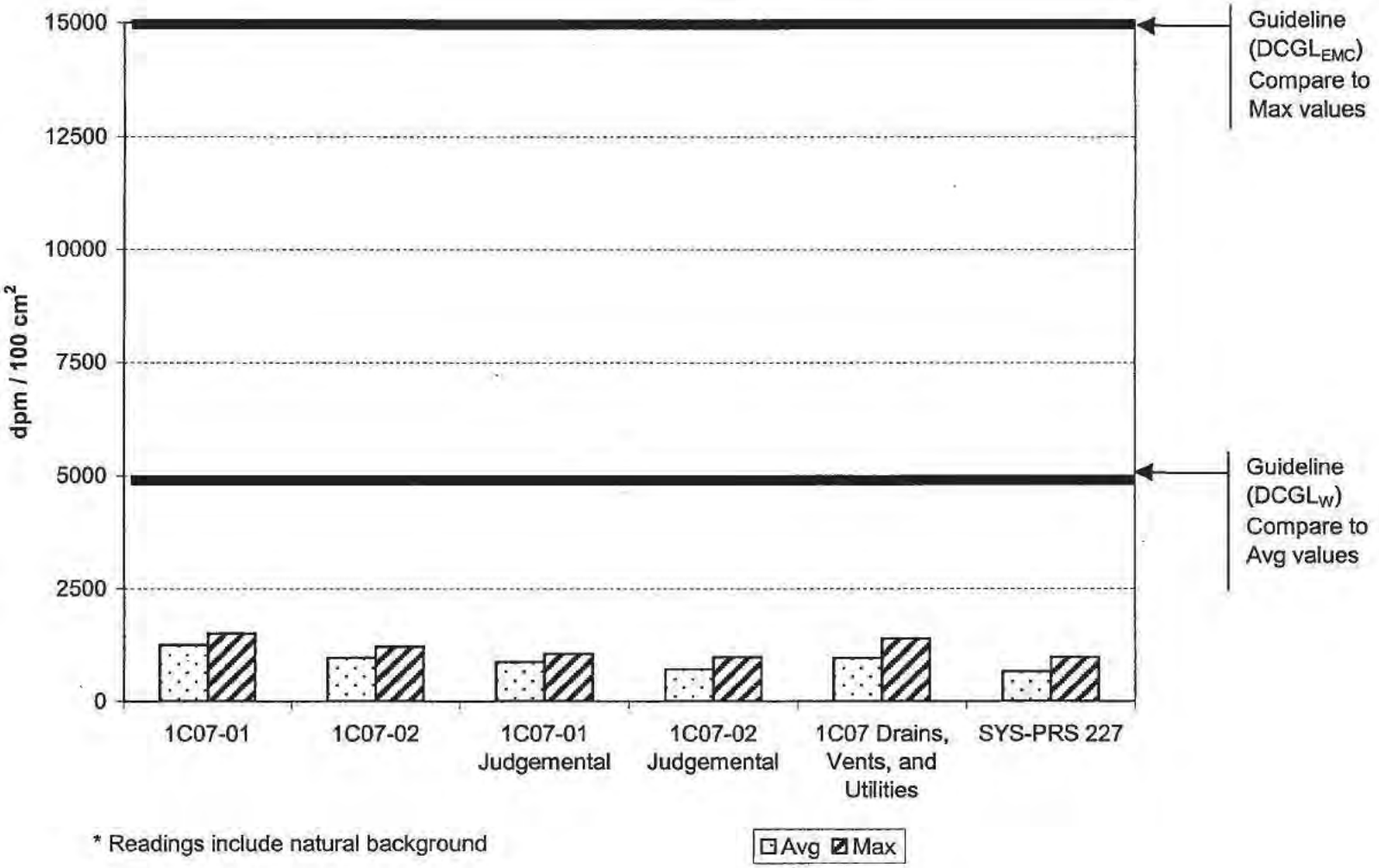
## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity (removable)



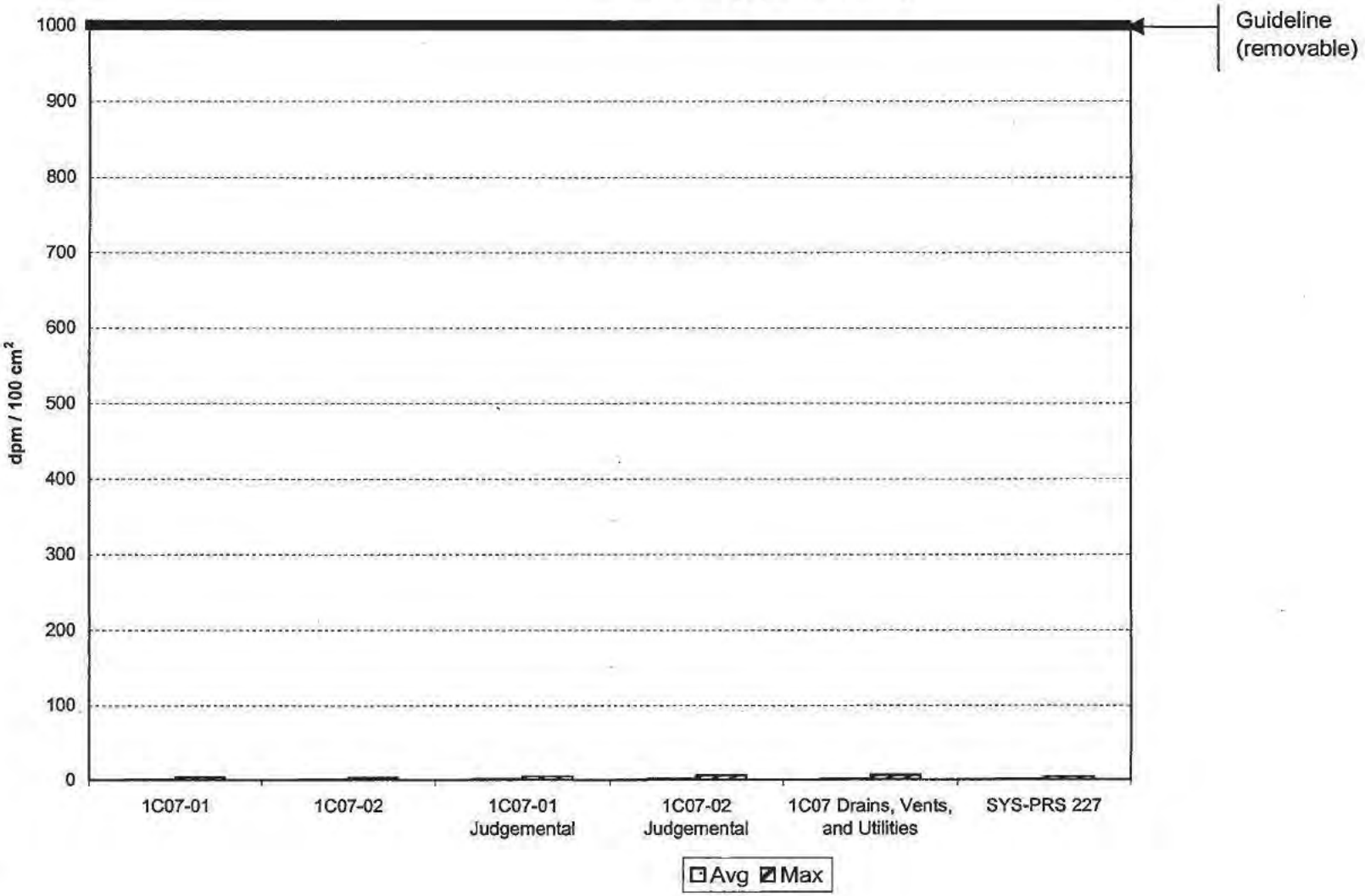

B2/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity* (direct)**



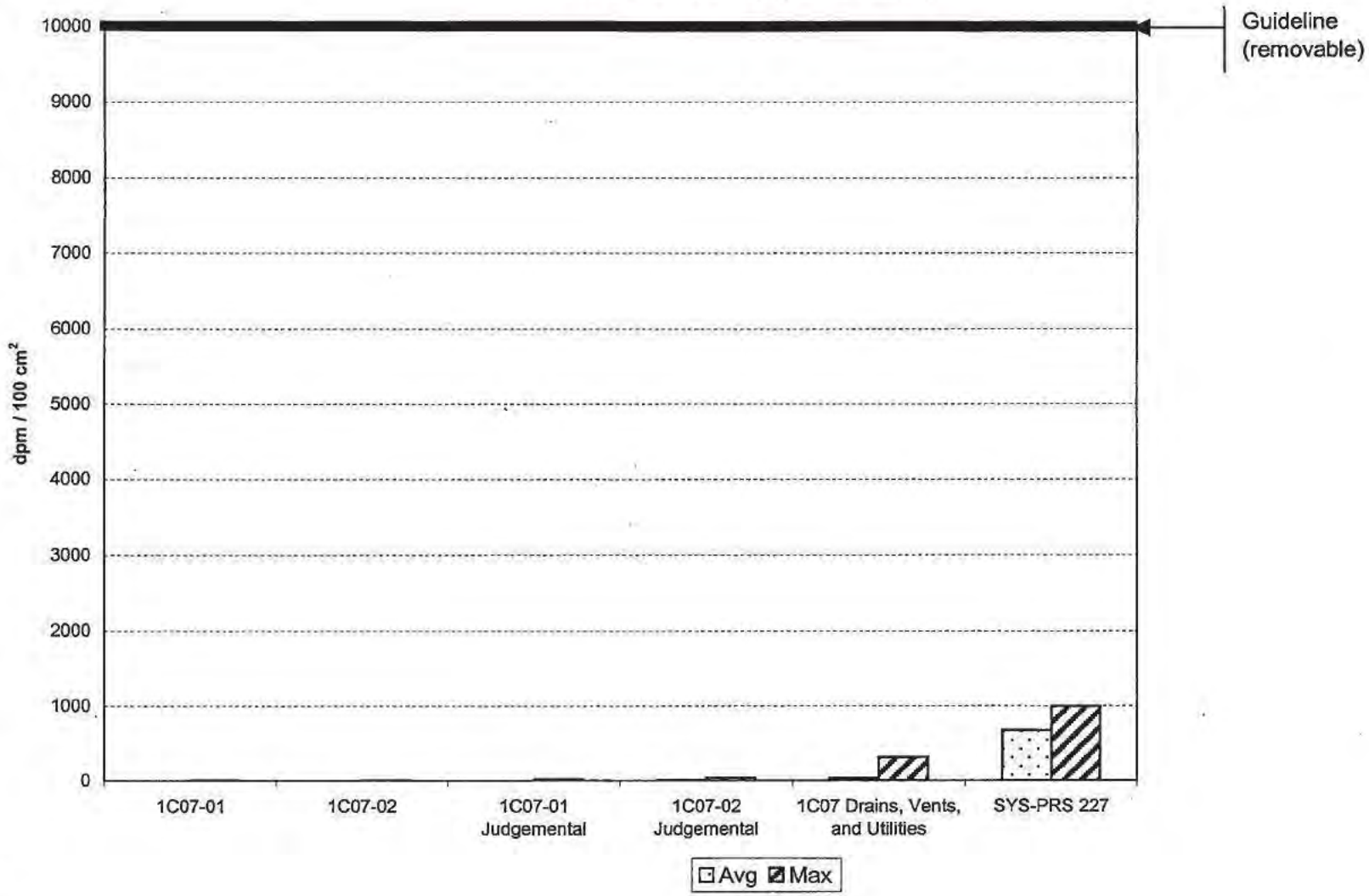

* Readings include natural background

**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity (removable)**



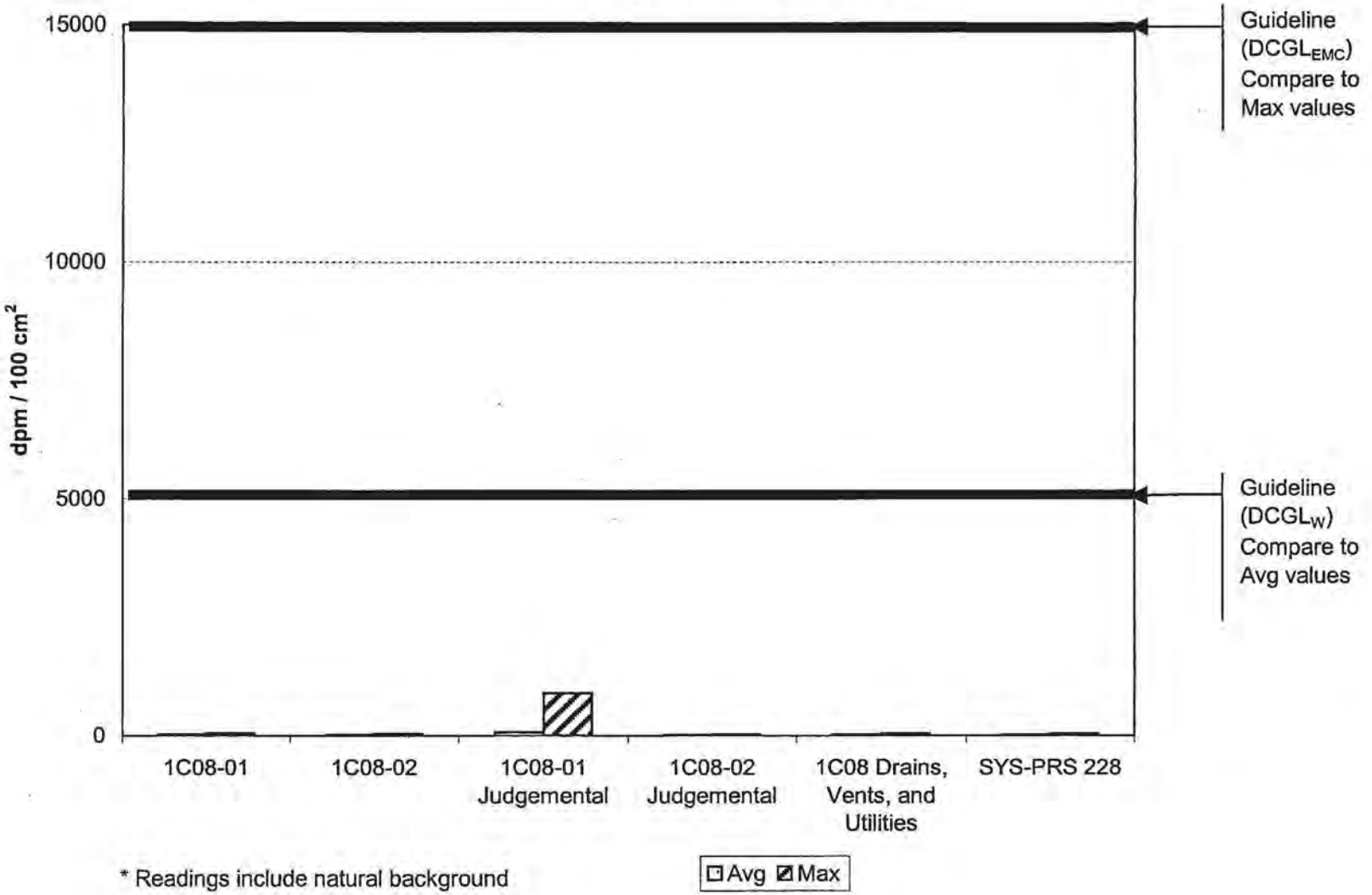

B4/35

## Attachment B
## Mound - T Building Final Status Survey
## Tritium Activity (removable)




B5/35

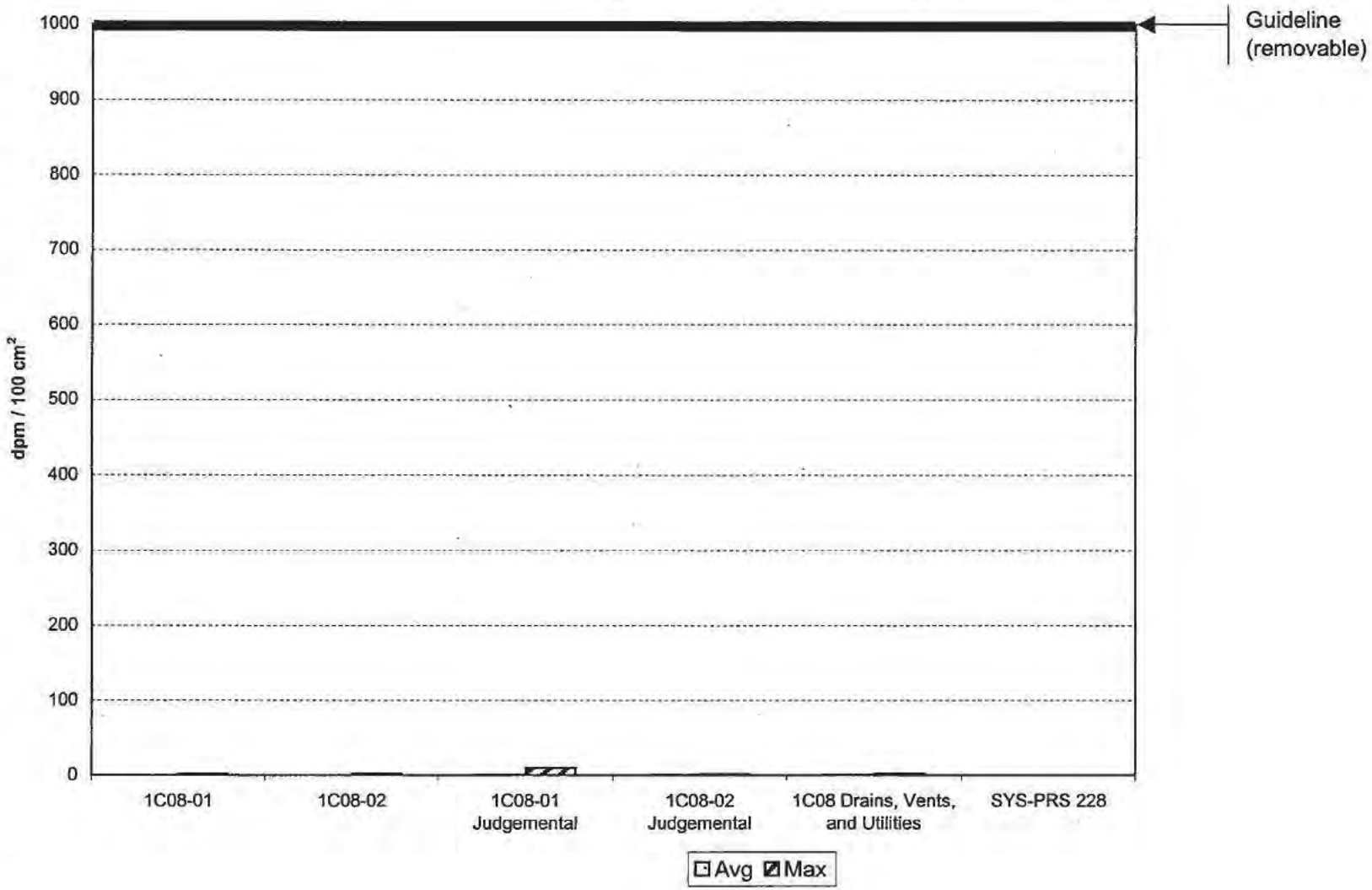
**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**




* Readings include natural background

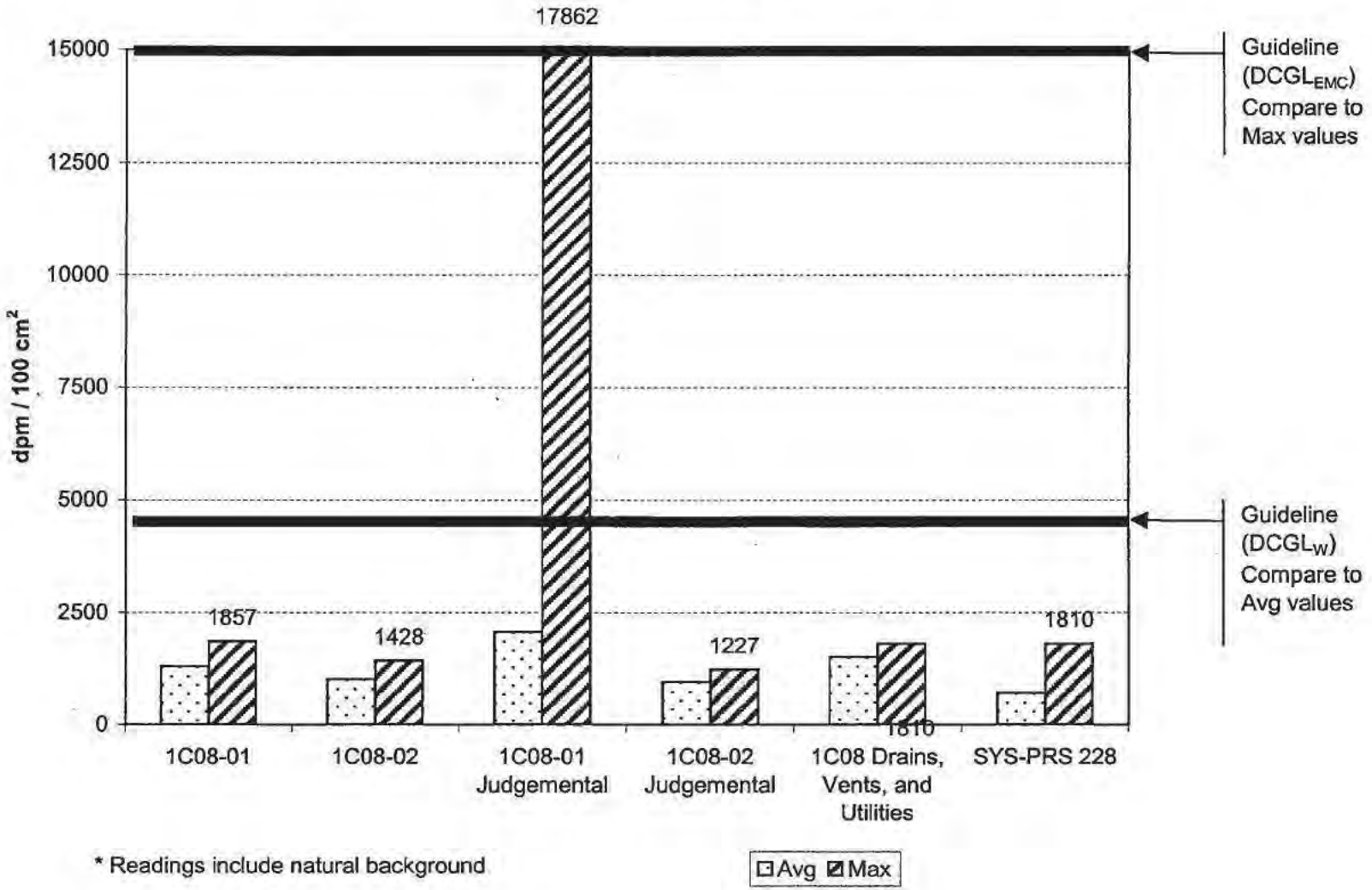
B6/35

## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity (removable)




B7/35

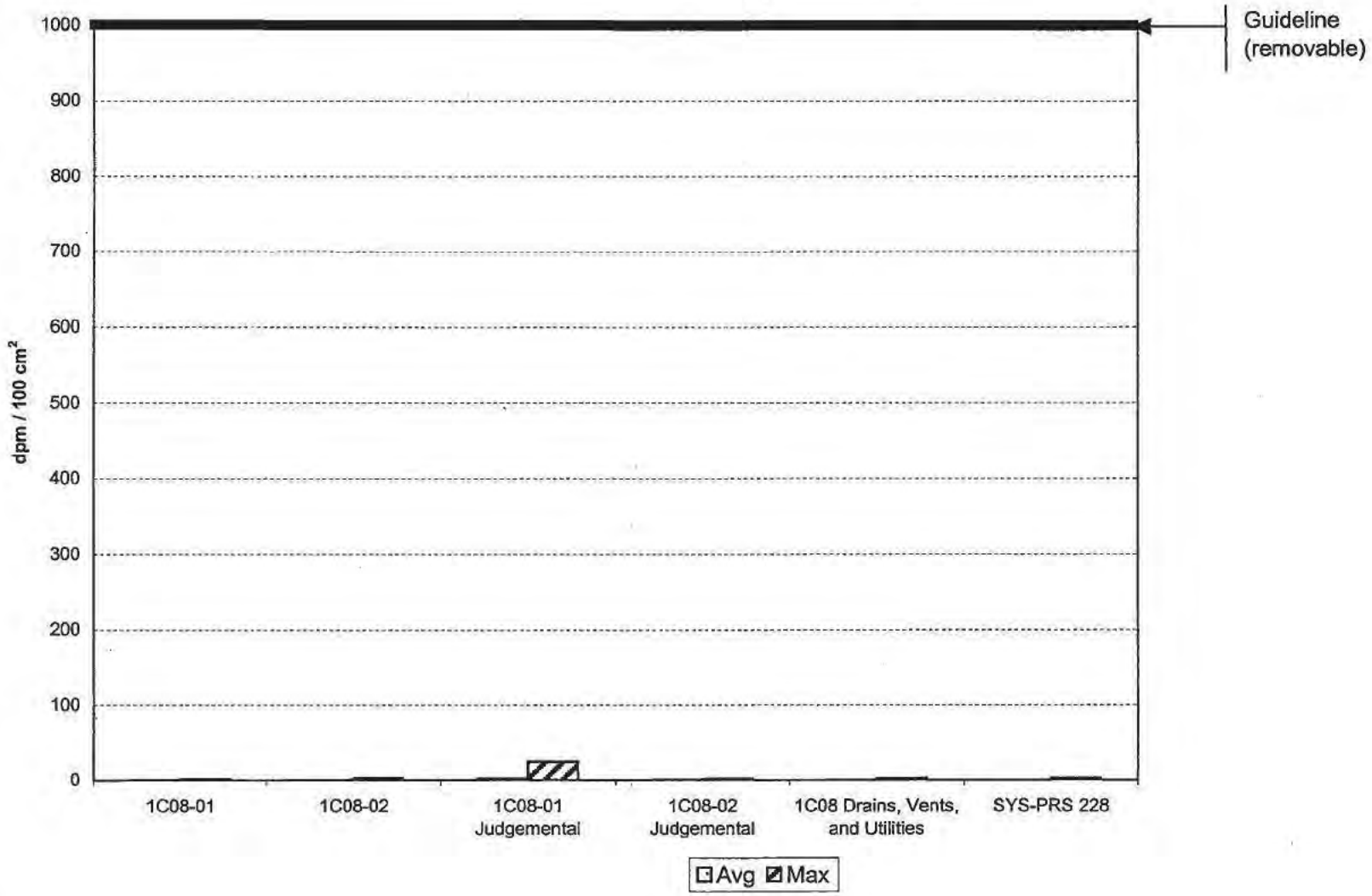
**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity* (direct)**




* Readings include natural background

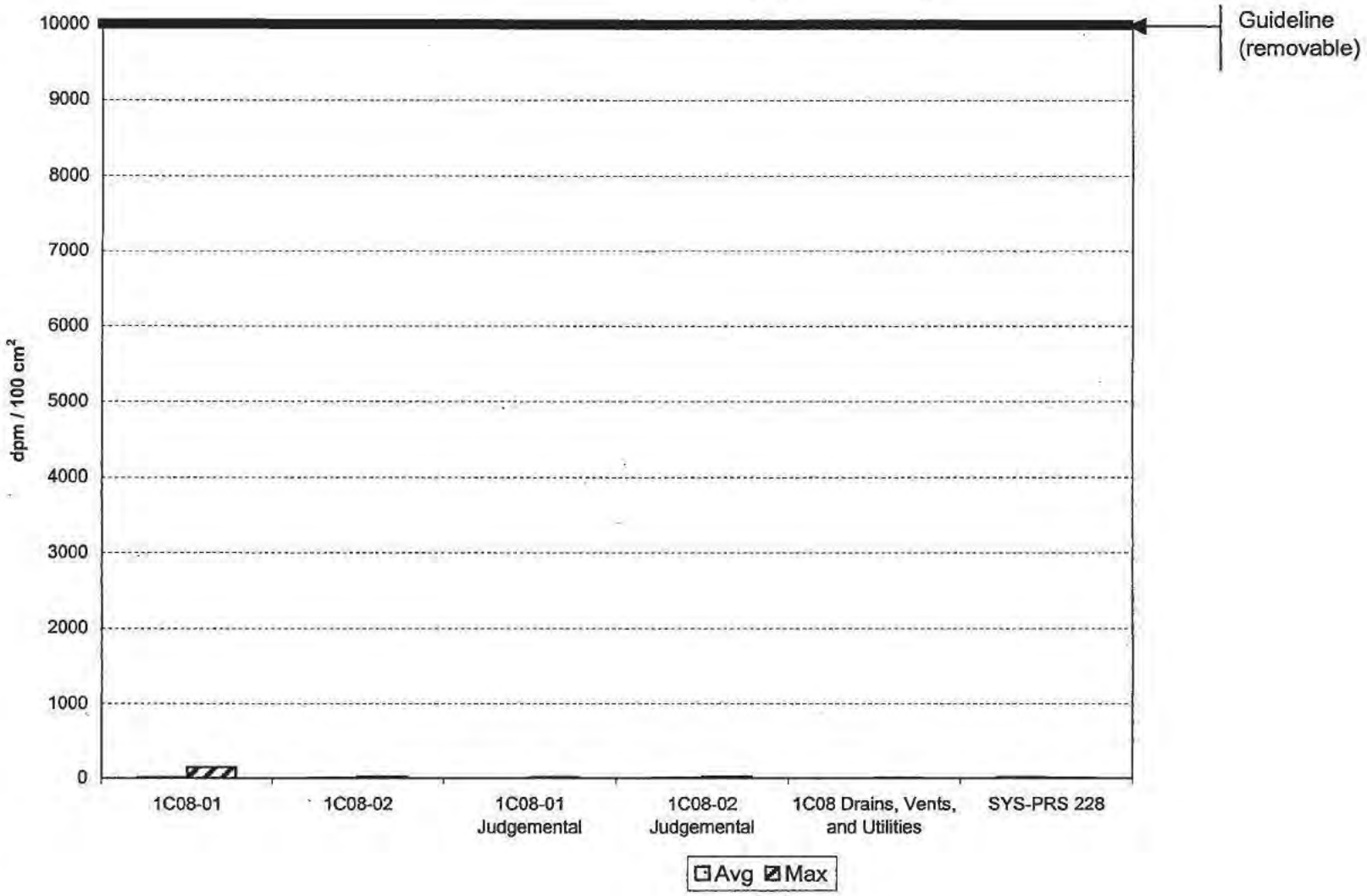
B8/35

## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity (removable)



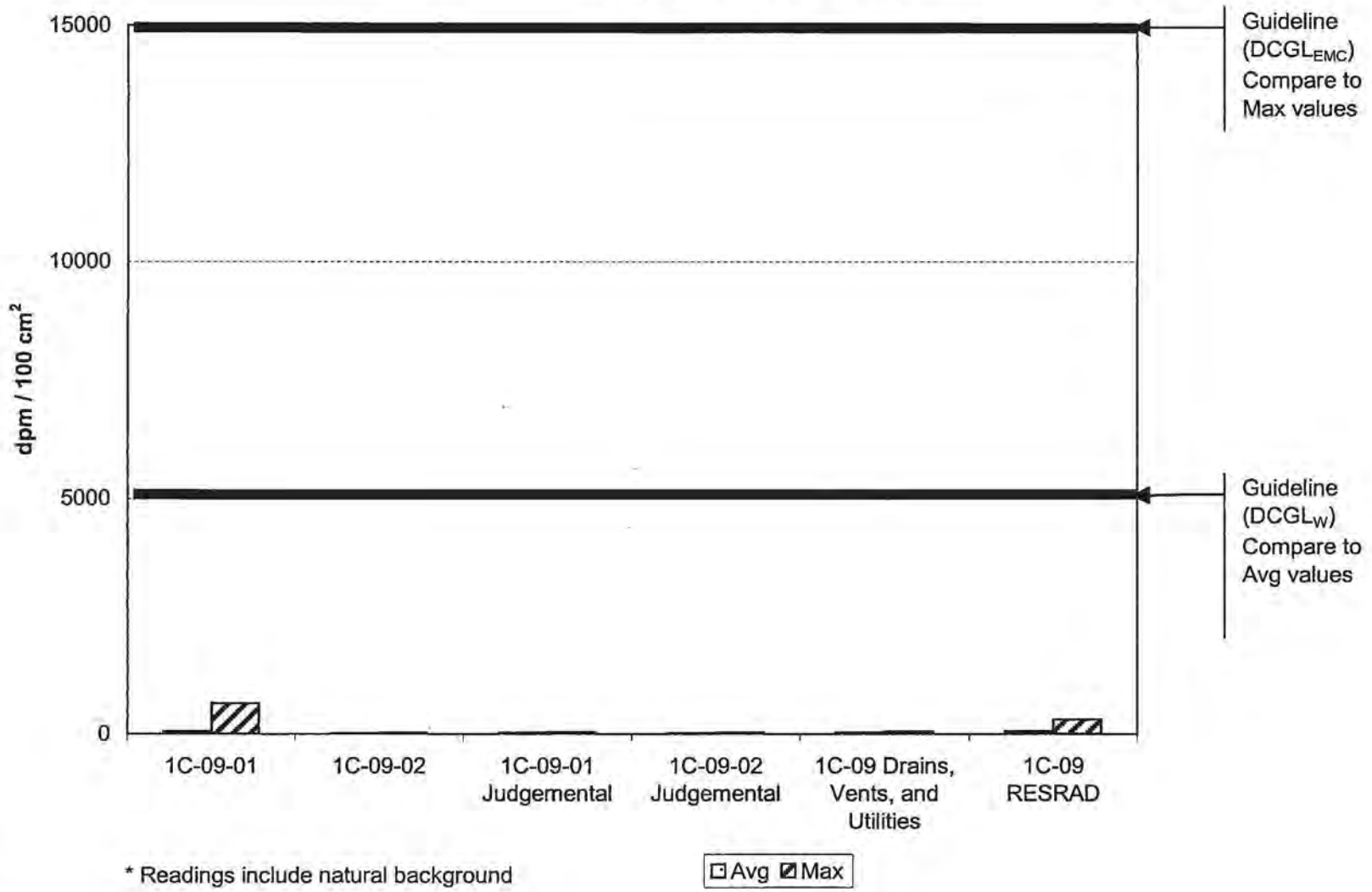

B4/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Tritium Activity (removable)**




B10/35

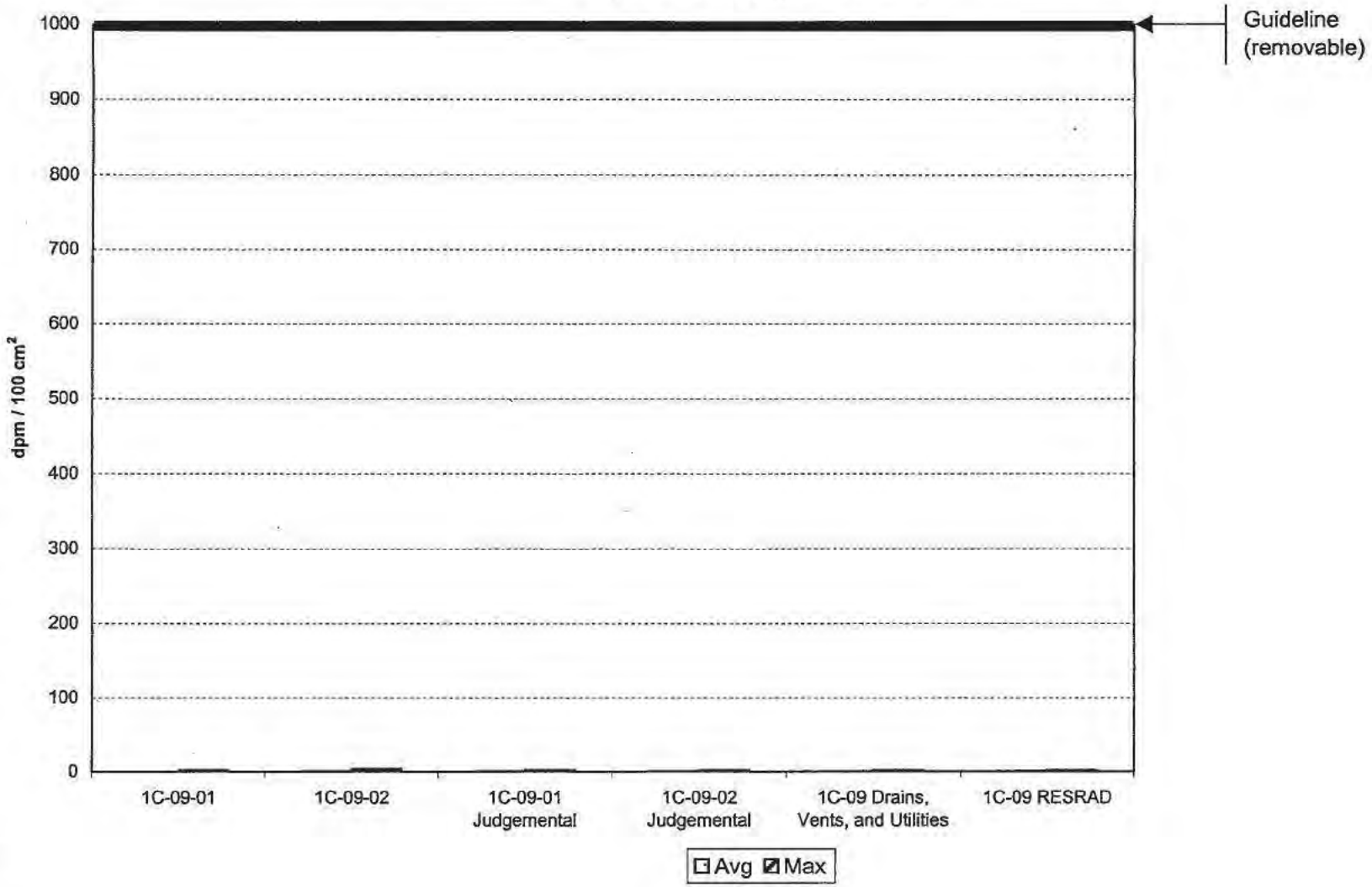
**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**



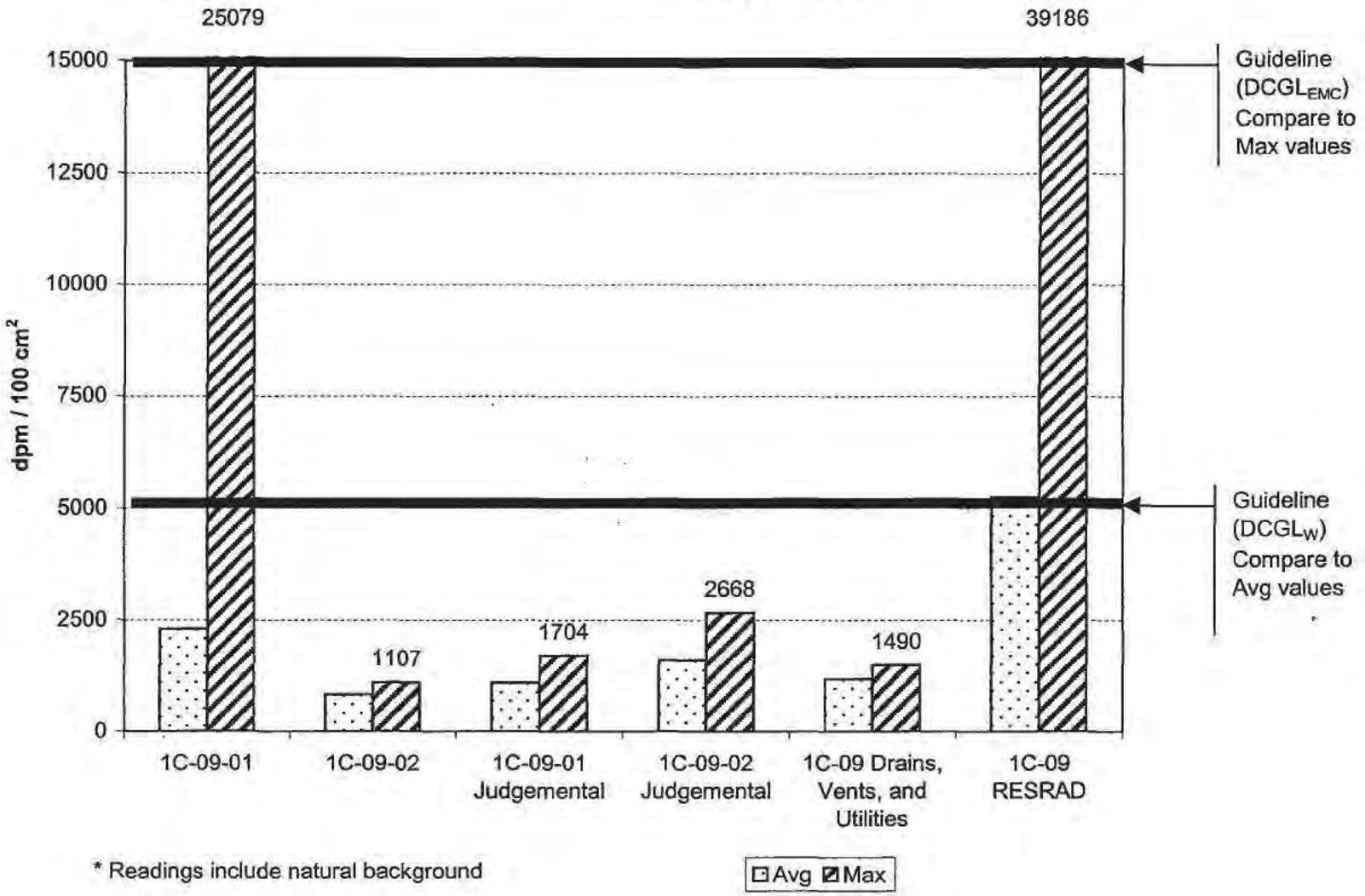

* Readings include natural background

B11/35

## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity (removable)



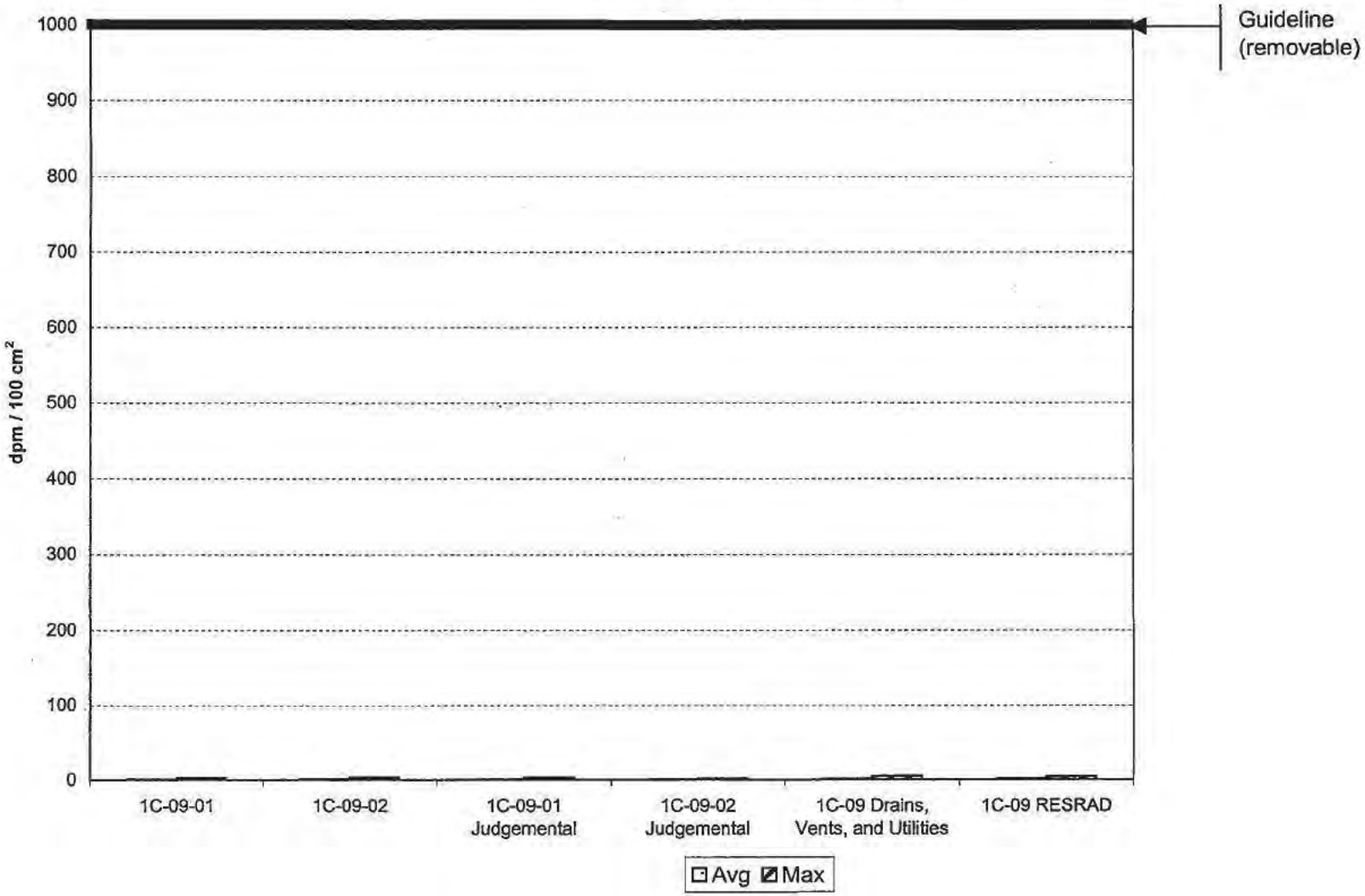
## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity* (direct)



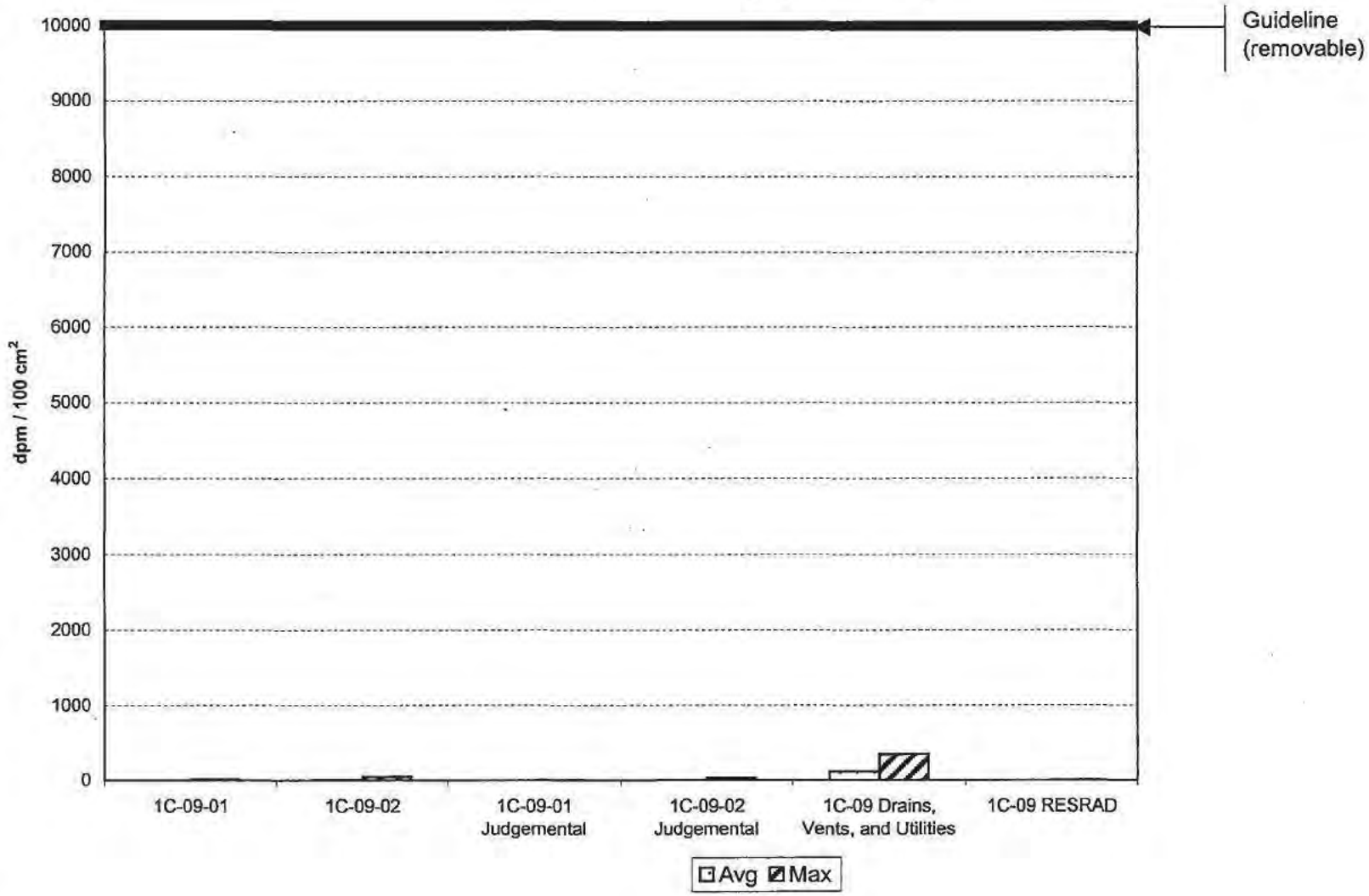

* Readings include natural background

B13/32

**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity (removable)**

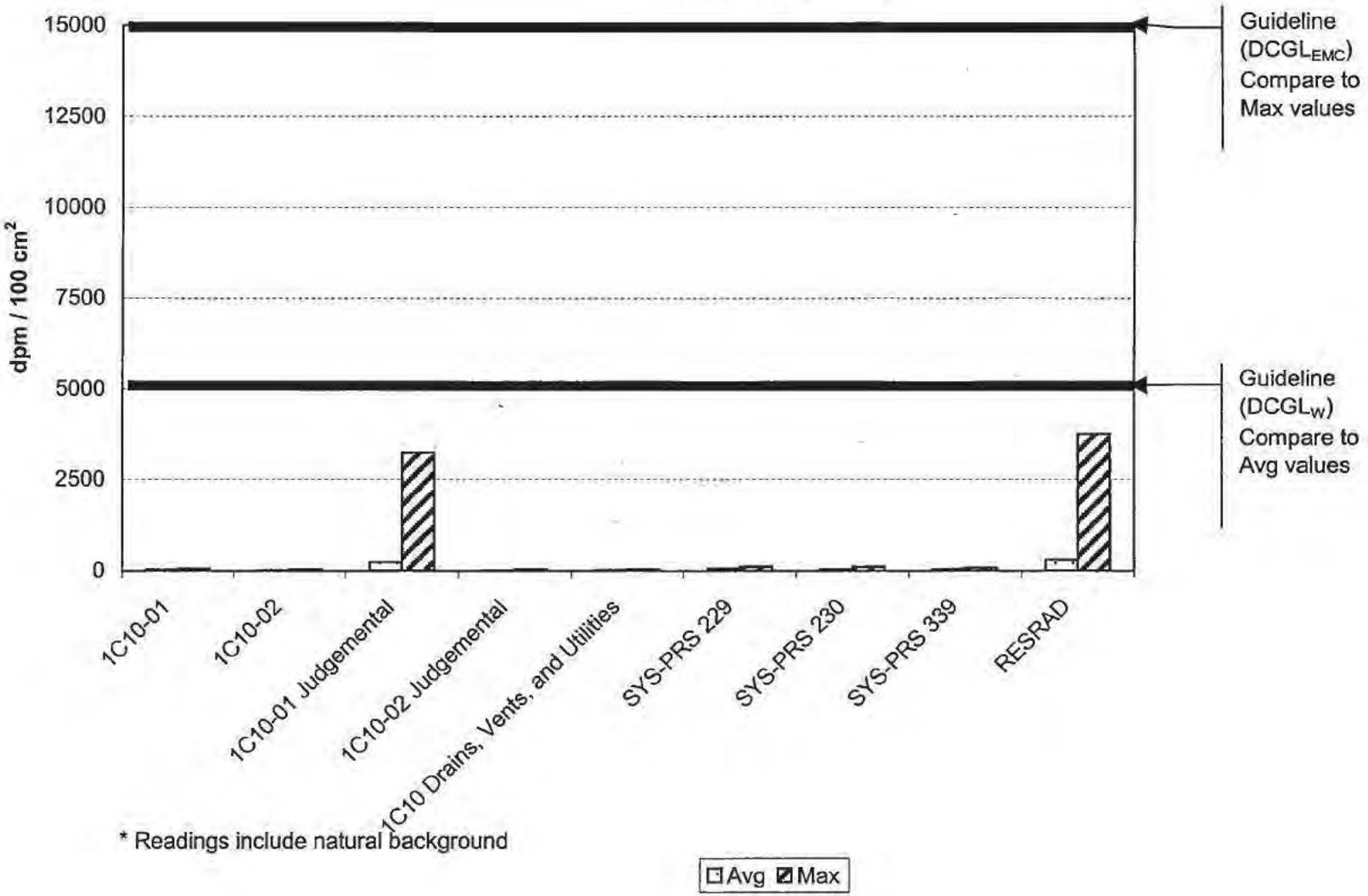


## Attachment B
## Mound - T Building Final Status Survey
## Tritium Activity (removable)




B15/35

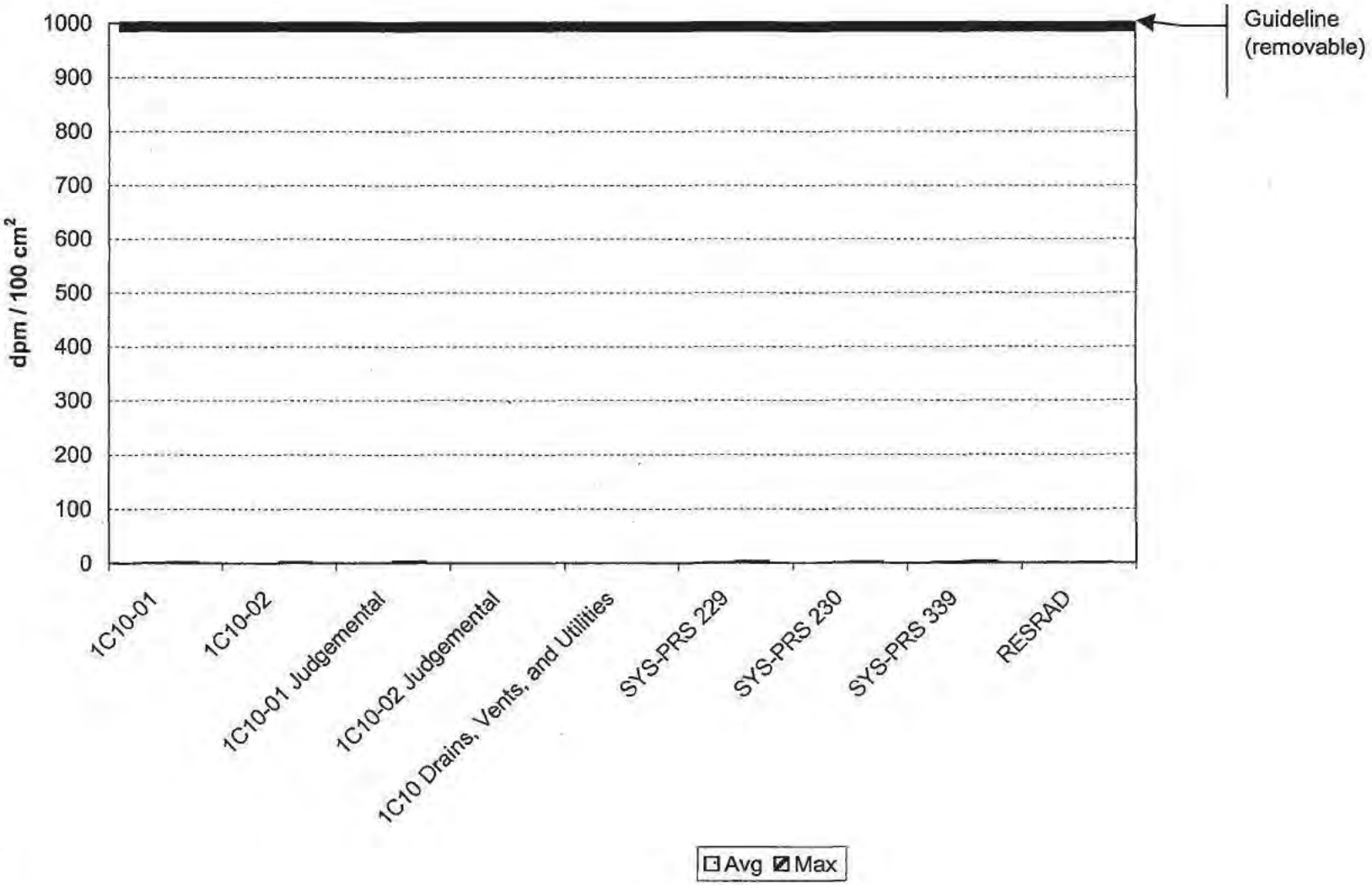
**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**




* Readings include natural background

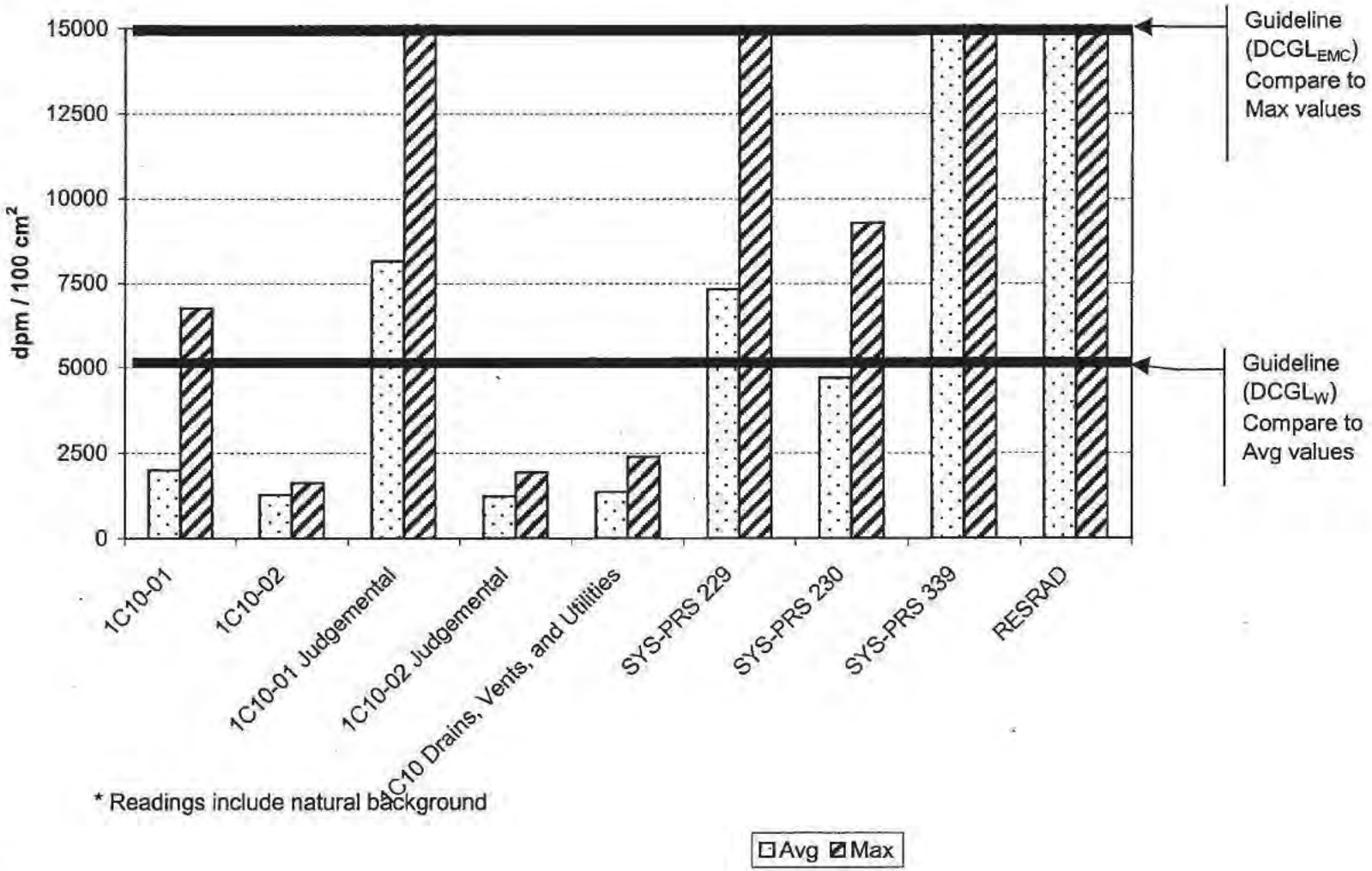
8/6/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity (removable)**




817/35

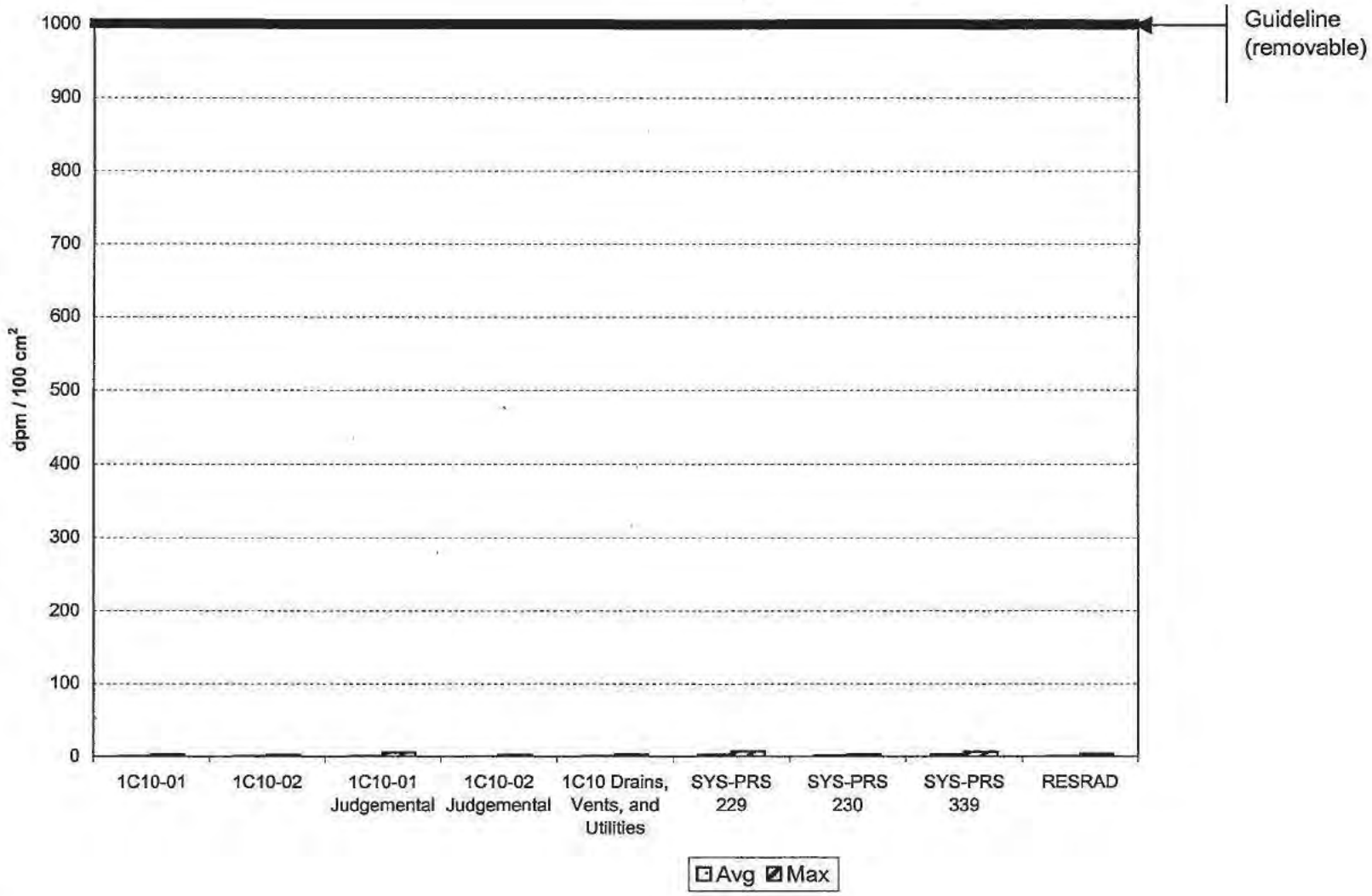
**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity* (direct)**




* Readings include natural background

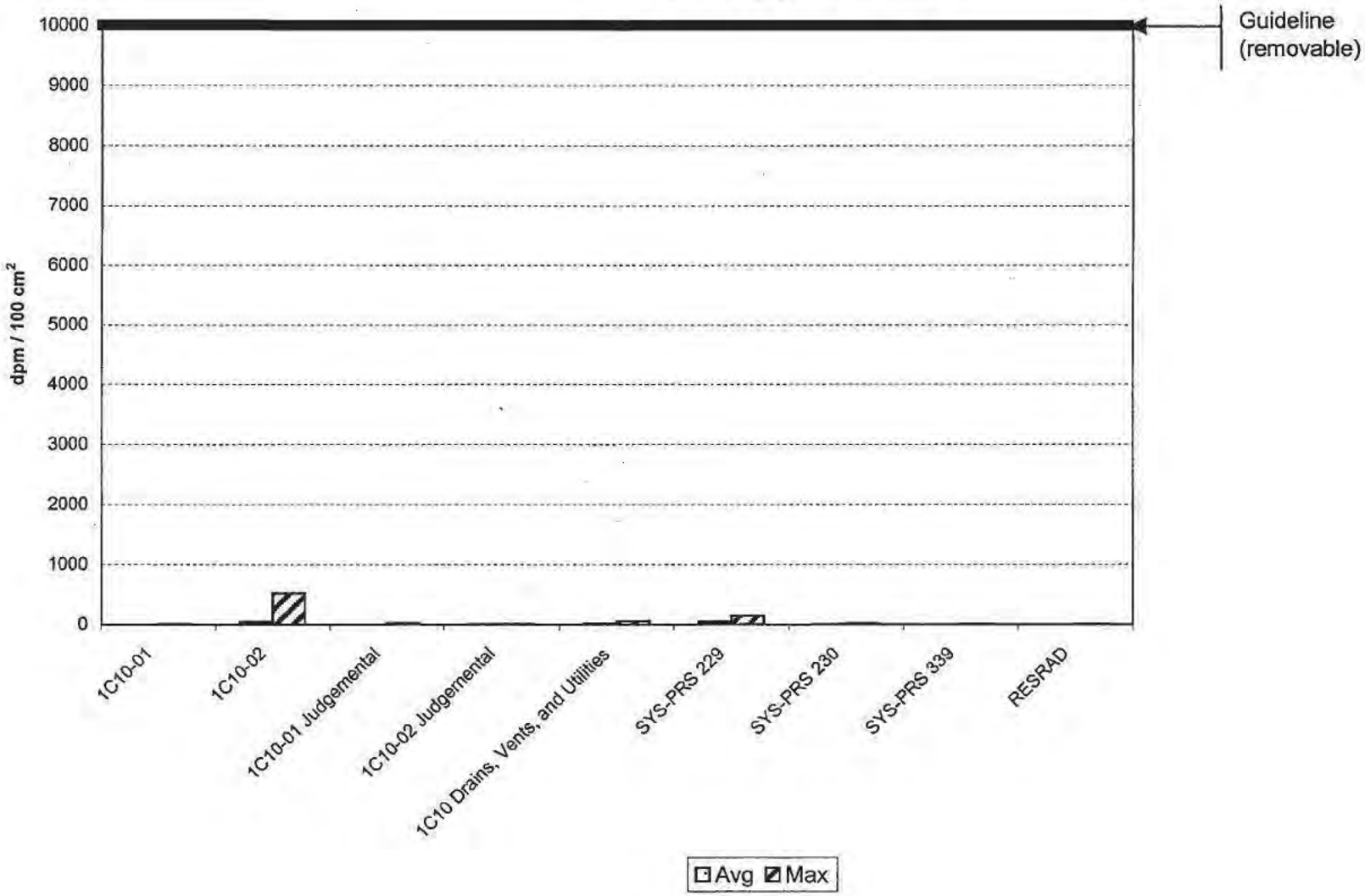
B18/35

## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity (removable)



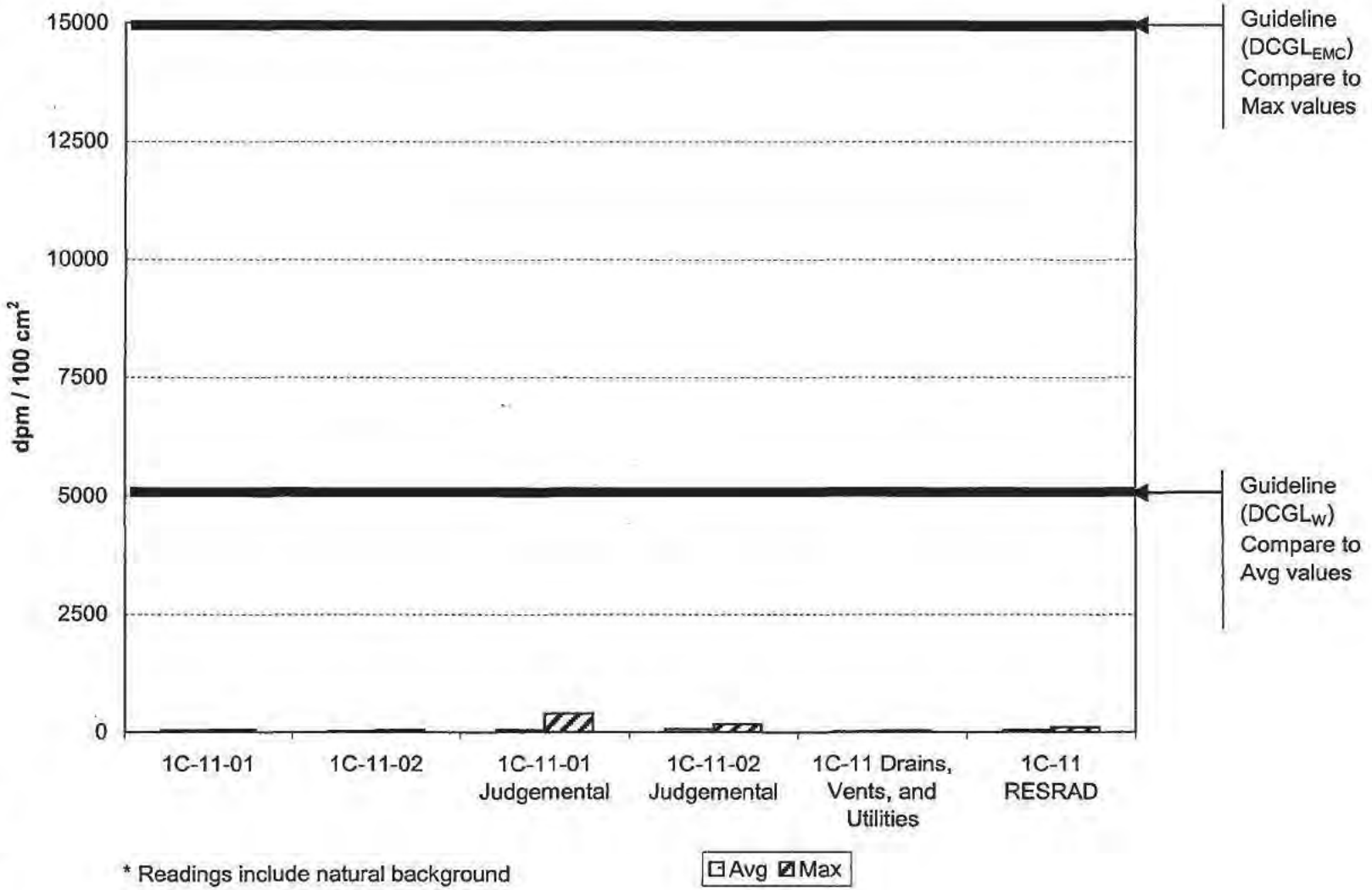

B19/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Tritium Activity (removable)**




820/35

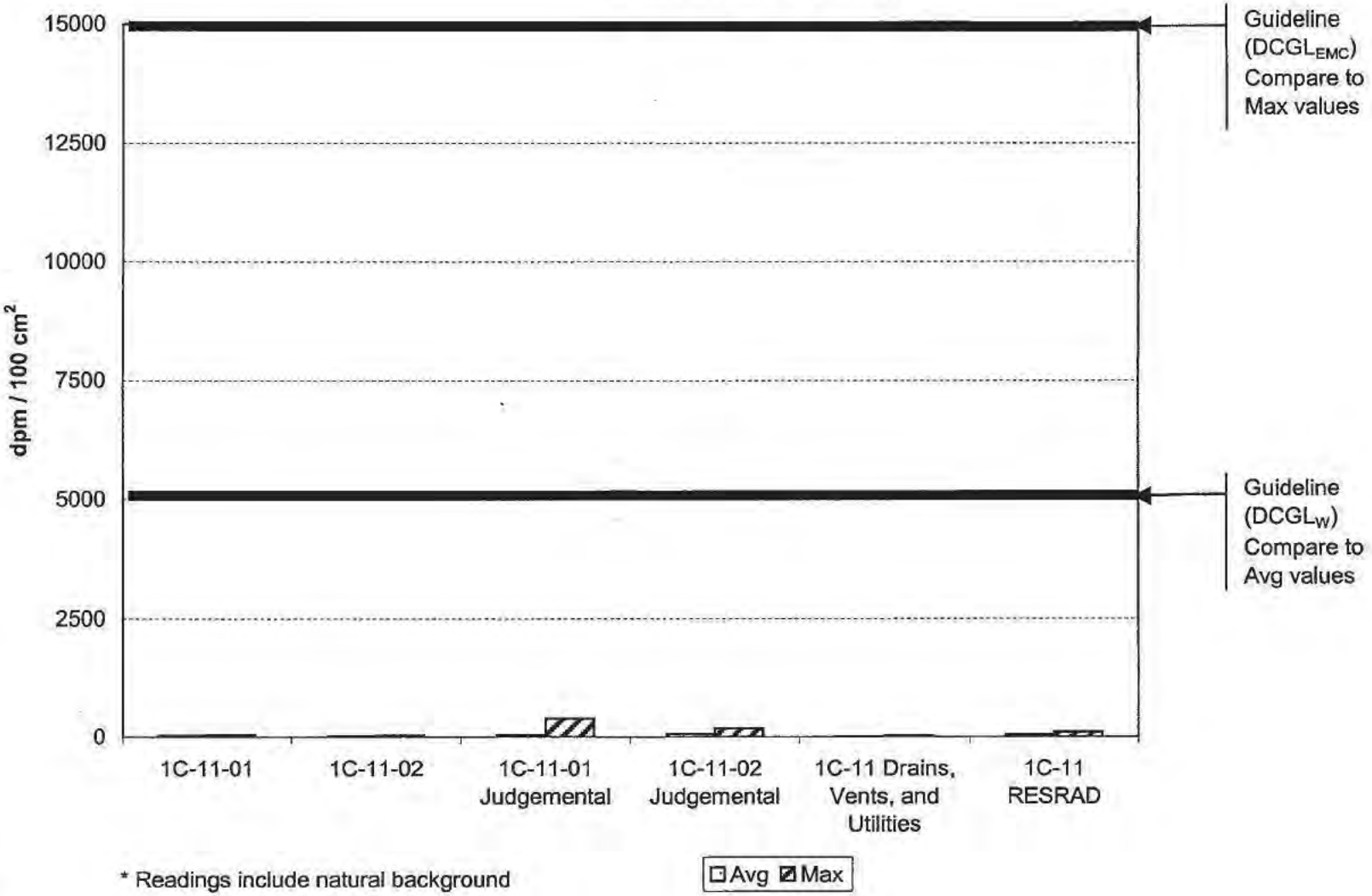
**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**




* Readings include natural background

B21/35

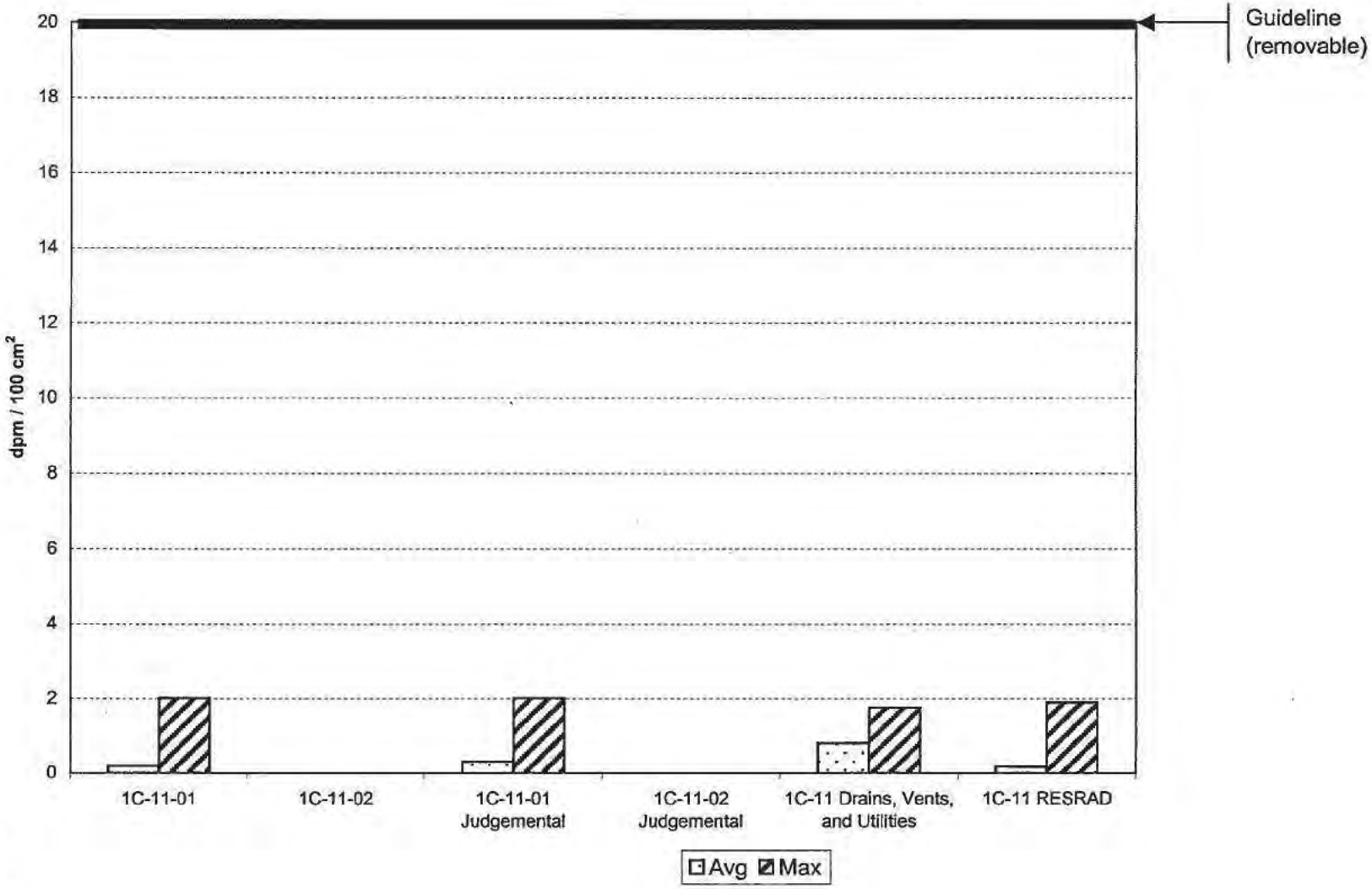
**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity* (direct)**




* Readings include natural background

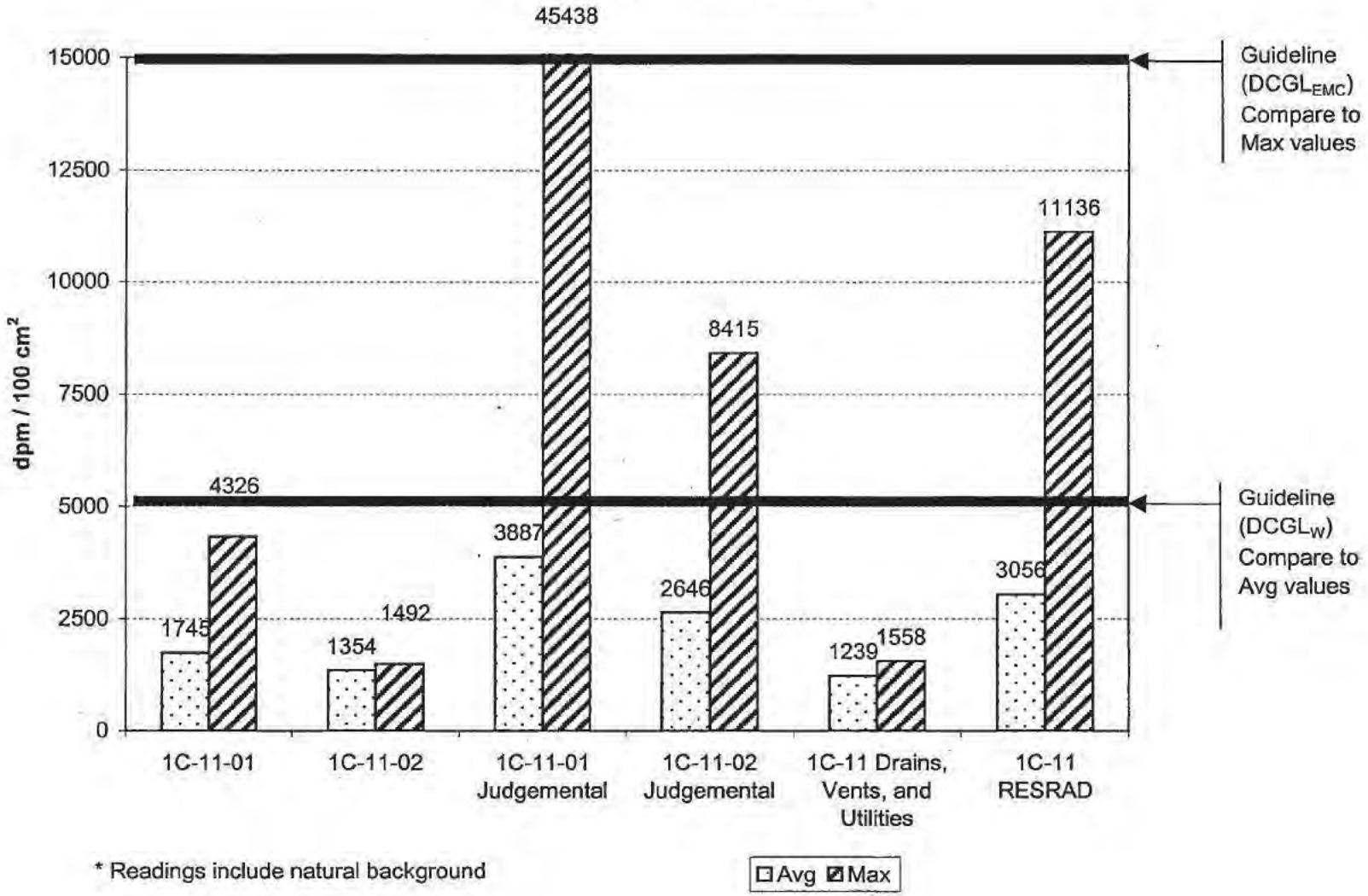
822/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Alpha Activity (removable)**




B23/35

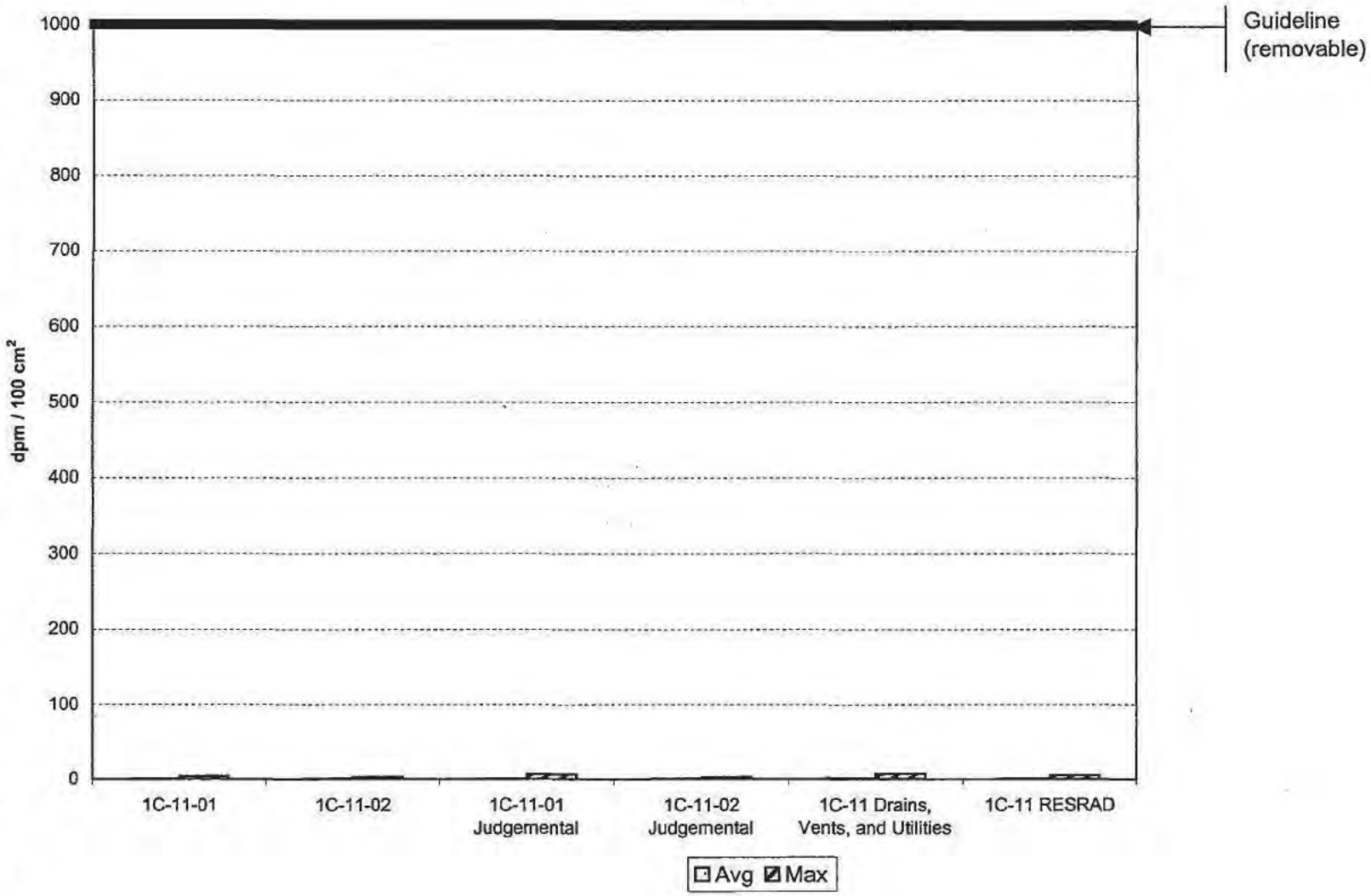
## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity* (direct)




* Readings include natural background

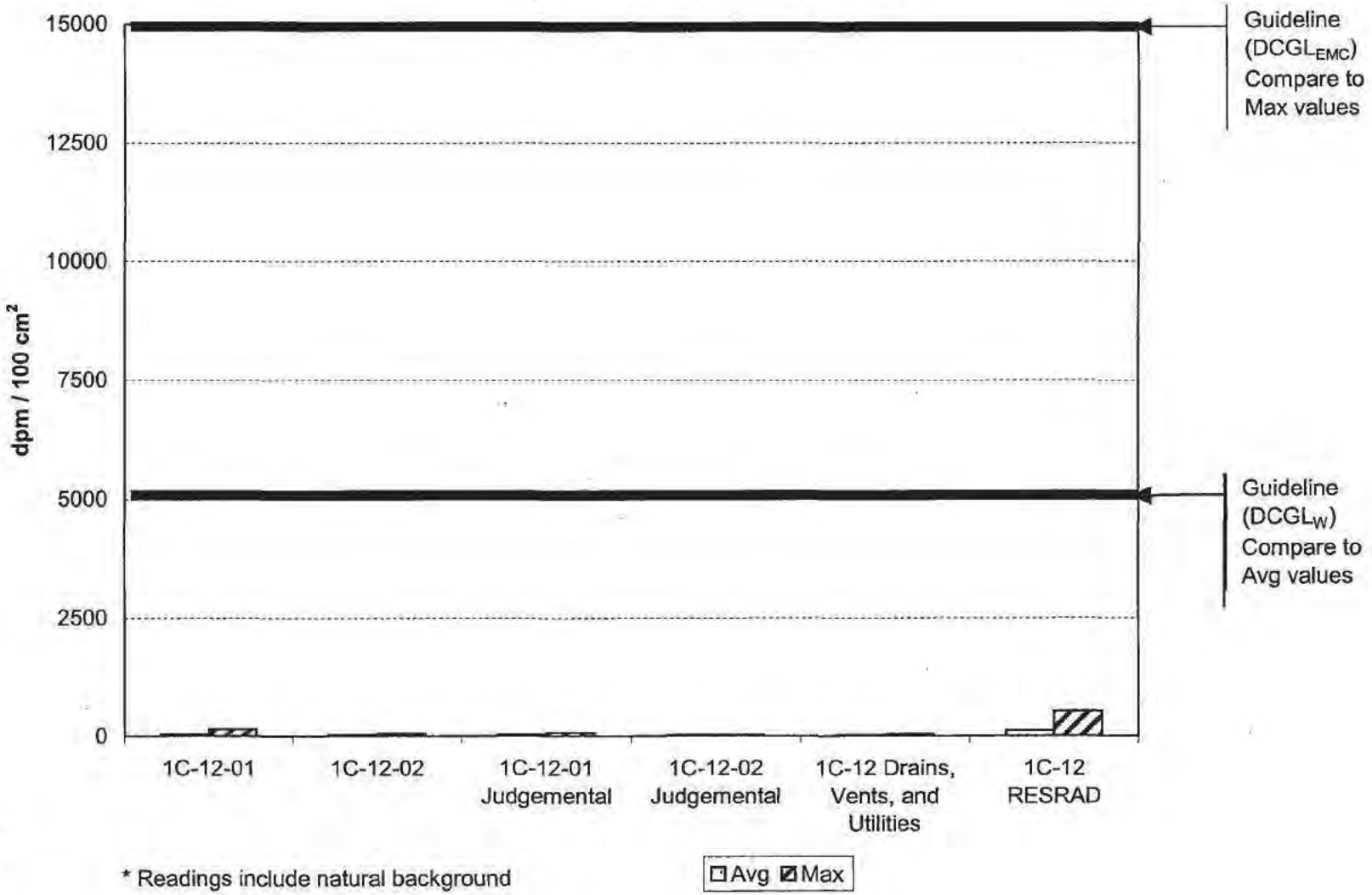
B24/35

## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity (removable)




B25/35

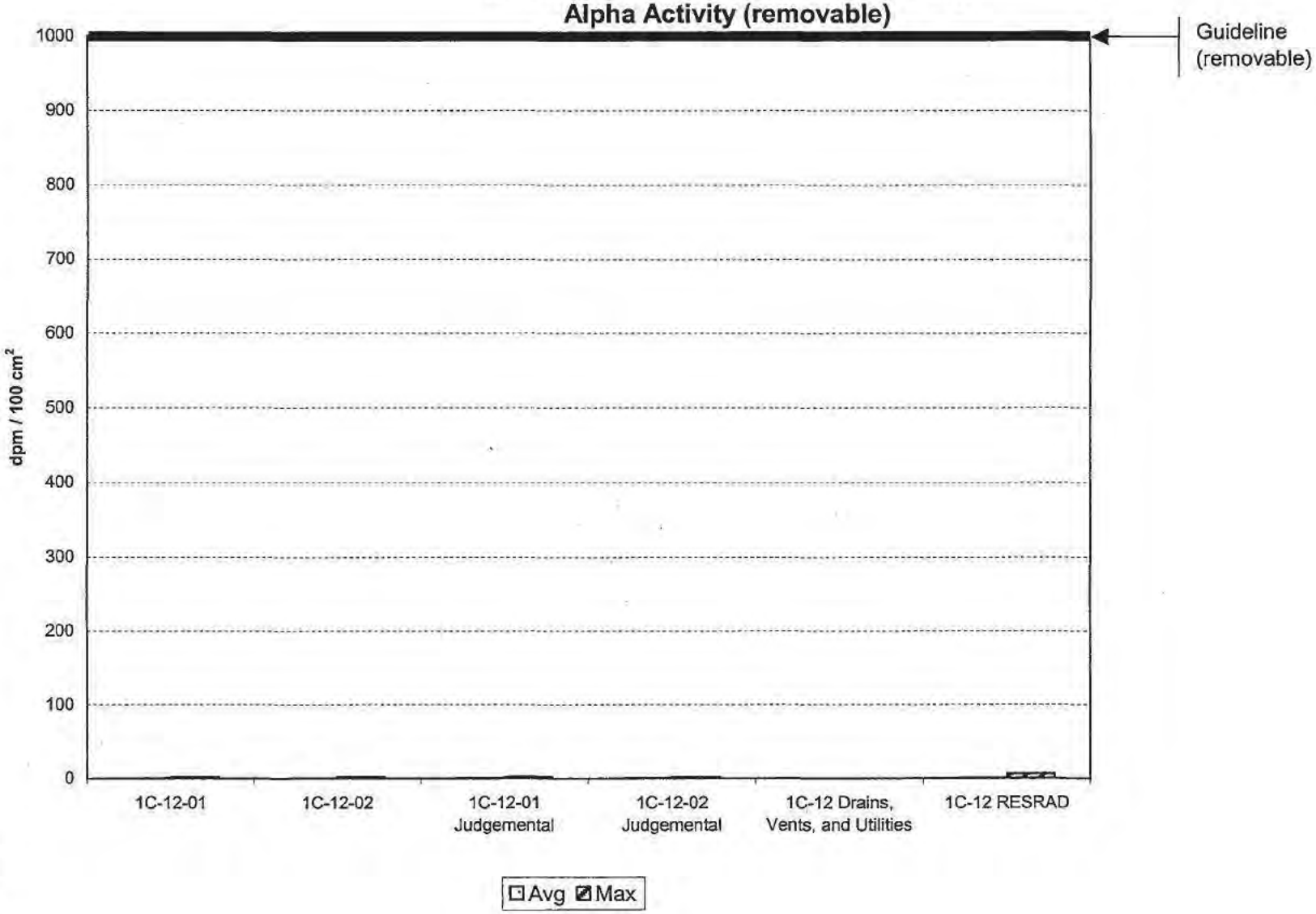
## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity* (direct)




* Readings include natural background

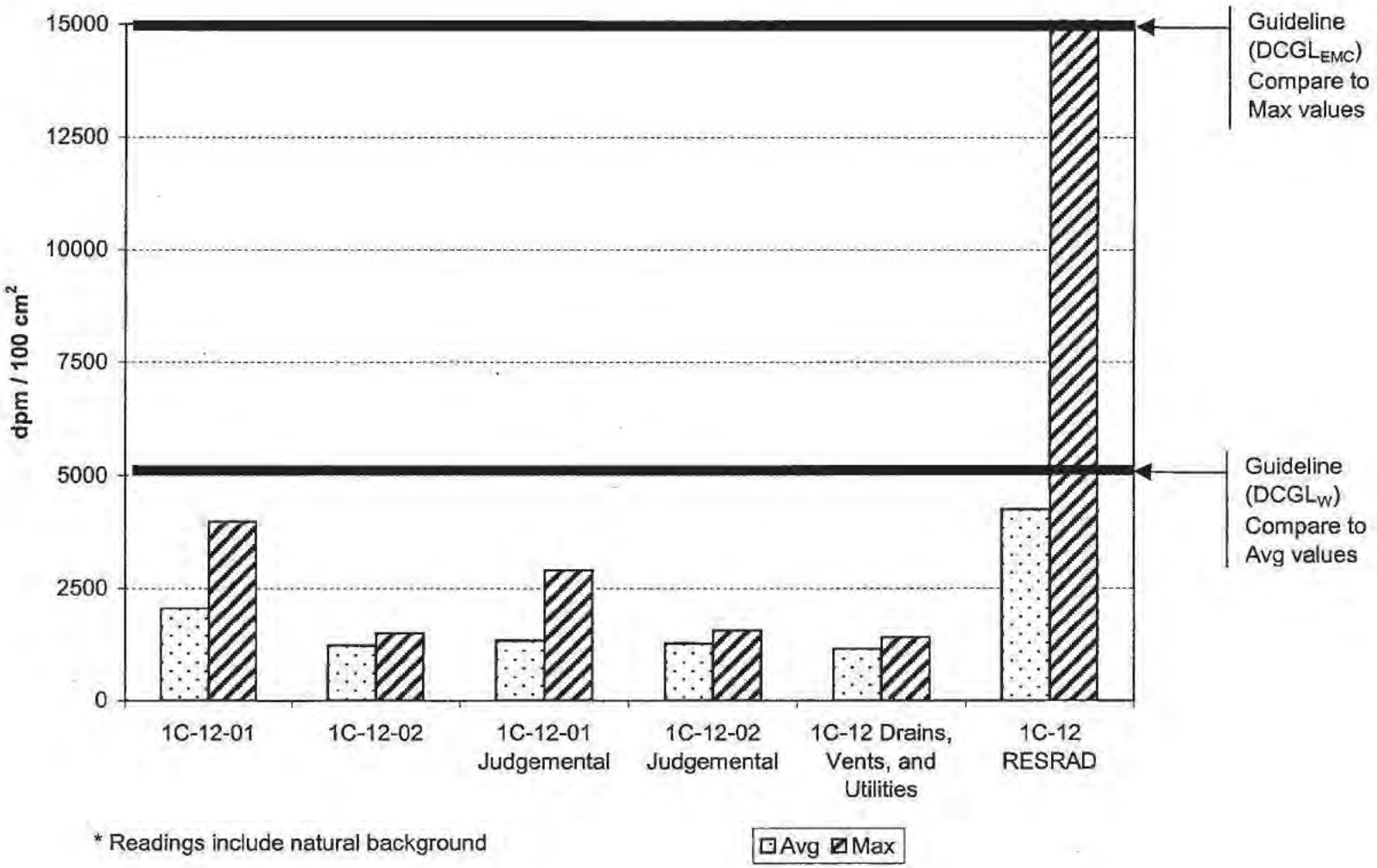
B26/35

## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity (removable)




B27/35

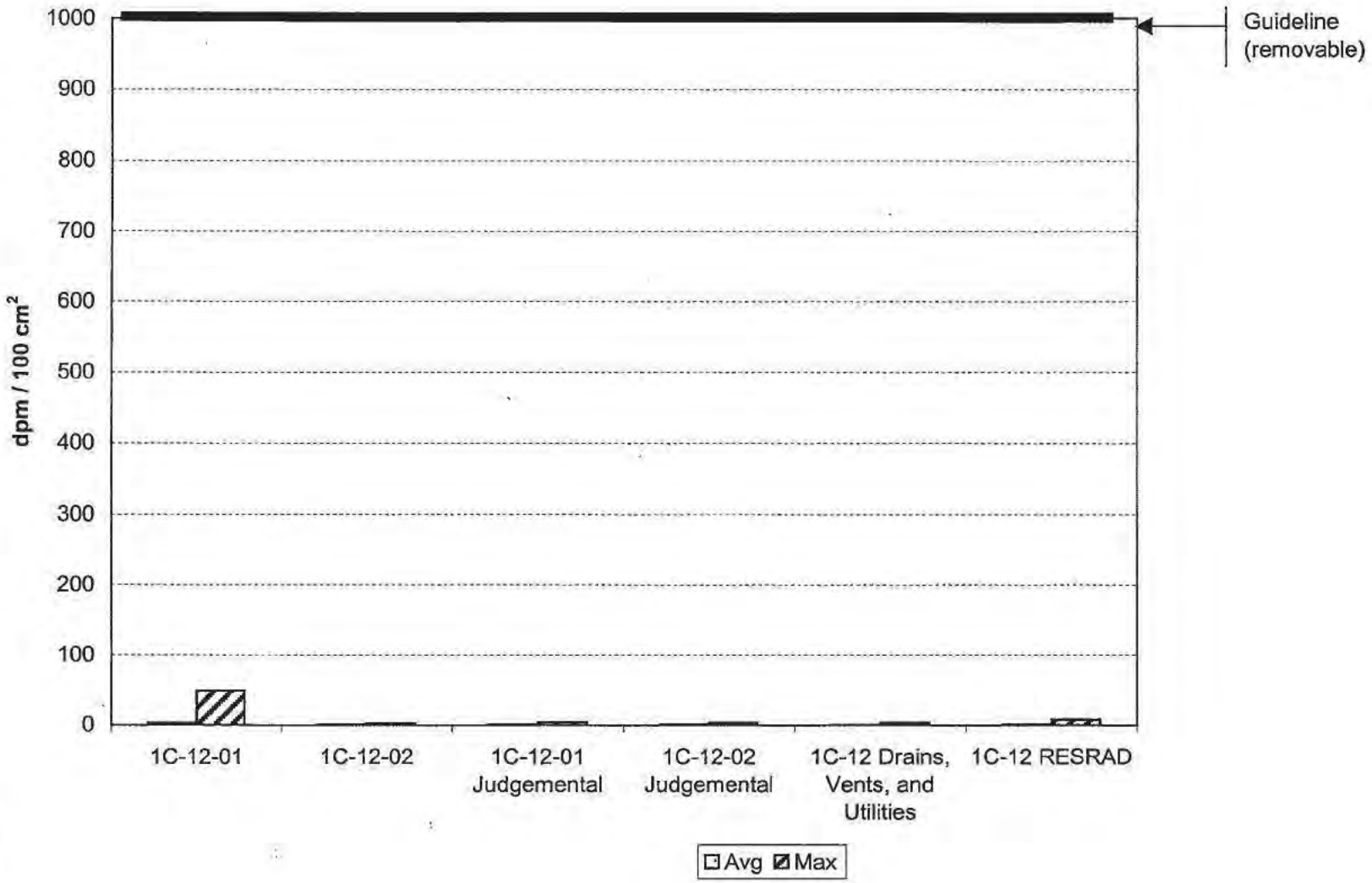
**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity* (direct)**




* Readings include natural background

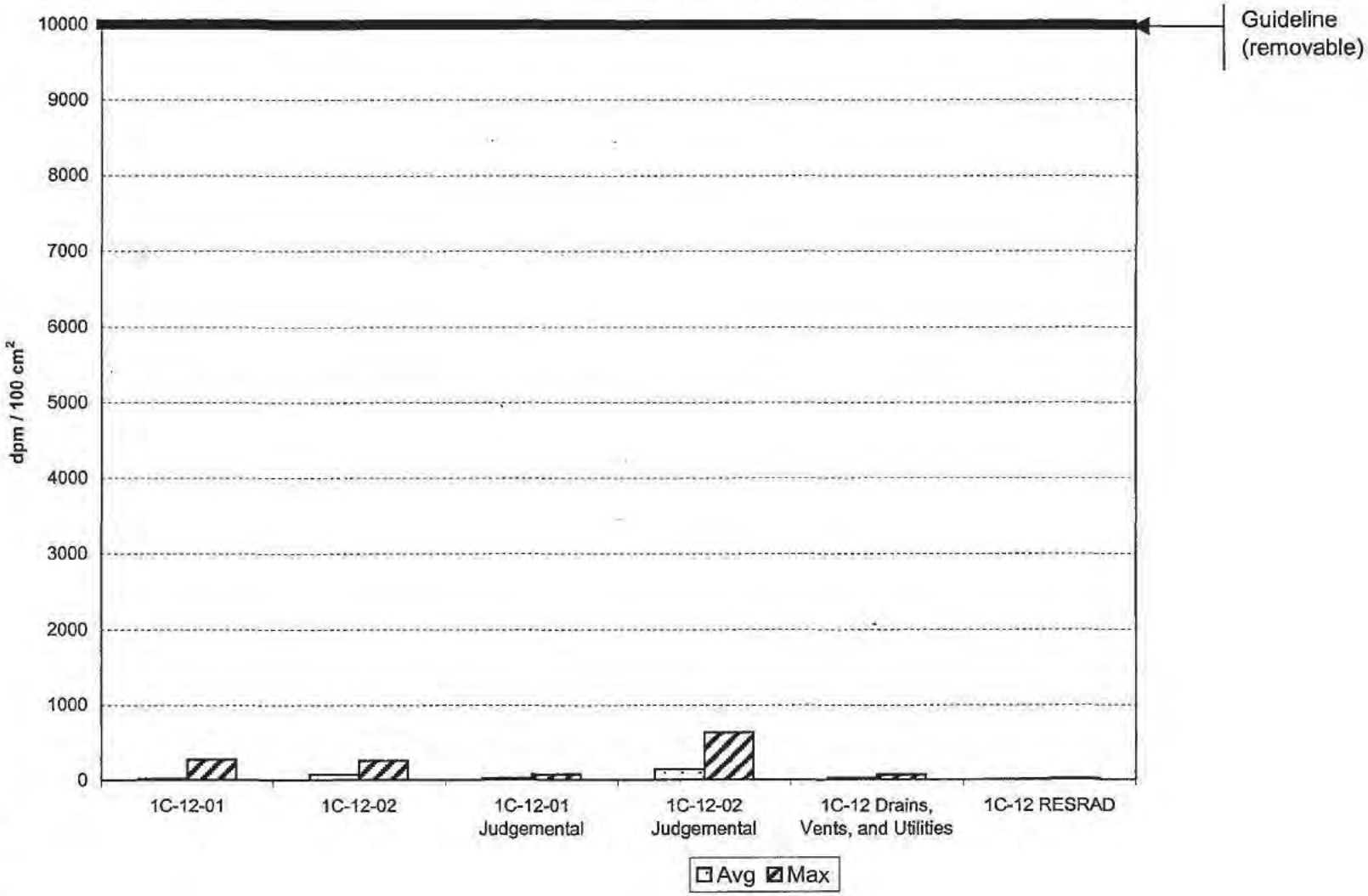
828/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity (removable)**



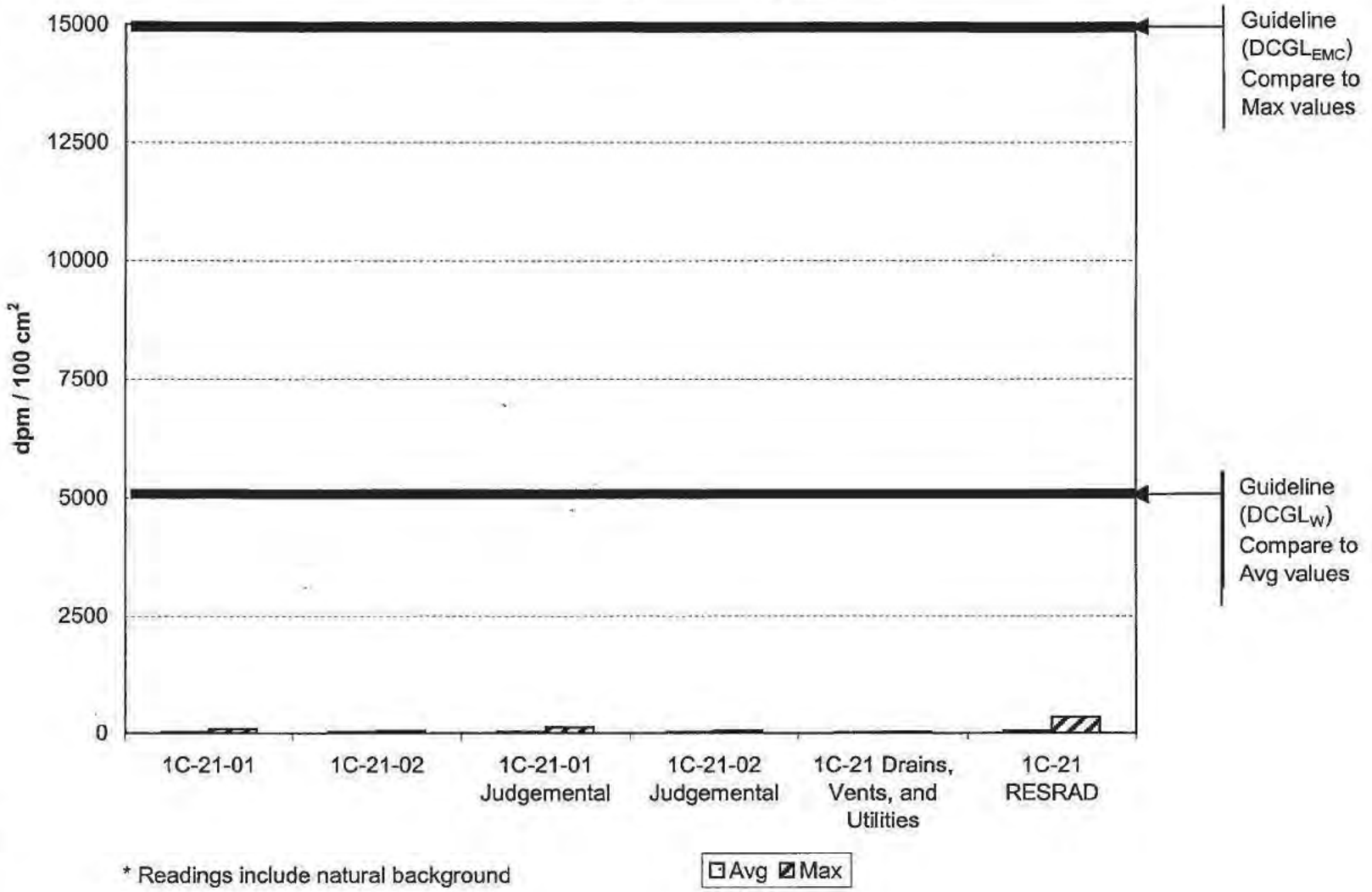

B29/35

## Attachment B
## Mound - T Building Final Status Survey
## Tritium Activity (removable)




B30/35

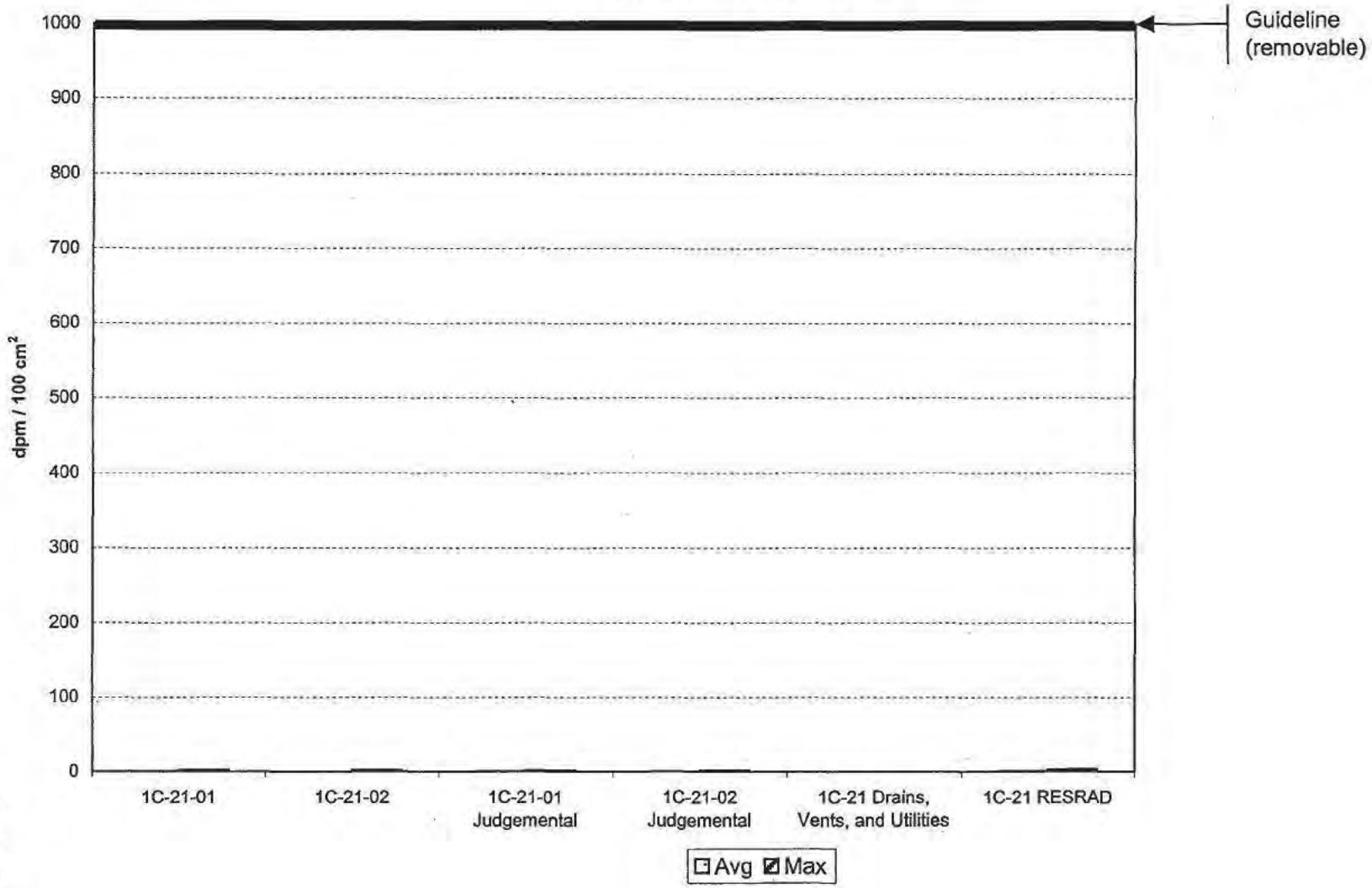
## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity* (direct)




* Readings include natural background

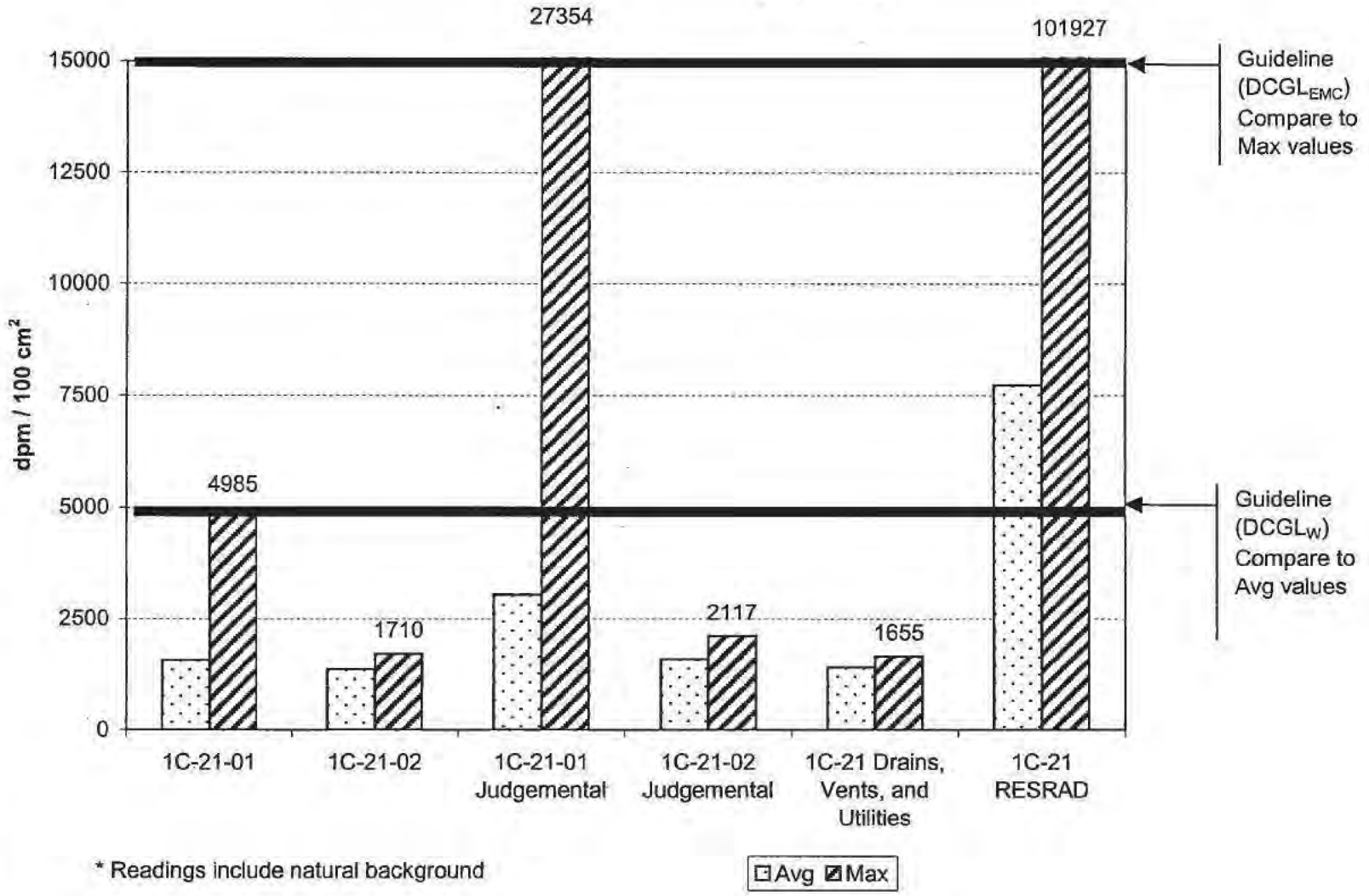
B31/35

## Attachment B
## Mound - T Building Final Status Survey
## Alpha Activity (removable)




B32/35

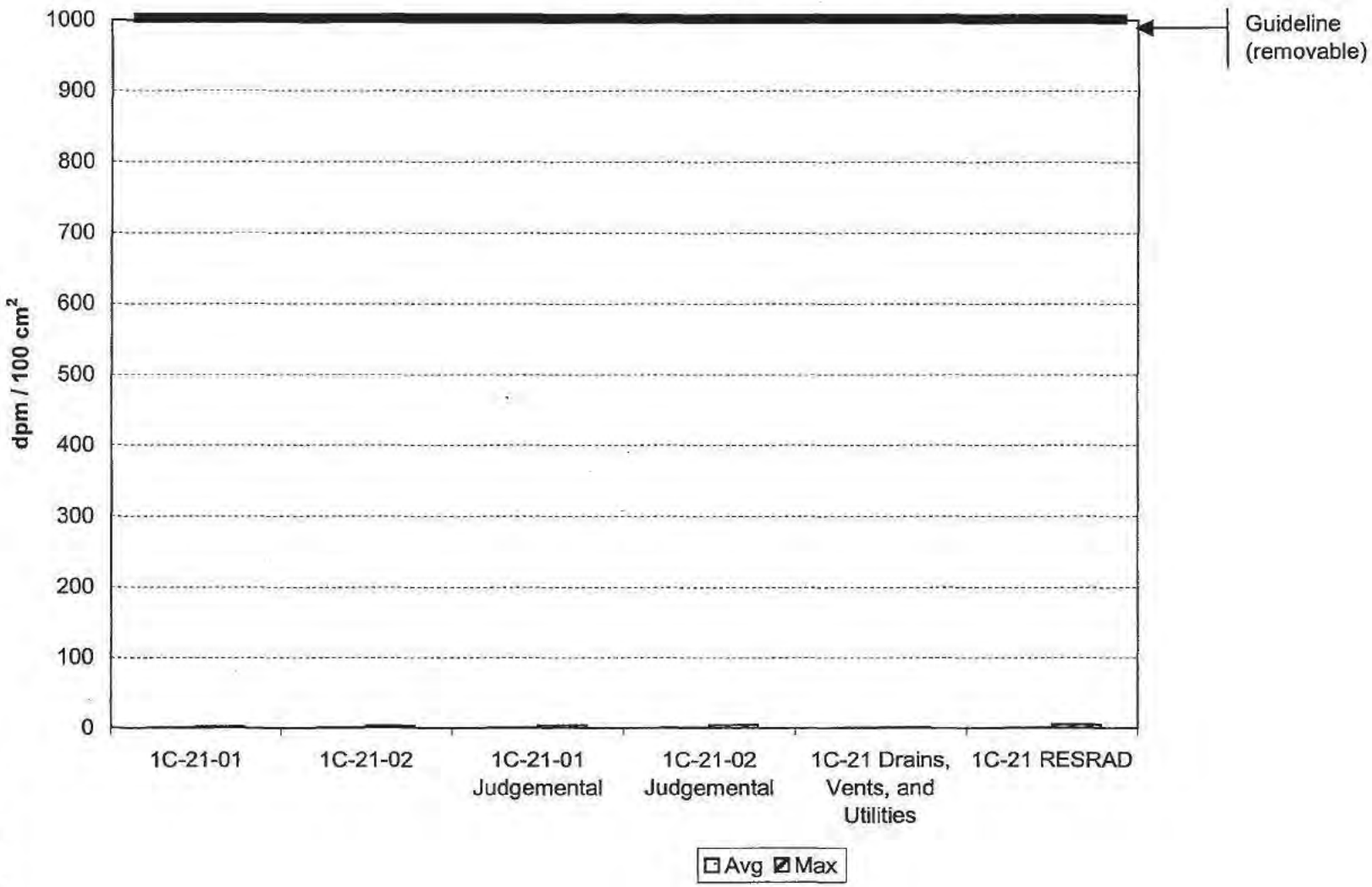
## Attachment B
## Mound - T Building Final Status Survey
## Beta Activity* (direct)




* Readings include natural background

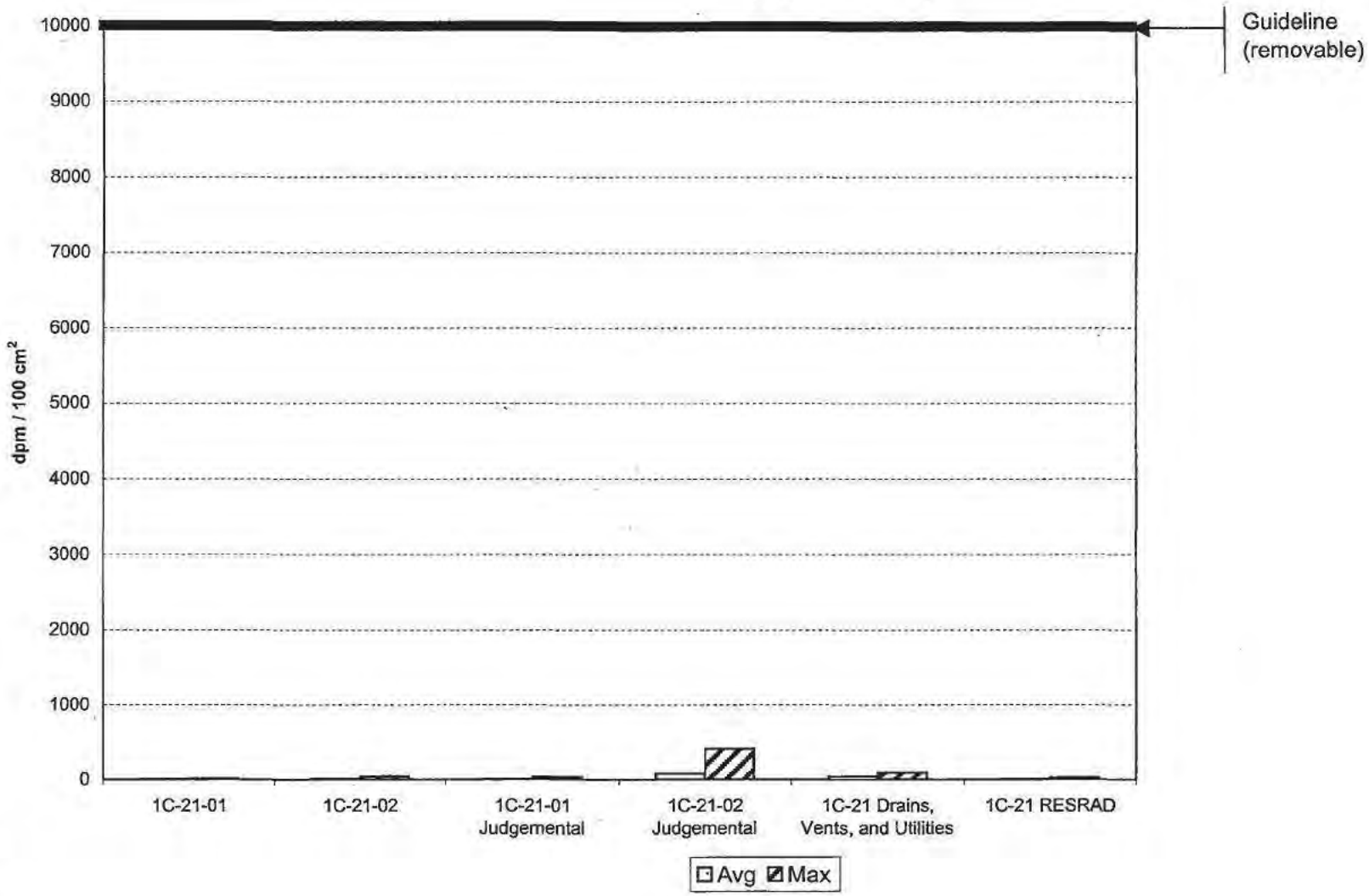
B33/35

**Attachment B**
**Mound - T Building Final Status Survey**
**Beta Activity (removable)**




B34/35

## Attachment B
## Mound - T Building Final Status Survey
## Tritium Activity (removable)




835/35

# Attachment C
# Retrospective Power Curves

NOTE: No power curves were generated. Survey Unit has volumetric contamination and was dose modeled.

# Attachment D
# Data Analysis Worksheets

| | |
|---|---|
| **T Building rooms** | Corridor 39, Room 40 and East End of Room 48 |
| **MARSSIM classification** | Class 1 |
| **Historical use** | These areas were used for polonium processing area. Corridor 39 was used as an access and egress route The walls have been removed between Corridor 39 and Room 40 and all the internal walls between rooms 40, 41, 43-48, Corridor 49, room 50, and corridor 51in the center bay section known as the cap have been removed. It is one large room sometimes referred to as the cap and/or Room 48. This covers the most eastern portion of the cap (base area equals 100 $m^2$). SYS-PRS 227 (Sump 7) was high-risk sump located in room 40 and was taken out of service and later removed from the building. |

**Survey description summary**

| | |
|---|---|
| **gamma scan:** | drain chases - 100% |
| | sump - 100% |
| **alpha and beta scan:** | floor - 100% |
| | walls below 2 meters - 50% |
| | walls above 2 meters - at least 25% |
| | ceiling - approx. 1 meter area scanned around each static measurement |
| **static measurements:** | 21 each random location measurements on floor and walls below 2 meters |
| | 24 each random location measurements on ceiling and walls above 2 meters |
| | 41 each judgmental* location measurements on floor and walls below 2 meters |
| | 11 each judgmental location measurements on ceiling and walls above 2 meters |
| | 29 each judgmental location measurements on drains, vents, and utilities |
| | 3 each judgmental location measurements in the hole that previously held the sump and it's steel liner |

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** taken from 1 meter above floor in center of room

## Survey results summary

**gamma scan:** no activity significantly above natural background detected

**alpha and beta scan:** all readings below alarm set points**

**static measurements:** all readings below alarm set points

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

## Treatment of elevated*** measurements

None identified

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 5000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

**Conclusion** Survey unit meets the release criteria

Attachment D
Mound - T Building **Survey Unit 1C-07**
Data Analysis Worksheet

| 1C07-01 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.82 | 0.68 | 1 | 29 | 1251 |
| StDev | 1.21 | 1.12 | 2 | 14 | 164 |
| Max | 3.72 | 3.84 | 6 | 66 | 1509 |

| 1C07-02 (24 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.14 | 0.47 | 1 | 15 | 973 |
| StDev | 0.46 | 0.82 | 2 | 6 | 138 |
| Max | 1.68 | 2.79 | 8 | 31 | 1217 |

| 1C07-01 Judgemental (41 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.11 | 0.74 | 2 | 26 | 879 |
| StDev | 0.41 | 1.13 | 3 | 13 | 125 |
| Max | 1.72 | 4.79 | 18 | 55 | 1070 |

| 1C07-02 Judgemental (11 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.32 | 1.10 | 9 | 17 | 719 |
| StDev | 0.70 | 1.87 | 12 | 7 | 151 |
| Max | 1.75 | 6.05 | 40 | 30 | 989 |

| 1C07 Drains, Vents, and Utilities (29 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.17 | 0.78 | 37 | 14 | 966 |
| StDev | 0.52 | 1.60 | 72 | 9 | 176 |
| Max | 1.81 | 6.35 | 310 | 39 | 1402 |

| 1C07 Statistical Data Points (45 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 45 | 45 | 45 | 45 | 45 |
| Average | 0.46 | 0.57 | 1 | 22 | 1103 |
| StDev | 0.94 | 0.96 | 2 | 13 | 204 |
| Max | 3.72 | 3.84 | 8 | 66 | 1509 |

| SYS-PRS 227 (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.43 | 0.49 | 3 | 22 | 666 |
| StDev | 0.77 | 0.97 | 3 | 10 | 140 |
| Max | 1.95 | 4.23 | 9 | 49 | 993 |

Attachment D
Mound T - Building
Survey Unit 1C-07
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C07-01 (21 samples each) | 1C070101S | 06-0148 | 0.00 | 0.00 | 0 | **66** | 1461 |
| | 1C070102S | 06-0148 | 3.60 | 0.00 | 0 | 23 | 1344 |
| | 1C070103S | 06-0148 | 0.00 | 0.00 | 0 | 19 | 1422 |
| | 1C070104S | 06-0148 | 1.81 | 0.00 | 0 | 35 | 1276 |
| | 1C070105S | 06-0148 | 0.00 | 0.00 | 0 | 19 | 1315 |
| | 1C070106S | 06-0148 | 1.54 | 0.00 | 0 | 35 | 1344 |
| | 1C070107S | 06-0148 | 0.00 | 0.20 | **6** | 31 | 1451 |
| | 1C070108S | 06-0148 | 0.00 | 0.40 | 1 | 19 | 1120 |
| | 1C070109S | 06-0148 | **3.72** | 0.00 | 1 | 12 | 1100 |
| | 1C070110S | 06-0148 | 0.00 | 0.47 | 0 | 27 | **1509** |
| | 1C070111S | 06-0148 | 0.00 | 1.49 | 0 | 31 | 1169 |
| | 1C070112S | 06-0148 | 1.68 | **3.84** | 4 | 27 | 1324 |
| | 1C070113S | 06-0148 | 0.00 | 2.79 | 0 | 46 | 1412 |
| | 1C070114S | 06-0148 | 0.00 | 1.58 | 0 | 31 | 1305 |
| | 1C070115S | 06-0148 | 0.00 | 0.00 | 6 | 43 | 1246 |
| | 1C070116S | 06-0148 | 0.00 | 2.54 | 4 | 31 | 1052 |
| | 1C070117S | 06-0148 | 1.72 | 0.00 | 0 | 8 | 945 |
| | 1C070118S | 06-0148 | 1.61 | 0.00 | 0 | 50 | 1208 |
| | 1C070119S | 06-0148 | 0.00 | 0.41 | 4 | 8 | 1022 |
| | 1C070120S | 06-0148 | 0.00 | 0.48 | 0 | 27 | 993 |
| | 1C070121S | 06-0148 | 1.52 | 0.00 | 0 | 23 | 1256 |
| 1C07-02 (24 samples each) | 1C070201S | 06-0148 | 0.00 | 0.21 | 0 | 27 | 1130 |
| | 1C070202S | 06-0148 | 0.00 | 0.20 | 0 | 8 | 915 |
| | 1C070203S | 06-0148 | 1.61 | 0.00 | 0 | 15 | 828 |
| | 1C070204S | 06-0148 | 0.00 | 0.26 | 0 | 12 | 808 |
| | 1C070205S | 06-0148 | 0.00 | 0.00 | **8** | 23 | 925 |
| | 1C070206S | 06-0148 | 0.00 | 0.27 | 3 | 8 | 954 |
| | 1C070207S | 06-0148 | 0.00 | 0.00 | 0 | 12 | 1139 |
| | 1C070208S | 06-0148 | 0.00 | **2.79** | 2 | 12 | 1052 |
| | 1C070209S | 06-0148 | 0.00 | 0.39 | 0 | 19 | 993 |
| | 1C070210S | 06-0148 | 0.00 | 0.00 | 0 | 8 | 1032 |
| | 1C070211S | 06-0148 | 0.00 | 0.20 | 0 | **31** | 1110 |
| | 1C070212S | 06-0148 | 0.00 | 0.00 | 1 | 12 | **1217** |
| | 1C070213S | 06-0148 | 0.00 | 0.00 | 1 | 19 | 1149 |
| | 1C070214S | 06-0148 | 0.00 | 0.00 | 0 | 8 | 1003 |
| | 1C070215S | 06-0148 | 0.00 | 0.48 | 0 | 15 | 954 |
| | 1C070216S | 06-0148 | 0.00 | 0.04 | 6 | 15 | 1003 |
| | 1C070217S | 06-0148 | 0.00 | 0.00 | 0 | 19 | 935 |
| | 1C070218S | 06-0148 | 0.00 | 1.52 | 0 | 15 | 915 |
| | 1C070219S | 06-0148 | 0.00 | 0.00 | 0 | 15 | 1130 |
| | 1C070220S | 06-0148 | 0.00 | 2.71 | 4 | 8 | 993 |
| | 1C070221S | 06-0148 | 0.00 | 0.00 | 0 | 12 | 945 |
| | 1C070222S | 06-0148 | 0.00 | 0.27 | 0 | 15 | 857 |
| | 1C070223S | 06-0148 | **1.68** | 0.47 | 0 | 19 | 652 |
| | 1C070224S | 06-0148 | 0.00 | 1.54 | 1 | 19 | 721 |

Attachment D
Mound T - Building
Survey Unit 1C-07
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C07-01 (judgmental) (44 samples taken) | 1C070101X | 05-1331 | 0.00 | 1.78 | 0 | 26 | 952 |
| | 1C070102X | 05-1331 | 0.00 | 0.00 | 1 | 7 | 1018 |
| | 1C070103X | 05-1331 | 0.00 | 0.00 | 5 | 26 | 924 |
| | 1C070107X | 05-1331 | 0.00 | 0.20 | 0 | 33 | 980 |
| | 1C070110X | 05-1331 | 1.41 | 0.31 | 0 | 22 | 1018 |
| | 1C070111X | 05-1331 | 0.00 | 0.00 | 6 | 26 | 990 |
| | 1C070112X | 05-1331 | 0.00 | 0.62 | 0 | 33 | 934 |
| | 1C070115X | 05-1331 | 0.00 | 0.00 | 0 | **55** | 803 |
| | 1C070116X | 05-1331 | 0.00 | 2.54 | 0 | 22 | 887 |
| | 1C070117X | 05-1331 | **1.72** | 0.29 | 0 | 40 | 878 |
| | 1C070118X | 05-1331 | 0.00 | 0.00 | 0 | 37 | 1018 |
| | 1C070119X | 05-1331 | 0.00 | 0.00 | 0 | 18 | 1055 |
| | 1C070120X | 05-1331 | 0.00 | 0.00 | 3 | 15 | 1055 |
| | 1C070123X | 05-1335 | 0.00 | 0.00 | 0 | 15 | 766 |
| | 1C070124X | 05-1335 | 0.00 | 0.00 | 0 | 22 | 1036 |
| | 1C070125X | 05-1335 | 0.00 | 0.00 | 0 | 26 | 784 |
| | 1C070126X | 05-1335 | 0.00 | 0.48 | **18** | 18 | 924 |
| | 1C070127X | 05-1335 | 0.00 | 0.04 | 0 | 40 | 812 |
| | 1C070132X | 05-1335 | 0.00 | 0.00 | 5 | 4 | 682 |
| | 1C070133X | 05-1335 | 0.00 | 2.70 | 0 | 44 | 598 |
| | 1C070134X | 05-1335 | 0.00 | 1.74 | 0 | 15 | 896 |
| | 1C070135X | 05-1335 | 0.00 | 1.54 | 2 | 29 | 644 |
| | 1C070136X | 05-1335 | 0.00 | 2.77 | 0 | 48 | 924 |
| | 1C070137X | 05-1335 | 0.00 | 1.42 | 1 | 29 | 654 |
| | 1C070138X | 05-1335 | 1.54 | 0.00 | 0 | 15 | 859 |
| | 1C070139X | 05-1335 | 0.00 | 3.08 | 0 | 7 | 990 |
| | 1C070140X | 05-1335 | 0.00 | 0.00 | 0 | 22 | 775 |
| | 1C070141X | 05-1335 | 0.00 | 0.41 | 0 | 18 | 868 |
| | 1C070142X | 05-1335 | 0.00 | 1.69 | 6 | 33 | 756 |
| | 1C070143X | 05-1335 | 0.00 | **4.79** | 0 | 26 | 887 |
| | 1C070144X | 05-1335 | 0.00 | 0.00 | 0 | 51 | 756 |
| | 1C070101J | 06-0151 | 0.00 | 0.00 | 8 | 23 | 753 |
| | 1C070102J | 06-0151 | 0.00 | 1.51 | 0 | 19 | 680 |
| | 1C070103J | 06-0151 | 0.00 | 1.67 | 1 | 45 | **1070** |
| | 1C070104J | 06-0151 | 0.00 | 0.48 | 0 | 15 | 1007 |
| | 1C070105J | 06-0151 | 0.00 | 0.00 | 4 | 19 | 880 |
| | 1C070106J | 06-0151 | 0.00 | 0.00 | 2 | 15 | 952 |
| | 1C070107J | 06-0151 | 0.00 | 0.00 | 0 | 26 | 934 |
| | 1C070108J | 06-0151 | 0.00 | 0.00 | 1 | 30 | 871 |
| | 1C070109J | 06-0151 | 0.00 | 0.00 | 0 | 8 | 989 |
| | 1C070110J | 06-0151 | 0.00 | 0.47 | 0 | 49 | 798 |

Attachment D
Mound T - Building
Survey Unit 1C-07
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C07-01: Incremental (1H) Samples each) | 1C070101W | 05-1341 | 1.72 | 1.60 | 3 | 22 | 458 |
| | 1C070201J | 06-0151 | 0.00 | 0.00 | 10 | **30** | 780 |
| | 1C070202J | 06-0151 | 0.00 | 0.00 | 0 | 19 | 753 |
| | 1C070203J | 06-0151 | 0.00 | 0.00 | 4 | 8 | 680 |
| | 1C070204J | 06-0151 | 0.00 | 0.00 | 2 | 15 | **989** |
| | 1C070205J | 06-0151 | 0.00 | 1.42 | 2 | 19 | 590 |
| | 1C070206J | 06-0151 | 0.00 | **6.05** | 9 | 15 | 599 |
| | 1C070207J | 06-0151 | **1.75** | 2.64 | 4 | 19 | 707 |
| | 1C070208J | 06-0151 | 0.00 | 0.39 | **40** | 26 | 807 |
| | 1C070209J | 06-0151 | 0.00 | 0.00 | 19 | 8 | 644 |
| | 1C070210J | 06-0151 | 0.00 | 0.00 | 5 | 11 | 907 |
| 1C07-02: Drains, Vents, and Utilities (2H Samples each) | 1C070201U | 06-0143 | 0.00 | 5.69 | 0 | 4 | 1139 |
| | 1C070202U | 06-0143 | 0.00 | 0.00 | 0 | 19 | **1402** |
| | 1C070201D | 06-0143 | 0.00 | 0.00 | 10 | 12 | 1120 |
| | 1C070203U | 06-0143 | **1.81** | 0.00 | 101 | 19 | 906 |
| | 1C070204U | 06-0143 | 0.00 | 1.23 | 13 | 8 | 935 |
| | 1C070202D | 06-0143 | 0.00 | 0.00 | 62 | 23 | 915 |
| | 1C070205U | 06-0143 | 0.00 | 0.00 | 20 | 27 | 828 |
| | 1C070203D | 06-0143 | 0.00 | 0.00 | 52 | 8 | 1091 |
| | 1C070206U | 06-0143 | 0.00 | 0.00 | 5 | 31 | 945 |
| | 1C070207U | 06-0143 | 0.00 | 0.00 | 0 | 27 | 1169 |
| | 1C070201V | 06-0143 | 0.00 | **6.35** | 0 | 19 | 915 |
| | 1C070204D | 06-0143 | 1.68 | 0.47 | **310** | 15 | 915 |
| | 1C070205D | 06-0143 | 0.00 | 0.29 | 243 | 19 | 769 |
| | 1C070202V | 06-0143 | 0.00 | 0.00 | 1 | 8 | 565 |
| | 1C070206D | 06-0143 | 0.00 | 0.00 | 76 | 8 | 984 |
| | 1C070207D | 06-0143 | 0.00 | 1.37 | 14 | 12 | 906 |
| | 1C070208D | 06-0143 | 0.00 | 0.00 | 8 | 12 | 828 |
| | 1C070209D | 06-0143 | 0.00 | 0.00 | 39 | 15 | 964 |
| | 1C070210D | 06-0143 | 0.00 | 0.41 | 13 | 8 | 662 |
| | 1C070211D | 06-0143 | 0.00 | 0.00 | 16 | 15 | 1110 |
| | 1C070212D | 06-0143 | 1.52 | 0.00 | 59 | 12 | 906 |
| | 1C070213D | 06-0143 | 0.00 | 0.00 | 5 | 8 | 837 |
| | 1C070214D | 06-0143 | 0.00 | 2.84 | 11 | 4 | 954 |
| | 1C070215D | 06-0143 | 0.00 | 0.40 | 17 | **39** | 954 |
| | 1C070208U | 06-0143 | 0.00 | 0.00 | 0 | 0 | 896 |
| | 1C070209U | 06-0143 | 0.00 | 0.00 | 0 | 8 | 896 |
| | 1C070101D | 06-0143 | 0.00 | 1.49 | 0 | 12 | 1334 |
| | 1C070102D | 06-0143 | 0.00 | 0.62 | 0 | 15 | 1042 |
| | 1C070103D | 06-0143 | 0.00 | 1.54 | 0 | 8 | 1130 |

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Attachment D
Mound T - Building
Survey Unit 1C-07
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| SYSPRS 227 (20 samples each) | SYSPRS0101J | 06-0459 | **1.95** | 1.50 | 2 | 8 | 691 |
| | SYSPRS0102J | 06-0459 | 0.00 | 0.00 | 1 | 8 | 584 |
| | SYSPRS0103J | 06-0459 | 0.00 | 0.30 | 7 | 15 | 721 |
| | SYSPRS0104J | 06-0459 | 0.00 | 0.58 | 6 | 15 | 506 |
| | SYSPRS0105J | 06-0459 | 1.58 | 0.00 | 3 | 11 | 662 |
| | SYSPRS0106J | 06-0459 | 0.00 | 0.00 | 0 | 15 | 458 |
| | SYSPRS0107J | 06-0459 | 0.00 | 0.27 | 4 | 23 | 487 |
| | SYSPRS0108J | 06-0459 | 0.00 | 0.66 | 0 | 30 | 847 |
| | SYSPRS0109J | 06-0459 | 1.73 | 0.00 | 5 | 11 | 760 |
| | SYSPRS0110J | 06-0459 | 1.61 | 0.00 | 0 | 26 | 536 |
| | SYSPRS0111J | 06-0459 | 0.00 | **4.23** | 8 | 23 | 604 |
| | SYSPRS0112J | 06-0459 | 0.00 | 0.45 | 0 | 23 | 662 |
| | SYSPRS0113J | 06-0459 | 1.74 | 0.00 | 3 | 30 | 565 |
| | SYSPRS0114J | 06-0459 | 0.00 | 0.32 | 5 | 19 | 613 |
| | SYSPRS0115J | 06-0459 | 0.00 | 0.00 | 0 | 38 | 837 |
| | SYSPRS0116J | 06-0459 | 0.00 | 0.00 | 3 | 26 | **993** |
| | SYSPRS0117J | 06-0459 | 0.00 | 1.11 | 0 | 23 | 545 |
| | SYSPRS0118J | 06-0459 | 0.00 | 0.00 | 0 | 26 | 828 |
| | SYSPRS0119J | 06-0459 | 0.00 | 0.00 | **9** | 30 | 652 |
| | SYSPRS0120J | 06-0459 | 0.00 | 0.45 | 8 | **49** | 769 |

| | |
|---|---|
| **T Building rooms** | Rooms 41 and 43, parts of Rooms 48, 50, and corridor 49. |
| **MARSSIM classification** | Class 1 |
| **Historical use** | These areas were used for polonium processing area. All the internal walls between rooms 40, 41, 43-48, Corridor 49, room 50, and corridor 51in the center bay section known as the cap have been removed. It is one large room sometimes referred to as the cap and/or Room 48. This covers the second most eastern portion of the cap (base area equals 100 $m^2$). See page D56 for layout. SYS-PRS 228 (Sump 8) was high-risk sump located in room 41 and was taken out of service and later removed from the building. |

**Survey description summary**

| | |
|---|---|
| **gamma scan:** | elevator pits- 100%<br><br>sump - 100% |
| **alpha and beta scan:** | floor – 100%<br><br>walls below 2 meters - 100%<br><br>walls above 2 meters – 25%<br><br>ceiling - approx. 1 meter area scanned around each static measurement |
| **static measurements:** | 23 each static locations measurements on floor and walls below 2 meters<br><br>20 each static location measurements on ceiling and walls above 2 meters<br><br>59 each judgmental location measurements on floor and walls below 2 meters<br><br>11 each judgmental location measurements on ceiling and walls above 2 meters<br><br>43 each judgmental location measurements on drains, vents, and<br><br>10 each judgmental location measurements in holes that previously held the sump and it's steel liner |

3 each judgmental location measurements in holes that previously were elevator pits.

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the 8 elevated areas in Room 58.

**volumetric samples:** random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario the activity found in the surface to 15 cm sample is again assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

## Survey results summary

**gamma scan:** no activity significantly above natural background detected

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page 59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

## Treatment of elevated*** measurements

Multiple elevated measurements were detected floor and elevator pits in SU# 1C-08, which exceed the $DCGL_{EMC}$ for gross beta. The decision was made to not to remediate since this is part of the cap and will be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is conservatively estimated. See pages D57 – D58 for dose model evaluations.

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 15000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

**Conclusion** Survey units meet the release criteria.

Attachment D
Mound - T Building **Survey Unit 1C-08**
Data Analysis Worksheet

| 1C08-01 (23 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.14 | 0.40 | 11 | 29 | 1295 |
| StDev | 0.47 | 0.56 | 30 | 13 | 238 |
| Max | 1.72 | 1.69 | 146 | 58 | 1857 |

| 1C08-02 (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.17 | 0.51 | 6 | 25 | 1014 |
| StDev | 0.51 | 0.90 | 6 | 12 | 171 |
| Max | 1.73 | 2.79 | 22 | 46 | 1428 |

| 1C08-01 Judgemental (59 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.69 | 2.03 | 1 | 73 | 2071 |
| StDev | 1.75 | 5.05 | 2 | 163 | 3317 |
| Max | 9.29 | 24.67 | 10 | 909 | 17862 |

| 1C08-02 Judgemental (11 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.28 | 0.45 | 9 | 17 | 955 |
| StDev | 0.62 | 0.60 | 8 | 8 | 189 |
| Max | 1.54 | 1.74 | 23 | 27 | 1227 |

| 1C08 Drains, Vents, and Utilities (11 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.50 | 0.46 | 29 | 15 | 747 |
| StDev | 1.20 | 0.94 | 41 | 9 | 63 |
| Max | 3.78 | 2.79 | 128 | 34 | 880 |

| 1C08 Statistical Data Points (43 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 43 | 43 | 43 | 43 | 43 |
| Average | 0.15 | 0.45 | 8 | 27 | 1165 |
| StDev | 0.49 | 0.73 | 22 | 13 | 251 |
| Max | 1.73 | 2.79 | 146 | 58 | 1857 |

| SYS-PRS 228 (10 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.00 | 12 | 15 | 717 |
| StDev | 0.86 | 0.82 | 2 | 14 | 162 |
| Max | 1.73 | 2.36 | 5 | 46 | 1810 |

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Attachment D Mound T - Bldg
Survey Unit 1C-08
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C08-01 (23 samples each) | 1C080101S | 06-0156 | 0.00 | 0.00 | 0 | **58** | 1188 |
| | 1C080102S | 06-0156 | 0.00 | 1.51 | 0 | 46 | 1228 |
| | 1C080103S | 06-0156 | 0.00 | 0.41 | 5 | 27 | 1228 |
| | 1C080104S | 06-0156 | 0.00 | **1.69** | 12 | 46 | 1058 |
| | 1C080105S | 06-0156 | 0.00 | 0.00 | 0 | 54 | 1428 |
| | 1C080106S | 06-0156 | 1.54 | 0.00 | 0 | 27 | 1398 |
| | 1C080107S | 06-0156 | 0.00 | 0.20 | 3 | 12 | 1428 |
| | 1C080108S | 06-0156 | 0.00 | 0.00 | 2 | 19 | 1208 |
| | 1C080109S | 06-0156 | 0.00 | 0.00 | 7 | 31 | 1348 |
| | 1C080110S | 06-0156 | 0.00 | 0.47 | 5 | 15 | 1198 |
| | 1C080111S | 06-0156 | 0.00 | 0.00 | 0 | 35 | 1468 |
| | 1C080112S | 06-0156 | 0.00 | 0.62 | 6 | 43 | **1857** |
| | 1C080113S | 06-0156 | 0.00 | 0.00 | 4 | 31 | 1408 |
| | 1C080114S | 06-0156 | 0.00 | 1.58 | 3 | 19 | 1148 |
| | 1C080115S | 06-0156 | **1.72** | 0.02 | 3 | 31 | 1228 |
| | 1C080116S | 06-0156 | 0.00 | 0.20 | 3 | 23 | 1687 |
| | 1C080117S | 06-0156 | 0.00 | 0.47 | 14 | 31 | 1577 |
| | 1C080118S | 06-0156 | 0.00 | 0.00 | 0 | 27 | 1517 |
| | 1C080119S | 06-0156 | 0.00 | 0.00 | 3 | 15 | 1328 |
| | 1C080120S | 06-0156 | 0.00 | 0.48 | 0 | 23 | 938 |
| | 1C080121S | 06-0156 | 0.00 | 1.23 | 13 | 27 | 998 |
| | 1C080122S | 06-0156 | 0.00 | 0.21 | 23 | 8 | 978 |
| | 1C080123S | 06-0156 | 0.00 | 0.00 | **146** | 23 | 948 |
| 1C08-02 (20 samples each) | 1C080201S | 06-0156 | 0.00 | 0.00 | 1 | 12 | 809 |
| | 1C080202S | 06-0156 | 0.00 | 0.26 | 1 | 8 | 769 |
| | 1C080203S | 06-0156 | 0.00 | 0.47 | 10 | 35 | 958 |
| | 1C080204S | 06-0156 | 0.00 | 0.00 | 4 | **46** | 1038 |
| | 1C080205S | 06-0156 | 0.00 | 0.00 | 15 | 23 | 1148 |
| | 1C080206S | 06-0156 | 0.00 | **2.79** | **22** | 23 | 948 |
| | 1C080207S | 06-0156 | 0.00 | 0.39 | 10 | 15 | 1028 |
| | 1C080208S | 06-0156 | 0.00 | 0.00 | 11 | 23 | 1128 |
| | 1C080209S | 06-0156 | 0.00 | 0.00 | 2 | 19 | 918 |
| | 1C080210S | 06-0156 | 0.00 | 0.00 | 2 | 31 | 829 |
| | 1C080211S | 06-0156 | 0.00 | 0.00 | 4 | 27 | 1038 |
| | 1C080212S | 06-0156 | 0.00 | 0.20 | 0 | 27 | 1128 |
| | 1C080213S | 06-0156 | 1.61 | 0.00 | 0 | 12 | 1198 |
| | 1C080214S | 06-0156 | 0.00 | 0.26 | 17 | 39 | 1168 |
| | 1C080215S | 06-0156 | 0.00 | 0.00 | 4 | 39 | **1428** |
| | 1C080216S | 06-0156 | **1.73** | 0.00 | 1 | 23 | 819 |
| | 1C080217S | 06-0156 | 0.00 | 0.00 | 4 | 0 | 1228 |
| | 1C080218S | 06-0156 | 0.00 | 1.54 | 5 | 31 | 888 |
| | 1C080219S | 06-0156 | 0.00 | 2.77 | 0 | 23 | 859 |
| | 1C080220S | 06-0156 | 0.00 | 1.42 | 0 | 39 | 958 |

n/a not required

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Attachment D Mound T - Bldg
Survey Unit 1C-08
Data Analysis Worksheet

1C08-01 Judgemental (59 samples each)

| Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|
| | | a | b | H | a | b |
| RM48Sample1-paint | 05-946 | n/a | n/a | n/a | 16 | 1277 |
| RM48Sample10-paint | 05-946 | n/a | n/a | n/a | 3 | 937 |
| RM48Sample2-paint | 05-946 | n/a | n/a | n/a | 11 | 1119 |
| RM48Sample3-paint | 05-946 | n/a | n/a | n/a | 11 | 1293 |
| RM48Sample4-paint | 05-946 | n/a | n/a | n/a | 19 | 1164 |
| RM48Sample5-paint | 05-946 | n/a | n/a | n/a | 19 | 1111 |
| RM48Sample6-paint | 05-946 | n/a | n/a | n/a | 11 | 1179 |
| RM48Sample7-paint | 05-946 | n/a | n/a | n/a | 124 | 3779 |
| RM48Sample8-paint | 05-946 | n/a | n/a | n/a | 5 | 1058 |
| RM48Sample9-paint | 05-946 | n/a | n/a | n/a | 19 | 1043 |
| 1C070104X | 05-1331 | 0.00 | 0.00 | 3 | 26 | 971 |
| 1C070105X | 05-1331 | 0.00 | 0.00 | 0 | 11 | 878 |
| 1C070106X | 05-1331 | 0.00 | 0.21 | 3 | 33 | 915 |
| 1C070108X | 05-1331 | 0.00 | 0.00 | 0 | 55 | 999 |
| 1C070109X | 05-1331 | 0.00 | 0.00 | 0 | 18 | 607 |
| 1C070113X | 05-1331 | 0.00 | 0.00 | 0 | 15 | 1027 |
| 1C070114X | 05-1331 | 0.00 | 0.39 | 0 | 454 | 943 |
| 1C070121X | 05-1331 | 0.00 | 0.00 | 1 | 15 | 952 |
| 1C070122X | 05-1331 | 3.37 | 0.00 | 0 | 40 | 1083 |
| 1C070128X | 05-1335 | 0.00 | 0.21 | 1 | 15 | 906 |
| 1C070129X | 05-1335 | 0.00 | 0.00 | 1 | 40 | 971 |
| 1C070130X | 05-1335 | 0.00 | 0.40 | 0 | 48 | 784 |
| 1C070131X | 05-1335 | 0.00 | 0.00 | 0 | 37 | 784 |
| 1C070145X | 05-1335 | 0.00 | 0.20 | 0 | 7 | 794 |
| 1C070146X | 05-1335 | 0.00 | 0.40 | 0 | 15 | 700 |
| 1C080101W | 05-1342 | 0.00 | 0.00 | 0 | 18 | 728 |
| 1C080102W | 05-1342 | 0.00 | 0.00 | 0 | 4 | 654 |
| 1C080104W | 05-1342 | 0.00 | 0.00 | 0 | 40 | 635 |
| 1C080105W | 05-1342 | 0.00 | 1.23 | 0 | 15 | 700 |
| 1c080101P | 05-1346 | 0.00 | 0.00 | 0 | 29 | 971 |
| 1c080102P | 05-1346 | 3.60 | 0.01 | 0 | 18 | 1018 |
| 1c080103P | 05-1346 | 0.00 | 12.96 | 0 | 44 | 934 |
| 1c080104P | 05-1346 | 0.00 | 1.69 | 0 | 22 | 831 |
| 1c080105P | 05-1346 | 0.00 | 0.04 | 0 | 44 | 1457 |
| 1c080106P | 05-1346 | 0.00 | 2.43 | 0 | 40 | 999 |
| 1c080107P | 05-1346 | 0.00 | 1.52 | 0 | 37 | 887 |
| 1c080108P | 05-1346 | 0.00 | 2.79 | 0 | 37 | 756 |
| 1c080109P | 05-1346 | 0.00 | 0.00 | 0 | 26 | 766 |
| 1c080111P | 05-1346 | 0.00 | 0.27 | 0 | 48 | 2857 |
| 1c080110P | 05-1346 | 1.41 | 1.44 | 0 | 106 | 4641 |
| 1C080110P | 05-1352 | 0.00 | 1.78 | 0 | 136 | 5341 |
| 1C08110PA | 05-1352 | 1.61 | 0.00 | 8 | 51 | 2418 |
| 1C08110PB | 05-1352 | 1.93 | 0.23 | 0 | 18 | 2876 |
| 1C08110PC | 05-1352 | 1.81 | 1.53 | 0 | 40 | 1718 |
| 1C08110PD | 05-1352 | 1.52 | 4.58 | 1 | 48 | 1989 |
| 1C08110PE | 05-1352 | 3.36 | 15.38 | 2 | 667 | 13763 |
| 1C08110PF | 05-1352 | 5.93 | **24.67** | **10** | **909** | **17862** |
| 1C08110PG | 05-1352 | **9.29** | 18.45 | 0 | 539 | 15182 |
| 1C08110PH | 05-1352 | 0.00 | 3.94 | 5 | 59 | 3240 |
| 1C080101 | 06-0162 | 0.00 | 0.00 | 0 | 15 | 1402 |

n/a not required

D 13/84

Attachment D Mound T - Bldg
Survey Unit 1C-08
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C08-01 Judgemental (59 samples each) - continued | 1C080102 | 06-0162 | 0.00 | 0.00 | 0 | 27 | 945 |
| | 1C080103 | 06-0162 | 0.00 | 0.41 | 1 | 23 | 1422 |
| | 1C080104 | 06-0162 | 0.00 | 0.00 | 1 | 31 | 1042 |
| | 1C080105 | 06-0162 | 0.00 | 2.41 | 2 | 31 | 1324 |
| | 1C080106 | 06-0162 | 0.00 | 0.00 | 7 | 8 | 993 |
| | 1C080107 | 06-0162 | 0.00 | 0.00 | 7 | 50 | 1422 |
| | 1C080108 | 06-0162 | 0.00 | 0.00 | 0 | 12 | 1237 |
| | 1C080109 | 06-0162 | 0.00 | 0.00 | 0 | 19 | 993 |
| | 1C080110 | 06-0162 | 0.00 | 0.00 | 6 | 8 | 915 |
| 1C08-02 Judgemental (11 samples each) | 1C080103W | 05-1342 | 0.00 | 0.41 | 7 | 11 | 579 |
| | 1C080201 | 06-0162 | 0.00 | 1.49 | 0 | 12 | 1198 |
| | 1C080202 | 06-0162 | 0.00 | **1.74** | 1 | 12 | **1227** |
| | 1C080203 | 06-0162 | 0.00 | 0.29 | 0 | 15 | 906 |
| | 1C080204 | 06-0162 | 0.00 | 0.39 | 3 | 15 | 964 |
| | 1C080205 | 06-0162 | 0.00 | 0.00 | 10 | **27** | 730 |
| | 1C080206 | 06-0162 | 1.51 | 0.00 | 14 | 27 | 954 |
| | 1C080207 | 06-0162 | 0.00 | 0.29 | 3 | 4 | 935 |
| | 1C080208 | 06-0162 | 0.00 | 0.39 | 20 | 15 | 993 |
| | 1C080209 | 06-0162 | 0.00 | 0.00 | 17 | 19 | 1110 |
| | 1C080210 | 06-0162 | **1.54** | 0.00 | **23** | 27 | 906 |

n/a not required

D14/84

Attachment D Mound T - Bldg
Survey Unit 1C-08
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C08 Drains, Vents, and Utilities (11 samples each) | 1C080101D | 06-0154 | 0.00 | 1.78 | 0 | 15 | **880** |
| | 1C080201U | 06-0154 | 0.00 | 0.34 | 0 | 8 | 707 |
| | 1C080201V | 06-0154 | 0.00 | 0.00 | 0 | 8 | 662 |
| | 1C080202U | 06-0154 | 0.00 | 0.00 | 0 | 23 | 834 |
| | 1C080202V | 06-0154 | 0.00 | 0.00 | 21 | 19 | 707 |
| | 1C080203U | 06-0154 | 0.00 | 0.00 | 3 | 23 | 744 |
| | 1C080204U | 06-0154 | 0.00 | 0.00 | 21 | 8 | 689 |
| | 1C080205U | 06-0154 | 0.00 | **2.79** | 61 | **34** | 744 |
| | 1C080206U | 06-0154 | 1.69 | 0.11 | 65 | 8 | 771 |
| | 1C080207U | 06-0154 | 0.00 | 0.00 | 15 | 19 | 735 |
| | 1C080208U | 06-0154 | **3.78** | 0.00 | **128** | 4 | 744 |
| SYS-PRS 228 (10 samples each) | PRS2280101J | 06-0472 | 1.58 | 0.04 | 0 | 11 | 1190 |
| | PRS2280102J | 06-0472 | 1.69 | 0.28 | 0 | 15 | 1597 |
| | PRS2280103J | 06-0472 | 0.00 | 0.27 | **5** | 27 | **1810** |
| | PRS2280104J | 06-0472 | 1.68 | 0.00 | 0 | 11 | 1403 |
| | PRS2280105J | 06-0472 | 0.00 | **2.36** | 0 | 42 | 1578 |
| | PRS2280106J | 06-0472 | 0.00 | 0.00 | 1 | 42 | 1423 |
| | PRS2280107J | 06-0472 | 0.00 | 1.71 | 0 | 15 | 1539 |
| | PRS2280108J | 06-0472 | 0.00 | 0.45 | 0 | 11 | 1452 |
| | PRS2280109J | 06-0472 | **1.73** | 0.14 | 3 | **46** | 1500 |
| | PRS2280110J | 06-0472 | 0.00 | 0.00 | 3 | 27 | 1597 |

n/a not required

D15184

**T Building rooms** Room 43, parts of Rooms 48, 50, and corridor 49.

**MARSSIM classification** Class 1

**Historical use** These areas were used for polonium processing area. Corridor 49 was used as an access and egress route The walls have been removed between rooms 40, 41, 43-48, Corridor 49, room 50, and corridor 51in the center bay section known as the cap have been removed. It is one large room sometimes referred to as the cap and/or Room 48. This covers the second most western portion of the cap (base area equals 100 $m^2$). See page D56 for layout.

**Survey description summary**

**alpha and beta scan:** floor – 100%

walls below 2 meters - 100%

walls above 2 meters – 25%

ceiling - approx. 1 meter area scanned around each static measurement

**static measurements:** 20 each static locations measurements on floor and walls below 2 meters

21 each static location measurements on ceiling and walls above 2 meters

10 each judgmental location measurements on floor and walls below 2 meters

10 each judgmental location measurements on ceiling and walls above 2 meters

10 each judgmental location measurements on drains, vents, and

36 direct alpha and beta measurements were taken on the floor in SU# 1C-09 for RESRAD-Build

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the 3 elevated areas in SU# 1C-09.

**volumetric samples:** random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm composite sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario, the activity found in the surface to 15 cm composite sample is again assumed to be representative of the contamination levels to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

## Survey results summary

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page 59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

**Treatment of elevated*** measurements**

Five elevated beta measurements were found on the south wall in SU# 1C-09 (RSDS MT-05-1345); locations 1C090101W, 1C090103W, 1C090104W, 1C090105W, and 1C090106W, values respectively were 10065, 36134, 5350, 12988, and 15415 dpm/100 $cm^2$ beta. The area was remediated by removing approximately 2 inches of concrete with a rotary scabbler over an area of approximately $3m^2$. A follow-up survey (RSDS MT-06-0323) was conducted that included the original spots. No additional elevated activity was identified during scanning and all follow-up measurements were less than 5000 dpm /100 $cm^2$ beta. No further action is required on the south wall in SU# 1C-09.

Multiple elevated measurements were detected on the floor in SU# 1C-09, which exceed the DCGLEMC for gross beta. The decision was made to not to remediate since this is part of the cap and will be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is overestimated. See pages D57- D58 for dose model evaluations.

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 15000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

**Conclusion** Survey units meet the release criteria.

Attachment D

Mound - T Building **Survey Unit 1C-09**

Data Analysis Worksheet

| 1C-09-01 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.16 | 0.84 | 2 | 57 | 2307 |
| StDev | 0.52 | 0.95 | 3 | 138 | 5225 |
| Max | 1.76 | 2.66 | 11 | 656 | 25079 |

| 1C-09-02 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.34 | 0.66 | 8 | 14 | 833 |
| StDev | 0.91 | 0.98 | 12 | 7 | 100 |
| Max | 3.60 | 3.08 | 46 | 26 | 1107 |

| 1C-09-01 Judgemental (17 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.49 | 0.52 | 1 | 23 | 1101 |
| StDev | 0.78 | 1.02 | 1 | 12 | 283 |
| Max | 1.73 | 2.78 | 2 | 43 | 1704 |

| 1C-09-02 Judgemental (10 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.19 | 0.37 | 4 | 18 | 1594 |
| StDev | 0.61 | 0.65 | 10 | 10 | 658 |
| Max | 1.93 | 1.60 | 32 | 31 | 2668 |

| 1C-09 Drains, Vents, and Utilities (12 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.40 | 1.01 | 116 | 26 | 1183 |
| StDev | 0.72 | 1.40 | 121 | 14 | 210 |
| Max | 1.66 | 4.58 | 345 | 50 | 1490 |

| 1C-09 Statistical Data Points (42 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 42 | 42 | 42 | 42 | 42 |
| Average | 0.25 | 0.75 | 5 | 35 | 1570 |
| StDev | 0.74 | 0.96 | 9 | 99 | 3725 |
| Max | 3.60 | 3.08 | 46 | 656 | 25079 |

| 1C-09 RESRAD (13 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3$H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.36 | 1.08 | 1 | 57 | 5246 |
| StDev | 0.69 | 1.31 | 1 | 88 | 10964 |
| Max | 1.69 | 3.84 | 4 | 310 | 39186 |

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Attachment D
Mound T - Building
Survey Unit 1C-09
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-09-01 (21 samples each) | 1C090101S | 06-0089 | 0.00 | 0.00 | 0 | 44 | 952 |
| | 1C090102S | 06-0089 | 0.00 | 1.51 | 0 | 22 | 1849 |
| | 1C090103S | 06-0089 | 0.00 | 1.67 | 2 | 22 | 1242 |
| | 1C090104S | 06-0089 | 0.00 | 0.00 | 0 | 18 | 1139 |
| | 1C090105S | 06-0089 | 0.00 | 1.23 | 0 | 66 | 1755 |
| | 1C090106S | 06-0089 | 0.00 | 2.43 | 0 | 44 | 1242 |
| | 1C090107S | 06-0089 | 0.00 | 0.00 | 0 | 33 | 1102 |
| | 1C090108S | 06-0089 | 0.00 | 0.40 | 7 | 15 | 1289 |
| | 1C090109S | 06-0089 | 1.68 | 1.33 | 5 | 22 | 1027 |
| | 1C090110S | 06-0089 | 0.00 | 0.00 | 4 | **656** | **25079** |
| | 1C090111S | 06-0089 | 0.00 | 1.49 | 1 | 15 | 962 |
| | 1C090112S | 06-0089 | 0.00 | 0.00 | **11** | 26 | 840 |
| | 1C090113S | 06-0089 | **1.76** | 0.00 | 2 | 18 | 1298 |
| | 1C090114S | 06-0089 | 0.00 | 0.39 | 0 | 37 | 1018 |
| | 1C090115S | 06-0089 | 0.00 | **2.66** | 0 | 48 | 1064 |
| | 1C090116S | 06-0089 | 0.00 | 2.54 | 0 | 26 | 1102 |
| | 1C090117S | 06-0089 | 0.00 | 1.49 | 0 | 33 | 1429 |
| | 1C090118S | 06-0089 | 0.00 | 0.47 | 0 | 11 | 1176 |
| | 1C090119S | 06-0089 | 0.00 | 0.00 | 0 | 15 | 1242 |
| | 1C090120S | 06-0089 | 0.00 | 0.00 | 0 | 7 | 896 |
| | 1C090121S | 06-0089 | 0.00 | 0.00 | 0 | 18 | 747 |
| 1C-09-02 (21 samples each) | 1C090201S | 06-0166 | 0.00 | **3.08** | 9 | 4 | 938 |
| | 1C090202S | 06-0166 | 0.00 | 1.51 | 0 | 7 | 952 |
| | 1C090203S | 06-0166 | 0.00 | 0.00 | 29 | 7 | 797 |
| | 1C090204S | 06-0166 | 0.00 | 1.69 | 16 | 11 | 724 |
| | 1C090205S | 06-0166 | 0.00 | 0.04 | 19 | 11 | 812 |
| | 1C090206S | 06-0166 | 0.00 | 0.21 | 9 | 15 | 783 |
| | 1C090207S | 06-0166 | 1.66 | 0.00 | **46** | 18 | 694 |
| | 1C090208S | 06-0166 | 0.00 | 0.00 | 0 | 11 | 871 |
| | 1C090209S | 06-0166 | 0.00 | 0.00 | 7 | 4 | 746 |
| | 1C090210S | 06-0166 | 0.00 | 0.34 | 0 | 11 | 812 |
| | 1C090211S | 06-0166 | 0.00 | 0.00 | 0 | 11 | 709 |
| | 1C090212S | 06-0166 | 1.81 | 1.53 | 7 | 22 | 805 |
| | 1C090213S | 06-0166 | 0.00 | 0.00 | 0 | 11 | 812 |
| | 1C090214S | 06-0166 | 0.00 | 0.00 | 0 | 26 | 908 |
| | 1C090215S | 06-0166 | 0.00 | 2.84 | 0 | 18 | 812 |
| | 1C090216S | 06-0166 | 0.00 | 0.00 | 0 | 11 | 886 |
| | 1C090217S | 06-0166 | 0.00 | 0.47 | 0 | 18 | 901 |
| | 1C090218S | 06-0166 | **3.60** | 0.01 | 0 | **26** | 709 |
| | 1C090219S | 06-0166 | 0.00 | 1.67 | 6 | 18 | 915 |
| | 1C090220S | 06-0166 | 0.00 | 0.48 | 7 | 22 | **1107** |
| | 1C090221S | 06-0166 | 0.00 | 0.00 | 3 | 0 | 805 |

D20/84

Attachment D
Mound T - Building
Survey Unit 1C-09
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-09-01 Judgemental (17 samples each) | 1c090107W | 05-1345 | 1.66 | 0.00 | **2** | 15 | 672 |
| | 1c090107W | 05-1345 | 1.66 | 0.00 | 2 | 15 | 672 |
| | 1C090101PR1 | 06-0323 | 0.00 | 0.00 | 0 | 26 | 1255 |
| | 1C090101PR2 | 06-0323 | 0.00 | **2.78** | 0 | 0 | 1086 |
| | 1C090101PR3 | 06-0323 | 0.00 | 0.00 | 0 | 4 | 1077 |
| | 1C090101PR4 | 06-0323 | 0.00 | 2.71 | 2 | 34 | 880 |
| | 1C090101PR5 | 06-0323 | **1.73** | 0.38 | 0 | 11 | 1058 |
| | 1C090101J | 06-0167 | 1.72 | 0.29 | 2 | 27 | 945 |
| | 1C090102J | 06-0167 | 0.00 | 0.00 | 0 | 31 | 993 |
| | 1C090103J | 06-0167 | 0.00 | 0.00 | 0 | 23 | **1704** |
| | 1C090104J | 06-0167 | 0.00 | 0.00 | 0 | 31 | 1441 |
| | 1C090105J | 06-0167 | 0.00 | 2.41 | 0 | **43** | 1548 |
| | 1C090106J | 06-0167 | 1.54 | 0.01 | 0 | 39 | 1344 |
| | 1C090107J | 06-0167 | 0.00 | 0.20 | 0 | 15 | 1032 |
| | 1C090108J | 06-0167 | 0.00 | 0.00 | 0 | 35 | 1013 |
| | 1C090109J | 06-0167 | 0.00 | 0.00 | 1 | 12 | 1120 |
| | 1C090110J | 06-0167 | 0.00 | 0.00 | 0 | 23 | 876 |
| 1C-09-02 Judgemental (10 samples each) | 1C090201J | 06-0167 | **1.93** | 0.23 | **32** | 27 | 945 |
| | 1C090202J | 06-0167 | 0.00 | 0.00 | 1 | 4 | **2668** |
| | 1C090203J | 06-0167 | 0.00 | 0.04 | 0 | 15 | 2113 |
| | 1C090204J | 06-0167 | 0.00 | 0.21 | 4 | 27 | 2318 |
| | 1C090205J | 06-0167 | 0.00 | 0.00 | 2 | 12 | 1490 |
| | 1C090206J | 06-0167 | 0.00 | 1.60 | 3 | **31** | 1217 |
| | 1C090207J | 06-0167 | 0.00 | 0.04 | 0 | 19 | 1100 |
| | 1C090208J | 06-0167 | 0.00 | 0.00 | 0 | 4 | 799 |
| | 1C090209J | 06-0167 | 0.00 | 0.00 | 0 | 12 | 2142 |
| | 1C090210J | 06-0167 | 0.00 | **1.60** | 0 | 31 | 1149 |

D21/84

Attachment D
Mound T - Building
Survey Unit 1C-09
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-09 Drains, Vents, and Utilities (12 samples each) | 1C090101D | 06-0164 | 0.00 | 0.47 | 2 | 4 | 1003 |
| | 1C090201V | 06-0164 | 0.00 | 0.00 | 0 | 8 | 740 |
| | 1C090201U | 06-0164 | 0.00 | 1.67 | 100 | 31 | 1149 |
| | 1C090202U | 06-0164 | 0.00 | 0.00 | 40 | 23 | 1139 |
| | 1C090203U | 06-0164 | 1.52 | **4.58** | 105 | 35 | 1256 |
| | 1C090204U | 06-0164 | 0.00 | 1.32 | 4 | 23 | 1178 |
| | 1C090205U | 06-0164 | **1.66** | 0.00 | 270 | 35 | 1295 |
| | 1C090206U | 06-0164 | 1.61 | 1.39 | 258 | 39 | 1266 |
| | 1C090207U | 06-0164 | 0.00 | 0.00 | **345** | 12 | 1470 |
| | 1C090208U | 06-0164 | 0.00 | 2.43 | 76 | 35 | 1246 |
| | 1C090209U | 06-0164 | 0.00 | 0.20 | 185 | **50** | **1490** |
| | 1C090210U | 06-0164 | 0.00 | 0.00 | 2 | 23 | 964 |
| 1C-09 RESRAD (13 samples each) | 4801R | 06-0087 | 0.00 | 0.00 | 2 | 44 | 1092 |
| | 4802R | 06-0087 | 1.61 | 2.50 | 0 | 11 | 1186 |
| | 4805R | 06-0087 | 0.00 | 0.04 | **4** | 29 | 1027 |
| | 4806R | 06-0087 | 0.00 | 1.32 | 0 | 26 | 822 |
| | 4809R | 06-0087 | 0.00 | 2.78 | 0 | 18 | 1485 |
| | 4810R | 06-0087 | 1.41 | 0.00 | 0 | 18 | 1204 |
| | 4813R | 06-0087 | 0.00 | 1.54 | 0 | 15 | 1092 |
| | 4814R | 06-0087 | 0.00 | 0.39 | 1 | 15 | 952 |
| | 4817R | 06-0087 | 0.00 | 0.00 | 1 | 7 | 1008 |
| | 4818R | 06-0087 | 0.00 | **3.84** | 3 | 15 | 896 |
| | 4828R | 06-0091 | 0.00 | 0.00 | 0 | 54 | 2551 |
| | 4829R | 06-0091 | **1.69** | 0.00 | 3 | **310** | 15698 |
| | 4830R | 06-0091 | 0.00 | 1.59 | 0 | 174 | **39186** |

| | |
|---|---|
| **T Building rooms** | Room 44, parts of Rooms 48, and 50, Corridor 49 and Corridor 51 |
| **MARSSIM classification** | Class 1 |
| **Historical use** | These areas were used for polonium processing area. Corridor 49 was used as an access and egress route The walls have been removed between rooms 40, 41, 43-48, Corridor 49, room 50, and Corridor 51 in the center bay section known as the cap have been removed. It is one large room sometimes referred to as the cap and/or Room 48. This covers the second most western portion of the cap (base area equals 100 $m^2$). See page D56 for layout. SYS-PRS 339 (Sump 9), SYS-PRS 229 (Sump 10), and SYS-PRS 230 (Sump 11) were high-risk sumps located in SU# 1C-10 and were taken out of service in the 70s and later the sumps and their steel liners were removed from the building. |

**Survey description summary**

| | |
|---|---|
| **gamma scan:** | sump - 100% |
| **alpha and beta scan:** | floor – 100% |
| | walls below 2 meters - 100% |
| | walls above 2 meters – 25% |
| | ceiling - approx. 1 meter area scanned around each static measurement |
| **static measurements:** | 20 each static locations measurements on floor and walls below 2 meters |
| | 22 each static location measurements on ceiling and walls above 2 meters |
| | 35 each judgmental location measurements on floor and walls below 2 meters |
| | 10 each judgmental location measurements on ceiling and walls above 2 meters |
| | 6 each judgmental location measurements on drains, vents, and utilities |
| | 10 each judgmental location measurements in the holes that previously held the sumps and their steel liners |

36 direct alpha and beta measurements were taken on the floor in SU# 1C-10 for RESRAD-BUILD

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the elevated areas in SU# 1C-10.

**volumetric samples:** random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm composite sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario, the activity found in the surface to 15 cm composite sample is again assumed to be representative of the contamination levels to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

Composite samples from surface to 15 cm drill depths and 15 cm to 30 cm drill depths were collected to determine the extent of contamination.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

## Survey results summary

**gamma scan:** no activity significantly above natural background detected

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page D59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

## Treatment of elevated*** measurements

One elevated beta measurement at location 1C100110W was found on the base of north wall of SU# 1C-10 (RSDS MT-05-1356) and one elevated beta measurement at location 1C100112W was found approximately 3' up the north wall of SU# 1C-10 (RSDS MT-05-1357). The areas were remediated by removing approximately 2 inches of concrete with a rotary scabbler less than $1m^2$ each. A post remediation survey was conducted on RSDS MT-06-0321. The maximum fixed beta reading 1C100110WPR2 was 1953 dpm/$100cm^2$. The maximum fixed beta reading 1C100112WPR2 was 4204 dpm/$100cm^2$. No further action was required.

Five elevated measurements, 1C100101T, 1C100102T, 1C100103T, 1C100104T, and 1C100105T, were detected in the area that had been previously been excavated that held a drainpipe on RSDSS MT-05-1358. The decision was made not to remediate since this is part of the cap as it will be dose modeled.

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 15000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

Multiple elevated measurements were detected floor and sump pits in SU# 1C-10, which exceed the $DCGL_{EMC}$ for gross beta. The decision was made to not to remediate since this is part of the cap and will be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is conservatively estimated. See pages D57 – D58 for dose model evaluations.

**Conclusion** Survey unit meets the release criteria.

Attachment D

Mound - T Building **Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339**

Data Analysis Worksheet

| 1C10-01 (20 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.41 | 0.64 | 1 | 26 | 1997 |
| StDev | 0.74 | 1.02 | 2 | 16 | 1281 |
| Max | 1.81 | 2.92 | 5 | 56 | 6763 |

| 1C10-02 (22 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.16 | 0.68 | 46 | 18 | 1268 |
| StDev | 0.51 | 0.81 | 116 | 10 | 168 |
| Max | 1.74 | 2.79 | 524 | 38 | 1619 |

| 1C10-01 Judgemental (35 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.29 | 1.11 | 2 | 234 | 8144 |
| StDev | 0.77 | 1.46 | 4 | 713 | 14666 |
| Max | 3.59 | 5.43 | 21 | 3232 | 50131 |

| 1C10-02 Judgemental (10 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.48 | 4 | 17 | 1228 |
| StDev | 0.00 | 0.93 | 4 | 11 | 313 |
| Max | 0.00 | 2.67 | 11 | 43 | 1928 |

| 1C10 Drains, Vents, and Utilities (6 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.90 | 17 | 22 | 1354 |
| StDev | 0.00 | 1.17 | 25 | 11 | 530 |
| Max | 0.00 | 2.89 | 54 | 35 | 2396 |

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Attachment D

Mound - T Building **Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339**

Data Analysis Worksheet

| 1C10 Statistical Data Points (42 samples) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 42 | 42 | 42 | 42 | 42 |
| Average | 0.28 | 0.66 | 25 | 22 | 1615 |
| StDev | 0.63 | 0.90 | 86 | 13 | 954 |
| Max | 1.81 | 2.92 | 524 | 56 | 6763 |

| SYS-PRS 229 (10 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.53 | 2.95 | 46 | 58 | 7310 |
| StDev | 1.24 | 2.13 | 41 | 29 | 4212 |
| Max | 3.77 | 7.16 | 141 | 111 | 15050 |

| SYS-PRS 230 (10 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.68 | 1.31 | 4 | 48 | 4701 |
| StDev | 0.89 | 1.00 | 7 | 24 | 2101 |
| Max | 1.93 | 2.97 | 19 | 104 | 9275 |

| SYS-PRS 339 (10 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 1.47 | 3.13 | 1 | 45 | 14922 |
| StDev | 1.73 | 2.22 | 2 | 21 | 14069 |
| Max | 4.13 | 6.22 | 7 | 80 | 41734 |

| RESRAD (36 samples each) | | | | | |
|---|---|---|---|---|---|
| | Removable | | | Direct* | |
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.31 | 0.97 | 1 | 328 | 15366 |
| StDev | 0.65 | 1.21 | 1 | 810 | 27201 |
| Max | 1.72 | 4.29 | 4 | 3748 | 132866 |

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Attachment D
Mound T - Building
Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C10-01 (20 samples each) | 1C100101S | 06-0180 | 0.00 | 0.00 | 0 | 38 | 1811 |
| | 1C100102S | 06-0180 | 1.61 | 0.00 | 0 | 38 | 2673 |
| | 1C100103S | 06-0180 | 0.00 | **2.92** | 1 | 34 | 2203 |
| | 1C100104S | 06-0180 | 0.00 | 0.00 | 1 | 30 | 2491 |
| | 1C100105S | 06-0180 | 0.00 | 0.00 | **5** | **56** | 1590 |
| | 1C100106S | 06-0180 | 0.00 | 0.00 | 0 | 49 | 2088 |
| | 1C100107S | 06-0180 | 0.00 | 2.84 | 0 | 30 | 3496 |
| | 1C100108S | 06-0180 | 1.61 | 0.20 | 5 | 53 | 1638 |
| | 1C100109S | 06-0180 | 0.00 | 0.29 | 1 | 26 | 1494 |
| | 1C100110S | 06-0180 | 0.00 | 0.39 | 0 | 30 | 1820 |
| | 1C100111S | 06-0180 | 1.72 | 0.00 | 0 | 23 | **6763** |
| | 1C100112S | 06-0180 | 0.00 | 0.20 | 0 | 8 | 1581 |
| | 1C100113S | 06-0180 | 0.00 | 0.00 | 3 | 15 | 1150 |
| | 1C100114S | 06-0180 | 0.00 | 1.51 | 2 | 8 | 1207 |
| | 1C100115S | 06-0180 | 0.00 | 0.00 | 0 | 0 | 1025 |
| | 1C100116S | 06-0180 | **1.81** | 0.32 | 0 | 26 | 968 |
| | 1C100117S | 06-0180 | 1.52 | 0.00 | 0 | 26 | 1197 |
| | 1C100118S | 06-0180 | 0.00 | 2.43 | 5 | 19 | 1408 |
| | 1C100119S | 06-0180 | 0.00 | 0.00 | 2 | 8 | 1906 |
| | 1C100120S | 06-0180 | 0.00 | 1.60 | 3 | 11 | 1427 |
| 1C10-02 (22 samples each) | 1C100201S | 06-0180 | 0.00 | **2.79** | 0 | 15 | 1341 |
| | 1C100202S | 06-0180 | **1.74** | 1.43 | 7 | 8 | 1485 |
| | 1C100203S | 06-0180 | 1.72 | 0.00 | 0 | 11 | 1466 |
| | 1C100204S | 06-0180 | 0.00 | 1.37 | 92 | 30 | 1418 |
| | 1C100205S | 06-0180 | 0.00 | 0.00 | 1 | 15 | 1360 |
| | 1C100206S | 06-0180 | 0.00 | 1.51 | 55 | 26 | 1399 |
| | 1C100207S | 06-0180 | 0.00 | 1.67 | 113 | 23 | 1245 |
| | 1C100208S | 06-0180 | 0.00 | 0.00 | 2 | 23 | 1312 |
| | 1C100209S | 06-0180 | 0.00 | 1.23 | 0 | 26 | 1130 |
| | 1C100210S | 06-0180 | 0.00 | 0.21 | 0 | 8 | 1130 |
| | 1C100211S | 06-0180 | 0.00 | 0.20 | **524** | 11 | 1293 |
| | 1C100212S | 06-0180 | 0.00 | 0.40 | 0 | 26 | 1456 |
| | 1C100213S | 06-0180 | 0.00 | 1.54 | 8 | 11 | 1130 |
| | 1C100214S | 06-0180 | 0.00 | 0.00 | 168 | 19 | 1169 |
| | 1C100215S | 06-0180 | 0.00 | 0.18 | 0 | 8 | 1102 |
| | 1C100216S | 06-0180 | 0.00 | 0.20 | 0 | **38** | 891 |
| | 1C100217S | 06-0180 | 0.00 | 0.00 | 0 | 4 | 1217 |
| | 1C100218S | 06-0180 | 0.00 | 0.00 | 27 | 30 | 1130 |
| | 1C100219S | 06-0180 | 0.00 | 0.41 | 5 | 8 | 1159 |
| | 1C100220S | 06-0180 | 0.00 | 1.69 | 14 | 34 | **1619** |
| | 1C100221S | 06-0180 | 0.00 | 0.04 | 0 | 8 | 1312 |
| | 1C100222S | 06-0180 | 0.00 | 0.21 | 3 | 15 | 1121 |

Attachment D
Mound T - Building
Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-10-01 Judgemental (65 samples each) | 1C100101W | 05-1356 | 0.00 | 1.78 | 0 | 4 | 644 |
| | 1C100102W | 05-1356 | 0.00 | 2.67 | 4 | 7 | 635 |
| | 1C100103W | 05-1356 | 0.00 | 0.00 | 0 | 18 | 1083 |
| | 1C100104W | 05-1356 | 0.00 | 1.69 | 0 | 11 | 822 |
| | 1C100105W | 05-1356 | 0.00 | 0.00 | 3 | 18 | 831 |
| | 1C100106W | 05-1356 | 1.54 | 0.00 | **21** | 15 | 1167 |
| | 1C100107W | 05-1356 | 0.00 | 0.00 | 13 | 11 | 906 |
| | 1C100108W | 05-1356 | 0.00 | 0.00 | 4 | 11 | 663 |
| | 1C100109W | 05-1356 | 0.00 | 0.26 | 1 | 29 | 2726 |
| | 1C100111W | 05-1357 | 0.00 | 0.00 | 1 | 11 | 1111 |
| | 1C100113W | 05-1357 | 0.00 | **5.43** | 0 | 29 | 850 |
| | 1C100114W | 05-1357 | 0.00 | 0.00 | 9 | 15 | 635 |
| | 1C100101T | 05-1358 | 0.00 | 1.78 | 0 | 43 | 14957 |
| | 1C100102T | 05-1358 | 0.00 | 2.67 | 0 | 25 | 22969 |
| | 1C100103T | 05-1358 | 0.00 | 1.67 | 0 | 40 | 42829 |
| | 1C100104T | 05-1358 | 0.00 | 0.48 | 0 | 25 | 6274 |
| | 1C100105T | 05-1358 | 0.00 | 0.04 | 1 | 25 | 18273 |
| | 1C100106T | 05-1358 | 1.54 | 1.12 | 0 | 51 | 2901 |
| | 1C100101F | 05-1359 | 0.00 | 0.47 | 0 | 2338 | **50131** |
| | 1C100102F | 05-1359 | **3.59** | 2.34 | 0 | **3232** | 41382 |
| | 1C100103F | 05-1359 | 0.00 | 0.00 | 0 | 1814 | 48730 |
| | 1C100101J | 06-0172 | 0.00 | 3.08 | 0 | 46 | 1636 |
| | 1C100102J | 06-0172 | 0.00 | 3.83 | 0 | 23 | 1431 |
| | 1C100103J | 06-0172 | 0.00 | 0.00 | 0 | 4 | 886 |
| | 1C100104J | 06-0172 | 0.00 | 0.00 | 0 | 27 | 1490 |
| | 1C100105J | 06-0172 | 0.00 | 0.04 | 3 | 31 | 1987 |
| | 1C100106J | 06-0172 | 1.53 | 4.46 | 0 | 19 | 1519 |
| | 1C100107J | 06-0172 | 0.00 | 0.00 | 3 | 12 | 1198 |
| | 1C100108J | 06-0172 | 0.00 | 0.00 | 0 | 35 | 1724 |
| | 1C100109J | 06-0172 | 0.00 | 1.78 | 2 | 27 | 1071 |
| | 1C100110J | 06-0172 | 0.00 | 0.00 | 0 | 23 | 1753 |
| | 1C100110WPR1 | 06-0321 | 0.00 | 0.00 | 4 | 23 | 1953 |
| | 1C100110WPR2 | 06-0321 | 1.79 | 0.00 | 0 | 30 | 1760 |
| | 1C100112WPR1 | 06-0321 | 0.00 | 1.55 | 1 | 42 | 1905 |
| | 1C100112WPR2 | 06-0321 | 0.00 | 1.78 | 0 | 87 | 4204 |
| 1C-10-02 Judgemental (10 samples each) | 1C100201J | 06-0172 | **0.00** | 0.00 | 0 | 12 | 1022 |
| | 1C100202J | 06-0172 | 0.00 | 1.69 | 3 | **43** | 1558 |
| | 1C100203J | 06-0172 | 0.00 | 0.04 | 6 | 15 | 1402 |
| | 1C100204J | 06-0172 | 0.00 | 0.00 | **11** | 8 | **1928** |
| | 1C100205J | 06-0172 | 0.00 | 0.00 | 7 | 23 | 1032 |
| | 1C100206J | 06-0172 | 0.00 | 0.40 | 0 | 19 | 1022 |
| | 1C100207J | 06-0172 | 0.00 | 0.00 | 0 | 12 | 1139 |
| | 1C100208J | 06-0172 | 0.00 | **2.67** | 8 | 4 | 1013 |
| | 1C100209J | 06-0172 | 0.00 | 0.00 | 5 | 19 | 1208 |
| | 1C100210J | 06-0172 | 0.00 | 0.00 | 1 | 15 | 954 |

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Attachment D
Mound T - Building
Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C10 Drains Vents and Utilities (6 samples each) | 1C100101D | 06-0171 | **0.00** | 1.78 | 0 | **35** | **2396** |
| | 1C100201D | 06-0171 | 0.00 | 0.41 | 43 | 27 | 1276 |
| | 1C100201U | 06-0171 | 0.00 | 0.34 | **54** | 12 | 1315 |
| | 1C100201V | 06-0171 | 0.00 | 0.00 | 0 | 19 | 1003 |
| | 1C100202U | 06-0171 | 0.00 | **2.89** | 0 | 31 | 1169 |
| | 1C100202V | 06-0171 | 0.00 | 0.00 | 2 | 8 | 964 |
| SYS-PRS 229 (10 samples each) | PRS2290101J | 06-0467 | 1.57 | **7.16** | **141** | **111** | **15050** |
| | PRS2290102J | 06-0467 | 0.00 | 3.82 | 18 | 31 | 4113 |
| | PRS2290103J | 06-0467 | 0.00 | 2.91 | 36 | 99 | 12776 |
| | PRS2290104J | 06-0467 | 0.00 | 5.43 | 27 | 50 | 8420 |
| | PRS2290105J | 06-0467 | 0.00 | 1.11 | 73 | 23 | 7685 |
| | PRS2290106J | 06-0467 | 0.00 | 0.48 | 66 | 61 | 4626 |
| | PRS2290107J | 06-0467 | 0.00 | 2.97 | 55 | 80 | 9969 |
| | PRS2290108J | 06-0467 | 0.00 | 0.45 | 44 | 42 | 3707 |
| | PRS2290109J | 06-0467 | **3.77** | 2.49 | 3 | 46 | 3600 |
| | PRS2290110J | 06-0467 | 0.00 | 2.70 | 0 | 42 | 3155 |
| SYS-PRS 230 (10 samples each) | PRS2300101J | 06-0464 | 1.58 | 2.41 | 8 | 30 | 2046 |
| | PRS2300102J | 06-0464 | 1.69 | 1.39 | **19** | 45 | 2677 |
| | PRS2300103J | 06-0464 | 0.00 | 1.59 | 0 | 52 | 4437 |
| | PRS2300104J | 06-0464 | 0.00 | 0.00 | 0 | 26 | 5670 |
| | PRS2300105J | 06-0464 | 0.00 | 0.00 | 2 | 41 | 3385 |
| | PRS2300106J | 06-0464 | 0.00 | 1.63 | 0 | 52 | 3261 |
| | PRS2300107J | 06-0464 | 0.00 | **2.97** | 1 | 15 | **9275** |
| | PRS2300108J | 06-0464 | 1.64 | 1.43 | 14 | **104** | 4953 |
| | PRS2300109J | 06-0464 | 0.00 | 1.53 | 0 | 60 | 6349 |
| | PRS2300110J | 06-0464 | **1.93** | 0.17 | 0 | 56 | 4953 |
| SYS-PRS 339 (10 samples each) | PRS3390101J | 06-0483 | 3.42 | 3.39 | **7** | 50 | 3794 |
| | PRS3390102J | 06-0483 | 0.00 | 1.59 | 0 | 38 | 3329 |
| | PRS3390103J | 06-0483 | 0.00 | 0.00 | 0 | 19 | 14247 |
| | PRS3390104J | 06-0483 | 0.00 | 3.04 | 0 | 53 | **41734** |
| | PRS3390105J | 06-0483 | 1.73 | 3.46 | 3 | **80** | 32230 |
| | PRS3390106J | 06-0483 | 0.00 | **6.22** | 0 | 61 | 28233 |
| | PRS3390107J | 06-0483 | **4.13** | 5.18 | 0 | 11 | 4297 |
| | PRS3390108J | 06-0483 | 1.64 | 5.96 | 4 | 38 | 3901 |
| | PRS3390109J | 06-0483 | 3.77 | 2.49 | 0 | 34 | 5904 |
| | PRS3390110J | 06-0483 | 0.00 | 0.00 | 0 | 61 | 11547 |

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Attachment D
Mound T - Building
Survey Unit 1C-10, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| RESRAD (36 samples each) | 4821R | 06-0091 | **1.72** | 0.29 | 0 | 1123 | 50959 |
| | 4802R | 06-0087 | 1.61 | 2.50 | 0 | 11 | 1186 |
| | 4803R | 06-0087 | 0.00 | 0.41 | 0 | 11 | 1475 |
| | 4804R | 06-0087 | 0.00 | 0.48 | 0 | 22 | 1867 |
| | 4805R | 06-0087 | 0.00 | 0.04 | 4 | 29 | 1027 |
| | 4806R | 06-0087 | 0.00 | 1.32 | 0 | 26 | 822 |
| | 4807R | 06-0087 | 0.00 | 1.52 | 0 | 33 | 1214 |
| | 4808R | 06-0087 | 0.00 | 0.00 | 1 | 22 | 2138 |
| | 4809R | 06-0087 | 0.00 | 2.71 | 0 | 18 | 1485 |
| | 4810R | 06-0087 | 1.41 | 0.00 | 0 | 18 | 1204 |
| | 4811R | 06-0087 | 0.00 | 0.00 | 0 | 18 | 6592 |
| | 4812R | 06-0087 | 0.00 | 0.00 | 0 | 22 | 4416 |
| | 4813R | 06-0087 | 0.00 | 1.54 | 0 | 15 | 1092 |
| | 4814R | 06-0087 | 0.00 | 0.39 | 1 | 15 | 952 |
| | 4815R | 06-0087 | 0.00 | 2.66 | 0 | 62 | 1176 |
| | 4816R | 06-0087 | 0.00 | 0.00 | 0 | 26 | 2418 |
| | 4817R | 06-0087 | 0.00 | 0.00 | 1 | 7 | 1008 |
| | 4818R | 06-0087 | 0.00 | 3.84 | 3 | 15 | 896 |
| | 4819R | 06-0087 | 0.00 | 1.49 | 0 | 44 | 5770 |
| | 4820R | 06-0087 | 0.00 | 0.00 | 0 | 18 | 1167 |
| | 4821R | 06-0091 | 1.72 | 0.29 | 0 | 1123 | 50959 |
| | 4822R | 06-0091 | 0.00 | 0.00 | 1 | **3748** | 55565 |
| | 4823R | 06-0091 | 0.00 | 1.67 | 0 | 2839 | **132866** |
| | 4824R | 06-0091 | 0.00 | 0.00 | 3 | 46 | 28065 |
| | 4825R | 06-0091 | 1.52 | 2.20 | 0 | 19 | 67864 |
| | 4826R | 06-0091 | 0.00 | 1.32 | 0 | 163 | 22388 |
| | 4827R | 06-0091 | 1.66 | 0.00 | 0 | 46 | 11656 |
| | 4828R | 06-0091 | 0.00 | 0.00 | 0 | 54 | 2551 |
| | 4829R | 06-0091 | 1.69 | 0.00 | 3 | 310 | 15698 |
| | 4830R | 06-0091 | 0.00 | 1.59 | 0 | 174 | 39186 |
| | 1C10W0001 | 06-0316 | 0.00 | 2.71 | 0 | 31 | 1850 |
| | 1C10W0002 | 06-0316 | 0.00 | 0.00 | 0 | 15 | 7966 |
| | 1C10W0003 | 06-0316 | 0.00 | 0.00 | 0 | 35 | 1724 |
| | 1C10E10 | 06-0329 | 0.00 | 0.00 | 0 | 213 | 2882 |
| | 1C10W10 | 06-0330 | 0.00 | 1.63 | 0 | 31 | 2265 |
| | 1C10E0113R | 06-0427 | 0.00 | **4.29** | 3 | 1418 | 20807 |

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| | |
|---|---|
| **T Building rooms** | Room 57 |
| **MARSSIM classification** | Class 1 |
| **Historical use** | Room 57 was part of the polonium processing area. Residual bulk contamination remains in the concrete floor. The contaminants of concern (COCs) are Ag-108m, Bi-207, Bi-210m, Co-60, Cs-137 and Sr-90. |

**Survey description summary**

**alpha and beta scan:** floor – 100%

walls below 2 meters - 100%

walls above 2 meters – 100%

ceiling - approx. 1 meter area scanned around each static measurement

**static measurements:** 21 each static locations measurements on floor and walls below 2 meters

20 each static location measurements on ceiling and walls above 2 meters

58 each judgmental location measurements on floor and walls below 2 meters

37 each judgmental location measurements on ceiling and walls above 2 meters

8 each judgmental location measurements on drains, vents, and

30 direct alpha and beta measurements were taken on the floor in Room 57 for RESRAD-Build

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the 6 elevated areas in Room 57.

**volumetric samples:** Random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm composite sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario, the activity found in the surface to 15 cm composite sample is again assumed to be representative of the contamination levels to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

<u>Survey results summary</u>

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page 59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

**Treatment of elevated*** measurements**

Twenty-two elevated beta measurements were found on the walls in Room 57 and three elevated beta measurements were found on the floor on RSDS MT-06-0111:

- locations 1C110101I, 1C110102I, 1C110103I, and 1C1101014I were located on the east wall which was grit blasted, and
- locations 1C110105I, 1C110106I, 1C110107I, 1C110108I, 1C110109I, 1C110110I, 1C110111I, 1C110114I, 1C110118I, 1C110119I, 1C110120I, and 1C110123I were located on the north wall which was grit blasted, and
- location 1C110125I was located on the west wall which was grit blasted, and
- locations 1C110126I, 1C110127I, 1C110128I, 1C110129I, and 1C110131I were located on the south wall which was grit blasted.
- locations 1C110132I, 1C110133I, and 1C110134I were located on the floor.

The walls were remediated by grit blasting. In some cases additional grit blasting occurred. If the second grit-blasting attempt did not remediate the area, then additional surfaces of the wall were removed by saw cutting, rotary scabbling, and/or removing sections of the wall. The largest area cut out was an eight foot by one foot section of the south wall. A post remediation survey that consisted of 100% scan of the walls was conducted on RSDS MT-06-0412. Four elevated areas were detected at locations 1C110104I, 1C110106I, 1C110107I, and 1C110109I:

- locations 1C110106I and 1C110107I were located on the two remaining small pieces of the east wall.
- location 1C110109 was located approximately 8ft up on the north wall. A follow-up survey (RSDS MT-06-0414) was conducted within a contiguous $1m^2$ area that included the original spot. The maximum measurement was 11,919 dpm/$100cm^2$. The average of these 10 measurements was 4319 dpm/$100cm^2$ beta.
- location 1C110904I was on the north wall. A follow-up survey (RSDS MT-06-0414) was conducted within a contiguous $1m^2$ area that included the original spot. The maximum measurement was 16,438 dpm/$100cm^2$ beta. Additional concrete was removed by grit blasting a $2^{nd}$ time. On the post remediation survey RSDS MT-06-0557 the maximum beta reading was 1012 dpm/$100cm^2$.
- locations 1C110132I, 1C110133I, and 1C110134I were located on the floor and no follow-up was done since the whole floor is known to be volumetrically contaminated.

Follow surveys to elevated wall locations identified on RSDSs MT-06-0111 and MT-06-0412 were conducted on RSDSs MT-06-0593 andMT-06-0594. All follow-up measurements were less than 5000 dpm/ 100 $cm^2$ alpha and less than 5000 dpm/ 100 $cm^2$ beta. No further action was required on walls.

*T-Bldg. Survey Unit # 1C-11

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 15000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

Multiple elevated measurements were detected on the floor in SU# 1C-11, which exceed the $DCGL_{EMC}$ for gross beta. After several unsuccessful remediation attempts the decision was made that volumetric contamination existed. The SU would be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is conservatively estimated. See pages D57 – D58 for dose model evaluations.

**Conclusion** Survey units meet the release criteria.

Attachment D

Mound - T Building **Survey Unit 1C-11**

Data Analysis Worksheet

| 1C-11-01 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.19 | 0.40 | 1 | 32 | 1745 |
| StDev | 0.59 | 0.90 | 2 | 12 | 709 |
| Max | 2.01 | 3.89 | 6 | 53 | 4326 |

| 1C-11-02 (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.70 | 2 | 25 | 1354 |
| StDev | 0.00 | 0.91 | 4 | 11 | 98 |
| Max | 0.00 | 3.04 | 13 | 41 | 1492 |

| 1C-11-01 Judgemental (58 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.31 | 0.53 | 2 | 44 | 3887 |
| StDev | 0.69 | 1.19 | 5 | 62 | 6567 |
| Max | 2.01 | 6.59 | 27 | 391 | 45438 |

| 1C-11-02 Judgemental (37 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.64 | 0 | 66 | 2646 |
| StDev | 0.00 | 1.12 | 1 | 44 | 1704 |
| Max | 0.00 | 2.97 | 2 | 179 | 8415 |

| 1C-11 Drains, Vents, and Utilities (8 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.80 | 1.39 | 83 | 12 | 1239 |
| StDev | 0.87 | 2.49 | 184 | 10 | 193 |
| Max | 1.77 | 7.23 | 532 | 26 | 1558 |

| 1C-11 Statistical Data Points (41 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 41 | 41 | 40 | 41 | 41 |
| Average | 0.10 | 0.54 | 1 | 29 | 1554 |
| StDev | 0.43 | 0.90 | 3 | 12 | 543 |
| Max | 2.01 | 3.89 | 13 | 53 | 4326 |

| 1C-11 RESRAD (30 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | ³H (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.17 | 0.80 | 2 | 47 | 3056 |
| StDev | 0.53 | 1.31 | 3 | 24 | 2749 |
| Max | 1.90 | 5.28 | 11 | 103 | 11136 |

Attachment DMound T - Bldg
Survey Unit 1C-11
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-11-01 (21 samples each) | 1C110101S | 06-0542 | 0.00 | 0.00 | 1 | 23 | 1674 |
| | 1C110102S | 06-0542 | 0.00 | 0.36 | 0 | 34 | 2797 |
| | 1C110103S | 06-0542 | **2.01** | 0.00 | 0 | 27 | 1655 |
| | 1C110104S | 06-0542 | 1.90 | 0.00 | 0 | 50 | 1636 |
| | 1C110105S | 06-0542 | 0.00 | 0.25 | 0 | 27 | 1442 |
| | 1C110106S | 06-0542 | 0.00 | 0.00 | 0 | **53** | **4326** |
| | 1C110107S | 06-0542 | 0.00 | 0.00 | 0 | 50 | 1278 |
| | 1C110108S | 06-0542 | 0.00 | 0.00 | 0 | 27 | 1491 |
| | 1C110109S | 06-0542 | 0.00 | 1.11 | 0 | 53 | 1607 |
| | 1C110110S | 06-0542 | 0.00 | 0.00 | 0 | 23 | 1355 |
| | 1C110111S | 06-0542 | 0.00 | 0.45 | 0 | 19 | 1336 |
| | 1C110112S | 06-0542 | 0.00 | 1.58 | 0 | 23 | 1423 |
| | 1C110113S | 06-0542 | 0.00 | 0.00 | 0 | 11 | 1403 |
| | 1C110114S | 06-0542 | 0.00 | **3.89** | 1 | 19 | 1626 |
| | 1C110115S | 06-0542 | 0.00 | 0.00 | 0 | 42 | 1403 |
| | 1C110116S | 06-0542 | 0.00 | 0.00 | 5 | 34 | 1626 |
| | 1C110117S | 06-0542 | 0.00 | 0.00 | 3 | 27 | 1432 |
| | 1C110118S | 06-0542 | 0.00 | 0.00 | 0 | 34 | 1278 |
| | 1C110119S | 06-0542 | 0.00 | 0.00 | **6** | 46 | 2652 |
| | 1C110120S | 06-0542 | 0.00 | 0.45 | 0 | 23 | 1626 |
| | 1C110121S | 06-0542 | 0.00 | 0.28 | 0 | 23 | 1587 |
| 1C-11-02 (20 samples each) | 1C110201S | 06-0528 | **0.00** | 1.44 | 6 | 22 | 1348 |
| | 1C110202S | 06-0528 | 0.00 | 0.48 | 0 | 34 | 1138 |
| | 1C110203S | 06-0528 | 0.00 | 1.59 | 3 | 30 | 1348 |
| | 1C110204S | 06-0528 | 0.00 | 0.00 | 0 | 26 | 1358 |
| | 1C110205S | 06-0528 | 0.00 | 0.00 | 0 | 11 | 1453 |
| | 1C110206S | 06-0528 | 0.00 | 0.00 | 0 | 15 | 1300 |
| | 1C110207S | 06-0528 | 0.00 | 0.27 | **13** | **41** | 1339 |
| | 1C110208S | 06-0528 | 0.00 | 1.85 | 0 | 19 | 1492 |
| | 1C110209S | 06-0528 | 0.00 | 1.44 | 5 | 26 | 1386 |
| | 1C110210S | 06-0528 | 0.00 | 0.00 | 0 | 15 | 1272 |
| | 1C110211S | 06-0528 | 0.00 | 0.27 | | 37 | 1434 |
| | 1C110212S | 06-0528 | 0.00 | 0.00 | 2 | 30 | 1224 |
| | 1C110213S | 06-0528 | 0.00 | 1.44 | 1 | 22 | 1224 |
| | 1C110214S | 06-0528 | 0.00 | 0.00 | 7 | 19 | **1492** |
| | 1C110215S | 06-0528 | 0.00 | 0.00 | 1 | 37 | 1453 |
| | 1C110216S | 06-0528 | 0.00 | **3.04** | 0 | 41 | 1358 |
| | 1C110217S | 06-0528 | 0.00 | 0.25 | 0 | 11 | 1444 |
| | 1C110218S | 06-0528 | 0.00 | 0.00 | 5 | 41 | 1444 |
| | 1C110219S | 06-0528 | 0.00 | 0.00 | 0 | 19 | 1320 |
| | 1C110220S | 06-0528 | 0.00 | 1.85 | 0 | 11 | 1253 |

n/a Not Required

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Attachment DMound T - Bldg
Survey Unit 1C-11
Data Analysis Worksheet

1C-11-01 Judgemental (58 samples each)

| Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|
| | | a | b | H | a | b |
| 1C110101I | 06-0412 | 0.00 | 0.25 | 2 | 15 | 3998 |
| 1C110102I | 06-0412 | 0.00 | 0.00 | 3 | 31 | 3362 |
| 1C110103I | 06-0412 | 0.00 | 1.59 | 2 | 8 | 1508 |
| 1C110104I | 06-0412 | 1.68 | 0.45 | 2 | 99 | 8250 |
| 1C110105I | 06-0412 | 0.00 | 1.11 | 9 | 11 | 2917 |
| 1C110106I | 06-0412 | 0.00 | 1.63 | 4 | 230 | 16954 |
| 1C110107I | 06-0412 | **2.01** | **6.59** | 11 | 27 | 11875 |
| 1C110108I | 06-0412 | 0.00 | 2.71 | 0 | 107 | 4034 |
| 1C110109I | 06-0412 | 0.00 | 0.00 | 0 | 149 | **45438** |
| 1C110104A | 06-0414 | 0.00 | 0.00 | 3 | 128 | 8316 |
| 1C110104B | 06-0414 | n/a | n/a | n/a | 31 | 2970 |
| 1C110104C | 06-0414 | n/a | n/a | n/a | 70 | 3778 |
| 1C110104D | 06-0414 | n/a | n/a | n/a | 27 | 2863 |
| 1C110104E | 06-0414 | n/a | n/a | n/a | 15 | 1548 |
| 1C110104F | 06-0414 | n/a | n/a | n/a | 35 | 1948 |
| 1C110104G | 06-0414 | n/a | n/a | n/a | 43 | 1188 |
| 1C110104H | 06-0414 | n/a | n/a | n/a | 35 | 1519 |
| 1C110104I | 06-0414 | n/a | n/a | n/a | 66 | 2425 |
| 1C110107A | 06-0414 | 0.00 | 0.00 | 4 | 23 | 11919 |
| 1C110107B | 06-0414 | n/a | n/a | n/a | 19 | 1519 |
| 1C110107C | 06-0414 | n/a | n/a | n/a | 19 | 1724 |
| 1C110107D | 06-0414 | n/a | n/a | n/a | 23 | 1860 |
| 1C110107E | 06-0414 | n/a | n/a | n/a | 19 | 1938 |
| 1C110107F | 06-0414 | n/a | n/a | n/a | 35 | 3616 |
| 1C110107G | 06-0414 | n/a | n/a | n/a | 31 | 2201 |
| 1C110107H | 06-0414 | n/a | n/a | n/a | 15 | 2629 |
| 1C110107I | 06-0414 | n/a | n/a | n/a | 12 | 3905 |
| 1C110104J | 06-0414 | n/a | n/a | n/a | 151 | 7479 |
| 1C110104K | 06-0414 | n/a | n/a | n/a | **391** | 16438 |
| SYS020104PR | 06-0557 | 0.00 | 1.52 | **27** | 30 | 1012 |
| 1C110101J | 06-0544 | 0.00 | 0.00 | **2** | 26 | 1740 |
| 1C110102J | 06-0544 | 0.00 | **0.36** | 0 | 7 | 1434 |
| 1C110103J | 06-0544 | 0.00 | 0.30 | 0 | 22 | 1836 |
| 1C110104J | 06-0544 | 0.00 | 0.00 | 0 | 30 | 2993 |
| 1C110105J | 06-0544 | 0.00 | 0.00 | 0 | **37** | 1396 |
| 1C110106J | 06-0544 | 0.00 | 0.00 | 0 | 26 | 1329 |
| 1C110107J | 06-0544 | 0.00 | 0.00 | 0 | 37 | 1396 |
| 1C110108J | 06-0544 | 0.00 | 0.00 | 0 | 22 | 1396 |
| 1C110109J | 06-0544 | **1.73** | 0.00 | 0 | 37 | 1616 |
| 1C110110J | 06-0544 | 0.00 | 0.00 | 0 | 30 | 1559 |
| 1C110106PR | 06-0593 | 0.00 | 0.00 | 3 | 19 | 1200 |
| 1C110109PR | 06-0593 | 0.00 | 0.00 | 0 | 38 | 1488 |
| 1C110101PR | 06-0593 | 0.00 | 0.00 | 0 | 19 | 2679 |
| 1C110102PR | 06-0593 | 0.00 | 1.78 | 1 | 42 | 3829 |
| 1C110119PR | 06-0593 | 0.00 | 0.25 | 0 | 19 | 913 |
| 1C110120PR | 06-0593 | 0.00 | 0.00 | 0 | 19 | 1091 |
| 1C110123PR | 06-0593 | 1.91 | 0.05 | 0 | 19 | 1706 |
| 1C110125PR | 06-0593 | 1.68 | 0.00 | 0 | 15 | 1815 |
| 1C110106PR | 06-0594 | 0.00 | 1.68 | 0 | 15 | 1418 |

n/a Not Required

D29/84

Attachment DMound T - Bldg
Survey Unit 1C-11
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-11-01 Judgemental (58 samples each) - continued | 1C110108PR | 06-0594 | 1.79 | 0.20 | 0 | 19 | 1475 |
| | 1C110109PR | 06-0594 | 0.00 | 0.00 | 2 | 19 | 1240 |
| | 1C110110PR | 06-0594 | 0.00 | 0.00 | 0 | 26 | 1165 |
| | 1C110111PR | 06-0594 | 0.00 | 0.25 | 0 | 37 | 1071 |
| | 1C110126PR | 06-0594 | 0.00 | 0.00 | 0 | 34 | 1456 |
| | 1C110127PR | 06-0594 | 0.00 | 0.00 | 2 | 19 | 1465 |
| | 1C110128PR | 06-0594 | 1.68 | 0.00 | 0 | 7 | 1277 |
| | 1C110129PR | 06-0594 | 0.00 | 0.28 | 0 | 22 | 1202 |
| | 1C110131PR | 06-0594 | 0.00 | 0.32 | 0 | 7 | 1118 |
| 1C-11-02 Judgemental (37 samples each) | 1C110201J | 06-0544 | **0.00** | **2.97** | 0 | 146 | 4743 |
| | 1C110202J | 06-0544 | 0.00 | 0.00 | 0 | 30 | 1463 |
| | 1C110203J | 06-0544 | 0.00 | 2.78 | **2** | 15 | 1434 |
| | 1C110204J | 06-0544 | 0.00 | 0.00 | 0 | 60 | 1339 |
| | 1C110205J | 06-0544 | 0.00 | 0.00 | 0 | 22 | 1386 |
| | 1C110206J | 06-0544 | 0.00 | 0.40 | 0 | 30 | 1511 |
| | 1C110207J | 06-0544 | 0.00 | 0.38 | 0 | 37 | 1406 |
| | 1C110208J | 06-0544 | 0.00 | 0.00 | 0 | 41 | 2687 |
| | 1C110209J | 06-0544 | 0.00 | 0.00 | 0 | 30 | 1300 |
| | 1C110210J | 06-0544 | 0.00 | 0.00 | 0 | 45 | 1645 |
| | 1C110201JA | 06-0549 | 0.00 | 0.48 | 1 | 168 | 5632 |
| | 1C110201JB | 06-0549 | n/a | n/a | n/a | 153 | 4284 |
| | 1C110201JC | 06-0549 | n/a | n/a | n/a | 75 | 3442 |
| | 1C110201JD | 06-0549 | n/a | n/a | n/a | 123 | 6101 |
| | 1C110201JE | 06-0549 | n/a | n/a | n/a | 67 | 5383 |
| | 1C110201JF | 06-0549 | n/a | n/a | n/a | 108 | **8415** |
| | 1C110201JG | 06-0549 | n/a | n/a | n/a | **179** | 5154 |
| | 1C110201JH | 06-0549 | n/a | n/a | n/a | 63 | 2859 |
| | 1C110201JI | 06-0549 | n/a | n/a | n/a | 86 | 2266 |
| | 1C110201JJ | 06-0549 | n/a | n/a | n/a | 104 | 2658 |
| | 1C110201JK | 06-0549 | n/a | n/a | n/a | 134 | 4255 |
| | 1C110201JL | 06-0549 | n/a | n/a | n/a | 34 | 1358 |
| | 1C110201JM | 06-0549 | n/a | n/a | n/a | 26 | 1339 |
| | 1C110201JN | 06-0549 | n/a | n/a | n/a | 34 | 1406 |
| | 1C110201JO | 06-0549 | n/a | n/a | n/a | 26 | 1750 |
| | 1C110201JP | 06-0549 | n/a | n/a | n/a | 52 | 1473 |
| | 1C110201JQ | 06-0549 | n/a | n/a | n/a | 52 | 1893 |
| | 1C110201JR | 06-0549 | n/a | n/a | n/a | 52 | 1740 |
| | 1C110201JS | 06-0549 | n/a | n/a | n/a | 34 | 1367 |
| | 1C110201JT | 06-0549 | n/a | n/a | n/a | 41 | 1635 |
| | 1C110201JU | 06-0549 | n/a | n/a | n/a | 56 | 2457 |
| | 1C110201JV | 06-0549 | n/a | n/a | n/a | 63 | 2295 |
| | 1C110201JW | 06-0549 | n/a | n/a | n/a | 52 | 2142 |
| | 1C110201JX | 06-0549 | n/a | n/a | n/a | 75 | 1932 |
| | 1C110201JY | 06-0549 | n/a | n/a | n/a | 41 | 1817 |
| | 1C110201JZ | 06-0549 | n/a | n/a | n/a | 60 | 2544 |
| | 1C110201J0 | 06-0549 | n/a | n/a | n/a | 34 | 1386 |

n/a Not Required

Attachment DMound T - Bldg
Survey Unit 1C-11
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-11 Drains, Vents, and Utilities (8 samples each) | 1C110201U | 05-616 | 1.74 | 0.00 | 9 | 22 | 1384 |
| | 1C110202U | 05-616 | 1.56 | **7.23** | 23 | 7 | 1256 |
| | 1C110203U | 05-616 | **1.77** | 1.80 | 1 | **26** | 1201 |
| | 1C110201V | 05-616 | 0.00 | 0.32 | 96 | 4 | 990 |
| | 1C110204U | 05-616 | 0.00 | 1.73 | 0 | 15 | **1558** |
| | 1C110205U | 05-616 | 1.33 | 0.00 | **532** | 0 | 1173 |
| | 1C110206U | 05-616 | 0.00 | 0.00 | 5 | 18 | 1347 |
| | 1C110207U | 05-616 | 0.00 | 0.00 | 0 | 4 | 999 |
| 1C-11 RESRAD (30 samples each) | 1C110101S | 06-0526 | 0.00 | 0.00 | 0 | 38 | 1169 |
| | 1C110102S | 06-0526 | 0.00 | 0.00 | 10 | 98 | 2746 |
| | 1C110103S | 06-0526 | 0.00 | 1.55 | 6 | 49 | 1227 |
| | 1C110104S | 06-0526 | 0.00 | 0.00 | 0 | 23 | 1217 |
| | 1C110105S | 06-0526 | 0.00 | 0.00 | 5 | 49 | 1091 |
| | 1C110106S | 06-0526 | 0.00 | 0.48 | 0 | 57 | 3759 |
| | 1C110107S | 06-0526 | 0.00 | 0.66 | 4 | 34 | 1169 |
| | 1C110108S | 06-0526 | 0.00 | 0.00 | 2 | 53 | 1052 |
| | 1C110109S | 06-0526 | 0.00 | 1.51 | 1 | 23 | 1032 |
| | 1C110110E | 06-0526 | 0.00 | 0.00 | 4 | 26 | 1071 |
| | 1C110111E | 06-0526 | 0.00 | 0.00 | 3 | 38 | 6232 |
| | 1C110112E | 06-0526 | 0.00 | 0.28 | 3 | 72 | 7080 |
| | 1C110113E | 06-0526 | **1.90** | 0.17 | 3 | 57 | 4363 |
| | 1C110114E | 06-0526 | 1.68 | 0.10 | 0 | 30 | 1655 |
| | 1C110115E | 06-0526 | 0.00 | 1.57 | 0 | 26 | 1237 |
| | 1C110101S | 06-0115 | 0.00 | 0.00 | 0 | 53 | 2120 |
| | 1C110102S | 06-0115 | 0.00 | 0.34 | 1 | 31 | 3852 |
| | 1C110103S | 06-0115 | 0.00 | 0.00 | **11** | 23 | 1712 |
| | 1C110104S | 06-0115 | 0.00 | 0.48 | 0 | 27 | 1702 |
| | 1C110105S | 06-0115 | 0.00 | 0.00 | 0 | 27 | 1420 |
| | 1C110106S | 06-0115 | 0.00 | 0.00 | 0 | **103** | 6565 |
| | 1C110107S | 06-0115 | 1.66 | 0.00 | 6 | 31 | 1556 |
| | 1C110108S | 06-0115 | 0.00 | 1.60 | 0 | 42 | 1459 |
| | 1C110109S | 06-0115 | 0.00 | 3.94 | 1 | 23 | 1887 |
| | 1C110110S | 06-0115 | 0.00 | 0.00 | 1 | 27 | 1770 |
| | 1C110111S | 06-0115 | 0.00 | 2.70 | 1 | 92 | 9639 |
| | 1C110112S | 06-0115 | 0.00 | 0.62 | 0 | 80 | **11136** |
| | 1C110113S | 06-0115 | 0.00 | **5.28** | 1 | 27 | 7061 |
| | 1C110114S | 06-0115 | 0.00 | 0.00 | 6 | 72 | 2033 |
| | 1C110115S | 06-0115 | 0.00 | 2.66 | 0 | 72 | 1683 |

n/a Not Required

| | |
|---|---|
| **T Building rooms** | Room 58 |
| **MARSSIM classification** | Class 1 |
| **Historical use** | Room 58 was part of the polonium processing area. Residual bulk contamination remains in the concrete floor. The contaminants of concern (COCs) are Ag-108m, Bi-207, Bi-210m, Co-60, Cs-137 and Sr-90. |

**Survey description summary**

**alpha and beta scan:** floor – 100%

walls below 2 meters - 100%

walls above 2 meters – 25%

ceiling - approx. 1 meter area scanned around each static measurement

**static measurements:** 20 each static locations measurements on floor and walls below 2 meters

21 each static location measurements on ceiling and walls above 2 meters

10 each judgmental location measurements on floor and walls below 2 meters

10 each judgmental location measurements on ceiling and walls above 2 meters

10 each judgmental location measurements on drains, vents, and utilities

36 direct alpha and beta measurements were taken on the floor in Room 58 for RESRAD-Build

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the 8 elevated areas in Room 58.

**volumetric samples:** Random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm composite sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario, the activity found in the surface to 15 cm composite sample is again assumed to be representative of the contamination levels to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

## Survey results summary

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page 59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

**Treatment of elevated*** measurements**

Multiple elevated measurements were detected on the floor in SU# 1C-12, which exceed the $DCGL_{EMC}$ for gross beta. After several unsuccessful remediation attempts the decision was made that volumetric contamination existed. The SU would be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is conservatively estimated. See pages D57 – D58 for dose model evaluations.

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 $cm^2$, direct beta measurement exceeding 15000 dpm/100 $cm^2$, removable gross alpha exceeding 1000 dpm/100 $cm^2$, removable gross beta exceeding 1000 dpm/100 $cm^2$, or removable tritium exceeding 10,000 dpm/100 $cm^2$.

**Conclusion** Survey units meet the release criteria.

Attachment D

Mound - T Building **Survey Unit 1C-12**

Data Analysis Worksheet

| 1C-12-01 (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.27 | 3.10 | 16 | 44 | 2056 |
| StDev | 0.65 | 10.65 | 62 | 32 | 840 |
| Max | 1.95 | 48.00 | 279 | 147 | 3973 |

| 1C-12-02 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.26 | 0.62 | 76 | 27 | 1232 |
| StDev | 0.66 | 0.79 | 70 | 14 | 165 |
| Max | 2.02 | 2.63 | 265 | 57 | 1501 |

| 1C-12-01 Judgemental (10 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.40 | 1.25 | 21 | 39 | 1333 |
| StDev | 0.83 | 1.52 | 24 | 21 | 730 |
| Max | 2.01 | 4.11 | 76 | 72 | 2896 |

| 1C-12-02 Judgemental (10 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.34 | 1.04 | 142 | 26 | 1275 |
| StDev | 0.71 | 1.25 | 184 | 7 | 183 |
| Max | 1.71 | 3.92 | 634 | 34 | 1558 |

| 1C-12 Drains, Vents, and Utilities (9 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.79 | 23 | 17 | 1168 |
| StDev | 0.00 | 1.34 | 24 | 11 | 179 |
| Max | 0.00 | 3.84 | 70 | 45 | 1405 |

| 1C-12 Statistical Data Points (41 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 41 | 41 | 41 | 41 | 41 |
| Average | 0.26 | 1.83 | 47 | 35 | 1634 |
| StDev | 0.65 | 7.47 | 72 | 26 | 723 |
| Max | 2.02 | 48.00 | 279 | 147 | 3973 |

| 1C-12 RESRAD (36 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.61 | 1.63 | 2 | 126 | 4244 |
| StDev | 1.24 | 1.96 | 4 | 98 | 4038 |
| Max | 6.23 | 7.59 | 18 | 527 | 19106 |

D45184

Attachment D
Mound T - Building
Survey Unit 1C-12
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-12-01 (20 samples each) | 1C120101S | 06-0518 | **1.95** | 0.20 | 7 | 91 | 3396 |
| | 1C120102S | 06-0518 | 0.00 | 0.00 | 2 | 57 | 2107 |
| | 1C120103S | 06-0518 | 0.00 | 0.30 | 0 | 19 | 1635 |
| | 1C120104S | 06-0518 | 0.00 | 0.58 | 4 | 30 | 2030 |
| | 1C120105S | 06-0518 | 1.58 | 2.41 | 0 | **147** | **3973** |
| | 1C120106S | 06-0518 | 0.00 | 4.90 | 0 | 79 | 2713 |
| | 1C120107S | 06-0518 | 0.00 | 0.00 | **279** | 30 | 2030 |
| | 1C120108S | 06-0518 | 0.00 | 0.00 | 0 | 57 | 2001 |
| | 1C120109S | 06-0518 | 0.00 | 0.00 | 5 | 30 | 1693 |
| | 1C120110S | 06-0518 | 0.00 | **48.00** | 0 | 60 | 1972 |
| | 1C120111S | 06-0518 | 0.00 | 0.45 | 9 | 15 | 1241 |
| | 1C120112S | 06-0518 | 0.00 | 0.00 | 0 | 49 | 1443 |
| | 1C120113S | 06-0518 | 0.00 | 0.00 | 3 | 30 | 2039 |
| | 1C120114S | 06-0518 | 0.00 | 0.00 | 0 | 49 | 1203 |
| | 1C120115S | 06-0518 | 0.00 | 0.00 | 0 | 23 | 1318 |
| | 1C120116S | 06-0518 | 0.00 | 0.40 | 5 | 34 | 1308 |
| | 1C120117S | 06-0518 | 0.00 | 2.98 | 0 | 19 | 3963 |
| | 1C120118S | 06-0518 | 1.79 | 0.20 | 0 | 15 | 1799 |
| | 1C120119S | 06-0518 | 0.00 | 1.55 | 0 | 23 | 1962 |
| | 1C120120S | 06-0518 | 0.00 | 0.00 | 0 | 19 | 1289 |
| 1C-12-02 (21 samples each) | 1C120201S | 06-0518 | 0.00 | 0.25 | 91 | 19 | 1260 |
| | 1C120202S | 06-0518 | 0.00 | 1.59 | 82 | 53 | 1212 |
| | 1C120203S | 06-0518 | 0.00 | 0.27 | 72 | 23 | 1164 |
| | 1C120204S | 06-0518 | 0.00 | 0.00 | 62 | 15 | 1029 |
| | 1C120205S | 06-0518 | 0.00 | 0.00 | 45 | 19 | 1058 |
| | 1C120206S | 06-0518 | 0.00 | 0.00 | 57 | 26 | 1154 |
| | 1C120207S | 06-0518 | 0.00 | 1.71 | 18 | 38 | 1029 |
| | 1C120208S | 06-0518 | 0.00 | 0.45 | 6 | 45 | 808 |
| | 1C120209S | 06-0518 | 1.73 | **2.63** | 7 | 19 | 1183 |
| | 1C120210S | 06-0518 | 0.00 | 0.00 | 25 | 4 | 1337 |
| | 1C120211S | 06-0518 | 0.00 | 1.50 | 134 | 34 | 1405 |
| | 1C120212S | 06-0518 | 0.00 | 1.57 | 31 | **57** | 1443 |
| | 1C120213S | 06-0518 | 0.00 | 0.00 | 33 | 15 | 1260 |
| | 1C120214S | 06-0518 | 0.00 | 0.48 | 34 | 15 | 1328 |
| | 1C120215S | 06-0518 | 0.00 | 0.00 | 209 | 26 | 1337 |
| | 1C120216S | 06-0518 | 0.00 | 0.00 | 76 | 11 | **1501** |
| | 1C120217S | 06-0518 | 1.73 | 0.00 | **265** | 45 | 1077 |
| | 1C120218S | 06-0518 | 0.00 | 0.48 | 38 | 30 | 1328 |
| | 1C120219S | 06-0518 | **2.02** | 1.56 | 39 | 23 | 1308 |
| | 1C120220S | 06-0518 | 0.00 | 0.45 | 70 | 19 | 1279 |
| | 1C120221S | 06-0518 | 0.00 | 0.00 | 203 | 26 | 1376 |

Attachment D
Mound T - Building
Survey Unit 1C-12
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-12-01 Judgemental (10 samples each) | 1C120101J | 06-0506 | 1.95 | **4.11** | 0 | 57 | 1780 |
| | 1C120102J | 06-0506 | 0.00 | 0.00 | 0 | 64 | 165 |
| | 1C120103J | 06-0506 | **2.01** | 0.00 | 8 | 38 | **2896** |
| | 1C120104J | 06-0506 | 0.00 | 1.78 | 14 | **72** | 1722 |
| | 1C120105J | 06-0506 | 0.00 | 0.00 | 7 | 45 | 1664 |
| | 1C120106J | 06-0506 | 0.00 | 1.59 | 23 | 34 | 875 |
| | 1C120107J | 06-0506 | 0.00 | 0.27 | 16 | 11 | 1068 |
| | 1C120108J | 06-0506 | 0.00 | 0.66 | 16 | 34 | 991 |
| | 1C120109J | 06-0506 | 0.00 | 3.62 | **76** | 23 | 1068 |
| | 1C120110J | 06-0506 | 0.00 | 0.48 | 46 | 11 | 1097 |
| 1C-12-02 Judgemental (10 samples each) | 1C120201J | 06-0506 | 0.00 | 1.71 | 219 | 26 | 1270 |
| | 1C120202J | 06-0506 | 0.00 | 1.58 | **634** | **34** | 1087 |
| | 1C120203J | 06-0506 | 0.00 | 0.00 | 60 | 30 | 1318 |
| | 1C120204J | 06-0506 | 0.00 | 0.00 | 76 | 26 | 1029 |
| | 1C120205J | 06-0506 | 1.68 | 1.34 | 121 | 11 | 1481 |
| | 1C120206J | 06-0506 | **1.71** | 1.43 | 29 | 30 | 1414 |
| | 1C120207J | 06-0506 | 0.00 | 0.00 | 13 | 34 | **1558** |
| | 1C120208J | 06-0506 | 0.00 | **3.92** | 59 | 30 | 1356 |
| | 1C120209J | 06-0506 | 0.00 | 0.00 | 152 | 23 | 1183 |
| | 1C120210J | 06-0506 | 0.00 | 0.45 | 55 | 19 | 1058 |
| 1C-12 Drains, Vents, and Utilities (9 samples each) | 1C120101D | 06-0519 | **0.00** | 0.00 | 1 | 15 | **1405** |
| | 1C120102D | 06-0519 | 0.00 | 0.00 | 0 | **45** | 1299 |
| | 1C120201U | 06-0519 | 0.00 | 0.00 | 12 | 15 | 885 |
| | 1C120202U | 06-0519 | 0.00 | 0.00 | 21 | 11 | 1068 |
| | 1C120203U | 06-0519 | 0.00 | 0.00 | 47 | 15 | 1318 |
| | 1C120204U | 06-0519 | 0.00 | 0.00 | 42 | 19 | 1097 |
| | 1C120205U | 06-0519 | 0.00 | 1.71 | **70** | 15 | 1279 |
| | 1C120206U | 06-0519 | 0.00 | **3.84** | 12 | 8 | 1222 |
| | 1C120201V | 06-0519 | 0.00 | 1.53 | 4 | 11 | 943 |

D47/84

Attachment D
Mound T - Building
Survey Unit 1C-12
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-12 RESRAD (36 samples each) | 1C120101Y | 05-1195/05-1208 | 0.00 | 2.30 | 0 | 49 | 1397 |
| | 1C120102Y | 05-1195/05-1208 | 0.00 | 0.00 | 6 | 30 | 1469 |
| | 1C120103Y | 05-1195/05-1208 | 0.00 | 1.98 | 4 | 53 | 1370 |
| | 1C120104Y | 05-1195/05-1208 | 1.71 | 0.16 | **18** | 49 | 1678 |
| | 1C120105Y | 05-1195/05-1208 | 2.61 | 3.68 | 0 | 72 | 1714 |
| | 1C120106Y | 05-1195/05-1208 | 0.00 | 0.00 | 0 | 98 | 2730 |
| | 1C120107Y | 05-1195/05-1208 | **6.23** | **7.59** | 0 | 121 | 5098 |
| | 1C120108Y | 05-1195/05-1208 | 1.28 | 4.73 | 0 | 147 | 3447 |
| | 1C120109Y | 05-1195/05-1208 | 0.00 | 1.49 | 2 | 144 | 5288 |
| | 1C120110Y | 05-1195/05-1208 | 0.00 | 6.08 | 0 | 151 | 4227 |
| | 1C120111Y | 05-1195/05-1208 | 0.00 | 1.49 | 17 | 98 | 508 |
| | 1C120112Y | 05-1195/05-1208 | 0.00 | 0.62 | 0 | 136 | 3819 |
| | 1C120113Y | 05-1195/05-1208 | 1.75 | 1.39 | 0 | 223 | 15193 |
| | 1C120114Y | 05-1195/05-1208 | 0.00 | 2.77 | 0 | 181 | 13769 |
| | 1C120115Y | 05-1195/05-1208 | 1.72 | 1.26 | 1 | 174 | 9679 |
| | 1C120116Y | 05-1195/05-1208 | 0.00 | 4.88 | 0 | 257 | 4517 |
| | 1C120117Y | 05-1195/05-1208 | 0.00 | 0.00 | 2 | 102 | 2658 |
| | 1C120118Y | 05-1195/05-1208 | 1.57 | 0.26 | 0 | 132 | 3392 |
| | 1C120101R | 06-0397 | 0.00 | 0.00 | 0 | 23 | 1461 |
| | 1C120102R | 06-0397 | 1.79 | 1.36 | 0 | 38 | 1520 |
| | 1C120103R | 06-0397 | 0.00 | 2.81 | 0 | 11 | 1413 |
| | 1C120104R | 06-0397 | 0.00 | 0.00 | 8 | 27 | 1849 |
| | 1C120105R | 06-0397 | 0.00 | 2.62 | 0 | 38 | 1645 |
| | 1C120106R | 06-0397 | 0.00 | 0.00 | 0 | 107 | 4578 |
| | 1C120107R | 06-0397 | 0.00 | 4.24 | 0 | 99 | 4113 |
| | 1C120108R | 06-0397 | 0.00 | 0.66 | 0 | 286 | 5304 |
| | 1C120109R | 06-0397 | 0.00 | 3.62 | 0 | 103 | 5226 |
| | 1C120110R | 06-0397 | 0.00 | 0.48 | 1 | 46 | 2342 |
| | 1C120111R | 06-0397 | 0.00 | 0.00 | 0 | 156 | 3688 |
| | 1C120112R | 06-0397 | 0.00 | 1.58 | 8 | 156 | 2807 |
| | 1C120113R | 06-0397 | 0.00 | 0.28 | 0 | **527** | **19106** |
| | 1C120114R | 06-0397 | 0.00 | 0.32 | 0 | 141 | 2623 |
| | 1C120115R | 06-0397 | 0.00 | 0.00 | 0 | 172 | 3397 |
| | 1C120116R | 06-0397 | 1.71 | 0.00 | 0 | 259 | 3542 |
| | 1C120117R | 06-0397 | 1.73 | 0.00 | 2 | 61 | 2836 |
| | 1C120118R | 06-0397 | 0.00 | 0.00 | 0 | 65 | 3368 |

| | |
|---|---|
| **T Building rooms** | Room 59 |
| **MARSSIM classification** | Class 1 |
| **Historical use** | Room 59 was part of the polonium processing area. Residual bulk contamination remains in the concrete floor. The contaminants of concern (COCs) are Ag-108m, Bi-207, Bi-210m, Co-60, Cs-137 and Sr-90. |

**Survey description summary**

**alpha and beta scan:** floor – 100%

walls - 100%

ceiling - approx. 1 meter area scanned around each static measurement

**static measurements:** 21 each static locations measurements on floor and walls below 2 meters

20 each static location measurements on ceiling and walls above 2 meters

24 each judgmental location measurements on floor and walls below 2 meters

20 each judgmental location measurements on ceiling and walls above 2 meters

10 each judgmental location measurements on drains, vents, and

42 direct alpha and beta measurements were taken on the floor in Room 59 for RESRAD-Build

* Judgmental measurements are biased measurements in locations where, in the professional judgment of the surveyor, the potential for residual contamination exists.

**removable contamination measurements:** smears were taken at each static measurement location and each was assayed for gross alpha, gross beta, and tritium

**exposure rate measurement:** 1 taken from 1 meter above floor in center of each room and 1 measurement taken at contact and from 1 meter above the floor at each of the 7 elevated areas in Room 59.

**volumetric samples:** Random and biased concrete samples were collected from drilling 1" holes in the concrete floor and combining them into one composite sample to determine the average volumetric concentration for use in the RESRAD-Build dose models.

In the RESRAD-Build renovation scenario the activity found in the surface to 15 cm composite sample is assumed to represent the activity concentration (pCi/g) in the concrete to a depth of 15 cm.

In the RESRAD-Build occupancy scenario, the activity found in the surface to 15 cm composite sample is again assumed to be representative of the contamination levels to a depth of 15 cm. In this scenario, however, all of the activity is modeled as being on the surface.

Composite samples from surface to 15 cm drill depths and from 15 cm to 30 cm drill depths were collected to determine the extent of contamination.

**potential radiation dose building occupancy scenario:**
In this scenario, the worker was positioned in the center of the room at a distance of 1 meter above the contaminated floor. The exposure duration was 1 year.

**potential radiation dose building renovation scenario:**
In this scenario, the contaminated concrete floor was disturbed such that the worker is exposed to airborne radioactivity. The exposure duration in this scenario was 6 months.

## Survey results summary

**alpha and beta scan:** Areas above alarm set points** were identified. See discussion below.

**static measurements:** Areas above alarm set points** were identified. See discussion below.

** Instruments are set to alarm at 75% of the applicable guideline values for the most restrictive alpha emitter and most difficult to detect beta emitter.

**removable contamination measurements:** all smears were below applicable guideline values

**exposure rate measurement:** less than 20 μR/hr above natural background

**volumetric sample:** results are provided on page 59 in Attachment D

**potential radiation dose from building occupancy scenario:** 8.88 mrem/yr

**potential radiation dose from building renovation scenario:** 1.86 mrem/yr

**Treatment of elevated*** measurements**

Two elevated beta measurements located on the south wall in Room 59 were detected on RSDS MT-06-0022. The walls were remediated by grit blasting. In some cases additional grit blasting occurred. If the second grit-blasting attempt did not remediate the area, then additional surfaces of the wall were removed by saw cutting, rotary scabbling, and/or removing sections of the wall. The largest area cut out was an eight foot by eight foot section of the south wall. A post remediation survey was conducted on RSDS MT-06-0596. Both locations were still elevated. Since they are both located below the grade of where concrete will be poured no additional remediation was conducted. A follow-up survey at the locations directly above these areas was conducted on MT-06-0597. Both readings were below 5000 dpm/100cm$^2$ beta. No further action was required.

Multiple elevated measurements were detected floor and elevator pits in SU# 1C-21, which exceed the $DCGL_{EMC}$ for gross beta. After several unsuccessful remediation attempts the decision was made that volumetric contamination existed. The SU would be dose modeled. SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is overestimated. See pages D70- D82 for dose model evaluations.

*** defined as direct gross alpha measurement exceeding 5000 dpm/100 cm$^2$, direct beta measurement exceeding 15000 dpm/100 cm$^2$, removable gross alpha exceeding 1000 dpm/100 cm$^2$, removable gross beta exceeding 1000 dpm/100 cm$^2$, or removable tritium exceeding 10,000 dpm/100 cm$^2$.

**Conclusion** Survey unit meets the release criteria.

Attachment D

Mound - T Building **Survey Unit 1C- 21**

Data Analysis Worksheet

| 1C-21-01 (21 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.34 | 0.65 | 3 | 24 | 1571 |
| StDev | 0.72 | 0.87 | 4 | 15 | 807 |
| Max | 2.02 | 2.62 | 10 | 84 | 4985 |

| 1C-21-02 (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.10 | 0.92 | 12 | 23 | 1365 |
| StDev | 0.45 | 1.07 | 12 | 10 | 235 |
| Max | 2.01 | 3.82 | 43 | 46 | 1710 |

| 1C-21-01 Judgemental (24 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.36 | 0.63 | 7 | 28 | 3047 |
| StDev | 0.73 | 1.10 | 10 | 25 | 5958 |
| Max | 1.95 | 4.38 | 36 | 121 | 27354 |

| 1C-21-02 Judgemental (20 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.27 | 1.09 | 78 | 23 | 1599 |
| StDev | 0.66 | 1.53 | 103 | 13 | 372 |
| Max | 1.92 | 5.00 | 412 | 57 | 2117 |

| 1C-21 Drains, Vents, and Utilities (10 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.00 | 0.57 | 39 | 10 | 1414 |
| StDev | 0.00 | 0.62 | 30 | 5 | 194 |
| Max | 0.00 | 1.63 | 95 | 23 | 1655 |

| 1C-21 Statistical Data Points (41 samples) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Number | 41 | 41 | 41 | 41 | 41 |
| Average | 0.22 | 0.78 | 7 | 24 | 1470 |
| StDev | 0.61 | 0.97 | 10 | 13 | 603 |
| Max | 2.02 | 3.82 | 43 | 84 | 4985 |

| 1C-21 RESRAD (42 samples each) | Removable | | | Direct* | |
|---|---|---|---|---|---|
| | α (dpm/100 cm²) | β (dpm/100 cm²) | $^3H$ (dpm/100 cm²) | α (dpm/100 cm²) | β (dpm/100 cm²) |
| Average | 0.24 | 0.93 | 4 | 47 | 7730 |
| StDev | 0.72 | 1.39 | 6 | 56 | 20866 |
| Max | 3.60 | 5.77 | 27 | 341 | 101927 |

D52184

Attachment D
Mound T - Building
Survey Unit 1C-21
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-21-01 (21 samples each) | 1C210101S | 06-0394 | 0.00 | 0.38 | 0 | 11 | 1336 |
| | 1C210102S | 06-0394 | 0.00 | 0.36 | 6 | 38 | 1403 |
| | 1C210103S | 06-0394 | 0.00 | 1.55 | 0 | 19 | 1171 |
| | 1C210104S | 06-0394 | 0.00 | 0.00 | 2 | 19 | 1181 |
| | 1C210105S | 06-0394 | 0.00 | 0.00 | **10** | 19 | 1558 |
| | 1C210106S | 06-0394 | 1.69 | 2.50 | 10 | **84** | **4985** |
| | 1C210107S | 06-0394 | 0.00 | 0.27 | 0 | 23 | 1500 |
| | 1C210108S | 06-0394 | 0.00 | 0.66 | 5 | 27 | 1452 |
| | 1C210109S | 06-0394 | 1.73 | 0.00 | 1 | 19 | 1481 |
| | 1C210110S | 06-0394 | 0.00 | 0.00 | 2 | 23 | 1752 |
| | 1C210111S | 06-0394 | **2.02** | 0.30 | 0 | 27 | 1220 |
| | 1C210112S | 06-0394 | 0.00 | 0.00 | 4 | 23 | 1694 |
| | 1C210113S | 06-0394 | 0.00 | 0.00 | 9 | 27 | 1858 |
| | 1C210114S | 06-0394 | 0.00 | 0.00 | 1 | 27 | 1258 |
| | 1C210115S | 06-0394 | 0.00 | 1.50 | 3 | 23 | 1278 |
| | 1C210116S | 06-0394 | 1.71 | 1.43 | 10 | 11 | 1491 |
| | 1C210117S | 06-0394 | 0.00 | 0.00 | 0 | 31 | 1268 |
| | 1C210118S | 06-0394 | 0.00 | 0.00 | 1 | 11 | 1103 |
| | 1C210119S | 06-0394 | 0.00 | 0.30 | 0 | 19 | 1181 |
| | 1C210120S | 06-0394 | 0.00 | 1.78 | 5 | 8 | 1365 |
| | 1C210121S | 06-0394 | 0.00 | **2.62** | 0 | 23 | 1452 |
| 1C-21-02 (20 samples each) | 1C210216S | 06-0398 | 0.00 | 0.00 | 8 | 38 | 1288 |
| | 1C210209S | 06-0398 | 0.00 | 1.52 | **43** | 27 | 1690 |
| | 1C210215S | 06-0398 | **2.01** | 0.12 | 1 | 23 | 1569 |
| | 1C210217S | 06-0398 | 0.00 | 0.58 | 32 | 15 | 1217 |
| | 1C210204S | 06-0398 | 0.00 | 0.00 | 28 | 19 | 1378 |
| | 1C210214S | 06-0398 | 0.00 | **3.82** | 4 | 19 | 1247 |
| | 1C210208S | 06-0398 | 0.00 | 0.00 | 24 | 23 | 1117 |
| | 1C210218S | 06-0398 | 0.00 | 0.00 | 25 | 27 | 1026 |
| | 1C210203S | 06-0398 | 0.00 | 1.11 | 8 | 23 | 1006 |
| | 1C210213S | 06-0398 | 0.00 | 1.63 | 7 | 23 | 1117 |
| | 1C210207S | 06-0398 | 0.00 | 1.71 | 8 | 11 | 1086 |
| | 1C210219S | 06-0398 | 0.00 | 1.58 | 5 | **46** | 1147 |
| | 1C210202S | 06-0398 | 0.00 | 0.00 | 1 | 8 | 1418 |
| | 1C210212S | 06-0398 | 0.00 | 0.32 | 3 | 23 | 1619 |
| | 1C210206S | 06-0398 | 0.00 | 0.26 | 6 | 19 | **1710** |
| | 1C210220S | 06-0398 | 0.00 | 2.74 | 4 | 42 | 1408 |
| | 1C210201S | 06-0398 | 0.00 | 1.53 | 6 | 19 | 1469 |
| | 1C210211S | 06-0398 | 0.00 | 0.00 | 9 | 27 | 1619 |
| | 1C210205S | 06-0398 | 0.00 | 1.50 | 9 | 19 | 1509 |
| | 1C210210S | 06-0398 | 0.00 | 0.00 | 5 | 8 | 1660 |

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Attachment D
Mound T - Building
Survey Unit 1C-21
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-21-01 Judgemental (24 samples each) | 1C210101X | 05-1327 | 0.00 | 0.26 | 5 | 29 | 1111 |
| | 1C210102X | 05-1327 | 1.41 | 0.31 | 2 | 26 | 924 |
| | 1C210103X | 05-1327 | 0.00 | 0.00 | 1 | 84 | 2288 |
| | 1C210104X | 06-0020 | 0.00 | **4.38** | 29 | 22 | 813 |
| | 1C210105X | 06-0020 | 0.00 | 0.00 | 20 | 18 | 737 |
| | 1C210106X | 06-0020 | 1.93 | 1.49 | 26 | 11 | 680 |
| | 1C210107X | 06-0020 | 0.00 | 0.00 | 8 | 7 | 690 |
| | 1C210108X | 06-0020 | 0.00 | 0.04 | **36** | 18 | 557 |
| | 1C210109X | 06-0020 | 0.00 | 0.21 | 13 | 22 | 586 |
| | 1C210101J | 06-0413 | 0.00 | 0.38 | 10 | **121** | 2425 |
| | 1C210102J | 06-0413 | 0.00 | 0.00 | 1 | 38 | 1061 |
| | 1C210103J | 06-0413 | 0.00 | 0.30 | 0 | 8 | 1227 |
| | 1C210104J | 06-0413 | 0.00 | 0.00 | 0 | 34 | 954 |
| | 1C210105J | 06-0413 | 1.58 | 0.00 | 1 | 11 | 1139 |
| | 1C210106J | 06-0413 | 0.00 | 0.00 | 0 | 45 | 1071 |
| | 1C210107J | 06-0413 | 0.00 | 0.00 | 0 | 26 | 974 |
| | 1C210108J | 06-0413 | 0.00 | 1.85 | 0 | 30 | 1120 |
| | 1C210109J | 06-0413 | 0.00 | 0.00 | 0 | 19 | 1451 |
| | 1C210110J | 06-0413 | 0.00 | 2.78 | 5 | 30 | 1110 |
| | 1C210201J | 06-0401 | **1.95** | 0.20 | 0 | 19 | 1491 |
| | 1C210102E | 06-0596 | 0.00 | 1.52 | 7 | 15 | **27354** |
| | 1C210102E | 06-059 | 1.79 | 1.36 | 0 | 15 | 4256 |
| | 1C210101E | 06-0596 | 0.00 | 0.00 | 10 | 11 | 15055 |
| | 1C210101E | 06-0597 | 0.00 | 0.00 | 3 | 19 | 4061 |
| 1C-21-02 Judgemental (20 samples each) | 1C210201S | 05-0368 | 0.00 | 0.00 | 49 | 15 | 1672 |
| | 1C210202S | 05-0368 | 0.00 | 1.59 | 152 | 15 | 1817 |
| | 1C210203S | 05-0368 | 0.00 | 0.00 | 80 | 11 | 1690 |
| | 1C210204S | 05-0368 | 1.71 | 0.16 | 86 | 34 | 1744 |
| | 1C210205S | 05-0368 | 0.00 | 1.73 | 118 | 8 | 166 |
| | 1C210206S | 05-0368 | 0.00 | 0.00 | 223 | 11 | 1817 |
| | 1C210207S | 05-0368 | **1.92** | 2.74 | **412** | 27 | **2117** |
| | 1C210208S | 05-0368 | 0.00 | 1.56 | 96 | 23 | 1590 |
| | 1C210209S | 05-0368 | 0.00 | 0.00 | 79 | 8 | 1717 |
| | 1C210201J | 05-0369 | 0.00 | 0.00 | 72 | 4 | 1654 |
| | 1C210202J | 05-0369 | 1.74 | 0.00 | 177 | 11 | 1545 |
| | 1C210202J | 06-0401 | 0.00 | 2.68 | 0 | 26 | 1414 |
| | 1C210203J | 06-0401 | 0.00 | 0.00 | 2 | 30 | 1664 |
| | 1C210204J | 06-0401 | 0.00 | 0.00 | 4 | 19 | 1433 |
| | 1C210205J | 06-0401 | 0.00 | **5.00** | 2 | **57** | 1568 |
| | 1C210206J | 06-0401 | 0.00 | 1.59 | 0 | 26 | 1760 |
| | 1C210207J | 06-0401 | 0.00 | 4.24 | 4 | 34 | 1703 |
| | 1C210208J | 06-0401 | 0.00 | 0.00 | 1 | 34 | 1818 |
| | 1C210209J | 06-0401 | 0.00 | 0.00 | 1 | 30 | 1530 |
| | 1C210210J | 06-0401 | 0.00 | 0.48 | 4 | 30 | 1568 |

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Attachment D
Mound T - Building
Survey Unit 1C-21
Data Analysis Worksheet

| | Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|---|
| | | | a | b | H | a | b |
| 1C-21 Drains, Vents, and Utilities (10 samples each) | 1C210201U | 06-0400 | **0.00** | 0.38 | 7 | 8 | 1626 |
| | 1C210202U | 06-0400 | 0.00 | 1.52 | 3 | 12 | 1539 |
| | 1C210203U | 06-0400 | 0.00 | 0.30 | 45 | 8 | 1344 |
| | 1C210204U | 06-0400 | 0.00 | 0.00 | 69 | 8 | 1276 |
| | 1C210205U | 06-0400 | 0.00 | 0.25 | 56 | 4 | **1655** |
| | 1C210206U | 06-0400 | 0.00 | 0.48 | 53 | 12 | 1568 |
| | 1C210207U | 06-0400 | 0.00 | 0.00 | **95** | **23** | 1178 |
| | 1C210208U | 06-0400 | 0.00 | 0.00 | 13 | 8 | 1383 |
| | 1C210209U | 06-0400 | 0.00 | 1.11 | 16 | 8 | 1490 |
| | 1C210210U | 06-0400 | 0.00 | **1.63** | 37 | 8 | 1081 |

D54A/84

Attachment D
Mound T - Building
Survey Unit 1C-21
Data Analysis Worksheet

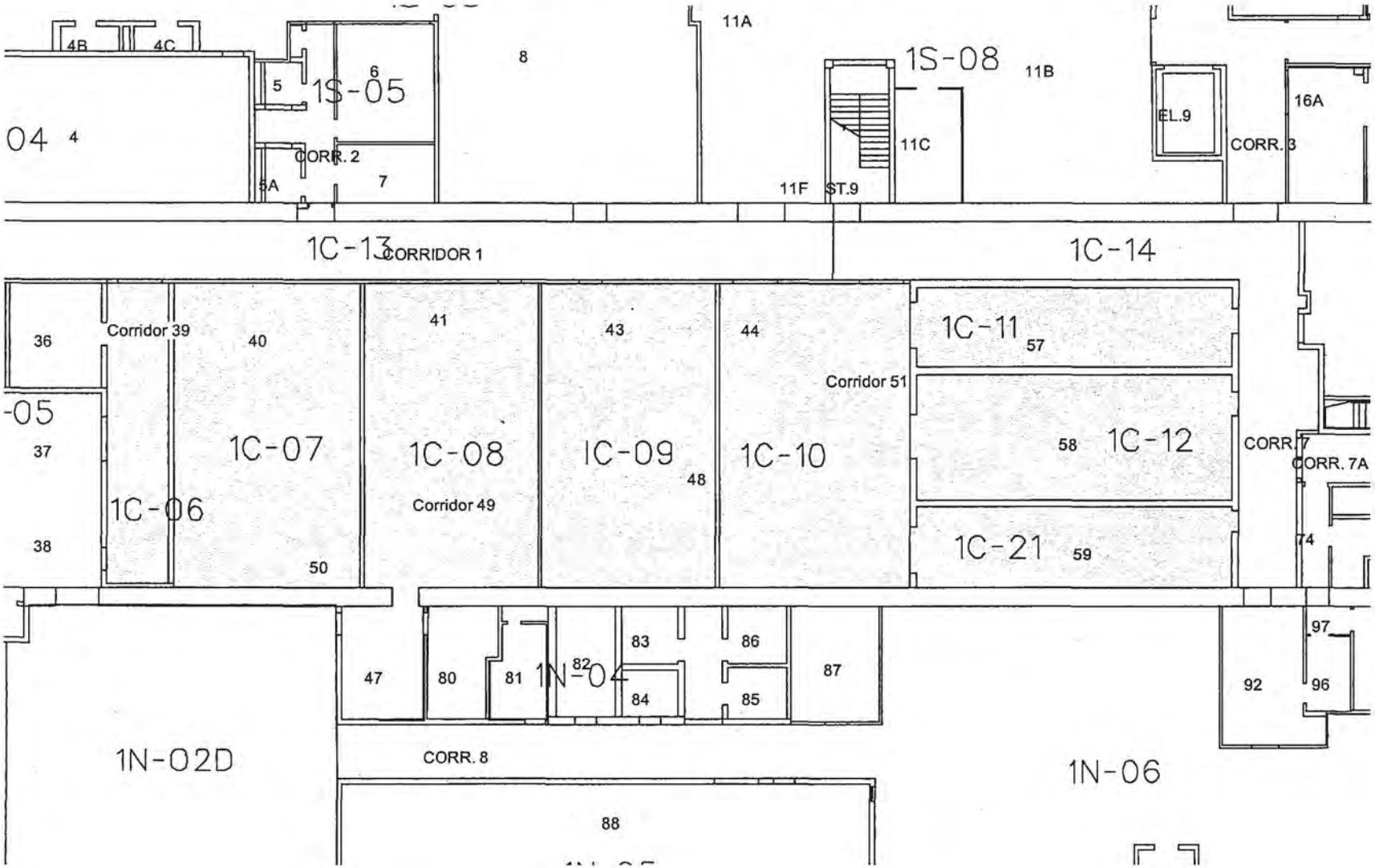
1C-21 RESRAD (42 samples each)

| Location | RSDS | Removable (dpm/100cm$^2$) | | | Direct (dpm/100cm$^2$) | |
|---|---|---|---|---|---|---|
| | | a | b | H | a | b |
| 1C210101Y | 05-1269 | 1.72 | 1.60 | 4 | 69 | 4818 |
| 1C210102Y | 05-1269 | 0.00 | 2.67 | 3 | 38 | 1509 |
| 1C210103Y | 05-1269 | 0.00 | 4.18 | 0 | 11 | 1298 |
| 1C210104Y | 05-1269 | 0.00 | 0.00 | 2 | 23 | 1267 |
| 1C210105Y | 05-1269 | 0.00 | 2.41 | 0 | 0 | 1630 |
| 1C210106Y | 05-1269 | 0.00 | 0.21 | 0 | 180 | 8540 |
| 1C210107Y | 05-1269 | 0.00 | 0.00 | 0 | 27 | 1680 |
| 1C210108Y | 05-1269 | 0.00 | 0.40 | 2 | 31 | 2303 |
| 1C210109Y | 05-1269 | 0.00 | 0.00 | 0 | 8 | 1368 |
| 1C210110Y | 05-1269 | 0.00 | 1.59 | 3 | 23 | 4899 |
| 1C210111Y | 05-1269 | 0.00 | 0.00 | 0 | 27 | 4305 |
| 1C210112Y | 05-1269 | 0.00 | 0.00 | 0 | 38 | 2364 |
| 1C210113Y | 05-1269 | 0.00 | 0.00 | 1 | 65 | 5542 |
| 1C210114Y | 05-1269 | 0.00 | 0.00 | 4 | 88 | **101927** |
| 1C210115Y | 05-1269 | 1.72 | 3.73 | 0 | **341** | 29211 |
| 1C210114Y | 06-0289 | 0.00 | 1.78 | 3 | 123 | 93517 |
| 1C21E1RES | 06-0289 | 0.00 | 0.34 | 2 | 15 | 1912 |
| 1C21E2RES | 06-0289 | 0.00 | 0.00 | 14 | 26 | 2859 |
| 1C21E3RES | 06-0289 | 0.00 | 0.48 | 4 | 34 | 1587 |
| 1C21E4RES | 06-0289 | 1.52 | 0.00 | 5 | 34 | 1386 |
| 1C21E5RES | 06-0289 | 0.00 | **5.77** | 14 | 15 | 1970 |
| 1C21E6RES | 06-0289 | 0.00 | 2.84 | 9 | 41 | 3079 |
| 1C21E7RES | 06-0289 | 0.00 | 0.00 | 10 | 15 | 1826 |
| 1C21E8RES | 06-0289 | 0.00 | 3.22 | 6 | 37 | 1568 |
| 1C21E9RES | 06-0289 | 0.00 | 0.00 | 0 | 67 | 3672 |
| 1C21E10RES | 06-0289 | 0.00 | 0.00 | 0 | 52 | 5575 |
| 1C21E11RES | 06-0289 | 0.00 | 0.47 | 0 | 67 | 765 |
| 1C21W1RES | 06-0294 | 0.00 | 0.00 | 0 | 22 | 1587 |
| 1C21W2RES | 06-0294 | **3.60** | 0.01 | 4 | 41 | 1348 |
| 1C21W3RES | 06-0294 | 0.00 | 1.67 | 11 | 34 | 1358 |
| 1C21W4RES | 06-0294 | 0.00 | 1.69 | 13 | 45 | 1205 |
| 1C21W5RES | 06-0294 | 0.00 | 0.00 | 10 | 30 | 1664 |
| 1C21W6RES | 06-0294 | 0.00 | 1.32 | 8 | 30 | 1348 |
| 1C21W7RES | 06-0294 | 0.00 | 0.00 | 0 | 26 | 1310 |
| 1C21W8RES | 06-0294 | 1.61 | 0.00 | 6 | 26 | 1482 |
| 1C21W9RES | 06-0294 | 0.00 | 0.71 | **27** | 30 | 1463 |
| 1C21W10RES | 06-0294 | 0.00 | 0.00 | 3 | 19 | 2018 |
| 1C21W11RES | 06-0294 | 0.00 | 0.00 | 1 | 49 | 2821 |
| 1C21W12RES | 06-0294 | 0.00 | 0.00 | 2 | 52 | 2238 |
| 1C21W13RES | 06-0294 | 0.00 | 0.00 | 0 | 30 | 1406 |
| 1C2110YRES | 06-0294 | 0.00 | 1.59 | 14 | 26 | 6091 |
| 1C2111YRES | 06-0294 | 0.00 | 0.18 | 2 | 22 | 4953 |

D55/84

# Map of Cap Area

Note: Corridor 39, Corridor 49,Corridor 51, and Rooms 40, 41, 43, 44, and 50 are now all one big room known as Room 48 or the "CAP"

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## RESRAD-Build Evaluation for Mound T Building - 1st floor "T-Cap" area

The "T-Cap" area of T-Building, which includes SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21, has residual volumetric contamination from the polonium work that ended in the early 1970s. The contaminants of concern are Ag-108m, Bi-207, Bi-210m, Co-60, Cs-137 and Sr-90. Volumetric concrete samples were assayed using gamma spectroscopy. Sr-90, which is non-detectable with gamma spec, is assumed to be present at an equal activity concentration as Cs-137. This is a conservative assumption, since both are long-lived fission products, which are produced and decay at similar rates. The $DCGL_w$ for these radionuclides is 5000 dpm/100 $cm^2$ and the $DCGL_{EMC}$ is 15,000 dpm/100 $cm^2$. Multiple elevated measurements were detected on the floor area, which exceed the $DCGL_{EMC}$ for gross beta. Samples were collected from the floor at 2.54 cm, 15 cm, and 30 cm depths to determine the extent of volumetric contamination. It was determined that volumetric contamination exists within the top 15 cm of the exposed concrete.

As stated in Appendix A of the Mound 2000, in the case of the presence of volumetric contamination the RESRAD-Build computer code can be used to determine the potential radiation dose to future building occupants. Doses were computed using both the building occupancy scenario (office worker) and the building renovation scenario (construction worker), as required in Appendix A of Mound 2000. Potential radiation dose to future workers was evaluated versus the established dose limit of 15 mrem/yr as stated in Appendix A of the Work Plan for Environmental Restoration of the DOE Mound Site, excluding naturally occurring radioactive materials (NORM). The RESRAD-Build computer code was used to assess potential radiation dose to future building occupants.

SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 are adjacent to each and share the same air space. They were modeled together as a single room using assumptions to ensure that the estimated dose to future occupants is overestimated. Reported doses for both the occupational and renovation scenarios are all-inclusive.

Contamination is non-uniform in the area. The areas of 1C-10 and 1C-21 are the most heavily contaminated areas. These areas were covered with a dyed concrete (rusty red color) with a nominal thickness of 11 inches. These areas will be clearly identified to prevent disturbance by any future occupants (deed restriction). The remainder of the area will have a restriction on the disposal of the floor and are identified with signs

In the RESRAD-Build model, two exposure sources are identified and modeled differently. Source 1 consists of 1C-10 and 1C-21. These areas were modeled as if the source was already shielded with concrete and there is zero potential for airborne contamination originating from these areas. Since the model was run, the area has been shielded. Source 2 is the remainder of the affected area (Corr. 39, 1C-07, 1C-08, 1C-09, 1C-11, and 1C-12). The receptor radiation dose includes direct (external) radiation from beneath Source 1 and from Source 2. It also includes internal radiation dose from Source 2 from potential ingestion and inhalation of contaminants originating from the contaminated floor. For the external dose calculations, the receptor is simultaneously positioned 1 meter above the centers of each source, i.e., the 2 sources are superimposed on top of one another. Although it is not physically possible for a receptor to spend of 100% of their time

above each source at the same time, this assumption will ensure that potential doses are overestimated.

The total floor area of the affected area is 588 $m^2$, with Source 1 area being 144 $m^2$ and Source 2 area being 444 $m^2$. The modeled room had a floor area of 588 $m^2$ and a ceiling height of 3.32 m. The height was selected such that the modeled volume was equivalent to the actual volume.

Two different scenarios were modeled: building occupancy scenario and renovation scenario. The input parameters and assumptions used in the RESRAD-Build computer model were reviewed and concurred upon by the regulators and are provided on pages D58A, D58B, and D58C. In the occupancy scenario the future occupant is assumed to work full-time for 1 year (2340 hours) in the area. In the renovation scenario, the contaminant release rate is elevated due to some construction activity and the exposure duration is only 1508 hours.

Multiple sampling events were conducted trying to isolate the areas of significant contamination, which would require concrete shielding. Composite samples were collected at statistically selected and at 20 % of the elevated locations (not to exceed a maximum of 10 per sampling event) by drilling 1" diameter holes into the concrete floor to a depth of 2.54 cm. The powder from these drillings was combined to form a single composite sample. Then composite samples were again collected right next to the original locations from the surface to a depth of 15 cm. Again the powder from these drillings was combined to form a single composite sample. At two areas of highest contamination, the northwest corner of SU# 1C-10 and SU# 1C-21, additional composite samples were collected at greater depths to determine the depth of contamination. The data used for this evaluation came from the average volumetric core sampling to a depth of 15 cm, which resulted in the highest amount of total activity. Data were reported in units of pCi/gram. Naturally occurring radioactive materials (NORM) in building materials (e.g. Th-228, Th-230, Th-232, Ra-226, and Pb-210) were not used in the dose model. Laboratory MDA values were used when COCs were reported at less than or equal to their MDA. Laboratory MDA values were not used when non-COCs were reported at less than or equal to the MDA. In the building occupancy scenario, contaminant levels were entered into the code in units of $dpm/m^2$. These inputs were generated by assuming that all contamination present to a depth of 15 cm is located on the surface and the density of concrete is 2.3 $g/cm^3$. See pages D59 for input values.

For example, if the volumetric measurement is 1 pCi/gram, the input for the building occupancy scenario is calculated as follows:

$$1\ pCi/g \times 10{,}000\ cm^2/m^2 \times 15\ cm \times 2.3\ g/cm^3 \times 2.22\ dpm/pCi = 765{,}900\ dpm/m^2$$

The RESRAD-Build computer code was used to assess potential radiation dose to future building occupants in the cap area. Doses were computed using both the building occupancy scenario (office worker) and the building renovation scenario (construction worker), as required in Appendix A of Mound 2000. Since the potential doses from the building occupancy scenario (8.88 mrem/yr), and the building renovation scenario (1.86

mrem/yr) were both below 15 mrem/yr, no further action was required. See pages D70 and D82 for dose results.

Calculations in the cap were done independently, without any consideration for additive dose contributions from the other areas. The significance of additive dose contributions from all areas to receptors in each area modeled with RESRAD-Build is captured on pages D83 – D84.

Conclusion: SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, and 1C-21 meet the release criteria.

**Parameters Used in the Building Occupancy Scenario**

| Parameter | Value used | Remarks |
|---|---|---|
| Number of rooms | 1 | Future airflow between T Building rooms is unknown. |
| Air exchange rate | 0.8 $hr^{-1}$ | RESRAD-Build default value based on studies of various residential and commercial buildings (Yu et al. 2003). |
| Exposure duration | 365.25 days | To match occupancy period in NUREG/CR-5512 building occupancy scenario (Beyeler et al. 1999). |
| Indoor fraction | 0.267 | To match 97.5 d/yr time in building in NUREG/CR-5512 (Beyeler et al. 1999). |
| Receptor location | X, Y, 1 (meters) | The X and Y values are such that the receptor is located in the center of room/source at a height of 1 meter above floor. |
| Receptor inhalation rate | 33.6 $m^3$/d | To match the 1.4 $m^3$/h breathing rate in NUREG/CR-5512 (Beyeler et al. 1999). |
| Receptor indirect ingestion rate | 1.12E-4 $m^2$/h | Mean value from the parameter distribution (Yu et al. 2003). |
| Source type | Area | It is assumed that contamination is only on the surface (Yu et al. 2003). |
| Direct ingestion rate | 0 | Direct ingestion of the floor is highly unlikely. Ingestion may occur indirectly as the floor erodes and small particles become available to contaminate an occupant's hands and subsequently be ingested. (Indirect ingestion is a separate parameter.) |
| Air release fraction | 0.07 | Most likely value from the parameter distribution (Yu et al. 2003). |
| Removable fraction | 0.1 | Assumes 10% of the contamination is removable (NUREG/CR-5512 default). |
| Time for source removal or source lifetime | 10,000 days | Most likely value from parameter distribution (Yu et al. 2003). |
| Deposition velocity | 0.01 m/s | RESRAD-Build default (Yu et al. 2003). |
| Resuspension rate | 5E-7 s-1 | RESRAD-Build default (Yu et al. 2003). |
| Time fraction | 1 | Exposed individual spends 100% of their time at the receptor location. |
| Radon release fraction | 0.1 | RESRAD-Build default (Yu et al. 2003). |
| Source geometry | ------ | Disc source with area equal to room floor area. Receptor positioned 1 meter above center of source. |

**Parameters Used in the Building Renovation Scenario**

| Parameter | Value used | Remarks |
|---|---|---|
| Number of rooms | 1 | Future airflow between T Building rooms is unknown. |
| Air exchange rate | 0.8 $h^{-1}$ | RESRAD-Build default value based on studies of various residential and commercial buildings (Yu et al. 2003). |
| Exposure duration | 179 days | To match renovation period in NUREG/CR-5512 building renovation scenario (Beyeler et al. 1999). |
| Indoor fraction | 0.351 | To match the 62.83 days spent in the building during renovation period in NUREG/CR-5512 building renovation scenario (Wernig et al. 1999). |
| Receptor location | X, Y, 1 (meters) | The X and Y values are such that the receptor is located in the center of room/source at a height of 1 meter above floor. |
| Receptor inhalation rate | 38.4 $m^3$/d | To match building renovation scenario with 1.6 $m^3$/ breathing rate of moderate activity given in the EPA Exposure Factor Handbook (US EPA 1997). |
| Receptor indirect ingestion rate | 0 | It is assumed that the ingestion is only from the direct contact with the source (Yu et al. 2003). |
| Source type | Volume | Contamination is assumed to be volumetric. |
| Direct ingestion rate | 0.052 g/h | The effective transfer rate from NUREG/CR-5512 building renovation scenario for ingestion of loose dust to the hands and mouth during building renovation (Wernig et al. 1999). |
| Air release fraction | 0.07 | Most likely value from the parameter distribution (Yu et al. 2003). |
| Source erosion rate | 4.1E-4 cm/d | It is assumed that the total source thickness of 15 cm can be removed in 100 years of building life (Yu et al. 2003). |
| Deposition velocity | 0.01 m/s | RESRAD-Build default (Yu et al. 2003). |
| Resuspension rate | 5E-7 s-1 | RESRAD-Build default (Yu et al. 2003). |
| Time fraction | 1 | Exposed individual spends 100% of their time at the receptor location. |
| Source geometry | ------ | Volumetric disc source, 15 cm thick, with area equal to room floor area. Receptor positioned 1 meter above center of source. |

D58B/84

## References


Beyeler, W.E., et al., 1999, *Residual Radioactive Contamination from Decommissioning Parameter Analysis*, NUREG/CR-5512, Vol. 3, Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, Washington, D.C., Oct.

Yu, C., et al., 2003, *User's Manual for RESRAD-BUILD Version 3*, ANL/EAD/03-01, Environmental Assessment Division, Argonne National Laboratory, Argonne, IL, June.

Wernig, M.A., et al., 1999, *Residual Radioactive Contamination from Decommissioning: User's Manual*, NUREG/CR-5512, Vol. 2, Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, Washington, D.C., May.

U.S. Environmental Protection Agency, 1997, *Exposure Factor Handbook*, EPA/600/P-95/002Fa, Office of Research and Development, National Center for Environmental Assessment, Washington, D.C.


D58c/84

Sample Results and RESRAD-Build Input Parameters forT-Cap model

MDA value used [pCi/g]

| **Source 2** | Sample ID | Page # | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
|---|---|---|---|---|---|---|---|---|
| SU# 1C-08/1C-09 | | | | | | | | |
| 2.54 cm** | | | n/a | n/a | n/a | n/a | n/a | n/a |
| 15 cm | GL10932 | F288/F304 | **0.05** | **0.05** | **0.07** | **0.13** | 0.07 | 0.07 |
| 15 cm w/sample from el pit *** | GL11363 | F321 | 0.03 | 0.04 | 0.05 | 0.09 | **0.08** | **0.08** |
| 30 cm | | | n/a | n/a | n/a | n/a | n/a | n/a |

| SU# 1C11 | Sample ID | Page # | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
|---|---|---|---|---|---|---|---|---|
| 2.54 cm | GL09829 | F380A | 0.06 | 0.04 | 0.12 | 0.09 | 0.72 | 0.72 |
| 15 cm | GL11407 | F441 | **0.05** | **0.04** | **0.14** | **0.17** | **0.72** | **0.72** |
| 30 cm | | | n/a | n/a | n/a | n/a | n/a | n/a |

| SU# 1C12 | Sample ID | Page # | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
|---|---|---|---|---|---|---|---|---|
| 2.54 cm | GL08746 | F513 | 0.05 | 0.11 | 0.39 | **1.48** | 0.46 | 0.46 |
| 15 cm | GL11319 | F527 | **0.03** | **0.03** | **0.17** | 0.2 | **0.09** | **0.09** |
| 30 cm | | | n/a | n/a | n/a | n/a | n/a | n/a |

| **Source 1** | Sample ID | Page # | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
|---|---|---|---|---|---|---|---|---|
| 1C10 Red @ 15 cm | GL10933 | F313 | **0.08** | **0.2** | **2.34** | **7.18** | **0.22** | **0.22** |
| 1C10W @ 15 cm | GL10934 | F314 | **0.06** | **0.05** | **0.06** | **0.84** | **0.01** | **0.01** |
| 1C10 NW @ 15cm | GL11266 | MT-06-0385 | **0.08** | **0.18** | **0.25** | **28.19** | **1.75** | **1.75** |
| 1C10 NW @ 30 cm | GL11267 | MT-06-0385 | 0.08 | 0.1 | 0.09 | 14.03 | 0.24 | 0.34 |
| 1C10 NW @ 48 cm | GL11268**** | **** | 0.03 | 0.03 | 0.17 | 0.2 | 0.09 | 0.09 |
| 48 Top *** (NW corner) | GL11333 | MT-06-0385 | 0.03 | 0.02 | 0.1 | 0.85 | 0.04 | 0.04 |
| 48 Bottom *** (NW corner) | GL11334 | MT-06-0385 | 0.03 | 0.02 | 0.02 | 0.08 | 0.04 | 0.04 |
| Sump 10 located in 1C10NW | GL11402 | F351 | 0.06 | 0.05 | 0.06 | 3.85 | 0.07 | 0.07 |
| 1C21 @ 2.54 cm | GL09126 | F588 | 0.14 | 0.88 | 3.36 | 68.75 | 1.14 | 1.14 |
| 1C21 east @ 15 cm | GL10816 | F618 | **0.1** | **0.08** | **0.08** | **14.34** | **0.18** | **0.18** |
| 1C21 west @ 15 cm | GL10815 | F620 | **0.06** | **0.07** | **0.06** | **2.61** | **0.1** | **0.1** |
| 1C21 east @ 30 cm | GL10814 | F619 | 0.05 | 0.05 | 0.06 | 0.12 | 0.07 | 0.07 |
| 1C21 west @ 30 cm | GL10817 | F621 | 0.07 | 0.04 | 0.05 | 0.23 | 0.1 | 0.1 |

| FOR RESRAD-Build calcs., use: | for building renovation scenario [pCi/g] | | | | | |
|---|---|---|---|---|---|---|
| | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
| Source 1 (1C10 and 1C21) | 0.076 | 0.116 | 0.558 | 10.632 | 0.452 | 0.452 |
| Source 2 (1C08,1C09, 1C11 and 1C12) | 0.043 | 0.040 | 0.127 | 0.593 | 0.297 | 0.297 |

these average values are calculated using the values shown in **bold**.

059/84

formula used to convert [pCi/g] to [dpm/m$^2$]
1 pCi/g X 10,000 cm$^2$/m$^2$ X 15 cm X 2.3 g/cm$^3$ X 2.22 dpm/pCi = 765,900 dpm/m2

Expressed in units of dpm/100 cm$^2$ (all contamination to a depth of 15 cm is moved to the surface for modeling purposes)

| | for building occupancy scenario | | | dpm/m$^2$ | | |
|---|---|---|---|---|---|---|
| | Ag-108m | Bi-207 | Bi-210m | Co-60 | Cs-137 | Sr-90 |
| Source 1 (1C10 and 1C21) | 5.82E+04 | 8.88E+04 | 4.27E+05 | 8.14E+06 | 3.46E+05 | 3.46E+05 |
| Source 2 (1C08,1C09, 1C11 and 1C12) | 3.32E+04 | 3.06E+04 | 9.70E+04 | 4.54E+05 | 2.27E+05 | 2.27E+05 |

These values were computed by converting the pCi/g value used in the renovation scenario to dpm/m2

In the RESRAD-BUILD renovation scenario computations, contamination is assumed to be present to a depth of 15 cm. For this reason, samples taken to a depth of 15 cm were generally assumed to be the most representative and were used in the computations.

In the RESRAD-BUILD occupancy scenario, contamination is modeled as residing on the surface. In this scenario, all of the contamination within the 15 cm depth is modeled as being located on the surface.

In one case, SU# 1C12, the total activity in the 2.54-cm depth sample actually exceeded that found in the 15 cm depth sample. For this one case, the Co-60 concentration found in the 2.54-cm depth sample was used in both of the RESRAD-BUILD scenarios.

Values show in bold were used in the RESRAD-Build Calculation. They were selected because they resulted in the highest total activity which results in the highest dose.

Examples of total activity calculation used for occupancy scenario:
the sample results from GL10815 (15cm depth) was used in the dose model,
because the total activity was higher than the 2.54 cm sample
14.34 pCi/g X 10,000 cm$^2$/m$^2$ X 15 cm X 2.3 g/cm$^3$ X 2.22 dpm/pCi 1.09E+07 dpm/m2
68.75 pCi/g X 10,000 cm$^2$/m$^2$ X 2.54 cm X 2.3 g/cm$^3$ X 2.22 dpm/pCi 8.92E+06 dpm/m2

* n/a not required because concentration had significantly decreased at the 15 cm sample
Only the areas of highest contamination (1C10NW and 1C-21) had samples collected at depths greater than 30 cm.

** n/a Since all but a couple of areas were less than the DCGL$_w$ no 1" samples were collected. Results from the samples taken to a depth of 15 cm were generally assumed to be the most representative and were used in the computations.

*** this was a repeat measurement of samples GL11266 and 11267 with the top 15 cm sleeved to prevent drillings from falling down
this data was not used in the averaging calculations because the other values in the NW corner were more conservative.

**** These are sample results for GL11319 were inadvertently repeated as results for GL11286 and should not have been entered here, they were from room 58 not 48.
Sample GL11286 was a labID # for a sample from a R/SW project.

D59A/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld

## RESRAD-BUILD Table of Contents


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D60/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld

## RESRAD-BUILD Input Parameters

Number of Sources : 2
Number of Receptors: 1
Total Time : 3.652500E+02 days
Fraction Inside : 2.670000E-01

### Receptor Information

| Receptor | Room | x [m] | y [m] | z [m] | FracTime | Inhalation [m3/day] | Ingestion(Dust) [m2/hr] |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.000 | 0.000 | 1.000 | 1.000 | 3.36E+01 | 1.12E-04 |

### Receptor-Source Shielding Relationship

| Receptor | Source | Density [g/cm3] | Thickness [cm] | Material |
|---|---|---|---|---|
| 1 | 1 | 2.30E+00 | 2.80E+01 | Concrete |
| 1 | 2 | 2.30E+00 | 0.00E+00 | Concrete |

D 61/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld

## Building Information

Building Air Exchange Rate: 8.00E-01 1/hr

```
Height[m]          Air Exchanges [m3/hr]
Area [m2]
                  ********************************
                  *                              *
                  *                              *
                  *                              <=Q01: 1.56E+03
H1:    3.320      *            Room  1           *      Q10 :  1.56E+03
                  *   LAMBDA: 8.00E-01           *
Area 588.000      *                              *
                  *                              *
                  ********************************
```

Deposition velocity: 1.00E-02 [m/s]  Resuspension Rate: 5.00E-07 [1/s]

D60/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld

## Source Information

Source: 1
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00[m]
Geometry:: Type: Area Area:1.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 0.000E+00
Removable fraction: 0.000E+00
Time to Remove: 1.000E+04 [day]

Contamination::

| Nuclide | Concentration [dpm/m2] | Dose Conversion Factor (Library: BUILD Ingestion [mrem/dpm] | Inhalation [mrem/dpm] | Submersion [mrem/yr/ (dpm/m3)] |
|---|---|---|---|---|
| BI-210M | 4.270E+05 | 4.315E-05 | 3.419E-03 | 6.486E-04 |
| BI-207 | 8.880E+04 | 2.468E-06 | 9.009E-06 | 3.973E-03 |
| CS-137 | 3.460E+05 | 2.252E-05 | 1.437E-05 | 1.437E-03 |
| AG-108M | 5.820E+04 | 3.432E-06 | 1.275E-04 | 4.117E-03 |
| SR-90 | 3.460E+05 | 6.892E-05 | 5.901E-04 | 1.041E-05 |
| CO-60 | 8.140E+06 | 1.212E-05 | 9.865E-05 | 6.622E-03 |

Source: 2
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00[m]
Geometry:: Type: Area Area:4.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 7.000E-02
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Contamination::

| Nuclide | Concentration [dpm/m2] | Dose Conversion Factor (Library: BUILD Ingestion [mrem/dpm] | Inhalation [mrem/dpm] | Submersion [mrem/yr/ (dpm/m3)] |
|---|---|---|---|---|

D63/84

| | | | | |
|---|---|---|---|---|
| BI-210M | 9.700E+04 | 4.315E-05 | 3.419E-03 | 6.486E-04 |
| BI-207 | 3.060E+04 | 2.468E-06 | 9.009E-06 | 3.973E-03 |
| CS-137 | 2.270E+05 | 2.252E-05 | 1.437E-05 | 1.437E-03 |
| AG-108M | 3.320E+04 | 3.432E-06 | 1.275E-04 | 4.117E-03 |
| CO-60 | 4.540E+05 | 1.212E-05 | 9.865E-05 | 6.622E-03 |

D64/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld
Evaluation Time: 0.00000000E+00 years

```
==========================================
==========================================
==      Assessment for Time:  1         ==
==            Time =0.00E+00 yr         ==
==========================================
==========================================
```

## Source Information

Source: 1
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00 [m]
Geometry:: Type: Area Area:1.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 0.000E+00
Removable fraction: 0.000E+00
Time to Remove: 1.000E+04 [day]

Contamination::

| Nuclide | Concentration [dpm/m2] |
|---|---|
| BI-210M | 4.270E+05 |
| BI-207 | 8.880E+04 |
| CS-137 | 3.460E+05 |
| AG-108M | 5.820E+04 |
| SR-90 | 3.460E+05 |
| CO-60 | 8.140E+06 |

Source: 2
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00 [m]
Geometry:: Type: Area Area:4.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [1/hr]
Fraction released to air: 7.000E-02
Removable fraction: 1.000E-01
Time to Remove: 1.000E+04 [day]

Contamination::

| Nuclide | Concentration [dpm/m2] |
|---|---|
| BI-210M | 9.700E+04 |
| BI-207 | 3.060E+04 |
| CS-137 | 2.270E+05 |
| AG-108M | 3.320E+04 |
| CO-60 | 4.540E+05 |

D65/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld
Evaluation Time: 0.00000000E+00 years

## RESRAD-BUILDDose Tables

### Source Contributions to Receptor Doses

[mrem]

| | Source 1 | Source 2 | Total |
|---|---|---|---|
| Receptor 1 | 7.27E-01 | 8.15E+00 | 8.88E+00 |
| Total | 7.27E-01 | 8.15E+00 | 8.88E+00 |

D66/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld
Evaluation Time: 0.00000000E+00 years

## Pathway Detail of Doses

[mrem]

Source: 1

| Receptor | External | Deposition | Immersion | Inhalation | Radon | Ingestion |
|---|---|---|---|---|---|---|
| 1 | 7.27E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total | 7.27E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

Source: 2

| Receptor | External | Deposition | Immersion | Inhalation | Radon | Ingestion |
|---|---|---|---|---|---|---|
| 1 | 8.14E+00 | 1.30E-03 | 7.02E-06 | 1.02E-02 | 0.00E+00 | 6.05E-04 |
| Total | 8.14E+00 | 1.30E-03 | 7.02E-06 | 1.02E-02 | 0.00E+00 | 6.05E-04 |

D67/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld
Evaluation Time: 0.00000000E+00 years

## Nuclide Detail of Doses

[mrem]

Source: 1

| Nuclide | Receptor 1 | Total |
|---|---|---|
| BI-210M | | |
| BI-210M | 4.60E-04 | 4.60E-04 |
| BI-207 | | |
| BI-207 | 2.75E-03 | 2.75E-03 |
| CS-137 | | |
| CS-137 | 2.82E-03 | 2.82E-03 |
| AG-108M | | |
| AG-108M | 1.21E-03 | 1.21E-03 |
| SR-90 | | |
| SR-90 | 4.96E-06 | 4.96E-06 |
| CO-60 | | |
| CO-60 | 7.20E-01 | 7.20E-01 |

Source: 2

| Nuclide | Receptor 1 | Total |
|---|---|---|
| BI-210M | | |
| BI-210M | 1.70E-01 | 1.70E-01 |
| BI-207 | | |
| BI-207 | 2.98E-01 | 2.98E-01 |
| CS-137 | | |
| CS-137 | 8.20E-01 | 8.20E-01 |
| AG-108M | | |
| AG-108M | 3.50E-01 | 3.50E-01 |
| CO-60 | | |
| CO-60 | 6.51E+00 | 6.51E+00 |

D68/84

Title : Mound T Building - T - Cap Building Occ
Input File : T:\T-Marssim\RESRAD\T cap occupancy28cm.bld
Full Summary

## RESRAD-BUILD Dose (Time) Tables

### Receptor Dose Received for the Exposure Duration

(mrem)

| | Evaluation Time [yr] 0.00E+00 |
|---|---|
| 1 | 8.88E+00 |

### Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

| | Evaluation Time [yr] 0.00E+00 |
|---|---|
| 1 | 8.88E+00 |

D69/84

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld

## RESRAD-BUILD Table of Contents

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Full Summary..... 11

D70184

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld

## RESRAD-BUILD Input Parameters

Number of Sources : 2
Number of Receptors: 1
Total Time : 1.790000E+02 days
Fraction Inside : 3.510000E-01

### Receptor Information

| Receptor | Room | x [m] | y [m] | z [m] | FracTime | Inhalation [m3/day] | Ingestion(Dust) [m2/hr] |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.000 | 0.000 | 1.000 | 1.000 | 3.84E+01 | 0.00E+00 |

### Receptor-Source Shielding Relationship

| Receptor | Source | Density [g/cm3] | Thickness [cm] | Material |
|---|---|---|---|---|
| 1 | 1 | 2.30E+00 | 2.80E+01 | Concrete |
| 1 | 2 | 2.30E+00 | 0.00E+00 | Concrete |

D71/84

## Building Information

Building Air Exchange Rate: 8.00E-01 1/hr

```
Height[m]          Air Exchanges [m3/hr]
Area [m2]
                  ******************************
                  *                            *
                  *                            *
                  *                            <=Q01: 1.56E+03
H1:    3.320      *           Room  1          *      Q10 :  1.56E+03
                  *   LAMBDA: 8.00E-01         *
Area 588.000      *                            *
                  *                            *
                  ******************************
```

Deposition velocity: 1.00E-02 [m/s]  Resuspension Rate: 5.00E-07 [1/s]

D72/84

## Source Information

Source: 1

Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00[m]
Geometry:: Type: Volume Area:1.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 0.000E+00 [gm/hr]
Fraction released to air: 0.000E+00

Containment :: Number of Regions: 1 Contaminated Region: 1

| | |
|---|---|
| Region | : 1 |
| Thickness [cm] | :1.50E+01 |
| Density [g/cm3] | :2.40E+00 |
| Material | :Concrete |
| Erosion Rate [cm/day] | :4.10E-04 |

Contamination::

| Nuclide | Concentration [pCi/g] | Dose Conversion Factor (Library: BUILD Ingestion [mrem/pCi] | Inhalation [mrem/pCi] | Submersion [mrem/yr/ (pCi/m3)] |
|---|---|---|---|---|
| BI-210M | 5.580E-01 | 9.580E-05 | 7.590E-03 | 1.440E-03 |
| BI-207 | 1.160E-01 | 5.480E-06 | 2.000E-05 | 8.820E-03 |
| CS-137 | 4.520E-01 | 5.000E-05 | 3.190E-05 | 3.190E-03 |
| AG-108M | 7.600E-02 | 7.620E-06 | 2.830E-04 | 9.140E-03 |
| SR-90 | 4.520E-01 | 1.530E-04 | 1.310E-03 | 2.310E-05 |
| CO-60 | 1.060E+01 | 2.690E-05 | 2.190E-04 | 1.470E-02 |

D73/84

Source: 2
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00[m]
Geometry:: Type: Volume Area:4.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate: 5.200E-02 [gm/hr]
Fraction released to air: 7.000E-02

Containment :: Number of Regions: 1 Contaminated Region: 1

| | |
|---|---|
| Region | : 1 |
| Thickness [cm] | :1.50E+01 |
| Density [g/cm3] | :2.30E+00 |
| Material | :Concrete |
| Erosion Rate [cm/day] | :4.10E-04 |

Contamination::

| Nuclide | Concentration [pCi/g] | Dose Conversion Factor (Library: BUILD Ingestion [mrem/pCi] | Inhalation [mrem/pCi] | Submersion [mrem/yr/ (pCi/m3)] |
|---|---|---|---|---|
| BI-210M | 1.270E-01 | 9.580E-05 | 7.590E-03 | 1.440E-03 |
| BI-207 | 4.000E-02 | 5.480E-06 | 2.000E-05 | 8.820E-03 |
| CS-137 | 2.970E-01 | 5.000E-05 | 3.190E-05 | 3.190E-03 |
| AG-108M | 4.300E-02 | 7.620E-06 | 2.830E-04 | 9.140E-03 |
| SR-90 | 2.970E-01 | 1.530E-04 | 1.310E-03 | 2.310E-05 |
| CO-60 | 5.930E-01 | 2.690E-05 | 2.190E-04 | 1.470E-02 |

D74184

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Evaluation Time: 0.00000000E+00 years

Assessment for Time: 1
Time =0.00E+00 yr

Source Information

Source: 1
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00 [m]
Geometry:: Type: Volume Area:1.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate : 0.000E+00 [gm/hr]
Fraction released to air: 0.000E+00

Containment :: Number of Regions: 1 Contaminated Region: 1
Region : 1
Thickness [cm] :1.50E+01
Fraction Contaminated :1.00E+00
Density [g/cm3] :2.40E+00

Contamination::

| Nuclide | Concentration [pCi/g] |
|---|---|
| BI-210M | 5.580E-01 |
| BI-207 | 1.160E-01 |
| CS-137 | 4.520E-01 |
| AG-108M | 7.600E-02 |
| SR-90 | 4.520E-01 |
| CO-60 | 1.060E+01 |

D-75/84

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Evaluation Time: 0.00000000E+00 years

Source: 2
Location:: Room : 1 x: 0.00 y: 0.00 z: 0.00 [m]
Geometry:: Type: Volume Area:4.44E+02 [m2] Direction: z
Pathway ::
Direct Ingestion Rate : 5.200E-02 [gm/hr]
Fraction released to air: 7.000E-02

Containment :: Number of Regions: 1 Contaminated Region: 1
Region : 1
Thickness [cm] :1.50E+01
Fraction Contaminated :1.00E+00
Density [g/cm3] :2.30E+00

Contamination::

| Nuclide | Concentration [pCi/g] |
|---|---|
| BI-210M | 1.270E-01 |
| BI-207 | 4.000E-02 |
| CS-137 | 2.970E-01 |
| AG-108M | 4.300E-02 |
| SR-90 | 2.970E-01 |
| CO-60 | 5.930E-01 |

D76/84

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Evaluation Time: 0.00000000E+00 years

RESRAD-BUILDDose Tables

Source Contributions to Receptor Doses

[mrem]

| | Source 1 | Source 2 | Total |
|---|---|---|---|
| Receptor 1 | 1.70E-01 | 1.70E+00 | 1.86E+00 |
| Total | 1.70E-01 | 1.70E+00 | 1.86E+00 |

D77184

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Evaluation Time: 0.00000000E+00 years

## Pathway Detail of Doses

[mrem]

Source: 1

| Receptor | External | Deposition | Immersion | Inhalation | Radon | Ingestion |
|---|---|---|---|---|---|---|
| 1 | 1.70E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Total | 1.70E-01 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

Source: 2

| Receptor | External | Deposition | Immersion | Inhalation | Radon | Ingestion |
|---|---|---|---|---|---|---|
| 1 | 1.66E+00 | 2.35E-03 | 1.27E-05 | 2.79E-02 | 0.00E+00 | 6.91E-03 |
| Total | 1.66E+00 | 2.35E-03 | 1.27E-05 | 2.79E-02 | 0.00E+00 | 6.91E-03 |

D-78/84

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Evaluation Time: 0.00000000E+00 years

## Nuclide Detail of Doses

[mrem]

Source: 1

| Nuclide | Receptor 1 | Total |
|---|---|---|
| BI-210M | | |
| BI-210M | 7.50E-05 | 7.50E-05 |
| BI-207 | | |
| BI-207 | 5.63E-04 | 5.63E-04 |
| CS-137 | | |
| CS-137 | 5.46E-04 | 5.46E-04 |
| AG-108M | | |
| AG-108M | 2.28E-04 | 2.28E-04 |
| SR-90 | | |
| SR-90 | 7.74E-07 | 7.74E-07 |
| CO-60 | | |
| CO-60 | 1.68E-01 | 1.68E-01 |

Source: 2

| Nuclide | Receptor 1 | Total |
|---|---|---|
| BI-210M | | |
| BI-210M | 4.51E-02 | 4.51E-02 |
| BI-207 | | |
| BI-207 | 5.56E-02 | 5.56E-02 |
| CS-137 | | |
| CS-137 | 1.53E-01 | 1.53E-01 |
| AG-108M | | |
| AG-108M | 6.26E-02 | 6.26E-02 |
| SR-90 | | |
| SR-90 | 1.18E-02 | 1.18E-02 |
| CO-60 | | |
| CO-60 | 1.37E+00 | 1.37E+00 |

D-79/84

Title : Mound T Building - T Cap Renovation Sc
Input File : T:\T-Marssim\RESRAD\T cap renovationw28cm.bld
Full Summary

## RESRAD-BUILD Dose (Time) Tables

Receptor Dose Received for the Exposure Duration

(mrem)

| | Evaluation Time [yr] 0.00E+00 |
|---|---|
| 1 | 1.86E+00 |

Receptor Dose/Yr Averaged Over Exposure Duration

(mrem/yr)

| | Evaluation Time [yr] 0.00E+00 |
|---|---|
| 1 | 3.81E+00 |

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D 81-82/84

## T-Building Residual Contamination

There are five rooms/areas in T-Building with residual volumetric contamination. Surveys in these areas have resulted in the identification of contamination at levels exceeding the surface release guidelines established in Mound 2000. The RESRAD-Build computer code has been used to estimate the maximum dose to any future building occupant in each of these 5 areas. Calculations in each area were done independently, without any consideration for additive dose contributions from the other areas. The purpose of this narrative is to consider the significance of additive dose contributions from all areas to receptors in each area modeled with RESRAD-Build. This is necessary to ensure that the maximum dose to future building occupants is less than 15 mrem/year from all building sources combined.

Any potential dose contributions from areas where the levels of surface contamination are below the release criteria are assumed to contribute insignificantly to the dose of future building occupants. The following quotation is from Mound 2000, Appendix A, "Surface and Volumetric Release Criteria for Building Disposition:"

> *If there is no surface contamination above the surface contamination criteria (Table 1), it is reasonable to assume that there is no significant exposure due to existence of residual volumetric contamination.*

This discussion is therefore limited to the 5 areas where surface contamination is above the Mound 2000 Table 1 values. The following table summarizes the results of the independent dose calculations for each area.

| Area Description | Occupancy Scenario Dose (mrem/yr) | | | Renovation Scenario Dose (mrem/yr) | | |
|---|---|---|---|---|---|---|
| | External | Internal | Total | External | Internal | Total |
| 1S-10 (Room 16) | 10.5 | 0.02 | **10.5** | 3.05 | 0.05 | **3.1** |
| 1C-15 (Room 61) | 0.12 | 0.76 | **0.9** | 0.03 | 1.62 | **1.7** |
| 1C-16 (Room 63) | 0.13 | 0.74 | **0.9** | 0.03 | 1.60 | **1.6** |
| T-Cap* (Rooms 48, 57, 58, and 59) | 8.87 | 0.02 | **8.9** | 1.83 | 0.04 | **1.9** |
| SYS-02A** (West Head House) | 0.2 | 5.2 | **5.4** | 0.0 | 11.1 | **11.1** |

* T Cap includes SU #s 1C-07, 1C-08, 1C-09, 1C-10, 1C-11, 1C-12, 1C-21, SYS-PRS 227, SYS-PRS 228, SYS-PRS 229, SYS-PRS 230, and SYS-PRS 339.

** SYS-02A includes SU #s SYS-02A, SYS-02B, and SYS-02C

In this analysis, it is important to point out that T-Building is divided into 3 bays, each bay separated by a 3-feet thick concrete wall. Of the 5 areas listed in the above table, only 1C-15, 1C-16, and T-Cap share the same bay. Although it is possible for airborne contamination to pass freely between bays, the 3-feet thick concrete walls effectively shield the external dose between bays, i.e., reducing the dose rate by more than a factor of 1000. For simplification in this analysis, computed doses from 1C-15, 1C-16, and T-Cap will simply be combined, leaving only 3 areas to consider.

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| Area Description | Occupancy Scenario Dose (mrem/yr) | | | Renovation Scenario Dose (mrem/yr) | | |
|---|---|---|---|---|---|---|
| | External | Internal | Total | External | Internal | Total |
| 1S-10 | 10.5 | 0.02 | **10.5** | 3.05 | 0.05 | **3.1** |
| 1C-15, 1C-16, and T-Cap combined for simplicity | 9.12 | 1.52 | **10.6** | 1.88 | 3.25 | **5.1** |
| SYS-02A | 0.2 | 5.2 | **5.4** | 0.05 | 11.02 | **11.1** |

Since these 3 areas are isolated from each other with regard to external dose due to the 3-feet thick concrete wall that separates them, external dose components between the different areas may be ignored. Although some small component of the computed internal doses are from direct ingestion, for the purpose of this analysis, it is assumed that internal dose is all due to airborne contamination that may pass freely throughout the building. Therefore, the internal dose component to the building as a whole from each of the affected areas can be estimated using a ratio of the air volume of the affected area to the total building air volume. The total building air volume is approximately 42,000 $m^3$.

| Area Description | Modeled room air volume ($m^3$) | Ratio (modeled room air volume/building air volume) |
|---|---|---|
| 1S-10 | 155 | 0.0037 |
| 1C-15, 1C-16, and T-Cap (combined for simplicity) | 2480 | 0.059 |
| West Head House | 500 | 0.012 |

The computed internal dose from each area can then be multiplied by this ratio to estimate the internal dose component that could affect other areas. Internal dose contributions from each area to other parts of the building are given in the table below.

| Area Description | Occupancy Scenario Dose (mrem/yr) | Renovation Scenario Dose (mrem/yr) |
|---|---|---|
| 1S-10 | 0.00008 | 0.0002 |
| 1C-15, 1C-16, and T-Cap | 0.09 | 0.192 |
| West Head House | 0.06 | 0.131 |
| Total | 0.15 | 0.32 |

As can be seen in the table, the total internal dose component to other parts of the building from all of the affected areas combined, including both occupancy and renovation scenarios at the same time, is less than 0.5 mrem. Therefore, since the maximum dose computed for any area independently was 10.6 mrem (1C-15, 1C-16, and T-Cap combined) and the addition of 0.5 mrem is still less than 15 mrem, it may be concluded that the maximum dose to any future building occupant will be less than 15 mrem when considering the collective dose from all 5 affected areas in T-Building.

D84/84

Attachment E
Survey Plan Form
#T-01
(Revised 7-30-05)

| SURVEY PLAN FORM | | | |
|---|---|---|---|
| SP NUMBER | T-01 | DATE OF REQUEST | |
| TYPE OF SP | ☒ FSS ☐ CHARACTERIZATION ☐ REFERENCE ☐ OTHER: | | |
| AREA/LOCATION | T Building | | |
| PURPOSE | The purpose of this SPF is to perform a final status survey in Class 1 floors and lower walls and Class 2 ceilings and upper walls in T Building to support decisions on final disposition and free release of the building. | | |
| SURVEY UNIT # 1 | See Attachment 1 | SURVEY UNIT # 4 | |
| SURVEY UNIT # 2 | | SURVEY UNIT # 5 | |
| SURVEY UNIT # 3 | | SURVEY UNIT # 6 | |

| SURVEY TYPE | | | | | |
|---|---|---|---|---|---|
| SURFACE SCAN | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | INST. TYPE | Shonka PSPC | SCAN RATE & DETECTOR DISTANCE FROM SURFACE | Refer to SHONKA Surface Contamination Monitor (SCM) operating procedures. |
| | | PROBE TYPE | 2 ft, 4ft, or 6 ft | | |
| SURFACE SCAN | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | INST. TYPE | L-2350 | SCAN RATE & DETECTOR DISTANCE FROM SURFACE | Scan surface at a rate of ½" per second at a distance of not more than ¼" from the surface |
| | | PROBE TYPE | 43-37 Floor Probe or 43-68 Hand Probe | | |
| SURFACE SCAN | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | INST. TYPE | L-2360 | SCAN RATE & DETECTOR DISTANCE FROM SURFACE | Refer to MD-80036, Op 30030, Operation of Ludlum 2360 Scaler/ratemeter with Ludlum 43-89 alpha/beta scintillator |
| | | PROBE TYPE | 43-89 hand probe | | |
| STATIC MEASUREMENT | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | INST. TYPE | L-2350 | COUNT TIME & DETECTOR DISTANCE FROM SURFACE | Perform 2 minute counts (α) and 1 minute count (β) at specified locations not more than ¼" from the surface for hand probe (30 seconds (α) and (β) counts if using floor probe). |
| | | PROBE TYPE | 43-68 Hand Probe (or 43-37 Floor) | | |
| STATIC MEASUREMENT | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | INST. TYPE | L-2360 | COUNT TIME & DETECTOR DISTANCE FROM SURFACE | Refer to MD-80036, Op 30030, Operation of Ludlum 2360 Scaler/ratemeter with Ludlum 43-89 alpha/beta scintillator |
| | | PROBE TYPE | 43-89 hand probe | | |
| GENERAL AREA EXPOSURE RATE MEASUREMENT | ☐ BETA<br>☒ GAMMA<br>☐ ALPHA | INST. TYPE | Micro Rem meter | DETECTOR DISTANCE FROM SURFACE | Perform general area exposure rate measurements 1 meter (m) from the surface. |
| | | PROBE TYPE | | | |

| | |
|---|---|
| COMMENTS AND GENERAL REQUIREMENTS | All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.<br><br>Perform scan surveys prior to fixed-point surveys.<br><br>Ensure building surfaces are clean and free of loose debris, dirt, and obstructions prior to performing surveys.<br><br>Rad Con shall document all discrepancies from the above sampling and surveying instructions on the RSDS.<br><br>**Continued next page** |

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**Specific Sampling and Survey Instructions Continued**

## Safety Considerations

1. Obtain assistance from the responsible building custodian for access to upper walls, ceilings, roof, etc.
2. Exercise extreme caution when performing surveys from ladders, lifts, or scaffolds.
3. Follow appropriate site safety procedures when accessing areas requiring fall protection measures.
4. Ensure ventilation units are de-energized prior to attempting to collect a sample from them.
5. Obtain approval and assistance from the responsible building custodian to dismantle any equipment for sample collection.
6. Use L2360 if locations are not safely accessible using the L2350 (e.g. close tight spaces, on top roofs, etc).

## Scanning using Ludlum 2350-1 with 43-37 (floor) and 43-68 (hand) probes

1. Verify that the rate meters are set to alarm at or below 225 dpm/100 $cm^2$ alpha and 11250 dpm/100 $cm^2$ beta. (The RPOC or Rad Engineer will provide cpm values for alarm set points).
2. Scan at a rate of ½ inch per sec at a distance of not more than ¼ " from the surface.
3. Perform a static measurement at every location where an indication of elevated activity is observed.
4. Record the locations and document the results of the area scanned on the RSDS.

## Scanning using Ludlum 2360 with 43-89 probe

1. Scan in accordance with instrument procedures at a rate of ½ inch per sec at a distance of not more than ¼ " from the surface.
2. Perform a static measurement at every location where an indication of elevated activity is observed.
3. Record the locations and document the results of the area scanned on the RSDS.

## Scanning using SHONKA Position Sensitive Proportional Counter (PSPC) with 2',4' and 6' probes

1. Scan in accordance with instrument procedures at a rate of 0.4 inch per sec for alpha and 4.0 inch per sec for beta, at a distance of not more than ¼ " from the surface.
2. Perform a static measurement at every location where an indication of elevated activity is observed.
3. Record the locations and document the results of the area scanned on the RSDS.

**Continued next page**

**Specific Sampling and Survey Instructions Continued**

## Scanning in Class 1 areas

1.Scan 100% of the floor and walls up to 2 meters

## Scanning in Class 2 areas

1. Scan at least 25% of walls above 2 meters using a serpentine pattern with scan paths spaced three probe widths apart.
2. On ceilings and in crawlspaces, scan an area of approximately 1 $m^2$ around each static measurement location.

## Static measurements

1. When using hand probes, the count time is 2 min for alpha measurements and 1 min for beta measurements. When using the floor probe, the count time for alpha and beta measurements is 30 sec.
2. Perform integrated counts at all pre-designated sample location and at any elevated locations identified by scanning.
3. Perform at least 10 measurements on beams, supports, or other horizontal structural surfaces in each survey unit where, in the judgment of the surveyor, a potential exists for residual contamination.
4. Record the location and document the results on the RSDS in accordance with Mound Rad Con procedures.
5. Document the gross activity for each location (no "<" or ">" values).

## Data Point Location

1. Locate the data points in each survey unit.
2. Mark each data point with tape or other non-permanent marking.
3. Document locations on the appropriate RSDS.

## General Area Exposure Rate Measurements

1. Perform general area exposure rate measurement using Micro Rem survey meter in each room in the survey unit at a distance of 1 meter (m) from the floor.
2. Record reading results (microRem/hr) including background on RSDS in accordance with Mound Rad Con procedures (no "<" or ">" values).

## Loose Surface Contamination

1. Obtain a smear of 100$cm^2$ at each pre-designated static measurement location.
2. Count each smear for alpha, beta, and $^3H$.
3. Record location and attach results on the RSDS in accordance with Mound Rad Con procedures (no "<" or ">" values).

**Continued next page**

**Specific Sampling and Survey Instructions Continued**

## Quality Control

1. Check Configuration Index (CI) for latest revision of procedures.
2. Daily source checks will be performed at the beginning and end of each day in accordance with Mound Rad Con procedures.
3. 16 fixed measurement data points will be selected for resurvey from the pool of Class 1 areas. Data points selected for resurvey should include the highest and lowest measurement from the data pool.
4. 16 smears will be randomly selected for recount from the pool of Class 1 areas.
5. 5% of the scan measurements taken in Class 1 areas will randomly be selected for replicate scan surveys.
6. Follow Rad Con procedures for Chain of Custody requirements.
7. Ensure alpha and beta smear results are obtained before performing $^{3}H$ analysis.
8. Record location and results on the RSDS in accordance with Mound Rad Con procedures.

| APPROVAL SIGNATURES | | | |
|---|---|---|---|
| Project Engineer | Mary Sizemore | DATE | 7-30-05 |
| Radiological Engineer | [illegible] | DATE | 7/30/05 |
| Manager | [illegible] | DATE | 8/1/05 |
| **SP CLOSE-OUT SIGNATURES** | | | |
| Project Engineer | | DATE | |
| Radiological Engineer | | DATE | |
| Manager | | DATE | |
| **COMMENTS** | | | |

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**ATTACHMENT 1:** SPF T-01

**Floors and walls < 2m**

| | |
|---|---|
| 1C-01-1 | 2C-01-1 |
| 1C-02-1 | 2C-02-1 |
| 1C-03-1 | 2C-03-1 |
| 1C-04-1 | 2C-04-1 |
| 1C-05-1 | 2C-05-1 |
| 1C-06-1 | 2C-06-1 |
| 1C-07-1 | 2C-07-1 |
| 1C-08-1 | 2C-08-1 |
| 1C-09-1 | 2C-09-1 |
| 1C-10-1 | 2C-10-1 |
| 1C-11-1 | 2C-11-1 |
| 1C-12-1 | 2C-12-1 |
| 1C-13-1 | 2C-13-1 |
| 1C-14-1 | 2C-14-1 |
| 1C-15-1 | 2C-15-1 |
| 1C-16-1 | 2C-16-1 |
| 1C-17-1 | 2C-17-1 |
| 1C-18-1 | 2C-18-1 |
| 1N-01-1 | 2C-19-1 |
| 1N-04-1 | 2N-06-1 |
| 1N-07-1 | 2N-07-1 |
| 1N-08-1 | 2N-08-1 |
| 1S-05-1 | 2S-06-1 |
| 1S-06-1 | 2S-07-1 |
| 1S-07-1 | 2S-08-1 |
| 1S-09-1 | 2S-09-1 |
| 1S-10-1 | 2S-10-1 |
| 1S-11-1 | 2S-12-1 |
| 1S-12-1 | 2S-13-1 |
| 1C-19-1 | 2S-14-1 |
| 1C-20-1 | 2S-15-1 |

**ATTACHMENT 1 continued:** SPF T-01

## Ceilings and walls > 2m

| | |
|---|---|
| 1C-01-2 | 2C-01-2 |
| 1C-02-2 | 2C-02-2 |
| 1C-03-2 | 2C-03-2 |
| 1C-04-2 | 2C-04-2 |
| 1C-05-2 | 2C-05-2 |
| 1C-06-2 | 2C-06-2 |
| 1C-07-2 | 2C-07-2 |
| 1C-08-2 | 2C-08-2 |
| 1C-09-2 | 2C-09-2 |
| 1C-10-2 | 2C-10-2 |
| 1C-11-2 | 2C-11-2 |
| 1C-12-2 | 2C-12-2 |
| 1C-13-2 | 2C-13-2 |
| 1C-14-2 | 2C-14-2 |
| 1C-15-2 | 2C-15-2 |
| 1C-16-2 | 2C-16-2 |
| 1C-17-2 | 2C-17-2 |
| 1C-18-2 | 2C-18-2 |
| 1N-01-2 | 2C-19-2 |
| 1N-04-2 | 2N-06-2 |
| 1N-07-2 | 2N-07-2 |
| 1N-08-2 | 2N-08-2 |
| 1S-05-2 | 2S-06-2 |
| 1S-06-2 | 2S-07-2 |
| 1S-07-2 | 2S-08-2 |
| 1S-09-2 | 2S-09-2 |
| 1S-10-2 | 2S-10-2 |
| 1S-11-2 | 2S-12-2 |
| 1S-12-2 | 2S-13-2 |
| 1C-19-2 | 2S-14-2 |
| 1C-20-2 | 2S-15-2 |

## SURVEY PLAN FORM

| | | | |
|---|---|---|---|
| **SP NUMBER** | T-05 | **DATE OF REQUEST** | |
| **TYPE OF SP** | ☒ FSS ☐ CHARACTERIZATION ☐ REFERENCE ☐ OTHER: | | |
| **AREA/LOCATION** | T Building | | |
| **PURPOSE** | The purpose of this SPF is to perform a final status survey in areas previously occupied with Class 1 sumps and associated piping in T Building to support decisions on final disposition and free release of T Building | | |

| | | | | | |
|---|---|---|---|---|---|
| **SURVEY UNIT # 1** | See Attachment 1 | **SURVEY UNIT # 4** | | **SURVEY UNIT # 7** | |
| **SURVEY UNIT # 2** | | **SURVEY UNIT # 5** | | **SURVEY UNIT # 8** | |
| **SURVEY UNIT # 3** | | **SURVEY UNIT # 6** | | **SURVEY UNIT # 9** | |

## SAMPLE TYPE

☐ **SCRAPING/SEDIMENT SAMPLE:**

☐ **FLUID/LIQUID SAMPLE:**

☐ **OTHER:**

## SURVEY TYPE

| | | | | | |
|---|---|---|---|---|---|
| **SURFACE SCAN** | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | **INST. TYPE** | L-2350 | **SCAN RATE & DETECTOR DISTANCE FROM SURFACE** | Scan surface at a rate of ½" per second at a distance of not more than ¼" from the surface |
| | | **PROBE TYPE** | 43-68 Hand Probe | | |
| **SURFACE SCAN** | ☐ BETA<br>☒ GAMMA<br>☐ ALPHA | **INST. TYPE** | L-2360 | **SCAN RATE & DETECTOR DISTANCE FROM SURFACE** | Refer to MD-80036, Op number 30040, Operation of Ludlum 2360 with Fidler probe. |
| | | **PROBE TYPE** | Fidler Probe | | |
| **STATIC MEASUREMENT** | ☒ BETA<br>☐ GAMMA<br>☒ ALPHA | **INST. TYPE** | L-2350 | **COUNT TIME & DETECTOR DISTANCE FROM SURFACE** | Perform 2 minute counts (α) and 1 minute count (β) at specified locations not more than ¼" from the surface. |
| | | **PROBE TYPE** | 43-68 Hand Probe | | |
| **GENERAL AREA EXPOSURE RATE MEASUREMENT** | ☐ BETA<br>☒ GAMMA<br>☐ ALPHA | **INST. TYPE** | Micro Rem meter | **DETECTOR DISTANCE FROM SURFACE** | Perform general area exposure rate measurements 1 meter (m) from the surface. |
| | | **PROBE TYPE** | | | |

**COMMENTS AND GENERAL REQUIREMENTS**

Class 1 sumps and associated piping are excavated and disposed of as radioactive waste. They are not to be surveyed and released. This SPF addresses surveys performed in excavated sump pits and empty pipe chases.

All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.

Perform scan surveys prior to fixed-point surveys.

Rad Con shall document all discrepancies from the above sampling and surveying instructions on the RSDS.

**Continued next page**

E7/14

**Safety Considerations**

1. Obtain assistance from the responsible building custodian for access to sumps.
2. Exercise extreme caution when performing surveys inside sump area.
3. Follow appropriate site safety procedures when accessing areas requiring fall protection measures.

**Scanning using Ludlum 2350-1 with 43-68 hand probe**

1. Verify that the rate meters are set to alarm at or below 225 dpm/100 $cm^2$ alpha and 11250 dpm/100 $cm^2$ beta. (The RPOC or Rad Engineer will provide cpm values for alarm set points).
2. Scan at a rate of ½ inch per sec at a distance of not more than ¼ " from the surface.
3. Perform a static measurement at every location where an indication of elevated activity is observed.
4. Record the locations and document the results of the area scanned on the RSDS.
5. Use L2360 with Fidler probe if surfaces are too uneven to use L2350.

**Scanning in Class 1 areas**

Scan 100% of the sump pit and empty drain chases.

**Surface Scan Using a Ludlum 2360 with a Fidler probe**

1. Scan the sump pit and empty drain chase surfaces at a rate of 2.5" per second.
2. Record the locations of the area scanned on the RSDS and document the results in accordance with Mound Rad Con procedures (no "<" or ">" values).

**General Area Exposure Rate Measurements**

1. Perform general area exposure rate measurement using a Micro Rem survey meter for each sump at a distance of 1m from the surface.
2. Record reading results (microRem/hr) on RSDS in accordance with Mound Rad Con procedures (no "<" or ">" values).

**Data Point Location**

1. Locate the data points in each survey unit.
2. Mark each data point with tape or other non-permanent marking.
3. Document locations on the appropriate RSDS.

**Continued next page**

**Specific Sampling and Survey Instructions Continued**

**Static measurements**

1. The count time for static measurements using the hand probe is 2 min for alpha and 1 min for beta.
2. Perform integrated counts at each sample location.
3. Record location, material type, and results on RSDS in accordance with Mound Rad Con procedures.
4. Document gross activity for each location (no "<" or ">" values).

**Loose Surface Contamination**

1. Obtain a smear of 100 $cm^2$ at each survey point identified above.
2. Count each smear for alpha, beta, and $^3H$.
3. Record location and results on RSDS map in accordance with Mound Rad Con procedures.

**Continued next page**

**Specific Sampling and Survey Instructions Continued**

## QUALITY CONTROL

1. Check Configuration Index (CI) for latest revision of procedures.
2. Daily source checks will be performed at the beginning and end of each day in accordance with Mound Rad Con procedures.
3. 16 fixed measurement data points will be selected for resurvey from the Class 1 sumps. Data points selected for resurvey should include the highest and lowest measurement from the data pool
4. 16 smears will be randomly selected for recount from the Class 1 sumps.
5. 5% of the scan measurements taken in Class 1 sumps will randomly be selected for replicate scan surveys in accordance with MD-80046, Op 402.
6. Follow Rad Con procedures for Chain of Custody requirements.
7. Ensure alpha and beta smear results are obtained before performing $^{3}H$ analysis.
8. Record location, material, and results on RSDS in accordance with Mound Rad Con procedures.

| APPROVAL SIGNATURES | | | |
|---|---|---|---|
| Project Engineer | Mary E Simmons | DATE | 6-1-05 |
| Technical Reviewer | [illegible] | DATE | 6/1/05 |
| Manager | Bo [illegible] | DATE | 6/1/05 |
| **SP CLOSE-OUT SIGNATURES** | | | |
| Project Engineer | | DATE | |
| Technical Reviewer | | DATE | |
| Manager | | DATE | |
| **COMMENTS** | | | |

E10/14

**ATTACHMENT 1: SPF T-05**
Class 1 sumps

| Sump # | Survey Unit ID# | Identification |
|---|---|---|
| Sump 5 | SYS-PRS 340 | Waste Water Sump (Tank 251) |
| Sump 6 | SYS-PRS 225 | Beta Waste Water Sump (Tank 227) |
| Sump 7 | SYS-PRS 227 | Alpha Waste Water Sump (Tank 229) |
| Sump 8 | SYS-PRS 228 | Alpha Waste Water Sump (Tank 230) |
| Sump 9 | SYS-PRS 339 | Waste Water Sump (Tank 250) |
| Sump 10 | SYS-PRS 229 | Alpha Waste Water Sump (Tank 231) |
| Sump 11 | SYS-PRS 230 | Alpha Waste Water Sump (Tank 232) |
| Sump 13 | SYS-PRS 233 | Alpha Waste Water Sump (Tank 235) |

E11/14

# SURVEY PLAN FORM

| | | | |
|---|---|---|---|
| SPF NUMBER | T-11 | DATE OF REQUEST | |
| TYPE OF SPF | ☐ FSS x CHARACTERIZATION ☐ REFERENCE ☐ OTHER: | | |
| AREA/LOCATION | T Building | | |
| PURPOSE | The purpose of this SPF is to collect a concrete samples for characterization. | | |
| SURVEY UNIT # | 1C-15/16 (Rooms 61 and 63) | SURVEY UNIT# | |
| SURVEY UNIT # | 2C-15 (Room 277) | SURVEY UNIT # | 1C-11/12/21 (Rooms 57,58, and 59) |
| SURVEY UNIT # | 1S-10 (Room 16) | SURVEY UNIT # | 1C-08/09/10 (cap area Room 48) |

## SAMPLE TYPE

☐ SURFACE SOIL SAMPLE:

☐ SUB-SURFACE SOIL SAMPLE:

SEDIMENT SAMPLE:

☐ CORE SAMPLE:

☐ WATER SAMPLE:

☒ OTHER: Samples of concrete as specified on page 2 of this SPF

## SURVEY TYPE

| | | | | | |
|---|---|---|---|---|---|
| SURFACE SCAN | ☐ BETA<br>☐ GAMMA<br>☐ ALPHA | INST. TYPE<br>PROBE TYPE | | SCAN RATE & DETECTOR DISTANCE FROM SURFACE | |
| STATIC MEASURE-MENT | ☐ BETA<br>☐ GAMMA<br>☐ ALPHA | INST. TYPE<br>PROBE TYPE | | COUNT TIME & DETECTOR DISTANCE FROM SURFACE | |
| STATIC MEASURE-MENT | ☐ BETA<br>☐ GAMMA<br>☐ ALPHA | INST. TYPE<br>PROBE TYPE | | COUNT TIME & DETECTOR DISTANCE FROM SURFACE | |
| General Area Exposure Rate Measurement | ☐ BETA<br>X GAMMA<br>☐ ALPHA | INST. TYPE | Bicron Micro Rem meter | DETECTOR DISTANCE FROM SURFACE | Perform general area exposure rate measurements at specified locations at 1 meter (m) from the surface |

**COMMENTS**

All surveys shall be performed and documented in accordance with Mound Radiological Control procedures.

Perform fixed-point measurements surveys prior to collecting concrete sample.

Collect same amount of sample at each location. Ensure clean sample equipment is used for each distinct sample area/room.

Rad Con shall document all discrepancies from the above sampling and surveying instructions on the RSDS.



E12/14

## SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

**Safety Considerations**

1. Obtain assistance from the responsible building custodian for assistance in collecting bulk sample.
2. Exercise extreme caution when collecting bulk samples.
3. Follow appropriate site safety procedures when accessing areas with potential electrical hazards.

**Concrete Sample: Obtain one (1) bulk sample at each static and judgmental measurement location identified on the floor. (Applies to rooms 16, 61, 63, 48, 57, 58, and 59)**

1. Composite and homogenize the samples from the drilled locations at a depth of 6" (15 cm) into one sample container per room. Composite and homogenize the samples from the area to be capped in 48 into a separate sample container. Composite and homogenize the samples from the area to be capped in Room 59 into a separate sample container.
2. Seek guidance from Radiological Engineer/RPOC with regard to type of sample container, sample mass at each location and total mass needed for each area/room composite sample.
3. Ensure each sample is labeled with date, time, room #, survey unit #, and sample ID#.
4. Record sample location on Radiological Survey Data Sheet.
5. Ensure chain of custody is maintained for all samples.
6. Process sample for gamma spectroscopy analysis in accordance with laboratory procedures.
7. Repeat process at a depth of approximately 12" (30 cm) at each of the previous locations using a smaller drill bit. Thoroughly clean the holes prior to second drilling.

**Concrete Sample: Obtain one (1) bulk sample at each static and judgmental measurement location on the floor. (Applies to Room 277)**

1. Composite the samples from the drill samples collected at a depth of approximately 5" (13 cm) into one sample container. Adjust the drill depth so that the bit penetrates as deep as possible without going through the floor.
2. Seek guidance from Radiological Engineer/RPOC with regard to type of sample container, sample mass at each location and total mass needed for each area/room composite sample.
3. Ensure each sample is labeled with date, time, room #, survey unit #, and sample ID#.
4. Record sample location on Radiological Survey Data Sheet.
5. Ensure chain of custody is maintained for all samples.
6. Process sample for gamma spectroscopy analysis in accordance with laboratory procedures.

**General Area Exposure Rate Measurements**

1. Perform general area exposure rate measurements at specified locations at 1 meter (m) from the surface.

**Quality Control (QC) Measurements**

1. Field duplicate taken in every 10 or fewer field samples
2. Replicate sample taken every 20 samples of a similar matrix

**Reference Sample (obtain one bulk sample from an area that has not been impacted)**



E13/14

## APPROVAL SIGNATURES

| | | | |
|---|---|---|---|
| Project Engineer | Mary E Sizemore | DATE | 3-9-06 |
| Radiological Engineer | Robert M Coblentz | DATE | 3-9-06 |
| Project Manager | Ken [illegible] | DATE | 3-9-06 |

## SP CLOSE-OUT SIGNATURES

| | | | |
|---|---|---|---|
| Project Engineer | | DATE | |
| Radiological Engineer | | DATE | |
| Project Manager | | DATE | |

## COMMENTS

NOTE: Rad Con shall document all discrepancies from the above sampling and surveying instructions on the Radiological Survey Data Sheet.

Ensure that the mass of sample collected from each location is consistent. Composite all sample from a given room to form a single bulk room sample for each room. After sample has been homogenized sample size may be reduced if necessary as need for the gamma spec lab.



E 14/14

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-1160 | 08-Nov-05 | 1C07 | scan (t-cap) |
| MT-05-1331 | 16-Dec-05 | 1C07 | Investigative |
| MT-05-1335 | 17-Dec-05 | 1C07 | Investigative |
| MT-05-1341 | 19-Dec-05 | 1C07 | Investigative |
| MT-06-0074 | 20-Jan-06 | 1C07 | scan |
| MT-06-0143 | 07-Feb-06 | 1C07 | DVU (t-cap) |
| MT-06-0148 | 09-Feb-06 | 1C07 | static (01/02) |
| MT-06-0151 | 09-Feb-06 | 1C07 | Judgmental (01/02) |
| MT-06-0459 | 09-Feb-06 | SYS-PRS 227 | Judgmental, scan and dose |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-0946 | 06-Oct-05 | 1C08 | Investigative |
| MT-05-1342 | 19-Dec-05 | 1C08 | Investigative |
| MT-05-1343 | 19-Dec-05 | 1C08 | Investigative |
| MT-05-1346 | 20-Dec-05 | 1C08 | Investigative |
| MT-05-1352 | 21-Dec-05 | 1C08 | Investigative |
| MT-06-0075 | 20-Jan-06 | 1C08 | scan |
| MT-06-0154 | 09-Feb-06 | 1C08 | DVU |
| MT-06-0156 | 09-Feb-06 | 1C08 | static (1c08) |
| MT-06-0162 | 10-Feb-06 | 1C08 | judgmental (01/02) |
| MT-06-0216 | 20-Feb-06 | 1C08 | Investigative |
| MT-06-0472 | 02-May-06 | SYS-PRS 228 | judgmental, scan |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-1345 | 20-Dec-05 | 1C09 | Investigative |
| MT-05-1350 | 21-Dec-05 | 1C09 | Investigative |
| MT-06-0076 | 20-Jan-06 | 1C09 | scan |
| MT-06-0087 | 23-Jan-06 | 1C09, 1C10 | characterization |
| MT-06-0089 | 24-Jan-06 | 1C09 | static (t-cap) |
| MT-06-0091 | 24-Jan-06 | 1C09, 1C10 | Investigative |
| MT-06-0164 | 10-Feb-06 | 1C09 | DVU (upper and lower) |
| MT-06-0166 | 10-Feb-06 | 1C09 | static (02) |
| MT-06-0167 | 10-Feb-06 | 1C09 | judgmental (upper and lower) |
| MT-06-0323 | 10-Feb-06 | 1C09 | judgmental |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-1356 | 21-Dec-05 | 1C10 | scan (t-cap) Investigative |
| MT-05-1357 | 22-Dec-05 | 1C10 | Investigative |
| MT-05-1358 | 22-Dec-05 | 1C10 | scan (t-cap) Investigative |
| MT-05-1359 | 22-Dec-05 | 1C10 | Investigative |
| MT-06-0077 | 20-Jan-06 | 1C10 | scan (t-cap) |
| MT-06-0171 | 11-Feb-06 | 1C10 | DVU (t- cap) |
| MT-06-0172 | 11-Feb-06 | 1C10 | judgmental (01, 02) |
| MT-06-0180 | 13-Feb-06 | 1C10 | static (01,02) dose (t-48 (t-cap)) Investigative |
| MT-06-0297 | 11-Mar-06 | 1C10 | DVU (t-48) |
| MT-06-0316 | 15-Mar-06 | 1C10 | static (floor) |
| MT-06-0321 | 16-Mar-06 | 1C10 | judgmental (01) |
| MT-06-0329 | 18-Mar-06 | 1C10 | Investigative |
| MT-06-0330 | 20-Mar-06 | 1C10 | static (01) |
| MT-06-0385 | 01-Apr-06 | 1C10 | static (t-48) |
| MT-06-0427 | 13-Apr-06 | 1C10 | Investigative |
| MT-06-0553 | 08-Jun-06 | 1C10 | dose (info for dose model) |
| MT-06-0483 | 04-May-06 | SYS-PRS 339 | judgmental, scan, dose |
| MT-06-0464 | 28-Apr-06 | SYS-PRS 230 | judgmental, scan, dose |
| MT-06-0467 | 04-May-06 | SYS-PRS 229 | judgmental, scan, dose |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-0616 | 09-Aug-05 | 1C11 | DVU (57) |
| MT-06-0111 | 31-Jan-06 | 1C11 | judgmental (01) Investigative |
| MT-06-0115 | 31-Jan-06 | 1C11 | static (01) Investigative |
| MT-06-0158 | 09-Feb-06 | 1C11 | Investigative |
| MT-06-0168 | 10-Feb-06 | 1C11 | Investigative |
| MT-06-0174 | 11-Feb-06 | 1C11 | Investigative |
| MT-06-0179 | 13-Feb-06 | 1C11 | Investigative |
| MT-06-0412 | 09-Apr-06 | 1C11 | scan (57) Investigative |
| MT-06-0414 | 10-Apr-06 | 1C11 | Investigative |
| MT-06-0526 | 17-May-06 | 1C11 | static (01) Investigative |
| MT-06-0528 | 18-May-06 | 1C11 | static (02) |
| MT-06-0542 | 23-May-06 | 1C11 | static (01) |
| MT-06-0544 | 24-May-06 | 1C11 | judgmental (01/02) |
| MT-06-0549 | 25-May-06 | 1C11 | Investigative |
| MT-06-0557 | 01-Jun-06 | 1C11 | Investigative |
| MT-06-0588 | 16-Jun-06 | 1C11 | dose (t-57) |
| MT-06-0593 | 20-Jun-06 | 1C11 | Investigative |
| MT-06-0594 | 20-Jun-06 | 1C11 | Investigative |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-0617 | 09-Aug-05 | 1C12 | DVU (58) |
| MT-05-1195 | 15-Nov-05 | 1C12 | Characterization |
| MT-05-1208 | 17-Nov-05 | 1C12 | Characterization |
| MT-06-0397 | 05-Apr-06 | 1C12 | static (01) |
| MT-06-0506 | 10-May-06 | 1C12 | judgmental (01,02) |
| MT-06-0518 | 12-May-06 | 1C12 | static (01,02) |
| MT-06-0519 | 13-May-06 | 1C12 | DVU (58) |
| MT-06-0586 | 16-Jun-06 | 1C12 | dose (t-58) |

# Attachment F
# Summary of Attached
# Radiological Survey Data Sheets - continued

| RSDS | date | su | Content |
|---|---|---|---|
| MT-05-0368 | 10-Jun-05 | 1C21 | static (02) |
| MT-05-0369 | 10-Jun-05 | 1C21 | judgmental (02) |
| MT-05-0427 | 24-Jun-05 | 1C21 | scan (t-59) |
| MT-05-1269 | 05-Dec-05 | 1C21 | static (01) Investigative |
| MT-05-1327 | 15-Dec-05 | 1C21 | Investigative |
| MT-06-0020 | 06-Jan-06 | 1C21 | Investigative |
| MT-06-0022 | 06-Jan-06 | 1C21 | Investigative |
| MT-06-0289 | 10-Mar-06 | 1C21 | Characterization |
| MT-06-0294 | 10-Mar-06 | 1C21 | Characterization |
| MT-06-0394 | 04-Apr-06 | 1C21 | static (01) |
| MT-06-0398 | 06-Apr-06 | 1C21 | static (02) |
| MT-06-0400 | 07-Apr-06 | 1C21 | DVU (02) |
| MT-06-0401 | 07-Apr-06 | 1C21 | Judgmental (02) |
| MT-06-0413 | 10-Apr-06 | 1C21 | Judgmental (01) |
| MT-06-0587 | 16-Jun-06 | 1C21 | dose (t-59) |
| MT-06-0596 | 23-Jun-06 | 1C21 | Investigative |
| MT-06-0597 | 24-Jun-06 | 1C21 | Investigative |

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-CAP 1C-07 | SURVEY NO. MT-05-1160 |
| PURPOSE: Marssims Wall and Floor Scan | RWP NO. NA |
| | DATE: 11/8/05 |
| | TIME: 1600 |

## MAP/DRAWING

100% Scan of Walls from Floor up 2 meters on Wall.

100% Scan of Floors

25% Scan of walls above two meters

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5895/5896 | 2-5-06 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | HP# | Date: 11/8/05 |
| Completed by: (Print Name) Joseph Kenyon | | |
| Counted by: (Signature) | HP# | Date: |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | HP# | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) Jess Griffin | | F1/686 |

ML-9620 (2-98)

Survey No.
MT-05-1160



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

COPY

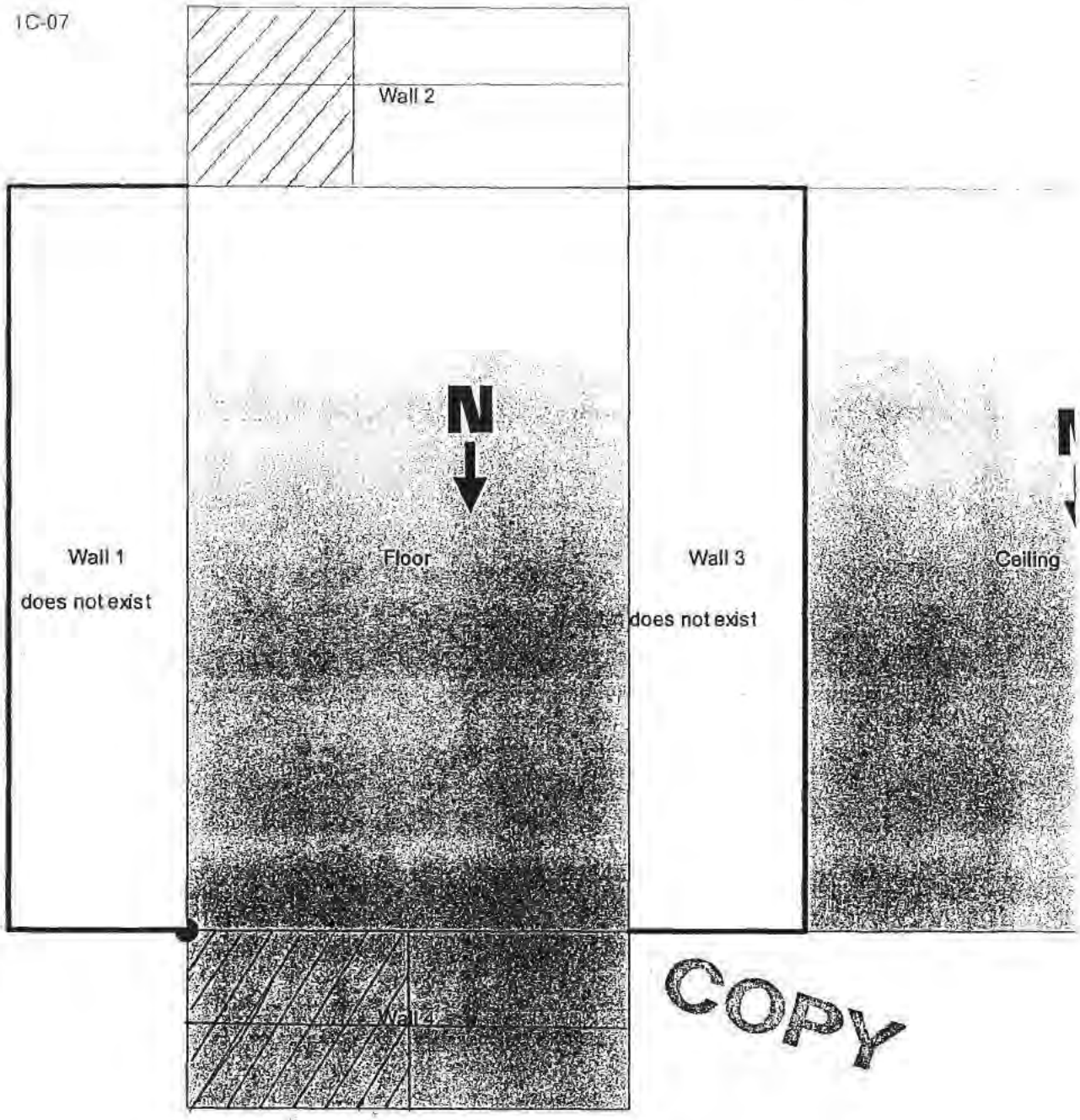
COMMENTS: N/A

NOTES:
1. See MD-60036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F2/686

ML-9620A (4-98)

MT-05-1160



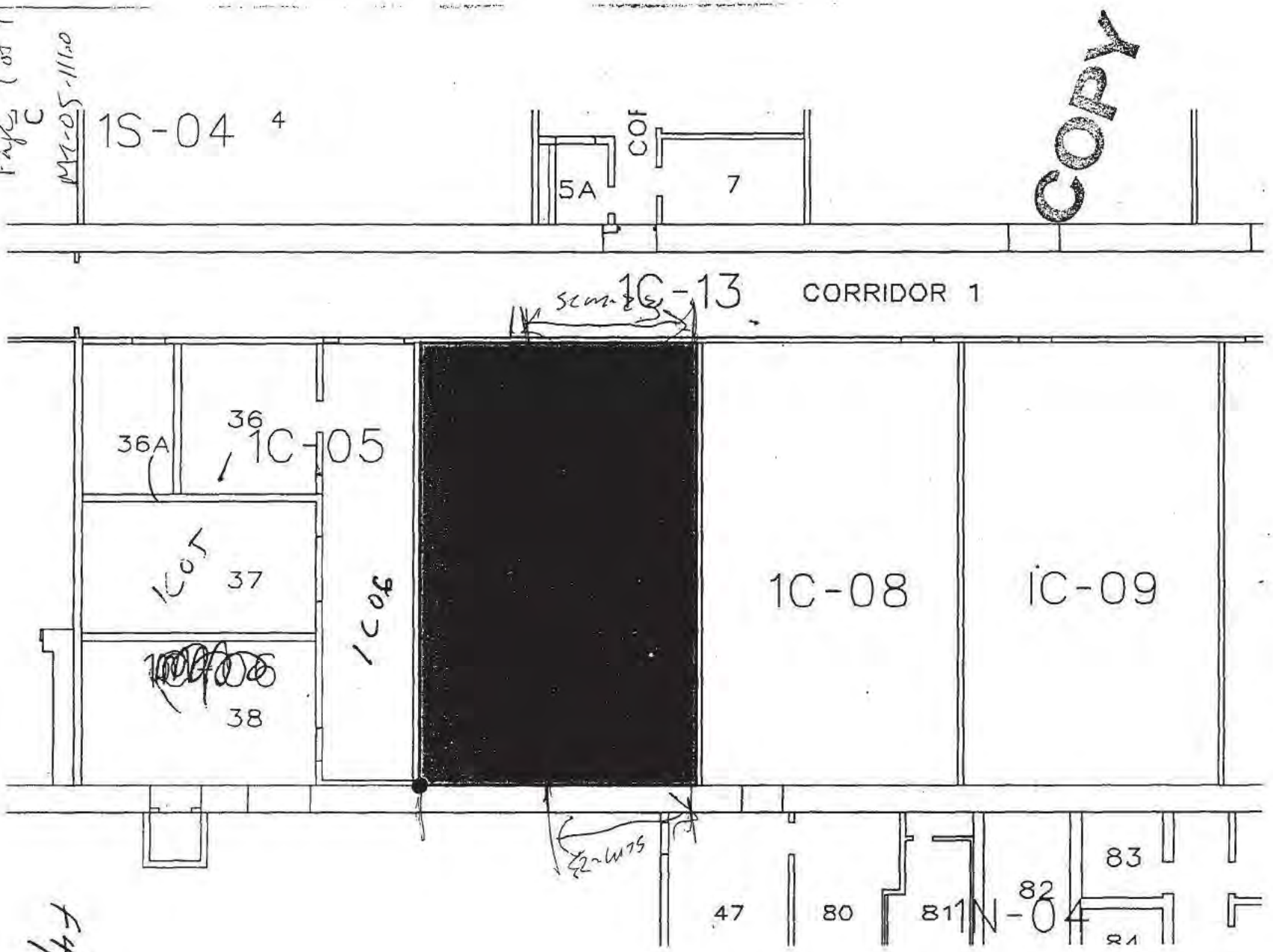

COPY

Inst used (WALL'S) – 5895/5892 USED ON 11-8-05

☐ - DEPICTS surface area scanned w/scm-23

▨ - Depicts surface area scanned w/0350-1

Page 4 of 4
C
MZ-05-1110




H-8-05 Scan walls N/S 5895/5896 Due 8-5-06
complete layout ceiling upper walls.

4/4/686

# RADIOLOGICAL SURVEY DATA SHEET



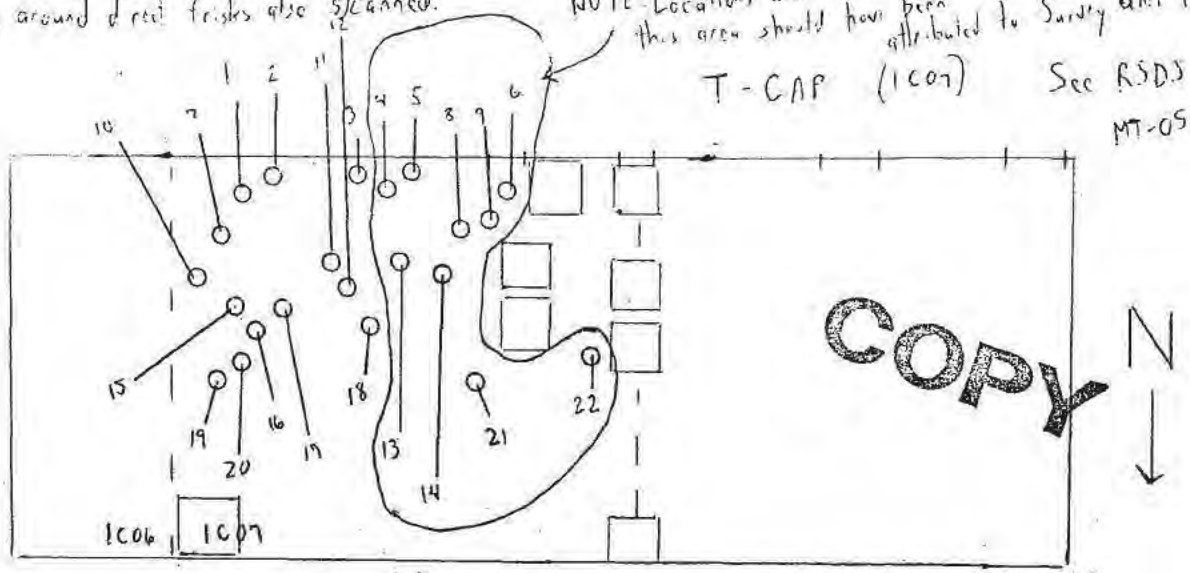
| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C07) | SURVEY NO. MT-05 1331 |
| PURPOSE: Investigation Survey of Suspected Elevated Spots (East Side of Room) | RWP NO. N/A |
| | DATE: 12-16-05 |
| | TIME: 1500 |

## MAP / DRAWING

- See Attachments for read ng results
- Areas around d rect frisks also scanned.

NOTE: Locations within this area should have been attributed to Survey Unit 1C05

T-CAP (1C07) See RSDS MT-05-1343




Survey Locations (NOTE: The 22 locations encompass 24 painted circles)

| | | | |
|---|---|---|---|
| 1 1C07 0101X | 8 1C07 0108X | 15 1C07 0115X | 22 1C07 0122X |
| 2 1C07 0102X | 9 1C07 0109X | 16 1C07 0116X | |
| 3 1C07 0103X | 10 1C07 0110X | 17 1C07 0117X | |
| 4 1C07 0104X | 11 1C07 0111X | 18 1C07 0118X | |
| *5 1C07 0105X | 12 1C07 0112X | 19 1C07 0119X | |
| 6 1C07 0106X | 13 1C07 0113X | 20 1C07 0120X | |
| 7 1C07 0107X | *14 1C07 0114X | 21 1C07 0121X | |

*- Denotes location with cluster of 2 painted circles

SCM 23 Summary attached. Surveyed covered 4 units: 1C07, 1C08, 1C09 & 1C10.

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM 23 | R180 / C180 | 6/01/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | | |
|---|---|---|---|
| Completed by: (Signature) J. King | HP [redacted] | Date: 12-16-05 | |
| Completed by: (Print Name) J. King | | | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A | |
| Counted by: (Print Name) See Attachments | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-8-06 | |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

F5/686

Survey No. MT-05-1331

Page 2 of 9 ~~8~~ 7/14/00

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C07 0101X |
| 2 | | | | 1C07 0102X |
| 3 | | | | 1C07 0103X |
| 4 | | | | 1C07 0104X |
| 5 | | | | 1C07 0105X |
| 6 | | | | 1C07 0106X |
| 7 | | | | 1C07 0107X |
| 8 | | | | 1C07 0108X |
| 9 | | | | 1C07 0109X |
| 10 | | | | 1C07 0110X |
| 11 | | | | 1C07 0111X |
| 12 | | | | 1C07 0112X |
| 13 | | | | 1C07 0113X |
| 14 | | | | 1C07 0114X |
| 15 | | | | 1C07 0115X |
| 16 | | | | 1C07 0116X |
| 17 | | | | 1C07 0117X |
| 18 | | | | 1C07 0118X |
| 19 | | | | 1C07 0119X |
| 20 | | | | 1C07 0120X |
| 21 | | | | 1C07 0121X |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| | | 2K 12-19-05 | | 1C07 0122X |
| | | N/A | | |

22 OK

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

NOTES:
1. See MD-60036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-6620A (4-95)

F6/686

3 of 9

MARSSIM Smear Data

J.H 12.22.05

COPY MT-05-1331

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20051219_1727.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1331.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F4/686

4 of 8

MARSSIM Smear Data

J.H
12-20-05

COPY
MT-05-1331

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/19/05 | 5:27:51 PM | -1 | 10.00 | 8 | 7 | 13 | 18 | 607.41 | 0 | 21.8 | B | 2 |
| 12/19/05 | 5:38:42 PM | 0 | 2.00 | 489 | 472 | 0 | 1 | 572.64 | 926 | 6.5 | | 2 |
| 12/19/05 | 5:41:24 PM | 1 | 2.00 | 0 | 0 | 0 | 0 | 547.40 | 0 | 0.0 | | 2 |
| 12/19/05 | 5:44:06 PM | 2 | 2.00 | 0 | 1 | 0 | 6 | 593.55 | 1 | 1321.2 | | 2 |
| 12/19/05 | 5:46:50 PM | 3 | 2.00 | 3 | 3 | 0 | 0 | 603.22 | 5 | 200.0 | | 2 |
| 12/19/05 | 5:49:32 PM | 4 | 2.00 | 1 | 1 | 0 | 0 | 509.95 | 3 | 370.4 | | 2 |
| 12/19/05 | 5:52:15 PM | 5 | 2.00 | 0 | 0 | 0 | 13 | 516.63 | 0 | 0.0 | | 2 |
| 12/19/05 | 5:54:57 PM | 6 | 2.00 | 2 | 3 | 0 | 5 | 574.78 | 3 | 301.1 | | 2 |
| 12/19/05 | 5:57:39 PM | 7 | 2.00 | 0 | 0 | 0 | 6 | 568.58 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:00:22 PM | 8 | 2.00 | 0 | 0 | 0 | 7 | 602.62 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:03:04 PM | 9 | 2.00 | 0 | 0 | 0 | 8 | 579.33 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:05:47 PM | 10 | 2.00 | 0 | 0 | 0 | 7 | 478.51 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:08:30 PM | 11 | 2.00 | 3 | 3 | 0 | 4 | 592.52 | 6 | 165.3 | | 2 |
| 12/19/05 | 6:11:13 PM | 12 | 2.00 | 0 | 0 | 0 | 7 | 587.51 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:13:56 PM | 13 | 2.00 | 0 | 0 | 0 | 7 | 549.88 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:16:39 PM | 14 | 2.00 | 0 | 1 | 0 | 6 | 567.26 | 0 | 4285.2 | | 2 |
| 12/19/05 | 6:19:21 PM | 15 | 2.00 | 0 | 0 | 0 | 7 | 526.04 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:22:04 PM | 16 | 2.00 | 0 | 0 | 0 | 9 | 448.59 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:25:28 PM | 17 | 2.00 | 0 | 0 | 0 | 7 | 587.59 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:28:11 PM | 18 | 2.00 | 0 | 0 | 0 | 0 | 518.96 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:30:53 PM | 19 | 2.00 | 0 | 1 | 0 | 6 | 575.30 | 0 | 0.0 | | 2 |
| 12/19/05 | 6:33:34 PM | 20 | 2.00 | 2 | 2 | 0 | 5 | 555.70 | 3 | 268.2 | | 2 |
| 12/19/05 | 6:36:17 PM | 21 | 2.00 | 1 | 0 | 0 | 6 | 574.09 | 1 | 763.5 | | 2 |
| 12/19/05 | 6:39:01 PM | √22 | 2.00 | 0 | 1 | 0 | 6 | 536.52 | 0 | 0.0 | | 2 |

J.H

F8/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_072
Batch Ended: 12/19/05 9:59
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-02-1331 KING [22] GWD ✓

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 7 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 1.41 | 1.92 | | 0.31 | 1.59 | |
| C3 | 11 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 12 | 0.00 | 1.96 | | 0.62 | 1.59 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.24 | |
| D4 | 16 | 0.00 | 2.08 | | 2.54 | 2.35 | |
| A1 | 17 | 1.72 | 2.20 | | 0.29 | 1.84 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 19 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 20 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 21 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 ✓ | 22 | 3.37 | 2.61 | | 0.00 | 1.12 | |

J.H J.H

COPY

5 of 8 2/14/06



J.H 12-23-05

19/086

# T-Building T-CAP (1C07);Survey of Suspected Elevated Spots

*RSDS#* MT-05-1331 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C070101X | 5895 | [redacted] | 5896 | 1 | 1 | 12/16/05 | 7:19 | 7 | 120 | 26 |
| ALPHA | 1C070102X | 5895 | [redacted] | 5896 | 1 | 2 | 12/16/05 | 7:27 | 2 | 120 | 7 |
| ALPHA | 1C070103X | 5895 | [redacted] | 5896 | 1 | 3 | 12/16/05 | 7:35 | 7 | 120 | 26 |
| ALPHA | 1C070104X | 5895 | [redacted] | 5896 | 1 | 4 | 12/16/05 | 7:43 | 7 | 120 | 26 |
| ALPHA | 1C070105X | 5895 | [redacted] | 5896 | 1 | 5 | 12/16/05 | 7:53 | 3 | 120 | 11 |
| ALPHA | 1C070106X | 5895 | [redacted] | 5896 | 1 | 6 | 12/16/05 | 8:00 | 9 | 120 | 33 |
| ALPHA | 1C070107X | 5895 | [redacted] | 5896 | 1 | 7 | 12/16/05 | 8:30 | 9 | 120 | 33 |
| ALPHA | 1C070108X | 5895 | [redacted] | 5896 | 1 | 8 | 12/16/05 | 8:41 | 15 | 120 | 55 |
| ALPHA | 1C070109X | 5895 | [redacted] | 5896 | 1 | 9 | 12/16/05 | 8:48 | 5 | 120 | 18 |
| ALPHA | 1C070110X | 5895 | [redacted] | 5896 | 1 | 10 | 12/16/05 | 9:41 | 6 | 120 | 22 |
| ALPHA | 1C070111X | 5895 | [redacted] | 5896 | 1 | 11 | 12/16/05 | 9:52 | 7 | 120 | 26 |
| ALPHA | 1C070112X | 5895 | [redacted] | 5896 | 1 | 12 | 12/16/05 | 10:01 | 9 | 120 | 33 |
| ALPHA | 1C070113X | 5895 | [redacted] | 5896 | 1 | 13 | 12/16/05 | 10:09 | 4 | 120 | 15 |
| ALPHA | 1C070114X | 5895 | [redacted] | 5896 | 1 | 14 | 12/16/05 | 10:20 | 124 | 120 | 454 |
| ALPHA | 1C070115X | 5895 | [redacted] | 5896 | 1 | 15 | 12/16/05 | 10:29 | 15 | 120 | 55 |
| ALPHA | 1C070116X | 5895 | [redacted] | 5896 | 1 | 16 | 12/16/05 | 10:37 | 6 | 120 | 22 |
| ALPHA | 1C070117X | 5895 | [redacted] | 5896 | 1 | 17 | 12/16/05 | 10:44 | 11 | 120 | 40 |
| ALPHA | 1C070118X | 5895 | [redacted] | 5896 | 1 | 18 | 12/16/05 | 12:16 | 10 | 120 | 37 |
| ALPHA | 1C070119X | 5895 | [redacted] | 5896 | 1 | 19 | 12/16/05 | 12:26 | 5 | 120 | 18 |
| ALPHA | 1C070120X | 5895 | [redacted] | 5896 | 1 | 20 | 12/16/05 | 12:31 | 4 | 120 | 15 |
| ALPHA | 1C070121X | 5895 | [redacted] | 5896 | 1 | 21 | 12/16/05 | 12:50 | 4 | 120 | 15 |
| ALPHA | 1C070122X | 5895 | [redacted] | 5896 | 1 | 22 | 12/16/05 | 14:33 | 11 | 120 | 40 |
| BETA | 1C070101X | 5895 | [redacted] | 5896 | 2 | 1 | 12/16/05 | 7:20 | 102 | 60 | 952 ✓ |
| BETA | 1C070102X | 5895 | [redacted] | 5896 | 2 | 2 | 12/16/05 | 7:28 | 109 | 60 | 1018 |
| BETA | 1C070103X | 5895 | [redacted] | 5896 | 2 | 3 | 12/16/05 | 7:36 | 99 | 60 | 924 |
| BETA | 1C070104X | 5895 | [redacted] | 5896 | 2 | 4 | 12/16/05 | 7:44 | 104 | 60 | 971 |
| BETA | 1C070105X | 5895 | [redacted] | 5896 | 2 | 5 | 12/16/05 | 7:54 | 94 | 60 | 878 |
| BETA | 1C070106X | 5895 | [redacted] | 5896 | 2 | 6 | 12/16/05 | 8:02 | 98 | 60 | 915 |
| BETA | 1C070107X | 5895 | [redacted] | 5896 | 2 | 7 | 12/16/05 | 8:32 | 105 | 60 | 980 |
| BETA | 1C070108X | 5895 | [redacted] | 5896 | 2 | 8 | 12/16/05 | 8:42 | 107 | 60 | 999 |
| BETA | 1C070109X | 5895 | [redacted] | 5896 | 2 | 9 | 12/16/05 | 8:49 | 65 | 60 | 607 |
| BETA | 1C070110X | 5895 | [redacted] | 5896 | 2 | 10 | 12/16/05 | 9:42 | 109 | 60 | 1018 |
| BETA | 1C070111X | 5895 | [redacted] | 5896 | 2 | 11 | 12/16/05 | 9:53 | 106 | 60 | 990 |
| BETA | 1C070112X | 5895 | [redacted] | 5896 | 2 | 12 | 12/16/05 | 10:02 | 100 | 60 | 934 |
| BETA | 1C070113X | 5895 | [redacted] | 5896 | 2 | 13 | 12/16/05 | 10:11 | 110 | 60 | 1027 |
| BETA | 1C070114X | 5895 | [redacted] | 5896 | 2 | 14 | 12/16/05 | 10:22 | 101 | 60 | 943 |
| BETA | 1C070115X | 5895 | [redacted] | 5896 | 2 | 15 | 12/16/05 | 10:30 | 86 | 60 | 803 |
| BETA | 1C070116X | 5895 | [redacted] | 5896 | 2 | 16 | 12/16/05 | 10:38 | 95 | 60 | 887 |
| BETA | 1C070117X | 5895 | [redacted] | 5896 | 2 | 17 | 12/16/05 | 10:45 | 94 | 60 | 878 |
| BETA | 1C070118X | 5895 | [redacted] | 5896 | 2 | 18 | 12/16/05 | 12:17 | 109 | 60 | 1018 |
| BETA | 1C070119X | 5895 | [redacted] | 5896 | 2 | 19 | 12/16/05 | 12:27 | 113 | 60 | 1055 |
| BETA | 1C070120X | 5895 | [redacted] | 5896 | 2 | 20 | 12/16/05 | 12:32 | 113 | 60 | 1055 ✓ |



F-10/686

# T-Building T-CAP (1C07);Survey of Suspected Elevated Spots

*RSDS#* MT-05-1331 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| BETA | 1C070121X | 5895 | [redacted] | 5896 | 2 | 21 | 12/16/05 | 12:51 | 102 | 60 | 952 |
| BETA | 1C070122X | 5895 | [redacted] | 5896 | 2 | 22 | 12/16/05 | 14:34 | 116 | 60 | 1083 |

N

A

COPY



F11/686

**Survey Unit Number:** 1C07

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(Supplemental sheet for biased measurements.)

RSDS # MT 05-1331

RCT INT/HP 7H /

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C07 0101X | T-CAP | Floor | N/A | N/A |
| 1C07 0102X | | | | |
| 1C07 0103X | | | | |
| 1C07 0104X | | | | |
| 1C07 0105X | | | | |
| 1C07 0106X | | | | |
| 1C07 0107X | | | | |
| 1C07 0108X | | | | |
| 1C07 0109X | | | | |
| 1C07 0110X | | | | |
| 1C07 0111X | | | | |
| 1C07 0112X | | | | |
| 1C07 0113X | | | | |
| 1C07 0114X | | | | |
| 1C07 0115X | | | | |
| 1C07 0116X | | | | |
| 1C07 0117X | | | | |
| 1C07 0118X | | | | |
| 1C07 0119X | | | | |
| 1C07 0120X | | | | |
| 1C07 0121X | | | | |
| 1C07 0122X | | | | |
| N/A | N/A | N/A | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F12/686

# Surface Contamination Monitor Survey Investigation Summary

| | |
|---|---|
| Survey Unit | 1C-07 (Includes 1C-08, 1C-09, 1C-10) |
| SCM ID (Circle One) | SCM 53<br>(SCM 23) |
| Calibration Due Date | 06-01-06 |

| Room | Surface | Investigations | |
|---|---|---|---|
| T-Cap | Floor - East | 58 | (for 58 spots) |
| " | Floor - West | 3 | (Marked for Resrad - Includes 5 highest Alpha and 5 highest Beta) |
| | | | |
| | | | |
| | | | |
| T-Cap | Walls | 30 | (for 36 spots) |
| | | | |
| | | | |
| T-Cap Sump Pits | Walls Only | 38 | (for 48 spots) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Note: 2 floor spots and 1 wall spot from T-CAP Floor East and walls are actually located in Corridor 39, north end.

Name Sherry Oran

Signature Sherry Oran

Date 12-19-05

COPY

# RADIOLOGICAL SURVEY DATA SHEET



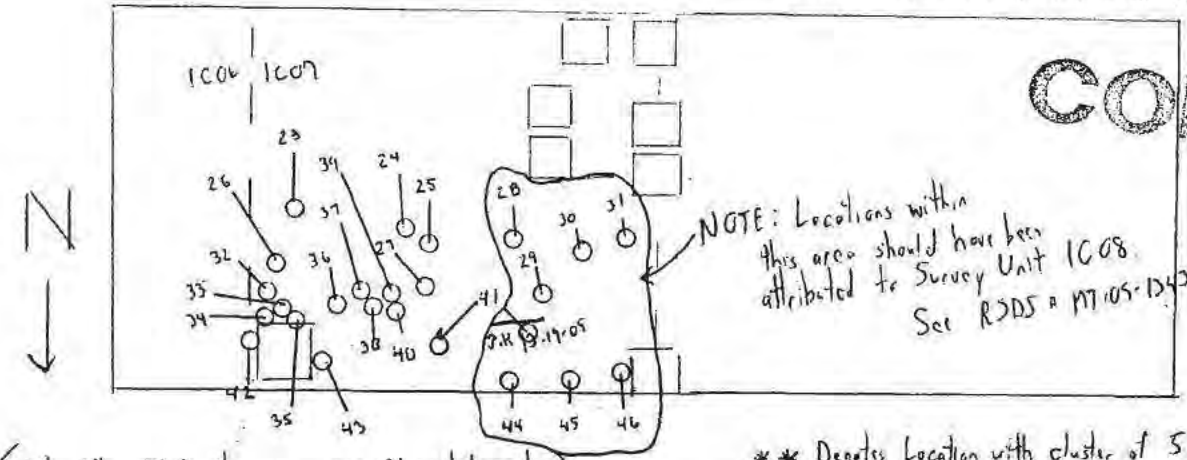
| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T BLDG T-CAP (1C07) | SURVEY NO. MT-05-1335 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots (East S.E. Room) | RWP NO. N/A |
| | DATE: 12-17-05 |
| | TIME: 1030 |

## MAP / DRAWING

See Attachments

- No elevated α/β readings detected during scanning
- Areas around direct friskes also scanned

T CAP




NOTE: Locations within this area should have been attributed to Survey Unit 1C08. See RSDS # MT-05-1343

COPY

(Note: The 24 locations encompass 31 painted circles)

** Denotes Location with cluster of 5 painted circles
* Denotes Location with cluster of 4 painted circles

Survey Locations

| | | | |
|---|---|---|---|
| (23) 1C07 0123X | (29) 1C07 0129X | (35) 1C07 0135X | (41) 1C07 0141X |
| (24) 1C07 0124X | (30) 1C07 0130X | (36) 1C07 0136X | (42) 1C07 0142X |
| (25) 1C07 0125X | (31) 1C07 0131X | (37) 1C07 0137X | (43) 1C07 0143X |
| (26) 1C07 0126X | (32) 1C07 0132X | (38) 1C07 0138X | (44) 1C07 0144X |
| (27) 1C07 0127X | ** (33) 1C07 0133X | (39) 1C07 0139X | (45) 1C07 0145X |
| (28) 1C07 0128X | * (34) 1C07 0134X | (40) 1C07 0140X | (46) 1C07 0146X |

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary

Reference MT-05-1331 for Scan Summary

Note: 3 of the original painted circles were actually located in 1C08. These were surveyed separately. Refer to Survey # MT-05-1336.

△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895, 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | HP [redacted] | Date: 12-17-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# | Date: |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F14/686

Survey No. MT-05-1335



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C07 0123X |
| 2 | | | | 1C07 0124X |
| 3 | | | | 1C07 0125X |
| 4 | | | | 1C07 0126X |
| 5 | | | | 1C07 0127X |
| 6 | | | | 1C07 0128X |
| 7 | | | | 1C07 0129X |
| 8 | | | | 1C07 0130X |
| 9 | | | | 1C07 0131X |
| 10 | | | | 1C07 0132X |
| 11 | | | | 1C07 0133X |
| 12 | | | | 1C07 0134X |
| 13 | | | | 1C07 0135X |
| 14 | | | | 1C07 0136X |
| 15 | | | | 1C07 0137X |
| 16 | | | | 1C07 0138X |
| 17 | | | | 1C07 0139X |
| 18 | | | | 1C07 0141X |
| 19 | | | | 1C07 0142X |
| 20 | | | | 1C07 0143X |
| 21 | | | | 1C07 0144X |
| 22 | | | | 1C07 0145X |
| 23 | | | | 1C07 0146X |
| 24 | | | | |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | | |
| | | N/A | | |

COMMENTS: N/A

NOTES:
1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

COPY

F15/686

MARSSIM Smear Data

COPY

MT-05-1335

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051219_1608.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1335.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F19/686

MARSSIM Smear Data

ZM
12-22-05

COPY

MT-05-1335

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/19/05 | 4:08:41 PM | -1 | 10.00 | 9 | 8 | 11 | 10 | 617.85 | 0 | 20.9 | B | 1 |
| 12/19/05 | 4:19:31 PM | 0 | 2.00 | 436 | 412 | 0 | 1 | 550.68 | 841 | 6.9 | | 1 |
| 12/19/05 | 4:22:13 PM | 1 | 2.00 | 0 | 0 | 0 | 27 | 561.53 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:24:57 PM | 2 | 2.00 | 0 | 0 | 0 | 13 | 479.31 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:27:40 PM | 3 | 2.00 | 0 | 0 | 0 | 7 | 504.81 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:30:22 PM | 4 | 2.00 | 10 | 7 | 2 | 5 | 578.09 | 18 | 65.9 | | 1 |
| 12/19/05 | 4:33:06 PM | 5 | 2.00 | 0 | 0 | 0 | 13 | 564.49 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:35:58 PM | 6 | 2.00 | 0 | 1 | 0 | 5 | 479.60 | 1 | 1658.8 | | 1 |
| 12/19/05 | 4:38:40 PM | 7 | 2.00 | 1 | 1 | 0 | 5 | 574.51 | 1 | 672.2 | | 1 |
| 12/19/05 | 4:41:23 PM | 8 | 2.00 | 0 | 1 | 0 | 6 | 535.10 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:44:05 PM | 9 | 2.00 | 0 | 0 | 0 | 13 | 601.31 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:46:48 PM | 10 | 2.00 | 2 | 2 | 0 | 8 | 560.66 | 5 | 208.9 | | 1 |
| 12/19/05 | 4:49:31 PM | 11 | 2.00 | 0 | 0 | 0 | 23 | 553.01 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:52:14 PM | 12 | 2.00 | 0 | 0 | 0 | 13 | 434.23 | 0 | 0.0 | | 1 |
| 12/19/05 | 4:54:57 PM | 13 | 2.00 | 1 | 1 | 0 | 5 | 507.23 | 2 | 608.3 | | 1 |
| 12/19/05 | 4:57:39 PM | 14 | 2.00 | 0 | 0 | 0 | 8 | 451.74 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:00:22 PM | 15 | 2.00 | 0 | 2 | 0 | 10 | 530.36 | 1 | 995.1 | | 1 |
| 12/19/05 | 5:03:04 PM | 16 | 2.00 | 0 | 0 | 2 | 13 | 466.70 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:05:53 PM | 17 | 2.00 | 0 | 0 | 3 | 8 | 569.08 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:08:35 PM | 18 | 2.00 | 0 | 0 | 0 | 11 | 540.95 | 0 | 2965.0 | | 1 |
| 12/19/05 | 5:11:17 PM | 19 | 2.00 | 0 | 0 | 0 | 17 | 494.91 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:14:00 PM | 20 | 2.00 | 3 | 2 | 0 | 4 | 513.45 | 6 | 187.9 | | 1 |
| 12/19/05 | 5:16:43 PM | 21 | 2.00 | 0 | 0 | 0 | 14 | 442.01 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:19:25 PM | 22 | 2.00 | 0 | 0 | 0 | 15 | 537.97 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:22:08 PM | 23 | 2.00 | 0 | 0 | 0 | 7 | 395.01 | 0 | 0.0 | | 1 |
| 12/19/05 | 5:24:50 PM | 24 | 2.00 | 0 | 0 | 0 | 18 | 570.23 | 0 | 0.0 | | 1 |

J.K.

F19/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_070
Batch Ended: 12/19/05 9:04
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1335 KING [24] GWD ✓

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 11 | 0.00 | 2.10 | | 2.70 | 2.43 | |
| C4 | 12 | 0.00 | 1.98 | | 1.74 | 1.95 | |
| D1 | 13 | 0.00 | 2.07 | | 1.54 | 2.16 | |
| D2 | 14 | 0.00 | 2.19 | | 2.77 | 2.38 | |
| D3 | 15 | 0.00 | 2.11 | | 1.42 | 2.15 | |
| D4 | 16 | 1.54 | 2.04 | | 0.00 | 1.17 | |
| A1 | 17 | 0.00 | 2.23 | | 3.08 | 2.61 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 19 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 20 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 21 | 0.00 | 1.97 | | 4.79 | 2.92 | |
| B2 | 22 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 23 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 ✓ | 24 | 0.00 | 1.97 | | 0.40 | 1.69 | |

J.K J.K

COPY

5 of 8



J.K
12-22-05

418/686

# T-Building T-CAP (1C07);Survey of Suspected Elevated Spots

*RSDS#* MT-05-1335 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C070123X | 5895 | [redacted] | 5896 | 1 | 1 | 12/17/05 | 6:13 | 4 | 120 | 15 |
| ALPHA | 1C070124X | 5895 | [redacted] | 5896 | 1 | 2 | 12/17/05 | 6:29 | 6 | 120 | 22 |
| ALPHA | 1C070125X | 5895 | [redacted] | 5896 | 1 | 3 | 12/17/05 | 6:34 | 7 | 120 | 26 |
| ALPHA | 1C070126X | 5895 | [redacted] | 5896 | 1 | 4 | 12/17/05 | 6:46 | 5 | 120 | 18 |
| ALPHA | 1C070127X | 5895 | [redacted] | 5896 | 1 | 5 | 12/17/05 | 6:55 | 11 | 120 | 40 |
| ALPHA | 1C070128X | 5895 | [redacted] | 5896 | 1 | 6 | 12/17/05 | 7:03 | 4 | 120 | 15 |
| ALPHA | 1C070129X | 5895 | [redacted] | 5896 | 1 | 7 | 12/17/05 | 7:11 | 11 | 120 | 40 |
| ALPHA | 1C070130X | 5895 | [redacted] | 5896 | 1 | 8 | 12/17/05 | 7:19 | 13 | 120 | 48 |
| ALPHA | 1C070131X | 5895 | [redacted] | 5896 | 1 | 9 | 12/17/05 | 7:28 | 10 | 120 | 37 |
| ALPHA | 1C070132X | 5895 | [redacted] | 5896 | 1 | 10 | 12/17/05 | 7:52 | 1 | 120 | 4 |
| ALPHA | 1C070133X | 5895 | [redacted] | 5896 | 1 | 11 | 12/17/05 | 8:04 | 12 | 120 | 44 |
| ALPHA | 1C070134X | 5895 | [redacted] | 5896 | 1 | 12 | 12/17/05 | 8:15 | 4 | 120 | 15 |
| ALPHA | 1C070135X | 5895 | [redacted] | 5896 | 1 | 13 | 12/17/05 | 8:22 | 8 | 120 | 29 |
| ALPHA | 1C070136X | 5895 | [redacted] | 5896 | 1 | 14 | 12/17/05 | 8:29 | 13 | 120 | 48 |
| ALPHA | 1C070137X | 5895 | [redacted] | 5896 | 1 | 15 | 12/17/05 | 8:35 | 8 | 120 | 29 |
| ALPHA | 1C070138X | 5895 | [redacted] | 5896 | 1 | 16 | 12/17/05 | 8:40 | 4 | 120 | 15 |
| ALPHA | 1C070139X | 5895 | [redacted] | 5896 | 1 | 17 | 12/17/05 | 9:23 | 2 | 120 | 7 |
| ALPHA | 1C070140X | 5895 | [redacted] | 5896 | 1 | 18 | 12/17/05 | 9:30 | 6 | 120 | 22 |
| ALPHA | 1C070141X | 5895 | [redacted] | 5896 | 1 | 19 | 12/17/05 | 9:39 | 5 | 120 | 18 |
| ALPHA | 1C070142X | 5895 | [redacted] | 5896 | 1 | 20 | 12/17/05 | 9:46 | 9 | 120 | 33 |
| ALPHA | 1C070143X | 5895 | [redacted] | 5896 | 1 | 21 | 12/17/05 | 9:54 | 7 | 120 | 26 |
| ALPHA | 1C070144X | 5895 | [redacted] | 5896 | 1 | 22 | 12/17/05 | 10:02 | 14 | 120 | 51 |
| ALPHA | 1C070145X | 5895 | [redacted] | 5896 | 1 | 23 | 12/17/05 | 10:10 | 2 | 120 | 7 |
| ALPHA | 1C070146X | 5895 | [redacted] | 5896 | 1 | 24 | 12/17/05 | 10:19 | 4 | 120 | 15 |
| BETA | 1C070123X | 5895 | [redacted] | 5896 | 2 | 1 | 12/17/05 | 6:14 | 82 | 60 | 766 |
| BETA | 1C070124X | 5895 | [redacted] | 5896 | 2 | 2 | 12/17/05 | 6:31 | 111 | 60 | 1036 |
| BETA | 1C070125X | 5895 | [redacted] | 5896 | 2 | 3 | 12/17/05 | 6:35 | 84 | 60 | 784 |
| BETA | 1C070126X | 5895 | [redacted] | 5896 | 2 | 4 | 12/17/05 | 6:47 | 99 | 60 | 924 |
| BETA | 1C070127X | 5895 | [redacted] | 5896 | 2 | 5 | 12/17/05 | 6:56 | 87 | 60 | 812 |
| BETA | 1C070128X | 5895 | [redacted] | 5896 | 2 | 6 | 12/17/05 | 7:04 | 97 | 60 | 906 |
| BETA | 1C070129X | 5895 | [redacted] | 5896 | 2 | 7 | 12/17/05 | 7:12 | 104 | 60 | 971 |
| BETA | 1C070130X | 5895 | [redacted] | 5896 | 2 | 8 | 12/17/05 | 7:21 | 84 | 60 | 784 |
| BETA | 1C070131X | 5895 | [redacted] | 5896 | 2 | 9 | 12/17/05 | 7:29 | 84 | 60 | 784 |
| BETA | 1C070132X | 5895 | [redacted] | 5896 | 2 | 10 | 12/17/05 | 7:53 | 73 | 60 | 682 |
| BETA | 1C070133X | 5895 | [redacted] | 5896 | 2 | 11 | 12/17/05 | 8:05 | 64 | 60 | 598 |
| BETA | 1C070134X | 5895 | [redacted] | 5896 | 2 | 12 | 12/17/05 | 8:16 | 96 | 60 | 896 |
| BETA | 1C070135X | 5895 | [redacted] | 5896 | 2 | 13 | 12/17/05 | 8:23 | 69 | 60 | 644 |
| BETA | 1C070136X | 5895 | [redacted] | 5896 | 2 | 14 | 12/17/05 | 8:30 | 99 | 60 | 924 |
| BETA | 1C070137X | 5895 | [redacted] | 5896 | 2 | 15 | 12/17/05 | 8:36 | 70 | 60 | 654 |
| BETA | 1C070138X | 5895 | [redacted] | 5896 | 2 | 16 | 12/17/05 | 8:41 | 92 | 60 | 859 |
| BETA | 1C070139X | 5895 | [redacted] | 5896 | 2 | 17 | 12/17/05 | 9:24 | 106 | 60 | 990 |
| BETA | 1C070140X | 5895 | [redacted] | 5896 | 2 | 18 | 12/17/05 | 9:31 | 83 | 60 | 775 |



F19/686

# T-Building T-CAP (1C07);Survey of Suspected Elevated Spots

*RSDS#* MT-05-1335 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| BETA | 1C070141X | 5895 | [redacted] | 5896 | 2 | 19 | 12/17/05 | 9:40 | 93 | 60 | 868 |
| BETA | 1C070142X | 5895 | [redacted] | 5896 | 2 | 20 | 12/17/05 | 9:48 | 81 | 60 | 756 |
| BETA | 1C070143X | 5895 | [redacted] | 5896 | 2 | 21 | 12/17/05 | 9:55 | 95 | 60 | 887 |
| BETA | 1C070144X | 5895 | [redacted] | 5896 | 2 | 22 | 12/17/05 | 10:03 | 81 | 60 | 756 |
| BETA | 1C070145X | 5895 | [redacted] | 5896 | 2 | 23 | 12/17/05 | 10:11 | 85 | 60 | 794 |
| BETA | 1C070146X | 5895 | [redacted] | 5896 | 2 | 24 | 12/17/05 | 10:20 | 75 | 60 | 700 ✓ |

N
A

Copy



F-20/686

**Survey Unit Number:** 1C07



(Supplemental sheet for biased measurements.)

RSDS # M7-05-1335

RCT INT/HP 2K [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C07 0123X | T-CAP | Floor | N/A | N/A |
| 1C07 0124X | | | | |
| 1C07 0125X | | | | |
| 1C07 0126X | | | | |
| 1C07 0127X | | | | |
| 1C07 0128X | | | | |
| 1C07 0129X | | | | |
| 1C07 0130X | | | | |
| 1C07 0131X | | | | |
| 1C07 0132X | | | | |
| 1C07 0133X | | | | |
| 1C07 0134X | | | | |
| 1C07 0135X | | | | |
| 1C07 0136X | | | | |
| 1C07 0137X | | | | |
| 1C07 0138X | | | | |
| 1C07 0139X | | | | |
| 1C07 0140X | | | | |
| 1C07 0141X | | | | |
| 1C07 0142X | | | | |
| 1C07 0143X | | | | |
| 1C07 0144X | | | | |
| 1C07 0145X | | | | |
| 1C07 0146X | | | | |
| N/A | N/A | N/A | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F21/686

# RADIOLOGICAL SURVEY DATA SHEET

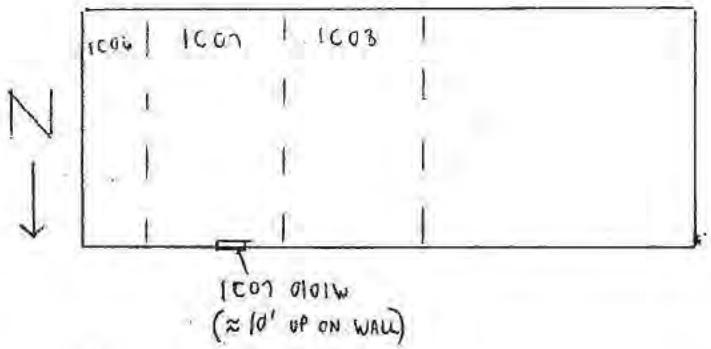


| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C07) | SURVEY NO. MT-05-1341 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Walls | RWP NO. N/A |
| | DATE: 12-19-05 |
| | TIME: 1373 |

## MAP / DRAWING

See Attachments
No elevated α/β readings detected during scanning Area around direct frisk also scanned

T-CAP




COPY

Note: The data for the alpha/beta readings for this location was downloaded to the floppy disk for the wall readings for Survey Unit 1C07 (see Survey # MT-05-1340)

Reference MT-05-1331 for SCM23 Summary

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 & 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | | |
|---|---|---|---|
| Completed by: (Signature) J. King | [redacted] | | Date: 12-19-05 |
| Completed by: (Print Name) T. King | | | |
| Counted by: (Signature) See Attachments | HP# N/A | | Date: N/A |
| Counted by: (Print Name) See Attachments | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | HP# [redacted] | | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

F22/686

Survey No. M7-05-1341



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C07010IW |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

N/A

COMMENTS:

N/A

NOTES:

1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9820A (4-95)

F23/686

JK
12-22-05

**MARSSIM Smear Data**

MT-05-1341

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051220_1002.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1341.001 ✓
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F24/686

RJ

Protocol# 1 - MARSSIM_Smear_1.1sa User: 5801

J.K
12.22.05

## MARSSIM Smear Data

COPY

MT-05-1341

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/20/05 | 10:02:53 AM | -1 | 10.00 | 7 | 7 | 11 | 5 | 620.00 | 0 | 23.3 | B | 1 |
| 12/20/05 | 10:13:43 AM | 0 | 2.00 | 447 | 421 | 0 | 1 | 547.39 | 864 | 6.8 | | 1 |
| 12/20/05 | 10:16:25 AM | 1 | 2.00 | 2 | 2 | 0 | 11 | 570.77 | 3 | 275.2 | | 1 |

JK

F25/086

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_081
Batch Ended: 12/20/05 9:11
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1341 KING [1] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.72 | 2.21 | | 1.60 | 2.26 | |

J.K J.K

COPY

5 of 7



J.K
1/2-22-05

F 24/686

# T-BLDG. T-CAP (1C07) Survey suspected elevated spots on walls

*RSDS# MT-05-1341*_____ *RCT:* [redacted] _____ *RCT:* _____*N/A*_____

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C070101W | 5895 | [redacted] | 5896 | 1 | 1 | 12/19/05 | 10:29 | 6 | 120 | 22 ✓ |
| BETA | 1C070101W | 5895 | [redacted] | 5896 | 2 | 1 | 12/19/05 | 10:30 | 49 | 60 | 458 ✓ |

N

A

COPY



F27/686

**Survey Unit Number:** 1C07



(Supplemental sheet for biased measurements.)

RSDS # MT 05-1341

RCT INT/HP JK / [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C07 0101W | T-CAP | North Wall | N/A | N/A |
| N/A | N/A | N/A | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F28/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) J-Bldg. - J-Cap | SURVEY NO. MT-06-0074 |
| PURPOSE: Scan of lower walls inaccessible by Shemba with 2350 And SCM23 scan of floors and walls. 1007 | RWP NO. N/A |
| | DATE: ~~1-20-06~~ 1-19-06 |
| | TIME: 1015 |

## MAP / DRAWING

See attached

No elevated α/β detected during scan.

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM 23 | C180 / R180 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| 2350 | 5854/5861 | 7-28-06 |
| | A | |
| | N | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) B.J. Koe / Neal Reynolds | | | Date: 1-19-06 |
| Completed by: (Print Name) B.J. Koe NEAL REYNOLDS | | | |
| Counted by: (Signature) N/A | | HP# | Date: |
| Counted by: (Print Name) N/A | | | |
| Reviewed/Approved by: (Signature) | | | Date: 2/13/06 |
| Reviewed/Approved by: (Print Name) Jess Gi. Am | | | F29/686 |

Survey No. MT-06-0074

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
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| 28 | | | | |
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| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
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| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

N/A

COPY

COMMENTS: N/A

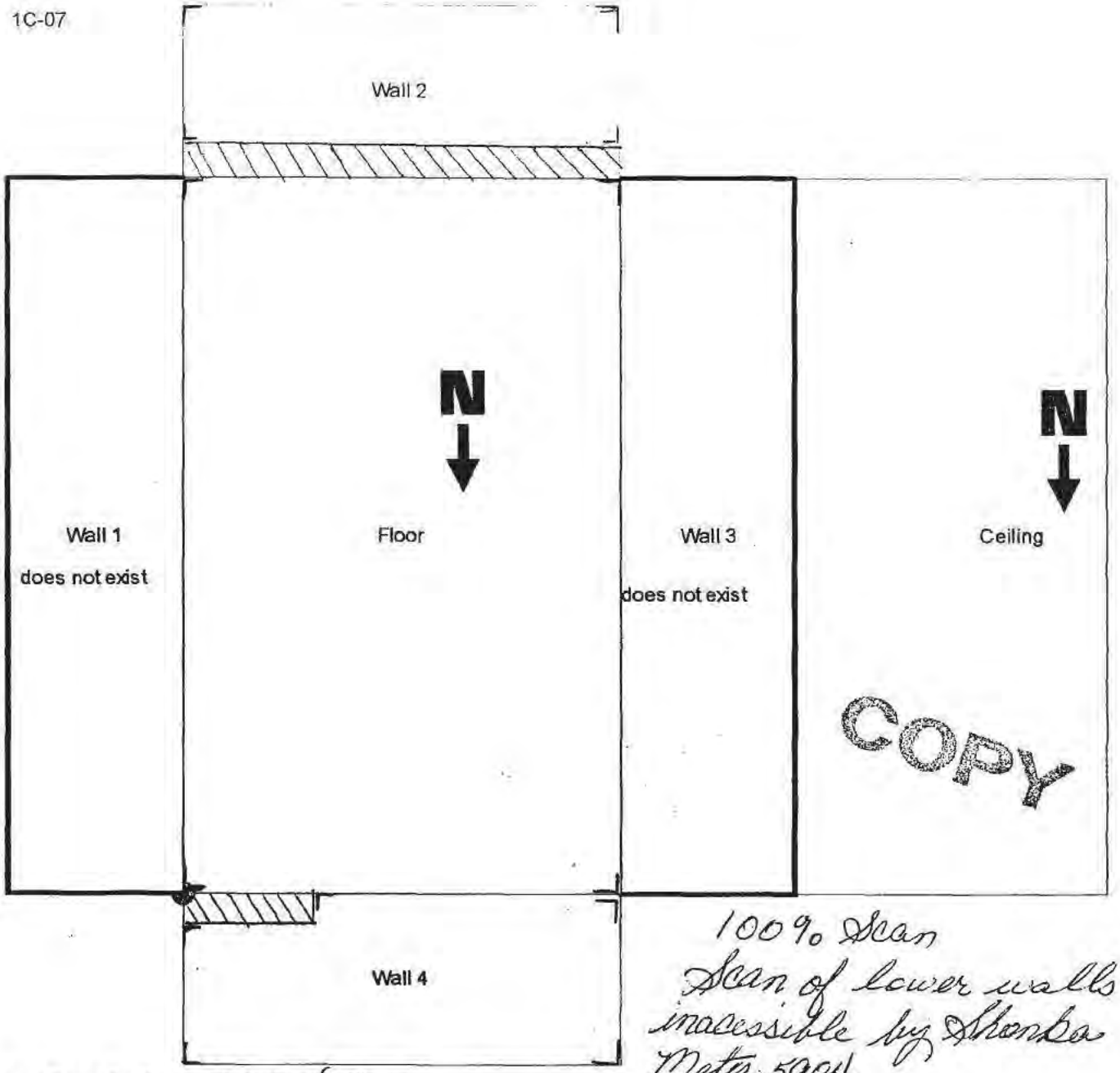
NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F39/686

MT-06-CC74
Pg. 3 of 3

1C-07




100% Scan
Scan of lower walls inaccessible by Shonka
Meter 5904
Probe ~~5861~~ BR 1-19-05 5905
Cal due 2/22/06
Meter 5854
Probe 5861
Cal due 7/28/06
BR
MR

[ ] SCM23 Scanned 100% of floors
[ ] and 100% of walls up to 2 meters
and 25% of walls above 2 meters

F31/686

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 11

| | |
|---|---|
| LOCATION (BLDG/AREA/ROOM) J Bldg - J Cap | SURVEY NO. MT-06-0143 |
| Wiring, Vents, & utilities | RWP NO. N/A |
| | DATE 2-7-06 |
| 1207 | TIME 1530 |

MAP / DRAWING

See attached

No elevated α / β READINGS DETECTED

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) BJ Roe Donnie Watson | [redacted] | Date: 2-7-06 |
| Completed by: (Print Name) BJ Roe D Watson | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) See attached | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor F32/686 | | |

Survey No. MT-06-0143

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C07-0201 U |
| 2 | | | | 1C07-0202 U |
| 3 | | | | 1C07-0201 D |
| 4 | | | | 1C07-0203 U |
| 5 | | | | 1C07-0204 U |
| 6 | | | | 1C07-0202 D |
| 7 | | | | 1C07-0205 U |
| 8 | | | | 1C07-0203 D |
| 9 | | | | 1C07-0206 U |
| 10 | | | | 1C07-0207 U |
| 11 | | | | 1C07-0201 V |
| 12 | | | | 1C07-0204 D |
| 13 | | | | 1C07-0205 D |
| 14 | | | | 1C07-0202 V |
| 15 | | | | 1C07-0206 D |
| 16 | | | | 1C07-0207 D |
| 17 | | | | 1C07-0208 D |
| 18 | | | | 1C07-0209 D |
| 19 | | | | 1C07-0210 D |
| 20 | | | | 1C07-0211 D |
| 21 | | | | 1C07-0212 D |
| 22 | | | | 1C07-0213 D |
| 23 | | | | 1C07-0214 D |
| 24 | | | | 1C07-0215 D |
| 25 | | | | 1C07-0208 U |
| 26 | | | | 1C07-0209 U |
| 27 | | | | 1C07-0101 D |
| 28 | | | | 1C07-0102 D |
| 29 | | | | 1C07-0103 D |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
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| 52 | | | | |
| 53 | | | A | |
| 54 | | | N | |
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| 70 | | | | |

COPY

**COMMENTS:** N/A

**NOTES:**

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060207_1623.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0143.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/7/06 | 4:24:04 PM | -1 | 10.00 | 11 | 9 | 11 | 16 | 609.75 | 0 | 19.1 | B | 1 |
| 2/7/06 | 4:34:54 PM | 0 | 2.00 | 505 | 477 | 0 | 1 | 574.46 | 955 | 6.4 | | 1 |
| 2/7/06 | 4:37:38 PM | 1 | 2.00 | 0 | 1 | 0 | 10 | 603.34 | 0 | 0.0 | | 1 |
| 2/7/06 | 4:40:20 PM | 2 | 2.00 | 0 | 0 | 0 | 6 | 611.72 | 0 | 0.0 | | 1 |
| 2/7/06 | 4:43:03 PM | 3 | 2.00 | 5 | 5 | 1 | 10 | 471.70 | 10 | 129.6 | | 1 |
| 2/7/06 | 4:45:46 PM | 4 | 2.00 | 53 | 47 | 0 | 2 | 571.42 | 101 | 21.6 | | 1 |
| 2/7/06 | 4:48:28 PM | 5 | 2.00 | 7 | 7 | 1 | 3 | 614.87 | 13 | 87.8 | | 1 |
| 2/7/06 | 4:51:11 PM | 6 | 2.00 | 34 | 32 | 0 | 2 | 623.70 | 62 | 28.4 | | 1 |
| 2/7/06 | 4:53:54 PM | 7 | 2.00 | 11 | 11 | 0 | 2 | 624.64 | 20 | 62.7 | | 1 |
| 2/7/06 | 4:56:37 PM | 8 | 2.00 | 29 | 27 | 1 | 3 | 624.00 | 52 | 31.8 | | 1 |
| 2/7/06 | 4:59:20 PM | 9 | 2.00 | 3 | 5 | 0 | 7 | 639.42 | 5 | 216.3 | | 1 |
| 2/7/06 | 5:02:01 PM | 10 | 2.00 | 0 | 0 | 0 | 12 | 612.41 | 0 | 0.0 | | 1 |
| 2/7/06 | 5:04:44 PM | 11 | 2.00 | 0 | 0 | 1 | 7 | 519.77 | 0 | 0.0 | | 1 |
| 2/7/06 | 5:07:26 PM | 12 | 2.00 | 167 | 160 | 0 | 1 | 599.68 | 310 | 11.4 | | 1 |
| 2/7/06 | 5:10:09 PM | 13 | 2.00 | 130 | 122 | 0 | 1 | 587.06 | 243 | 13.0 | | 1 |
| 2/7/06 | 5:12:52 PM | 14 | 2.00 | 1 | 2 | 0 | 4 | 513.86 | 1 | 887.4 | | 1 |
| 2/7/06 | 5:15:34 PM | 15 | 2.00 | 39 | 37 | 0 | 2 | 545.89 | 76 | 26.2 | | 1 |
| 2/7/06 | 5:18:17 PM | 16 | 2.00 | 8 | 9 | 0 | 5 | 598.68 | 14 | 84.7 | | 1 |
| 2/7/06 | 5:21:05 PM | 17 | 2.00 | 4 | 5 | 0 | 7 | 611.38 | 8 | 143.3 | | 1 |
| 2/7/06 | 5:23:47 PM | 18 | 2.00 | 21 | 21 | 0 | 2 | 609.41 | 39 | 39.2 | | 1 |
| 2/7/06 | 5:26:29 PM | 19 | 2.00 | 7 | 8 | 0 | 5 | 602.69 | 13 | 87.8 | | 1 |
| 2/7/06 | 5:29:19 PM | 20 | 2.00 | 8 | 9 | 2 | 5 | 539.73 | 16 | 77.8 | | 1 |
| 2/7/06 | 5:32:01 PM | 21 | 2.00 | 32 | 30 | 0 | 2 | 599.38 | 59 | 29.9 | | 1 |
| 2/7/06 | 5:34:42 PM | 22 | 2.00 | 3 | 3 | 0 | 7 | 612.72 | 5 | 216.3 | | 1 |
| 2/7/06 | 5:37:25 PM | 23 | 2.00 | 6 | 6 | 0 | 6 | 621.75 | 11 | 98.8 | | 1 |
| 2/7/06 | 5:40:07 PM | 24 | 2.00 | 9 | 9 | 3 | 5 | 613.90 | 17 | 73.3 | | 1 |
| 2/7/06 | 5:42:49 PM | 25 | 2.00 | 0 | 0 | 1 | 5 | 620.59 | 0 | 0.0 | | 1 |
| 2/7/06 | 5:45:30 PM | 26 | 2.00 | 0 | 0 | 0 | 11 | 629.56 | 0 | 0.0 | | 1 |
| 2/7/06 | 5:48:13 PM | 27 | 2.00 | 0 | 2 | 0 | 9 | 533.07 | 0 | 5738.8 | | 1 |
| 2/7/06 | 5:50:56 PM | 28 | 2.00 | 0 | 0 | 0 | 17 | 557.42 | 0 | 0.0 | | 1 |
| 2/7/06 | 5:53:38 PM | 29 | 2.00 | 0 | 0 | 0 | 36 | 497.19 | 0 | 0.0 | | 1 |

Pg 5 of 11
MT-06-0143

# Smear Analysis

COPY

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_021
Batch Ended: 2/7/06 15:45
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0143 [29] ROE 2-7-06 RLH

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.26 | | 5.69 | 3.21 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 1.81 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.91 | | 1.23 | 2.06 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.13 | |
| C3 | 11 | 0.00 | 2.14 | | 6.35 | 3.23 | |
| C4 | 12 | 1.68 | 1.96 | | 0.47 | 1.59 | |
| D1 | 13 | 0.00 | 2.06 | | 0.29 | 1.77 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.19 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.24 | |
| D4 | 16 | 0.00 | 2.06 | | 1.37 | 2.03 | |
| A1 | 17 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 19 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 20 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 21 | 1.52 | 1.89 | | 0.00 | 1.68 | |
| B2 | 22 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 23 | 0.00 | 2.24 | | 2.84 | 2.65 | |
| B4 | 24 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| C1 | 25 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 26 | 0.00 | 1.91 | | 0.00 | 1.13 | |
| C3 | 27 | 0.00 | 2.08 | | 1.49 | 2.11 | |

DW DW

~~Page 1 of 2~~ BR 2-7-06

RLH

F36/0886

pg 6 of 11
MT-06-0143

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_021
Batch Ended: 2/7/06 15:45
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0143 [29] ROE 2-7-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C4 | 28 | 0.00 | 1.96 | | 0.62 | 1.59 | |
| D1 ✓ | 29 | 0.00 | 2.07 | | 1.54 | 2.16 | |

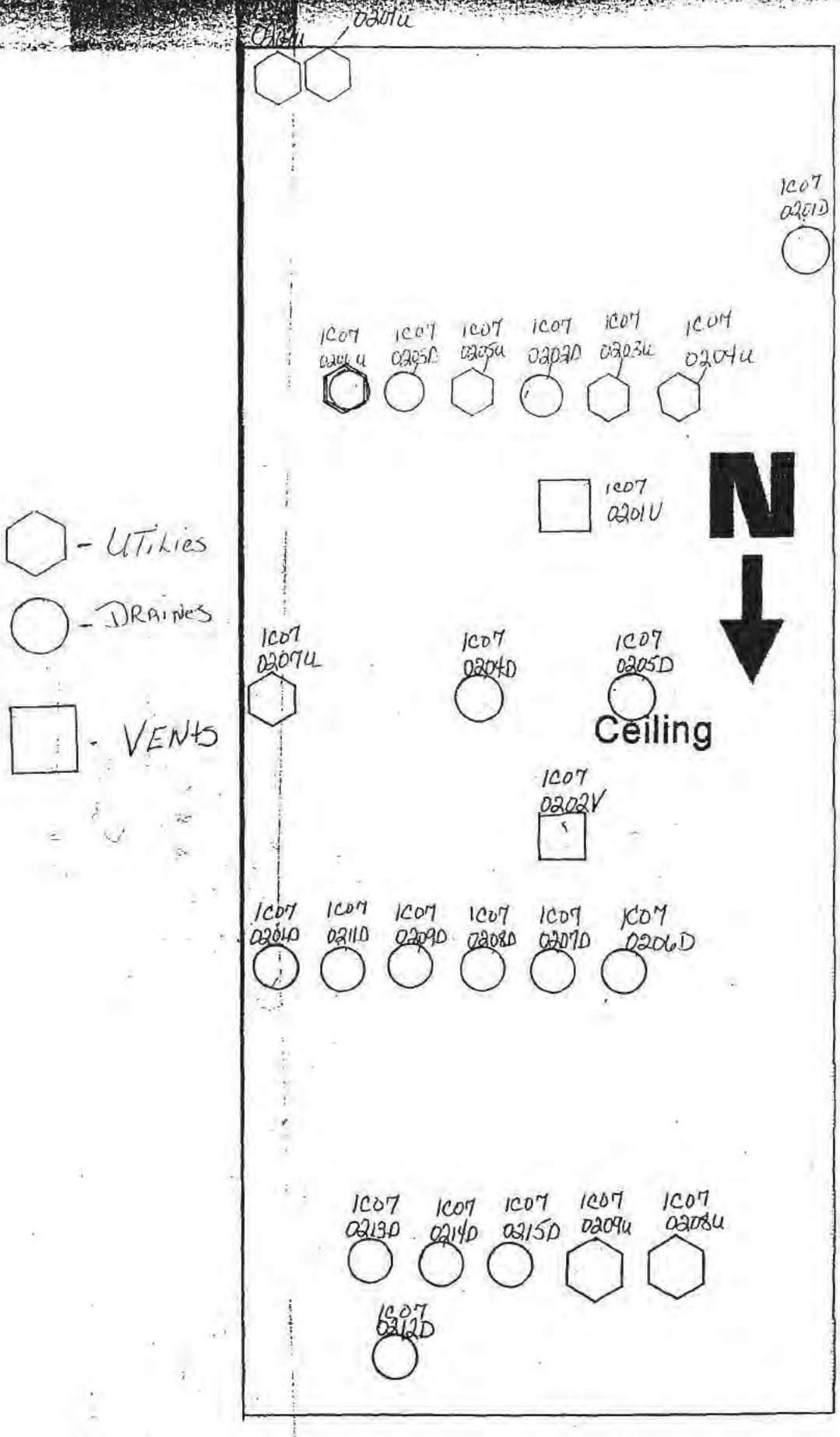
DW DW

COPY

F37/686

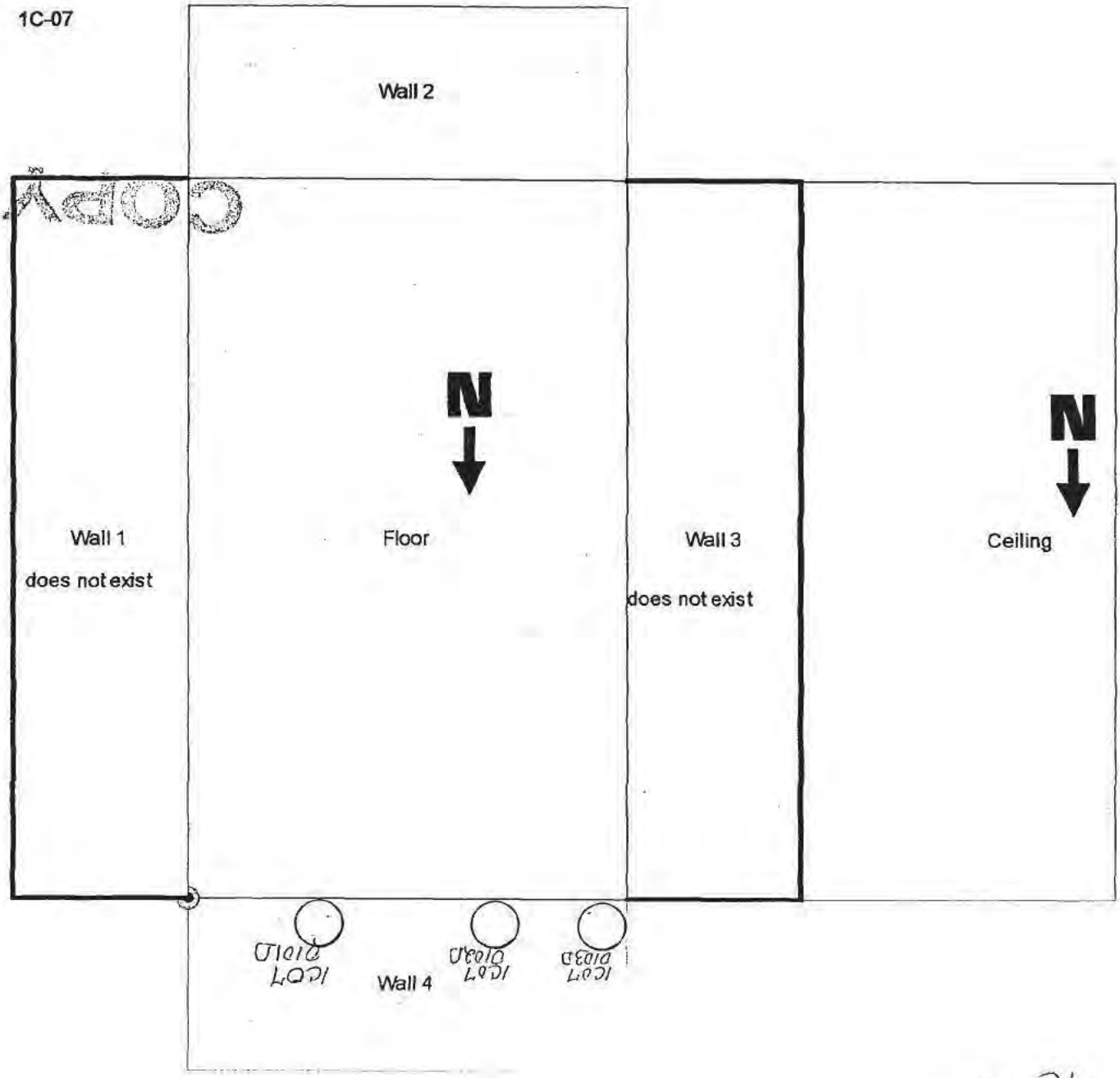
~~Page 2 of 2~~ BR 2-7-06

MT-06-0143




COPY

1C-07




1C-07

F39/686

# T-Building Drains, Vents, & Utilities - 1C07 - T-Cap

*RSDS#* MT-06-0143 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.182 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | [illegible] | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | [illegible] | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C070201U | 5854 | [redacted] | 5861 | 1 | 1 | 2/7/06 | 7:44 | 1 | 120 | 4 |
| ALPHA | 1C070202U | 5854 | [redacted] | 5861 | 1 | 2 | 2/7/06 | 7:52 | 5 | 120 | 19 |
| ALPHA | 1C070201D | 5854 | [redacted] | 5861 | 1 | 3 | 2/7/06 | 8:06 | 3 | 120 | 12 |
| ALPHA | 1C070203U | 5854 | [redacted] | 5861 | 1 | 4 | 2/7/06 | 8:13 | 5 | 120 | 19 |
| ALPHA | 1C070204U | 5854 | [redacted] | 5861 | 1 | 5 | 2/7/06 | 8:19 | 2 | 120 | 8 |
| ALPHA | 1C070202D | 5854 | [redacted] | 5861 | 1 | 6 | 2/7/06 | 9:23 | 6 | 120 | 23 |
| ALPHA | 1C070205U | 5854 | [redacted] | 5861 | 1 | 7 | 2/7/06 | 9:32 | 7 | 120 | 27 |
| ALPHA | 1C070203D | 5854 | [redacted] | 5861 | 1 | 8 | 2/7/06 | 9:40 | 2 | 120 | 8 |
| ALPHA | 1C070206U | 5854 | [redacted] | 5861 | 1 | 9 | 2/7/06 | 9:52 | 8 | 120 | 31 |
| ALPHA | 1C070207U | 5854 | [redacted] | 5861 | 1 | 10 | 2/7/06 | 9:59 | 7 | 120 | 27 |
| ALPHA | 1C070201V | 5854 | [redacted] | 5861 | 1 | 11 | 2/7/06 | 10:07 | 5 | 120 | 19 |
| ALPHA | 1C070204D | 5854 | [redacted] | 5861 | 1 | 12 | 2/7/06 | 10:18 | 4 | 120 | 15 |
| ALPHA | 1C070205D | 5854 | [redacted] | 5861 | 1 | 13 | 2/7/06 | 10:24 | 5 | 120 | 19 |
| ALPHA | 1C070202V | 5854 | [redacted] | 5861 | 1 | 14 | 2/7/06 | 12:06 | 2 | 120 | 8 |
| ALPHA | 1C070206D | 5854 | [redacted] | 5861 | 1 | 15 | 2/7/06 | 12:14 | 2 | 120 | 8 |
| ALPHA | 1C070207D | 5854 | [redacted] | 5861 | 1 | 16 | 2/7/06 | 12:19 | 3 | 120 | 12 |
| ALPHA | 1C070208D | 5854 | [redacted] | 5861 | 1 | 17 | 2/7/06 | 12:26 | 3 | 120 | 12 |
| ALPHA | 1C070209D | 5854 | [redacted] | 5861 | 1 | 18 | 2/7/06 | 12:31 | 4 | 120 | 15 |
| ALPHA | 1C070210D | 5854 | [redacted] | 5861 | 1 | 19 | 2/7/06 | 12:37 | 2 | 120 | 8 |
| ALPHA | 1C070211D | 5854 | [redacted] | 5861 | 1 | 20 | 2/7/06 | 12:41 | 4 | 120 | 15 |
| ALPHA | 1C070212D | 5854 | [redacted] | 5861 | 1 | 21 | 2/7/06 | 12:50 | 3 | 120 | 12 |
| ALPHA | 1C070213D | 5854 | [redacted] | 5861 | 1 | 22 | 2/7/06 | 12:55 | 2 | 120 | 8 |
| ALPHA | 1C070214D | 5854 | [redacted] | 5861 | 1 | 23 | 2/7/06 | 12:59 | 1 | 120 | 4 |
| ALPHA | 1C070215D | 5854 | [redacted] | 5861 | 1 | 24 | 2/7/06 | 13:06 | 10 | 120 | 39 |
| ALPHA | 1C070208U | 5854 | [redacted] | 5861 | 1 | 25 | 2/7/06 | 13:13 | 0 | 120 | 0 |
| ALPHA | 1C070209U | 5854 | [redacted] | 5861 | 1 | 26 | 2/7/06 | 13:17 | 2 | 120 | 8 |
| ALPHA | 1C070101D | 5854 | [redacted] | 5861 | 1 | 27 | 2/7/06 | 14:23 | 3 | 120 | 12 |
| ALPHA | 1C070102D | 5854 | [redacted] | 5861 | 1 | 28 | 2/7/06 | 14:27 | 4 | 120 | 15 |
| ALPHA | 1C070103D | 5854 | [redacted] | 5861 | 1 | 29 | 2/7/06 | 14:31 | 2 | 120 | 8 ✓ |
| BETA | 1C070201U | 5854 | [redacted] | 5861 | 2 | 1 | 2/7/06 | 7:45 | 117 | 60 | 1139 |
| BETA | 1C070202U | 5854 | [redacted] | 5861 | 2 | 2 | 2/7/06 | 7:54 | 144 | 60 | 1402 |
| BETA | 1C070201D | 5854 | [redacted] | 5861 | 2 | 3 | 2/7/06 | 8:07 | 115 | 60 | 1120 |
| BETA | 1C070203U | 5854 | [redacted] | 5861 | 2 | 4 | 2/7/06 | 8:14 | 93 | 60 | 906 |
| BETA | 1C070204U | 5854 | [redacted] | 5861 | 2 | 5 | 2/7/06 | 8:20 | 96 | 60 | 935 |
| BETA | 1C070202D | 5854 | [redacted] | 5861 | 2 | 6 | 2/7/06 | 9:24 | 94 | 60 | 915 |
| BETA | 1C070205U | 5854 | [redacted] | 5861 | 2 | 7 | 2/7/06 | 9:33 | 85 | 60 | 828 |
| BETA | 1C070203D | 5854 | [redacted] | 5861 | 2 | 8 | 2/7/06 | 9:41 | 112 | 60 | 1091 |
| BETA | 1C070206U | 5854 | [redacted] | 5861 | 2 | 9 | 2/7/06 | 9:53 | 97 | 60 | 945 |
| BETA | 1C070207U | 5854 | [redacted] | 5861 | 2 | 10 | 2/7/06 | 10:00 | 120 | 60 | 1169 |
| BETA | 1C070201V | 5854 | [redacted] | 5861 | 2 | 11 | 2/7/06 | 10:08 | 94 | 60 | 915 |
| BETA | 1C070204D | 5854 | [redacted] | 5861 | 2 | 12 | 2/7/06 | 10:19 | 94 | 60 | 915 |
| BETA | 1C070205D | 5854 | [redacted] | 5861 | 2 | 13 | 2/7/06 | 10:25 | 79 | 60 | 769 ✓ |



F-4/686

# T-Building Drains, Vents, & Utilities - 1C07 - T-Cap

*RSDS#* MT-06-0143 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.103 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 1 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| BETA | 1C070202V | 5854 | [redacted] | 5861 | 2 | 14 | 2/7/06 | 12:07 | 58 | 60 | 565 | |
| BETA | 1C070206D | 5854 | [redacted] | 5861 | 2 | 15 | 2/7/06 | 12:15 | 101 | 60 | 984 | |
| BETA | 1C070207D | 5854 | [redacted] | 5861 | 2 | 16 | 2/7/06 | 12:21 | 93 | 60 | 906 | |
| BETA | 1C070208D | 5854 | [redacted] | 5861 | 2 | 17 | 2/7/06 | 12:27 | 85 | 60 | 828 | |
| BETA | 1C070209D | 5854 | [redacted] | 5861 | 2 | 18 | 2/7/06 | 12:32 | 99 | 60 | 964 | |
| BETA | 1C070210D | 5854 | [redacted] | 5861 | 2 | 19 | 2/7/06 | 12:38 | 68 | 60 | 662 | |
| BETA | 1C070211D | 5854 | [redacted] | 5861 | 2 | 20 | 2/7/06 | 12:42 | 114 | 60 | 1110 | |
| BETA | 1C070212D | 5854 | [redacted] | 5861 | 2 | 21 | 2/7/06 | 12:51 | 93 | 60 | 906 | |
| BETA | 1C070213D | 5854 | [redacted] | 5861 | 2 | 22 | 2/7/06 | 12:56 | 86 | 60 | 837 | |
| BETA | 1C070214D | 5854 | [redacted] | 5861 | 2 | 23 | 2/7/06 | 13:00 | 98 | 60 | 954 | |
| BETA | 1C070215D | 5854 | [redacted] | 5861 | 2 | 24 | 2/7/06 | 13:07 | 98 | 60 | 954 | |
| BETA | 1C070208U | 5854 | [redacted] | 5861 | 2 | 25 | 2/7/06 | 13:14 | 92 | 60 | 896 | |
| BETA | 1C070209U | 5854 | [redacted] | 5861 | 2 | 26 | 2/7/06 | 13:18 | 92 | 60 | 896 | |
| BETA | 1C070101D | 5854 | [redacted] | 5861 | 2 | 27 | 2/7/06 | 14:24 | 137 | 60 | 1334 | |
| BETA | 1C070102D | 5854 | [redacted] | 5861 | 2 | 28 | 2/7/06 | 14:28 | 107 | 60 | 1042 | |
| BETA | 1C070103D | 5854 | [redacted] | 5861 | 2 | 29 | 2/7/06 | 14:32 | 116 | 60 | 1130 ✓ | |

COPY



F-41/686

Survey Unit Number: 1C07



(Supplemental sheet for biased measurements.)

RSDS # MT-C6-C143
RCT INT/HP BR [redacted] DN [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C07-0201U | T-CHP | Steam | | |
| 1C07-0202U | | Steam | | |
| 1C07-0201D | | Ceiling | | |
| 1C07-0203U | | Steam | | |
| 1C07-0204U | | Steam | | |
| 1C07-0202D | | Ceiling | | |
| 1C07-0205U | | Steam | | |
| 1C07-0203D | | Ceiling | | |
| 1C07-0206U | | Steam | | |
| 1C07-0207U | | Steam | | |
| 1C07-0201V | | Ceiling | | |
| 1C07-0204D | | Ceiling | | |
| 1C07-0205D | | Ceiling | | |
| 1C07-0202V | | Ceiling | | A |
| 1C07-0206D | | Ceiling | N | |
| 1C07-0207D | | Ceiling | | |
| 1C07-0208D | | Ceiling | | |
| 1C07-0209D | | Ceiling | | |
| 1C07-0210D | | Ceiling | | |
| 1C07-0211D | | Ceiling | | |
| 1C07-0212D | | Ceiling | | |
| 1C07-0213D | | Ceiling | | |
| 1C07-0214D | | Ceiling | | |
| 1C07-0215D | | Ceiling | | |
| 1C07-0208U | | Steam | | |
| 1C07-0209U | | Steam | | |
| 1C07-0101D | | Wall | | |
| 1C07-0102D | | Wall | | |
| 1C07-0103D | ↓ | Wall | | |

COPY

**J- designator represents measurement as judgmental location**
**E-designator represents measurement as potentially elevated activity.**
**D-designator represents measurement at a drain.**
**V-designator represents measurement on ventalation system.**
**U-designator represents measurement on a utility drop.**

F42/686

# RADIOLOGICAL SURVEY DATA SHEET

Page 13 14 DW 2-10-06

| | |
|---|---|
| LOCATION (BLDG, AREA/ROOM): T-Bldg | SURVEY NO: MT-06-0148 |
| INSPECTOR: | RWP NO: N/A |
| | DATE: 2-8-06 |
| Upper and Lower Statics 1007 | TIME: 6:20 |

MAP / DRAWING

No Elevated Readings

Dose Rate: BKGD 4 G/A 4

Bicron Micro Rem
S/N 3981 cal due 4-7-06

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Donna Watson / BJ Roe | | Date: |
| Completed by: (Print Name) Donna Watson / BJ Roe | | |
| Counted by: (Signature) See Attached Sheets | HP# | Date: |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) | | Date: 2/13/06 |
| Reviewed/Approved by: (Print Name) Jerry Griffin | | F-45/686 |

Page 1 of B-14
Dw 2-10-06

Survey No.
MF06-0148

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C07-01019 |
| 2 | | | | 1C07-01029 |
| 3 | | | | 1C07-01039 |
| 4 | | | | 1C07-01049 |
| 5 | | | | 1C07-01059 |
| 6 | | | | 1C07-01069 |
| 7 | | | | 1C07-01079 |
| 8 | | | | 1C07-01089 |
| 9 | | | | 1C07-01099 |
| 10 | | | | 1C07-01109 |
| 11 | | | | 1C07-01119 |
| 12 | | | | 1C07-01129 |
| 13 | | | | 1C07-01139 |
| 14 | | | | 1C07-01149 |
| 15 | | | | 1C07-01159 |
| 16 | | | | 1C07-01169 |
| 17 | | | | 1C07-01179 |
| 18 | | | | 1C07-01189 |
| 19 | | | | 1C07-01199 |
| 20 | | | | 1C07-01209 |
| 21 | | | 1C07 | ~~1C07~~ 1C07-01219 |
| 22 | | | | 1C07-01019 |
| 23 | | | | 1C07-01029 |
| 24 | | | | 1C07-01039 |
| 25 | | | | 1C07-01049 |
| 26 | | | | 1C07-01059 |
| 27 | | | | 1C07-01069 |
| 28 | | | | 1C07-01079 |
| 29 | | | | 1C07-01089 |
| 30 | | | | 1C07-01099 |
| 31 | | | | 1C07-01109 |
| 32 | | | | 1C07-01119 |
| 33 | | | | 1C07-01129 |
| 34 | | | | 1C07-01139 |
| 35 | | | | 1C07-01149 |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | See | Attached | Sheets | 1C07-01159 |
| 37 | | | | 1C07-01169 |
| 38 | | | | 1C07-01179 |
| 39 | | | | 1C07-01189 |
| 40 | | | | 1C07-01199 |
| 41 | | | | 1C07-01209 |
| 42 | | | | 1C07-01219 |
| 43 | | | | 1C07-01229 |
| 44 | | | | 1C07-01239 |
| 45 | | | | 1C07-01249 |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | N | |
| 55 | | | | |
| 56 | | | A | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

3 of 15
14

MARSSIM Smear Data

MT-06-0148

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060209_0926.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0148.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

Copy

Exp 3/08

2/9/06 11:41:58 AM QuantaSmart (TM) - 1.31 - Serial# 423022

Protocol# 1 - MARSSIM_Smear_1.lsa User: 5801

MARSSIM Smear Data

MT-06-0148

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/9/06 | 9:27:12 AM | -1 | 10.00 | 9 | 8 | 10 | 6 | 621.64 | 0 | 21.4 | B | 1 |
| 2/9/06 | 9:38:01 AM | 0 | 2.00 | 475 | 450 | 4 | 0 | 587.44 | 889 | 6.6 | | 1 |
| 2/9/06 | 9:40:44 AM | 1 | 2.00 | 0 | 0 | 0 | 6 | 581.00 | 0 | 0.0 | | 1 |
| 2/9/06 | 9:43:25 AM | 2 | 2.00 | 0 | 0 | 3 | 7 | 571.60 | 0 | 0.0 | | 1 |
| 2/9/06 | 9:46:07 AM | 3 | 2.00 | 0 | 0 | 0 | 7 | 612.16 | 0 | 0.0 | | 1 |
| 2/9/06 | 9:48:49 AM | 4 | 2.00 | 0 | 0 | 0 | 7 | 524.25 | 0 | 0.0 | | 1 |
| 2/9/06 | 9:51:31 AM | 5 | 2.00 | 0 | 0 | 0 | 6 | 611.62 | 0 | 0.0 | | 1 |
| 2/9/06 | 9:54:12 AM | 6 | 2.00 | 0 | 0 | 1 | 6 | 621.88 | 0 | 1803.2 | | 1 |
| 2/9/06 | 9:56:54 AM | 7 | 2.00 | 3 | 3 | 0 | 13 | 608.87 | 6 | 161.0 | | 1 |
| 2/9/06 | 9:59:34 AM | 8 | 2.00 | 1 | 0 | 0 | 5 | 606.75 | 1 | 626.5 | | 1 |
| 2/9/06 | 10:02:17 AM | 9 | 2.00 | 0 | 0 | 0 | 5 | 620.20 | 1 | 1045.9 | | 1 |
| 2/9/06 | 10:04:59 AM | 10 | 2.00 | 0 | 0 | 0 | 20 | 586.72 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:07:41 AM | 11 | 2.00 | 0 | 0 | 0 | 15 | 559.68 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:10:23 AM | 12 | 2.00 | 2 | 1 | 0 | 9 | 540.74 | 4 | 237.6 | | 1 |
| 2/9/06 | 10:13:05 AM | 13 | 2.00 | 0 | 0 | 1 | 11 | 577.89 | 0 | 1803.2 | | 1 |
| 2/9/06 | 10:15:47 AM | 14 | 2.00 | 0 | 0 | 0 | 25 | 584.81 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:18:28 AM | 15 | 2.00 | 3 | 2 | 0 | 13 | 596.66 | 6 | 161.0 | | 1 |
| 2/9/06 | 10:21:11 AM | 16 | 2.00 | 2 | 0 | 0 | 5 | 623.27 | 4 | 250.0 | | 1 |
| 2/9/06 | 10:23:56 AM | 17 | 2.00 | 0 | 0 | 0 | 8 | 649.74 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:26:37 AM | 18 | 2.00 | 0 | 0 | 0 | 7 | 656.26 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:29:19 AM | 19 | 2.00 | 2 | 1 | 0 | 5 | 602.28 | 4 | 223.7 | | 1 |
| 2/9/06 | 10:32:01 AM | 20 | 2.00 | 0 | 0 | 0 | 13 | 609.33 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:34:43 AM | 21 | 2.00 | 0 | 0 | 1 | 11 | 630.46 | 0 | 3811.0 | | 1 |
| 2/9/06 | 10:37:24 AM | 22 | 2.00 | 0 | 0 | 2 | 11 | 645.64 | 0 | 1803.2 | | 1 |
| 2/9/06 | 10:40:06 AM | 23 | 2.00 | 0 | 0 | 0 | 13 | 606.81 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:42:47 AM | 24 | 2.00 | 0 | 0 | 0 | 7 | 646.31 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:45:29 AM | 25 | 2.00 | 0 | 0 | 3 | 15 | 569.33 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:48:11 AM | 26 | 2.00 | 4 | 3 | 0 | 8 | 537.92 | 8 | 138.3 | | 1 |
| 2/9/06 | 10:50:54 AM | 27 | 2.00 | 2 | 2 | 1 | 10 | 631.50 | 3 | 300.6 | | 1 |
| 2/9/06 | 10:53:36 AM | 28 | 2.00 | 0 | 0 | 0 | 6 | 626.48 | 0 | 0.0 | | 1 |
| 2/9/06 | 10:56:17 AM | 29 | 2.00 | 1 | 1 | 0 | 10 | 604.77 | 2 | 407.4 | | 1 |
| 2/9/06 | 10:58:58 AM | 30 | 2.00 | 0 | 0 | 0 | 11 | 646.78 | 0 | 1803.2 | | 1 |
| 2/9/06 | 11:01:39 AM | 31 | 2.00 | 0 | 0 | 1 | 12 | 624.39 | 0 | 0.0 | | 1 |

✓DW ✓DW

COPY

F46/086

MARSSIM Smear Data

MT-06-0148

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/9/06 | 11:04:22 AM | 32 | 2.00 | 0 | 0 | 0 | 12 | 665.05 | 0 | 0.0 | 1 |
| 2/9/06 | 11:07:04 AM | 33 | 2.00 | 0 | 0 | 0 | 11 | 645.19 | 1 | 1259.0 | 1 |
| 2/9/06 | 11:09:46 AM | 34 | 2.00 | 1 | 0 | 1 | 11 | 636.96 | 1 | 626.5 | 1 |
| 2/9/06 | 11:12:34 AM | 35 | 2.00 | 0 | 0 | 1 | 25 | 645.70 | 0 | 0.0 | 1 |
| 2/9/06 | 11:15:17 AM | 36 | 2.00 | 0 | 0 | 1 | 13 | 624.46 | 0 | 0.0 | 1 |
| 2/9/06 | 11:17:58 AM | 37 | 2.00 | 3 | 3 | 0 | 13 | 619.62 | 6 | 161.0 | 1 |
| 2/9/06 | 11:20:39 AM | 38 | 2.00 | 0 | 0 | 0 | 19 | 659.88 | 0 | 0.0 | 1 |
| 2/9/06 | 11:23:21 AM | 39 | 2.00 | 0 | 0 | 0 | 11 | 630.03 | 0 | 1803.2 | 1 |
| 2/9/06 | 11:26:02 AM | 40 | 2.00 | 0 | 0 | 0 | 11 | 640.33 | 0 | 1803.2 | 1 |
| 2/9/06 | 11:28:42 AM | 41 | 2.00 | 2 | 1 | 0 | 5 | 627.72 | 4 | 223.7 | 1 |
| 2/9/06 | 11:31:25 AM | 42 | 2.00 | 0 | 0 | 0 | 22 | 657.77 | 0 | 0.0 | 1 |
| 2/9/06 | 11:34:06 AM | 43 | 2.00 | 0 | 0 | 1 | 15 | 626.98 | 0 | 0.0 | 1 |
| 2/9/06 | 11:36:48 AM | 44 | 2.00 | 0 | 0 | 0 | 20 | 610.66 | 0 | 0.0 | 1 |
| 2/9/06 | 11:39:29 AM | 45 | 2.00 | 1 | 0 | 0 | 16 | 660.83 | 1 | 742.9 | 1 |

✓ DW ✓ DW

Copy

F-47/G86

6 of 14
2/17/06

MT-06-0148

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_025
Batch Ended: 2/9/06 7:11
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0148 BR [45] GWD

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 3.60 | 2.82 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 1.81 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 1.54 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 8 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| C1 | 9 | 3.72 | 2.90 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 11 | 0.00 | 2.08 | | 1.49 | 2.11 | |
| C4 | 12 | 1.68 | 2.00 | | 3.84 | 2.52 | |
| D1 | 13 | 0.00 | 2.08 | | 2.79 | 2.50 | |
| D2 | 14 | 0.00 | 2.18 | | 1.58 | 2.06 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 0.00 | 2.08 | | 2.54 | 2.35 | |
| A1 | 17 | 1.72 | 2.18 | | 0.00 | 1.31 | |
| A2 | 18 | 1.61 | 2.00 | | 0.00 | 1.16 | |
| A3 | 19 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 20 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 21 | 1.52 | 1.87 | | 0.00 | 1.20 | |
| B2 | 22 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 23 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 24 | 1.61 | 1.95 | | 0.00 | 1.20 | |
| C1 | 25 | 0.00 | 2.06 | | 0.26 | 1.74 | |
| C2 | 26 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 27 | 0.00 | 2.07 | | 0.27 | 1.72 | |

DW DW

COPY

 DW 2-10-06

4/8/06

7 14/15
2/12/06

MT-06-0148

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_025
Batch Ended: 2/9/06 7:11
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0148 BR [45] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C4 | 28 | 0.00 | 1.95 | | 0.00 | 1.12 | |
| D1 | 29 | 0.00 | 2.08 | | 2.79 | 2.50 | |
| D2 | 30 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 31 | 0.00 | 2.09 | | 0.00 | 1.24 | |
| D4 | 32 | 0.00 | 2.05 | | 0.20 | 1.66 | |
| A1 | 33 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 34 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 35 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 36 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 37 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 38 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 39 | 0.00 | 2.22 | | 1.52 | 2.29 | |
| B4 | 40 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 41 | 0.00 | 2.09 | | 2.71 | 2.46 | |
| C2 | 42 | 0.00 | 1.91 | | 0.00 | 1.13 | |
| C3 | 43 | 0.00 | 2.07 | | 0.27 | 1.72 | |
| C4 | 44 | 1.68 | 1.96 | | 0.47 | 1.59 | |
| D1 | 45 | 0.00 | 2.07 | | 1.54 | 2.16 | |

DW DW

COPY

1-49/686

DW 2-10-06

# T-Building UPPER AND LOWER STATICS IN 1C07

***RSDS#*** MT-06-0148 ***RCT:*** [redacted] ***RCT:*** [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | [redacted] | 0.205 | [redacted] | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.163 | | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **Item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| ALPHA | 1C070101S | 5854 | [redacted] | 5861 | 1 | 1 | 2/8/06 | 09:57 | 17 | 120 | 66 |
| ALPHA | 1C070102S | 5854 | | 5861 | 1 | 2 | 2/8/06 | 10:01 | 6 | 120 | 23 |
| ALPHA | 1C070103S | 5854 | | 5861 | 1 | 3 | 2/8/06 | 10:04 | 5 | 120 | 19 |
| ALPHA | 1C070104S | 5854 | | 5861 | 1 | 4 | 2/8/06 | 10:08 | 9 | 120 | 35 |
| ALPHA | 1C070105S | 5854 | | 5861 | 1 | 5 | 2/8/06 | 10:12 | 5 | 120 | 19 |
| ALPHA | 1C070106S | 5854 | | 5861 | 1 | 6 | 2/8/06 | 10:16 | 9 | 120 | 35 |
| ALPHA | 1C070107S | 5854 | | 5861 | 1 | 7 | 2/8/06 | 10:20 | 8 | 120 | 31 |
| ALPHA | 1C070108S | 5854 | | 5861 | 1 | 8 | 2/8/06 | 10:24 | 5 | 120 | 19 |
| ALPHA | 1C070109S | 5854 | | 5861 | 1 | 9 | 2/8/06 | 10:28 | 3 | 120 | 12 |
| ALPHA | 1C070110S | 5854 | | 5861 | 1 | 10 | 2/8/06 | 10:32 | 7 | 120 | 27 |
| ALPHA | 1C070111S | 5854 | | 5861 | 1 | 11 | 2/8/06 | 10:36 | 8 | 120 | 31 |
| ALPHA | 1C070112S | 5854 | | 5861 | 1 | 12 | 2/8/06 | 10:39 | 7 | 120 | 27 |
| ALPHA | 1C070113S | 5854 | | 5861 | 1 | 13 | 2/8/06 | 10:43 | 12 | 120 | 46 |
| ALPHA | 1C070114S | 5854 | | 5861 | 1 | 14 | 2/8/06 | 11:54 | 8 | 120 | 31 |
| ALPHA | 1C070115S | 5854 | | 5861 | 1 | 15 | 2/8/06 | 11:58 | 11 | 120 | 43 |
| ALPHA | 1C070116S | 5854 | | 5861 | 1 | 16 | 2/8/06 | 12:01 | 8 | 120 | 31 |
| ALPHA | 1C070117S | 5854 | | 5861 | 1 | 17 | 2/8/06 | 12:06 | 2 | 120 | 8 |
| ALPHA | 1C070118S | 5854 | | 5861 | 1 | 18 | 2/8/06 | 12:13 | 13 | 120 | 50 |
| ALPHA | 1C070119S | 5854 | | 5861 | 1 | 19 | 2/8/06 | 12:19 | 2 | 120 | 8 |
| ALPHA | 1C070120S | 5854 | | 5861 | 1 | 20 | 2/8/06 | 12:23 | 7 | 120 | 27 |
| ALPHA | 1C070121S | 5854 | | 5861 | 1 | 21 | 2/8/06 | 12:27 | 6 | 120 | 23 |
| ALPHA | 1C070201S | 5854 | | 5861 | 1 | 22 | 2/8/06 | 12:45 | 7 | 120 | 27 |
| ALPHA | 1C070202S | 5854 | | 5861 | 1 | 23 | 2/8/06 | 12:50 | 2 | 120 | 8 |
| ALPHA | 1C070203S | 5854 | | 5861 | 1 | 24 | 2/8/06 | 12:55 | 4 | 120 | 15 |
| ALPHA | 1C070204S | 5854 | | 5861 | 1 | 25 | 2/8/06 | 13:01 | 3 | 120 | 12 |
| ALPHA | 1C070205S | 5854 | | 5861 | 1 | 26 | 2/8/06 | 13:05 | 6 | 120 | 23 |
| ALPHA | 1C070206S | 5854 | | 5861 | 1 | 27 | 2/8/06 | 13:09 | 2 | 120 | 8 |
| ALPHA | 1C070207S | 5854 | | 5861 | 1 | 28 | 2/8/06 | 13:14 | 3 | 120 | 12 |
| ALPHA | 1C070208S | 5854 | | 5861 | 1 | 29 | 2/8/06 | 13:18 | 3 | 120 | 12 |
| ALPHA | 1C070209S | 5854 | | 5861 | 1 | 30 | 2/8/06 | 13:23 | 5 | 120 | 19 |
| ALPHA | 1C070210S | 5854 | | 5861 | 1 | 31 | 2/8/06 | 13:27 | 2 | 120 | 8 |
| ALPHA | 1C070211S | 5854 | | 5861 | 1 | 32 | 2/8/06 | 13:31 | 8 | 120 | 31 |
| ALPHA | 1C070212S | 5854 | | 5861 | 1 | 33 | 2/8/06 | 14:33 | 3 | 120 | 12 |
| ALPHA | 1C070213S | 5854 | | 5861 | 1 | 34 | 2/8/06 | 14:38 | 5 | 120 | 19 |
| ALPHA | 1C070214S | 5854 | | 5861 | 1 | 35 | 2/8/06 | 14:42 | 2 | 120 | 8 |
| ALPHA | 1C070215S | 5854 | | 5861 | 1 | 36 | 2/8/06 | 14:46 | 4 | 120 | 15 |
| ALPHA | 1C070216S | 5854 | | 5861 | 1 | 37 | 2/8/06 | 14:51 | 4 | 120 | 15 |
| ALPHA | 1C070217S | 5854 | | 5861 | 1 | 38 | 2/8/06 | 14:55 | 5 | 120 | 19 |
| ALPHA | 1C070218S | 5854 | | 5861 | 1 | 39 | 2/8/06 | 14:59 | 4 | 120 | 15 |
| ALPHA | 1C070219S | 5854 | | 5861 | 1 | 40 | 2/8/06 | 15:04 | 4 | 120 | 15 |
| ALPHA | 1C070220S | 5854 | | 5861 | 1 | 41 | 2/8/06 | 15:08 | 2 | 120 | 8 |
| ALPHA | 1C070221S | 5854 | | 5861 | 1 | 42 | 2/8/06 | 15:11 | 3 | 120 | 12 |

F50/686

# T-Building UPPER AND LOWER STATICS IN 1C07

*RSDS#* MT-06-0148 *RCT:* [redacted] *RCT* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | [redacted] | 0.205 | | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.163 | | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| ALPHA | 1C070222S | 5854 | [redacted] | 5861 | 1 | 43 | 2/8/06 | 15:17 | 4 | 120 | 15 |
| ALPHA | 1C070224S | 5854 | [redacted] | 5861 | 1 | 44 | 2/8/06 | 15:25 | 5 | 120 | 19 |
| ALPHA | 1C070223S | 5854 | [redacted] | 5861 | 1 | 45 | 2/8/06 | 15:30 | 5 | 120 | 19 |
| BETA | 1C070101S | 5854 | [redacted] | 5861 | 2 | 1 | 2/8/06 | 09:58 | 150 | 60 | 1461 |
| BETA | 1C070102S | 5854 | [redacted] | 5861 | 2 | 2 | 2/8/06 | 10:02 | 138 | 60 | 1344 |
| BETA | 1C070103S | 5854 | [redacted] | 5861 | 2 | 3 | 2/8/06 | 10:06 | 146 | 60 | 1422 |
| BETA | 1C070104S | 5854 | [redacted] | 5861 | 2 | 4 | 2/8/06 | 10:09 | 131 | 60 | 1276 |
| BETA | 1C070105S | 5854 | [redacted] | 5861 | 2 | 5 | 2/8/06 | 10:13 | 135 | 60 | 1315 |
| BETA | 1C070106S | 5854 | [redacted] | 5861 | 2 | 6 | 2/8/06 | 10:17 | 138 | 60 | 1344 |
| BETA | 1C070107S | 5854 | [redacted] | 5861 | 2 | 7 | 2/8/06 | 10:21 | 149 | 60 | 1451 |
| BETA | 1C070108S | 5854 | [redacted] | 5861 | 2 | 8 | 2/8/06 | 10:25 | 115 | 60 | 1120 |
| BETA | 1C070109S | 5854 | [redacted] | 5861 | 2 | 9 | 2/8/06 | 10:29 | 113 | 60 | 1100 |
| BETA | 1C070110S | 5854 | [redacted] | 5861 | 2 | 10 | 2/8/06 | 10:33 | 155 | 60 | 1509 |
| BETA | 1C070111S | 5854 | [redacted] | 5861 | 2 | 11 | 2/8/06 | 10:37 | 120 | 60 | 1169 |
| BETA | 1C070112S | 5854 | [redacted] | 5861 | 2 | 12 | 2/8/06 | 10:41 | 136 | 60 | 1324 |
| BETA | 1C070113S | 5854 | [redacted] | 5861 | 2 | 13 | 2/8/06 | 10:44 | 145 | 60 | 1412 |
| BETA | 1C070114S | 5854 | [redacted] | 5861 | 2 | 14 | 2/8/06 | 11:55 | 134 | 60 | 1305 |
| BETA | 1C070115S | 5854 | [redacted] | 5861 | 2 | 15 | 2/8/06 | 11:59 | 128 | 60 | 1246 |
| BETA | 1C070116S | 5854 | [redacted] | 5861 | 2 | 16 | 2/8/06 | 12:02 | 108 | 60 | 1052 |
| BETA | 1C070117S | 5854 | [redacted] | 5861 | 2 | 17 | 2/8/06 | 12:07 | 97 | 60 | 945 |
| BETA | 1C070118S | 5854 | [redacted] | 5861 | 2 | 18 | 2/8/06 | 12:14 | 124 | 60 | 1208 |
| BETA | 1C070119S | 5854 | [redacted] | 5861 | 2 | 19 | 2/8/06 | 12:20 | 105 | 60 | 1022 |
| BETA | 1C070120S | 5854 | [redacted] | 5861 | 2 | 20 | 2/8/06 | 12:24 | 102 | 60 | 993 |
| BETA | 1C070121S | 5854 | [redacted] | 5861 | 2 | 21 | 2/8/06 | 12:28 | 129 | 60 | 1256 |
| BETA | 1C070201S | 5854 | [redacted] | 5861 | 2 | 22 | 2/8/06 | 12:46 | 116 | 60 | 1130 |
| BETA | 1C070202S | 5854 | [redacted] | 5861 | 2 | 23 | 2/8/06 | 12:51 | 94 | 60 | 915 |
| BETA | 1C070203S | 5854 | [redacted] | 5861 | 2 | 24 | 2/8/06 | 12:56 | 85 | 60 | 828 |
| BETA | 1C070204S | 5854 | [redacted] | 5861 | 2 | 25 | 2/8/06 | 13:02 | 83 | 60 | 808 |
| BETA | 1C070205S | 5854 | [redacted] | 5861 | 2 | 26 | 2/8/06 | 13:06 | 95 | 60 | 925 |
| BETA | 1C070206S | 5854 | [redacted] | 5861 | 2 | 27 | 2/8/06 | 13:10 | 98 | 60 | 954 |
| BETA | 1C070207S | 5854 | [redacted] | 5861 | 2 | 28 | 2/8/06 | 13:15 | 117 | 60 | 1139 |
| BETA | 1C070208S | 5854 | [redacted] | 5861 | 2 | 29 | 2/8/06 | 13:20 | 108 | 60 | 1052 |
| BETA | 1C070209S | 5854 | [redacted] | 5861 | 2 | 30 | 2/8/06 | 13:24 | 102 | 60 | 993 |
| BETA | 1C070210S | 5854 | [redacted] | 5861 | 2 | 31 | 2/8/06 | 13:28 | 106 | 60 | 1032 |
| BETA | 1C070211S | 5854 | [redacted] | 5861 | 2 | 32 | 2/8/06 | 13:33 | 114 | 60 | 1110 |
| BETA | 1C070212S | 5854 | [redacted] | 5861 | 2 | 33 | 2/8/06 | 14:34 | 125 | 60 | 1217 |
| BETA | 1C070213S | 5854 | [redacted] | 5861 | 2 | 34 | 2/8/06 | 14:39 | 118 | 60 | 1149 |
| BETA | 1C070214S | 5854 | [redacted] | 5861 | 2 | 35 | 2/8/06 | 14:43 | 103 | 60 | 1003 |
| BETA | 1C070215S | 5854 | [redacted] | 5861 | 2 | 36 | 2/8/06 | 14:47 | 98 | 60 | 954 |
| BETA | 1C070216S | 5854 | [redacted] | 5861 | 2 | 37 | 2/8/06 | 14:52 | 103 | 60 | 1003 |
| BETA | 1C070217S | 5854 | [redacted] | 5861 | 2 | 38 | 2/8/06 | 14:56 | 96 | 60 | 935 |
| BETA | 1C070218S | 5854 | [redacted] | 5861 | 2 | 39 | 2/8/06 | 15:00 | 94 | 60 | 916 |



F51/686

# T-Building UPPER AND LOWER STATICS IN 1C07

COPY

**RSDS#** MT-06-0148 **RCT:** [redacted] **RCT:** 7126

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | [redacted] | 0.205 | | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.163 | | 126 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| | | 0 | [redacted] | 0.22 | | 584 | | | | 0.5 | |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **Item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| BETA | 1C070219S | 5854 | [redacted] | 5861 | 2 | 40 | 2/8/06 | 15:05 | 116 | 60 | 1130 |
| BETA | 1C070220S | 5854 | [redacted] | 5861 | 2 | 41 | 2/8/06 | 15:09 | 102 | 60 | 993 |
| BETA | 1C070221S | 5854 | [redacted] | 5861 | 2 | 42 | 2/8/06 | 15:13 | 97 | 60 | 945 |
| BETA | 1C070222S | 5854 | [redacted] | 5861 | 2 | 43 | 2/8/06 | 15:18 | 88 | 60 | 857 |
| BETA | 1C070224S | 5854 | [redacted] | 5861 | 2 | 44 | 2/8/06 | 15:26 | 74 | 60 | 721 |
| BETA | 1C070223S | 5854 | [redacted] | 5861 | 2 | 45 | 2/8/06 | 15:31 | 67 | 60 | 652 |

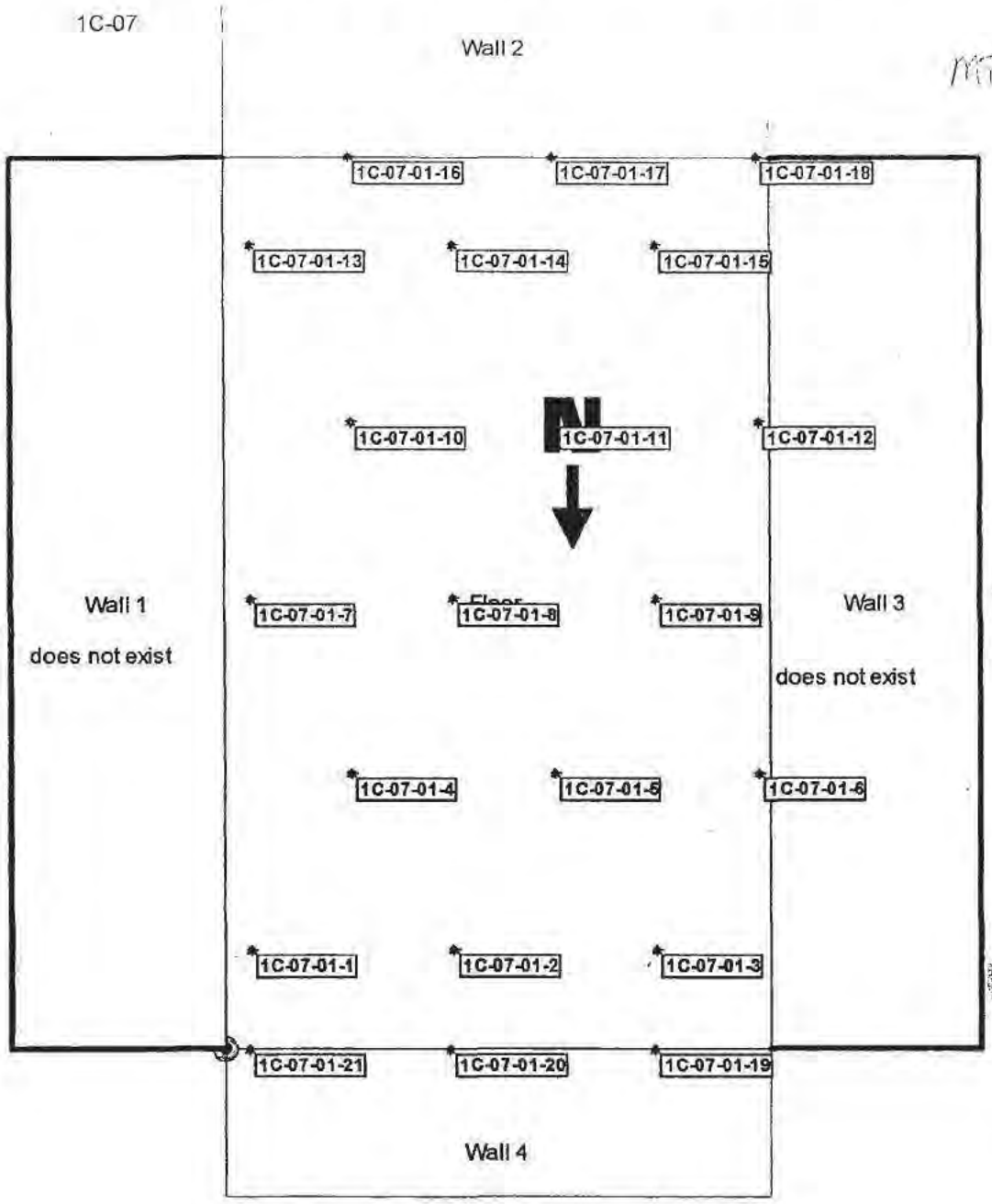
N/A



F52/686

11 14
TC 8/13 DJ
2-12-01

## 1C-07-01
## floor and lower wall static measurement locations




MT-06-0148

COPY

F 53/686

12 14
#8 ~~13~~
DW
2-10-04

**1C-07-01**
**floor and lower wall static measurement locations**

| Area: 1C-07 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-07-01-1 | Systematic | Floor | 1 | 5 |
| 1C-07-01-2 | Systematic | Floor | 11 | 5 |
| 1C-07-01-3 | Systematic | Floor | 20 | 5 |
| 1C-07-01-4 | Systematic | Floor | 6 | 13 |
| 1C-07-01-5 | Systematic | Floor | 15 | 13 |
| 1C-07-01-6 | Systematic | Floor | 25 | 13 |
| 1C-07-01-7 | Systematic | Floor | 1 | 21 |
| 1C-07-01-8 | Systematic | Floor | 11 | 21 |
| 1C-07-01-9 | Systematic | Floor | 20 | 21 |
| 1C-07-01-10 | Systematic | Floor | 6 | 29 |
| 1C-07-01-11 | Systematic | Floor | 15 | 29 |
| 1C-07-01-12 | Systematic | Floor | 25 | 29 |
| 1C-07-01-13 | Systematic | Floor | 1 | 37 |
| 1C-07-01-14 | Systematic | Floor | 11 | 37 |
| 1C-07-01-15 | Systematic | Floor | 20 | 37 |
| 1C-07-01-16 | Systematic | Wall 2 | 6 | 0 |
| 1C-07-01-17 | Systematic | Wall 2 | 15 | 0 |
| 1C-07-01-18 | Systematic | Wall 2 | 25 | 0 |
| 1C-07-01-19 | Systematic | Wall 4 | 5 | 0 |
| 1C-07-01-20 | Systematic | Wall 4 | 15 | 0 |
| 1C-07-01-21 | Systematic | Wall 4 | 24 | 0 |

COPY

F 54/686

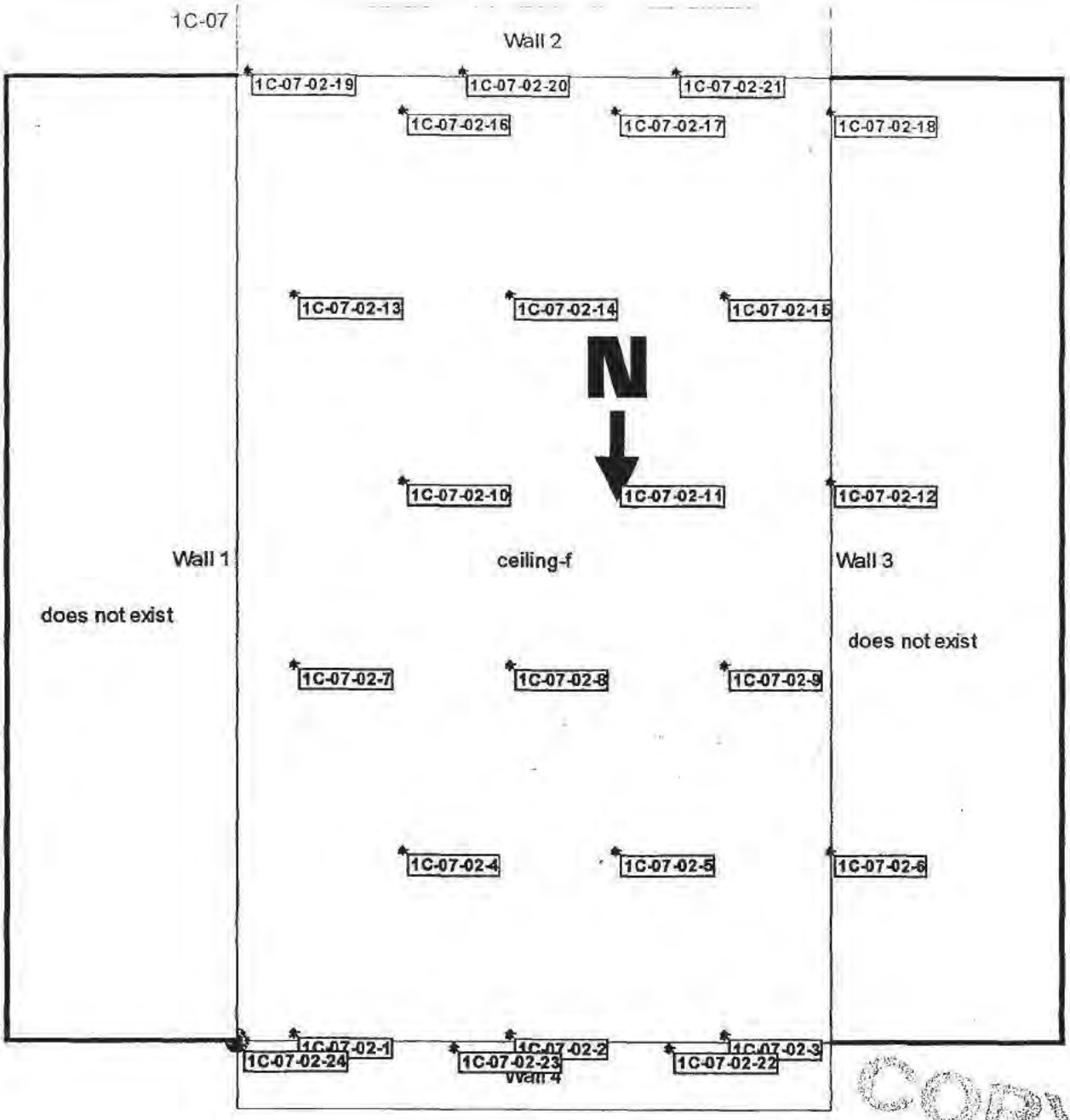
13 14
~~12~~ of ~~13~~
DW
2-10-06

MT-06-0148

**1C-07-02**

**ceiling and upper wall static measurement locations**

**scan an area of approximately 1 m2 around each ceiling location**




COPY

F55/686

MT-06-0145

**1C-07-02**

**ceiling and upper wall static measurement locations**

**scan an area of approximately 1 m2 around each ceiling location**

| Area: 1C-07 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-07-02-1 | Systematic | ceiling-f | 2 | 0 |
| 1C-07-02-2 | Systematic | ceiling-f | 12 | 0 |
| 1C-07-02-3 | Systematic | ceiling-f | 21 | 0 |
| 1C-07-02-4 | Systematic | ceiling-f | 7 | 8 |
| 1C-07-02-5 | Systematic | ceiling-f | 16 | 8 |
| 1C-07-02-6 | Systematic | ceiling-f | 25 | 8 |
| 1C-07-02-7 | Systematic | ceiling-f | 2 | 16 |
| 1C-07-02-8 | Systematic | ceiling-f | 12 | 16 |
| 1C-07-02-9 | Systematic | ceiling-f | 21 | 16 |
| 1C-07-02-10 | Systematic | ceiling-f | 7 | 24 |
| 1C-07-02-11 | Systematic | ceiling-f | 16 | 24 |
| 1C-07-02-12 | Systematic | ceiling-f | 25 | 24 |
| 1C-07-02-13 | Systematic | ceiling-f | 2 | 32 |
| 1C-07-02-14 | Systematic | ceiling-f | 12 | 32 |
| 1C-07-02-15 | Systematic | ceiling-f | 21 | 32 |
| 1C-07-02-16 | Systematic | ceiling-f | 7 | 40 |
| 1C-07-02-17 | Systematic | ceiling-f | 16 | 40 |
| 1C-07-02-18 | Systematic | ceiling-f | 25 | 40 |
| 1C-07-02-19 | Systematic | Wall 2 | 0 | 0 |
| 1C-07-02-20 | Systematic | Wall 2 | 10 | 0 |
| 1C-07-02-21 | Systematic | Wall 2 | 19 | 0 |
| 1C-07-02-22 | Systematic | Wall 4 | 7 | 0 |
| 1C-07-02-23 | Systematic | Wall 4 | 16 | 0 |
| 1C-07-02-24 | Systematic | Wall 4 | 25 | 0 |

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) 1 Bldg | SURVEY NO. MT-06-0151 |
| PURPOSE: Lower & Upper Instrumentation 1007 | RWP NO. N/A |
| | DATE: 2-9-06 |
| | TIME: 1000 |

## MAP / DRAWING

See Attached

No elevated α or β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B Quick | | Date: 2-9-06 |
| Completed by: (Print Name) B.T. Koe B. Nuesick | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) See Attached | | |
| Reviewed/Approved by: (Signature) | | Date: 2/13/06 |
| Reviewed/Approved by: (Print Name) Jesse Griffin | | |

F-57/686

Survey No.
MT-06-0151

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C07 - 0101 J |
| 2 | | | | 1C07 - 0102 J |
| 3 | | | | 1C07 - 0103 J |
| 4 | | | | 1C07 - 0104 J |
| 5 | | | | 1C07 - 0105 J |
| 6 | | | | 1C07 - 0106 J |
| 7 | | | | 1C07 - 0107 J |
| 8 | | | | 1C07 - 0108 J |
| 9 | | | | 1C07 - 0109 J |
| 10 | | | | 1C07 - 0110 J |
| 11 | | | | 1C07 - 0201 J |
| 12 | | | | 1C07 - 0202 J |
| 13 | | | | 1C07 - 0203 J |
| 14 | | | | 1C07 - 0204 J |
| 15 | | | | 1C07 - 0205 J |
| 16 | | | | 1C07 - 0206 J |
| 17 | | | | 1C07 - 0207 J |
| 18 | | | | 1C07 - 0208 J |
| 19 | | | | 1C07 - 0209 J |
| 20 | ↓ | ↓ | ↓ | 1C07 - 0210 J |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | A | |
| 28 | | N | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | A | | |
| 51 | | N | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

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COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F 58/686

Pg. 34 of MT-06-0151

**MARSSIM Smear Data**

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060209_1619.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0151 001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

COPY

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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159/686

Pg. 4 of 1
MT-06-0157

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/9/06 | 4:20:09 PM | -1 | 10.00 | 8 | 7 | 10 | 26 | 610.57 | 0 | 22.8 | B | 1 |
| 2/9/06 | 4:30:59 PM | 0 | 2.00 | 502 | 482 | 1 | 0 | 579.08 | 945 | 6.4 | | 1 |
| 2/9/06 | 4:33:41 PM | 1 | 2.00 | 4 | 3 | 0 | 8 | 568.27 | 8 | 125.7 | | 1 |
| 2/9/06 | 4:36:32 PM | 2 | 2.00 | 0 | 0 | 0 | 17 | 560.16 | 0 | 0.0 | | 1 |
| 2/9/06 | 4:39:23 PM | 3 | 2.00 | 0 | 1 | 0 | 6 | 542.29 | 1 | 1483.0 | | 1 |
| 2/9/06 | 4:42:08 PM | 4 | 2.00 | 0 | 0 | 0 | 9 | 572.25 | 0 | 0.0 | | 1 |
| 2/9/06 | 4:44:50 PM | 5 | 2.00 | 2 | 1 | 0 | 5 | 605.12 | 4 | 214.9 | | 1 |
| 2/9/06 | 4:47:33 PM | 6 | 2.00 | 1 | 1 | 0 | 6 | 597.07 | 2 | 354.7 | | 1 |
| 2/9/06 | 4:50:15 PM | 7 | 2.00 | 0 | 0 | 2 | 7 | 580.08 | 0 | 0.0 | | 1 |
| 2/9/06 | 4:52:59 PM | 8 | 2.00 | 1 | 2 | 0 | 12 | 603.86 | 1 | 564.0 | | 1 |
| 2/9/06 | 4:55:41 PM | 9 | 2.00 | 0 | 0 | 0 | 7 | 623.26 | 0 | 0.0 | | 1 |
| 2/9/06 | 4:58:24 PM | 10 | 2.00 | 0 | 0 | 0 | 0 | 634.36 | 0 | 0.0 | | 1 |
| 2/9/06 | 5:01:06 PM | 11 | 2.00 | 5 | 5 | 1 | 4 | 630.78 | 10 | 101.9 | | 1 |
| 2/9/06 | 5:03:50 PM | 12 | 2.00 | 0 | 0 | 0 | 15 | 573.78 | 0 | 0.0 | | 1 |
| 2/9/06 | 5:06:33 PM | 13 | 2.00 | 2 | 2 | 0 | 5 | 634.37 | 4 | 215.3 | | 1 |
| 2/9/06 | 5:09:15 PM | 14 | 2.00 | 1 | 1 | 0 | 6 | 591.54 | 2 | 354.7 | | 1 |
| 2/9/06 | 5:11:59 PM | 15 | 2.00 | 1 | 2 | 0 | 6 | 610.08 | 2 | 354.7 | | 1 |
| 2/9/06 | 5:14:42 PM | 16 | 2.00 | 5 | 5 | 0 | 4 | 582.36 | 9 | 109.5 | | 1 |
| 2/9/06 | 5:17:48 PM | 17 | 2.00 | 2 | 2 | 0 | 5 | 598.43 | 4 | 209.4 | | 1 |
| 2/9/06 | 5:20:31 PM | 18 | 2.00 | 21 | 19 | 0 | 2 | 594.03 | 40 | 36.7 | | 1 |
| 2/9/06 | 5:23:13 PM | 19 | 2.00 | 10 | 11 | 0 | 3 | 599.96 | 19 | 61.4 | | 1 |
| 2/9/06 | 5:25:55 PM | 20 | 2.00 | 3 | 3 | 0 | 5 | 610.97 | 5 | 175.6 | | 1 |

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Pg 1 of 86

Pg. 5 of 7
MT-06-0151

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_030
Batch Ended: 2/9/06 14:51
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0151 [20] ROE 2-9-06 RLH

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 11 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 12 | 0.00 | 1.95 | | 0.00 | 1.12 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.19 | |
| D3 | 15 | 0.00 | 2.11 | | 1.42 | 2.15 | |
| D4 | 16 | 0.00 | 2.11 | | 6.05 | 3.11 | |
| D1 | 17 | 1.75 | 2.08 | | 2.64 | 2.50 | |
| D2 | 18 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 19 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 20 | 0.00 | 2.04 | | 0.00 | 1.17 | |

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~~Page 1 of 1~~ BR 2-9-06

RLH

F01/086

# T-BLDG- JUDGEMENTALS 1C-07

*RSDS#* MT-06-0151 *RCT:* [redacted] *RCT* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C070101J | 5904 | [redacted] | 5905 | 1 | 1 | 2/9/06 | 7:13 | 6 | 120 | 23 |
| ALPHA | 1C070102J | 5904 | [redacted] | 5905 | 1 | 2 | 2/9/06 | 7:17 | 5 | 120 | 19 |
| ALPHA | 1C070103J | 5904 | [redacted] | 5905 | 1 | 3 | 2/9/06 | 7:23 | 12 | 120 | 45 |
| ALPHA | 1C070104J | 5904 | [redacted] | 5905 | 1 | 4 | 2/9/06 | 7:27 | 4 | 120 | 15 |
| ALPHA | 1C070105J | 5904 | [redacted] | 5905 | 1 | 5 | 2/9/06 | 7:31 | 5 | 120 | 19 |
| ALPHA | 1C070106J | 5904 | [redacted] | 5905 | 1 | 6 | 2/9/06 | 7:36 | 4 | 120 | 15 |
| ALPHA | 1C070107J | 5904 | [redacted] | 5905 | 1 | 7 | 2/9/06 | 7:41 | 7 | 120 | 26 |
| ALPHA | 1C070108J | 5904 | [redacted] | 5905 | 1 | 8 | 2/9/06 | 7:45 | 8 | 120 | 30 |
| ALPHA | 1C070109J | 5904 | [redacted] | 5905 | 1 | 9 | 2/9/06 | 7:48 | 2 | 120 | 8 |
| ALPHA | 1C070110J | 5904 | [redacted] | 5905 | 1 | 10 | 2/9/06 | 7:52 | 13 | 120 | 49 |
| ALPHA | 1C070201J | 5904 | [redacted] | 5905 | 1 | 11 | 2/9/06 | 7:58 | 8 | 120 | 30 |
| ALPHA | 1C070202J | 5904 | [redacted] | 5905 | 1 | 12 | 2/9/06 | 8:03 | 5 | 120 | 19 |
| ALPHA | 1C070203J | 5904 | [redacted] | 5905 | 1 | 13 | 2/9/06 | 8:07 | 2 | 120 | 8 |
| ALPHA | 1C070204J | 5904 | [redacted] | 5905 | 1 | 14 | 2/9/06 | 8:12 | 4 | 120 | 15 |
| ALPHA | 1C070205J | 5904 | [redacted] | 5905 | 1 | 15 | 2/9/06 | 8:15 | 5 | 120 | 19 |
| ALPHA | 1C070206J | 5904 | [redacted] | 5905 | 1 | 16 | 2/9/06 | 8:19 | 4 | 120 | 15 |
| ALPHA | 1C070207J | 5904 | [redacted] | 5905 | 1 | 17 | 2/9/06 | 8:22 | 5 | 120 | 19 |
| ALPHA | 1C070208J | 5904 | [redacted] | 5905 | 1 | 18 | 2/9/06 | 8:26 | 7 | 120 | 26 |
| ALPHA | 1C070209J | 5904 | [redacted] | 5905 | 1 | 19 | 2/9/06 | 8:30 | 2 | 120 | 8 |
| ALPHA | 1C070210J | 5904 | [redacted] | 5905 | 1 | 20 | 2/9/06 | 8:33 | 3 | 120 | 11 |
| BETA | 1C070101J | 5904 | [redacted] | 5905 | 2 | 1 | 2/9/06 | 7:14 | 83 | 60 | 753 |
| BETA | 1C070102J | 5904 | [redacted] | 5905 | 2 | 2 | 2/9/06 | 7:19 | 75 | 60 | 680 |
| BETA | 1C070103J | 5904 | [redacted] | 5905 | 2 | 3 | 2/9/06 | 7:24 | 118 | 60 | 1070 |
| BETA | 1C070104J | 5904 | [redacted] | 5905 | 2 | 4 | 2/9/06 | 7:28 | 111 | 60 | 1007 |
| BETA | 1C070105J | 5904 | [redacted] | 5905 | 2 | 5 | 2/9/06 | 7:32 | 97 | 60 | 880 |
| BETA | 1C070106J | 5904 | [redacted] | 5905 | 2 | 6 | 2/9/06 | 7:37 | 105 | 60 | 952 |
| BETA | 1C070107J | 5904 | [redacted] | 5905 | 2 | 7 | 2/9/06 | 7:42 | 103 | 60 | 934 |
| BETA | 1C070108J | 5904 | [redacted] | 5905 | 2 | 8 | 2/9/06 | 7:46 | 96 | 60 | 871 |
| BETA | 1C070109J | 5904 | [redacted] | 5905 | 2 | 9 | 2/9/06 | 7:49 | 109 | 60 | 989 |
| BETA | 1C070110J | 5904 | [redacted] | 5905 | 2 | 10 | 2/9/06 | 7:53 | 88 | 60 | 798 |
| BETA | 1C070201J | 5904 | [redacted] | 5905 | 2 | 11 | 2/9/06 | 8:00 | 86 | 60 | 780 |
| BETA | 1C070202J | 5904 | [redacted] | 5905 | 2 | 12 | 2/9/06 | 8:04 | 83 | 60 | 753 |
| BETA | 1C070203J | 5904 | [redacted] | 5905 | 2 | 13 | 2/9/06 | 8:08 | 75 | 60 | 680 |
| BETA | 1C070204J | 5904 | [redacted] | 5905 | 2 | 14 | 2/9/06 | 8:13 | 109 | 60 | 989 |
| BETA | 1C070205J | 5904 | [redacted] | 5905 | 2 | 15 | 2/9/06 | 8:16 | 65 | 60 | 590 |
| BETA | 1C070206J | 5904 | [redacted] | 5905 | 2 | 16 | 2/9/06 | 8:20 | 66 | 60 | 599 |
| BETA | 1C070207J | 5904 | [redacted] | 5905 | 2 | 17 | 2/9/06 | 8:23 | 78 | 60 | 707 |
| BETA | 1C070208J | 5904 | [redacted] | 5905 | 2 | 18 | 2/9/06 | 8:27 | 89 | 60 | 807 |
| BETA | 1C070209J | 5904 | [redacted] | 5905 | 2 | 19 | 2/9/06 | 8:31 | 71 | 60 | 644 |
| BETA | 1C070210J | 5904 | [redacted] | 5905 | 2 | 20 | 2/9/06 | 8:34 | 100 | 60 | 907 |



F 62/686

MT-06-0151
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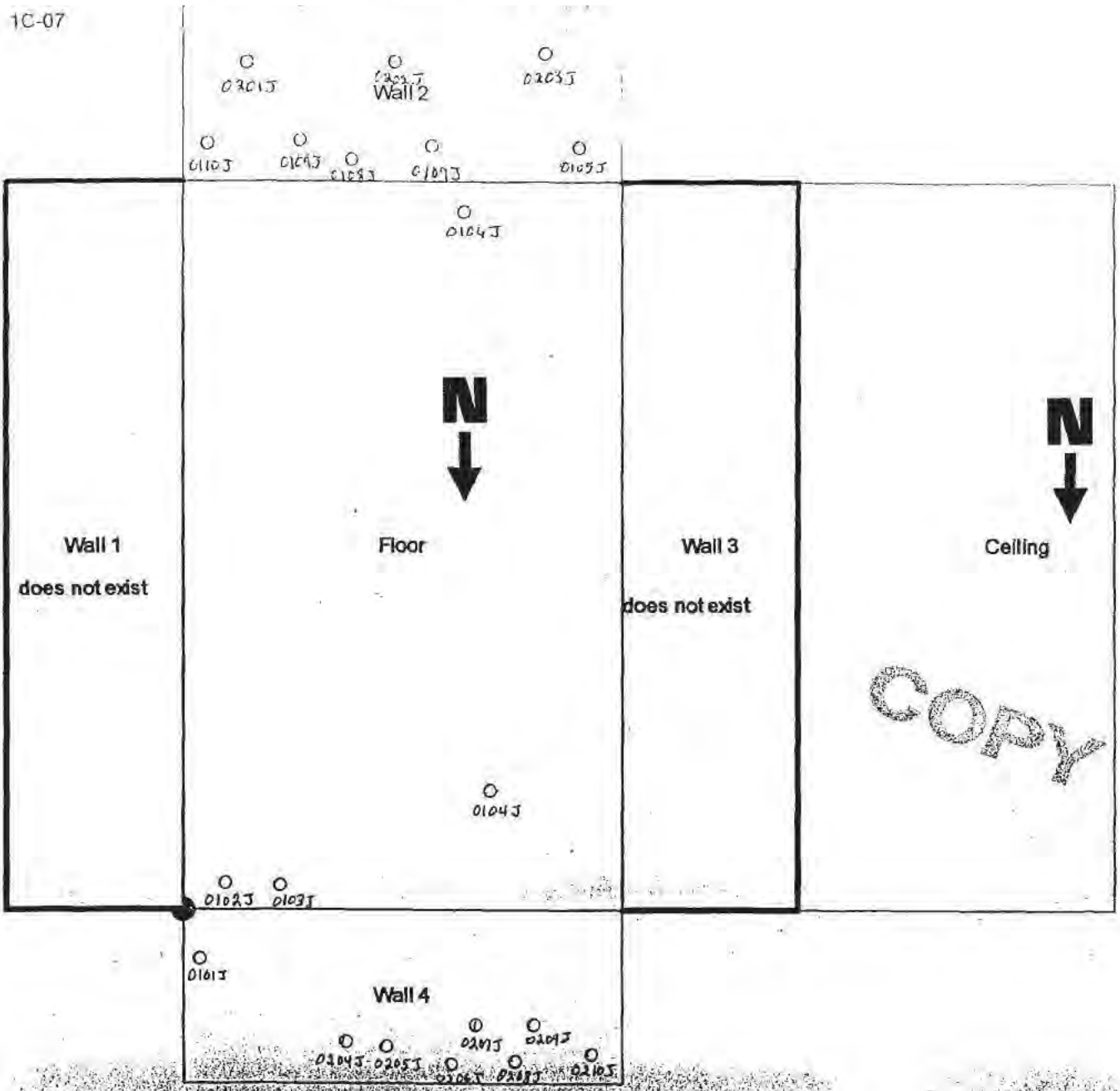
Judgmentals

1C-07




COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg 1607 #7 Sump | SURVEY NO. MT-06-0459 |
| PURPOSE: SAN 100% W/2350 AND L2360 W/Fidler Probe Also Judge Mentals SYS-PRS 227 | RWP NO. N/A |
| | DATE: 4-26-06 |
| | TIME: 0730 |

## MAP / DRAWING

SCAN 100% of Sump Surface with L2360 W/Fidler Probe
SCAN 100% of Sump W/2350 α+β.

See Attached Sheets

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895/5896 | 3-23-07 |
| 2360 | 5871/3975 | 5-18-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) Donna Watson | | Date: 4/27/06 |
| Completed by: (Print Name) DONNA WATSON | | |
| Counted by: (Signature) SEE | HP# N/A | Date: N/A |
| Counted by: (Print Name) ATTACHED Sheets | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 5/1/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F64/686

Survey No. MT-06-0459



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 94SPRS-0101J |
| 2 | | | | 94SPRS-0102J |
| 3 | | | | 94SPRS-0103J |
| 4 | | | | 94SPRS-0104J |
| 5 | | | | 94SPRS-0105J |
| 6 | | | | 94SPRS-0106J |
| 7 | | | | 94SPRS-0107J |
| 8 | | | | 94SPRS-0108J |
| 9 | | | | 94SPRS-0109J |
| 10 | | | | 94SPRS-0110J |
| 11 | | | | 94SPRS-0111J |
| 12 | | | | 94SPRS-0112J |
| 13 | | | | 94SPRS-0113J |
| 14 | | | | 94SPRS-0114J |
| 15 | | | | 94SPRS-0115J |
| 16 | | | | 94SPRS-0116J |
| 17 | | | | 94SPRS-0117J |
| 18 | | | | 94SPRS-0118J |
| 19 | | | | 94SPRS-0119J |
| 20 | | | | 94SPRS-0120J |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

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COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

F 65/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060427_0931.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0459.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|

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Pg 3 of 9
MT-06-0459

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/27/06 | 9:32:10 AM | -1 | 10.00 | 8 | 7 | 10 | 8 | 624.38 | 0 | 22.9 | B | 3 |
| 4/27/06 | 9:42:58 AM | 0 | 2.00 | 206 | 196 | 4 | 0 | 557.99 | 395 | 10.1 | | 3 |
| 4/27/06 | 9:45:39 AM | 1 | 2.00 | 1 | 1 | 0 | 0 | 639.68 | 2 | 499.8 | | 3 |
| 4/27/06 | 9:48:21 AM | 2 | 2.00 | 0 | 1 | 0 | 0 | 642.96 | 1 | 1102.8 | | 3 |
| 4/27/06 | 9:51:04 AM | 3 | 2.00 | 4 | 4 | 0 | 0 | 637.27 | 7 | 131.6 | | 3 |
| 4/27/06 | 9:53:46 AM | 4 | 2.00 | 3 | 2 | 1 | 9 | 572.87 | 6 | 151.5 | | 3 |
| 4/27/06 | 9:56:27 AM | 5 | 2.00 | 2 | 2 | 0 | 0 | 624.71 | 3 | 247.7 | | 3 |
| 4/27/06 | 9:59:09 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 631.84 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:01:51 AM | 7 | 2.00 | 2 | 3 | 0 | 0 | 642.00 | 4 | 196.1 | | 3 |
| 4/27/06 | 10:04:33 AM | 8 | 2.00 | 0 | 0 | 0 | 0 | 634.13 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:07:16 AM | 9 | 2.00 | 3 | 2 | 0 | 5 | 616.02 | 5 | 191.8 | | 3 |
| 4/27/06 | 10:09:57 AM | 10 | 2.00 | 0 | 0 | 1 | 8 | 636.63 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:12:40 AM | 11 | 2.00 | 4 | 4 | 0 | 4 | 628.96 | 8 | 122.1 | | 3 |
| 4/27/06 | 10:15:22 AM | 12 | 2.00 | 0 | 0 | 0 | 0 | 615.00 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:18:04 AM | 13 | 2.00 | 1 | 2 | 1 | 11 | 502.66 | 3 | 328.7 | | 3 |
| 4/27/06 | 10:20:49 AM | 14 | 2.00 | 2 | 2 | 0 | 10 | 441.94 | 5 | 200.4 | | 3 |
| 4/27/06 | 10:23:32 AM | 15 | 2.00 | 0 | 0 | 0 | 0 | 616.82 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:26:14 AM | 16 | 2.00 | 1 | 1 | 0 | 0 | 563.58 | 3 | 328.7 | | 3 |
| 4/27/06 | 10:29:02 AM | 17 | 2.00 | 0 | 0 | 0 | 8 | 479.48 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:31:44 AM | 18 | 2.00 | 0 | 0 | 3 | 10 | 519.00 | 0 | 0.0 | | 3 |
| 4/27/06 | 10:34:25 AM | 19 | 2.00 | 5 | 6 | 2 | 0 | 626.80 | 9 | 103.0 | | 3 |
| 4/27/06 | 10:37:07 AM | 20 | 2.00 | 4 | 5 | 0 | 0 | 607.96 | 8 | 118.3 | | 3 |

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F 67/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_045
Batch Ended: 4/27/06 8:29
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0459 [20] WATSON 4-27-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.95 | 2.22 | | 1.50 | 2.26 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 4 | 0.00 | 2.11 | | 0.58 | 1.71 | |
| B1 | 5 | 1.58 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 8 | 0.00 | 1.97 | | 0.66 | 1.69 | |
| C1 | 9 | 1.73 | 2.07 | | 0.00 | 1.27 | |
| C2 | 10 | 1.61 | 1.93 | | 0.00 | 1.16 | |
| C3 | 11 | 0.00 | 2.17 | | 4.23 | 2.83 | |
| C4 | 12 | 0.00 | 1.99 | | 0.45 | 1.61 | |
| D1 | 13 | 1.74 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.17 | | 0.32 | 1.69 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 0.00 | 2.04 | | 0.00 | 1.18 | |
| C1 | 17 | 0.00 | 2.09 | | 1.11 | 2.18 | |
| C2 | 18 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 19 | 0.00 | 2.12 | | 0.00 | 1.27 | |
| C4 | 20 | 0.00 | 1.99 | | 0.45 | 1.61 | |

COPY

F68/686

4/28/06

~~Page 1 of 1~~

Pg 579
MT-06-0459

# T-BLDG 1C07 SUMP # 7 JUDGEMENTALS Survey

*RSDS#* MT-06-0459 *RCT:* [redacted] *RCT:* N/A

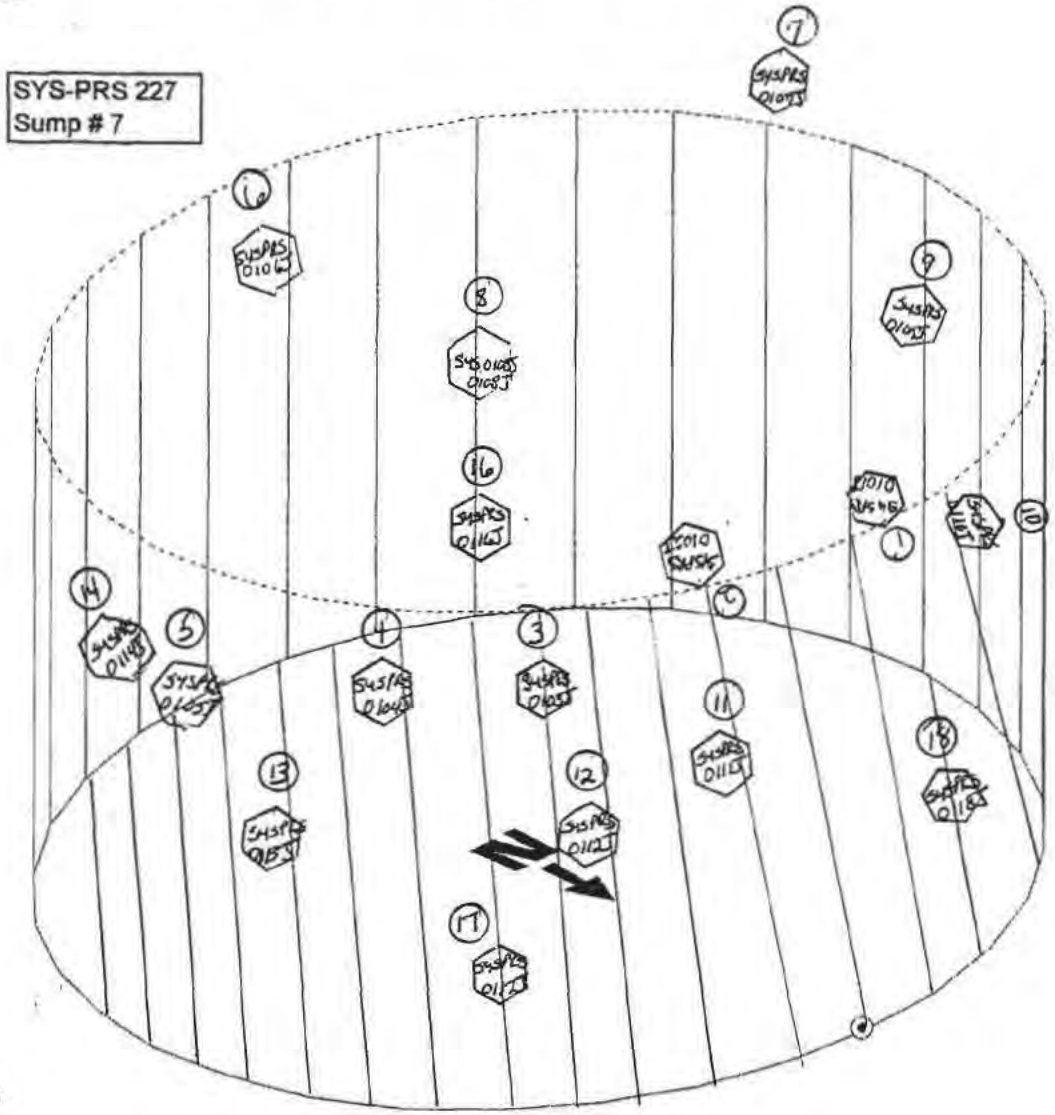
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | SYSPRS0101J | 5895 | [redacted] | 5896 | 1 | 1 | 4/26/06 | 13:02 | 2 | 120 | 8 |
| ALPHA | SYSPRS0102J | 5895 | [redacted] | 5896 | 1 | 2 | 4/26/06 | 13:06 | 2 | 120 | 8 |
| ALPHA | SYSPRS0103J | 5895 | [redacted] | 5896 | 1 | 3 | 4/26/06 | 13:09 | 4 | 120 | 15 |
| ALPHA | SYSPRS0104J | 5895 | [redacted] | 5896 | 1 | 4 | 4/26/06 | 13:13 | 4 | 120 | 15 |
| ALPHA | SYSPRS0105J | 5895 | [redacted] | 5896 | 1 | 5 | 4/26/06 | 13:17 | 3 | 120 | 11 |
| ALPHA | SYSPRS0106J | 5895 | [redacted] | 5896 | 1 | 6 | 4/26/06 | 13:21 | 4 | 120 | 15 |
| ALPHA | SYSPRS0107J | 5895 | [redacted] | 5896 | 1 | 7 | 4/26/06 | 13:24 | 6 | 120 | 23 |
| ALPHA | SYSPRS0108J | 5895 | [redacted] | 5896 | 1 | 8 | 4/26/06 | 13:28 | 8 | 120 | 30 |
| ALPHA | SYSPRS0109J | 5895 | [redacted] | 5896 | 1 | 9 | 4/26/06 | 13:32 | 3 | 120 | 11 |
| ALPHA | SYSPRS0110J | 5895 | [redacted] | 5896 | 1 | 10 | 4/26/06 | 13:35 | 7 | 120 | 26 |
| ALPHA | SYSPRS0111J | 5895 | [redacted] | 5896 | 1 | 11 | 4/26/06 | 13:39 | 6 | 120 | 23 |
| ALPHA | SYSPRS0112J | 5895 | [redacted] | 5896 | 1 | 12 | 4/26/06 | 13:43 | 6 | 120 | 23 |
| ALPHA | SYSPRS0113J | 5895 | [redacted] | 5896 | 1 | 13 | 4/26/06 | 13:46 | 8 | 120 | 30 |
| ALPHA | SYSPRS0114J | 5895 | [redacted] | 5896 | 1 | 14 | 4/26/06 | 14:20 | 5 | 120 | 19 |
| ALPHA | SYSPRS0115J | 5895 | [redacted] | 5896 | 1 | 15 | 4/26/06 | 14:24 | 10 | 120 | 38 |
| ALPHA | SYSPRS0116J | 5895 | [redacted] | 5896 | 1 | 16 | 4/26/06 | 14:28 | 7 | 120 | 26 |
| ALPHA | SYSPRS0117J | 5895 | [redacted] | 5896 | 1 | 17 | 4/26/06 | 14:33 | 6 | 120 | 23 |
| ALPHA | SYSPRS0118J | 5895 | [redacted] | 5896 | 1 | 18 | 4/26/06 | 14:38 | 7 | 120 | 26 |
| ALPHA | SYSPRS0119J | 5895 | [redacted] | 5896 | 1 | 19 | 4/26/06 | 14:42 | 8 | 120 | 30 |
| ALPHA | SYSPRS0120J | 5895 | [redacted] | 5896 | 1 | 20 | 4/26/06 | 14:49 | 13 | 120 | 49 ✓ |
| BETA | SYSPRS0101J | 5895 | [redacted] | 5896 | 2 | 1 | 4/26/06 | 13:03 | 71 | 60 | 691 |
| BETA | SYSPRS0102J | 5895 | [redacted] | 5896 | 2 | 2 | 4/26/06 | 13:07 | 60 | 60 | 584 |
| BETA | SYSPRS0103J | 5895 | [redacted] | 5896 | 2 | 3 | 4/26/06 | 13:11 | 74 | 60 | 721 |
| BETA | SYSPRS0104J | 5895 | [redacted] | 5896 | 2 | 4 | 4/26/06 | 13:14 | 52 | 60 | 506 |
| BETA | SYSPRS0105J | 5895 | [redacted] | 5896 | 2 | 5 | 4/26/06 | 13:18 | 68 | 60 | 662 |
| BETA | SYSPRS0106J | 5895 | [redacted] | 5896 | 2 | 6 | 4/26/06 | 13:22 | 47 | 60 | 458 |
| BETA | SYSPRS0107J | 5895 | [redacted] | 5896 | 2 | 7 | 4/26/06 | 13:26 | 50 | 60 | 487 |
| BETA | SYSPRS0108J | 5895 | [redacted] | 5896 | 2 | 8 | 4/26/06 | 13:29 | 87 | 60 | 847 |
| BETA | SYSPRS0109J | 5895 | [redacted] | 5896 | 2 | 9 | 4/26/06 | 13:33 | 78 | 60 | 760 |
| BETA | SYSPRS0110J | 5895 | [redacted] | 5896 | 2 | 10 | 4/26/06 | 13:37 | 55 | 60 | 536 |
| BETA | SYSPRS0111J | 5895 | [redacted] | 5896 | 2 | 11 | 4/26/06 | 13:40 | 62 | 60 | 604 |
| BETA | SYSPRS0112J | 5895 | [redacted] | 5896 | 2 | 12 | 4/26/06 | 13:44 | 68 | 60 | 662 |
| BETA | SYSPRS0113J | 5895 | [redacted] | 5896 | 2 | 13 | 4/26/06 | 13:48 | 58 | 60 | 565 |
| BETA | SYSPRS0114J | 5895 | [redacted] | 5896 | 2 | 14 | 4/26/06 | 14:21 | 63 | 60 | 613 |
| BETA | SYSPRS0115J | 5895 | [redacted] | 5896 | 2 | 15 | 4/26/06 | 14:25 | 86 | 60 | 837 |
| BETA | SYSPRS0116J | 5895 | [redacted] | 5896 | 2 | 16 | 4/26/06 | 14:29 | 102 | 60 | 993 |
| BETA | SYSPRS0117J | 5895 | [redacted] | 5896 | 2 | 17 | 4/26/06 | 14:34 | 56 | 60 | 545 |
| BETA | SYSPRS0118J | 5895 | [redacted] | 5896 | 2 | 18 | 4/26/06 | 14:39 | 85 | 60 | 828 |
| BETA | SYSPRS0119J | 5895 | [redacted] | 5896 | 2 | 19 | 4/26/06 | 14:43 | 67 | 60 | 652 |
| BETA | SYSPRS0120J | 5895 | [redacted] | 5896 | 2 | 20 | 4/26/06 | 14:50 | 79 | 60 | 769 ✓ |
| | | | | | | | | | | | |
| | | | | | | N/A | | | | | F 69/686 |
| | | | | | | | | | | | |

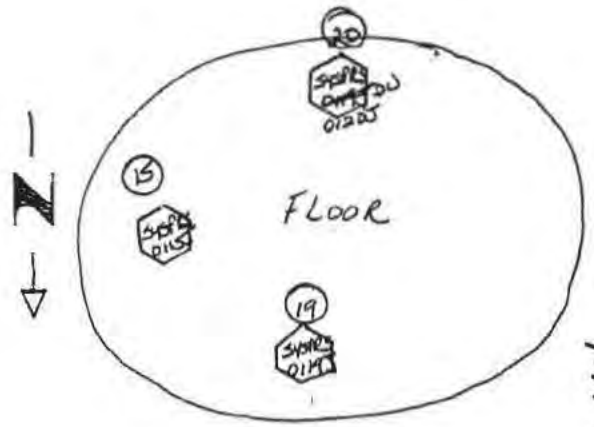


COPY

SYS-PRS 227
Sump # 7
Room 40

Scan 100 % of the sump surface with L2360 w/ fidler probe
10 minimum judgmentals in sump hole



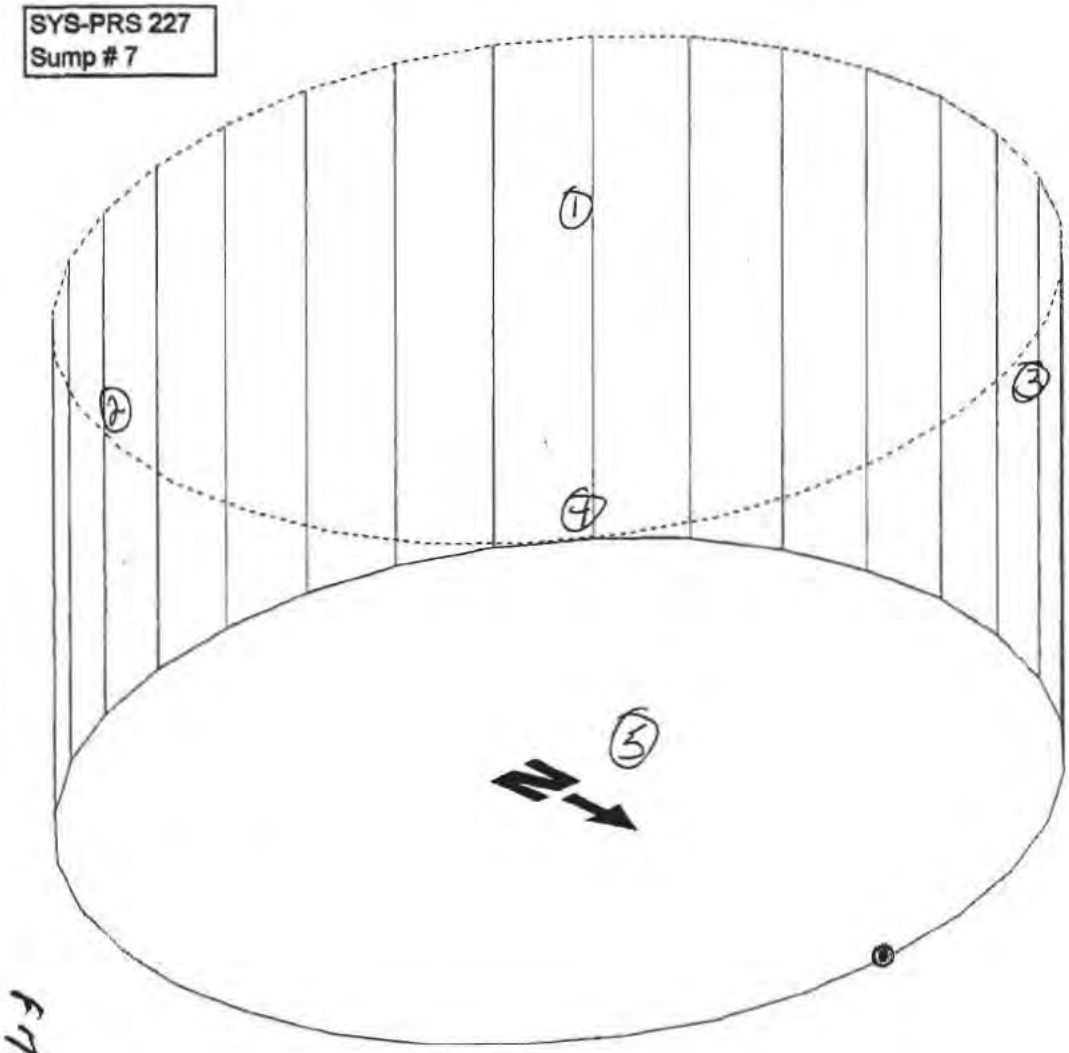

⬡ = Judgemental

⊖ = Swipes or smears

COPY

SYS-PRS 227
Sump # 7
Room 40

Scan 100 % of the sump surface with L2360 w/ fidler probe
10 minimum judgmentals in sump hole




(2360) 5871/3975 ✓ CAL 5/18/06
Fidler BKG. 257 dpm

1 244 dpm
2 244 dpm
3 267 dpm
4 248 dpm
5 264 dpm

F71/686

COPY

Pg 8 of 9
MT-06-0459

Survey Unit Number 5YS-PRS 227



(Supplemental sheet for biased measurements)

RSDS # MT-06-0459
RCT INT/HP 7126

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 5YS PRS- 0101J | 1C07 | Sump Top | | |
| 5YS PRS- 0102J | | Sump Top | | |
| 5YSPRS- 0103J | | Sump Top | | |
| 5YSPRS- 0104J | | Sump N-WALL Top | | |
| 5YSPRS- 0105J | | EAST - WALL | | |
| 5YSPRS- 0106J | | South WALL | | |
| 5YSPRS- 0107J | | South WALL | | |
| 5YSPRS- 0108J | | South Top | | |
| 5YSPRS- 0109J | | South WALL | | |
| 5YSPRS 0110J | | West WALL | | |
| 5YSPRS- 0111J | | West WALL | | |
| 5YSPRS- 0112J | | NORTH WALL | | |
| 5YSPRS- 0113J | | NORTH WALL | | |
| 5YSPRS 0114J | | NORTH WALL | | |
| 5YSPRS 0115J | | EAST WALL | | |
| 5YSPRS 0116J | | FLOOR | | |
| 5YSPRS 0117J | | S WALL | | |
| 5YSPRS 0118J | | WEST WALL | | |
| 5YSPRS 0119J | | FLOOR ~~WALL~~ N-WALL | | |
| 5YSPRS 0120J | | FLOOR | | |
| | N | | | N |
| | A | | | A |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F 72/686

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T BLDG / ~~H104~~ 1608 / ROOM 48 | SURVEY NO. MT-05-946 |
| PURPOSE PAINT CHIP ANALYSIS | RWP NO. N/A |
| | DATE: 10/6/05 |
| | TIME: 1000 |

MAP/DRAWING

- SEE ATTACHED FOR RESULTS.
- A STATIC MEASUREMENT WAS OBTAINED FOR EACH SAMPLE PRIOR TO SENDING FOR "OUTSIDE" LAB ANALYSIS.

COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or/β = direct cont. measurement in dpm/100cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5924/5929 | 5/9/06 |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | DATE: 10/6/05 |
| Completed by: (Print Name) RICARDO V. BURKE | | |
| Counted by: (Signature) SEE ATTACHED SHEET | HI' # N/A | DATE: N/A |
| Counted by: (Print Name) SEE ATTACHED SHEET | | |
| Reviewed/Approved by: (Signature) | | DATE: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

F73/686

Survey No. MI-05-946

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | N | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | A |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | N | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | A |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N A

NOTES:
1. See MD-50036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620 (4-96)

F74/686

# T-Building Paint Sample Analysis Survey Rm 48

1C08

*RSDS#* MT-05-946 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.30 | PROBE AREA: | 128 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | [illegible] | EFF: | 0.21 | PROBE AREA: | 128 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | 0.5 | Detector # : | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | RM48Sample1 | 5924 | [redacted] | 5929 | 1 | 1 | 10/6/05 | 8:56 | 6 | 120 | 16 |
| ALPHA | RM48Sample2 | 5924 | [redacted] | 5929 | 1 | 2 | 10/6/05 | 9:02 | 4 | 120 | 11 |
| ALPHA | RM48Sample3 | 5924 | [redacted] | 5929 | 1 | 3 | 10/6/05 | 9:07 | 4 | 120 | 11 |
| ALPHA | RM48Sample4 | 5924 | [redacted] | 5929 | 1 | 4 | 10/6/05 | 9:12 | 7 | 120 | 19 |
| ALPHA | RM48Sample5 | 5924 | [redacted] | 5929 | 1 | 5 | 10/6/05 | 9:16 | 7 | 120 | 19 |
| ALPHA | RM48Sample6 | 5924 | [redacted] | 5929 | 1 | 6 | 10/6/05 | 9:21 | 4 | 120 | 11 |
| ALPHA | RM48Sample7 | 5924 | [redacted] | 5929 | 1 | 7 | 10/6/05 | 9:27 | 47 | 120 | 124 |
| ALPHA | RM48Sample8 | 5924 | [redacted] | 5929 | 1 | 8 | 10/6/05 | 9:32 | 2 | 120 | 5 |
| ALPHA | RM48Sample9 | 5924 | [redacted] | 5929 | 1 | 9 | 10/6/05 | 9:36 | 7 | 120 | 19 |
| ALPHA | RM48Sample10 | 5924 | [redacted] | 5929 | 1 | 10 | 10/6/05 | 9:41 | 1 | 120 | 3 |
| BETA | RM48Sample1 | 5924 | [redacted] | 5929 | 2 | 1 | 10/6/05 | 8:57 | 169 | 60 | 1277 |
| BETA | RM48Sample2 | 5924 | [redacted] | 5929 | 2 | 2 | 10/6/05 | 9:03 | 148 | 60 | 1119 |
| BETA | RM48Sample3 | 5924 | [redacted] | 5929 | 2 | 3 | 10/6/05 | 9:08 | 171 | 60 | 1293 |
| BETA | RM48Sample4 | 5924 | [redacted] | 5929 | 2 | 4 | 10/6/05 | 9:13 | 154 | 60 | 1164 |
| BETA | RM48Sample5 | 5924 | [redacted] | 5929 | 2 | 5 | 10/6/05 | 9:17 | 147 | 60 | 1111 |
| BETA | RM48Sample6 | 5924 | [redacted] | 5929 | 2 | 6 | 10/6/05 | 9:22 | 156 | 60 | 1179 |
| BETA | RM48Sample7 | 5924 | [redacted] | 5929 | 2 | 7 | 10/6/05 | 9:28 | 500 | 60 | 3779 |
| BETA | RM48Sample8 | 5924 | [redacted] | 5929 | 2 | 8 | 10/6/05 | 9:33 | 140 | 60 | 1058 |
| BETA | RM48Sample9 | 5924 | [redacted] | 5929 | 2 | 9 | 10/6/05 | 9:37 | 138 | 60 | 1043 |
| BETA | RM48Sample10 | 5924 | [redacted] | 5929 | 2 | 10 | 10/6/05 | 9:42 | 124 | 60 | 937 |

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F75/686

# CERTIFICATE OF ANALYSIS

Client: CH2M Hill - Mound (DOE) Site
Date Received: 10/12/05
Date Reported: 11/7/05

| Client ID | GEL-Ohio ID | Gamma Screen | Alpha Qualitative ID | | |
|---|---|---|---|---|---|
| | | | Peak Energy | Possible Source | Relative Ratio |
| T48-1 | 147695001 | Bi-210m, Co-60, Tl-208,Ac-228,Bi-214, Cs-137 | 4054 | Th-232 | 11% |
| | | | 5376 | Th-228 | 22% |
| | | | 5443 | Am-241/Ra-224 | 20% |
| | | | 5693 | Ra-224 | 12% |
| | | | 6277 | Rn-220 | 18% |
| | | | 6730 | Po-216 | 12% |
| T48-2 | 147695002 | U-235, Pb-214, Bi-214 | 4857 | Th-229 | 25% |
| | | | 6270 | At-219 | 25% |
| | | | 6704 | Rn-219 | 50% |
| T48-3 | 147695003 | Pb-212, Pb-214, Bi-214, Ac-228 | 4711 | U-234 or Th-230 | 61% |
| | | | 5638 | Ra-224 | 33% |
| | | | 5704 | Ra-224 | 6% |
| T48-4 | 147695004 | K-40 Only | 4850 | Th-229 or U-233 | 11% |
| | | | 5690 | Ra-224 | 63% |
| | | | 6255 | Rn-220 | 26% |
| T48-5 | 147695005 | Tl-208 | 5310 | Po-210 | 100% |
| T48-6 | 147695006 | Pb-210, Bi-210m, Pb-212, Bi-214 | 5709 | Ra-224, Th-227 | 50% |
| | | | 6720 | Po-216 | 50% |
| T48-7 | 147695007 | Am-241, Ra-223, Bi-210m, Bi-214, Cs-137, Co-60 | 5000 | Bi-210m | 99% |
| | | | 5093 | Pu-239 | 1% |
| | | | 5687 | Ra-224 | 0% |
| | | | 6257 | Rn-220 | 0% |
| T48-8 | 147695008 | Pb-212, Pb-214, Bi-210m | 4190 | U-238 | 32% |
| | | | 5288 | Po-210 | 32% |
| | | | 6077 | Bi-212 | 36% |
| T48-9 | 147695009 | Am-241, Co-60, Pb-214, Bi-214 | 4326 | U-238, U-235 | 20% |
| | | | 4576 | U-235, Ra-226 | 27% |
| | | | 4870 | U-233, Th-229 | 20% |
| | | | 5425 | Th-228 | 33% |
| T48-10 | 147695010 | Pb-214, Bi-214, Ac-228 | 4950 | Pa-231, Th-229 | 17% |
| | | | 5440 | Th-228, Ra-224 | 83% |

COPY

**NOTES:** Most samples had very little activity for the analyses. Sample T48-7 had significant alpha and gamma activity, most of which is suspected to be from the Bi-210m. Relative ratio is the activity at that peak energy versus activity for entire spectrum of detected alpha peaks.

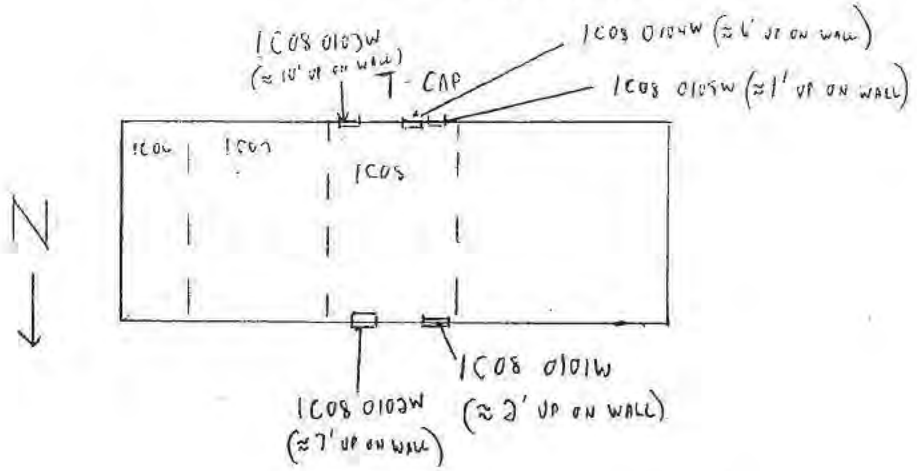
Timothy M. Dell

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C05) | SURVEY NO. MT-05-1342 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Walls | RWP NO. N/A |
| | DATE: 12-19-05 |
| | TIME: 1245 |

## MAP / DRAWING




No elevated α/β readings detected during scanning.
See Attachments.
Areas around locations around direct frisks also scanned.

COPY

Scan 23 Summary attached

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM 23 | R150 / C150 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) J. Klag | HP# [redacted] | Date: 12-19-05 |
| Completed by: (Print Name) T. Klag | 3X 12-19-05 | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2/8/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | F77/686 |

Survey No. M7-05-1347

Page 2 of 8 2/4/06

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C08 0101 W |
| 2 | ↓ | ↓ | ↓ | 1C08 0102 W |
| 3 | | | | 1C08 0103 W |
| 4 | | | | 1C08 0104 W |
| 5 | | | | 1C08 0105 W |

N/A

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

COMMENTS:

N/A

NOTES:
1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

COPY

F78/686

3 of 7 8

**MARSSIM Smear Data**

Copy

MT-05-1342

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20051220_1018.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1342.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

= 99/686

RLN

4 of 78

JK
12-22-05

## MARSSIM Smear Data

B
C

MT-05-1342

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/20/05 | 10:19:46 AM | -1 | 10.00 | 9 | 8 | 11 | 11 | 605.71 | 0 | 21.5 | B | 2 |
| 12/20/05 | 10:30:36 AM | 0 | 2.00 | 504 | 479 | 3 | 0 | 574.16 | 954 | 6.4 | | 2 |
| 12/20/05 | 10:33:19 AM | 1 | 2.00 | 0 | 0 | 0 | 7 | 502.58 | 0 | 0.0 | | 2 |
| 12/20/05 | 10:36:02 AM | 2 | 2.00 | 0 | 0 | 0 | 13 | 537.66 | 0 | 0.0 | | 2 |
| 12/20/05 | 10:38:45 AM | 3 | 2.00 | 4 | 5 | 0 | 0 | 550.38 | 7 | 139.1 | | 2 |
| 12/20/05 | 10:41:26 AM | 4 | 2.00 | 0 | 0 | 0 | 19 | 582.85 | 0 | 0.0 | | 2 |
| 12/20/05 | 10:44:07 AM | 5 | 2.00 | 0 | 0 | 0 | 7 | 591.18 | 0 | 0.0 | | 2 |

JK

F89/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_080
Batch Ended: 12/20/05 9:07
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1342 KING [5] GWD ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 ✓ | 5 | 0.00 | 1.91 | | 1.23 | 2.06 | |

ZK  ZK

ACCEPT

5 of 8 ZK 12/20/05

Page ~~1 of 1~~

ZK. 12-22-05

F81/686

EWD

# T-BLDG. T-CAP ( 1C08);Survey of Suspected Elevated Spots on Walls

***RSDS#*** MT-05-1342 ***RCT:*** [redacted] ***RCT:*** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 ✓ | PROBE AREA: | 126 | cm² | Surface Eff: | | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | [illegible] ✓ | PROBE AREA: | 126 | cm² | Surface Eff: | | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | 0.5 | Detector # : | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C080101W | 5895 | [redacted] | 5896 | 1 | 1 | 12/19/05 | 9:54 | 5 | 120 | 18 |
| ALPHA | 1C080102W | 5895 | [redacted] | 5896 | 1 | 2 | 12/19/05 | 10:04 | 1 | 120 | 4 |
| ALPHA | 1C080103W | 5895 | [redacted] | 5896 | 1 | 3 | 12/19/05 | 10:42 | 3 | 120 | 11 |
| ALPHA | 1C080104W | 5895 | [redacted] | 5896 | 1 | 4 | 12/19/05 | 12:25 | 11 | 120 | 40 |
| ALPHA | 1C080105W | 5895 | [redacted] | 5896 | 1 | 5 | 12/19/05 | 12:35 | 4 | 120 | 15 ✓ |
| BETA | 1C080101W | 5895 | [redacted] | 5896 | 2 | 1 | 12/19/05 | 9:55 | 78 | 60 | 728 |
| BETA | 1C080102W | 5895 | [redacted] | 5896 | 2 | 2 | 12/19/05 | 10:05 | 70 | 60 | 654 |
| BETA | 1C080103W | 5895 | [redacted] | 5896 | 2 | 3 | 12/19/05 | 10:43 | 62 | 60 | 579 |
| BETA | 1C080104W | 5895 | [redacted] | 5896 | 2 | 4 | 12/19/05 | 12:27 | 68 | 60 | 635 |
| BETA | 1C080105W | 5895 | [redacted] | 5896 | 2 | 5 | 12/19/05 | 12:37 | 75 | 60 | 700 ✓ |

N A



F82/686

**Survey Unit Number:** 1C08

Page 7 of 8 2/4/02

(Supplemental sheet for biased measurements.)

RSDS # M1 05-1342

RCT INT/HP 3M [redacted]

| Label | | Room | Surface | LX | LY |
|---|---|---|---|---|---|
| 1C08 | 0101W | T.CAP | North Wall | N/A | N/A |
| 1C08 | 0102W | | North Wall | | |
| 1C08 | 0103W | | South Wall | | |
| 1C08 | 0104W | | South Wall | | |
| 1C08 | 0105W | | South Wall | | |
| | N/A | N/A | N/A | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F83/6B6

# Surface Contamination Monitor Survey Investigation Summary

| | |
|---|---|
| Survey Unit | IC-07 (Includes IC-08, IC-09, IC-10) |
| SCM ID (Circle One) | SCM 53<br>(SCM 23) |
| Calibration Due Date | 06-01-06 |

| Room | Surface | Investigations | |
|---|---|---|---|
| T-Cap | Floor - East | 58 | (for 58 spots) |
| " | Floor - West | 3 | (Marked for Resrad - Includes 5 highest Alpha and 5 highest Beta) |
| | | | |
| | | | |
| | | | |
| T-Cap | Walls | 30 | (for 36 spots) |
| | | | |
| | | | |
| T-Cap Sump Pits | Walls Only | 38 | (for 48 spots) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Note: 2 floor spots and 1 wall spot from T-CAP Floor East and walls are actually located in Corridor 39, north end.

Name Sherry Oran

Signature Sherry Oran

Date 12-19-05

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# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T. CAP (1C08) | SURVEY NO. MT-05-1343 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots. The spots on this survey were originally erroneously attributed to Survey Unit 1C07 | RWP NO. N/A |
| | DATE: 12-15/17 05 |
| | TIME: 1036 (12 17 05) |

## MAP / DRAWING

The following locations were originally attributed to 1C07 and should have been attributed to 1C08 The data for these locations can be found on Survey # MT-05-1331

| | | |
|---|---|---|
| 1C07 0104X | 1C07 0108X | 1C07 0114X |
| 1C07 0105X | 1C07 0109X | 1C07 0121X |
| 1C07 0106X | 1C07 0113X | 1C07 0122X |

The following locations were originally attributed to 1C07 and should have been attributed to 1C08. The data for these locations can be found on Survey # MT-05-1335

| | |
|---|---|
| 1C07 0128X | 1C07 0144X |
| 1C07 0129X | 1C07 0145X |
| 1C07 0130X | 1C07 0146X |
| 1C07 0131X | |

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Reference MT-05-1342 for SCM23 Summary

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 & 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. Kiry | H [redacted] | Date: 12-15/17-05 |
| Completed by: (Print Name) T. Kiry | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F80/686

Survey No. MT-05-1343

Page 2 of 2

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | SEE | | | |
| | PAGE | | | |
| | 1 | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | SEE | | |
| | | PAGE | | |
| | | | 1 | |

COMMENTS: N/A

NOTES:

1. See MD-80036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620A (4-98)

COPY

F86/686

# RADIOLOGICAL SURVEY DATA SHEET

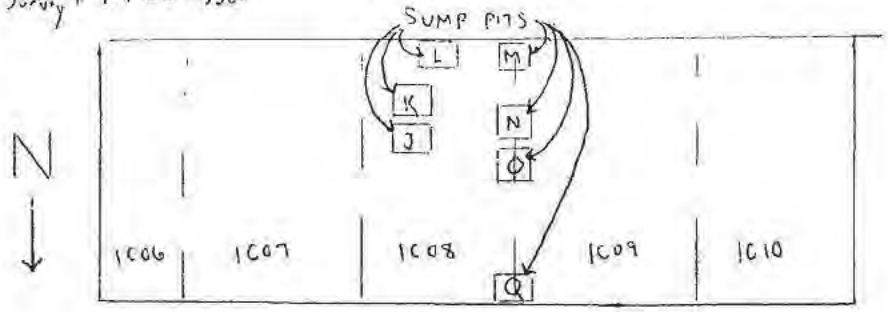


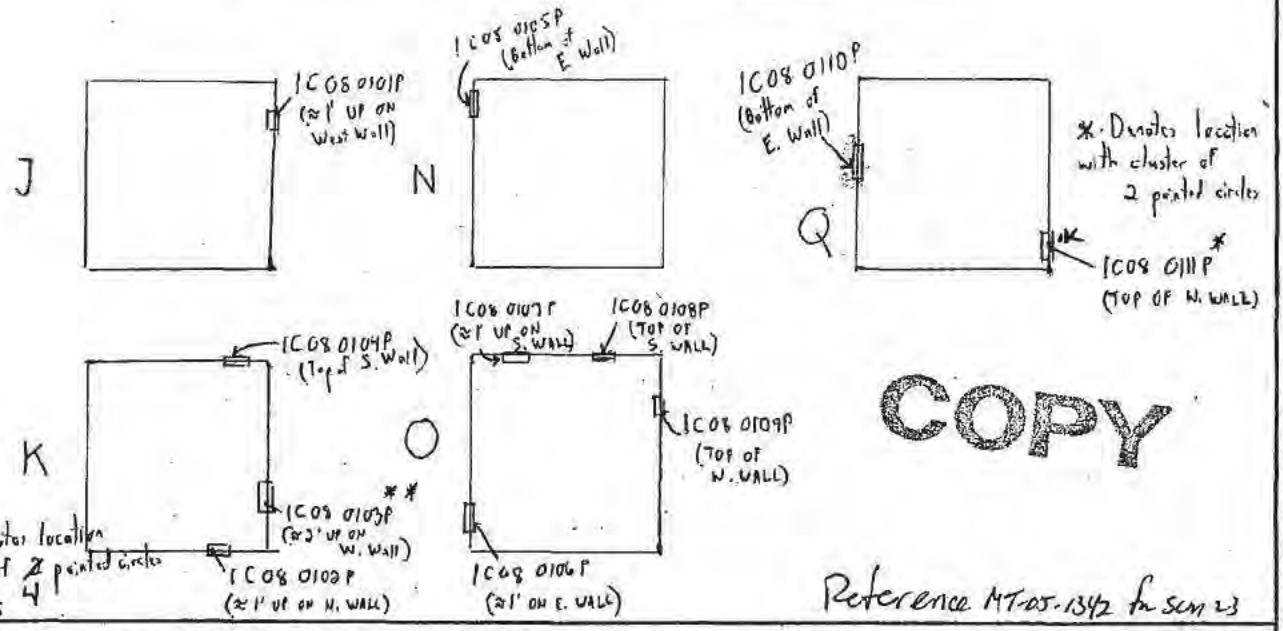
| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T CAP (1C08) | SURVEY NO. MT 05-1346 |
| PURPOSE: Investigation Survey of Suspected Elevated Spots in Sump Pits | RWP NO. N/A |
| | DATE: 12 20-05 |
| | TIME: 1300 |

## MAP / DRAWING

See Attachments
Note for follow up survey on elevated spot 1C08 0110P see Survey # MT-05-1352

Areas around fixed frisk locations also scanned.

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Reference MT-05-1342 for scan 23 summary

2K 12-21-05

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | | |
|---|---|---|---|
| Completed by: (Signature) BJ ROE J. King | H [redacted] | Date: 12-20-05 | |
| Completed by: (Print Name) BJ ROE T. King | | | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A | |
| Counted by: (Print Name) See Attachments | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-7-06 | |
| Reviewed/Approved by: (Print Name) Jerry Taylor F87/686 | | | |

Survey No. MT 05-1346



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C08 0101P |
| 2 | ↓ | ↓ | ↓ | 1C08 0102P |
| 3 | | | | 1C08 0103P |
| 4 | | | | 1C08 0104P |
| 5 | | | | 1C08 0105P |
| 6 | | | | 1C08 0106P |
| 7 | | | | 1C08 0107P |
| 8 | | | | 1C08 0108P |
| 9 | | | | 1C08 0109P |
| 10 | | | | 1C08 0110P |
| 11 | | | | 1C08 0111P |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

NOTES:
1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620A (4-98)

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F88/686

JH
1-4-06

**MARSSIM Smear Data**

COPY

MT-05-1346

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060103_1821.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1346.002
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

989/681

J.K
1-4-06

MARSSIM Smear Data

COPY

MT-05-1346

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/3/06 | 6:22:05 PM | -1 | 10.00 | 9 | 8 | 12 | 8 | 607.14 | 0 | 21.2 | B | 2 |
| 1/3/06 | 6:32:55 PM | 0 | 2.00 | 492 | 467 | 0 | 0 | 577.90 | 928 | 6.4 | | 2 |
| 1/3/06 | 6:35:38 PM | 1 | 2.00 | 0 | 0 | 0 | 11 | 477.69 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:38:21 PM | 2 | 2.00 | 0 | 0 | 0 | 0 | 379.00 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:41:05 PM | 3 | 2.00 | 0 | 0 | 0 | 0 | 433.22 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:43:48 PM | 4 | 2.00 | 0 | 0 | 0 | 0 | 472.21 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:46:31 PM | 5 | 2.00 | 0 | 0 | 0 | 0 | 398.71 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:49:14 PM | 6 | 2.00 | 0 | 1 | 0 | 6 | 469.57 | 0 | 4371.8 | | 2 |
| 1/3/06 | 6:51:57 PM | 7 | 2.00 | 0 | 0 | 0 | 0 | 581.50 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:54:40 PM | 8 | 2.00 | 0 | 0 | 0 | 7 | 546.68 | 0 | 0.0 | | 2 |
| 1/3/06 | 6:57:23 PM | 9 | 2.00 | 0 | 0 | 0 | 0 | 510.55 | 0 | 0.0 | | 2 |
| 1/3/06 | 7:00:06 PM | 10 | 2.00 | 0 | 0 | 0 | 0 | 412.60 | 0 | 0.0 | | 2 |
| 1/3/06 | 7:02:51 PM | 11 | 2.00 | 0 | 0 | 0 | 0 | 522.54 | 0 | 0.0 | | 2 |

J.K.

F00/686

TAS

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_107
Batch Ended: 1/3/06 15:22
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1346 KING (11) AG ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 3.60 | 2.83 | | 0.01 | 1.64 | |
| A3 | 3 | 0.00 | 2.45 | | 12.96 | 4.39 | |
| A4 | 4 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 0.00 | 1.91 | | 2.43 | 2.23 | |
| B3 | 7 | 0.00 | 2.22 | | 1.52 | 2.29 | |
| B4 | 8 | 0.00 | 2.01 | | 2.79 | 2.39 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 1.41 | 1.93 | | 1.44 | 1.95 | |
| C3 | 11 | 0.00 | 2.07 | | 0.27 | 1.72 | |

J.K J.K

Copy



J.K
1-4-06

F01/086

# T-Building T-CAP (1C08);Survey of Suspected Elevated Spots in Sump Pits

*RSDS#* MT-05-1346 *RCT:* [redacted] *RCT.* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| ALPHA | 1C080101P | 5895 | [redacted] | 5896 | 1 | 1 | 12/20/05 | 9:47 | 8 | 120 | 29 |
| ALPHA | 1C080102P | 5895 | [redacted] | 5896 | 1 | 2 | 12/20/05 | 9:56 | 5 | 120 | 18 |
| ALPHA | 1C080103P | 5895 | [redacted] | 5896 | 1 | 3 | 12/20/05 | 10:10 | 12 | 120 | 44 |
| ALPHA | 1C080104P | 5895 | [redacted] | 5896 | 1 | 4 | 12/20/05 | 10:17 | 6 | 120 | 22 |
| ALPHA | 1C080105P | 5895 | [redacted] | 5896 | 1 | 5 | 12/20/05 | 10:26 | 12 | 120 | 44 |
| ALPHA | 1C080106P | 5895 | [redacted] | 5896 | 1 | 6 | 12/20/05 | 10:34 | 11 | 120 | 40 |
| ALPHA | 1C080107P | 5895 | [redacted] | 5896 | 1 | 7 | 12/20/05 | 12:22 | 10 | 120 | 37 |
| ALPHA | 1C080108P | 5895 | [redacted] | 5896 | 1 | 8 | 12/20/05 | 12:28 | 10 | 120 | 37 |
| ALPHA | 1C080109P | 5895 | [redacted] | 5896 | 1 | 9 | 12/20/05 | 12:34 | 7 | 120 | 26 |
| ALPHA | 1C080110P | 5895 | [redacted] | 5896 | 1 | 10 | 12/20/05 | 12:42 | 29 | 120 | 106 |
| ALPHA | 1C080111P | 5895 | [redacted] | 5896 | 1 | 11 | 12/20/05 | 12:49 | 13 | 120 | 48 ✓ |
| BETA | 1C080101P | 5895 | [redacted] | 5896 | 2 | 1 | 12/20/05 | 9:48 | 104 | 60 | 971 |
| BETA | 1C080102P | 5895 | [redacted] | 5896 | 2 | 2 | 12/20/05 | 9:57 | 109 | 60 | 1018 |
| BETA | 1C080103P | 5895 | [redacted] | 5896 | 2 | 3 | 12/20/05 | 10:11 | 100 | 60 | 934 |
| BETA | 1C080104P | 5895 | [redacted] | 5896 | 2 | 4 | 12/20/05 | 10:18 | 89 | 60 | 831 |
| BETA | 1C080105P | 5895 | [redacted] | 5896 | 2 | 5 | 12/20/05 | 10:27 | 156 | 60 | 1457 |
| BETA | 1C080106P | 5895 | [redacted] | 5896 | 2 | 6 | 12/20/05 | 10:35 | 107 | 60 | 999 |
| BETA | 1C080107P | 5895 | [redacted] | 5896 | 2 | 7 | 12/20/05 | 12:23 | 95 | 60 | 887 |
| BETA | 1C080108P | 5895 | [redacted] | 5896 | 2 | 8 | 12/20/05 | 12:29 | 81 | 60 | 756 |
| BETA | 1C080109P | 5895 | [redacted] | 5896 | 2 | 9 | 12/20/05 | 12:35 | 82 | 60 | 766 |
| BETA | 1C080110P | 5895 | [redacted] | 5896 | 2 | 10 | 12/20/05 | 12:43 | 497 | 60 | 4641 |
| BETA | 1C080111P | 5895 | [redacted] | 5896 | 2 | 11 | 12/20/05 | 12:50 | 306 | 60 | 2857 ✓ |



F92/686

**Survey Unit Number:** 1C08



(Supplemental sheet for biased measurements.)

RSDS # MT-05-1346
RCT INT/HP [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C08 0101 P | T CAP (1C08) | W. Wall (Pit "J") | N/A | N/A |
| 1C08 0102 P | | N Wall (Pit "K") | | |
| 1C08 0103 P | | W. Wall (Pit "K") | | |
| 1C08 0104 P | | S. Wall (Pit "K") | | |
| 1C08 0105 P | | E. Wall (Pit "N") | | |
| 1C08 0106 P | | E. Wall (Pit "O") | | |
| 1C08 0107 P | | S. Wall (Pit "O") | | |
| 1C08 0108 P | | S. Wall (Pit "O") | | |
| 1C08 0109 P | | W. Wall (Pit "O") | | |
| 1C08 0110 P | | E. Wall (Pit "Q") | | |
| ~~N/A~~ 1C08 0111 P | | W. Wall (Pit "Q") | | |
| N/A | N/A | N/A | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F93/686

Pg 878
MT-05-1346

# Surface Contamination Monitor Survey Investigation
# Summary Revision 1

| | |
|---|---|
| Survey Unit: 1C-07, 1C-08, 1C-09, 1C-10 | SCM Survey Unit: 1C-07 |
| SCM ID | SCM 23 |
| Calibration Due Date | 06-01-06 |

| Room | Surface | *Spots Marked from SCM Surveys | *HH Investigations |
|---|---|---|---|
| T-Cap | Floor - East End | 58 | 58 |
| T-Cap | Floor – West End | 15 | 8 (3 areas marked to include 5 highest alpha and 5 highest beta spots plus 5 additional spots marked – all for Resrad) |
| T-Cap | Walls | 36 | 30 |
| T-Cap Sump Pits | Walls Only | 48 | 38 |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |

*Due to the close proximity of spots one mark may include more than one spot resulting in a different number of Hand Held investigations performed.

Name Sherry Oran

Signature Sherry Oran

Date 01-25-06

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C08) | SURVEY NO. MT 05-1352 |
| PURPOSE: Follow-up Survey on Elevated Spot 1C08 0110P in ~~Pit~~ Sump Pit "Q" 24 1-306 | RWP NO. N/A |
| | DATE: 12-21-05 |
| | TIME: 1015 |

## MAP / DRAWING

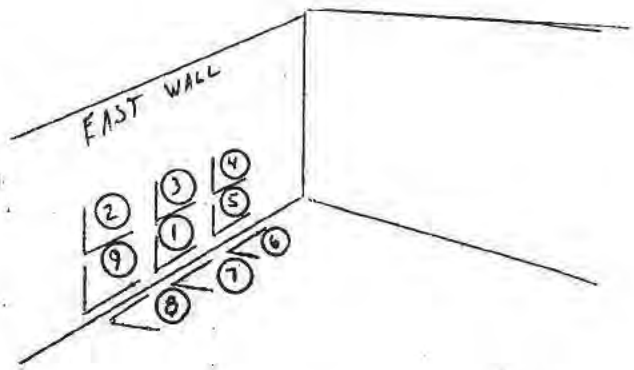
See Attachments.

For original readings for location 1C08 0110P, see Survey # MT-05-1346

SUMP PIT "Q"

Average alpha reading for the 6 spots on the east wall of the pit was 58.7 dpm/100cm².

Average alpha reading for all 9 spots was 274.1 dpm/100cm².




Survey Locations

1. 1C08 0110P
2. 1C08 110PA
3. 1C08 110PB
4. 1C08 110PC
5. 1C08 110PD
6. 1C08 110PE
7. 1C08 110PF
8. 1C08 110PG
9. 1C08 110PH

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·— = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | | |
|---|---|---|---|
| Completed by: (Signature) T. King | | | Date: 12-21-05 |
| Completed by: (Print Name) T. King | | | |
| Counted by: (Signature) See Attachments | | HP# | Date: |
| Counted by: (Print Name) See Attachments | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | | | Date: 2-7-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor F95/686 | | | |

Survey No. MT-05-1352



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C08 0110P |
| 2 | ↓ | ↓ | ↓ | 1C08 110PA |
| 3 | | | | 1C08 110PB |
| 4 | | | | 1C08 110PC |
| 5 | | | | 1C08 110PD |
| 6 | | | | 1C08 110PE |
| 7 | | | | 1C08 110PF |
| 8 | | | | 1C08 110PG |
| 9 | | | | 1C08 110PH |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

COMMENTS: N/A

NOTES:
1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0520A (4-98)

COPY

F96/686

MARSSIM Smear Data

2h.
1-3-06

MT-05-1352

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051227_0818.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1352.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F 97/686

ZH

1-3-06

MT-05-1352

## MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 8:18:45 AM | -1 | 10.00 | 7 | 6 | 11 | 1 | 623.57 | 0 | 23.9 | B | 1 |
| 12/27/05 | 8:29:28 AM | 0 | 2.00 | 444 | 421 | 0 | 0 | 541.05 | 863 | 6.8 | | 1 |
| 12/27/05 | 8:32:11 AM | 1 | 2.00 | 0 | 1 | 0 | 7 | 492.11 | 0 | 0.0 | | 1 |
| 12/27/05 | 8:34:54 AM | 2 | 2.00 | 4 | 4 | 0 | 5 | 537.59 | 8 | 124.5 | | 1 |
| 12/27/05 | 8:37:37 AM | 3 | 2.00 | 0 | 1 | 0 | 7 | 553.84 | 0 | 0.0 | | 1 |
| 12/27/05 | 8:40:22 AM | 4 | 2.00 | 0 | 0 | 0 | 8 | 454.06 | 0 | 0.0 | | 1 |
| 12/27/05 | 8:43:05 AM | 5 | 2.00 | 0 | 1 | 0 | 7 | 429.83 | 1 | 866.6 | | 1 |
| 12/27/05 | 8:45:48 AM | 6 | 2.00 | 1 | 1 | 15 | 6 | 431.23 | 2 | 433.6 | | 1 |
| 12/27/05 | 8:48:31 AM | 7 | 2.00 | 5 | 5 | 27 | 0 | 435.55 | 10 | 109.5 | | 1 |
| 12/27/05 | 8:51:14 AM | 8 | 2.00 | 0 | 0 | 16 | 0 | 491.15 | 0 | 0.0 | | 1 |
| 12/27/05 | 8:53:57 AM | 9 | 2.00 | 3 | 3 | 1 | 0 | 523.39 | 5 | 186.8 | | 1 |

ZH

F98/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_095
Batch Ended: 12/22/05 13:58
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1352 KING [9] GWD

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 1.61 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 1.93 | 2.28 | | 0.23 | 1.78 | |
| A4 | 4 | 1.81 | 2.13 | | 1.53 | 2.09 | |
| B1 | 5 | 1.52 | 1.97 | | 4.58 | 2.92 | |
| B2 | 6 | 3.36 | 2.83 | | 15.38 | 4.51 | |
| B3 | 7 | 5.93 | 4.01 | | 24.67 | 6.19 | |
| B4 | 8 | 9.29 | 4.50 | | 18.45 | 5.14 | |
| C1 | 9 | 0.00 | 2.10 | | 3.94 | 2.75 | |

J.K. J.K.

5 of 6

~~Page 1 of 1~~

J.K
1-3-06

F09/686

# T-Building T-CAP (1C08);Follow-up on 1C080110P;9-Spot Averaging

*RSDS#* MT-05-1352 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C080110P | 5895 | [redacted] | 5896 | 1 | 1 | 12/21/05 | 9:34 | 37 | 120 | 136 |
| ALPHA | 1C08110PA | 5895 | [redacted] | 5896 | 1 | 2 | 12/21/05 | 9:38 | 14 | 120 | 51 |
| ALPHA | 1C08110PB | 5895 | [redacted] | 5896 | 1 | 3 | 12/21/05 | 9:41 | 5 | 120 | 18 |
| ALPHA | 1C08110PC | 5895 | [redacted] | 5896 | 1 | 4 | 12/21/05 | 9:45 | 11 | 120 | 40 |
| ALPHA | 1C08110PD | 5895 | [redacted] | 5896 | 1 | 5 | 12/21/05 | 9:48 | 13 | 120 | 48 |
| ALPHA | 1C08110PE | 5895 | [redacted] | 5896 | 1 | 6 | 12/21/05 | 9:52 | 182 | 120 | 667 |
| ALPHA | 1C08110PF | 5895 | [redacted] | 5896 | 1 | 7 | 12/21/05 | 9:56 | 248 | 120 | 909 |
| ALPHA | 1C08110PG | 5895 | [redacted] | 5896 | 1 | 8 | 12/21/05 | 9:59 | 147 | 120 | 539 |
| ALPHA | 1C08110PH | 5895 | [redacted] | 5896 | 1 | 9 | 12/21/05 | 10:03 | 16 | 120 | 59 |
| BETA | 1C080110P | 5895 | [redacted] | 5896 | 2 | 1 | 12/21/05 | 9:35 | 572 | 60 | 5341 |
| BETA | 1C08110PA | 5895 | [redacted] | 5896 | 2 | 2 | 12/21/05 | 9:39 | 259 | 60 | 2418 |
| BETA | 1C08110PB | 5895 | [redacted] | 5896 | 2 | 3 | 12/21/05 | 9:42 | 308 | 60 | 2876 |
| BETA | 1C08110PC | 5895 | [redacted] | 5896 | 2 | 4 | 12/21/05 | 9:46 | 184 | 60 | 1718 |
| BETA | 1C08110PD | 5895 | [redacted] | 5896 | 2 | 5 | 12/21/05 | 9:50 | 213 | 60 | 1989 |
| BETA | 1C08110PE | 5895 | [redacted] | 5896 | 2 | 6 | 12/21/05 | 9:53 | 1474 | 60 | 13763 |
| BETA | 1C08110PF | 5895 | [redacted] | 5896 | 2 | 7 | 12/21/05 | 9:57 | 1913 | 60 | 17862 |
| BETA | 1C08110PG | 5895 | [redacted] | 5896 | 2 | 8 | 12/21/05 | 10:01 | 1626 | 60 | 15182 |
| BETA | 1C08110PH | 5895 | [redacted] | 5896 | 2 | 9 | 12/21/05 | 10:04 | 347 | 60 | 3240 |

N

A

COPY



F100/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) J-Bldg - 2 Cap | SURVEY NO. MT-06-0075 |
| PURPOSE: Scan of floors walls inaccessible by SCM23 with 2350 And Scm23 Scan of floor and walls 1008 | RWP NO. N/A |
| | DATE: 1-19-06 |
| | TIME: 1805 |

## MAP / DRAWING

See attached

7.0 elevated dpm detected during scan

100 % scan lower walls by 2350

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM 23 | C150 / R150 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| 2350 | 5854/5861 | 7-28-06 |
| | N/A | |
| | N | |

| | | |
|---|---|---|
| Completed by: (Signature) R.J. Roe / Neal Reynolds | | Date: 1-19-06 |
| Completed by: (Print Name) R.J. Roe / Neal Reynolds | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | | Date: 2/19/06 |
| Reviewed/Approved by: (Print Name) Jean Griffin | | F 101/686 |

Survey No. MT-06-0075

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
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| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
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| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

N/A

N/A

N/A

COPY

COMMENTS: N/A

NOTES:

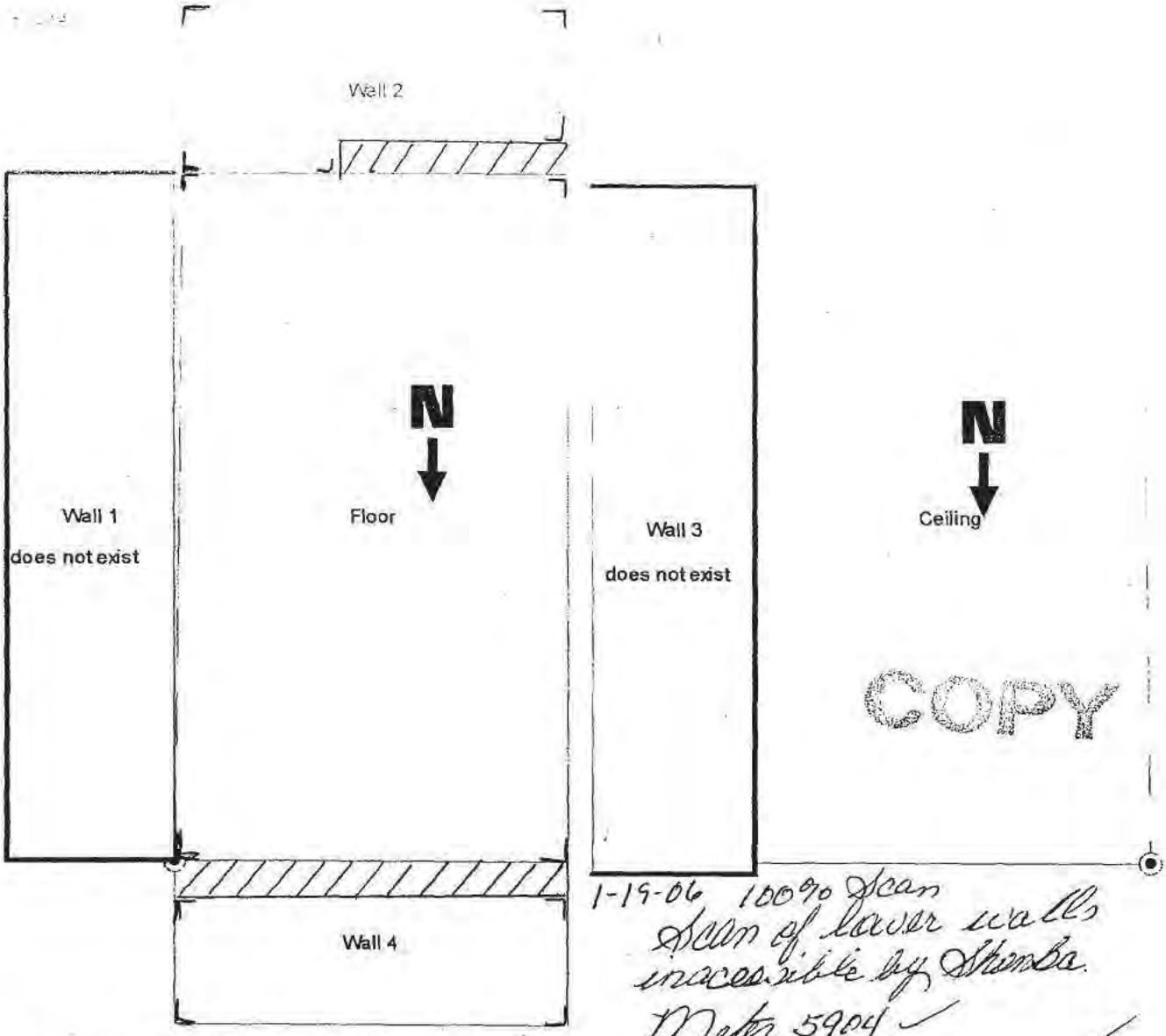
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F102/686

NT-06-0075
Pg. 3 of 3

BR 1-19-06

1C-08 100% scan of ~~floors~~ and walls < 2 meters
Class 1 ~~25% scan of walls > 2 meters~~ BR 1-19-06




COPY

1-19-06 100% Scan
Scan of lower walls
inaccessible by Stamba.
Meter 5904
Probe ~~5861~~ BR 1-19-05 5905
Cal due 2/22/06
Meter 5854
Probe 5861
Caldue 7/28/06
BR
AR

SCM23 Scanned 100% of floor, 100% of walls up to 2 meters, and 25% of walls above 2 meters.

F/03/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG /AREA/ROOM) J-Bldg J-Cap | SURVEY NO. MT-06-0154 |
| PURPOSE: Drains, Conts + utilities | RWP NO. N/A |
| | DATE: 2-9-06 |
| 1008 | TIME: 1330 |

MAP / DRAWING

Air attached

Pb elevated α, β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B J Roe / B. Norsick | | Date: 2-9-06 |
| Completed by: (Print Name) B J Roe B. Norsick | | |
| Counted by: (Signature) See attached | HP# | Date: |
| Counted by: (Print Name) See attached | | |
| Reviewed/Approved by: (Signature) | | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) Jess Griffin | | F104/686 |

Survey No. MT-06-0154

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C08-0101D |
| 2 | | | | 1C08-0201V |
| 3 | | | | 1C08-0202V |
| 4 | | | | 1C08-0201U |
| 5 | | | | 1C08-0202U |
| 6 | | | | 1C08-0203U |
| 7 | | | | 1C08-0204U |
| 8 | | | | 1C08-0205U |
| 9 | | | | 1C08-0206U |
| 10 | | | | 1C08-0207U |
| 11 | | | | 1C08-0208U |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
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| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
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| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | N/A | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
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| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
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| 53 | | | | |
| 54 | | | N/A | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
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| 70 | | | | |

COPY

COMMENTS: N/A

NOTES:
1. See MD-80036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F105/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060209_1535.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0154.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

✓ BL

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

MARSSIM Smear Data

1-4, 4 of 7
MIT-06-154

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/9/06 | 3:36:13 PM | -1 | 10.00 | 11 | 9 | 13 | 11 | 638.29 | 0 | 19.0 | B | 3 |
| 2/9/06 | 3:47:04 PM | 0 | 2.00 | 389 | 368 | 0 | 1 | 554.39 | 749 | 7.3 | | 3 |
| 2/9/06 | 3:49:47 PM | 1 | 2.00 | 0 | 0 | 0 | 15 | 554.27 | 0 | 0.0 | | 3 |
| 2/9/06 | 3:52:29 PM | 2 | 2.00 | 0 | 0 | 0 | 7 | 594.14 | 0 | 0.0 | | 3 |
| 2/9/06 | 3:55:12 PM | 3 | 2.00 | 0 | 0 | 0 | 6 | 604.21 | 0 | 0.0 | | 3 |
| 2/9/06 | 3:57:54 PM | 4 | 2.00 | 0 | 0 | 0 | 0 | 572.95 | 0 | 0.0 | | 3 |
| 2/9/06 | 4:00:36 PM | 5 | 2.00 | 11 | 12 | 0 | 4 | 587.82 | 21 | 63.2 | | 3 |
| 2/9/06 | 4:03:18 PM | 6 | 2.00 | 2 | 2 | 0 | 4 | 608.05 | 3 | 290.1 | | 3 |
| 2/9/06 | 4:06:01 PM | 7 | 2.00 | 11 | 11 | 0 | 2 | 587.39 | 21 | 63.2 | | 3 |
| 2/9/06 | 4:08:43 PM | 8 | 2.00 | 32 | 31 | 0 | 1 | 577.47 | 61 | 29.5 | | 3 |
| 2/9/06 | 4:11:28 PM | 9 | 2.00 | 33 | 32 | 0 | 1 | 529.95 | 65 | 29.1 | | 3 |
| 2/9/06 | 4:14:10 PM | 10 | 2.00 | 8 | 8 | 0 | 3 | 597.65 | 15 | 82.4 | | 3 |
| 2/9/06 | 4:16:53 PM | 11 | 2.00 | 65 | 58 | 0 | 1 | 525.20 | 128 | 19.3 | | 3 |

BL

F09/086

Pg. 5 of 7
MT-06-0154

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_031
Batch Ended: 2/9/06 14:55
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0154 [11] ROE 2-9-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.01 | | 0.34 | 1.64 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 2.01 | | 2.79 | 2.39 | |
| C1 | 9 | 1.69 | 2.06 | | 0.11 | 1.74 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 11 | 3.78 | 2.91 | | 0.00 | 1.22 | |

✓ BL ✓ BL

COPY

2/08/06

# T-BLDG. DRAINS, VENTS AND UTILITIES 1C-08

*RSDS#* MT-06-0154 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C080101D | 5904 | 7102 | [redacted] | 1 | 1 | 2/9/06 | 10:43 | 4 | 120 | 15 |
| ALPHA | 1C080201V | 5904 | 7102 | | 1 | 2 | 2/9/06 | 12:04 | 2 | 120 | 8 |
| ALPHA | 1C080202V | 5904 | 7102 | | 1 | 3 | 2/9/06 | 12:11 | 5 | 120 | 19 |
| ALPHA | 1C080201U | 5904 | 7102 | | 1 | 4 | 2/9/06 | 12:20 | 2 | 120 | 8 |
| ALPHA | 1C080202U | 5904 | 7102 | | 1 | 5 | 2/9/06 | 12:25 | 6 | 120 | 23 |
| ALPHA | 1C080203U | 5904 | 7102 | | 1 | 6 | 2/9/06 | 12:37 | 6 | 120 | 23 |
| ALPHA | 1C080204U | 5904 | 7102 | | 1 | 7 | 2/9/06 | 12:40 | 2 | 120 | 8 |
| ALPHA | 1C080205U | 5904 | 7102 | | 1 | 8 | 2/9/06 | 12:46 | 9 | 120 | 34 |
| ALPHA | 1C080206U | 5904 | 7102 | | 1 | 9 | 2/9/06 | 12:54 | 2 | 120 | 8 |
| ALPHA | 1C080207U | 5904 | 7102 | | 1 | 10 | 2/9/06 | 12:57 | 5 | 120 | 19 |
| ALPHA | 1C080208U | 5904 | 7102 | | 1 | 11 | 2/9/06 | 13:01 | 1 | 120 | 4 |
| BETA | 1C080101D | 5904 | 7102 | | 2 | 1 | 2/9/06 | 10:44 | 97 | 60 | 880 |
| BETA | 1C080201V | 5904 | 7102 | | 2 | 2 | 2/9/06 | 12:05 | 73 | 60 | 662 |
| BETA | 1C080202V | 5904 | 7102 | | 2 | 3 | 2/9/06 | 12:12 | 78 | 60 | 707 |
| BETA | 1C080201U | 5904 | 7102 | | 2 | 4 | 2/9/06 | 12:21 | 78 | 60 | 707 |
| BETA | 1C080202U | 5904 | 7102 | | 2 | 5 | 2/9/06 | 12:26 | 92 | 60 | 834 |
| BETA | 1C080203U | 5904 | 7102 | | 2 | 6 | 2/9/06 | 12:38 | 82 | 60 | 744 |
| BETA | 1C080204U | 5904 | 7102 | | 2 | 7 | 2/9/06 | 12:41 | 76 | 60 | 689 |
| BETA | 1C080205U | 5904 | 7102 | | 2 | 8 | 2/9/06 | 12:48 | 82 | 60 | 744 |
| BETA | 1C080206U | 5904 | 7102 | | 2 | 9 | 2/9/06 | 12:55 | 85 | 60 | 771 |
| BETA | 1C080207U | 5904 | 7102 | | 2 | 10 | 2/9/06 | 12:58 | 81 | 60 | 735 |
| BETA | 1C080208U | 5904 | 7102 | | 2 | 11 | 2/9/06 | 13:02 | 82 | 60 | 744 |

A

N

COPY

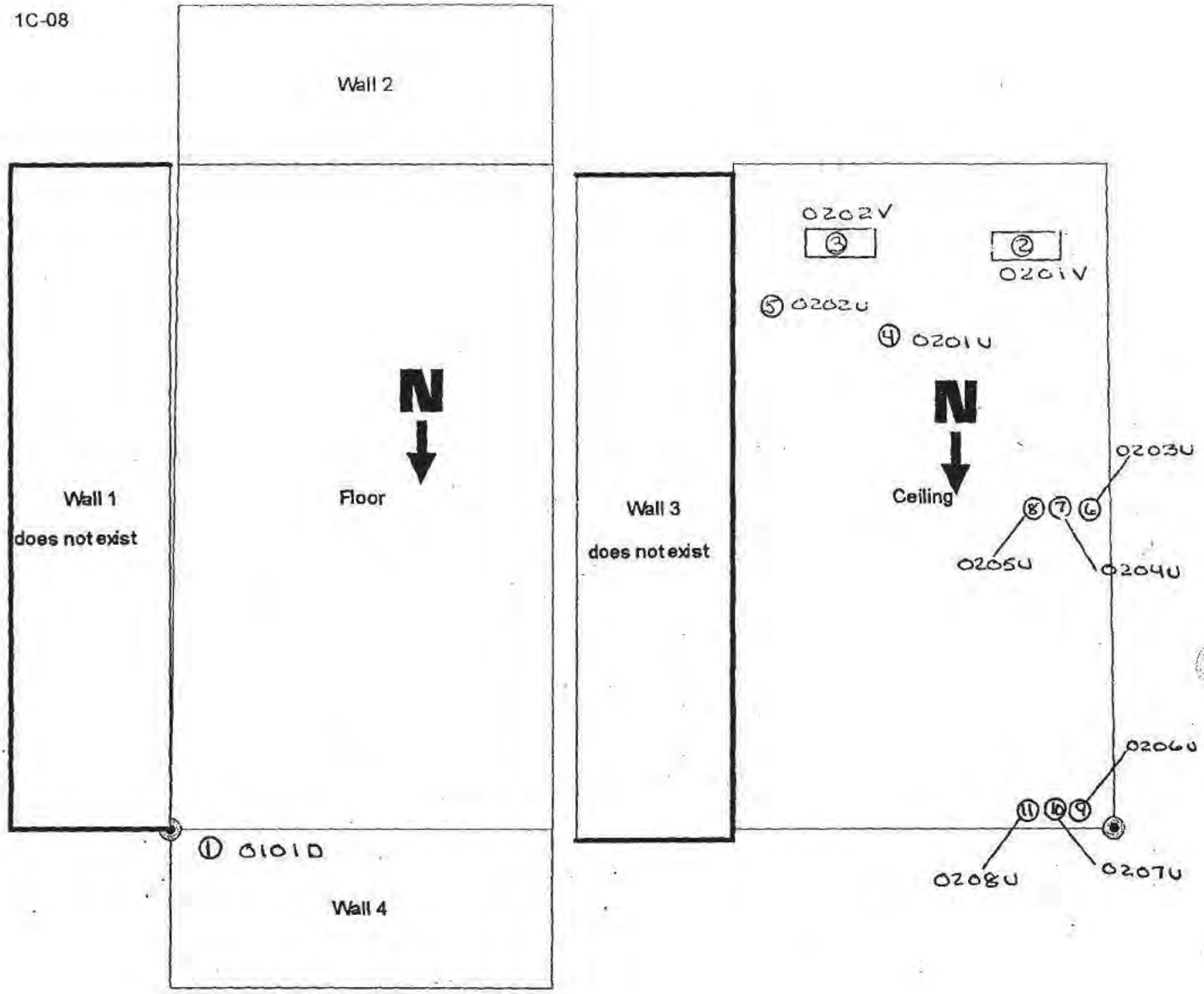


F109/686

7.9.1071
MT-06-0154

1C-08 Drains, Vents, and Utilities
Class 1

1C-08

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# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 13

| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-Bldg | SURVEY NO MF06-0154 |
| PURPOSE | RWP NO N/A |
| | DATE: 2-9-06 |
| Upper & Lower Statics 1008 | TIME 0620 |

MAP / DRAWING

No ELEVated Readings ∝ 0.5

COPY

DOSE RATE: BKGD: 4uR/HR G/A: 4uR/HR

BICRON MICRO REM
S/N 3981 CAL. DUE: 4-7-06

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) Donna Watson / BJ Roe | | Date: 2/9/06 |
| Completed by: (Print Name) Donna Watson / BJ Roe | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) " | | |
| Reviewed/Approved by: (Signature) | | Date: 2/13/06 |
| Reviewed/Approved by: (Print Name) Jess Gatton | | |

F 111/686

Survey No. MT-06-0152

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C08-01019 |
| 2 | | | | 1C08-01029 |
| 3 | | | | 1C08-01039 |
| 4 | | | | 1C08-01049 |
| 5 | | | | 1C08-01059 |
| 6 | | | | 1C08-01069 |
| 7 | | | | 1C08-01079 |
| 8 | | | | 1C08-01089 |
| 9 | | | | 1C08-01099 |
| 10 | | | | 1C08-01109 |
| 11 | | | | 1C08-01119 |
| 12 | | | | 1C08-01129 |
| 13 | | | | 1C08-01139 |
| 14 | | | | 1C08-01149 |
| 15 | | | | 1C08-01159 |
| 16 | | | | 1C08-01169 |
| 17 | | | | 1C08-01179 |
| 18 | | | | 1C08-01189 |
| 19 | | | | 1C08-01199 |
| 20 | | | | 1C08-01209 |
| 21 | | | | 1C08-01219 |
| 22 | | | | 1C08-01229 |
| 23 | | | | 1C08-01239 |
| 24 | | | | 1C08-02019 |
| 25 | | | | 1C08-02029 |
| 26 | | | | 1C08-02039 |
| 27 | | | | 1C08-02049 |
| 28 | | | | 1C08-02059 |
| 29 | | | | 1C08-02069 |
| 30 | | | | 1C08-02079 |
| 31 | | | | 1C08-02089 |
| 32 | | | | 1C08-02099 |
| 33 | | | | 1C08-02109 |
| 34 | | | | 1C08-02119 |
| 35 | ↓ | ↓ | ↓ | 1C08-02129 |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | See | Attached | Sheet | 1C08-02139 |
| 37 | ↓ | ↓ | ↓ | 1C08-02149 |
| 38 | | | | 1C08-02159 |
| 39 | | | | 1C08-02169 |
| 40 | | | | 1C08-02179 |
| 41 | | | | 1C08-02189 |
| 42 | | | | 1C08-02199 |
| 43 | ↓ | ↓ | ↓ | 1C08-02209 |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | N | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | A | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

**COMMENTS:** N/A

**NOTES:**

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

LM .0820 (4-98)

F112/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060210_1005.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0156.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

Rad

MARSSIM Smear Data

B
C

MT-06-0156

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/10/06 | 10:06:09 AM | -1 | 10.00 | 8 | 7 | 11 | 4 | 629.46 | 0 | 22.3 | B | 2 |
| 2/10/06 | 10:16:55 AM | 0 | 2.00 | 104 | 100 | 0 | 2 | 539.14 | 202 | 14.5 | | 2 |
| 2/10/06 | 10:19:36 AM | 1 | 2.00 | 0 | 0 | 2 | 7 | 606.12 | 0 | 0.0 | | 2 |
| 2/10/06 | 10:22:18 AM | 2 | 2.00 | 0 | 0 | 0 | 10 | 605.30 | 0 | 0.0 | | 2 |
| 2/10/06 | 10:24:59 AM | 3 | 2.00 | 2 | 1 | 0 | 10 | 581.91 | 5 | 202.5 | | 2 |
| 2/10/06 | 10:27:41 AM | 4 | 2.00 | 6 | 5 | 0 | 4 | 533.85 | 12 | 94.2 | | 2 |
| 2/10/06 | 10:30:22 AM | 5 | 2.00 | 0 | 0 | 0 | 7 | 557.44 | 0 | 0.0 | | 2 |
| 2/10/06 | 10:33:04 AM | 6 | 2.00 | 0 | 0 | 0 | 7 | 590.18 | 0 | 0.0 | | 2 |
| 2/10/06 | 10:35:46 AM | 7 | 2.00 | 1 | 1 | 0 | 5 | 593.76 | 3 | 329.5 | | 2 |
| 2/10/06 | 10:38:27 AM | 8 | 2.00 | 1 | 1 | 0 | 11 | 626.63 | 2 | 495.1 | | 2 |
| 2/10/06 | 10:41:10 AM | 9 | 2.00 | 3 | 3 | 0 | 13 | 552.00 | 7 | 147.6 | | 2 |
| 2/10/06 | 10:43:52 AM | 10 | 2.00 | 3 | 3 | 4 | 9 | 620.77 | 5 | 188.7 | | 2 |
| 2/10/06 | 10:46:34 AM | 11 | 2.00 | 0 | 0 | 1 | 17 | 621.59 | 0 | 0.0 | | 2 |
| 2/10/06 | 10:49:15 AM | 12 | 2.00 | 3 | 2 | 0 | 9 | 537.32 | 6 | 171.4 | | 2 |
| 2/10/06 | 10:51:57 AM | 13 | 2.00 | 2 | 1 | 0 | 14 | 621.28 | 4 | 202.5 | | 2 |
| 2/10/06 | 10:54:39 AM | 14 | 2.00 | 1 | 2 | 0 | 16 | 518.59 | 3 | 329.5 | | 2 |
| 2/10/06 | 10:57:21 AM | 15 | 2.00 | 1 | 2 | 0 | 11 | 590.23 | 3 | 329.5 | | 2 |
| 2/10/06 | 11:00:03 AM | 16 | 2.00 | 2 | 3 | 0 | 0 | 649.79 | 3 | 249.6 | | 2 |
| 2/10/06 | 11:03:05 AM | 17 | 2.00 | 8 | 6 | 0 | 3 | 613.40 | 14 | 78.1 | | 2 |
| 2/10/06 | 11:05:46 AM | 18 | 2.00 | 0 | 0 | 2 | 8 | 615.19 | 0 | 0.0 | | 2 |
| 2/10/06 | 11:08:28 AM | 19 | 2.00 | 1 | 0 | 0 | 11 | 618.16 | 3 | 329.5 | | 2 |
| 2/10/06 | 11:11:10 AM | 20 | 2.00 | 0 | 0 | 0 | 18 | 595.97 | 0 | 0.0 | | 2 |
| 2/10/06 | 11:13:52 AM | 21 | 2.00 | 7 | 6 | 0 | 7 | 608.50 | 13 | 83.2 | | 2 |
| 2/10/06 | 11:16:33 AM | 22 | 2.00 | 13 | 10 | 0 | 5 | 629.59 | 23 | 52.4 | | 2 |
| 2/10/06 | 11:19:16 AM | 23 | 2.00 | 79 | 72 | 0 | 2 | 607.28 | 146 | 16.8 | | 2 |
| 2/10/06 | 11:21:58 AM | 24 | 2.00 | 0 | 0 | 1 | 12 | 625.34 | 1 | 1044.4 | | 2 |
| 2/10/06 | 11:24:40 AM | 25 | 2.00 | 0 | 0 | 0 | 6 | 636.26 | 1 | 1044.4 | | 2 |
| 2/10/06 | 11:27:22 AM | 26 | 2.00 | 5 | 6 | 0 | 4 | 609.18 | 10 | 101.2 | | 2 |
| 2/10/06 | 11:30:05 AM | 27 | 2.00 | 2 | 2 | 0 | 5 | 619.89 | 4 | 249.6 | | 2 |
| 2/10/06 | 11:32:46 AM | 28 | 2.00 | 8 | 9 | 0 | 3 | 649.11 | 15 | 71.4 | | 2 |
| 2/10/06 | 11:35:28 AM | 29 | 2.00 | 12 | 10 | 0 | 5 | 640.04 | 22 | 53.5 | | 2 |
| 2/10/06 | 11:38:11 AM | 30 | 2.00 | 6 | 5 | 0 | 4 | 644.06 | 10 | 99.8 | | 2 |
| 2/10/06 | 11:40:52 AM | 31 | 2.00 | 6 | 5 | 0 | 4 | 653.34 | 11 | 94.2 | | 2 |

3 of 13

MF-06-0156

MARSSIM Smear Data

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/10/06 | 11:43:34 AM | 32 | 2.00 | 1 | 0 | 0 | 6 | 644.78 | 2 | 495.1 | 2 |
| 2/10/06 | 11:46:15 AM | 33 | 2.00 | 1 | 1 | 0 | 5 | 629.62 | 2 | 486.3 | 2 |
| 2/10/06 | 11:48:58 AM | 34 | 2.00 | 2 | 2 | 0 | 10 | 615.19 | 4 | 202.5 | 2 |
| 2/10/06 | 11:52:02 AM | 35 | 2.00 | 0 | 0 | 0 | 7 | 559.30 | 0 | 0.0 | 2 |
| 2/10/06 | 11:54:43 AM | 36 | 2.00 | 0 | 0 | 0 | 7 | 602.40 | 0 | 0.0 | 2 |
| 2/10/06 | 11:57:25 AM | 37 | 2.00 | 10 | 8 | 0 | 0 | 645.94 | 17 | 64.3 | 2 |
| 2/10/06 | 12:00:07 PM | 38 | 2.00 | 2 | 2 | 0 | 5 | 594.73 | 4 | 249.6 | 2 |
| 2/10/06 | 12:02:48 PM | 39 | 2.00 | 0 | 0 | 1 | 6 | 632.37 | 1 | 1044.4 | 2 |
| 2/10/06 | 12:05:29 PM | 40 | 2.00 | 2 | 2 | 0 | 0 | 633.84 | 4 | 202.5 | 2 |
| 2/10/06 | 12:08:12 PM | 41 | 2.00 | 3 | 2 | 0 | 9 | 619.91 | 5 | 190.4 | 2 |
| 2/10/06 | 12:10:54 PM | 42 | 2.00 | 0 | 0 | 0 | 6 | 628.62 | 0 | 0.0 | 2 |
| 2/10/06 | 12:13:35 PM | 43 | 2.00 | 0 | 0 | 0 | 13 | 628.75 | 0 | 0.0 | 2 |
| | | | | | | | DW | DW | DW | | |

COPY

F115/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_033
Batch Ended: 2/10/06 9:03
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0156 [43] WATSON 2-10-06 RLH

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 1.54 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 11 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 12 | 0.00 | 1.96 | | 0.62 | 1.59 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.18 | | 1.58 | 2.06 | |
| D3 | 15 | 1.72 | 2.10 | | 0.02 | 1.75 | |
| D4 | 16 | 0.00 | 2.05 | | 0.20 | 1.66 | |
| A1 | 17 | 0.00 | 2.20 | | 0.47 | 1.84 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 19 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 20 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 21 | 0.00 | 1.91 | | 1.23 | 2.06 | |
| B2 | 22 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 23 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 24 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| C1 | 25 | 0.00 | 2.06 | | 0.26 | 1.74 | |
| C2 | 26 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 27 | 0.00 | 2.06 | | 0.00 | 1.22 | |

DW DW



F116/686

RLH

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_033
Batch Ended: 2/10/06 9:03
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0156 [43] WATSON 2-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C4 | 28 | 0.00 | 1.95 | | 0.00 | 1.13 | |
| D1 | 29 | 0.00 | 2.08 | | 2.79 | 2.50 | |
| D2 | 30 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 31 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 32 | 0.00 | 2.04 | | 0.00 | 1.17 | |
| B1 | 33 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 34 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 35 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 36 | 1.61 | 1.95 | | 0.00 | 1.20 | |
| C1 | 37 | 0.00 | 2.06 | | 0.26 | 1.74 | |
| C2 | 38 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 39 | 1.73 | 2.06 | | 0.00 | 1.22 | |
| C4 | 40 | 0.00 | 1.95 | | 0.00 | 1.13 | |
| D1 | 41 | 0.00 | 2.07 | | 1.54 | 2.16 | |
| D2 | 42 | 0.00 | 2.19 | | 2.77 | 2.38 | |
| D3 | 43 | 0.00 | 2.11 | | 1.42 | 2.15 | |

COPY



F-117/686

# T-Building UPPER AND LOWER STATICS OF 1C08

COPY

*RSDS#* MT-06-0156 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.159 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C080101S | 5854 | [redacted] | 5861 | 1 | 1 | 2/9/06 | 8:18 | 15 | 120 | 58 |
| ALPHA | 1C080102S | 5854 | [redacted] | 5861 | 1 | 2 | 2/9/06 | 8:21 | 12 | 120 | 46 |
| ALPHA | 1C080103S | 5854 | [redacted] | 5861 | 1 | 3 | 2/9/06 | 8:25 | 7 | 120 | 27 |
| ALPHA | 1C080104S | 5854 | [redacted] | 5861 | 1 | 4 | 2/9/06 | 8:28 | 12 | 120 | 46 |
| ALPHA | 1C080105S | 5854 | [redacted] | 5861 | 1 | 5 | 2/9/06 | 8:32 | 14 | 120 | 54 |
| ALPHA | 1C080106S | 5854 | [redacted] | 5861 | 1 | 6 | 2/9/06 | 8:36 | 7 | 120 | 27 |
| ALPHA | 1C080107S | 5854 | [redacted] | 5861 | 1 | 7 | 2/9/06 | 9:36 | 3 | 120 | 12 |
| ALPHA | 1C080108S | 5854 | [redacted] | 5861 | 1 | 8 | 2/9/06 | 9:40 | 5 | 120 | 19 |
| ALPHA | 1C080109S | 5854 | [redacted] | 5861 | 1 | 9 | 2/9/06 | 9:44 | 8 | 120 | 31 |
| ALPHA | 1C080110S | 5854 | [redacted] | 5861 | 1 | 10 | 2/9/06 | 9:48 | 4 | 120 | 15 |
| ALPHA | 1C080111S | 5854 | [redacted] | 5861 | 1 | 11 | 2/9/06 | 9:52 | 9 | 120 | 35 |
| ALPHA | 1C080112S | 5854 | [redacted] | 5861 | 1 | 12 | 2/9/06 | 9:55 | 11 | 120 | 43 |
| ALPHA | 1C080113S | 5854 | [redacted] | 5861 | 1 | 13 | 2/9/06 | 9:59 | 8 | 120 | 31 |
| ALPHA | 1C080114S | 5854 | [redacted] | 5861 | 1 | 14 | 2/9/06 | 10:03 | 5 | 120 | 19 |
| ALPHA | 1C080115S | 5854 | [redacted] | 5861 | 1 | 15 | 2/9/06 | 10:07 | 8 | 120 | 31 |
| ALPHA | 1C080116S | 5854 | [redacted] | 5861 | 1 | 16 | 2/9/06 | 10:10 | 6 | 120 | 23 |
| ALPHA | 1C080117S | 5854 | [redacted] | 5861 | 1 | 17 | 2/9/06 | 10:14 | 8 | 120 | 31 |
| ALPHA | 1C080118S | 5854 | [redacted] | 5861 | 1 | 18 | 2/9/06 | 10:18 | 7 | 120 | 27 |
| ALPHA | 1C080119S | 5854 | [redacted] | 5861 | 1 | 19 | 2/9/06 | 10:28 | 4 | 120 | 15 |
| ALPHA | 1C080120S | 5854 | [redacted] | 5861 | 1 | 20 | 2/9/06 | 10:32 | 6 | 120 | 23 |
| ALPHA | 1C080121S | 5854 | [redacted] | 5861 | 1 | 21 | 2/9/06 | 10:37 | 7 | 120 | 27 |
| ALPHA | 1C080122S | 5854 | [redacted] | 5861 | 1 | 22 | 2/9/06 | 10:43 | 2 | 120 | 8 |
| ALPHA | 1C080123S | 5854 | [redacted] | 5861 | 1 | 23 | 2/9/06 | 11:44 | 6 | 120 | 23 |
| ALPHA | 1C080201S | 5854 | [redacted] | 5861 | 1 | 1 | 2/9/06 | 11:56 | 3 | 120 | 12 |
| ALPHA | 1C080202S | 5854 | [redacted] | 5861 | 1 | 2 | 2/9/06 | 12:00 | 2 | 120 | 8 |
| ALPHA | 1C080203S | 5854 | [redacted] | 5861 | 1 | 3 | 2/9/06 | 12:04 | 9 | 120 | 35 |
| ALPHA | 1C080204S | 5854 | [redacted] | 5861 | 1 | 4 | 2/9/06 | 12:10 | 12 | 120 | 46 |
| ALPHA | 1C080205S | 5854 | [redacted] | 5861 | 1 | 5 | 2/9/06 | 12:14 | 6 | 120 | 23 |
| ALPHA | 1C080206S | 5854 | [redacted] | 5861 | 1 | 6 | 2/9/06 | 12:19 | 6 | 120 | 23 |
| ALPHA | 1C080207S | 5854 | [redacted] | 5861 | 1 | 7 | 2/9/06 | 12:23 | 4 | 120 | 15 |
| ALPHA | 1C080208S | 5854 | [redacted] | 5861 | 1 | 8 | 2/9/06 | 12:36 | 6 | 120 | 23 |
| ALPHA | 1C080209S | 5854 | [redacted] | 5861 | 1 | 9 | 2/9/06 | 12:43 | 5 | 120 | 19 |
| ALPHA | 1C080210S | 5854 | [redacted] | 5861 | 1 | 10 | 2/9/06 | 12:48 | 8 | 120 | 31 |
| ALPHA | 1C080211S | 5854 | [redacted] | 5861 | 1 | 11 | 2/9/06 | 12:53 | 7 | 120 | 27 |
| ALPHA | 1C080212S | 5854 | [redacted] | 5861 | 1 | 12 | 2/9/06 | 12:58 | 7 | 120 | 27 |
| ALPHA | 1C080213S | 5854 | [redacted] | 5861 | 1 | 13 | 2/9/06 | 13:02 | 3 | 120 | 12 |
| ALPHA | 1C080214S | 5854 | [redacted] | 5861 | 1 | 14 | 2/9/06 | 13:11 | 10 | 120 | 39 |
| ALPHA | 1C080215S | 5854 | [redacted] | 5861 | 1 | 15 | 2/9/06 | 13:16 | 10 | 120 | 39 |
| ALPHA | 1C080216S | 5854 | [redacted] | 5861 | 1 | 16 | 2/9/06 | 13:20 | 6 | 120 | 23 |
| ALPHA | 1C080217S | 5854 | [redacted] | 5861 | 1 | 17 | 2/9/06 | 13:25 | 0 | 120 | 0 |
| ALPHA | 1C080218S | 5854 | [redacted] | 5861 | 1 | 18 | 2/9/06 | 13:29 | 8 | 120 | 31 |
| ALPHA | 1C080219S | 5854 | [redacted] | 5861 | 1 | 19 | 2/9/06 | 13:34 | 6 | 120 | 23 |
| ALPHA | 1C080220S | 5854 | [redacted] | 5861 | 1 | 20 | 2/9/06 | 13:38 | 10 | 120 | 39 |



F118/686

# T-Building UPPER AND LOWER STATICS OF 1C08

*RSDS#* MT-06-0156 *RCT:* [redacted] *RCT* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.159 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| BETA | 1C080101S | 5854 | [redacted] | 5861 | 2 | 1 | 2/9/06 | 8:19 | 119 | 60 | 1188 |
| BETA | 1C080102S | 5854 | [redacted] | 5861 | 2 | 2 | 2/9/06 | 8:23 | 123 | 60 | 1228 |
| BETA | 1C080103S | 5854 | [redacted] | 5861 | 2 | 3 | 2/9/06 | 8:26 | 123 | 60 | 1228 |
| BETA | 1C080104S | 5854 | [redacted] | 5861 | 2 | 4 | 2/9/06 | 8:30 | 106 | 60 | 1058 |
| BETA | 1C080105S | 5854 | [redacted] | 5861 | 2 | 5 | 2/9/06 | 8:33 | 143 | 60 | 1428 |
| BETA | 1C080106S | 5854 | [redacted] | 5861 | 2 | 6 | 2/9/06 | 8:37 | 140 | 60 | 1398 |
| BETA | 1C080107S | 5854 | [redacted] | 5861 | 2 | 7 | 2/9/06 | 9:37 | 143 | 60 | 1428 |
| BETA | 1C080108S | 5854 | [redacted] | 5861 | 2 | 8 | 2/9/06 | 9:41 | 121 | 60 | 1208 |
| BETA | 1C080109S | 5854 | [redacted] | 5861 | 2 | 9 | 2/9/06 | 9:45 | 135 | 60 | 1348 |
| BETA | 1C080110S | 5854 | [redacted] | 5861 | 2 | 10 | 2/9/06 | 9:49 | 120 | 60 | 1198 |
| BETA | 1C080111S | 5854 | [redacted] | 5861 | 2 | 11 | 2/9/06 | 9:53 | 147 | 60 | 1468 |
| BETA | 1C080112S | 5854 | [redacted] | 5861 | 2 | 12 | 2/9/06 | 9:56 | 186 | 60 | 1857 |
| BETA | 1C080113S | 5854 | [redacted] | 5861 | 2 | 13 | 2/9/06 | 10:00 | 141 | 60 | 1408 |
| BETA | 1C080114S | 5854 | [redacted] | 5861 | 2 | 14 | 2/9/06 | 10:04 | 115 | 60 | 1148 |
| BETA | 1C080115S | 5854 | [redacted] | 5861 | 2 | 15 | 2/9/06 | 10:08 | 123 | 60 | 1228 |
| BETA | 1C080116S | 5854 | [redacted] | 5861 | 2 | 16 | 2/9/06 | 10:11 | 169 | 60 | 1687 |
| BETA | 1C080117S | 5854 | [redacted] | 5861 | 2 | 17 | 2/9/06 | 10:15 | 158 | 60 | 1577 |
| BETA | 1C080118S | 5854 | [redacted] | 5861 | 2 | 18 | 2/9/06 | 10:19 | 152 | 60 | 1517 |
| BETA | 1C080119S | 5854 | [redacted] | 5861 | 2 | 19 | 2/9/06 | 10:29 | 133 | 60 | 1328 |
| BETA | 1C080120S | 5854 | [redacted] | 5861 | 2 | 20 | 2/9/06 | 10:33 | 94 | 60 | 938 |
| BETA | 1C080121S | 5854 | [redacted] | 5861 | 2 | 21 | 2/9/06 | 10:38 | 100 | 60 | 998 |
| BETA | 1C080122S | 5854 | [redacted] | 5861 | 2 | 22 | 2/9/06 | 10:44 | 98 | 60 | 978 |
| BETA | 1C080123S | 5854 | [redacted] | 5861 | 2 | 23 | 2/9/06 | 11:45 | 95 | 60 | 948 |
| BETA | 1C080201S | 5854 | [redacted] | 5861 | 2 | 1 | 2/9/06 | 11:57 | 81 | 60 | 809 |
| BETA | 1C080202S | 5854 | [redacted] | 5861 | 2 | 2 | 2/9/06 | 12:01 | 77 | 60 | 769 |
| BETA | 1C080203S | 5854 | [redacted] | 5861 | 2 | 3 | 2/9/06 | 12:06 | 96 | 60 | 958 |
| BETA | 1C080204S | 5854 | [redacted] | 5861 | 2 | 4 | 2/9/06 | 12:11 | 104 | 60 | 1038 |
| BETA | 1C080205S | 5854 | [redacted] | 5861 | 2 | 5 | 2/9/06 | 12:15 | 115 | 60 | 1148 |
| BETA | 1C080206S | 5854 | [redacted] | 5861 | 2 | 6 | 2/9/06 | 12:20 | 95 | 60 | 948 |
| BETA | 1C080207S | 5854 | [redacted] | 5861 | 2 | 7 | 2/9/06 | 12:24 | 103 | 60 | 1028 |
| BETA | 1C080208S | 5854 | [redacted] | 5861 | 2 | 8 | 2/9/06 | 12:37 | 113 | 60 | 1128 |
| BETA | 1C080209S | 5854 | [redacted] | 5861 | 2 | 9 | 2/9/06 | 12:44 | 92 | 60 | 918 |
| BETA | 1C080210S | 5854 | [redacted] | 5861 | 2 | 10 | 2/9/06 | 12:49 | 83 | 60 | 829 |
| BETA | 1C080211S | 5854 | [redacted] | 5861 | 2 | 11 | 2/9/06 | 12:54 | 104 | 60 | 1038 |
| BETA | 1C080212S | 5854 | [redacted] | 5861 | 2 | 12 | 2/9/06 | 12:59 | 113 | 60 | 1128 |
| BETA | 1C080213S | 5854 | [redacted] | 5861 | 2 | 13 | 2/9/06 | 13:03 | 120 | 60 | 1198 |
| BETA | 1C080214S | 5854 | [redacted] | 5861 | 2 | 14 | 2/9/06 | 13:12 | 117 | 60 | 1168 |
| BETA | 1C080215S | 5854 | [redacted] | 5861 | 2 | 15 | 2/9/06 | 13:17 | 143 | 60 | 1428 |
| BETA | 1C080216S | 5854 | [redacted] | 5861 | 2 | 16 | 2/9/06 | 13:21 | 82 | 60 | 819 |
| BETA | 1C080217S | 5854 | [redacted] | 5861 | 2 | 17 | 2/9/06 | 13:26 | 123 | 60 | 1228 |
| BETA | 1C080218S | 5854 | [redacted] | 5861 | 2 | 18 | 2/9/06 | 13:30 | 89 | 60 | 888 |
| BETA | 1C080219S | 5854 | [redacted] | 5861 | 2 | 19 | 2/9/06 | 13:35 | 86 | 60 | 859 |
| BETA | 1C080220S | 5854 | [redacted] | 5861 | 2 | 20 | 2/9/06 | 13:39 | 96 | 60 | 958 |

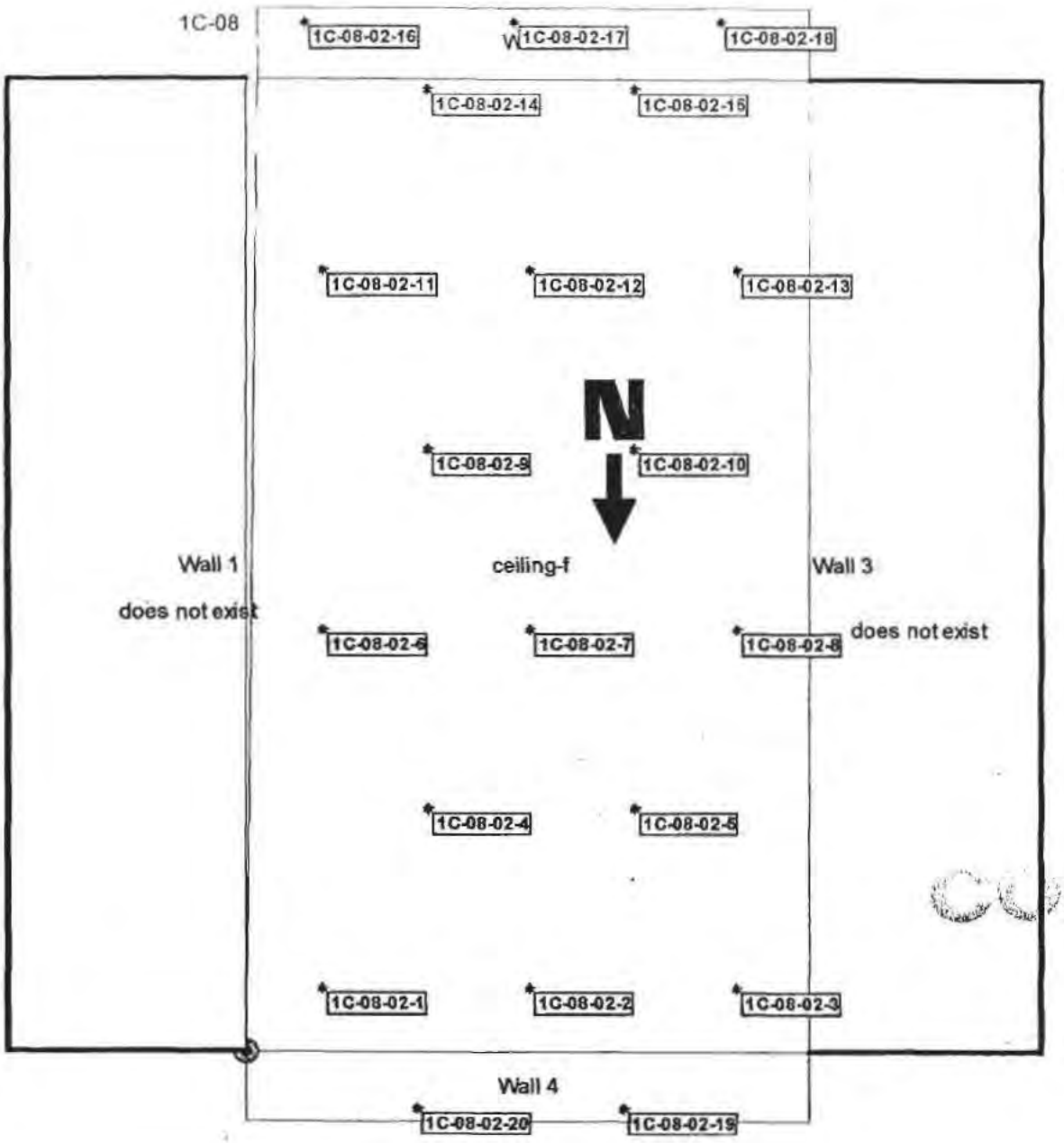


DW 2/11/06

F119/686

MT-06-0156

**1C-08-02**
**ceiling and upper wall static measurement locations**
**scan an area of approximately 1 m2 around each ceiling location**




COPY

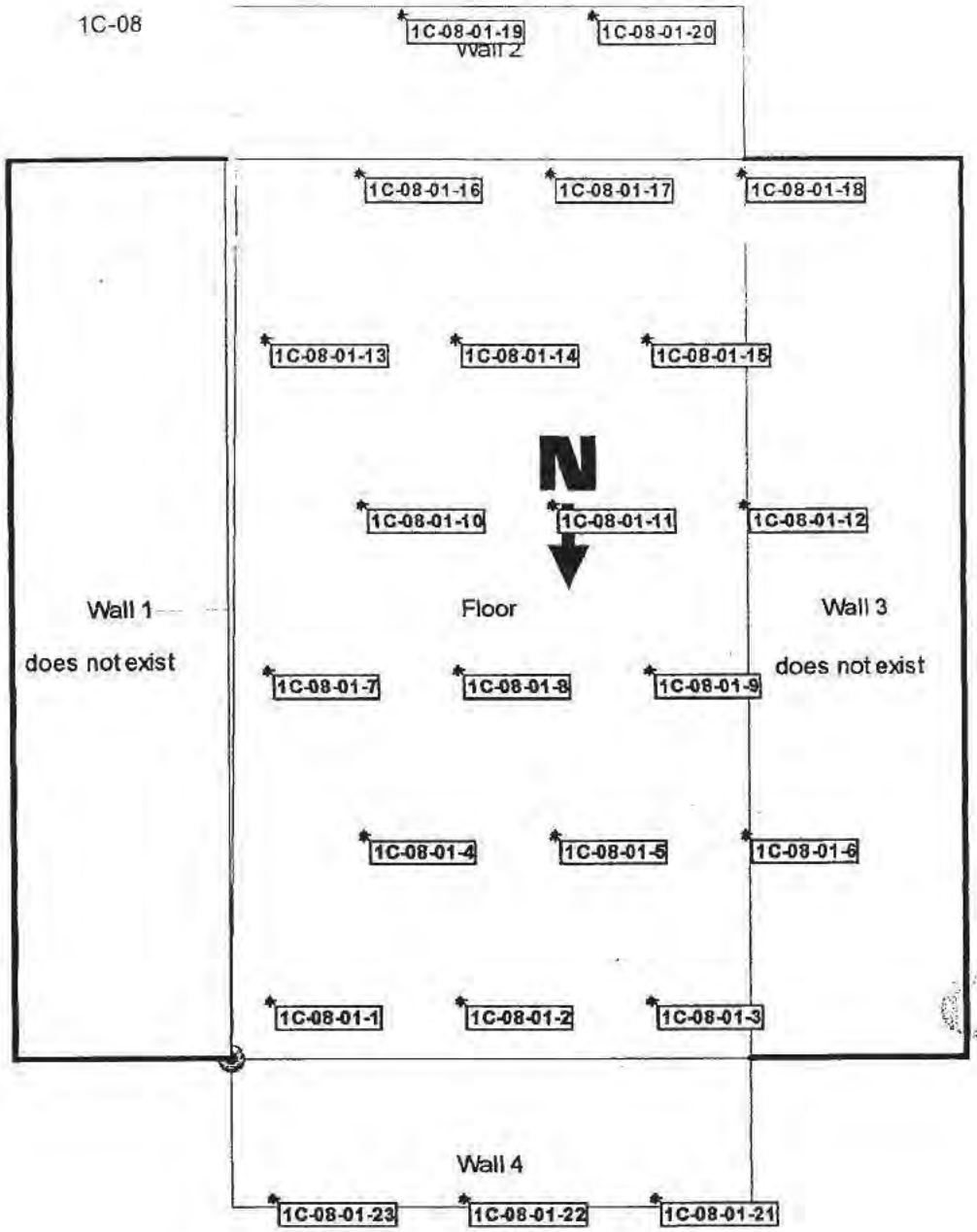
**1C-08-02**
**ceiling and upper wall static measurement locations**
**scan an area of approximately 1 m2 around each ceiling location**

| Area: 1C-08 | | | | | |
|---|---|---|---|---|---|
| Label | Type | Surface | LX | LY | |
| 1C-08-02-1 | Systematic | ceiling-f | 3 | 3 | |
| 1C-08-02-2 | Systematic | ceiling-f | 12 | 3 | |
| 1C-08-02-3 | Systematic | ceiling-f | 21 | 3 | |
| 1C-08-02-4 | Systematic | ceiling-f | 8 | 10 | |
| 1C-08-02-5 | Systematic | ceiling-f | 17 | 10 | |
| 1C-08-02-6 | Systematic | ceiling-f | 3 | 18 | |
| 1C-08-02-7 | Systematic | ceiling-f | 12 | 18 | |
| 1C-08-02-8 | Systematic | ceiling-f | 19 ~~24~~ | 18 | 5 FT TO THE EAST |
| 1C-08-02-9 | Systematic | ceiling-f | 8 | 26 | |
| 1C-08-02-10 | Systematic | ceiling-f | 17 | 26 | |
| 1C-08-02-11 | Systematic | ceiling-f | 3 | 33 | |
| 1C-08-02-12 | Systematic | ceiling-f | 12 | 33 | |
| 1C-08-02-13 | Systematic | ceiling-f | 21 | 33 | |
| 1C-08-02-14 | Systematic | ceiling-f | 8 | 41 | |
| 1C-08-02-15 | Systematic | ceiling-f | 17 | 41 | |
| 1C-08-02-16 | Systematic | Wall 2 | 2 | 2 | |
| 1C-08-02-17 | Systematic | Wall 2 | 11 | 2 | |
| 1C-08-02-18 | Systematic | Wall 2 | 20 | 2 | |
| 1C-08-02-19 | Systematic | Wall 4 | 8 | 2 | |
| 1C-08-02-20 | Systematic | Wall 4 | 17 | 2 | |

COPY

MT-06-0156

**1C-08-01**
**floor and lower wall static measurement locations**




COPY

F 122/686

**1C-08-01**
**floor and lower wall static measurement locations**

| Area: 1C-08 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-08-01-1 | Systematic | Floor | 2 | 3 |
| 1C-08-01-2 | Systematic | Floor | 11 | 3 |
| 1C-08-01-3 | Systematic | Floor | 19 | 3 |
| 1C-08-01-4 | Systematic | Floor | 6 | 10 |
| 1C-08-01-5 | Systematic | Floor | 15 | 10 |
| 1C-08-01-6 | Systematic | Floor | 24 | 10 |
| 1C-08-01-7 | Systematic | Floor | 2 | 18 |
| 1C-08-01-8 | Systematic | Floor | 11 | 18 |
| 1C-08-01-9 | Systematic | Floor | 19 | 18 |
| 1C-08-01-10 | Systematic | Floor | 6 | 26 |
| 1C-08-01-11 | Systematic | Floor | 15 | 26 |
| 1C-08-01-12 | Systematic | Floor | 24 | 26 |
| 1C-08-01-13 | Systematic | Floor | 2 | 33 |
| 1C-08-01-14 | Systematic | Floor | 11 | 33 |
| 1C-08-01-15 | Systematic | Floor | 19 | 33 |
| 1C-08-01-16 | Systematic | Floor | 6 | 41 |
| 1C-08-01-17 | Systematic | Floor | 15 | 41 |
| 1C-08-01-18 | Systematic | Floor | 24 | 41 |
| 1C-08-01-19 | Systematic | Wall 2 | 8 | 7 |
| 1C-08-01-20 | Systematic | Wall 2 | 17 | 7 |
| 1C-08-01-21 | Systematic | Wall 4 | 4 | 7 |
| 1C-08-01-22 | Systematic | Wall 4 | 13 | 7 |
| 1C-08-01-23 | Systematic | Wall 4 | 22 | 7 |

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-Bldg. - 1-Cap | SURVEY NO. MT-06-0162 |
| PURPOSE: Lower & Upper Equipmental | RWP NO. N/A |
| | DATE: 2-10-06 |
| 1108 | TIME: 1530 |

MAP / DRAWING

See attached

No elevated α/β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Nursick | | Date: 2-10-06 |
| Completed by: (Print Name) B. Nursick | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) See Attached | | |
| Reviewed/Approved by: (Signature) | | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) Jess Griffin | | F124/686 |

Survey No. MT-06-0162

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See Attached | | | 1C08-0101J |
| 2 | | | | 1C08-0102J |
| 3 | | | | 1C08-0103J |
| 4 | | | | 1C08-0104J |
| 5 | | | | 1C08-0105J |
| 6 | | | | 1C08-0106J |
| 7 | | | | 1C08-0107J |
| 8 | | | | 1C08-0108J |
| 9 | | | | 1C08-0109J |
| 10 | | | | 1C08-0110J |
| 11 | | | | 1C08-0201J |
| 12 | | | | 1C08-0202J |
| 13 | | | | 1C08-0203J |
| 14 | | | | 1C08-0204J |
| 15 | | | | 1C08-0205J |
| 16 | | | | 1C08-0206J |
| 17 | | | | 1C08-0207J |
| 18 | | | | 1C08-0208J |
| 19 | | | | 1C08-0209J |
| 20 | ✓ | ✓ | ✓ | 1C08-0210J |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | N/A | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | N/A | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MT-06-0162
pg 3 of 8



BR 2-14-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060210_1427.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0162.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

✓ BR

COPY

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F126/686

RLH

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/10/06 | 2:28:17 PM | -1 | 10.00 | 8 | 8 | 12 | 6 | 626.03 | 0 | 22.0 | B | 2 |
| 2/10/06 | 2:39:07 PM | 0 | 2.00 | 116 | 113 | 0 | 3 | 536.21 | 227 | 13.7 | | 2 |
| 2/10/06 | 2:41:50 PM | 1 | 2.00 | 0 | 0 | 0 | 10 | 590.69 | 0 | 0.0 | | 2 |
| 2/10/06 | 2:44:32 PM | 2 | 2.00 | 0 | 0 | 0 | 6 | 557.58 | 0 | 1860.0 | | 2 |
| 2/10/06 | 2:47:15 PM | 3 | 2.00 | 1 | 1 | 0 | 6 | 545.63 | 1 | 621.8 | | 2 |
| 2/10/06 | 2:49:57 PM | 4 | 2.00 | 0 | 0 | 0 | 6 | 618.43 | 1 | 1128.6 | | 2 |
| 2/10/06 | 2:52:40 PM | 5 | 2.00 | 1 | 1 | 0 | 5 | 579.71 | 2 | 377.7 | | 2 |
| 2/10/06 | 2:55:21 PM | 6 | 2.00 | 4 | 4 | 0 | 4 | 600.64 | 7 | 139.6 | | 2 |
| 2/10/06 | 2:58:02 PM | 7 | 2.00 | 4 | 3 | 0 | 8 | 618.90 | 7 | 139.6 | | 2 |
| 2/10/06 | 3:00:44 PM | 8 | 2.00 | 0 | 0 | 0 | 7 | 627.75 | 0 | 0.0 | | 2 |
| 2/10/06 | 3:03:26 PM | 9 | 2.00 | 0 | 0 | 0 | 6 | 632.53 | 0 | 1860.0 | | 2 |
| 2/10/06 | 3:06:07 PM | 10 | 2.00 | 3 | 3 | 0 | 4 | 646.64 | 6 | 158.2 | | 2 |
| 2/10/06 | 3:08:50 PM | 11 | 2.00 | 0 | 0 | 0 | 10 | 623.30 | 0 | 0.0 | | 2 |
| 2/10/06 | 3:11:33 PM | 12 | 2.00 | 1 | 1 | 0 | 11 | 578.93 | 1 | 621.8 | | 2 |
| 2/10/06 | 3:14:15 PM | 13 | 2.00 | 0 | 0 | 0 | 23 | 597.04 | 0 | 0.0 | | 2 |
| 2/10/06 | 3:16:56 PM | 14 | 2.00 | 2 | 2 | 0 | 5 | 619.22 | 3 | 277.1 | | 2 |
| 2/10/06 | 3:19:38 PM | 15 | 2.00 | 5 | 4 | 0 | 7 | 592.64 | 10 | 105.0 | | 2 |
| 2/10/06 | 3:22:21 PM | 16 | 2.00 | 8 | 7 | 0 | 3 | 603.53 | 14 | 76.7 | | 2 |
| 2/10/06 | 3:25:07 PM | 17 | 2.00 | 2 | 2 | 0 | 10 | 591.69 | 3 | 277.1 | | 2 |
| 2/10/06 | 3:27:49 PM | 18 | 2.00 | 11 | 10 | 3 | 3 | 607.50 | 20 | 59.8 | | 2 |
| 2/10/06 | 3:30:32 PM | 19 | 2.00 | 9 | 9 | 0 | 3 | 577.58 | 17 | 67.0 | | 2 |
| 2/10/06 | 3:33:15 PM | 20 | 2.00 | 13 | 11 | 0 | 5 | 610.84 | 23 | 52.8 | | 2 |

BX

COPY

F127/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_037
Batch Ended: 2/10/06 12:24
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0162 [20] ROE 2-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.93 | | 2.41 | 2.38 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.13 | |
| C3 | 11 | 0.00 | 2.08 | | 1.49 | 2.11 | |
| C4 | 12 | 0.00 | 1.98 | | 1.74 | 1.95 | |
| D1 | 13 | 0.00 | 2.06 | | 0.29 | 1.77 | |
| D2 | 14 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 1.54 | 2.04 | | 0.00 | 1.17 | |
| D1 | 17 | 0.00 | 2.06 | | 0.29 | 1.77 | |
| D2 | 18 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 19 | 0.00 | 2.09 | | 0.00 | 1.24 | |
| D4 | 20 | 1.54 | 2.04 | | 0.00 | 1.17 | |

✓ BR ✓ BR

COPY

BR 2-14-06



F128/086

RLH

# T-BLDG. JUDGEMENTALS 1C-08

**COPY**

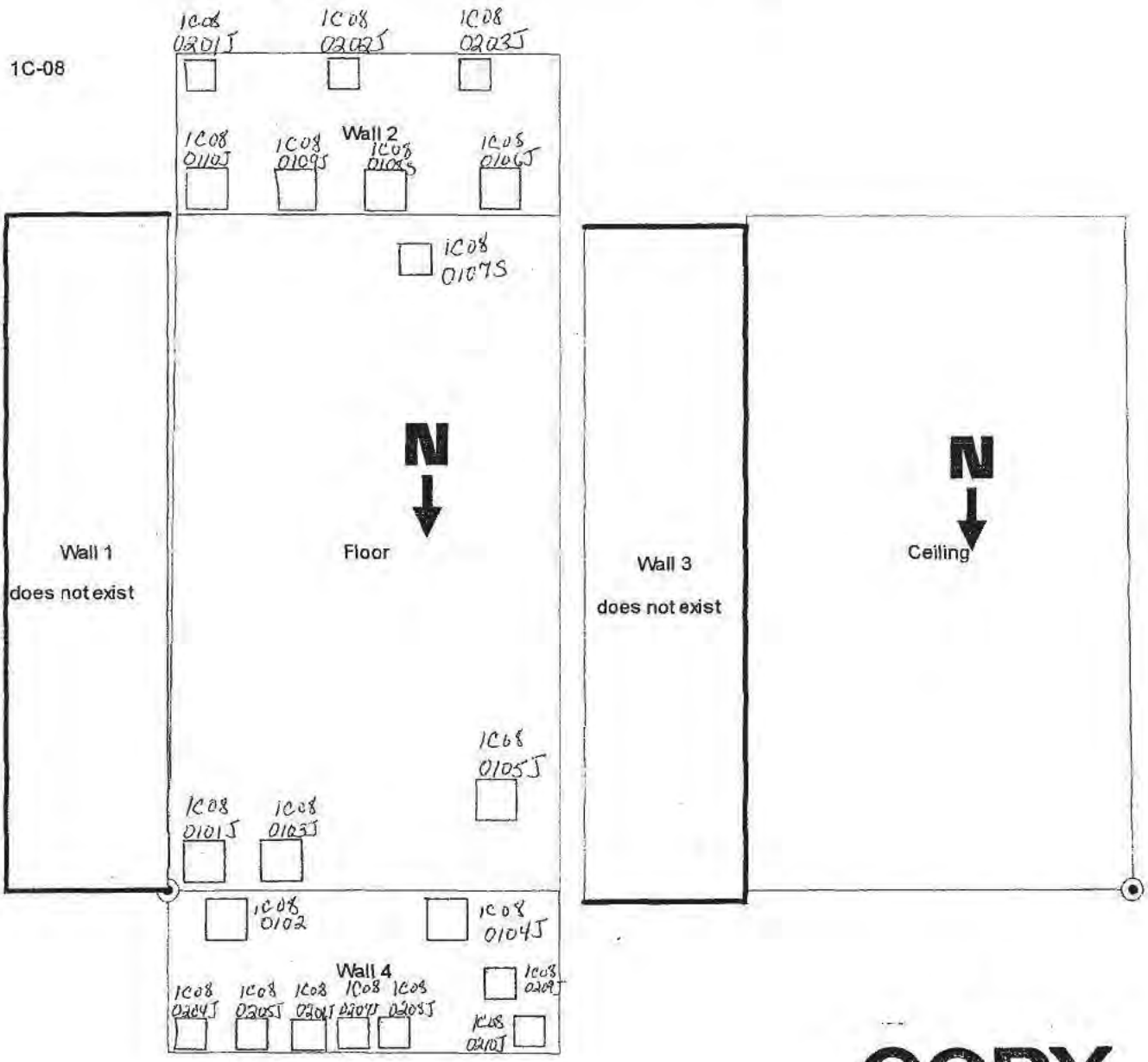
*RSDS#* MT-06-0162 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C080101J | 5854 | [redacted] | 5861 | 1 | 1 | 2/10/06 | 7:54 | 4 | 120 | 15 |
| ALPHA | 1C080102J | 5854 | [redacted] | 5861 | 1 | 2 | 2/10/06 | 7:57 | 7 | 120 | 27 |
| ALPHA | 1C080103J | 5854 | [redacted] | 5861 | 1 | 3 | 2/10/06 | 8:01 | 6 | 120 | 23 |
| ALPHA | 1C080104J | 5854 | [redacted] | 5861 | 1 | 4 | 2/10/06 | 8:04 | 8 | 120 | 31 |
| ALPHA | 1C080105J | 5854 | [redacted] | 5861 | 1 | 5 | 2/10/06 | 8:08 | 8 | 120 | 31 |
| ALPHA | 1C080106J | 5854 | [redacted] | 5861 | 1 | 6 | 2/10/06 | 8:12 | 2 | 120 | 8 |
| ALPHA | 1C080107J | 5854 | [redacted] | 5861 | 1 | 7 | 2/10/06 | 8:16 | 13 | 120 | 50 |
| ALPHA | 1C080108J | 5854 | [redacted] | 5861 | 1 | 8 | 2/10/06 | 8:21 | 3 | 120 | 12 |
| ALPHA | 1C080109J | 5854 | [redacted] | 5861 | 1 | 9 | 2/10/06 | 8:25 | 5 | 120 | 19 |
| ALPHA | 1C080110J | 5854 | [redacted] | 5861 | 1 | 10 | 2/10/06 | 8:28 | 2 | 120 | 8 |
| ALPHA | 1C080201J | 5854 | [redacted] | 5861 | 1 | 11 | 2/10/06 | 8:32 | 3 | 120 | 12 |
| ALPHA | 1C080202J | 5854 | [redacted] | 5861 | 1 | 12 | 2/10/06 | 8:35 | 3 | 120 | 12 |
| ALPHA | 1C080203J | 5854 | [redacted] | 5861 | 1 | 13 | 2/10/06 | 9:45 | 4 | 120 | 15 |
| ALPHA | 1C080204J | 5854 | [redacted] | 5861 | 1 | 14 | 2/10/06 | 9:50 | 4 | 120 | 15 |
| ALPHA | 1C080205J | 5854 | [redacted] | 5861 | 1 | 15 | 2/10/06 | 9:54 | 7 | 120 | 27 |
| ALPHA | 1C080206J | 5854 | [redacted] | 5861 | 1 | 16 | 2/10/06 | 9:58 | 7 | 120 | 27 |
| ALPHA | 1C080207J | 5854 | [redacted] | 5861 | 1 | 17 | 2/10/06 | 10:01 | 1 | 120 | 4 |
| ALPHA | 1C080208J | 5854 | [redacted] | 5861 | 1 | 18 | 2/10/06 | 10:05 | 4 | 120 | 15 |
| ALPHA | 1C080209J | 5854 | [redacted] | 5861 | 1 | 19 | 2/10/06 | 10:09 | 5 | 120 | 19 |
| ALPHA | 1C080210J | 5854 | [redacted] | 5861 | 1 | 20 | 2/10/06 | 10:13 | 7 | 120 | 27 |
| BETA | 1C080101J | 5854 | [redacted] | 5861 | 2 | 1 | 2/10/06 | 7:55 | 144 | 60 | 1402 |
| BETA | 1C080102J | 5854 | [redacted] | 5861 | 2 | 2 | 2/10/06 | 7:58 | 97 | 60 | 945 |
| BETA | 1C080103J | 5854 | [redacted] | 5861 | 2 | 3 | 2/10/06 | 8:02 | 146 | 60 | 1422 |
| BETA | 1C080104J | 5854 | [redacted] | 5861 | 2 | 4 | 2/10/06 | 8:06 | 107 | 60 | 1042 |
| BETA | 1C080105J | 5854 | [redacted] | 5861 | 2 | 5 | 2/10/06 | 8:09 | 136 | 60 | 1324 |
| BETA | 1C080106J | 5854 | [redacted] | 5861 | 2 | 6 | 2/10/06 | 8:13 | 102 | 60 | 993 |
| BETA | 1C080107J | 5854 | [redacted] | 5861 | 2 | 7 | 2/10/06 | 8:17 | 146 | 60 | 1422 |
| BETA | 1C080108J | 5854 | [redacted] | 5861 | 2 | 8 | 2/10/06 | 8:22 | 127 | 60 | 1237 |
| BETA | 1C080109J | 5854 | [redacted] | 5861 | 2 | 9 | 2/10/06 | 8:26 | 102 | 60 | 993 |
| BETA | 1C080110J | 5854 | [redacted] | 5861 | 2 | 10 | 2/10/06 | 8:29 | 94 | 60 | 915 |
| BETA | 1C080201J | 5854 | [redacted] | 5861 | 2 | 11 | 2/10/06 | 8:33 | 123 | 60 | 1198 |
| BETA | 1C080202J | 5854 | [redacted] | 5861 | 2 | 12 | 2/10/06 | 8:36 | 126 | 60 | 1227 |
| BETA | 1C080203J | 5854 | [redacted] | 5861 | 2 | 13 | 2/10/06 | 9:46 | 93 | 60 | 906 |
| BETA | 1C080204J | 5854 | [redacted] | 5861 | 2 | 14 | 2/10/06 | 9:51 | 99 | 60 | 964 |
| BETA | 1C080205J | 5854 | [redacted] | 5861 | 2 | 15 | 2/10/06 | 9:55 | 75 | 60 | 730 |
| BETA | 1C080206J | 5854 | [redacted] | 5861 | 2 | 16 | 2/10/06 | 9:59 | 98 | 60 | 954 |
| BETA | 1C080207J | 5854 | [redacted] | 5861 | 2 | 17 | 2/10/06 | 10:02 | 96 | 60 | 935 |
| BETA | 1C080208J | 5854 | [redacted] | 5861 | 2 | 18 | 2/10/06 | 10:06 | 102 | 60 | 993 |
| BETA | 1C080209J | 5854 | [redacted] | 5861 | 2 | 19 | 2/10/06 | 10:10 | 114 | 60 | 1110 |
| BETA | 1C080210J | 5854 | [redacted] | 5861 | 2 | 20 | 2/10/06 | 10:14 | 93 | 60 | 906 |
| | | | | | N | | | | | | |
| | | | | | | | | | | | |
| | | | | | | A | | | | | |



F-129/686

**1C-08** minimum 10 lower and 10 upper
**Class 1**




COPY

Survey Unit Number:



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0162
RCT INT/HP [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C08-0101J | T-Cap | Floor | | |
| 1C08-0102J | | Wall 4 | | |
| 1C08-0103J | | Floor | | |
| 1C08-0104J | | Wall 4 | | |
| 1C08-0105J | | Floor | | |
| 1C08-0106J | | Wall 2 | | |
| 1C08-0107J | | Floor | | |
| 1C08-0108J | | Wall 2 | | |
| 1C08-0109J | | Wall 2 | | |
| 1C08-0110J | | Wall 2 | | |
| 1C08-0201J | | Wall 2 | | |
| 1C08-0202J | | Wall 2 | | |
| 1C08-0203J | | Wall 2 | | |
| 1C08-0204J | | Wall 4 | | A |
| 1C08-0205J | | Wall 4 | N | |
| 1C08-0206J | | Wall 4 | | |
| 1C08-0207J | | Wall 4 | | |
| 1C08-0208J | | Wall 4 | | |
| 1C08-0209J | | Wall 4 | | |
| 1C08-0210J | | Wall 4 | | |
| | A | | | |
| | N | | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F131/686

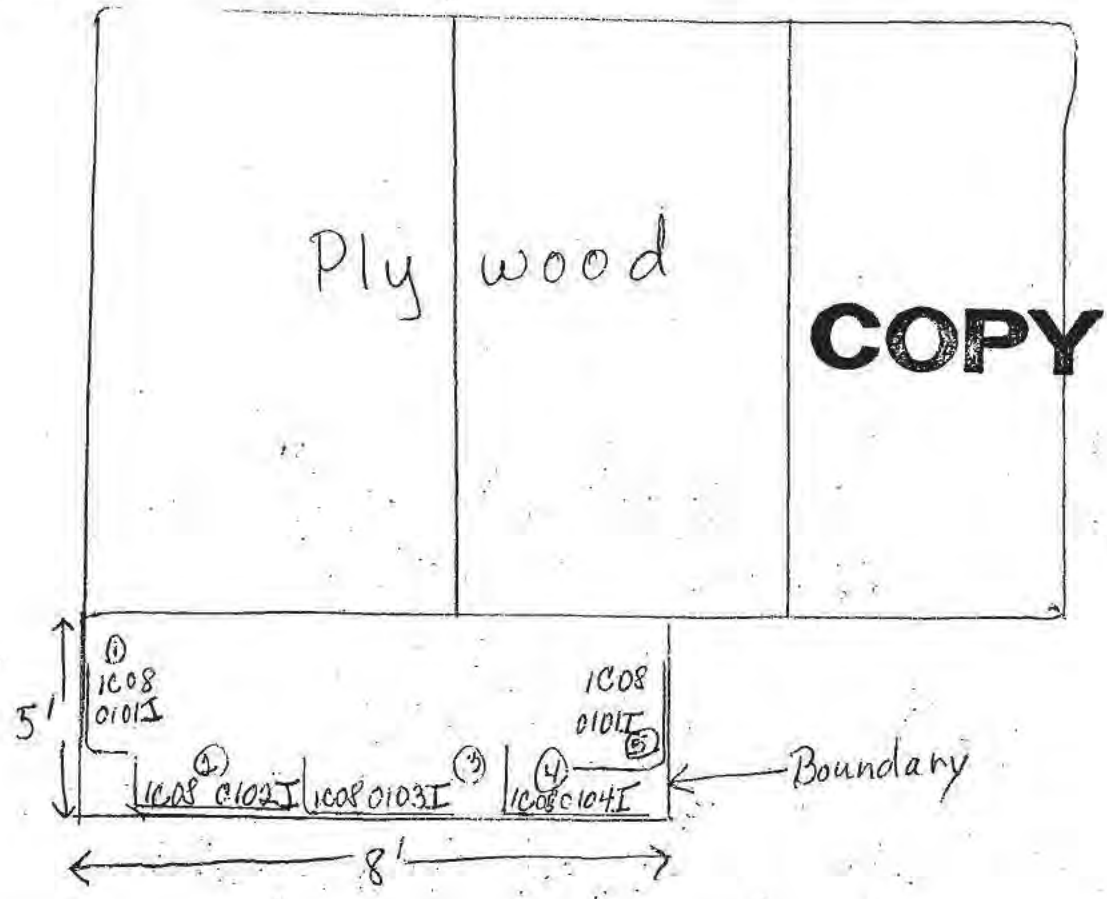
# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-48 | SURVEY NO. MT-06-0216 |
| PURPOSE: Investigative Survey of 1C08 Elevated Area / Pre-Remediation | RWP NO. N/A |
| | DATE 2-20-06 |
| | TIME 1545 |

MAP / DRAWING

To Determine Boundary for Remediation




LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·— = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination

mea[redacted] dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| M2350-1 | ~~5887~~ 5890 / ~~5884~~ / ~~5887~~ 4/3/06 | 1-30-07 4/3/06 |
| | N/A | |
| | | |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) Jan Gauthier / Neal Reynolds | [redacted] | | Date: 2-20-06 NR 2-20-06 |
| Completed by: (Print Name) Jan Gauthier / NEAL REYNOLDS | | | |
| Counted by: (Signature) see | HP# N/A | | Date: N/A |
| Counted by: (Print Name) Attached Results | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | | Date: 4/3/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

F132/680

Survey No. MT-06-0216

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See Attached | | Results | 1C08-0101I |
| 2 | | | | 1C08-0102I |
| 3 | | | | 1C08-0103I |
| 4 | | | | 1C08-0104I |
| 5 | See Attached | | Results | 1C08-0105I |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | N | |
| 19 | | | A | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | N | |
| 51 | | | A | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F133/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060222_1324.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0216\001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

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MT-06-0216

F13A/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/22/06 | 1:24:53 PM | -1 | 10.00 | 8 | 8 | 13 | 9 | 619.30 | 0 | 22.3 | B | 1 |
| 2/22/06 | 1:35:42 PM | 0 | 2.00 | 479 | 454 | 0 | 0 | 581.95 | 900 | 6.5 | | 1 |
| 2/22/06 | 1:38:24 PM | 1 | 2.00 | 0 | 0 | 0 | 13 | 603.88 | 0 | 0.0 | | 1 |
| 2/22/06 | 1:41:07 PM | 2 | 2.00 | 2 | 1 | 0 | 40 | 545.50 | 4 | 249.7 | | 1 |
| 2/22/06 | 1:43:49 PM | 3 | 2.00 | 4 | 3 | 0 | 13 | 576.24 | 7 | 132.8 | | 1 |
| 2/22/06 | 1:46:31 PM | 4 | 2.00 | 0 | 0 | 0 | 9 | 586.00 | 0 | 0.0 | | 1 |
| 2/22/06 | 1:49:12 PM | 5 | 2.00 | 1 | 1 | 0 | 11 | 579.85 | 2 | 495.4 | | 1 |

Vne

COPY

PAGE 4 OF 6
MI-06-0216

F135/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_091
Batch Ended: 2/22/06 12:55
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0216 [5] REYNOLDS 2-22-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 2 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 3 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 4 | 1.61 | 1.97 | | 0.20 | 1.69 | |
| C1 | 5 | 0.00 | 2.05 | | 0.00 | 1.23 | |

COPY

~~Page 1 of 1~~
4-3-06

F131/686

5
PAGE 4 OF 6
2-22-06
MT-06-0216

MT-06-0216
pg 6 of 6

# T-48,1C08, Investigative Survey

*RSDS# _MT-06-0216_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1695 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C080101I | 5889 | | 5890 | 1 | 1 | 2/20/06 | 13:02 | 9 | 120 | 34 |
| ALPHA | 1C080102I | 5889 | | 5890 | 1 | 2 | 2/20/06 | 13:07 | 6 | 120 | 22 |
| ALPHA | 1C080103I | 5889 | | 5890 | 1 | 3 | 2/20/06 | 13:10 | 3 | 120 | 11 |
| ALPHA | 1C080104I | 5889 | | 5890 | 1 | 4 | 2/20/06 | 13:15 | 9 | 120 | 34 |
| ALPHA | 1C080105I | 5889 | | 5890 | 1 | 5 | 2/20/06 | 13:21 | 6 | 120 | 22 ✓ |
| BETA | 1C080101I | 5889 | | 5890 | 2 | 1 | 2/20/06 | 13:03 | 110 | 60 | 1030 |
| BETA | 1C080102I | 5889 | | 5890 | 2 | 2 | 2/20/06 | 13:08 | 99 | 60 | 927 |
| BETA | 1C080103I | 5889 | | 5890 | 2 | 3 | 2/20/06 | 13:11 | 95 | 60 | 890 |
| BETA | 1C080104I | 5889 | | 5890 | 2 | 4 | 2/20/06 | 13:16 | 102 | 60 | 955 |
| BETA | 1C080105I | 5889 | | 5890 | 2 | 5 | 2/20/06 | 13:22 | 86 | 60 | 805 ✓ |

N A

COPY



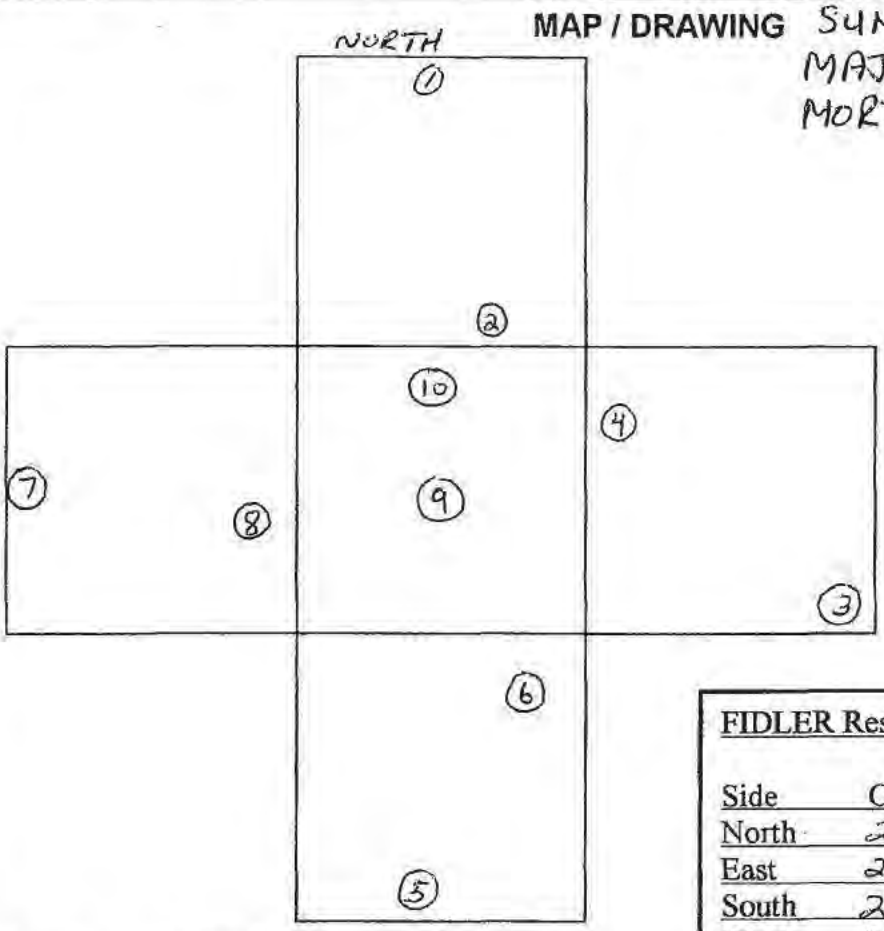
F137/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG. / ROOM / AREA) T-41 SUMP 8 | SURVEY NO. MT-06-0472 |
| PURPOSE: FIDLER, DOSE RATE JUDGEMENTAL SYS-PRS-228 SUMP 8 | RWP NO. NA |
| | DATE: 5-2-06 |
| | TIME: 0720 |

**MAP / DRAWING** SUMP LINER AND VAST MAJORITY OF BEDDING MORTAR ARE GONE.




DOSE RATE SURVEY IN AND AROUND SUMP 8 ARE <0.005 mR/hr.

**FIDLER Results** (263 Cpm Background)

| Side | Cpm gross | Cpm net |
|---|---|---|
| North | 213 | NDA |
| East | 223 | NDA |
| South | 233 | NDA |
| West | 237 | NDA |
| Bottom | 224 | NDA |

100% SCAN OF SUMP PERFORMED.
NDA = NO DETECTABLE ACTIVITY

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary
△# = mrem/hr neutron
# = air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2360 FIDLER | 5871/3975 | 5-18-06 |
| 2350 | 5884/5887 | 1-30-07 |
| MICRO R | 3980 | 5-13-06 |
| " | | " |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 5-3-06 |
| Completed by: (Print Name) NEAL REYNOLDS JOHN BAKO | | |
| Counted by: (Signature) SEE | HP# | Date: |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) | | Date: 5-4-06 |
| Reviewed/Approved by: (Print Name) J. HOLLABAUGH | | F138/686 |

Survey No.
MT-06-0472



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | SYSPRS2280101J |
| 2 | | | | 0102J |
| 3 | | | | 0103J |
| 4 | | | | 0104J |
| 5 | | | | 0105J |
| 6 | | SEE ATTACHED | | 0106J |
| 7 | | | | 0107J |
| 8 | | | | 0108J |
| 9 | | | | 0109J |
| 10 | | | | 0110J |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F139/686

ML-9620A (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060502_1354.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0472.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

Pg 3 of 7

F-140/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/2/06 | 1:55:31 PM | -1 | 10.00 | 9 | 8 | 11 | 2 | 609.46 | 0 | 21.7 | B | 2 |
| 5/2/06 | 2:06:20 PM | 0 | 2.00 | 70 | 67 | 2 | 1 | 542.68 | 136 | 18.1 | | 2 |
| 5/2/06 | 2:09:02 PM | 1 | 2.00 | 0 | 0 | 0 | 0 | 584.04 | 0 | 5709.5 | | 2 |
| 5/2/06 | 2:11:44 PM | 2 | 2.00 | 0 | 0 | 0 | 11 | 477.43 | 0 | 0.0 | | 2 |
| 5/2/06 | 2:14:28 PM | 3 | 2.00 | 3 | 2 | 0 | 4 | 559.62 | 5 | 188.3 | | 2 |
| 5/2/06 | 2:17:11 PM | 4 | 2.00 | 0 | 0 | 0 | 0 | 549.92 | 0 | 0.0 | | 2 |
| 5/2/06 | 2:19:55 PM | 5 | 2.00 | 0 | 0 | 0 | 6 | 521.11 | 0 | 0.0 | | 2 |
| 5/2/06 | 2:22:39 PM | 6 | 2.00 | 0 | 1 | 0 | 6 | 420.94 | 1 | 928.3 | | 2 |
| 5/2/06 | 2:25:21 PM | 7 | 2.00 | 0 | 0 | 0 | 0 | 558.66 | 0 | 0.0 | | 2 |
| 5/2/06 | 2:28:04 PM | 8 | 2.00 | 0 | 0 | 0 | 0 | 427.19 | 0 | 0.0 | | 2 |
| 5/2/06 | 2:30:46 PM | 9 | 2.00 | 1 | 2 | 1 | 5 | 503.44 | 3 | 322.9 | | 2 |
| 5/2/06 | 2:33:28 PM | 10 | 2.00 | 2 | 1 | 3 | 0 | 534.88 | 3 | 278.4 | | 2 |

03

COPY

F141/686

MT-06-0472 Pg 45 of 57

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_058
Batch Ended: 5/2/06 12:41
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0472 [10] REYNOLDS 5-2-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 1.58 | 1.89 | | 0.04 | 1.68 | |
| B2 | 2 | 1.69 | 1.87 | | 0.28 | 1.58 | |
| B3 | 3 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 4 | 1.68 | 1.95 | | 0.00 | 1.20 | |
| C1 | 5 | 0.00 | 2.11 | | 2.36 | 2.52 | |
| C2 | 6 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 7 | 0.00 | 2.15 | | 1.71 | 2.19 | |
| C4 | 8 | 0.00 | 1.99 | | 0.45 | 1.61 | |
| D1 | 9 | 1.73 | 2.06 | | 0.14 | 1.77 | |
| D2 | 10 | 0.00 | 2.15 | | 0.00 | 1.20 | |

COPY

F14/686



5-3-06

# T-41 SYS PRS-228 Sump 8 Judgementals

***RSDS# _MT-06-0472_ RCT: _____ RCT: _____***

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.208 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.164 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | PRS2280101J | [redacted] | 7760 | 5887 | 1 | 1 | 5/2/06 | 7:51 | 3 | 120 | 11 |
| ALPHA | PRS2280102J | [redacted] | 7760 | 5887 | 1 | 2 | 5/2/06 | 7:56 | 4 | 120 | 15 |
| ALPHA | PRS2280103J | [redacted] | 7760 | 5887 | 1 | 3 | 5/2/06 | 8:10 | 7 | 120 | 27 |
| ALPHA | PRS2280104J | [redacted] | 7760 | 5887 | 1 | 4 | 5/2/06 | 8:14 | 3 | 120 | 11 |
| ALPHA | PRS2280105J | [redacted] | 7760 | 5887 | 1 | 5 | 5/2/06 | 8:24 | 11 | 120 | 42 |
| ALPHA | PRS2280106J | [redacted] | 7760 | 5887 | 1 | 6 | 5/2/06 | 8:30 | 11 | 120 | 42 |
| ALPHA | PRS2280107J | [redacted] | 7760 | 5887 | 1 | 7 | 5/2/06 | 9:29 | 4 | 120 | 15 |
| ALPHA | PRS2280108J | [redacted] | 7760 | 5887 | 1 | 8 | 5/2/06 | 9:33 | 3 | 120 | 11 |
| ALPHA | PRS2280109J | [redacted] | 7760 | 5887 | 1 | 9 | 5/2/06 | 9:41 | 12 | 120 | 46 |
| ALPHA | PRS2280110J | [redacted] | 7760 | 5887 | 1 | 10 | 5/2/06 | 9:45 | 7 | 120 | 27 |
| BETA | PRS2280101J | [redacted] | 7760 | 5887 | 2 | 1 | 5/2/06 | 7:52 | 123 | 60 | 1190 |
| BETA | PRS2280102J | [redacted] | 7760 | 5887 | 2 | 2 | 5/2/06 | 7:57 | 165 | 60 | 1597 |
| BETA | PRS2280103J | [redacted] | 7760 | 5887 | 2 | 3 | 5/2/06 | 8:11 | 187 | 60 | 1810 |
| BETA | PRS2280104J | [redacted] | 7760 | 5887 | 2 | 4 | 5/2/06 | 8:16 | 145 | 60 | 1403 |
| BETA | PRS2280105J | [redacted] | 7760 | 5887 | 2 | 5 | 5/2/06 | 8:25 | 163 | 60 | 1578 |
| BETA | PRS2280106J | [redacted] | 7760 | 5887 | 2 | 6 | 5/2/06 | 8:31 | 147 | 60 | 1423 |
| BETA | PRS2280107J | [redacted] | 7760 | 5887 | 2 | 7 | 5/2/06 | 9:30 | 159 | 60 | 1539 |
| BETA | PRS2280108J | [redacted] | 7760 | 5887 | 2 | 8 | 5/2/06 | 9:34 | 150 | 60 | 1452 |
| BETA | PRS2280109J | [redacted] | 7760 | 5887 | 2 | 9 | 5/2/06 | 9:43 | 155 | 60 | 1500 |
| BETA | PRS2280110J | [redacted] | 7760 | 5887 | 2 | 10 | 5/2/06 | 9:46 | 165 | 60 | 1597 |

COPY



F 143/686

Survey Unit Number: SYS-PRS 228
10 minimum in sump



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0472
RCT INT/HP MR: [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| SYSPRS228 0101 J | T-41 | NORTH WALL | | |
| 0102 J | | ↓ | | |
| 0103 J | | EAST WALL | | |
| 0104 J | | ↓ | | |
| 0105 J | | SOUTH WALL | N | A |
| 0106 J | | ↓ | | |
| 0107 J | | WEST WALL | | |
| 0108 J | | ↓ | | |
| 0109 J | | BOTTOM | | |
| 0110 J | | ↓ | | |
| | | N | | |
| | | A | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F-144/686

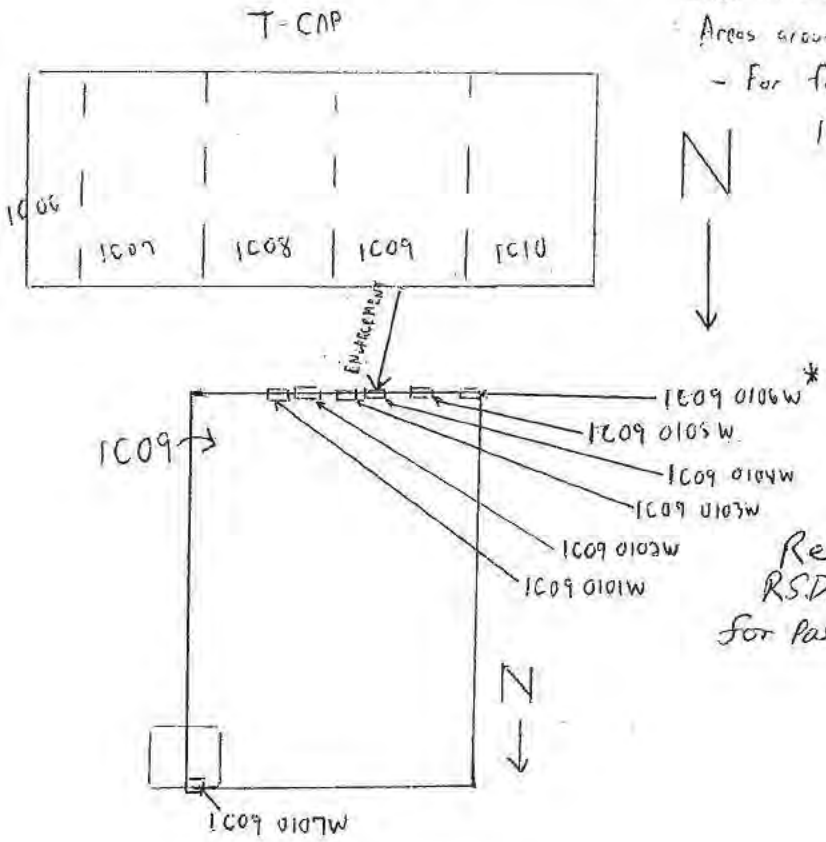
# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C09) | SURVEY NO. MT.05-1345 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Walls | RWP NO. N/A |
| | DATE: 12-20-05 |
| RESRAD | TIME: 0900 |

## MAP / DRAWING

- See Attachments for reading results. Areas around direct frisks also scanned.
- For follow-up survey on location 1C09 0102W, see Survey # MT-05-~~1345~~ 1350. PH 12-22-05




* - Denotes location with cluster of 2 painted circles

Reference: RSDS # MT-06-0323 for Post-Remediation survey

Sm23 summary attached.

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·· = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| Sm23 | C180 / R180 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | [redacted] | Date: 12-20-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | HP# [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F 145/686

Survey No. MT-05-1345



2/11/06

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C09 0101W |
| 2 | ↓ | ↓ | ↓ | 1C09 0102W |
| 3 | | | | 1C09 0103W |
| 4 | | | | 1C09 0104W |
| 5 | | | | 1C09 0105W |
| 6 | | | | 1C09 0106W |
| 7 | | | | 1C09 0107W |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

NOTES:
1. See MD-60036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-95)

F146/686

3.f.7 2/01/06

Protocol# 2 - MARSSIM_Smear_2.lsa User: 5801

MARSSIM Smear Data

JM 1-3-06

MT-05-1345

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20051227_0856.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1345.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

1-147/086

4.19

JM
1-3-06

## MARSSIM Smear Data

B
C

MT-05-1345

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 8:57:16 AM | -1 | 10.00 | 9 | 8 | 10 | 5 | 607.96 | 0 | 21.6 | B | 2 |
| 12/27/05 | 9:08:06 AM | 0 | 2.00 | 513 | 481 | 2 | 0 | 572.49 | 972 | 6.3 | | 2 |
| 12/27/05 | 9:10:47 AM | 1 | 2.00 | 1 | 1 | 1 | 11 | 558.63 | 2 | 520.4 | | 2 |
| 12/27/05 | 9:13:30 AM | 2 | 2.00 | 0 | 0 | 1 | 7 | 570.85 | 0 | 0.0 | | 2 |
| 12/27/05 | 9:16:12 AM | 3 | 2.00 | 0 | 0 | 4 | 6 | 609.95 | 0 | 0.0 | | 2 |
| 12/27/05 | 9:18:54 AM | 4 | 2.00 | 0 | 0 | 3 | 7 | 563.94 | 0 | 0.0 | | 2 |
| 12/27/05 | 9:21:35 AM | 5 | 2.00 | 1 | 1 | 0 | 5 | 534.59 | 3 | 343.3 | | 2 |
| 12/27/05 | 9:24:18 AM | 6 | 2.00 | 0 | 0 | 3 | 0 | 590.08 | 0 | 0.0 | | 2 |
| 12/27/05 | 9:27:00 AM | 7 | 2.00 | 1 | 0 | 0 | 0 | 510.75 | 2 | 520.4 | | 2 |

JM

148/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_096
Batch Ended: 12/22/05 14:05
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1345 KING [7] GWD ✓

| Detector ID | Sample. ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.23 | | 3.08 | 2.61 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 1.93 | 2.33 | | 4.00 | 2.81 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 1.52 | 1.89 | | 0.00 | 1.68 | |
| B2 | 6 | 1.54 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 1.66 | 2.20 | | 0.00 | 1.87 | |

J.K. J.K.

5 of 8 7a 2/19/06

~~Page 1 of 1~~ J.H. 1-3-06

F149/096

# T-Building T-CAP (1C09);Survey of Suspected Elevated Spots on Walls

*RSDS#* MT-05-1345 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C090101W | 5895 | [redacted] | 5896 | 1 | 1 | 12/20/05 | 7:18 | 7 | 120 | 26 |
| ALPHA | 1C090102W | 5895 | [redacted] | 5896 | 1 | 2 | 12/20/05 | 7:33 | 49 | 120 | 180 |
| ALPHA | 1C090103W | 5895 | [redacted] | 5896 | 1 | 3 | 12/20/05 | 7:51 | 214 | 120 | 784 |
| ALPHA | 1C090104W | 5895 | [redacted] | 5896 | 1 | 4 | 12/20/05 | 7:58 | 105 | 120 | 385 |
| ALPHA | 1C090105W | 5895 | [redacted] | 5896 | 1 | 5 | 12/20/05 | 8:15 | 109 | 120 | 399 |
| ALPHA | 1C090106W | 5895 | [redacted] | 5896 | 1 | 6 | 12/20/05 | 8:27 | 32 | 120 | 117 |
| ALPHA | 1C090107W | 5895 | [redacted] | 5896 | 1 | 7 | 12/20/05 | 8:36 | 4 | 120 | 15 |
| BETA | 1C090101W | 5895 | [redacted] | 5896 | 2 | 1 | 12/20/05 | 7:19 | 1078 | 60 | 10065 |
| BETA | 1C090102W | 5895 | [redacted] | 5896 | 2 | 2 | 12/20/05 | 7:34 | 163 | 60 | 1522 |
| BETA | 1C090103W | 5895 | [redacted] | 5896 | 2 | 3 | 12/20/05 | 7:52 | 3870 | 60 | 36134 |
| BETA | 1C090104W | 5895 | [redacted] | 5896 | 2 | 4 | 12/20/05 | 7:59 | 573 | 60 | 5350 |
| BETA | 1C090105W | 5895 | [redacted] | 5896 | 2 | 5 | 12/20/05 | 8:16 | 1391 | 60 | 12988 |
| BETA | 1C090106W | 5895 | [redacted] | 5896 | 2 | 6 | 12/20/05 | 8:28 | 1651 | 60 | 15415 |
| BETA | 1C090107W | 5895 | [redacted] | 5896 | 2 | 7 | 12/20/05 | 8:37 | 72 | 60 | 672 |

N

A

COPY



2/4/06

F150/686

**Survey Unit Number:** 1C09



2/14/06

(Supplemental sheet for biased measurements.)

RSDS # M7-05-1345

RCT INT/HP 2K [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C09 0101 W | T CAP (1C09) | South Wall | N/A | N/A |
| 1C09 0102 W | ↓ | ↓ | ↓ | ↓ |
| 1C09 0103 W | ↓ | ↓ | ↓ | ↓ |
| 1C09 0104 W | ↓ | ↓ | ↓ | ↓ |
| 1C09 0105 W | ↓ | ↓ | ↓ | ↓ |
| 1C09 0106 W | ↓ | ↓ | ↓ | ↓ |
| 1C09 0107 W | ↓ | North Wall | ↓ | ↓ |
| N/A | N/A | N/A | ↓ | ↓ |
| ↓ | ↓ | ↓ | ↓ | ↓ |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F151/686

COPY

# Surface Contamination Monitor Survey Investigation Summary

| | |
|---|---|
| Survey Unit | 1C-17 (Includes 1C-18, 1C-19, 1C-10) |
| SCM ID (Circle One) | SCM 53<br>(SCM 23) |
| Calibration Due Date | 06-01-06 |

| Room | Surface | Investigations | |
|---|---|---|---|
| T-Cap | Floor - East | 58 | (for 58 spots) |
| " | Floor - West | 3 | (Marked for Resrad - Includes 5 highest Alpha and 5 highest Beta) |
| T-Cap | Walls | 30 | (for 36 spots) |
| T-Cap Sump Pits | Walls Only | 38 | (for 48 spots) |

Note: 2 floor spots and 1 wall spot from T-CAP Floor East and walls are actually located in Corridor 39, north end.

COPY

Name Sherry Oran

Signature Sherry Oran

Date 12-19-05

# RADIOLOGICAL SURVEY DATA SHEET



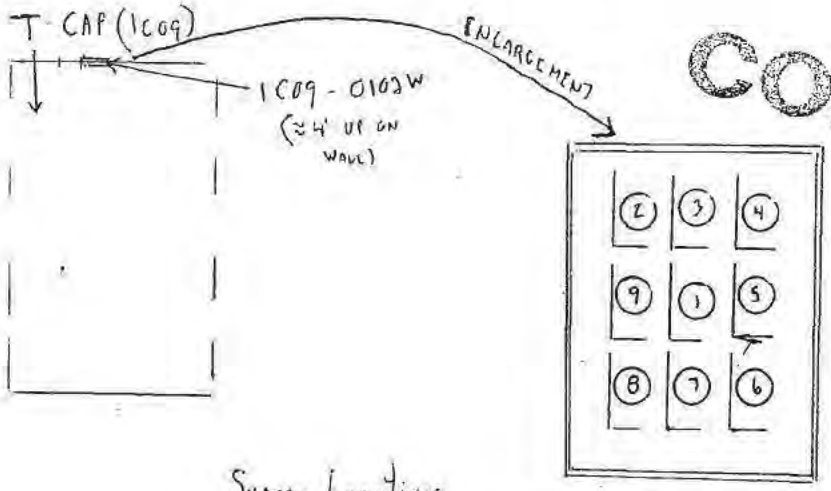
| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) J-BLDG T CAP (1C09) | SURVEY NO. MT-05-1350 |
| PURPOSE: Follow-up Survey on Elevated Spot 1C09 0103W. 9 Spot Averaging RESRAD | RWP NO N/A |
| | DATE: 12-21-05 |
| | TIME: 0900 |

Follow-up ORIGINAL RSDS MT-05-1345 MAP / DRAWING

See Attachments

Average alpha reading for 9 locations was 30.6 dpm/100 cm²

See Survey # MT-05-1345 for original readings for location 1C09 0103W




COPY

Survey Locations

| | | |
|---|---|---|
| (1) 1C09 0103W | (4) 1C09 103WC | (7) 1C09 103WF |
| (2) 1C09 103WA | (5) 1C09 103WD | (8) 1C09 103WG |
| (3) 1C09 103WB | (6) 1C09 103WE | (9) 1C09 103WH |

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·· = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) BJ Roe | [redacted] | Date: 12-21-05 |
| Completed by: (Print Name) T. King BJ Roe | | |
| Counted by: (Signature) See | HP# N/A | Date: N/A |
| Counted by: (Print Name) attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F153/686

Survey No. MT 05-1350



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See Attached Sheets | | | 1C09 0102W |
| 2 | | | | 1C09 102WA |
| 3 | | | | 1C09 102WB |
| 4 | | | | 1C09 102WC |
| 5 | | | | 1C09 102WD |
| 6 | | | | 1C09 102WE |
| 7 | | | | 1C09 102WF |
| 8 | | | | 1C09 102WG |
| 9 | | | | 1C09 102WH |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

N/A

COMMENTS: N/A

NOTES:
1. See MD-80036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

COPY

F154/686

3.56
2M
1-3-06

**MARSSIM Smear Data**

COPY

MT-05-1350

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20051227_1622.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1350.001 ✓
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

1-155/686

4 of 6

ZH 1-3-06

MARSSIM Smear Data

MT-05-1350

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 4:23:27 PM | -1 | 10.00 | 11 | 10 | 13 | 12 | 598.72 | 0 | 19.3 | B | 2 |
| 12/27/05 | 4:34:16 PM | 0 | 2.00 | 503 | 472 | 0 | 1 | 569.79 | 954 | 6.4 | | 2 |
| 12/27/05 | 4:36:57 PM | 1 | 2.00 | 0 | 0 | 0 | 7 | 543.00 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:39:39 PM | 2 | 2.00 | 0 | 0 | 0 | 5 | 587.78 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:42:21 PM | 3 | 2.00 | 0 | 0 | 0 | 7 | 511.01 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:45:03 PM | 4 | 2.00 | 0 | 0 | 0 | 10 | 515.89 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:47:46 PM | 5 | 2.00 | 0 | 0 | 0 | 8 | 457.45 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:50:27 PM | 6 | 2.00 | 0 | 0 | 0 | 15 | 501.56 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:53:09 PM | 7 | 2.00 | 0 | 0 | 0 | 7 | 539.53 | 0 | 0.0 | | 2 |
| 12/27/05 | 4:55:51 PM | 8 | 2.00 | 0 | 0 | 0 | 9 | 528.15 | 1 | 1356.7 | | 2 |
| 12/27/05 | 4:58:32 PM | 9 | 2.00 | 0 | 0 | 0 | 13 | 509.74 | 0 | 0.0 | | 2 |

ZH

F 1/26/06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_086
Batch Ended: 12/22/05 11:05
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1350 KING [9] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.91 | | 1.23 | 2.06 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.10 | | 3.94 | 2.75 | |

BL BL



3.4 1-3-06

1154/686

# T-Building T-Cap (1C09);Follow-up on 1C090102W;9-Spot Averaging

*RSDS#* MT-05-1350 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C090102W | 5895 | [redacted] | 5896 | 1 | 1 | 12/21/05 | 7:11 | 34 | 120 | 125 |
| ALPHA | 1C09102WA | 5895 | [redacted] | 5896 | 1 | 2 | 12/21/05 | 7:15 | 5 | 120 | 18 |
| ALPHA | 1C09102WB | 5895 | [redacted] | 5896 | 1 | 3 | 12/21/05 | 7:19 | 6 | 120 | 22 |
| ALPHA | 1C09102WC | 5895 | [redacted] | 5896 | 1 | 4 | 12/21/05 | 7:22 | 3 | 120 | 11 |
| ALPHA | 1C09102WD | 5895 | [redacted] | 5896 | 1 | 5 | 12/21/05 | 7:26 | 2 | 120 | 7 |
| ALPHA | 1C09102WE | 5895 | [redacted] | 5896 | 1 | 6 | 12/21/05 | 7:30 | 2 | 120 | 7 |
| ALPHA | 1C09102WF | 5895 | [redacted] | 5896 | 1 | 7 | 12/21/05 | 7:33 | 4 | 120 | 15 |
| ALPHA | 1C09102WG | 5895 | [redacted] | 5896 | 1 | 8 | 12/21/05 | 7:38 | 3 | 120 | 11 |
| ALPHA | 1C09102WH | 5895 | [redacted] | 5896 | 1 | 9 | 12/21/05 | 7:41 | 16 | 120 | 59 ✓ |
| BETA | 1C090102W | 5895 | [redacted] | 5896 | 2 | 1 | 12/21/05 | 7:12 | 178 | 60 | 1662 |
| BETA | 1C09102WA | 5895 | [redacted] | 5896 | 2 | 2 | 12/21/05 | 7:16 | 168 | 60 | 1569 |
| BETA | 1C09102WB | 5895 | [redacted] | 5896 | 2 | 3 | 12/21/05 | 7:20 | 191 | 60 | 1783 |
| BETA | 1C09102WC | 5895 | [redacted] | 5896 | 2 | 4 | 12/21/05 | 7:24 | 257 | 60 | 2400 |
| BETA | 1C09102WD | 5895 | [redacted] | 5896 | 2 | 5 | 12/21/05 | 7:27 | 256 | 60 | 2390 |
| BETA | 1C09102WE | 5895 | [redacted] | 5896 | 2 | 6 | 12/21/05 | 7:31 | 341 | 60 | 3184 |
| BETA | 1C09102WF | 5895 | [redacted] | 5896 | 2 | 7 | 12/21/05 | 7:34 | 260 | 60 | 2428 |
| BETA | 1C09102WG | 5895 | [redacted] | 5896 | 2 | 8 | 12/21/05 | 7:39 | 263 | 60 | 2456 |
| BETA | 1C09102WH | 5895 | [redacted] | 5896 | 2 | 9 | 12/21/05 | 7:42 | 166 | 60 | 1550 ✓ |

N

A

COPY



F158/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG /AREA/ROOM) 7-Bldg. - 7-Cap | SURVEY NO MT-06-0076 |
| PURPOSE Scan of lower walls inaccessible by Ludlum with 2350 and SCM23 scan of floors and walls 1009 | RWP NO N/A |
| | DATE: 1-19-06 |
| | TIME 1300 |

MAP / DRAWING

See attached
The elevated 4/5 detailed drawing scan

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM23 | C180 / R180 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) R.J. Roe / Neal Reynolds | | Date: 1-19-06 |
| Completed by: (Print Name) R.J. Roe / NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HP# | Date: |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) Jeff Brine | | |

F159/686

Survey No. MT-06-0076

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | N/A | |
| 21 | | N/A | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | N/A | | |
| 54 | | | | |
| 55 | | N/A | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.



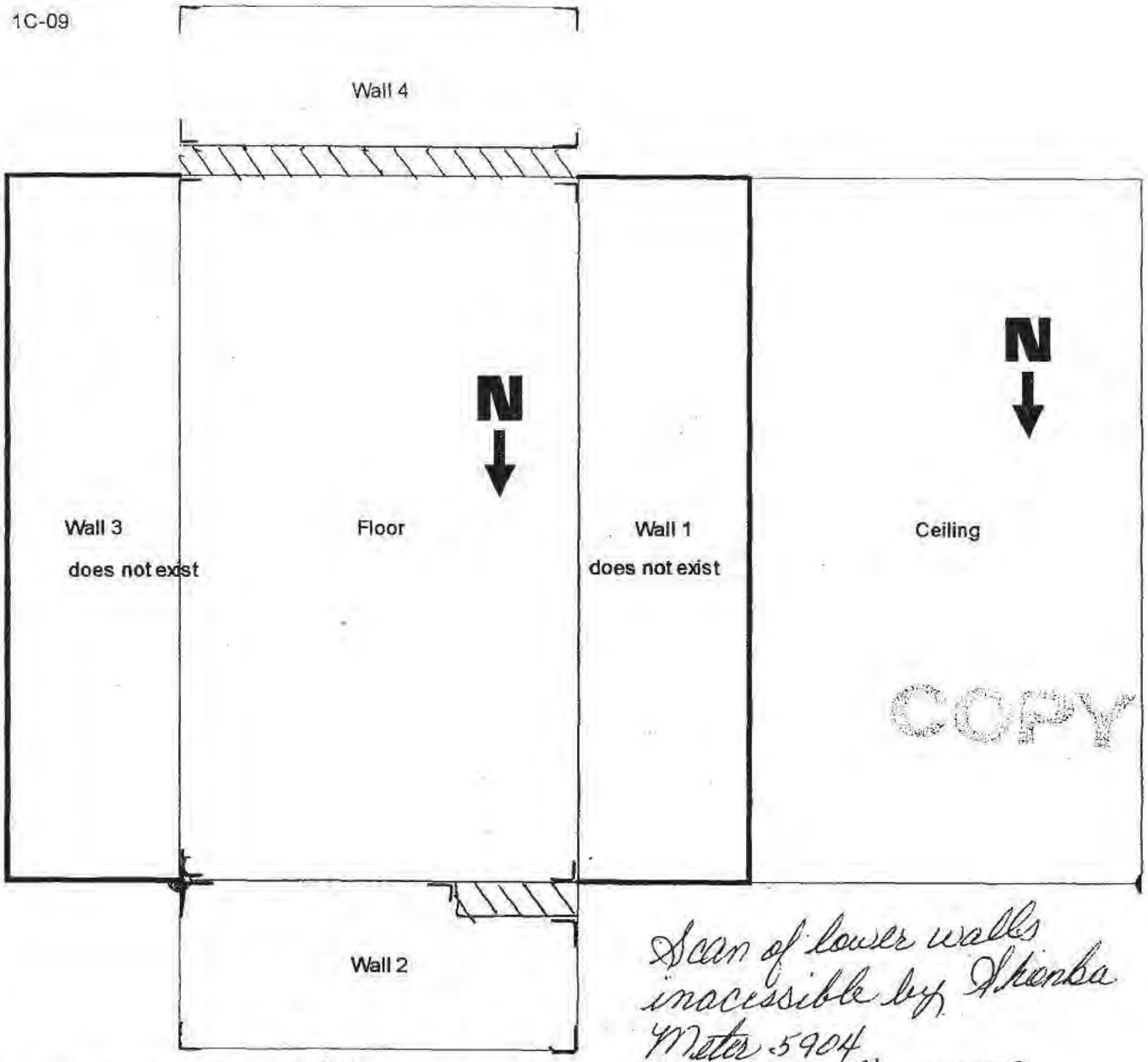
F160/686

MT-06 0076
Pg 3 of 3

BR 1-19-06

1C-09 100% scan of ~~floor~~ and walls up to 2 meters.
Class 1 ~~25% scan on walls above 2 meters~~ BR 1-19-06

1C-09




Scan of lower walls inacessible by Skanba
Meter 5904
Probe ~~5861~~ BR 1-19-06 5905
Cal due 2/22/06
Meter 5854
Probe 5861
Cal due 7/28/06
BR [redacted]
MR [redacted]

SCM23 Scanned 100% of floor, 100% of walls up to 2 meters, and 25% of walls over 2 meters.

F161/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-BLDG T CAP (1010 & 1009) | SURVEY NO MT-06-0087 |
| PURPOSE RES RAD Survey (Floor Only) STATICS CORE SAMPLING ONLY | RWP NO N/A |
| | DATE 1-25-06 |
| | TIME 1600 |

MAP / DRAWING

See Attachments

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm² 2K

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 & 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) | J. King / J. Gauthier | | Date: 1-24-06 |
| Completed by: (Print Name) | T. King / J. Gauthier | | |
| Counted by: (Signature) | See Attachments | HP# N/A | Date: N/A |
| Counted by: (Print Name) | See Attachments | | |
| Reviewed/Approved by: (Signature) | Jerry Taylor | | Date: 2-9-06 |
| Reviewed/Approved by: (Print Name) | Jerry Taylor | | |

F162/686

Survey No. MT-06-0087

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 48 01R |
| 2 | | | | 48 02R |
| 3 | | | | 48 03R |
| 4 | | | | 48 04R |
| 5 | | | | 48 05R |
| 6 | | | | 48 06R |
| 7 | | | | 48 07R |
| 8 | | | | 48 08R |
| 9 | | | | 48 09R |
| 10 | | | | 48 10R |
| 11 | | | | 48 11R |
| 12 | | | | 48 12R |
| 13 | | | | 48 13R |
| 14 | | | | 48 14R |
| 15 | | | | 48 15R |
| 16 | | | | 48 16R |
| 17 | | | | 48 17R |
| 18 | | | | 48 18R |
| 19 | | | | 48 19R |
| 20 | | | | 48 20R |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | N | | |
| 28 | | | | |
| 29 | | A | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | N | | |
| 52 | | A | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
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| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F163/686

MI 0820 (4-98)

**MARSSIM Smear Data**

PM 1-25-06

MT-06-0087

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060124_1100.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0087.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F164/686

MARSSIM Smear Data

4.4.1

J.H 1-25-06

MT-06-0087

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/24/06 | 11:00:42 AM | -1 | 10.00 | 9 | 9 | 13 | 4 | 625.73 | 0 | 20.7 | B | 2 |
| 1/24/06 | 11:11:26 AM | 0 | 2.00 | 127 | 120 | 0 | 3 | 532.56 | 250 | 13.1 | | 2 |
| 1/24/06 | 11:14:09 AM | 1 | 2.00 | 1 | 0 | 0 | 5 | 613.00 | 2 | 401.7 | | 2 |
| 1/24/06 | 11:16:51 AM | 2 | 2.00 | 0 | 0 | 0 | 8 | 607.94 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:19:34 AM | 3 | 2.00 | 0 | 0 | 0 | 5 | 635.83 | 0 | 3726.1 | | 2 |
| 1/24/06 | 11:22:18 AM | 4 | 2.00 | 0 | 0 | 0 | 6 | 534.32 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:25:02 AM | 5 | 2.00 | 2 | 2 | 0 | 9 | 542.19 | 4 | 250.6 | | 2 |
| 1/24/06 | 11:27:45 AM | 6 | 2.00 | 0 | 0 | 0 | 20 | 549.50 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:30:28 AM | 7 | 2.00 | 0 | 0 | 0 | 5 | 552.47 | 0 | 2117.9 | | 2 |
| 1/24/06 | 11:33:11 AM | 8 | 2.00 | 1 | 0 | 0 | 10 | 571.76 | 1 | 723.8 | | 2 |
| 1/24/06 | 11:35:53 AM | 9 | 2.00 | 0 | 0 | 0 | 15 | 597.07 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:38:35 AM | 10 | 2.00 | 0 | 1 | 0 | 11 | 533.40 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:41:18 AM | 11 | 2.00 | 0 | 0 | 0 | 11 | 550.55 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:44:02 AM | 12 | 2.00 | 0 | 0 | 0 | 15 | 577.28 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:46:44 AM | 13 | 2.00 | 0 | 0 | 0 | 6 | 596.56 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:49:25 AM | 14 | 2.00 | 1 | 0 | 0 | 5 | 576.11 | 1 | 782.3 | | 2 |
| 1/24/06 | 11:52:09 AM | 15 | 2.00 | 0 | 0 | 0 | 9 | 565.19 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:54:50 AM | 16 | 2.00 | 0 | 0 | 0 | 6 | 620.13 | 0 | 0.0 | | 2 |
| 1/24/06 | 11:57:56 AM | 17 | 2.00 | 1 | 1 | 0 | 10 | 611.94 | 1 | 723.8 | | 2 |
| 1/24/06 | 12:00:41 PM | 18 | 2.00 | 2 | 2 | 0 | 9 | 548.23 | 3 | 303.2 | | 2 |
| 1/24/06 | 12:03:24 PM | 19 | 2.00 | 0 | 0 | 0 | 12 | 584.75 | 0 | 0.0 | | 2 |
| 1/24/06 | 12:06:05 PM | 20 | 2.00 | 0 | 0 | 0 | 7 | 619.20 | 0 | 0.0 | | 2 |

J.H

F165/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_064
Batch Ended: 1/24/06 7:38
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0087 [20] KING 1-24-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 1.61 | 2.05 | | 2.50 | 2.33 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 0.00 | 1.89 | | 1.32 | 1.93 | |
| B3 | 7 | 0.00 | 2.22 | | 1.52 | 2.29 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.09 | | 2.71 | 2.46 | |
| C2 | 10 | 1.41 | 1.91 | | 0.00 | 1.12 | |
| C3 | 11 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 12 | 0.00 | 1.95 | | 0.00 | 1.13 | |
| D1 | 13 | 0.00 | 2.07 | | 1.54 | 2.16 | |
| D2 | 14 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 15 | 0.00 | 2.13 | | 2.66 | 2.48 | |
| D4 | 16 | 0.00 | 2.04 | | 0.00 | 1.17 | |
| C1 | 17 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 18 | 0.00 | 1.96 | | 3.84 | 2.52 | |
| C3 | 19 | 0.00 | 2.08 | | 1.49 | 2.11 | |
| C4 | 20 | 0.00 | 1.95 | | 0.00 | 1.13 | |

J.H J.H

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J.H 1-25-06

F166/686

# T-Building T-CAP; 1C09 and 1C10; RES RAD Survey

*RSDS#* MT-06-0087 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | cm² | Surface Eff: | 0.5 | Detector #: | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | cm² | Surface Eff: | 0.5 | Detector #: | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | 0.5 | Detector #: | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | cm² | Surface Eff: | 0.5 | Detector #: | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 4801R | 5895 | [redacted] | 5896 | 1 | 1 | 1/23/06 | 13:17 | 12 | 120 | 44 |
| ALPHA | 4802R | 5895 | [redacted] | 5896 | 1 | 2 | 1/23/06 | 13:23 | 3 | 120 | 11 |
| ALPHA | 4803R | 5895 | [redacted] | 5896 | 1 | 3 | 1/23/06 | 13:27 | 3 | 120 | 11 |
| ALPHA | 4804R | 5895 | [redacted] | 5896 | 1 | 4 | 1/23/06 | 13:32 | 6 | 120 | 22 |
| ALPHA | 4805R | 5895 | [redacted] | 5896 | 1 | 5 | 1/23/06 | 13:37 | 8 | 120 | 29 |
| ALPHA | 4806R | 5895 | [redacted] | 5896 | 1 | 6 | 1/23/06 | 13:42 | 7 | 120 | 26 |
| ALPHA | 4807R | 5895 | [redacted] | 5896 | 1 | 7 | 1/23/06 | 13:47 | 9 | 120 | 33 |
| ALPHA | 4808R | 5895 | [redacted] | 5896 | 1 | 8 | 1/23/06 | 14:34 | 6 | 120 | 22 |
| ALPHA | 4809R | 5895 | [redacted] | 5896 | 1 | 9 | 1/23/06 | 14:38 | 5 | 120 | 18 |
| ALPHA | 4810R | 5895 | [redacted] | 5896 | 1 | 10 | 1/23/06 | 14:42 | 5 | 120 | 18 |
| ALPHA | 4811R | 5895 | [redacted] | 5896 | 1 | 11 | 1/23/06 | 14:46 | 5 | 120 | 18 |
| ALPHA | 4812R | 5895 | [redacted] | 5896 | 1 | 12 | 1/23/06 | 14:51 | 6 | 120 | 22 |
| ALPHA | 4813R | 5895 | [redacted] | 5896 | 1 | 13 | 1/23/06 | 14:56 | 4 | 120 | 15 |
| ALPHA | 4814R | 5895 | [redacted] | 5896 | 1 | 14 | 1/23/06 | 14:59 | 4 | 120 | 15 |
| ALPHA | 4815R | 5895 | [redacted] | 5896 | 1 | 15 | 1/23/06 | 15:04 | 17 | 120 | 62 |
| ALPHA | 4816R | 5895 | [redacted] | 5896 | 1 | 16 | 1/23/06 | 15:07 | 7 | 120 | 26 |
| ALPHA | 4817R | 5895 | [redacted] | 5896 | 1 | 17 | 1/23/06 | 15:13 | 2 | 120 | 7 |
| ALPHA | 4818R | 5895 | [redacted] | 5896 | 1 | 18 | 1/23/06 | 15:17 | 4 | 120 | 15 |
| ALPHA | 4819R | 5895 | [redacted] | 5896 | 1 | 19 | 1/23/06 | 15:22 | 12 | 120 | 44 |
| ALPHA | 4820R | 5895 | [redacted] | 5896 | 1 | 20 | 1/23/06 | 15:26 | 5 | 120 | 18 ✓ |
| BETA | 4801R | 5895 | [redacted] | 5896 | 2 | 1 | 1/23/06 | 13:19 | 117 | 60 | 1092 |
| BETA | 4802R | 5895 | [redacted] | 5896 | 2 | 2 | 1/23/06 | 13:24 | 127 | 60 | 1186 |
| BETA | 4803R | 5895 | [redacted] | 5896 | 2 | 3 | 1/23/06 | 13:28 | 158 | 60 | 1475 |
| BETA | 4804R | 5895 | [redacted] | 5896 | 2 | 4 | 1/23/06 | 13:33 | 200 | 60 | 1867 |
| BETA | 4805R | 5895 | [redacted] | 5896 | 2 | 5 | 1/23/06 | 13:38 | 110 | 60 | 1027 |
| BETA | 4806R | 5895 | [redacted] | 5896 | 2 | 6 | 1/23/06 | 13:44 | 88 | 60 | 822 |
| BETA | 4807R | 5895 | [redacted] | 5896 | 2 | 7 | 1/23/06 | 13:48 | 130 | 60 | 1214 |
| BETA | 4808R | 5895 | [redacted] | 5896 | 2 | 8 | 1/23/06 | 14:35 | 229 | 60 | 2138 |
| BETA | 4809R | 5895 | [redacted] | 5896 | 2 | 9 | 1/23/06 | 14:39 | 159 | 60 | 1485 |
| BETA | 4810R | 5895 | [redacted] | 5896 | 2 | 10 | 1/23/06 | 14:43 | 129 | 60 | 1204 |
| BETA | 4811R | 5895 | [redacted] | 5896 | 2 | 11 | 1/23/06 | 14:48 | 706 | 60 | [redacted] |
| BETA | 4812R | 5895 | [redacted] | 5896 | 2 | 12 | 1/23/06 | 14:52 | 473 | 60 | 4416 |
| BETA | 4813R | 5895 | [redacted] | 5896 | 2 | 13 | 1/23/06 | 14:57 | 117 | 60 | 1092 |
| BETA | 4814R | 5895 | [redacted] | 5896 | 2 | 14 | 1/23/06 | 15:01 | 102 | 60 | 952 |
| BETA | 4815R | 5895 | [redacted] | 5896 | 2 | 15 | 1/23/06 | 15:05 | 126 | 60 | 1176 |
| BETA | 4816R | 5895 | [redacted] | 5896 | 2 | 16 | 1/23/06 | 15:08 | 259 | 60 | 2418 |
| BETA | 4817R | 5895 | [redacted] | 5896 | 2 | 17 | 1/23/06 | 15:14 | 108 | 60 | 1008 |
| BETA | 4818R | 5895 | [redacted] | 5896 | 2 | 18 | 1/23/06 | 15:18 | 96 | 60 | 896 |
| BETA | 4819R | 5895 | [redacted] | 5896 | 2 | 19 | 1/23/06 | 15:23 | 618 | 60 | [redacted] |
| BETA | 4820R | 5895 | [redacted] | 5896 | 2 | 20 | 1/23/06 | 15:27 | 125 | 60 | 1167 ✓ |
| | | | | | | | | | | | |
| | | | | | | | | | | | |



F167/686

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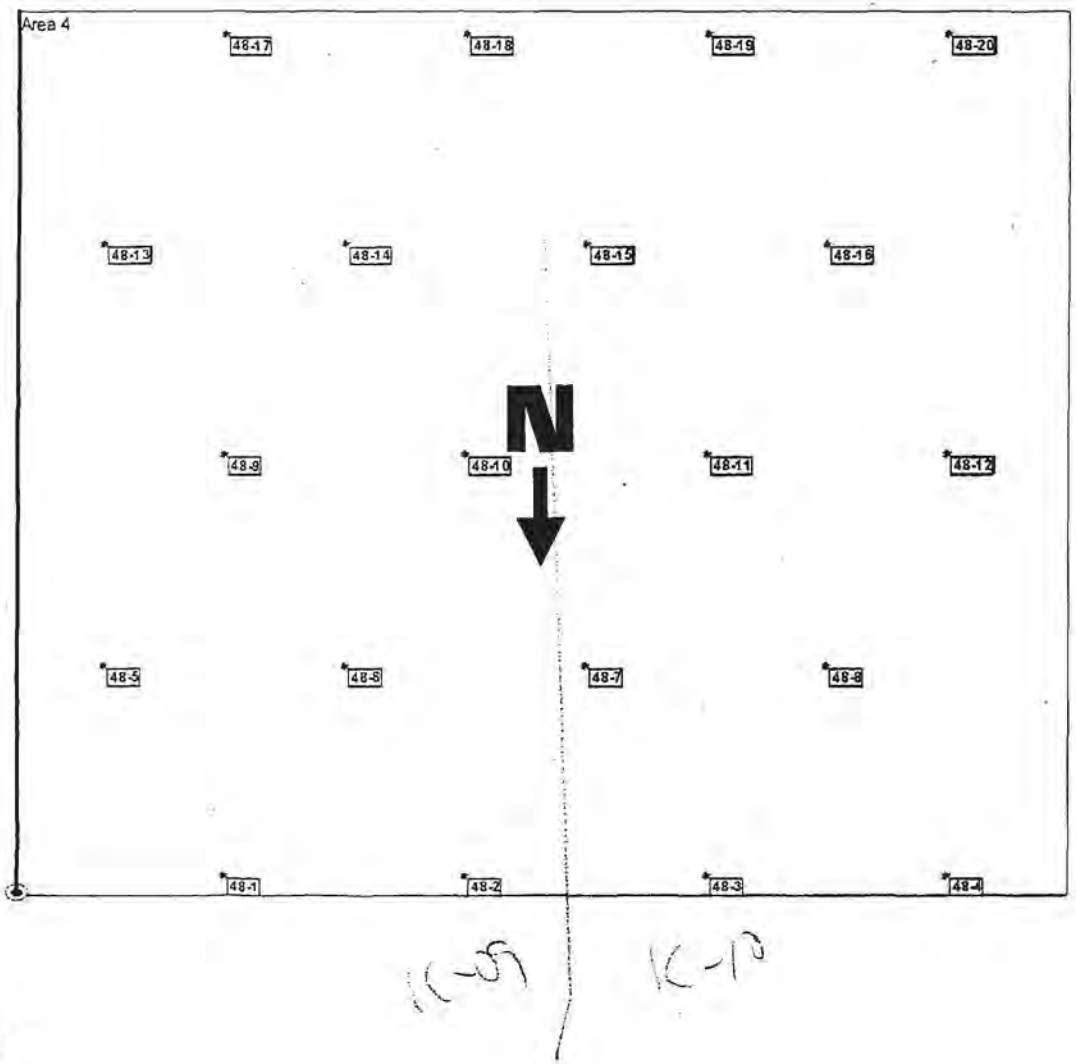
MT-06-0087

COPY

**Cap area - (1C-09 and 1C-10 only)**
**static measurement locations for core sampling**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at each static location on the floor.
Composite bulk sample with bulk samples taken at judgmental locations on the floor.




| Label | Type | Surface | LX | LY |
|---|---|---|---|---|
| 48-1 | Systematic | Floor | 10 | 1 |
| 48-2 | Systematic | Floor | 21 | 1 |
| 48-3 | Systematic | Floor | 33 | 1 |
| 48-4 | Systematic | Floor | 44 | 1 |
| 48-5 | Systematic | Floor | 4 | 11 |
| 48-6 | Systematic | Floor | 16 | 11 |
| 48-7 | Systematic | Floor | 27 | 11 |
| 48-8 | Systematic | Floor | 38 | 11 |
| 48-9 | Systematic | Floor | 10 | 21 |
| 48-10 | Systematic | Floor | 21 | 21 |
| 48-11 | Systematic | Floor | 33 | 21 |
| 48-12 | Systematic | Floor | 44 | 21 |
| 48-13 | Systematic | Floor | 4 | 31 |
| 48-14 | Systematic | Floor | 16 | 31 |
| 48-15 | Systematic | Floor | 27 | 31 |
| 48-16 | Systematic | Floor | 38 | 31 |
| 48-17 | Systematic | Floor | 10 | 40 |
| 48-18 | Systematic | Floor | 21 | 40 |
| 48-19 | Systematic | Floor | 33 | 40 |
| 48-20 | Systematic | Floor | 44 | 40 |

F 168/666

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T. BLDG T-CAP (1C09) | SURVEY NO MT 06 0089 |
| PURPOSE Lower Statics | RWP NO N/A |
| | DATE 1-24-06 |
| RESEAD | TIME 1030 |

MAP / DRAWING

See Attachments

Dose Rate BKGD 4 G/A 4

Bicron S/N 3981 Micro Rem 8R 1-24-06 cal due

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) J. Kly J. Gauthier | | Date: 1-24-06 |
| Completed by: (Print Name) J. Kly J. Gauthier | | |
| Counted by: (Signature) See Attachments | HP# | Date: |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 2-9-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F 169/686

Survey No. MT-06-0089

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C09 0101 S |
| 2 | | | | 1C09 0102 S |
| 3 | | | | 1C09 0103 S |
| 4 | | | | 1C09 0104 S |
| 5 | | | | 1C09 0105 S |
| 6 | | | | 1C09 0106 S |
| 7 | | | | 1C09 0107 S |
| 8 | | | | 1C09 0108 S |
| 9 | | | | 1C09 0109 S |
| 10 | | | | 1C09 0110 S |
| 11 | | | | 1C09 0111 S |
| 12 | | | | 1C09 0112 S |
| 13 | | | | 1C09 0113 S |
| 14 | | | | 1C09 0114 S |
| 15 | | | | 1C09 0115 S |
| 16 | | | | 1C09 0116 S |
| 17 | | | | 1C09 0117 S |
| 18 | | | | 1C09 0118 S |
| 19 | | | | 1C09 0119 S |
| 20 | | | | 1C09 0120 S |
| 21 21 | | | | 1C09 0121 S |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | N | | |
| 28 | | | | |
| 29 | | A | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | N | |
| 50 | | | A | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

**COMMENTS:**

N
A

**NOTES:**

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MI 0820 (4-98)

F170/686

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MARSSIM Smear Data

COPY

MT-06-0089

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060124_1305.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0089.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F-14/686

MARSSIM Smear Data

JK 1-25-06

MT-06-0089

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/24/06 | 1:06:14 PM | -1 | 10.00 | 10 | 9 | 13 | 5 | 609.43 | 0 | 19.9 | B | 1 |
| 1/24/06 | 1:17:05 PM | 0 | 2.00 | 501 | 471 | 0 | 0 | 577.15 | 944 | 6.4 | | 1 |
| 1/24/06 | 1:19:48 PM | 1 | 2.00 | 0 | 0 | 0 | 6 | 580.50 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:22:30 PM | 2 | 2.00 | 0 | 0 | 0 | 7 | 572.64 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:25:14 PM | 3 | 2.00 | 1 | 1 | 0 | 4 | 567.79 | 2 | 505.1 | | 1 |
| 1/24/06 | 1:27:56 PM | 4 | 2.00 | 0 | 0 | 0 | 6 | 556.97 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:30:39 PM | 5 | 2.00 | 0 | 0 | 6 | 6 | 597.20 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:33:22 PM | 6 | 2.00 | 0 | 0 | 1 | 10 | 548.92 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:36:05 PM | 7 | 2.00 | 0 | 0 | 0 | 10 | 556.84 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:38:47 PM | 8 | 2.00 | 4 | 2 | 0 | 3 | 587.14 | 7 | 153.4 | | 1 |
| 1/24/06 | 1:41:31 PM | 9 | 2.00 | 2 | 2 | 0 | 4 | 574.21 | 5 | 224.8 | | 1 |
| 1/24/06 | 1:44:15 PM | 10 | 2.00 | 2 | 1 | 0 | 8 | 530.70 | 4 | 255.7 | | 1 |
| 1/24/06 | 1:46:58 PM | 11 | 2.00 | 1 | 1 | 0 | 4 | 565.45 | 1 | 680.1 | | 1 |
| 1/24/06 | 1:49:41 PM | 12 | 2.00 | 6 | 4 | 3 | 6 | 547.83 | 11 | 102.5 | | 1 |
| 1/24/06 | 1:52:23 PM | 13 | 2.00 | 1 | 0 | 0 | 4 | 621.34 | 2 | 465.0 | | 1 |
| 1/24/06 | 1:55:05 PM | 14 | 2.00 | 0 | 0 | 0 | 6 | 596.26 | 0 | 0.0 | | 1 |
| 1/24/06 | 1:57:47 PM | 15 | 2.00 | 0 | 0 | 0 | 11 | 594.12 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:00:30 PM | 16 | 2.00 | 0 | 0 | 0 | 6 | 610.76 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:03:18 PM | 17 | 2.00 | 0 | 0 | 0 | 8 | 605.47 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:06:01 PM | 18 | 2.00 | 0 | 0 | 0 | 7 | 594.06 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:08:43 PM | 19 | 2.00 | 0 | 0 | 0 | 7 | 636.92 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:11:27 PM | 20 | 2.00 | 0 | 0 | 0 | 7 | 630.39 | 0 | 0.0 | | 1 |
| 1/24/06 | 2:14:09 PM | 21 | 2.00 | 0 | 0 | 0 | 11 | 597.45 | 0 | 0.0 | | 1 |

JK

F172/086

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_065
Batch Ended: 1/24/06 10:54
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0089 [21] KING 1-24-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.91 | | 1.23 | 2.06 | |
| B2 | 6 | 0.00 | 1.91 | | 2.43 | 2.23 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| C1 | 9 | 1.68 | 2.08 | | 1.33 | 2.13 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 11 | 0.00 | 2.08 | | 1.49 | 2.11 | |
| C4 | 12 | 0.00 | 1.95 | | 0.00 | 1.12 | |
| D1 | 13 | 1.76 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 15 | 0.00 | 2.13 | | 2.66 | 2.48 | |
| D4 | 16 | 0.00 | 2.08 | | 2.54 | 2.35 | |
| C1 | 17 | 0.00 | 2.07 | | 1.49 | 2.13 | |
| C2 | 18 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 19 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 20 | 0.00 | 1.95 | | 0.00 | 1.12 | |
| D1 | 21 | 0.00 | 2.05 | | 0.00 | 1.25 | |

JK JK

5 of 8

JK 1-25-06



F123/686

RLH

# T-Building T-CAP; 1C09; Lower Statics

*RSDS#* MT-06-0089 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C090101S | 5895 | [redacted] | 5896 | 1 | 1 | 1/24/06 | 6:49 | 12 | 120 | 44 |
| ALPHA | 1C090102S | 5895 | [redacted] | 5896 | 1 | 2 | 1/24/06 | 6:54 | 6 | 120 | 22 |
| ALPHA | 1C090103S | 5895 | [redacted] | 5896 | 1 | 3 | 1/24/06 | 6:59 | 6 | 120 | 22 |
| ALPHA | 1C090104S | 5895 | [redacted] | 5896 | 1 | 4 | 1/24/06 | 7:03 | 5 | 120 | 18 |
| ALPHA | 1C090105S | 5895 | [redacted] | 5896 | 1 | 5 | 1/24/06 | 7:07 | 18 | 120 | 66 |
| ALPHA | 1C090106S | 5895 | [redacted] | 5896 | 1 | 6 | 1/24/06 | 7:11 | 12 | 120 | 44 |
| ALPHA | 1C090107S | 5895 | [redacted] | 5896 | 1 | 7 | 1/24/06 | 7:15 | 9 | 120 | 33 |
| ALPHA | 1C090108S | 5895 | [redacted] | 5896 | 1 | 8 | 1/24/06 | 7:20 | 4 | 120 | 15 |
| ALPHA | 1C090109S | 5895 | [redacted] | 5896 | 1 | 9 | 1/24/06 | 7:24 | 6 | 120 | 22 |
| ALPHA | 1C090110S | 5895 | [redacted] | 5896 | 1 | 10 | 1/24/06 | 7:28 | 179 | 120 | 656 |
| ALPHA | 1C090111S | 5895 | [redacted] | 5896 | 1 | 11 | 1/24/06 | 7:34 | 4 | 120 | 15 |
| ALPHA | 1C090112S | 5895 | [redacted] | 5896 | 1 | 12 | 1/24/06 | 7:38 | 7 | 120 | 26 |
| ALPHA | 1C090113S | 5895 | [redacted] | 5896 | 1 | 13 | 1/24/06 | 7:42 | 5 | 120 | 18 |
| ALPHA | 1C090114S | 5895 | [redacted] | 5896 | 1 | 14 | 1/24/06 | 7:46 | 10 | 120 | 37 |
| ALPHA | 1C090115S | 5895 | [redacted] | 5896 | 1 | 15 | 1/24/06 | 7:55 | 13 | 120 | 48 |
| ALPHA | 1C090116S | 5895 | [redacted] | 5896 | 1 | 16 | 1/24/06 | 9:58 | 7 | 120 | 26 |
| ALPHA | 1C090117S | 5895 | [redacted] | 5896 | 1 | 17 | 1/24/06 | 10:02 | 9 | 120 | 33 |
| ALPHA | 1C090118S | 5895 | [redacted] | 5896 | 1 | 18 | 1/24/06 | 10:06 | 3 | 120 | 11 |
| ALPHA | 1C090119S | 5895 | [redacted] | 5896 | 1 | 19 | 1/24/06 | 10:11 | 4 | 120 | 15 |
| ALPHA | 1C090120S | 5895 | [redacted] | 5896 | 1 | 20 | 1/24/06 | 10:15 | 2 | 120 | 7 |
| ALPHA | 1C090121S | 5895 | [redacted] | 5896 | 1 | 21 | 1/24/06 | 10:19 | 5 | 120 | 18 |
| BETA | 1C090101S | 5895 | [redacted] | 5896 | 2 | 1 | 1/24/06 | 6:51 | 102 | 60 | 952 |
| BETA | 1C090102S | 5895 | [redacted] | 5896 | 2 | 2 | 1/24/06 | 6:56 | 198 | 60 | 1849 |
| BETA | 1C090103S | 5895 | [redacted] | 5896 | 2 | 3 | 1/24/06 | 7:00 | 133 | 60 | 1242 |
| BETA | 1C090104S | 5895 | [redacted] | 5896 | 2 | 4 | 1/24/06 | 7:04 | 122 | 60 | 1139 |
| BETA | 1C090105S | 5895 | [redacted] | 5896 | 2 | 5 | 1/24/06 | 7:08 | 188 | 60 | 1755 |
| BETA | 1C090106S | 5895 | [redacted] | 5896 | 2 | 6 | 1/24/06 | 7:12 | 133 | 60 | 1242 |
| BETA | 1C090107S | 5895 | [redacted] | 5896 | 2 | 7 | 1/24/06 | 7:17 | 118 | 60 | 1102 |
| BETA | 1C090108S | 5895 | [redacted] | 5896 | 2 | 8 | 1/24/06 | 7:21 | 138 | 60 | 1289 |
| BETA | 1C090109S | 5895 | [redacted] | 5896 | 2 | 9 | 1/24/06 | 7:25 | 110 | 60 | 1027 |
| BETA | 1C090110S | 5895 | [redacted] | 5896 | 2 | 10 | 1/24/06 | 7:29 | 2686 | 60 | 25079 |
| BETA | 1C090111S | 5895 | [redacted] | 5896 | 2 | 11 | 1/24/06 | 7:35 | 103 | 60 | 962 |
| BETA | 1C090112S | 5895 | [redacted] | 5896 | 2 | 12 | 1/24/06 | 7:39 | 90 | 60 | 840 |
| BETA | 1C090113S | 5895 | [redacted] | 5896 | 2 | 13 | 1/24/06 | 7:43 | 139 | 60 | 1298 |
| BETA | 1C090114S | 5895 | [redacted] | 5896 | 2 | 14 | 1/24/06 | 7:47 | 109 | 60 | 1018 |
| BETA | 1C090115S | 5895 | [redacted] | 5896 | 2 | 15 | 1/24/06 | 7:56 | 114 | 60 | 1064 |
| BETA | 1C090116S | 5895 | [redacted] | 5896 | 2 | 16 | 1/24/06 | 9:59 | 118 | 60 | 1102 |
| BETA | 1C090117S | 5895 | [redacted] | 5896 | 2 | 17 | 1/24/06 | 10:03 | 153 | 60 | 1429 |
| BETA | 1C090118S | 5895 | [redacted] | 5896 | 2 | 18 | 1/24/06 | 10:07 | 126 | 60 | 1176 |
| BETA | 1C090119S | 5895 | [redacted] | 5896 | 2 | 19 | 1/24/06 | 10:12 | 133 | 60 | 1242 |
| BETA | 1C090120S | 5895 | [redacted] | 5896 | 2 | 20 | 1/24/06 | 10:16 | 96 | 60 | 896 |
| BETA | 1C090121S | 5895 | [redacted] | 5896 | 2 | 21 | 1/24/06 | 10:20 | 80 | 60 | 747 |



F174/686

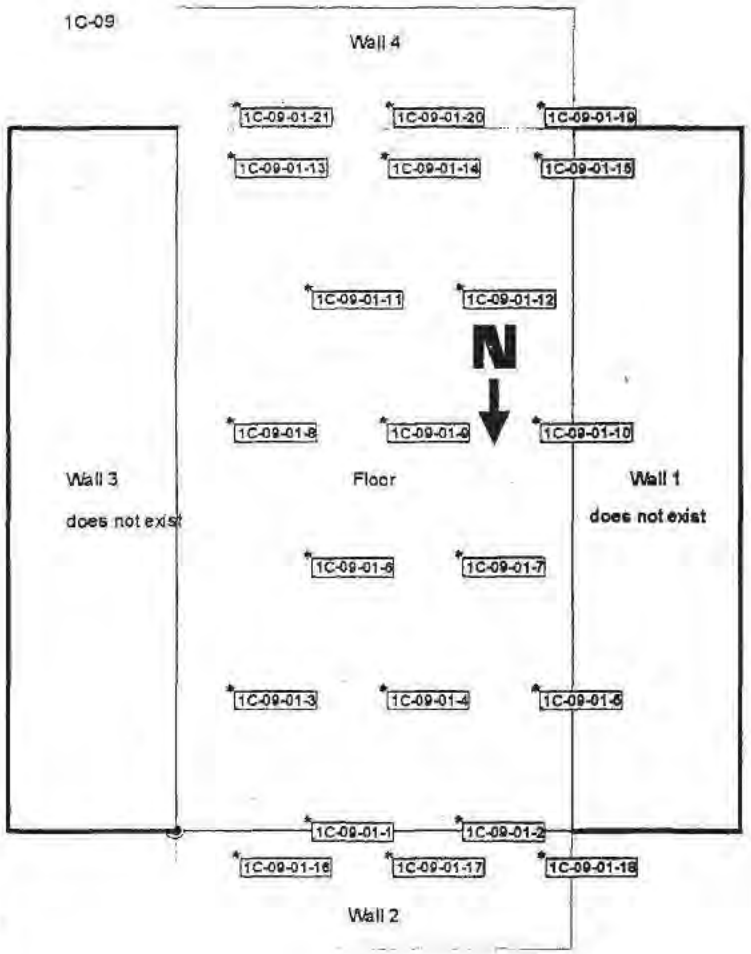
Pg 7 of 8

MT-06 0089

**1C-09-01**

**floor and lower wall static measurement locations**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at each static location on the floor.
Composite bulk sample with bulk samples taken at judgmental locations on the floor.




N/A (See page 8 for coordinates)

| Area: 1C-09 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-09-01-1 | Systematic | Floor | 8 | 1 |
| 1C-09-01-2 | Systematic | Floor | 17 | 1 |
| 1C-09-01-3 | Systematic | Floor | 3 | 9 |
| 1C-09-01-4 | Systematic | Floor | 12 | 9 |
| 1C-09-01-5 | Systematic | Floor | 21 | 9 |
| 1C-09-01-6 | Systematic | Floor | 8 | 16 |
| 1C-09-01-7 | Systematic | Floor | 17 | 16 |
| 1C-09-01-8 | Systematic | Floor | 3 | 24 |
| 1C-09-01-9 | Systematic | Floor | 12 | 24 |
| 1C-09-01-10 | Systematic | Floor | 21 | 24 |
| 1C-09-01-11 | Systematic | Floor | 8 | 32 |
| 1C-09-01-12 | Systematic | Floor | 17 | 32 |
| 1C-09-01-13 | Systematic | Floor | 3 | 40 |
| 1C-09-01-14 | Systematic | Floor | 12 | 40 |
| 1C-09-01-15 | Systematic | Floor | 21 | 40 |

2M
1-25-06

1/25/06

JK
1-25-06
MT-06-008

**1C-09-01**
**floor and lower wall static measurement locations**

| Area: 1C-09 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-09-01-1 | Systematic | Floor | 8 | 1 |
| 1C-09-01-2 | Systematic | Floor | 17 | 1 |
| 1C-09-01-3 | Systematic | Floor | 3 | 9 |
| 1C-09-01-4 | Systematic | Floor | 12 | 9 |
| 1C-09-01-5 | Systematic | Floor | 21 | 9 |
| 1C-09-01-6 | Systematic | Floor | 8 | 16 |
| 1C-09-01-7 | Systematic | Floor | 17 | 16 |
| 1C-09-01-8 | Systematic | Floor | 3 | 24 |
| 1C-09-01-9 | Systematic | Floor | 12 | 24 |
| 1C-09-01-10 | Systematic | Floor | 21 | 24 |
| 1C-09-01-11 | Systematic | Floor | 8 | 32 |
| 1C-09-01-12 | Systematic | Floor | 17 | 32 |
| 1C-09-01-13 | Systematic | Floor | 3 | 40 |
| 1C-09-01-14 | Systematic | Floor | 12 | 40 |
| 1C-09-01-15 | Systematic | Floor | 21 | 40 |
| 1C-09-01-16 | Systematic | Wall 2 | 20 | 1 |
| 1C-09-01-17 | Systematic | Wall 2 | 11 | 1 |
| 1C-09-01-18 | Systematic | Wall 2 | 2 | 1 |
| 1C-09-01-19 | Systematic | Wall 4 | 22 | 1 |
| 1C-09-01-20 | Systematic | Wall 4 | 13 | 1 |
| 1C-09-01-21 | Systematic | Wall 4 | 4 | 1 |

COPY

# RADIOLOGICAL SURVEY DATA SHEET



FIELD INFORMATION: Bldg. T-48
Rad Survey CORE SAMPLES
ELEVATED SPOTS DETERMINED BY SHONKA SCAN 1C10 1C09

SURVEY #: MT-06-0091
N/A
1-24-06
1230

MAP / DRAWING

See attached
For additional 20 static point location 48E1R thru 48E R, reference RSDS # MT-06-0087

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| 3030 | 5825 | 4-13-06 |
| | | |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) BJ Roe | | | Date: 1-24-06 |
| Completed by: (Print Name) BJ Roe NEAL REYNOLDS | | | |
| Counted by: (Signature) See attached | HP# N/A | | Date: N/A |
| Counted by: (Print Name) See attached | | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | | | Date: 2-9-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

2 . 8

MT-06-0091

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination Swipes (dpm/100cm²) | | | | |
|---|---|---|---|---|
| Sample # | β/γ | Alpha | Tritium | Comments |
| | See attached | | | 4821R |
| | | | | 4822R |
| 3 | | | | 4823R |
| 4 | | | | 4824R |
| 5 | | | | 4825R |
| 6 | | | | 4826R |
| 7 | | | | 4827R |
| 8 | | | | 4828R |
| 9 | | | | 4829R |
| 10 | | | | 4830R |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
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| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination Swipes (dpm/100cm²) | | | | |
|---|---|---|---|---|
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
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| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

N/A

COPY

**COMMENTS:** N/A

**NOTES:**

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MI .0020 (4-98)

F-178/686

**MARSSIM Smear Data**

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060124_1537.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0091.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
  Quench Indicator: tSIE/AEC
  External Std Terminator (sec): 0.5 2s%
  Pre-Count Delay (min): 0.00
Quench Set:
  Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

1/24/06

MT-06-0091

MT-06-0091

## MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/24/06 | 3:38:23 PM | -1 | 10.00 | 11 | 10 | 11 | 4 | 618.48 | 0 | 19.1 | B | 4 |
| 1/24/06 | 3:49:13 PM | 0 | 2.00 | 230 | 218 | 1 | 0 | 545.32 | 446 | 9.6 | | 4 |
| 1/24/06 | 3:51:56 PM | 1 | 2.00 | 0 | 0 | 0 | 12 | 569.75 | 0 | 0.0 | | 4 |
| 1/24/06 | 3:54:38 PM | 2 | 2.00 | 1 | 1 | 0 | 13 | 554.47 | 1 | 921.5 | | 4 |
| 1/24/06 | 3:57:20 PM | 3 | 2.00 | 0 | 0 | 5 | 15 | 641.15 | 0 | 0.0 | | 4 |
| 1/24/06 | 4:00:11 PM | 4 | 2.00 | 1 | 1 | 0 | 0 | 574.12 | 3 | 385.5 | | 4 |
| 1/24/06 | 4:02:56 PM | 5 | 2.00 | 0 | 0 | 2 | 5 | 635.21 | 0 | 0.0 | | 4 |
| 1/24/06 | 4:05:39 PM | 6 | 2.00 | 0 | 0 | 0 | 8 | 589.59 | 0 | 0.0 | | 4 |
| 1/24/06 | 4:08:22 PM | 7 | 2.00 | 0 | 0 | 0 | 7 | 585.89 | 0 | 0.0 | | 4 |
| 1/24/06 | 4:11:06 PM | 8 | 2.00 | 0 | 0 | 0 | 5 | 456.90 | 0 | 0.0 | | 4 |
| 1/24/06 | 4:13:49 PM | 9 | 2.00 | 2 | 2 | 0 | 8 | 508.45 | 3 | 345.7 | | 4 |
| 1/24/06 | 4:16:31 PM | 10 | 2.00 | 0 | 0 | 0 | 5 | 592.82 | 0 | 0.0 | | 4 |

BR

MT-06-0091

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_067
Batch Ended: 1/24/06 15:03
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0091 ROE (10) 01/24/06 TAS

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.72 | 2.20 | | 0.29 | 1.84 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 1.52 | 1.93 | | 2.20 | 2.38 | |
| B2 | 6 | 0.00 | 1.89 | | 1.32 | 1.93 | |
| B3 | 7 | 1.66 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| C1 | 9 | 1.69 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.93 | | 1.59 | 1.95 | |

BR BR

pg 5 of 8

~~Page 1 of 1~~ BR 1-24-06

1-18/06

TAS

# T-48; 1C09 and 1C10; RES RAD Survey

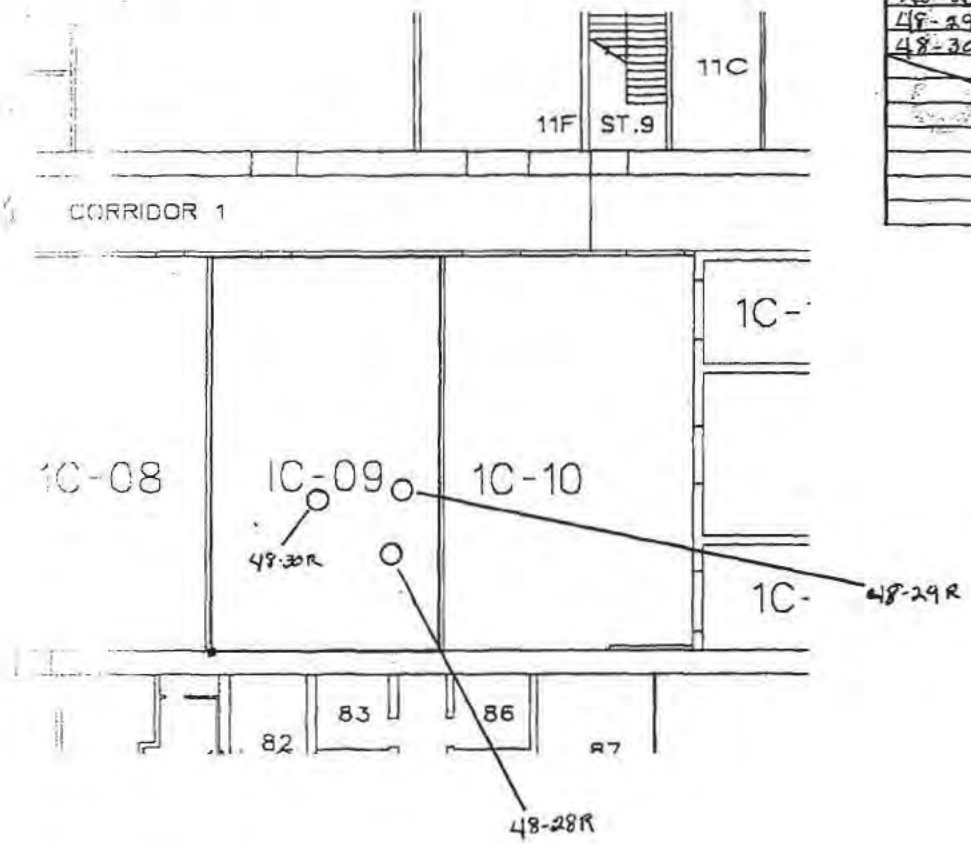
*RSDS# _MT-06-0091_____ RCT: [redacted] _____ RCT: [redacted] _____*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | [redacted] |
| Beta | 43-68 BKG: | 0 | EFF: | 0.103 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** | |
| ALPHA | 4821R | 5854 | [redacted] | 5861 | 1 | 1 | 1/24/06 | 12:58 | 290 | 120 | 1123 | |
| ALPHA | 4822R | 5854 | [redacted] | 5861 | 1 | 2 | 1/24/06 | 13:03 | 968 | 120 | 3748 | |
| ALPHA | 4823R | 5854 | [redacted] | 5861 | 1 | 3 | 1/24/06 | 13:07 | 741 | 120 | 2869 | |
| ALPHA | 4824R | 5854 | [redacted] | 5861 | 1 | 4 | 1/24/06 | 13:12 | 12 | 120 | 46 | |
| ALPHA | 4825R | 5854 | [redacted] | 5861 | 1 | 5 | 1/24/06 | 13:16 | 5 | 120 | 19 | |
| ALPHA | 4826R | 5854 | [redacted] | 5861 | 1 | 6 | 1/24/06 | 13:20 | 42 | 120 | 163 | |
| ALPHA | 4827R | 5854 | [redacted] | 5861 | 1 | 7 | 1/24/06 | 13:24 | 12 | 120 | 46 | |
| ALPHA | 4828R | 5854 | [redacted] | 5861 | 1 | 8 | 1/24/06 | 13:28 | 14 | 120 | 54 | |
| ALPHA | 4829R | 5854 | [redacted] | 5861 | 1 | 9 | 1/24/06 | 13:35 | 80 | 120 | 310 | |
| ALPHA | 4830R | 5854 | [redacted] | 5861 | 1 | 10 | 1/24/06 | 13:41 | 45 | 120 | 174 | |
| BETA | 4821R | 5854 | [redacted] | 5861 | 2 | 1 | 1/24/06 | 12:59 | 5233 | 60 | 50959 | |
| BETA | 4822R | 5854 | [redacted] | 5861 | 2 | 2 | 1/24/06 | 13:04 | 5706 | 60 | 55565 | |
| BETA | 4823R | 5854 | [redacted] | 5861 | 2 | 3 | 1/24/06 | 13:08 | 13644 | 60 | 132866 | |
| BETA | 4824R | 5854 | [redacted] | 5861 | 2 | 4 | 1/24/06 | 13:13 | 2882 | 60 | 28065 | |
| BETA | 4825R | 5854 | [redacted] | 5861 | 2 | 5 | 1/24/06 | 13:17 | 6969 | 60 | 67864 | |
| BETA | 4826R | 5854 | [redacted] | 5861 | 2 | 6 | 1/24/06 | 13:21 | 2299 | 60 | 22388 | |
| BETA | 4827R | 5854 | [redacted] | 5861 | 2 | 7 | 1/24/06 | 13:25 | 1197 | 60 | 11656 | |
| BETA | 4828R | 5854 | [redacted] | 5861 | 2 | 8 | 1/24/06 | 13:29 | 262 | 60 | 2551 | |
| BETA | 4829R | 5854 | [redacted] | 5861 | 2 | 9 | 1/24/06 | 13:36 | 1612 | 60 | 15698 | |
| BETA | 4830R | 5854 | [redacted] | 5861 | 2 | 10 | 1/24/06 | 13:42 | 4024 | 60 | 39186 | |
| | R=RESRAD | | | | | | | | | | | |

COPY

11T-06-0091

[illegible] alpha and beta measurement are taken and the smear is taken,
[illegible] bulk sample at the highest 20% (maximum # of 10) elevated activity areas identified on the floor.
[illegible] bulk sample with bulk samples taken at static locations on the floor.



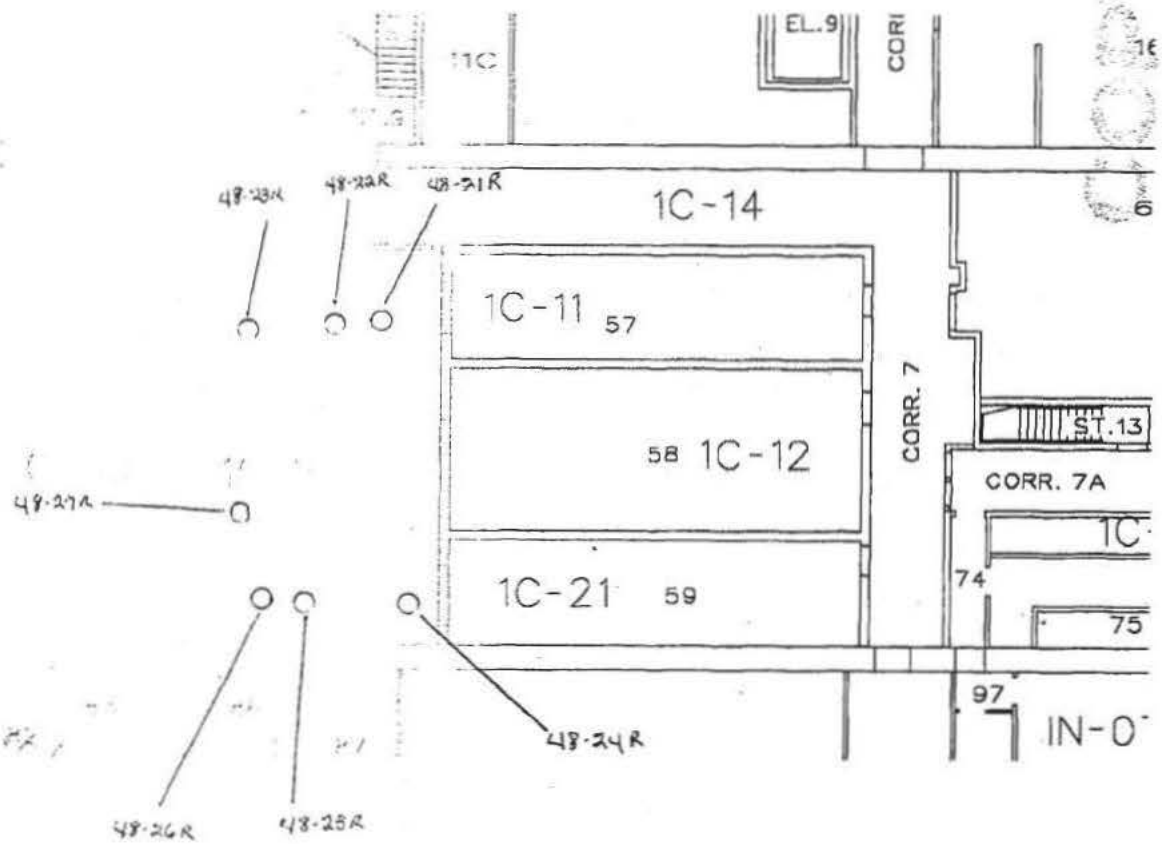

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 48-28 R | T-48 | Floor | | |
| 48-29 R | T-48 | Floor | | |
| 48-30 R | T-48 | Floor | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

F183/686

MT-06-0091

Class 1

After a direct alpha and beta measurement are taken and the smear is taken,
then collect a bulk sample at the highest 20% (maximum # of 10) elevated activity areas identified on the floor.
Composite bulk sample with bulk samples taken at static locations on the floor.




| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 48-21 R | T-48 | Floor | | |
| 48-22 R | | | | |
| 48-23 R | | | | |
| 48-24 R | | | | |
| 48-25 R | | | | |
| 48-26 R | | | | |
| 48-27 R | | | | |
| | | | | |
| | | | | |
| | | | | |

F18#686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) I-Bldg. T-Cap | SURVEY NO. MT-06-0164 |
| PURPOSE Drains, Vents, & Utilities | RWP NO. N/A |
| | DATE 2-10-06 |
| 1009 | TIME 1300 |

MAP / DRAWING

NO ELEVATED α β READINGS DETECTED

SEE ATTACHED SHEETS

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Norsick / BJ Roe | [redacted] | Date: 2/10/06 |
| Completed by: (Print Name) B. NORSICK / BJ Roe | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) See Attached | | |
| Reviewed/Approved by: (Signature) | [redacted] | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) | | |

F185/686

Survey No. MT-06-0164

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C09-0101D |
| 2 | | | | 1C09-0201V |
| 3 | | | | 1C09-0201U |
| 4 | | | | 1C09-0202U |
| 5 | | | | 1C09-0203U |
| 6 | | | | 1C09-0204U |
| 7 | | | | 1C09-0205U |
| 8 | | | | 1C09-0206U |
| 9 | | | | 1C09-0207U |
| 10 | | | | 1C09-0208U |
| 11 | | | | 1C09-0209U |
| 12 | | | | 1C09-0210U |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | A | |
| 25 | | N | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
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| 48 | | | | |
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| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | A | |
| 55 | | N | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
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| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

**COMMENTS:** N/A

**NOTES:**
1. See MD-80036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F 186/686

99.3 of 8
BR 2-14-06

**MARSSIM Smear Data**

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060213_1242.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0164.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

✓ BR

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F187/686

Rut

pg. 4 of 8
BR 2-14-06

MT-06-0164

## MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 12:43:12 PM | -1 | 10.00 | 9 | 8 | 11 | 14 | 638.19 | 0 | 21.4 | B | 3 |
| 2/13/06 | 12:54:01 PM | 0 | 2.00 | 376 | 353 | 5 | 0 | 559.80 | 720 | 7.4 | | 3 |
| 2/13/06 | 12:56:43 PM | 1 | 2.00 | 1 | 1 | 0 | 5 | 586.41 | 2 | 515.9 | | 3 |
| 2/13/06 | 12:59:26 PM | 2 | 2.00 | 0 | 0 | 0 | 6 | 565.66 | 0 | 0.0 | | 3 |
| 2/13/06 | 1:02:08 PM | 3 | 2.00 | 48 | 45 | 3 | 2 | 469.66 | 100 | 22.6 | | 3 |
| 2/13/06 | 1:04:50 PM | 4 | 2.00 | 21 | 20 | 0 | 3 | 562.38 | 40 | 37.7 | | 3 |
| 2/13/06 | 1:07:32 PM | 5 | 2.00 | 52 | 49 | 3 | 1 | 492.43 | 105 | 21.6 | | 3 |
| 2/13/06 | 1:10:14 PM | 6 | 2.00 | 2 | 1 | 1 | 5 | 651.66 | 4 | 219.2 | | 3 |
| 2/13/06 | 1:12:57 PM | 7 | 2.00 | 139 | 128 | 0 | 1 | 537.19 | 270 | 12.5 | | 3 |
| 2/13/06 | 1:15:40 PM | 8 | 2.00 | 130 | 122 | 0 | 1 | 513.66 | 258 | 12.9 | | 3 |
| 2/13/06 | 1:18:22 PM | 9 | 2.00 | 182 | 166 | 0 | 1 | 571.03 | 345 | 10.8 | | 3 |
| 2/13/06 | 1:21:04 PM | 10 | 2.00 | 41 | 38 | 1 | 1 | 614.74 | 76 | 24.6 | | 3 |
| 2/13/06 | 1:23:46 PM | 11 | 2.00 | 96 | 90 | 0 | 0 | 554.36 | 185 | 15.2 | | 3 |
| 2/13/06 | 1:26:29 PM | 12 | 2.00 | 1 | 0 | 0 | 5 | 490.13 | 2 | 590.3 | | 3 |

BR

F188/086

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_043
Batch Ended: 2/13/06 9:12
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0164 [12] ROE 2-13-06 RLH

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.20 | | 0.47 | 1.84 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 1.52 | 1.97 | | 4.58 | 2.92 | |
| B2 | 6 | 0.00 | 1.89 | | 1.32 | 1.93 | |
| B3 | 7 | 1.66 | 2.20 | | 0.00 | 1.87 | |
| B4 | 8 | 1.61 | 1.99 | | 1.39 | 2.07 | |
| B1 | 9 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 10 | 0.00 | 1.91 | | 2.43 | 2.23 | |
| B3 | 11 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 12 | 0.00 | 1.95 | | 0.00 | 1.19 | |

BR 2-14-06



F-187/686

RLH

# T-BLDG. DRAINS, VENTS AND UTILITIES 1C-09

*RSDS#* MT-06-0164 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C090101D | 5854 | [redacted] | 5861 | 1 | 1 | 2/10/06 | 12:29 | 1 | 120 | 4 | |
| ALPHA | 1C090201V | 5854 | [redacted] | 5861 | 1 | 2 | 2/10/06 | 12:38 | 2 | 120 | 8 | |
| ALPHA | 1C090201U | 5854 | [redacted] | 5861 | 1 | 3 | 2/10/06 | 12:46 | 8 | 120 | 31 | |
| ALPHA | 1C090202U | 5854 | [redacted] | 5861 | 1 | 4 | 2/10/06 | 12:50 | 6 | 120 | 23 | |
| ALPHA | 1C090203U | 5854 | [redacted] | 5861 | 1 | 5 | 2/10/06 | 12:53 | 9 | 120 | 35 | |
| ALPHA | 1C090204U | 5854 | [redacted] | 5861 | 1 | 6 | 2/10/06 | 12:57 | 6 | 120 | 23 | |
| ALPHA | 1C090205U | 5854 | [redacted] | 5861 | 1 | 7 | 2/10/06 | 13:02 | 9 | 120 | 35 | |
| ALPHA | 1C090206U | 5854 | [redacted] | 5861 | 1 | 8 | 2/10/06 | 13:06 | 10 | 120 | 39 | |
| ALPHA | 1C090207U | 5854 | [redacted] | 5861 | 1 | 9 | 2/10/06 | 13:09 | 3 | 120 | 12 | |
| ALPHA | 1C090208U | 5854 | [redacted] | 5861 | 1 | 10 | 2/10/06 | 13:13 | 9 | 120 | 35 | |
| ALPHA | 1C090209U | 5854 | [redacted] | 5861 | 1 | 11 | 2/10/06 | 13:16 | 13 | 120 | 50 | |
| ALPHA | 1C090210U | 5854 | [redacted] | 5861 | 1 | 12 | 2/10/06 | 13:21 | 6 | 120 | 23 | |
| BETA | 1C090101D | 5854 | [redacted] | 5861 | 2 | 1 | 2/10/06 | 12:31 | 103 | 60 | 1003 | |
| BETA | 1C090201V | 5854 | [redacted] | 5861 | 2 | 2 | 2/10/06 | 12:39 | 76 | 60 | 740 | |
| BETA | 1C090201U | 5854 | [redacted] | 5861 | 2 | 3 | 2/10/06 | 12:47 | 118 | 60 | 1149 | |
| BETA | 1C090202U | 5854 | [redacted] | 5861 | 2 | 4 | 2/10/06 | 12:51 | 117 | 60 | 1139 | |
| BETA | 1C090203U | 5854 | [redacted] | 5861 | 2 | 5 | 2/10/06 | 12:54 | 129 | 60 | 1256 | |
| BETA | 1C090204U | 5854 | [redacted] | 5861 | 2 | 6 | 2/10/06 | 12:59 | 121 | 60 | 1178 | |
| BETA | 1C090205U | 5854 | [redacted] | 5861 | 2 | 7 | 2/10/06 | 13:03 | 133 | 60 | 1295 | |
| BETA | 1C090206U | 5854 | [redacted] | 5861 | 2 | 8 | 2/10/06 | 13:07 | 130 | 60 | 1266 | |
| BETA | 1C090207U | 5854 | [redacted] | 5861 | 2 | 9 | 2/10/06 | 13:10 | 151 | 60 | 1470 | |
| BETA | 1C090208U | 5854 | [redacted] | 5861 | 2 | 10 | 2/10/06 | 13:14 | 128 | 60 | 1246 | |
| BETA | 1C090209U | 5854 | [redacted] | 5861 | 2 | 11 | 2/10/06 | 13:17 | 153 | 60 | 1490 | |
| BETA | 1C090210U | 5854 | [redacted] | 5861 | 2 | 12 | 2/10/06 | 13:22 | 99 | 60 | 964 | |

N A

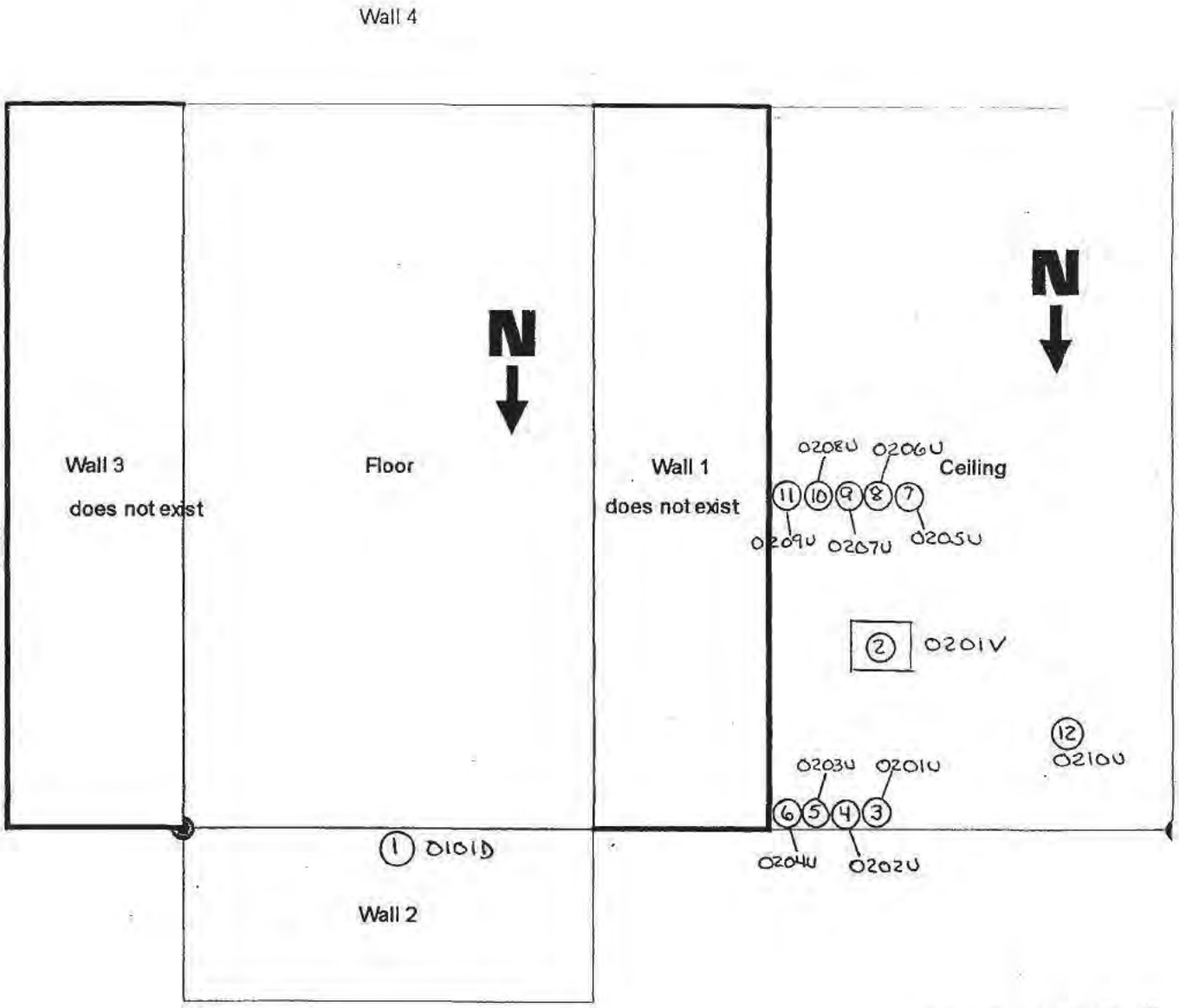


F190/686

DRAINS, VENTS, UTILITIES

1C-09
Class 1

1C-09




COPY

Survey Unit Number: 1C-08-01 10 minimum on lower surfaces Page 8 of 8
1C-08-02 10 minimum on upper surfaces
(Supplemental sheet for biased measurements.)

RSDS # MT-06-0144
RCT INT/HP

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C09-0101D | T-Cap | Floor | | |
| 1C09-0201V | | Ceiling | | |
| 1C09-0201U | | Glass | | |
| 1C09-0202U | | Glass | | |
| 1C09-0203U | | Glass | | |
| 1C09-0204U | | Glass | | |
| 1C09-0205U | | Air | | |
| 1C09-0206U | | Glass | | |
| 1C09-0207U | | Glass | | |
| 1C09-0208U | | Glass | | |
| 1C09-0209U | | Water | | |
| 1C09-0210U | | Glass | | |
| | | | | A |
| | | | N | |
| | A | | | |
| | N | | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventilation system.

COPY

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 8

| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-Bldg | SURVEY NO MT-06-0166 |
| PURPOSE | RWP NO N/A |
| | DATE 2-11-06 |
| Upper Statics 1C09 | TIME 0622 |

MAP / DRAWING

NO ELEVATED READINGS α+β

COPY

DOSE RATE: BKGD. 4uR/HR G/A 4uR/HR

BICRON MICRO REM
S/N 3981 CAL. DUE 4-7-06

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Jamie Watson / BJ Roe | [redacted] | Date: 2-14-06 |
| Completed by: (Print Name) DWATSON / BJ Roe | | |
| Counted by: (Signature) See Attache-Sheets | HP# | Date: |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) | [redacted] | Date: 2/18/06 |
| Reviewed/Approved by: (Print Name) Ross Griffin | | F193/686 |

Page 8

Survey No.
MT-06-0166

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C09-0201S |
| 2 | | | | 1C09-0202S |
| 3 | | | | 1C09-0203S |
| 4 | | | | 1C09-0204S |
| 5 | | | | 1C09-0205S |
| 6 | | | | 1C09-0206S |
| 7 | | | | 1C09-0207S |
| 8 | | | | 1C09-0208S |
| 9 | | | | 1C09-0209S |
| 10 | | | | 1C09-0210S |
| 11 | | | | 1C09-0211S |
| 12 | | | | 1C09-0212S |
| 13 | | | | 1C09-0213S |
| 14 | | | | 1C09-0214S |
| 15 | | | | 1C09-0215S |
| 16 | | | | 1C09-0216S |
| 17 | | | | 1C09-0217S |
| 18 | | | | 1C09-0218S |
| 19 | | | | 1C09-0219S |
| 20 | | | | 1C09-0220S |
| 21 | ✓ | ✓ | ✓ | 1C09-0221S |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | N | |
| 29 | | | | |
| 30 | | | A | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
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| 52 | | | | |
| 53 | | | N | |
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| 56 | | | | |
| 57 | | | A | |
| 58 | | | | |
| 59 | | | | |
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| 67 | | | | |
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| 69 | | | | |
| 70 | | | | |

COPY

**COMMENTS:**

N

A

**NOTES:**

1. See MD-80036.10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F194/086

3 of 8

MARSSIM Smear Data

MT-06-0166

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060213_1522.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0166.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F 195/686

2/16/06 4 OPS

MARSSIM Smear Data

MT-06-0166

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 3:23:27 PM | -1 | 10.00 | 10 | 9 | 12 | 6 | 624.58 | 0 | 20.2 | B | 2 |
| 2/13/06 | 3:34:17 PM | 0 | 2.00 | 198 | 187 | 0 | 2 | 547.91 | 382 | 10.4 | | 2 |
| 2/13/06 | 3:36:59 PM | 1 | 2.00 | 5 | 4 | 0 | 7 | 490.14 | 9 | 123.1 | | 2 |
| 2/13/06 | 3:39:40 PM | 2 | 2.00 | 0 | 0 | 1 | 6 | 634.41 | 0 | 0.0 | | 2 |
| 2/13/06 | 3:42:22 PM | 3 | 2.00 | 15 | 12 | 2 | 6 | 580.15 | 29 | 48.4 | | 2 |
| 2/13/06 | 3:45:04 PM | 4 | 2.00 | 9 | 8 | 1 | 5 | 618.59 | 16 | 73.9 | | 2 |
| 2/13/06 | 3:47:45 PM | 5 | 2.00 | 10 | 9 | 0 | 5 | 620.95 | 19 | 65.2 | | 2 |
| 2/13/06 | 3:50:26 PM | 6 | 2.00 | 5 | 5 | 0 | 7 | 623.34 | 9 | 117.9 | | 2 |
| 2/13/06 | 3:53:07 PM | 7 | 2.00 | 25 | 23 | 0 | 6 | 606.74 | 46 | 34.2 | | 2 |
| 2/13/06 | 3:55:48 PM | 8 | 2.00 | 0 | 0 | 0 | 11 | 598.92 | 0 | 0.0 | | 2 |
| 2/13/06 | 3:58:29 PM | 9 | 2.00 | 4 | 2 | 0 | 11 | 637.46 | 7 | 152.0 | | 2 |
| 2/13/06 | 4:01:12 PM | 10 | 2.00 | 0 | 1 | 0 | 10 | 628.53 | 0 | 3052.6 | | 2 |
| 2/13/06 | 4:03:54 PM | 11 | 2.00 | 0 | 0 | 0 | 20 | 631.68 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:06:36 PM | 12 | 2.00 | 4 | 4 | 0 | 11 | 627.64 | 7 | 141.3 | | 2 |
| 2/13/06 | 4:09:17 PM | 13 | 2.00 | 0 | 0 | 2 | 10 | 620.90 | 0 | 3052.6 | | 2 |
| 2/13/06 | 4:11:57 PM | 14 | 2.00 | 0 | 0 | 0 | 11 | 614.10 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:14:38 PM | 15 | 2.00 | 0 | 0 | 0 | 20 | 610.61 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:17:19 PM | 16 | 2.00 | 0 | 0 | 0 | 12 | 618.26 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:20:06 PM | 17 | 2.00 | 0 | 0 | 0 | 21 | 594.22 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:22:47 PM | 18 | 2.00 | 0 | 0 | 0 | 11 | 584.17 | 0 | 0.0 | | 2 |
| 2/13/06 | 4:25:29 PM | 19 | 2.00 | 3 | 0 | 0 | 65 | 578.66 | 6 | 173.1 | | 2 |
| 2/13/06 | 4:28:11 PM | 20 | 2.00 | 4 | 1 | 0 | 41 | 544.53 | 7 | 152.0 | | 2 |
| 2/13/06 | 4:30:51 PM | 21 | 2.00 | 2 | 1 | 0 | 26 | 616.00 | 3 | 312.6 | | 2 |

DW DW

F 196/686

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# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_046
Batch Ended: 2/13/06 9:34
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0166 [21] WATSON 2-13-06 RLH

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.23 | | 3.08 | 2.61 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 7 | 1.66 | 2.20 | | 0.00 | 1.87 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| A1 | 9 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 10 | 0.00 | 2.01 | | 0.34 | 1.64 | |
| A3 | 11 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 12 | 1.81 | 2.13 | | 1.53 | 2.09 | |
| B1 | 13 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 14 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 15 | 0.00 | 2.24 | | 2.84 | 2.65 | |
| B4 | 16 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| A1 | 17 | 0.00 | 2.20 | | 0.47 | 1.84 | |
| A2 | 18 | 3.60 | 2.83 | | 0.01 | 1.64 | |
| A3 | 19 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 20 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 21 | 0.00 | 1.87 | | 0.00 | 1.19 | |

DW DW

F197/986

~~Page 1 of 1~~ DW 2/14/06

RLH

# T-Building Upper Statics 1C09

*RSDS#* MT-06-0166 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.179 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C090201S | 5904 | [redacted] | 5905 | 1 | 1 | 2/10/06 | 8:07 | 1 | 120 | 4 |
| ALPHA | 1C090202S | 5904 | [redacted] | 5905 | 1 | 2 | 2/10/06 | 8:13 | 2 | 120 | 8 |
| ALPHA | 1C090203S | 5904 | [redacted] | 5905 | 1 | 3 | 2/10/06 | 8:21 | 2 | 120 | 8 |
| ALPHA | 1C090204S | 5904 | [redacted] | 5905 | 1 | 4 | 2/10/06 | 8:28 | 3 | 120 | 11 |
| ALPHA | 1C090205S | 5904 | [redacted] | 5905 | 1 | 5 | 2/10/06 | 8:33 | 3 | 120 | 11 |
| ALPHA | 1C090206S | 5904 | [redacted] | 5905 | 1 | 6 | 2/10/06 | 8:38 | 4 | 120 | 15 |
| ALPHA | 1C090207S | 5904 | [redacted] | 5905 | 1 | 7 | 2/10/06 | 8:44 | 5 | 120 | 19 |
| ALPHA | 1C090208S | 5904 | [redacted] | 5905 | 1 | 8 | 2/10/06 | 9:32 | 3 | 120 | 11 |
| ALPHA | 1C090209S | 5904 | [redacted] | 5905 | 1 | 9 | 2/10/06 | 9:37 | 1 | 120 | 4 |
| ALPHA | 1C090210S | 5904 | [redacted] | 5905 | 1 | 10 | 2/10/06 | 9:44 | 3 | 120 | 11 |
| ALPHA | 1C090211S | 5904 | [redacted] | 5905 | 1 | 11 | 2/10/06 | 9:53 | 3 | 120 | 11 |
| ALPHA | 1C090212S | 5904 | [redacted] | 5905 | 1 | 12 | 2/10/06 | 9:59 | 6 | 120 | 23 |
| ALPHA | 1C090213S | 5904 | [redacted] | 5905 | 1 | 13 | 2/10/06 | 10:03 | 3 | 120 | 11 |
| ALPHA | 1C090214S | 5904 | [redacted] | 5905 | 1 | 14 | 2/10/06 | 10:08 | 7 | 120 | 26 |
| ALPHA | 1C090215S | 5904 | [redacted] | 5905 | 1 | 15 | 2/10/06 | 10:13 | 5 | 120 | 19 |
| ALPHA | 1C090216S | 5904 | [redacted] | 5905 | 1 | 16 | 2/10/06 | 10:18 | 3 | 120 | 11 |
| ALPHA | 1C090217S | 5904 | [redacted] | 5905 | 1 | 17 | 2/10/06 | 10:22 | 5 | 120 | 19 |
| ALPHA | 1C090218S | 5904 | [redacted] | 5905 | 1 | 18 | 2/10/06 | 10:25 | 7 | 120 | 26 |
| ALPHA | 1C090219S | 5904 | [redacted] | 5905 | 1 | 19 | 2/10/06 | 10:30 | 5 | 120 | 19 |
| ALPHA | 1C090220S | 5904 | [redacted] | 5905 | 1 | 20 | 2/10/06 | 10:34 | 6 | 120 | 23 |
| ALPHA | 1C090221S | 5904 | [redacted] | 5905 | 1 | 21 | 2/10/06 | 10:38 | 0 | 120 | 0 |
| BETA | 1C090201S | 5904 | [redacted] | 5905 | 2 | 1 | 2/10/06 | 8:08 | 127 | 60 | 1152 |
| BETA | 1C090202S | 5904 | [redacted] | 5905 | 2 | 2 | 2/10/06 | 8:14 | 129 | 60 | 1170 |
| BETA | 1C090203S | 5904 | [redacted] | 5905 | 2 | 3 | 2/10/06 | 8:22 | 108 | 60 | 980 |
| BETA | 1C090204S | 5904 | [redacted] | 5905 | 2 | 4 | 2/10/06 | 8:29 | 98 | 60 | 889 |
| BETA | 1C090205S | 5904 | [redacted] | 5905 | 2 | 5 | 2/10/06 | 8:34 | 110 | 60 | 998 |
| BETA | 1C090206S | 5904 | [redacted] | 5905 | 2 | 6 | 2/10/06 | 8:39 | 106 | 60 | 961 |
| BETA | 1C090207S | 5904 | [redacted] | 5905 | 2 | 7 | 2/10/06 | 8:45 | 94 | 60 | 853 |
| BETA | 1C090208S | 5904 | [redacted] | 5905 | 2 | 8 | 2/10/06 | 9:33 | 118 | 60 | 1070 |
| BETA | 1C090209S | 5904 | [redacted] | 5905 | 2 | 9 | 2/10/06 | 9:38 | 101 | 60 | 916 |
| BETA | 1C090210S | 5904 | [redacted] | 5905 | 2 | 10 | 2/10/06 | 9:46 | 110 | 60 | 998 |
| BETA | 1C090211S | 5904 | [redacted] | 5905 | 2 | 11 | 2/10/06 | 9:54 | 96 | 60 | 871 |
| BETA | 1C090212S | 5904 | [redacted] | 5905 | 2 | 12 | 2/10/06 | 10:00 | 109 | 60 | 989 |
| BETA | 1C090213S | 5904 | [redacted] | 5905 | 2 | 13 | 2/10/06 | 10:04 | 110 | 60 | 998 |
| BETA | 1C090214S | 5904 | [redacted] | 5905 | 2 | 14 | 2/10/06 | 10:09 | 123 | 60 | 1116 |
| BETA | 1C090215S | 5904 | [redacted] | 5905 | 2 | 15 | 2/10/06 | 10:14 | 110 | 60 | 998 |
| BETA | 1C090216S | 5904 | [redacted] | 5905 | 2 | 16 | 2/10/06 | 10:19 | 120 | 60 | 1088 |
| BETA | 1C090217S | 5904 | [redacted] | 5905 | 2 | 17 | 2/10/06 | 10:23 | 122 | 60 | 1107 |
| BETA | 1C090218S | 5904 | [redacted] | 5905 | 2 | 18 | 2/10/06 | 10:26 | 96 | 60 | 871 |
| BETA | 1C090219S | 5904 | [redacted] | 5905 | 2 | 19 | 2/10/06 | 10:31 | 124 | 60 | 1125 |
| BETA | 1C090220S | 5904 | [redacted] | 5905 | 2 | 20 | 2/10/06 | 10:35 | 150 | 60 | 1361 |
| BETA | 1C090221S | 5904 | [redacted] | 5905 | 2 | 21 | 2/10/06 | 10:39 | 109 | 60 | 989 |



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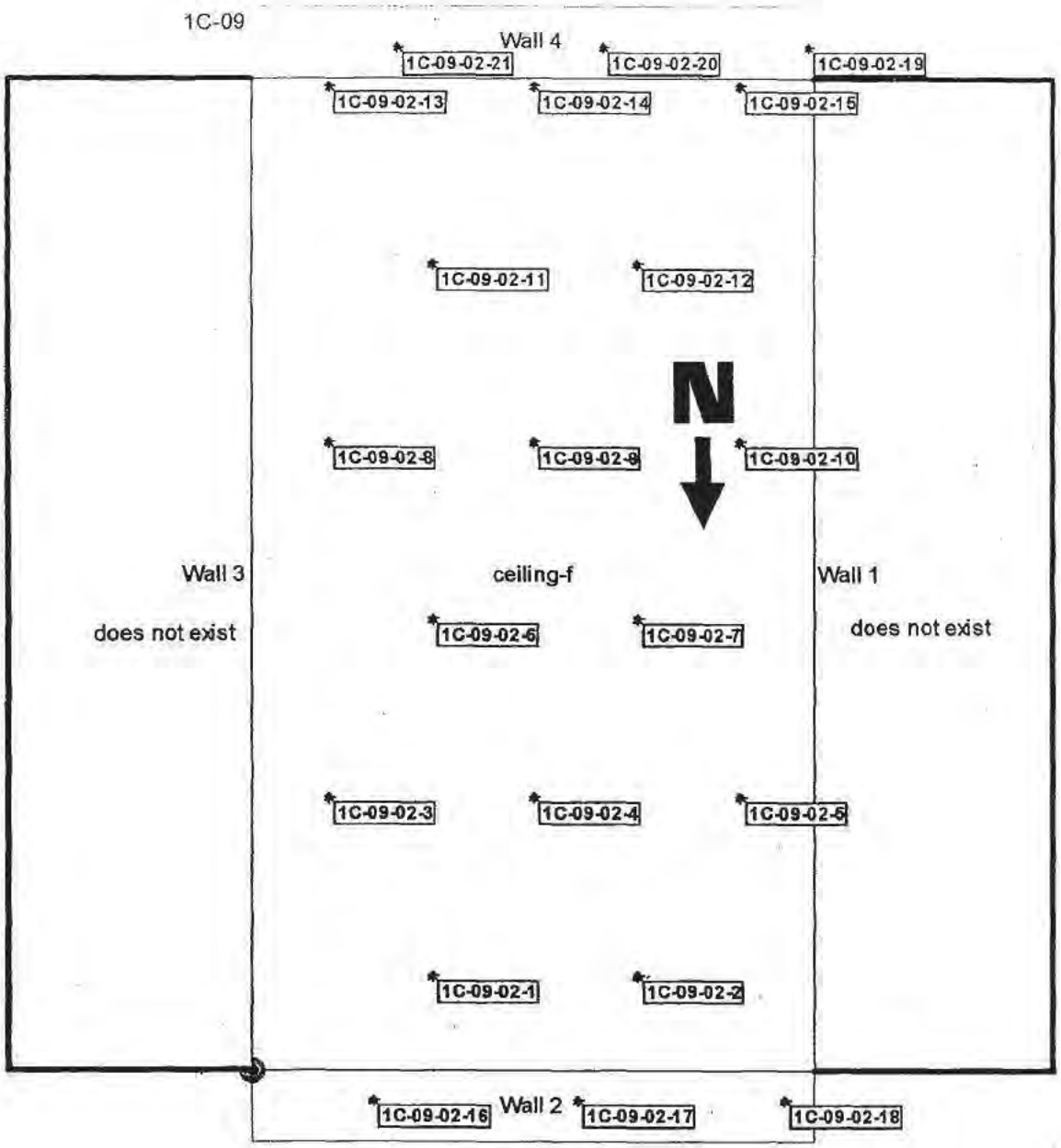
MT-06-0166




Copy

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MT-06-0166

**1C-09-02**

**ceiling and upper wall static measurement locations**

| Area: 1C-09 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-09-02-1 | Systematic | ceiling-f | 8 | 4 |
| 1C-09-02-2 | Systematic | ceiling-f | 16 | 4 |
| 1C-09-02-3 | Systematic | ceiling-f | 3 | 11 |
| 1C-09-02-4 | Systematic | ceiling-f | 12 | 11 |
| 1C-09-02-5 | Systematic | ceiling-f | 20 | 11 |
| 1C-09-02-6 | Systematic | ceiling-f | 8 | 19 |
| 1C-09-02-7 | Systematic | ceiling-f | 16 | 19 |
| 1C-09-02-8 | Systematic | ceiling-f | 3 | 26 |
| 1C-09-02-9 | Systematic | ceiling-f | 12 | 26 |
| 1C-09-02-10 | Systematic | ceiling-f | 20 | 26 |
| 1C-09-02-11 | Systematic | ceiling-f | 8 | 34 |
| 1C-09-02-12 | Systematic | ceiling-f | 16 | 34 |
| 1C-09-02-13 | Systematic | ceiling-f | 3 | 41 |
| 1C-09-02-14 | Systematic | ceiling-f | 12 | 41 |
| 1C-09-02-15 | Systematic | ceiling-f | 20 | 41 |
| 1C-09-02-16 | Systematic | Wall 2 | 18 | 1 |
| 1C-09-02-17 | Systematic | Wall 2 | 10 | 1 |
| 1C-09-02-18 | Systematic | Wall 2 | 1 | 1 |
| 1C-09-02-19 | Systematic | Wall 4 | 23 | 1 |
| 1C-09-02-20 | Systematic | Wall 4 | 15 | 1 |
| 1C-09-02-21 | Systematic | Wall 4 | 6 | 1 |

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) J-Bldg - J-Cap | SURVEY NO. MT-06-0167 |
| PURPOSE: Lower + Upper Fundamental 1C09 | RWP NO. N/A |
| | DATE: 2-10-06 |
| | TIME: 1600 |

MAP / DRAWING

See attached

No elevated α/β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·· = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) BJRoe / B. Nursick | | Date: 2-10-06 |
| Completed by: (Print Name) BJ Roe / B. NURSICK | | |
| Counted by: (Signature) See attached | HP# | Date: |
| Counted by: (Print Name) See attached | | |
| Reviewed/Approved by: (Signature) | | Date: 2/14/06 |
| Reviewed/Approved by: (Print Name) Jessen | | |

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Survey No. MT-06-0167

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C09-0101J |
| 2 | | | | 1C09-0102J |
| 3 | | | | 1C09-0103J |
| 4 | | | | 1C09-0104J |
| 5 | | | | 1C09-0105J |
| 6 | | | | 1C09-0106J |
| 7 | | | | 1C09-0107J |
| 8 | | | | 1C09-0108J |
| 9 | | | | 1C09-0109J |
| 10 | | | | 1C09-0110J |
| 11 | | | | 1C09-0201J |
| 12 | | | | 1C09-0202J |
| 13 | | | | 1C09-0203J |
| 14 | | | | 1C09-0204J |
| 15 | | | | 1C09-0205J |
| 16 | | | | 1C09-0206J |
| 17 | | | | 1C09-0207J |
| 18 | | | | 1C09-0208J |
| 19 | | | | 1C09-0209J |
| 20 | ↓ | ↓ | ↓ | 1C09-0210J |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | A | |
| 29 | | | N | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | A | |
| 55 | | N | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COMMENTS: N/A ↓

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

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MT-06-0167 Pg 30 of 8

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060213_1415.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0167.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

Copy

5303/686

MT-Cb-C167 Pg. 148

## MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 2:15:38 PM | -1 | 10.00 | 11 | 9 | 12 | 18 | 615.33 | 0 | 18.9 | B | 1 |
| 2/13/06 | 2:26:28 PM | 0 | 2.00 | 460 | 435 | 0 | 1 | 579.74 | 865 | 6.7 | | 1 |
| 2/13/06 | 2:29:09 PM | 1 | 2.00 | 1 | 1 | 0 | 52 | 584.24 | 2 | 432.1 | | 1 |
| 2/13/06 | 2:31:50 PM | 2 | 2.00 | 0 | 0 | 0 | 24 | 588.10 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:34:31 PM | 3 | 2.00 | 0 | 0 | 1 | 63 | 577.22 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:37:13 PM | 4 | 2.00 | 0 | 0 | 2 | 14 | 574.74 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:39:55 PM | 5 | 2.00 | 0 | 1 | 0 | 14 | 551.06 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:42:37 PM | 6 | 2.00 | 0 | 0 | 0 | 9 | 611.45 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:45:19 PM | 7 | 2.00 | 0 | 0 | 0 | 12 | 605.77 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:48:00 PM | 8 | 2.00 | 0 | 0 | 0 | 10 | 615.13 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:50:41 PM | 9 | 2.00 | 1 | 1 | 0 | 8 | 628.06 | 1 | 705.2 | | 1 |
| 2/13/06 | 2:53:24 PM | 10 | 2.00 | 0 | 0 | 0 | 11 | 562.37 | 0 | 0.0 | | 1 |
| 2/13/06 | 2:56:05 PM | 11 | 2.00 | 17 | 9 | 2 | 67 | 556.70 | 32 | 46.6 | | 1 |
| 2/13/06 | 2:58:46 PM | 12 | 2.00 | 0 | 0 | 0 | 44 | 580.17 | 1 | 1813.0 | | 1 |
| 2/13/06 | 3:01:28 PM | 13 | 2.00 | 0 | 0 | 0 | 27 | 604.43 | 0 | 0.0 | | 1 |
| 2/13/06 | 3:04:10 PM | 14 | 2.00 | 2 | 2 | 0 | 19 | 621.42 | 4 | 248.7 | | 1 |
| 2/13/06 | 3:06:51 PM | 15 | 2.00 | 1 | 2 | 0 | 36 | 563.65 | 2 | 432.1 | | 1 |
| 2/13/06 | 3:09:33 PM | 16 | 2.00 | 2 | 3 | 0 | 8 | 628.76 | 3 | 314.3 | | 1 |
| 2/13/06 | 3:12:20 PM | 17 | 2.00 | 0 | 0 | 0 | 16 | 615.84 | 0 | 0.0 | | 1 |
| 2/13/06 | 3:15:02 PM | 18 | 2.00 | 0 | 0 | 1 | 10 | 608.39 | 0 | 0.0 | | 1 |
| 2/13/06 | 3:17:43 PM | 19 | 2.00 | 0 | 0 | 0 | 18 | 620.55 | 0 | 0.0 | | 1 |
| 2/13/06 | 3:20:25 PM | 20 | 2.00 | 0 | 0 | 0 | 16 | 597.50 | 0 | 0.0 | | 1 |

✓ BR

F30 4/6/06

MT-06-0167
pg. 5 of 8

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_045
Batch Ended: 2/13/06 9:25
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0167 [20] ROE 2-13-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.72 | 2.20 | | 0.29 | 1.84 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.93 | | 2.41 | 2.38 | |
| B2 | 6 | 1.54 | 1.87 | | 0.01 | 1.58 | |
| B3 | 7 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| A1 | 9 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 10 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 11 | 1.93 | 2.28 | | 0.23 | 1.78 | |
| A4 | 12 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 13 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 14 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 15 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 16 | 0.00 | 1.99 | | 1.60 | 2.07 | |
| B1 | 17 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 18 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 19 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 20 | 0.00 | 1.99 | | 1.60 | 2.07 | |

BR

BR



RLH

F208/686

# T-BLDG. JUDGEMENTALS 1C-09

*RSDS#* MT-06-0167 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | [illegible] | EFF: | 0.285 | PROBE AREA: | [illegible] | $cm^2$ | Surface Eff: | [illegible] | Detector # : | [illegible] |
| Beta | 43-68 BKG: | | EFF: | [illegible] | PROBE AREA: | [illegible] | $cm^2$ | Surface Eff: | [illegible] | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | | EFF: | [illegible] | PROBE AREA: | [illegible] | $cm^2$ | Surface Eff: | [illegible] | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | [illegible] | EFF: | 0.2[illegible] | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | [illegible] | Detector # : | 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C090101J | 5854 | [redacted] | 5861 | 1 | 1 | 2/10/06 | 14:12 | 7 | 120 | 27 |
| ALPHA | 1C090102J | 5854 | [redacted] | 5861 | 1 | 2 | 2/10/06 | 14:16 | 8 | 120 | 31 |
| ALPHA | 1C090103J | 5854 | [redacted] | 5861 | 1 | 3 | 2/10/06 | 14:20 | 6 | 120 | 23 |
| ALPHA | 1C090104J | 5854 | [redacted] | 5861 | 1 | 4 | 2/10/06 | 14:23 | 8 | 120 | 31 |
| ALPHA | 1C090105J | 5854 | [redacted] | 5861 | 1 | 5 | 2/10/06 | 14:27 | 11 | 120 | 43 |
| ALPHA | 1C090106J | 5854 | [redacted] | 5861 | 1 | 6 | 2/10/06 | 14:31 | 10 | 120 | 39 |
| ALPHA | 1C090107J | 5854 | [redacted] | 5861 | 1 | 7 | 2/10/06 | 14:34 | 4 | 120 | 15 |
| ALPHA | 1C090108J | 5854 | [redacted] | 5861 | 1 | 8 | 2/10/06 | 14:38 | 9 | 120 | 35 |
| ALPHA | 1C090109J | 5854 | [redacted] | 5861 | 1 | 9 | 2/10/06 | 14:42 | 3 | 120 | 12 |
| ALPHA | 1C090110J | 5854 | [redacted] | 5861 | 1 | 10 | 2/10/06 | 14:45 | 6 | 120 | 23 |
| ALPHA | 1C090201J | 5854 | [redacted] | 5861 | 1 | 11 | 2/10/06 | 14:49 | 7 | 120 | 27 |
| ALPHA | 1C090202J | 5854 | [redacted] | 5861 | 1 | 12 | 2/10/06 | 14:54 | 1 | 120 | 4 |
| ALPHA | 1C090203J | 5854 | [redacted] | 5861 | 1 | 13 | 2/10/06 | 14:58 | 4 | 120 | 15 |
| ALPHA | 1C090204J | 5854 | [redacted] | 5861 | 1 | 14 | 2/10/06 | 15:02 | 7 | 120 | 27 |
| ALPHA | 1C090205J | 5854 | [redacted] | 5861 | 1 | 15 | 2/10/06 | 15:05 | 3 | 120 | 12 |
| ALPHA | 1C090206J | 5854 | [redacted] | 5861 | 1 | 16 | 2/10/06 | 15:09 | 8 | 120 | 31 |
| ALPHA | 1C090207J | 5854 | [redacted] | 5861 | 1 | 17 | 2/10/06 | 15:12 | 5 | 120 | 19 |
| ALPHA | 1C090208J | 5854 | [redacted] | 5861 | 1 | 18 | 2/10/06 | 15:16 | 1 | 120 | 4 |
| ALPHA | 1C090209J | 5854 | [redacted] | 5861 | 1 | 19 | 2/10/06 | 15:19 | 3 | 120 | 12 |
| ALPHA | 1C090210J | 5854 | [redacted] | 5861 | 1 | 20 | 2/10/06 | 15:23 | 8 | 120 | 31 |
| BETA | 1C090101J | 5854 | [redacted] | 5861 | 2 | 1 | 2/10/06 | 14:14 | 97 | 60 | 945 |
| BETA | 1C090102J | 5854 | [redacted] | 5861 | 2 | 2 | 2/10/06 | 14:18 | 102 | 60 | 993 |
| BETA | 1C090103J | 5854 | [redacted] | 5861 | 2 | 3 | 2/10/06 | 14:21 | 175 | 60 | 1704 |
| BETA | 1C090104J | 5854 | [redacted] | 5861 | 2 | 4 | 2/10/06 | 14:24 | 148 | 60 | 1441 |
| BETA | 1C090105J | 5854 | [redacted] | 5861 | 2 | 5 | 2/10/06 | 14:28 | 159 | 60 | 1548 |
| BETA | 1C090106J | 5854 | [redacted] | 5861 | 2 | 6 | 2/10/06 | 14:32 | 138 | 60 | 1344 |
| BETA | 1C090107J | 5854 | [redacted] | 5861 | 2 | 7 | 2/10/06 | 14:35 | 106 | 60 | 1032 |
| BETA | 1C090108J | 5854 | [redacted] | 5861 | 2 | 8 | 2/10/06 | 14:39 | 104 | 60 | 1013 |
| BETA | 1C090109J | 5854 | [redacted] | 5861 | 2 | 9 | 2/10/06 | 14:43 | 115 | 60 | 1120 |
| BETA | 1C090110J | 5854 | [redacted] | 5861 | 2 | 10 | 2/10/06 | 14:47 | 90 | 60 | 876 |
| BETA | 1C090201J | 5854 | [redacted] | 5861 | 2 | 11 | 2/10/06 | 14:50 | 97 | 60 | 945 |
| BETA | 1C090202J | 5854 | [redacted] | 5861 | 2 | 12 | 2/10/06 | 14:56 | 274 | 60 | 2668 |
| BETA | 1C090203J | 5854 | [redacted] | 5861 | 2 | 13 | 2/10/06 | 14:59 | 217 | 60 | 2113 |
| BETA | 1C090204J | 5854 | [redacted] | 5861 | 2 | 14 | 2/10/06 | 15:03 | 238 | 60 | 2318 |
| BETA | 1C090205J | 5854 | [redacted] | 5861 | 2 | 15 | 2/10/06 | 15:06 | 153 | 60 | 1490 |
| BETA | 1C090206J | 5854 | [redacted] | 5861 | 2 | 16 | 2/10/06 | 15:10 | 125 | 60 | 1217 |
| BETA | 1C090207J | 5854 | [redacted] | 5861 | 2 | 17 | 2/10/06 | 15:13 | 113 | 60 | 1100 |
| BETA | 1C090208J | 5854 | [redacted] | 5861 | 2 | 18 | 2/10/06 | 15:17 | 82 | 60 | 799 |
| BETA | 1C090209J | 5854 | [redacted] | 5861 | 2 | 19 | 2/10/06 | 15:20 | 220 | 60 | 2142 |
| BETA | 1C090210J | 5854 | [redacted] | 5861 | 2 | 20 | 2/10/06 | 15:24 | 118 | 60 | 1149 |
| | | | | | | A | | | | | |
| | | | | | N | | | | | | |

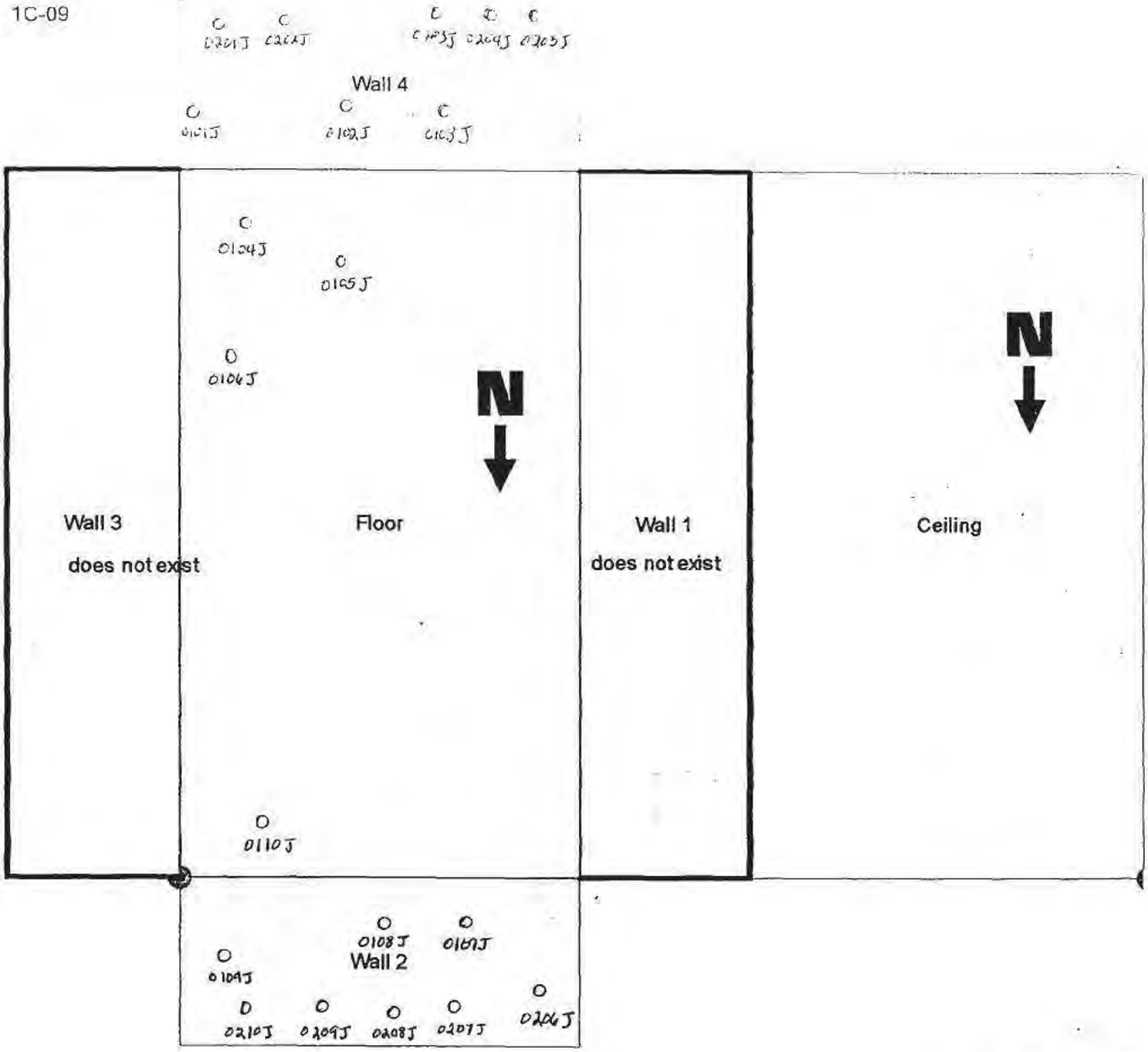


F206/686

MT-06-0167
PG 7 of 8

1C-09
Class 1

1C-09




COPY

F207/686

Survey Unit Number: 1C-07-01 10 minimum
1C-07-02 10 minimum
(Supplemental sheet for biased measurements.)



RSDS # MT-06-0167
RCT INT/HP [redacted] JR/BW [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C09-0101J | T-CAP | WALL 4 | | |
| 1C09-0102J | T-CAP | WALL 4 | | |
| 1C09-0103J | T-CAP | WALL 4 | | |
| 1C09-0104J | T-CAP | FLOOR | | |
| 1C09-0105J | T-CAP | FLOOR | | |
| 1C09-0106J | T-CAP | FLOOR | | |
| 1C09-0107J | T-CAP | WALL 2 | | |
| 1C09-0108J | T-CAP | WALL 2 | | |
| 1C09-0109J | T-CAP | WALL 2 | | |
| 1C09-0110J | T-CAP | FLOOR | | |
| 1C09-0201J | T-CAP | WALL 4 | | |
| 1C09-0202J | T-CAP | WALL 4 | | |
| 1C09-0203J | T-CAP | WALL 4 | | |
| 1C09-0204J | T-CAP | WALL 4 | | |
| 1C09-0205J | T-CAP | WALL 4 | | |
| 1C09-0206J | T-CAP | WALL 2 | | |
| 1C09-0207J | T-CAP | WALL 2 | | |
| 1C09-0208J | T-CAP | WALL 2 | | |
| 1C09-0209J | T-CAP | WALL 2 | | |
| 1C09-0210J | T-CAP | WALL 2 | | |
| | | | | |
| | | | | |
| | | | | |
| | A | | | |
| N | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

A
N

COPY

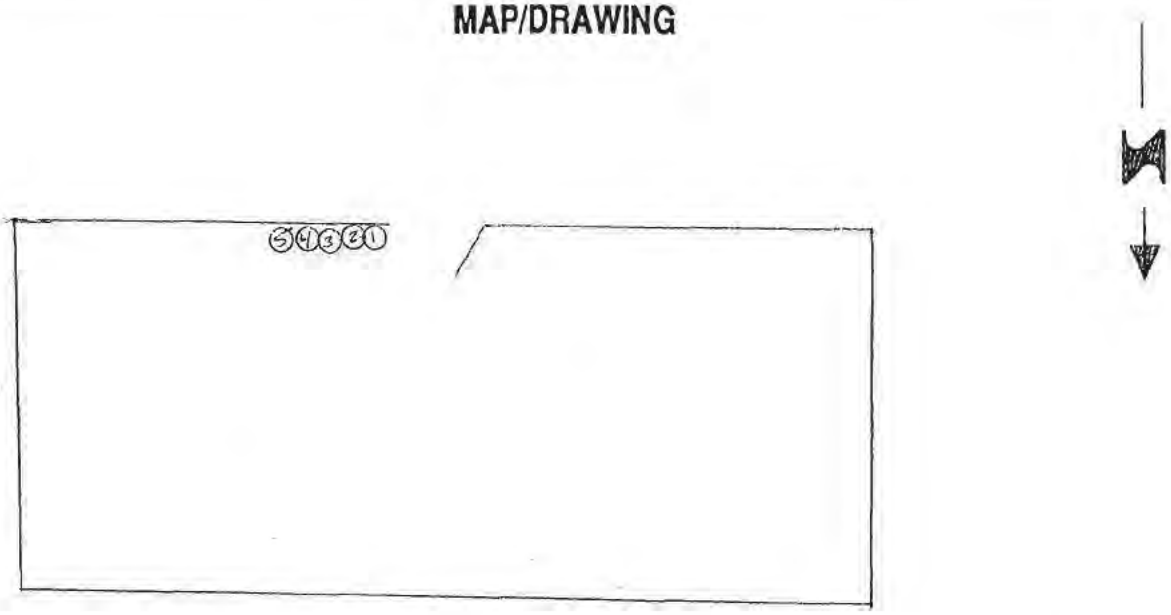
J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventilation system.

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Room T ~~248~~ 48 3/28/06 | SURVEY NO. MT-06-0323 |
| PURPOSE: post Remediation Survey 1C09 | RWP NO. N/A |
| | DATE: 3-17-06 |
| | TIME: 09:00 |

## MAP/DRAWING




Refer to

MT-05-1345

1 1C09 0101W
2 1C09 0103W
3 1C09 0104W
4 1C09 0105W
5 1C09 0106W

Scanned 1 M2
No Elevated Readings α/β

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2380-1 | 588915890 | 1-17-07 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Julie Kardos RM | | Date: 3-16-06 |
| Completed by: (Print Name) Julie Kardos RM Survey | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) Results | | F209/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 3/29/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-04-0323



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | | 0101PR1 |
| 2 | | | | 0102PR2 |
| 3 | | | | 0103PR3 |
| 4 | | | | 0104PR4 |
| 5 | | | | 0105PR5 |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS:

COPY

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F210/686

ML-9620 (4-98)

J.K 3-20-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060317_1232.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0323.001 J.K
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

F211/686

Page 3 of 7

AK 3-20-06

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/06 | 12:33:26 PM | -1 | 10.00 | 9 | 9 | 9 | 3 | 646.09 | 0 | 20.6 | B | 4 |
| 3/17/06 | 12:44:16 PM | 0 | 2.00 | 171 | 159 | 1 | 0 | 561.46 | 327 | 11.2 | | 4 |
| 3/17/06 | 12:46:59 PM | 1 | 2.00 | 0 | 0 | 0 | 0 | 669.44 | 0 | 0.0 | | 4 |
| 3/17/06 | 12:50:05 PM | 2 | 2.00 | 0 | 0 | 5 | 0 | 658.37 | 0 | 0.0 | | 4 |
| 3/17/06 | 12:52:47 PM | 3 | 2.00 | 0 | 0 | 1 | 0 | 660.25 | 0 | 0.0 | | 4 |
| 3/17/06 | 12:55:29 PM | 4 | 2.00 | 1 | 2 | 3 | 0 | 666.42 | 2 | 487.3 | | 4 |
| 3/17/06 | 12:58:18 PM | 5 | 2.00 | 0 | 0 | 0 | 0 | 663.26 | 0 | 0.0 | | 4 |

J.K

COPY

Page 4 of 7
MT-06-0323

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_046
Batch Ended: 3/17/06 10:20
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0323 [5] KARDAS 3-17-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C1 | 1 | 0.00 | 2.08 | | 0.00 | 1.78 | |
| C2 | 2 | 0.00 | 1.97 | | 2.78 | 2.30 | |
| C3 | 3 | 0.00 | 2.12 | | 0.00 | 1.27 | |
| C4 | 4 | 0.00 | 2.01 | | 2.71 | 2.27 | |
| D1 | 5 | 1.73 | 2.07 | | 1.38 | 2.17 | |

J.K J.K



J.K 3-20-06

COPY

F213/686

page 5 of 7 RLH

# T-Building Post Remediation Survey Room T-48 1C09

***RSDS#*** MT-06-0323 ***RCT:*** [redacted] ***RCT:*** [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1695 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C090101PR1 | 5889 | [redacted] | 5890 | 1 | 1 | 3/17/06 | 7:31 | 7 | 120 | 26 |
| ALPHA | 1C090102PR2 | 5889 | [redacted] | 5890 | 1 | 2 | 3/17/06 | 7:35 | 0 | 120 | 0 |
| ALPHA | 1C090103PR3 | 5889 | [redacted] | 5890 | 1 | 3 | 3/17/06 | 7:39 | 1 | 120 | 4 |
| ALPHA | 1C090104PR4 | 5889 | [redacted] | 5890 | 1 | 4 | 3/17/06 | 8:24 | 9 | 120 | 34 |
| ALPHA | 1C090105PR5 | 5889 | [redacted] | 5890 | 1 | 5 | 3/17/06 | 8:28 | 3 | 120 | 11 |
| BETA | 1C090101PR1 | 5889 | [redacted] | 5890 | 2 | 1 | 3/17/06 | 7:32 | 134 | 60 | 1255 |
| BETA | 1C090102PR2 | 5889 | [redacted] | 5890 | 2 | 2 | 3/17/06 | 7:36 | 116 | 60 | 1086 |
| BETA | 1C090103PR3 | 5889 | [redacted] | 5890 | 2 | 3 | 3/17/06 | 7:40 | 115 | 60 | 1077 |
| BETA | 1C090104PR4 | 5889 | [redacted] | 5890 | 2 | 4 | 3/17/06 | 8:25 | 94 | 60 | 880 |
| BETA | 1C090105PR5 | 5889 | [redacted] | 5890 | 2 | 5 | 3/17/06 | 8:29 | 113 | 60 | 1058 |

N/A



COPY F214/686

Survey Unit Number: 1C09



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0323
RCT INT/HP J.K [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C09 0101PR1 | T-248 | Wall | See | MAP |
| 1C09 0102PR2 | | | | |
| 1C09 0103PR3 | | | | |
| 1C09 0104PR4 | | | | |
| 1C09 0105PR5 | T-248 | Wall | See | MAP |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F215/686

# RADIOLOGICAL SURVEY DATA SHEET

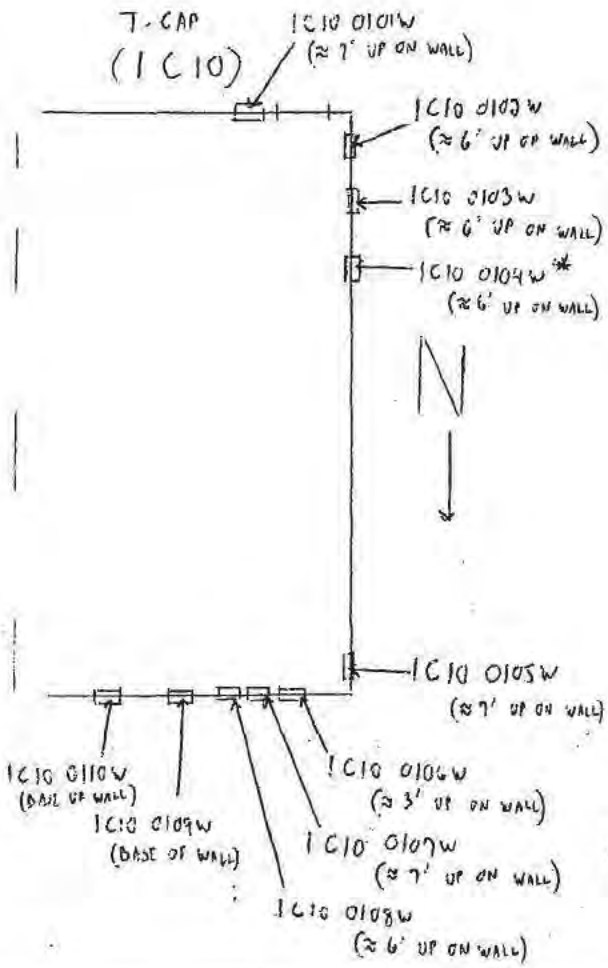


| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-BLDG T-CAP (1C10) | SURVEY NO. MT-05-1356 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Walls. Shadka summary of wall survey attached. RESRAD | RWP NO. N/A |
| | DATE: 12-21-05 |
| | TIME: 1500 |

## MAP / DRAWING

See Attachments
Areas around locations of direct frisks also scanned.

Reference RSDS# MT-06-0321 for Past Remediation survey.




JK 1-3-06
* Denotes cluster ~~unit~~ consisting of 2 painted circles

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

| | | |
|---|---|---|
| SCM23 | C180 / R180 | 6/1/06 |

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | HP# [redacted] | Date: 12-21-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-7-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F216/686

Survey No. MT-05-1356



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C10 0101W |
| 2 | | | | 1C10 0102W |
| 3 | | | | 1C10 0103W |
| 4 | | | | 1C10 0104W |
| 5 | | | | 1C10 0105W |
| 6 | | | | 1C10 0106W |
| 7 | | | | 1C10 0107W |
| 8 | | | | 1C10 0108W |
| 9 | | | | 1C10 0109W |
| 10 | | | | 1C10 0110W |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COPY

COMMENTS: N/A

NOTES:
1. See MD-60036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

F27/686

3 of 4

MARSSIM Smear Data

COPY

MT-05-1356

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20051227_1501.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1356.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

5 of 8/986

4 of 8 4

JK 1-3-06

MARSSIM Smear Data

COPY

MT-05-1356

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 3:01:44 PM | -1 | 10.00 | 9 | 8 | 13 | 11 | 613.74 | 0 | 21.2 | B | 4 |
| 12/27/05 | 3:12:34 PM | 0 | 2.00 | 261 | 246 | 0 | 1 | 545.71 | 505 | 8.9 | | 4 |
| 12/27/05 | 3:15:17 PM | 1 | 2.00 | 0 | 1 | 0 | 5 | 445.17 | 0 | 8111.7 | | 4 |
| 12/27/05 | 3:17:59 PM | 2 | 2.00 | 2 | 2 | 0 | 5 | 537.12 | 4 | 244.9 | | 4 |
| 12/27/05 | 3:20:42 PM | 3 | 2.00 | 0 | 0 | 0 | 6 | 483.93 | 0 | 0.0 | | 4 |
| 12/27/05 | 3:23:25 PM | 4 | 2.00 | 0 | 0 | 0 | 7 | 443.74 | 0 | 0.0 | | 4 |
| 12/27/05 | 3:26:07 PM | 5 | 2.00 | 2 | 2 | 0 | 0 | 430.66 | 3 | 316.7 | | 4 |
| 12/27/05 | 3:28:49 PM | 6 | 2.00 | 11 | 8 | 0 | 5 | 536.40 | 21 | 61.8 | | 4 |
| 12/27/05 | 3:31:33 PM | 7 | 2.00 | 7 | 5 | 0 | 3 | 548.13 | 13 | 89.8 | | 4 |
| 12/27/05 | 3:34:15 PM | 8 | 2.00 | 2 | 1 | 0 | 0 | 492.27 | 4 | 240.3 | | 4 |
| 12/27/05 | 3:36:58 PM | 9 | 2.00 | 1 | 1 | 0 | 11 | 577.52 | 1 | 841.0 | | 4 |
| 12/27/05 | 3:39:42 PM | 10 | 2.00 | 0 | 0 | 0 | 8 | 607.86 | 0 | 0.0 | | 4 |

JK

F219/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_088
Batch Ended: 12/22/05 13:09
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1356 KING [10] GWD ✓

COPY

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.04 | | 2.67 | 2.33 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 1.54 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| C1 | 9 | 0.00 | 2.06 | | 0.26 | 1.74 | |
| C2 | 10 | 1.41 | 1.93 | | 1.44 | 1.95 | |

JM JM

F220/686

8
5 of ~~7~~ 8
Page ~~1 of 1~~ 2/16/06
JM
1-3-06

# T-Building T-CAP (1C10);Survey of Suspected Elevated Spots on Walls

*RSDS#* MT-05-1356 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C100101W | 5895 | [redacted] | 5896 | 1 | 1 | 12/21/05 | 12:46 | 1 | 120 | 4 |
| ALPHA | 1C100102W | 5895 | [redacted] | 5896 | 1 | 2 | 12/21/05 | 12:59 | 2 | 120 | 7 |
| ALPHA | 1C100103W | 5895 | [redacted] | 5896 | 1 | 3 | 12/21/05 | 13:13 | 5 | 120 | 18 |
| ALPHA | 1C100104W | 5895 | [redacted] | 5896 | 1 | 4 | 12/21/05 | 13:27 | 3 | 120 | 11 |
| ALPHA | 1C100105W | 5895 | [redacted] | 5896 | 1 | 5 | 12/21/05 | 13:36 | 5 | 120 | 18 |
| ALPHA | 1C100106W | 5895 | [redacted] | 5896 | 1 | 6 | 12/21/05 | 13:45 | 4 | 120 | 15 |
| ALPHA | 1C100107W | 5895 | [redacted] | 5896 | 1 | 7 | 12/21/05 | 13:54 | 3 | 120 | 11 |
| ALPHA | 1C100108W | 5895 | [redacted] | 5896 | 1 | 8 | 12/21/05 | 14:22 | 3 | 120 | 11 |
| ALPHA | 1C100109W | 5895 | [redacted] | 5896 | 1 | 9 | 12/21/05 | 14:33 | 8 | 120 | 29 |
| ALPHA | 1C100110W | 5895 | [redacted] | 5896 | 1 | 10 | 12/21/05 | 14:45 | 153 | 120 | 561 |
| BETA | 1C100101W | 5895 | [redacted] | 5896 | 2 | 1 | 12/21/05 | 12:47 | 69 | 60 | 644 |
| BETA | 1C100102W | 5895 | [redacted] | 5896 | 2 | 2 | 12/21/05 | 13:00 | 68 | 60 | 635 |
| BETA | 1C100103W | 5895 | [redacted] | 5896 | 2 | 3 | 12/21/05 | 13:14 | 116 | 60 | 1083 |
| BETA | 1C100104W | 5895 | [redacted] | 5896 | 2 | 4 | 12/21/05 | 13:28 | 88 | 60 | 822 |
| BETA | 1C100105W | 5895 | [redacted] | 5896 | 2 | 5 | 12/21/05 | 13:37 | 89 | 60 | 831 |
| BETA | 1C100106W | 5895 | [redacted] | 5896 | 2 | 6 | 12/21/05 | 13:46 | 125 | 60 | 1167 |
| BETA | 1C100107W | 5895 | [redacted] | 5896 | 2 | 7 | 12/21/05 | 13:55 | 97 | 60 | 906 |
| BETA | 1C100108W | 5895 | [redacted] | 5896 | 2 | 8 | 12/21/05 | 14:23 | 71 | 60 | 663 |
| BETA | 1C100109W | 5895 | [redacted] | 5896 | 2 | 9 | 12/21/05 | 14:34 | 292 | 60 | 2726 |
| BETA | 1C100110W | 5895 | [redacted] | 5896 | 2 | 10 | 12/21/05 | 14:46 | 554 | 60 | 5173 |

N
A

COPY

**Survey Unit Number:** 1C10

Page 7 of 8 2/10/06

(Supplemental sheet for biased measurements.)

RSDS # M7-05-1356
RCT INT/HP 24 / [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C10 0101W | T-CM (1C10) | South Wall | N/A | N/A |
| 1C10 0102W | | East Wall | | |
| 1C10 0103W | | | | |
| 1C10 0104W | | | | |
| 1C10 0105W | | | | |
| 1C10 0106W | | North Wall | | |
| 1C10 0107W | | | | |
| 1C10 0108W | | | | |
| 1C10 0109W | | | | |
| 1C10 0110W | | | | |
| N/A | N/A | N/A | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F222/686

# Surface Contamination Monitor Survey Investigation Summary

| | |
|---|---|
| Survey Unit | IC-C7 (Includes IC-C8, IC-C9, IC-10) |
| SCM ID (Circle One) | SCM 53<br>(SCM 23) |
| Calibration Due Date | 06-01-06 |

| Room | Surface | Investigations | |
|---|---|---|---|
| T-Cap | Floor - East | 58 | (for 58 spots) |
| " | Floor - West | 3 | (Marked for Resrad - Includes 5 highest Alpha and 5 highest Beta) |
| | | | |
| | | | |
| | | | |
| T-Cap | Walls | 30 | (for 36 spots) |
| | | | |
| | | | |
| T-Cap Sump Pits | Walls Only | 38 | (for 48 spots) |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Note: 2 floor spots and 1 wall spot from T-CAP Floor East and walls are actually located in Corridor 39, north end.

Name Sherry Oran

Signature Sherry Oran

Date 12-19-05

COPY

# RADIOLOGICAL SURVEY DATA SHEET



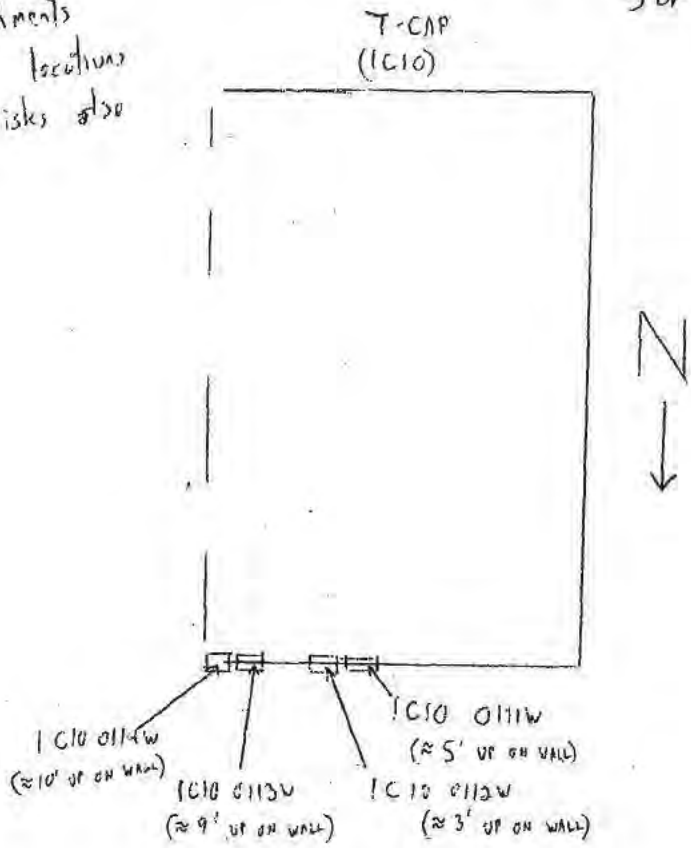
| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-BLDG T-CAP (1C10) | SURVEY NO. MT-05-1357 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Walls | RWP NO. N/A |
| | DATE: 12-22-05 |
| RESRAD | TIME: 0830 |

## MAP / DRAWING

Reference "RSDS" # MT-06-0321 for Post Remediation survey

See Attachments

Areas around locations of direct frisks also scanned.




Reference MT-05-1356 for SCM23 Summary

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary

COPY

(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 & 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | [redacted] | Date: 12-22-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# N/A | Date: N/A |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | H [redacted] | Date: 2-7-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | F224/6686 |

Survey No. M7-05-1357



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheet | 1010 0111W |
| 2 | ↓ | ↓ | ↓ | 1010 0112W |
| 3 | | | | 1010 0113W |
| 4 | | | | 1010 0114W |
| | | N | | |
| | | A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | | |
| | | A | | |

COMMENTS: N A

NOTES:
1. See MD-60036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620A (4-95)

F-225/686

MARSSIM Smear Data

COPY

MT-05-1357

RM
1-3-06

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051227_1038.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1357.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F226/686

4 of 7

MARSSIM Smear Data

JH
1-3-06
MT-05-1357

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 10:39:17 AM | -1 | 10.00 | 8 | 7 | 11 | 5 | 618.40 | 0 | 22.5 | B | 1 |
| 12/27/05 | 10:50:04 AM | 0 | 2.00 | 448 | 425 | 0 | 0 | 539.90 | 873 | 6.7 | | 1 |
| 12/27/05 | 10:52:46 AM | 1 | 2.00 | 1 | 1 | 0 | 12 | 538.29 | 1 | 790.7 | | 1 |
| 12/27/05 | 10:55:27 AM | 2 | 2.00 | 1 | 2 | 0 | 5 | 551.10 | 2 | 409.3 | | 1 |
| 12/27/05 | 10:58:09 AM | 3 | 2.00 | 0 | 0 | 0 | 7 | 457.94 | 0 | 0.0 | | 1 |
| 12/27/05 | 11:00:52 AM | 4 | 2.00 | 5 | 5 | 0 | 4 | 518.26 | 9 | 116.2 | | 1 |

JH

COPY

F 27/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_092
Batch Ended: 12/22/05 13:41
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1357 KING [4] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.06 | | 3.83 | 2.60 | |
| A3 | 3 | 0.00 | 2.35 | | 5.43 | 3.09 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |

J.K J.K

COPY

5 of 7

Page ~~1 of 1~~

J.K
1-3-06

1228/686

# T-Building T-CAP (1C10);Survey of Suspected Elevated Spots on Walls

*RSDS#* MT-05-1357 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C100111W | 5895 | [redacted] | 5896 | 1 | 1 | 12/22/05 | 7:23 | 3 | 120 | 11 |
| ALPHA | 1C100112W | 5895 | [redacted] | 5896 | 1 | 2 | 12/22/05 | 7:39 | 782 | 120 | 2865 |
| ALPHA | 1C100113W | 5895 | [redacted] | 5896 | 1 | 3 | 12/22/05 | 7:49 | 8 | 120 | 29 |
| ALPHA | 1C100114W | 5895 | [redacted] | 5896 | 1 | 4 | 12/22/05 | 8:02 | 4 | 120 | 15 |
| BETA | 1C100111W | 5895 | [redacted] | 5896 | 2 | 1 | 12/22/05 | 7:24 | 119 | 60 | 1111 |
| BETA | 1C100112W | 5895 | [redacted] | 5896 | 2 | 2 | 12/22/05 | 7:40 | 2693 | 60 | 25145 |
| BETA | 1C100113W | 5895 | [redacted] | 5896 | 2 | 3 | 12/22/05 | 7:50 | 91 | 60 | 850 |
| BETA | 1C100114W | 5895 | [redacted] | 5896 | 2 | 4 | 12/22/05 | 8:03 | 68 | 60 | 635 |

N

A

COPY



F229/686

**Survey Unit Number:** 1C10



(Supplemental sheet for biased measurements.)

RSDS # MT-05-1357
RCT INT/HP JH / [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C10 0111 W | T CAP (1C10) | North Wall | N/A | N/A |
| 1C10 0112 W | ↓ | ↓ | ↓ | ↓ |
| 1C10 0113 W | ↓ | ↓ | ↓ | ↓ |
| 1C10 0114 W | ↓ | ↓ | ↓ | ↓ |
| N/A | N/A | N/A | ↓ | ↓ |
| ↓ | ↓ | ↓ | ↓ | ↓ |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F230/686

# RADIOLOGICAL SURVEY DATA SHEET

| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T BLDG / IC10 / T-CAP | SURVEY NO. MT-05-1358 |
| PURPOSE: INVESTIGATION SURVEY NW AREA @ SUMP. ~~(RESRAD AREA)~~ | RWP NO. N/A |
| | DATE 12/22/05 |
| | TIME 1600 |

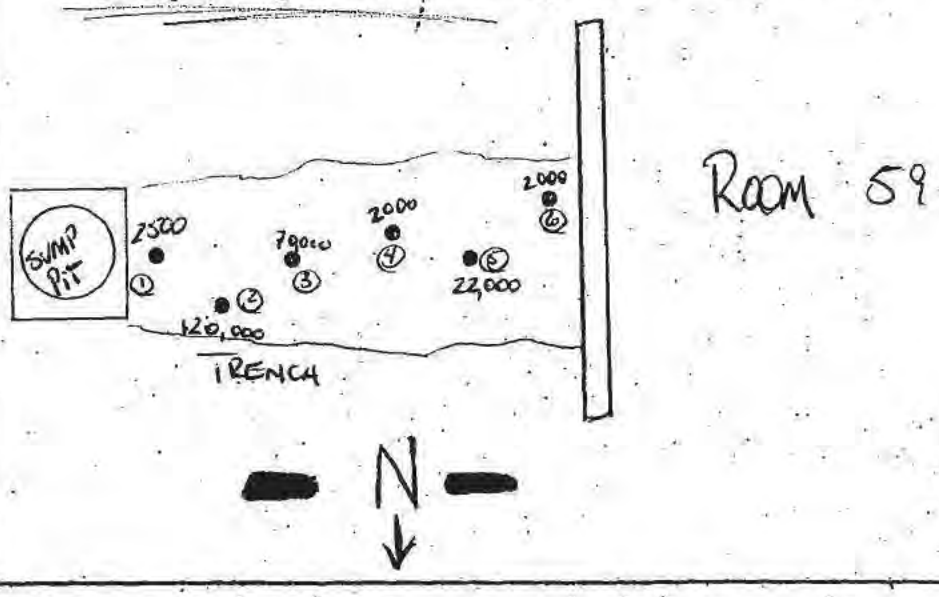
MAP/DRAWING

SURVEY PERFORMED USING A FIDLER & 2350-1. ELEVATED READINGS ARE DOCUMENTED ON ATTACHED SHEET.

SEE ATTACHED MAP FOR SURVEY LOCATION.

FIDLER READINGS PICTURED BELOW IN CPM.

COPY




LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) = direct cont. measurement in dpm/100cm².

INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5928 / 5927 | 5/24/06 |
| Fidler 2360 | 5874 / 3966 | 6/13/06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) K. Abercrombie | | DATE: 12/22/05 |
| Completed by: (Print Name) RICARDO V. BURKE / K. Abercrombie | | |
| Counted by: (Signature) SEE ATTACHED SHEETS | HI # | DATE: |
| Counted by: (Print Name) SEE ATTACHED SHEETS | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | HI # | DATE: 1-16-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-0620 (2-98)

F231/686

Survey No. MT-05-1358

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | ATTACHED | SHEET | 1C10-0101T |
| 2 | ↓ | ↓ | ↓ | 1C10-0102T |
| 3 | | | | 1C10-0103T |
| 4 | | | | 1C10-0104T |
| 5 | | | | 1C10-0105T |
| 6 | | | | 1C10-0106T |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | N | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | A |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | N | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | A |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 [redacted] | | [redacted] | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620 (4-96)

F232/686

MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20051227_1008.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1358.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

PAGE 4 OF 7
MT-05-1350

## MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 10:08:38 AM | -1 | 10.00 | 10 | 9 | 10 | 5 | 620.33 | 0 | 20.5 | B | 4 |
| 12/27/05 | 10:19:29 AM | 0 | 2.00 | 261 | 248 | 0 | 0 | 545.22 | 506 | 8.9 | | 4 |
| 12/27/05 | 10:22:11 AM | 1 | 2.00 | 0 | 0 | 0 | 0 | 580.18 | 0 | 0.0 | | 4 |
| 12/27/05 | 10:24:54 AM | 2 | 2.00 | 0 | 0 | 2 | 0 | 515.82 | 0 | 0.0 | | 4 |
| 12/27/05 | 10:27:35 AM | 3 | 2.00 | 0 | 0 | 0 | 9 | 583.46 | 0 | 0.0 | | 4 |
| 12/27/05 | 10:30:16 AM | 4 | 2.00 | 0 | 0 | 0 | 0 | 561.51 | 0 | 0.0 | | 4 |
| 12/27/05 | 10:32:58 AM | 5 | 2.00 | 0 | 1 | 8 | 0 | 555.46 | 1 | 1094.1 | | 4 |
| 12/27/05 | 10:35:40 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 492.51 | 0 | 0.0 | | 4 |

RB

Page 4 of 6

PAGE 5 OF 7

COPY

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_093
Batch Ended: 12/22/05 13:45
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1358 BURKE [6] GWD

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.04 | | 2.67 | 2.33 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 1.54 | 1.89 | | 1.12 | 1.93 | |

RB RB

F 35/686

 RJS 1/9/06

EWB

# T-Building Investigation Survey (NW T-Cap @ Sump) 1C10

*RSDS#* MT-05-1358 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.168 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C100101T | 5928 | [redacted] | 5927 | 1 | 1 | 12/22/05 | 8:05 | 12 | 120 | 43 |
| ALPHA | 1C100102T | 5928 | [redacted] | 5927 | 1 | 2 | 12/22/05 | 8:10 | 7 | 120 | 25 |
| ALPHA | 1C100103T | 5928 | [redacted] | 5927 | 1 | 3 | 12/22/05 | 8:16 | 11 | 120 | 40 |
| ALPHA | 1C100104T | 5928 | [redacted] | 5927 | 1 | 4 | 12/22/05 | 8:21 | 7 | 120 | 25 |
| ALPHA | 1C100105T | 5928 | [redacted] | 5927 | 1 | 5 | 12/22/05 | 8:27 | 7 | 120 | 25 |
| ALPHA | 1C100106T | 5928 | [redacted] | 5927 | 1 | 6 | 12/22/05 | 8:32 | 14 | 120 | 51 |
| BETA | 1C100101T | 5928 | [redacted] | 5927 | 2 | 1 | 12/22/05 | 8:06 | 1583 | 60 | 14957 |
| BETA | 1C100102T | 5928 | [redacted] | 5927 | 2 | 2 | 12/22/05 | 8:11 | 2431 | 60 | 22985 |
| BETA | 1C100103T | 5928 | [redacted] | 5927 | 2 | 3 | 12/22/05 | 8:17 | 4533 | 60 | 42829 |
| BETA | 1C100104T | 5928 | [redacted] | 5927 | 2 | 4 | 12/22/05 | 8:22 | 664 | 60 | 6274 |
| BETA | 1C100105T | 5928 | [redacted] | 5927 | 2 | 5 | 12/22/05 | 8:28 | 1932 | 60 | 18276 |
| BETA | 1C100106T | 5928 | [redacted] | 5927 | 2 | 6 | 12/22/05 | 8:33 | 307 | 60 | 2901 |

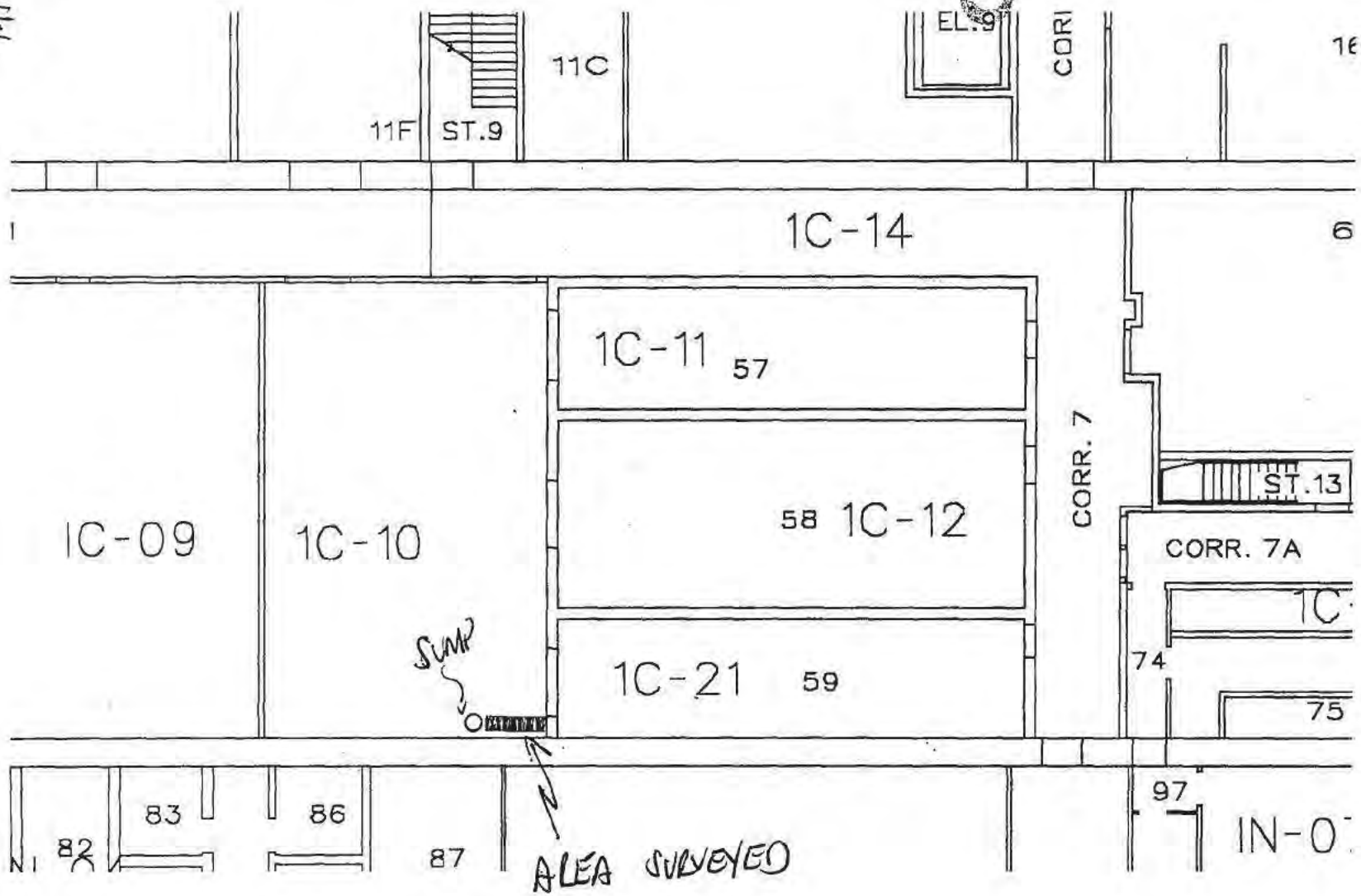
COPY



F236/686

PAGE 7 OF 7
MT-05-1358

1C-10
Class 1




5/24/06
6/13/06
5928/5927
5874/3966
ABSECONDIBLE
2350-1
FIGURE
FIGURE
F-237/686

# RADIOLOGICAL SURVEY DATA SHEET

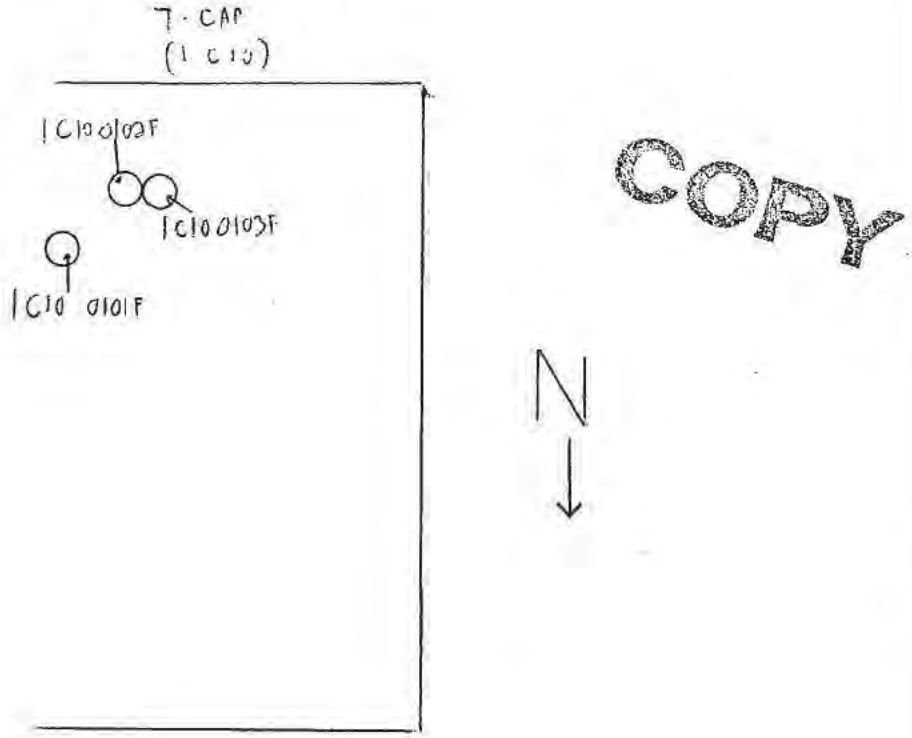


| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG T-CAP (1C10) | SURVEY NO. MT-05-1359 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots on Floor | RWP NO. N/A |
| | DATE: 12-22-05 |
| RESRAD | TIME: 0915 |

## MAP / DRAWING

See Attachments

Areas around locations of direct frisks also scanned.




COPY

Reference MT-05-1356 for scan23 summary

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | HP# [redacted] | Date: 12-22-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# | Date: |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | HP# [redacted] | Date: 2-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F238/686

Survey No. M7-05-1359



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheet | 1C10 0101F |
| 2 | ↓ | ↓ | ↓ | 1C10 0103F |
| 3 | | | | 1C10 0103F |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N A

N A

COMMENTS:

N A

NOTES:

1. See MD-60036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

F-239/686

MARSSIM Smear Data

JK
1-3-06

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051227_1246.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1359.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

E246/680

4.1.7
JK
1.3.06

MARSSIM Smear Data

COPY

MJ.05-1359

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/27/05 | 12:47:08 PM | -1 | 10.00 | 9 | 8 | 12 | 2 | 616.66 | 0 | 21.7 | B | 1 |
| 12/27/05 | 12:57:56 PM | 0 | 2.00 | 417 | 396 | 4 | 0 | 541.89 | 811 | 7.0 | | 1 |
| 12/27/05 | 1:00:38 PM | 1 | 2.00 | 0 | 0 | 0 | 10 | 503.82 | 0 | 0.0 | | 1 |
| 12/27/05 | 1:03:20 PM | 2 | 2.00 | 0 | 0 | 2 | 20 | 495.38 | 0 | 0.0 | | 1 |
| 12/27/05 | 1:06:04 PM | 3 | 2.00 | 0 | 0 | 0 | 15 | 511.29 | 0 | 0.0 | | 1 |

JK

F-241/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_091
Batch Ended: 12/22/05 13:38
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1359 KING [3] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.47 | 1.84 | |
| A2 | 2 | 3.59 | 2.85 | | 2.34 | 2.33 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |

JK JK

Copy

5 of 7



JK

F-243/686

# T-Building T-CAP (1C10);Survey of Suspected Elevated Spots on Floor

*RSDS#* MT-05-1359 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| **TYPE** | **LOCATION** | **2350#** | **RCT ID** | **PROBE** | **DET #** | **item** | **DATE** | **TIME** | **CNTS** | **CT TIME** | **dpm/100cm2** |
| ALPHA | 1C100101F | 5895 | [redacted] | 5896 | 1 | 1 | 12/22/05 | 8:46 | 638 | 120 | 2338 |
| ALPHA | 1C100102F | 5895 | [redacted] | 5896 | 1 | 2 | 12/22/05 | 8:54 | 882 | 120 | 3232 |
| ALPHA | 1C100103F | 5895 | [redacted] | 5896 | 1 | 3 | 12/22/05 | 9:02 | 495 | 120 | 1814 ✓ |
| BETA | 1C100101F | 5895 | [redacted] | 5896 | 2 | 1 | 12/22/05 | 8:47 | 5369 | 60 | 50131 |
| BETA | 1C100102F | 5895 | [redacted] | 5896 | 2 | 2 | 12/22/05 | 8:55 | 4432 | 60 | 41382 |
| BETA | 1C100103F | 5895 | [redacted] | 5896 | 2 | 3 | 12/22/05 | 9:03 | 5219 | 60 | 48730 ✓ |

N

A

COPY



F-243/686

**Survey Unit Number:** 1C1C



(Supplemental sheet for biased measurements.)

RSDS # MT-05-1359
RCT INT/HP ?K [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C10 0101F | T CAP (1C1C) | Floor | N/A | N/A |
| 1C10 0102F | ↓ | ↓ | ↓ | ↓ |
| 1C10 0103F | ↓ | ↓ | ↓ | ↓ |
| N/A | N/A | N/A | ↓ | ↓ |
| ↓ | ↓ | ↓ | ↓ | ↓ |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F244/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION (BLDG./AREA/ROOM) 1-Bldg -01 Cap | SURVEY NO. MT-06-0077 |
| SURVEYOR Drain of lower walls inaccessible by Dwarfie with 2350 RESRAD 1C-10 | RWP NO N/A |
| | DATE 1-19-06 |
| | TIME 1315 |

## MAP / DRAWING

See attached

Elevated readings marked on attached map

No elevated readings in remaining areas

100% scan of lower WALLS by 2350

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| 2350 | 5854/5861 | 7-28-06 |
| | A | |
| | N | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 1-19-06 |
| Completed by: (Print Name) T.T. ROE / NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | F245/686 |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 2-9-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. JT-06-0077

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | A | |
| 22 | | | N | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | A | |
| 56 | | N | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N/A Per Jared Hollabaugh no spreadsheet required.

NOTES:

1. See MD-50036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

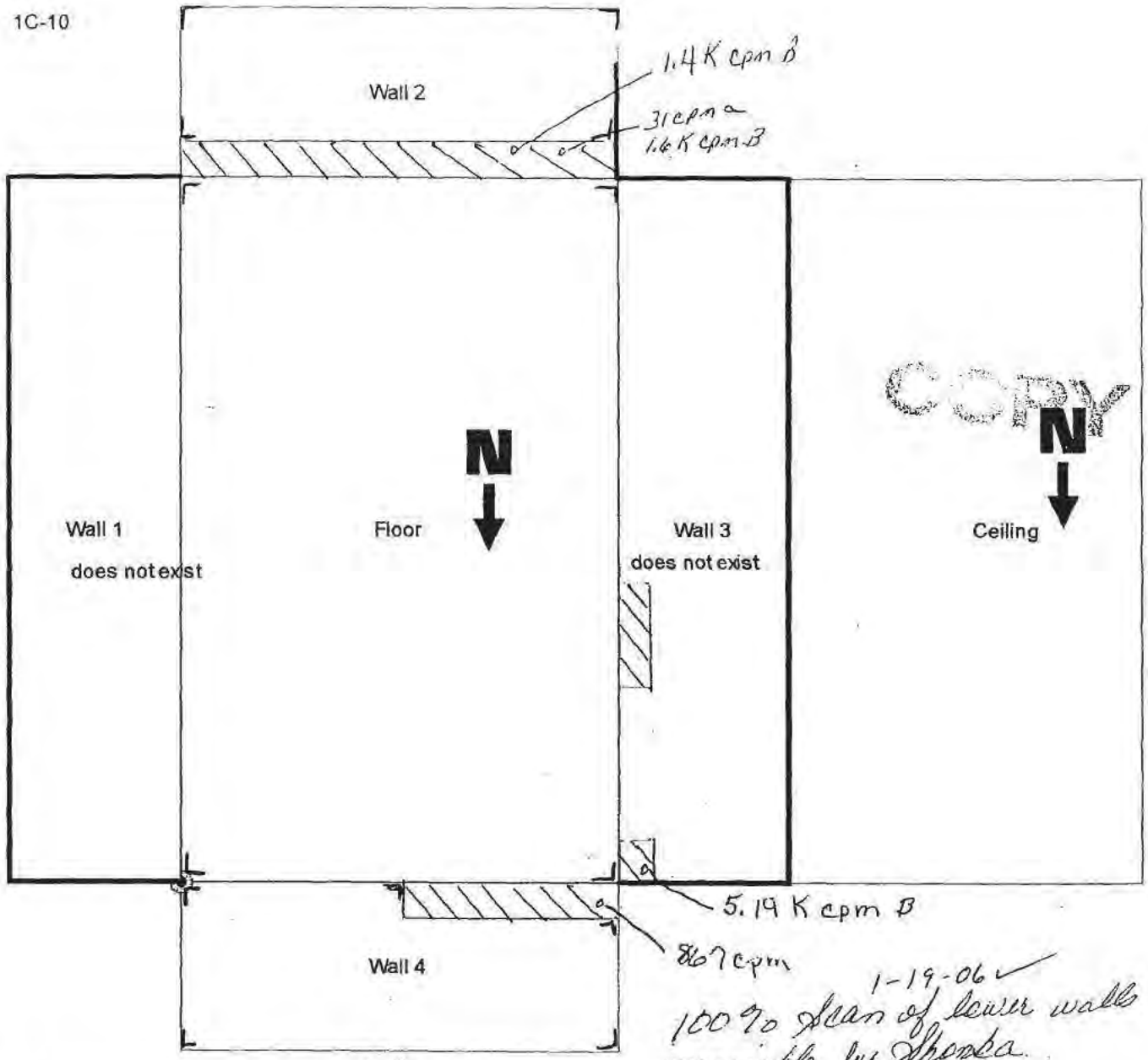
F246/686

MT-06-0071
Pg. 3 of 3

BR 1-19-06

1C-10 100% scan of ~~floor and~~ walls up to 2 meters
Class 1 ~~25 % scan of walls above 2 meters~~ BR 1-19-06

1C-10




COPY

SCM 23 scanned 100% of floor, 100% of walls up to 2 meters and 25% of walls above 2 meters.

1-19-06
100% scan of lower walls inaccessible by Shonka.
Meter 5904
Probe 5905
Cal due 2/22/06
Meter 5854
Probe 5861
cal due 7/28/06 F247/686
BR
NR

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) J Bldg - J Cap | SURVEY NO. MT-06-0171 |
| PURPOSE: Living Quarters + Utilities | RWP NO. N/A |
| | DATE: 2-11-06 |
| RESRAD 1010 | TIME: 1030 |

MAP / DRAWING

See attached

No direct α/β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 2-11-06 |
| Completed by: (Print Name) [illegible] Donna Watson | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) See attached | | F248/686 |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 2-15-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0171

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | IC10-0101D |
| 2 | | | | IC10-0201H |
| 3 | | | | IC10-0201D |
| 4 | | | | IC10-0203H |
| 5 | | | | IC10-0201V |
| 6 | | | | IC10-0202V |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | A | |
| 20 | | N | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
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| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | A | | |
| 51 | | | | |
| 52 | | N | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
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| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-60036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F 249/686

Fig. 39 of MT-06-0171

MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060214_0830.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0171.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

1 of 850/686

BR 2-11-06

Fig. 4 of 8
MT-06-0171

## MARSSIM Smear Data

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/14/06 | 8:30:52 AM | -1 | 10.00 | 12 | 10 | 11 | 12 | 618.42 | 0 | 18.4 | B | 1 |
| 2/14/06 | 8:41:43 AM | 0 | 2.00 | 484 | 459 | 0 | 1 | 581.65 | 909 | 6.5 | | 1 |
| 2/14/06 | 8:44:25 AM | 1 | 2.00 | 0 | 0 | 0 | 18 | 597.89 | 0 | 0.0 | | 1 |
| 2/14/06 | 8:47:08 AM | 2 | 2.00 | 28 | 24 | 0 | 8 | 564.36 | 54 | 32.7 | | 1 |
| 2/14/06 | 8:49:49 AM | 3 | 2.00 | 24 | 23 | 0 | 4 | 631.64 | 43 | 36.4 | | 1 |
| 2/14/06 | 8:52:32 AM | 4 | 2.00 | 0 | 0 | 0 | 11 | 630.32 | 0 | 0.0 | | 1 |
| 2/14/06 | 8:55:14 AM | 5 | 2.00 | 0 | 0 | 4 | 12 | 573.17 | 0 | 0.0 | | 1 |
| 2/14/06 | 8:57:56 AM | 6 | 2.00 | 1 | 2 | 0 | 4 | 524.71 | 2 | 678.0 | | 1 |

BR

F-951/686

Pg. 5 of 8
MT-06-0171

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_055
Batch Ended: 2/14/06 7:48
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0171 [6] ROE 2-14-06 RLH ✓

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.01 | | 0.34 | 1.64 | |
| A3 | 3 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 4 | 0.00 | 2.14 | | 2.89 | 2.41 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| | | ✓ BR | | | ✓ BR | | |

COPY

F-250/686

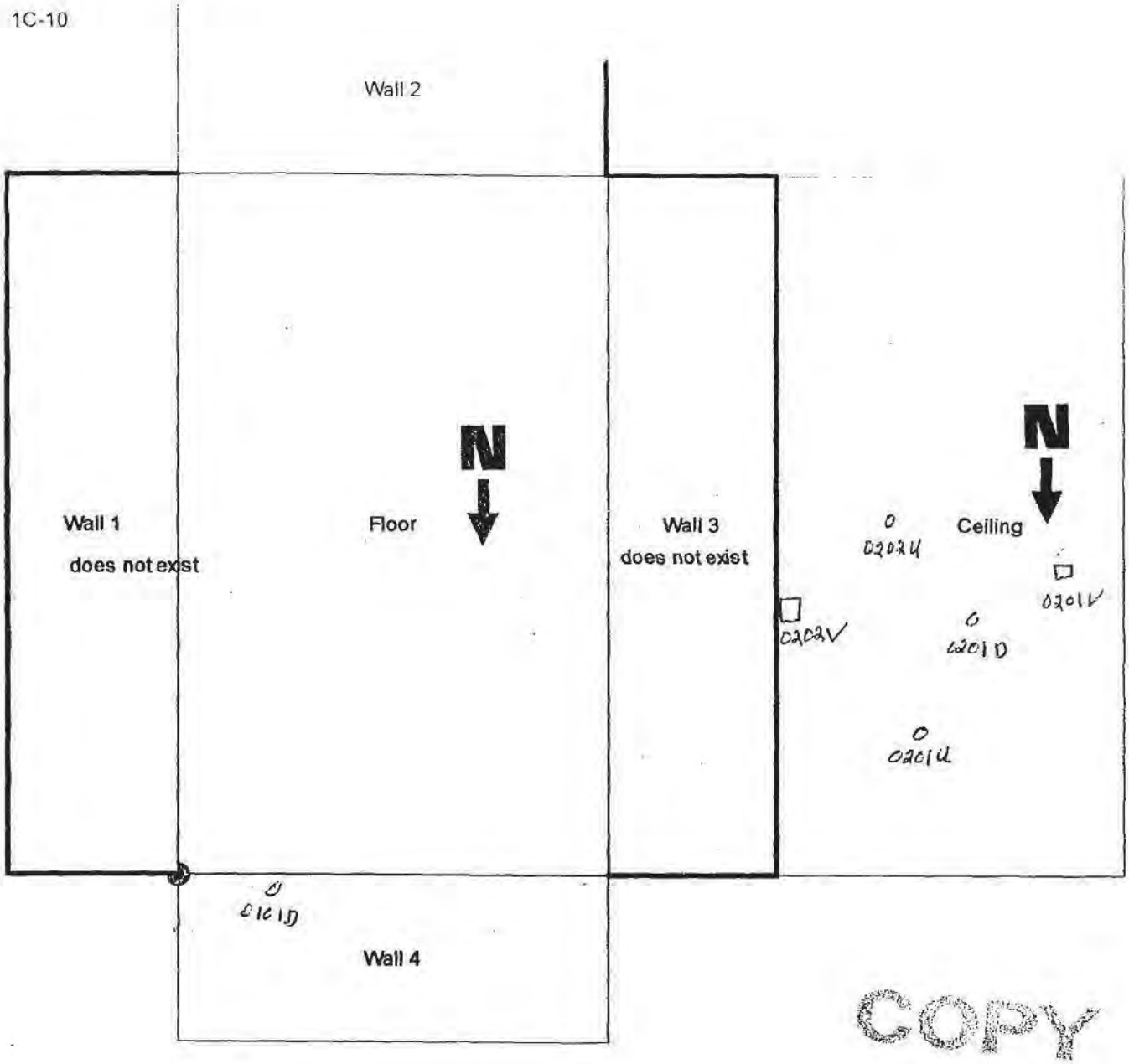


RLH

Fig 6 of 8
MT-06-0171

1C-10 drains, vents, and utilities
Class 1

1C-10




COPY

F253/686

# T-Building DRAINS VENTS AND UTILITIES 1C10

*RSDS#* MT-06-0171 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C100101D | 5854 | [redacted] | 5861 | 1 | 1 | 2/11/06 | 9:18 | 9 | 120 | 35 |
| ALPHA | 1C100201U | 5854 | [redacted] | 5861 | 1 | 2 | 2/11/06 | 9:25 | 3 | 120 | 12 |
| ALPHA | 1C100201D | 5854 | [redacted] | 5861 | 1 | 3 | 2/11/06 | 9:31 | 7 | 120 | 27 |
| ALPHA | 1C100202U | 5854 | [redacted] | 5861 | 1 | 4 | 2/11/06 | 9:37 | 8 | 120 | 31 |
| ALPHA | 1C100201V | 5854 | [redacted] | 5861 | 1 | 5 | 2/11/06 | 9:43 | 5 | 120 | 19 |
| ALPHA | 1C100202V | 5854 | [redacted] | 5861 | 1 | 6 | 2/11/06 | 9:45 | 2 | 120 | 8 ✓ |
| BETA | 1C100101D | 5854 | [redacted] | 5861 | 2 | 1 | 2/11/06 | 9:19 | 246 | 60 | 2396 |
| BETA | 1C100201U | 5854 | [redacted] | 5861 | 2 | 2 | 2/11/06 | 9:26 | 135 | 60 | 1315 |
| BETA | 1C100201D | 5854 | [redacted] | 5861 | 2 | 3 | 2/11/06 | 9:32 | 131 | 60 | 1276 |
| BETA | 1C100202U | 5854 | [redacted] | 5861 | 2 | 4 | 2/11/06 | 9:38 | 120 | 60 | 1169 |
| BETA | 1C100201V | 5854 | [redacted] | 5861 | 1 | 5 | 2/13/06 | 9:45 | 103 | 120 | 1003 |
| BETA | 1C100202V | 5854 | [redacted] | 5861 | 2 | 6 | 2/13/06 | 9:47 | 99 | 60 | 964 ✓ |

A

N

COPY



F254/686

Survey Unit Number: 1C10



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0171
RCT INT/HP BR [redacted] Dil [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C10-0101D | T-Cap | Wall 4 Drain | | |
| 1C10-0201U | | Water | | |
| 1C10-0201D | | Ceiling | | |
| 1C10-0202U | | Stream | | |
| 1C10-0201V | | Ceiling Vent | | |
| 1C10-0202V | | Ceiling Vent | | |
| | | | | A |
| | | | N | |
| | A | | | |
| | N | | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) Bldg 2 J-Cap | SURVEY NO. MT-06-0172 |
| PURPOSE: Upper & Lower Judgementals | RWP NO. N/A |
| | DATE: 2-11-06 |
| 1C10 | TIME: 1400 |

MAP / DRAWING

See attached

No elevated α/β detected

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·· = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| ~~6-23-06~~ ~~AMC 2350~~ | 5854/5861 | 7-28-06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) R J Rice / Bruce Watson | [redacted] | Date: 2-11-06 |
| Completed by: (Print Name) R J Rice / Bruce Watson | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) See attached | | F256/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-15-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0172

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C10 - 0101J |
| 2 | | | | 1C10 - 0102J |
| 3 | | | | 1C10 - 0103J |
| 4 | | | | 1C10 - 0104J |
| 5 | | | | 1C10 - 0105J |
| 6 | | | | 1C10 - 0106J |
| 7 | | | | 1C10 - 0107J |
| 8 | | | | 1C10 - 0108J |
| 9 | | | | 1C10 - 0109J |
| 10 | | | | 1C10 - 0110J |
| 11 | | | | 1C10 - 0201J |
| 12 | | | | 1C10 - 0202J |
| 13 | | | | 1C10 - 0203J |
| 14 | | | | 1C10 - 0204J |
| 15 | | | | 1C10 - 0205J |
| 16 | | | | 1C10 - 0206J |
| 17 | | | | 1C10 - 0207J |
| 18 | | | | 1C10 - 0208J |
| 19 | | | | 1C10 - 0209J |
| 20 | ↓ | ↓ | ↓ | 1C10 - 0210J |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | A | |
| 29 | | N | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | A | |
| 54 | | N | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

**COMMENTS:** N/A ↓

**NOTES:**

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F257/686

MT-06-0172
Fig. 3 of 8



**MARSSIM Smear Data**

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060213_1633.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0172.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
  Quench Indicator: tSIE/AEC
  External Std Terminator (sec): 0.5 2s%
  Pre-Count Delay (min): 0.00
Quench Set:
  Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F258/686

DK 2-11-06

MT-CK-0172 pg 4 of 8

## MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 4:34:12 PM | -1 | 10.00 | 10 | 9 | 12 | 20 | 636.30 | 0 | 19.9 | B | 3 |
| 2/13/06 | 4:45:02 PM | 0 | 2.00 | 376 | 361 | 0 | 1 | 556.66 | 722 | 7.4 | | 3 |
| 2/13/06 | 4:47:43 PM | 1 | 2.00 | 0 | 0 | 0 | 15 | 568.53 | 0 | 0.0 | | 3 |
| 2/13/06 | 4:50:25 PM | 2 | 2.00 | 0 | 0 | 1 | 27 | 603.96 | 0 | 0.0 | | 3 |
| 2/13/06 | 4:53:05 PM | 3 | 2.00 | 0 | 0 | 0 | 15 | 618.70 | 0 | 0.0 | | 3 |
| 2/13/06 | 4:55:47 PM | 4 | 2.00 | 0 | 0 | 4 | 17 | 589.71 | 0 | 0.0 | | 3 |
| 2/13/06 | 4:58:28 PM | 5 | 2.00 | 2 | 2 | 3 | 8 | 615.39 | 3 | 281.4 | | 3 |
| 2/13/06 | 5:01:08 PM | 6 | 2.00 | 0 | 0 | 0 | 19 | 600.60 | 0 | 2070.4 | | 3 |
| 2/13/06 | 5:03:49 PM | 7 | 2.00 | 2 | 0 | 0 | 21 | 634.02 | 3 | 281.4 | | 3 |
| 2/13/06 | 5:06:30 PM | 8 | 2.00 | 0 | 0 | 0 | 16 | 608.37 | 0 | 0.0 | | 3 |
| 2/13/06 | 5:09:11 PM | 9 | 2.00 | 1 | 0 | 0 | 18 | 591.69 | 2 | 578.7 | | 3 |
| 2/13/06 | 5:11:52 PM | 10 | 2.00 | 0 | 0 | 0 | 20 | 593.40 | 0 | 0.0 | | 3 |
| 2/13/06 | 5:14:33 PM | 11 | 2.00 | 0 | 1 | 0 | 15 | 616.06 | 0 | 0.0 | | 3 |
| 2/13/06 | 5:17:15 PM | 12 | 2.00 | 1 | 1 | 0 | 22 | 612.92 | 3 | 376.3 | | 3 |
| 2/13/06 | 5:19:57 PM | 13 | 2.00 | 3 | 4 | 0 | 11 | 609.80 | 6 | 164.8 | | 3 |
| 2/13/06 | 5:22:38 PM | 14 | 2.00 | 6 | 5 | 0 | 9 | 601.82 | 11 | 102.1 | | 3 |
| 2/13/06 | 5:25:19 PM | 15 | 2.00 | 4 | 3 | 0 | 7 | 552.98 | 7 | 145.8 | | 3 |
| 2/13/06 | 5:28:01 PM | 16 | 2.00 | 0 | 0 | 0 | 11 | 604.40 | 0 | 0.0 | | 3 |
| 2/13/06 | 5:31:02 PM | 17 | 2.00 | 0 | 0 | 0 | 12 | 628.53 | 0 | 0.0 | | 3 |
| 2/13/06 | 5:33:43 PM | 18 | 2.00 | 4 | 4 | 0 | 7 | 563.24 | 8 | 132.1 | | 3 |
| 2/13/06 | 5:36:24 PM | 19 | 2.00 | 2 | 3 | 0 | 12 | 585.67 | 5 | 217.2 | | 3 |
| 2/13/06 | 5:39:05 PM | 20 | 2.00 | 0 | 0 | 0 | 38 | 549.33 | 1 | 1310.3 | | 3 |

BR

F-259/686

MT-06-0172
Page 5 of 8

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_042
Batch Ended: 2/13/06 9:02
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0172 [20] ROE 2-13-06 RLH ✓

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.23 | | 3.08 | 2.61 | |
| A2 | 2 | 0.00 | 2.06 | | 3.83 | 2.60 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 1.53 | 1.95 | | 4.46 | 2.74 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.19 | |
| A1 | 9 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 10 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 11 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 12 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 13 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 14 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 15 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 16 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| A1 | 17 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 18 | 0.00 | 2.04 | | 2.67 | 2.33 | |
| A3 | 19 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 20 | 0.00 | 2.10 | | 0.00 | 1.21 | |

BR BR

F26966

 BR 2-11-06

RLH

MT-06-0172
pg 6 of 8

# T-Building UPPER AND LOWER JUDGEMENTALS FOR 1C10

RSDS# MT-06-0172 RCT: [redacted] RCT: [redacted]

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | | EFF: | | PROBE AREA: | | cm² | Surface Eff: | | Detector #: 1 |
| Beta | 43-68 BKG: | | EFF: | | PROBE AREA: | | cm² | Surface Eff: | | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | | EFF: | | PROBE AREA: | | cm² | Surface Eff: | | Detector #: 3 |
| Beta Scan | 43-37 BKG: | | EFF: | | PROBE AREA: | | cm² | Surface Eff: | | Detector #: 4 |

| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ALPHA | 1C100101J | 5854 | [redacted] | 5861 | 1 | 1 | 2/11/06 | 10:14 | 12 | 120 | 46 |
| ALPHA | 1C100102J | 5854 | [redacted] | 5861 | 1 | 2 | 2/11/06 | 10:25 | 6 | 120 | 23 |
| ALPHA | 1C100103J | 5854 | [redacted] | 5861 | 1 | 3 | 2/11/06 | 10:29 | 1 | 120 | 4 |
| ALPHA | 1C100104J | 5854 | [redacted] | 5861 | 1 | 4 | 2/11/06 | 10:34 | 7 | 120 | 27 |
| ALPHA | 1C100105J | 5854 | [redacted] | 5861 | 1 | 5 | 2/11/06 | 10:37 | 8 | 120 | 31 |
| ALPHA | 1C100106J | 5854 | [redacted] | 5861 | 1 | 6 | 2/11/06 | 12:25 | 5 | 120 | 19 |
| ALPHA | 1C100107J | 5854 | [redacted] | 5861 | 1 | 7 | 2/11/06 | 12:28 | 3 | 120 | 12 |
| ALPHA | 1C100108J | 5854 | [redacted] | 5861 | 1 | 8 | 2/11/06 | 12:32 | 9 | 120 | 35 |
| ALPHA | 1C100109J | 5854 | [redacted] | 5861 | 1 | 9 | 2/11/06 | 12:36 | 7 | 120 | 27 |
| ALPHA | 1C100110J | 5854 | [redacted] | 5861 | 1 | 10 | 2/11/06 | 12:39 | 6 | 120 | 23 |
| ALPHA | 1C100201J | 5854 | [redacted] | 5861 | 1 | 11 | 2/11/06 | 12:44 | 3 | 120 | 12 |
| ALPHA | 1C100202J | 5854 | [redacted] | 5861 | 1 | 12 | 2/11/06 | 12:48 | 11 | 120 | 43 |
| ALPHA | 1C100203J | 5854 | [redacted] | 5861 | 1 | 13 | 2/11/06 | 12:51 | 4 | 120 | 15 |
| ALPHA | 1C100204J | 5854 | [redacted] | 5861 | 1 | 14 | 2/11/06 | 12:56 | 2 | 120 | 8 |
| ALPHA | 1C100205J | 5854 | [redacted] | 5861 | 1 | 15 | 2/11/06 | 13:00 | 6 | 120 | 23 |
| ALPHA | 1C100206J | 5854 | [redacted] | 5861 | 1 | 16 | 2/11/06 | 13:04 | 5 | 120 | 19 |
| ALPHA | 1C100207J | 5854 | [redacted] | 5861 | 1 | 17 | 2/11/06 | 13:08 | 3 | 120 | 12 |
| ALPHA | 1C100208J | 5854 | [redacted] | 5861 | 1 | 18 | 2/11/06 | 13:12 | 1 | 120 | 4 |
| ALPHA | 1C100209J | 5854 | [redacted] | 5861 | 1 | 19 | 2/11/06 | 13:16 | 5 | 120 | 19 |
| ALPHA | 1C100210J | 5854 | [redacted] | 5861 | 1 | 20 | 2/11/06 | 13:24 | 4 | 120 | 15 ✓ |
| BETA | 1C100101J | 5854 | [redacted] | 5861 | 2 | 1 | 2/11/06 | 10:15 | 168 | 60 | 1636 |
| BETA | 1C100102J | 5854 | [redacted] | 5861 | 2 | 2 | 2/11/06 | 10:26 | 147 | 60 | 1431 |
| BETA | 1C100103J | 5854 | [redacted] | 5861 | 2 | 3 | 2/11/06 | 10:30 | 91 | 60 | 886 |
| BETA | 1C100104J | 5854 | [redacted] | 5861 | 2 | 4 | 2/11/06 | 10:35 | 153 | 60 | 1490 |
| BETA | 1C100105J | 5854 | [redacted] | 5861 | 2 | 5 | 2/11/06 | 10:39 | 204 | 60 | 1987 |
| BETA | 1C100106J | 5854 | [redacted] | 5861 | 2 | 6 | 2/11/06 | 12:26 | 156 | 60 | 1519 |
| BETA | 1C100107J | 5854 | [redacted] | 5861 | 2 | 7 | 2/11/06 | 12:29 | 123 | 60 | 1198 |
| BETA | 1C100108J | 5854 | [redacted] | 5861 | 2 | 8 | 2/11/06 | 12:33 | 177 | 60 | 1724 |
| BETA | 1C100109J | 5854 | [redacted] | 5861 | 2 | 9 | 2/11/06 | 12:37 | 110 | 60 | 1071 |
| BETA | 1C100110J | 5854 | [redacted] | 5861 | 2 | 10 | 2/11/06 | 12:41 | 180 | 60 | 1753 |
| BETA | 1C100201J | 5854 | [redacted] | 5861 | 2 | 11 | 2/11/06 | 12:45 | 105 | 60 | 1022 |
| BETA | 1C100202J | 5854 | [redacted] | 5861 | 2 | 12 | 2/11/06 | 12:49 | 160 | 60 | 1558 |
| BETA | 1C100203J | 5854 | [redacted] | 5861 | 2 | 13 | 2/11/06 | 12:52 | 144 | 60 | 1402 |
| BETA | 1C100204J | 5854 | [redacted] | 5861 | 2 | 14 | 2/11/06 | 12:57 | 198 | 60 | 1928 |
| BETA | 1C100205J | 5854 | [redacted] | 5861 | 2 | 15 | 2/11/06 | 13:01 | 106 | 60 | 1032 |
| BETA | 1C100206J | 5854 | [redacted] | 5861 | 2 | 16 | 2/11/06 | 13:05 | 105 | 60 | 1022 |
| BETA | 1C100207J | 5854 | [redacted] | 5861 | 2 | 17 | 2/11/06 | 13:09 | 117 | 60 | 1139 |
| BETA | 1C100208J | 5854 | [redacted] | 5861 | 2 | 18 | 2/11/06 | 13:13 | 104 | 60 | 1013 |
| BETA | 1C100209J | 5854 | [redacted] | 5861 | 2 | 19 | 2/11/06 | 13:17 | 124 | 60 | 1208 |
| BETA | 1C100210J | 5854 | [redacted] | 5861 | 2 | 20 | 2/11/06 | 13:25 | 98 | 60 | 954 ✓ |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

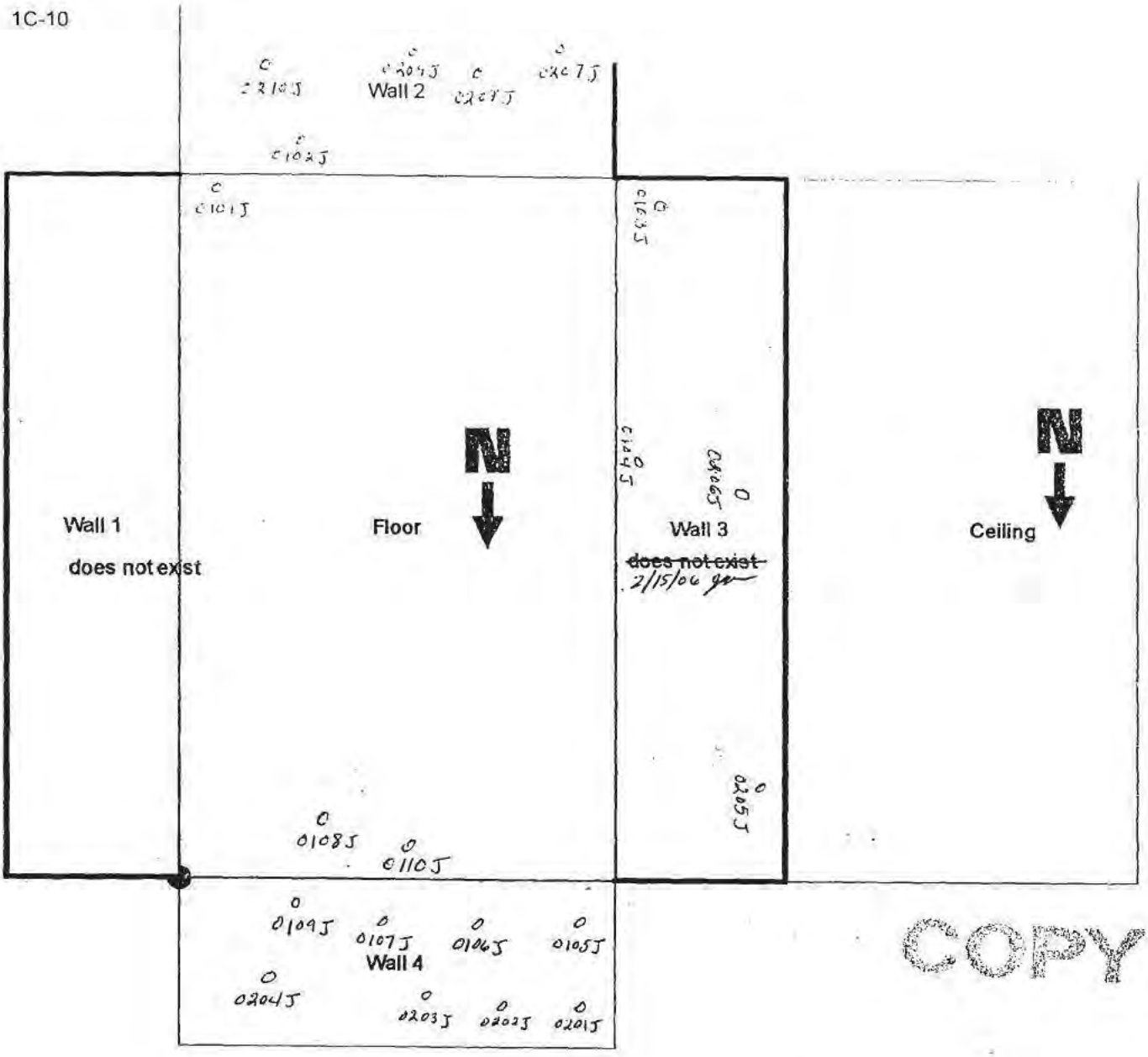


F261/686

MT-06-0172
Pg. 7 of 8

1C-10 Judgmentals
Class 1

1C-10




COPY

Survey Unit Number: 1C1C



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0172
RCT INT/HP [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C10-0101J | 1-Cap | Floor | | |
| 1C10-0102J | | Wall 2 | | |
| 1C10-0103J | | Wall 3 | | |
| 1C10-0104J | | Wall 3 | | |
| 1C10-0105J | | Wall 4 | | |
| 1C10-0106J | | Wall 4 | | |
| 1C10-0107J | | Wall 4 | | |
| 1C10-0108J | | Floor | | |
| 1C10-0109J | | Wall 4 | | |
| 1C10-0110J | | Floor | | |
| 1C10-0201J | | Wall 4 | | |
| 1C10-0202J | | Wall 4 | | |
| 1C10-0203J | | Wall 4 | | |
| 1C10-0204J | | Wall 4 | | A |
| 1C10-0205J | | Wall 3 | N | |
| 1C10-0206J | | Wall 3 | | |
| 1C10-0207J | | Wall 2 | | |
| 1C10-0208J | | Wall 2 | | |
| 1C10-0209J | | Wall 2 | | |
| 1C10-0210J | | Wall 2 | | |
| | A | | | |
| | N | | | |

COPY

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F263/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-Bldg | SURVEY NO. MT-06-0153 |
| PURPOSE: Dose Rate Survey + Upper and Lower static measurements in 1C10 | RWP NO. N/A |
| | DATE: 2-13-06 |
| | TIME: 0630 |

## MAP / DRAWING

See Attached Sheet

Elevated Readings 1C10-01115 B

This Room has been RESRAD Sampled

Scanned 1 meter square around Ceiling Static Points

COPY

Micro Rem - 3981 / Cal Date 4/5/06

BKG 4 uRem/hr - 4 uRem/hr

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5855/5921 | 6/8/06 2/15/06 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Donna Watson / BJ Roe | [redacted] | Date: 2-15-06 |
| Completed by: (Print Name) Donna Watson / BJ Roe | | |
| Counted by: (Signature) See Attached Sheets | HP# N/A | Date: N/A |
| Counted by: (Print Name) | | F264/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 2-15-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No.
MT-06-0180



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | ICID-01015 |
| 2 | | | | ICID-01025 |
| 3 | | | | ICID-01035 |
| 4 | | | | ICID-01045 |
| 5 | | | | ICID-01055 |
| 6 | | | | ICID-01065 |
| 7 | | | | ICID-01075 |
| 8 | | | | ICID-01085 |
| 9 | | | | ICID-01095 |
| 10 | | | | ICID-01105 |
| 11 | | | | ICID-01115 |
| 12 | | | | ICID-01125 |
| 13 | | | | ICID-01135 |
| 14 | | | | ICID-01145 |
| 15 | | | | ICID-01155 |
| 16 | | | | ICID-01165 |
| 17 | | | | ICID-01175 |
| 18 | | | | ICID-01185 |
| 19 | | | | ICID-01195 |
| 20 | | | | ICID-01205 |
| 21 | | | | ICID-02015 |
| 22 | | | | ICID-02025 |
| 23 | | | | ICID-02035 |
| 24 | | | | ICID-02045 |
| 25 | | | | ICID-02055 |
| 26 | | | | ICID-02065 |
| 27 | | | | ICID-02075 |
| 28 | | | | ICID-02085 |
| 29 | | | | ICID-02095 |
| 30 | | | | ICID-02105 |
| 31 | | | | ICID-02115 |
| 32 | | | | ICID-02125 |
| 33 | | | | ICID-02135 |
| 34 | | | | ICID-02145 |
| 35 | | | | ICID-02155 |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | See | Attached | Sheets | ICID-02165 |
| 37 | | | | ICID-02175 |
| 38 | | | | ICID-02185 |
| 39 | | | | ICID-02195 |
| 40 | | | | ICID-02205 |
| 41 | | | | ICID-02215 |
| 42 | | | | ICID-02225 |

N/A

Copy

COMMENTS:

N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F265/686

ML-9620 (4-98)

MARSSIM Smear Data

MT-06-0180

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060214_1101.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06~~-0172.002~~ 0180.001 RH
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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1-296/686

4 of 13

MT-06-0180

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/14/06 | 11:02:31 AM | -1 | 10.00 | 10 | 8 | 8 | 18 | 632.87 | 0 | 20.2 | B | 3 |
| 2/14/06 | 11:13:21 AM | 0 | 2.00 | 384 | 361 | 0 | 1 | 554.18 | 738 | 7.3 | | 3 |
| 2/14/06 | 11:16:02 AM | 1 | 2.00 | 0 | 0 | 4 | 11 | 585.39 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:18:42 AM | 2 | 2.00 | 0 | 0 | 0 | 18 | 638.27 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:21:25 AM | 3 | 2.00 | 0 | 1 | 0 | 14 | 550.49 | 1 | 1235.6 | | 3 |
| 2/14/06 | 11:24:07 AM | 4 | 2.00 | 1 | 1 | 2 | 10 | 577.97 | 1 | 738.2 | | 3 |
| 2/14/06 | 11:26:50 AM | 5 | 2.00 | 3 | 4 | 0 | 11 | 612.87 | 5 | 192.4 | | 3 |
| 2/14/06 | 11:29:32 AM | 6 | 2.00 | 0 | 0 | 1 | 15 | 568.74 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:32:14 AM | 7 | 2.00 | 0 | 0 | 3 | 15 | 554.29 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:34:57 AM | 8 | 2.00 | 3 | 1 | 0 | 20 | 586.23 | 5 | 201.0 | | 3 |
| 2/14/06 | 11:37:40 AM | 9 | 2.00 | 1 | 1 | 1 | 14 | 585.48 | 1 | 738.2 | | 3 |
| 2/14/06 | 11:40:21 AM | 10 | 2.00 | 0 | 0 | 2 | 21 | 579.66 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:43:04 AM | 11 | 2.00 | 0 | 0 | 3 | 16 | 621.28 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:45:46 AM | 12 | 2.00 | 0 | 0 | 4 | 20 | 590.74 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:48:27 AM | 13 | 2.00 | 2 | 3 | 0 | 9 | 612.36 | 3 | 309.6 | | 3 |
| 2/14/06 | 11:51:08 AM | 14 | 2.00 | 1 | 1 | 5 | 13 | 609.47 | 2 | 429.9 | | 3 |
| 2/14/06 | 11:53:50 AM | 15 | 2.00 | 0 | 1 | 2 | 11 | 637.67 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:56:32 AM | 16 | 2.00 | 0 | 0 | 2 | 6 | 564.78 | 0 | 0.0 | | 3 |
| 2/14/06 | 11:59:19 AM | 17 | 2.00 | 0 | 1 | 1 | 10 | 637.65 | 0 | 2773.1 | | 3 |
| 2/14/06 | 12:02:00 PM | 18 | 2.00 | 3 | 4 | 0 | 12 | 645.65 | 5 | 201.0 | | 3 |
| 2/14/06 | 12:04:43 PM | 19 | 2.00 | 1 | 2 | 0 | 14 | 633.99 | 2 | 461.6 | | 3 |
| 2/14/06 | 12:07:25 PM | 20 | 2.00 | 2 | 1 | 1 | 13 | 600.62 | 3 | 309.6 | | 3 |
| 2/14/06 | 12:10:08 PM | 21 | 2.00 | 0 | 0 | 7 | 8 | 633.80 | 0 | 0.0 | | 3 |
| 2/14/06 | 12:12:49 PM | 22 | 2.00 | 4 | 3 | 0 | 11 | 660.56 | 7 | 135.3 | | 3 |
| 2/14/06 | 12:15:32 PM | 23 | 2.00 | 0 | 1 | 0 | 11 | 663.31 | 0 | 0.0 | | 3 |
| 2/14/06 | 12:18:15 PM | 24 | 2.00 | 51 | 46 | 0 | 2 | 618.16 | 92 | 22.1 | | 3 |
| 2/14/06 | 12:20:57 PM | 25 | 2.00 | 1 | 1 | 0 | 10 | 631.77 | 1 | 738.2 | | 3 |
| 2/14/06 | 12:23:40 PM | 26 | 2.00 | 31 | 30 | 4 | 2 | 629.39 | 55 | 30.0 | | 3 |
| 2/14/06 | 12:26:21 PM | 27 | 2.00 | 62 | 56 | 0 | 1 | 618.89 | 113 | 19.6 | | 3 |
| 2/14/06 | 12:29:04 PM | 28 | 2.00 | 1 | 1 | 4 | 9 | 630.96 | 2 | 432.9 | | 3 |
| 2/14/06 | 12:31:45 PM | 29 | 2.00 | 0 | 0 | 0 | 11 | 620.37 | 0 | 0.0 | | 3 |
| 2/14/06 | 12:34:27 PM | 30 | 2.00 | 0 | 0 | 2 | 31 | 623.26 | 0 | 0.0 | | 3 |
| 2/14/06 | 12:37:07 PM | 31 | 2.00 | 291 | 144 | 3 | 0 | 636.27 | 524 | 8.4 | | 3 |

F2047/086

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2-15-06
MT-06-0180

## MARSSIM Smear Data

| | | | | | | | | | DPm 1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/14/06 | 12:39:50 PM | 32 | 2.00 | 0 | 0 | 4 | 15 | 574.23 | 0 | 0.0 | 3 |
| 2/14/06 | 12:42:32 PM | 33 | 2.00 | 4 | 4 | 1 | 21 | 635.67 | 8 | 135.3 | 3 |
| 2/14/06 | 12:45:12 PM | 34 | 2.00 | 94 | 76 | 0 | 1 | 639.90 | 168 | 15.5 | 3 |
| 2/14/06 | 12:48:18 PM | 35 | 2.00 | 0 | 0 | 0 | 15 | 625.43 | 0 | 0.0 | 3 |
| 2/14/06 | 12:51:01 PM | 36 | 2.00 | 0 | 0 | 0 | 14 | 587.42 | 0 | 0.0 | 3 |
| 2/14/06 | 12:53:43 PM | 37 | 2.00 | 0 | 0 | 0 | 18 | 602.37 | 0 | 0.0 | 3 |
| 2/14/06 | 12:56:25 PM | 38 | 2.00 | 14 | 13 | 1 | 6 | 564.19 | 27 | 51.5 | 3 |
| 2/14/06 | 12:59:07 PM | 39 | 2.00 | 3 | 3 | 2 | 8 | 610.78 | 5 | 201.0 | 3 |
| 2/14/06 | 1:01:49 PM | 40 | 2.00 | 7 | 8 | 1 | 21 | 578.73 | 14 | 85.9 | 3 |
| 2/14/06 | 1:04:31 PM | 41 | 2.00 | 0 | 0 | 1 | 10 | 644.82 | 0 | 2773.1 | 3 |
| 2/14/06 | 1:07:12 PM | 42 | 2.00 | 2 | 3 | 0 | 13 | 611.93 | 3 | 282.0 | 3 |
| | | | | | | | | DW | DW | | |

Copy

F968/686

9/13

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_056
Batch Ended: 2/14/06 7:53
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0180 [42] WATSON 2-14-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 1.61 | 2.00 | | 0.00 | 1.16 | |
| A3 | 3 | 0.00 | 2.31 | | 2.92 | 2.52 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.24 | | 2.84 | 2.65 | |
| B4 | 8 | 1.61 | 1.97 | | 0.20 | 1.69 | |
| D1 | 9 | 0.00 | 2.06 | | 0.29 | 1.77 | |
| D2 | 10 | 0.00 | 2.17 | | 0.39 | 1.68 | |
| D3 | 11 | 1.72 | 2.09 | | 0.00 | 1.24 | |
| D4 | 12 | 0.00 | 2.05 | | 0.20 | 1.66 | |
| A1 | 13 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 14 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 15 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 16 | 1.81 | 2.12 | | 0.32 | 1.70 | |
| B1 | 17 | 1.52 | 1.89 | | 0.00 | 1.68 | |
| B2 | 18 | 0.00 | 1.91 | | 2.43 | 2.23 | |
| B3 | 19 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 20 | 0.00 | 1.99 | | 1.60 | 2.07 | |
| D1 | 21 | 0.00 | 2.08 | | 2.79 | 2.50 | |
| D2 | 22 | 1.74 | 2.18 | | 1.43 | 2.06 | |
| D3 | 23 | 1.72 | 2.09 | | 0.00 | 1.24 | |
| D4 | 24 | 0.00 | 2.06 | | 1.37 | 2.03 | |
| A1 | 25 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 26 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 27 | 0.00 | 2.30 | | 1.67 | 2.18 | |

DW DW

 DW 2-15-06

F2269/6886 - 11

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# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_056
Batch Ended: 2/14/06 7:53
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0180 [42] WATSON 2-14-06 RLH ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A4 | 28 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 29 | 0.00 | 1.91 | | 1.23 | 2.06 | |
| B2 | 30 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 31 | 0.00 | 2.20 | | 0.20 | 1.87 | |
| B4 | 32 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| D1 | 33 | 0.00 | 2.07 | | 1.54 | 2.16 | |
| D2 | 34 | 0.00 | 2.15 | | 0.00 | 1.19 | |
| D3 | 35 | 0.00 | 2.10 | | 0.18 | 1.75 | |
| D4 | 36 | 0.00 | 2.05 | | 0.20 | 1.66 | |
| A1 | 37 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 38 | 0.00 | 2.00 | | 0.00 | 1.16 | |
| A3 | 39 | 0.00 | 2.28 | | 0.41 | 1.78 | |
| A4 | 40 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 41 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 ✓ | 42 | 0.00 | 1.87 | | 0.21 | 1.58 | |

DW DW

 DW 2-15-06

F-270/686

# T-BLDG. STATICS 1C10

*RSDS#* MT-06-0180 *RCT:* [redacted] *RCT* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.211 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1657 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C100101S | 5855 | [redacted] | 5921 | 1 | 1 | 2/13/06 | 7:30 | 10 | 120 | 38 |
| ALPHA | 1C100102S | 5855 | [redacted] | 5921 | 1 | 2 | 2/13/06 | 7:35 | 10 | 120 | 38 |
| ALPHA | 1C100103S | 5855 | [redacted] | 5921 | 1 | 3 | 2/13/06 | 7:39 | 9 | 120 | 34 |
| ALPHA | 1C100104S | 5855 | [redacted] | 5921 | 1 | 4 | 2/13/06 | 7:43 | 8 | 120 | 30 |
| ALPHA | 1C100105S | 5855 | [redacted] | 5921 | 1 | 5 | 2/13/06 | 7:47 | 15 | 120 | 56 |
| ALPHA | 1C100106S | 5855 | [redacted] | 5921 | 1 | 6 | 2/13/06 | 7:51 | 13 | 120 | 49 |
| ALPHA | 1C100107S | 5855 | [redacted] | 5921 | 1 | 7 | 2/13/06 | 7:55 | 8 | 120 | 30 |
| ALPHA | 1C100108S | 5855 | [redacted] | 5921 | 1 | 8 | 2/13/06 | 7:58 | 14 | 120 | 53 |
| ALPHA | 1C100109S | 5855 | [redacted] | 5921 | 1 | 9 | 2/13/06 | 8:02 | 7 | 120 | 26 |
| ALPHA | 1C100110S | 5855 | [redacted] | 5921 | 1 | 10 | 2/13/06 | 8:06 | 8 | 120 | 30 |
| ALPHA | 1C100111S | 5855 | [redacted] | 5921 | 1 | 11 | 2/13/06 | 8:10 | 6 | 120 | 23 |
| ALPHA | 1C100112S | 5855 | [redacted] | 5921 | 1 | 12 | 2/13/06 | 8:19 | 2 | 120 | 8 |
| ALPHA | 1C100113S | 5855 | [redacted] | 5921 | 1 | 13 | 2/13/06 | 8:24 | 4 | 120 | 15 |
| ALPHA | 1C100114S | 5855 | [redacted] | 5921 | 1 | 14 | 2/13/06 | 9:22 | 2 | 120 | 8 |
| ALPHA | 1C100115S | 5855 | [redacted] | 5921 | 1 | 15 | 2/13/06 | 9:26 | 0 | 120 | 0 |
| ALPHA | 1C100116S | 5855 | [redacted] | 5921 | 1 | 16 | 2/13/06 | 9:30 | 7 | 120 | 26 |
| ALPHA | 1C100117S | 5855 | [redacted] | 5921 | 1 | 17 | 2/13/06 | 9:34 | 7 | 120 | 26 |
| ALPHA | 1C100118S | 5855 | [redacted] | 5921 | 1 | 18 | 2/13/06 | 9:38 | 5 | 120 | 19 |
| ALPHA | 1C100119S | 5855 | [redacted] | 5921 | 1 | 19 | 2/13/06 | 9:42 | 2 | 120 | 8 |
| ALPHA | 1C100120S | 5855 | [redacted] | 5921 | 1 | 20 | 2/13/06 | 9:46 | 3 | 120 | 11 |
| ALPHA | 1C100201S | 5855 | [redacted] | 5921 | 1 | 21 | 2/13/06 | 9:52 | 4 | 120 | 15 |
| ALPHA | 1C100202S | 5855 | [redacted] | 5921 | 1 | 22 | 2/13/06 | 9:57 | 2 | 120 | 8 |
| ALPHA | 1C100203S | 5855 | [redacted] | 5921 | 1 | 23 | 2/13/06 | 10:05 | 3 | 120 | 11 |
| ALPHA | 1C100204S | 5855 | [redacted] | 5921 | 1 | 24 | 2/13/06 | 10:11 | 8 | 120 | 30 |
| ALPHA | 1C100205S | 5855 | [redacted] | 5921 | 1 | 25 | 2/13/06 | 10:17 | 4 | 120 | 15 |
| ALPHA | 1C100206S | 5855 | [redacted] | 5921 | 1 | 26 | 2/13/06 | 11:57 | 7 | 120 | 26 |
| ALPHA | 1C100207S | 5855 | [redacted] | 5921 | 1 | 27 | 2/13/06 | 12:13 | 6 | 120 | 23 |
| ALPHA | 1C100208S | 5855 | [redacted] | 5921 | 1 | 28 | 2/13/06 | 12:19 | 6 | 120 | 23 |
| ALPHA | 1C100209S | 5855 | [redacted] | 5921 | 1 | 29 | 2/13/06 | 12:23 | 7 | 120 | 26 |
| ALPHA | 1C100210S | 5855 | [redacted] | 5921 | 1 | 30 | 2/13/06 | 12:27 | 2 | 120 | 8 |
| ALPHA | 1C100211S | 5855 | [redacted] | 5921 | 1 | 31 | 2/13/06 | 12:32 | 3 | 120 | 11 |
| ALPHA | 1C100212S | 5855 | [redacted] | 5921 | 1 | 32 | 2/13/06 | 12:36 | 7 | 120 | 26 |
| ALPHA | 1C100213S | 5855 | [redacted] | 5921 | 1 | 33 | 2/13/06 | 12:40 | 3 | 120 | 11 |
| ALPHA | 1C100214S | 5855 | [redacted] | 5921 | 1 | 34 | 2/13/06 | 12:44 | 5 | 120 | 19 |
| ALPHA | 1C100215S | 5855 | [redacted] | 5921 | 1 | 35 | 2/13/06 | 12:48 | 2 | 120 | 8 |
| ALPHA | 1C100216S | 5855 | [redacted] | 5921 | 1 | 36 | 2/13/06 | 12:52 | 10 | 120 | 38 |
| ALPHA | 1C100217S | 5855 | [redacted] | 5921 | 1 | 37 | 2/13/06 | 12:56 | 1 | 120 | 4 |
| ALPHA | 1C100218S | 5855 | [redacted] | 5921 | 1 | 38 | 2/13/06 | 13:13 | 8 | 120 | 30 |
| ALPHA | 1C100219S | 5855 | [redacted] | 5921 | 1 | 39 | 2/13/06 | 13:17 | 2 | 120 | 8 |
| ALPHA | 1C100220S | 5855 | [redacted] | 5921 | 1 | 40 | 2/13/06 | 13:23 | 9 | 120 | 34 |
| ALPHA | 1C100221S | 5855 | [redacted] | 5921 | 1 | 41 | 2/13/06 | 13:29 | 2 | 120 | 8 |
| ALPHA | 1C100222S | 5855 | [redacted] | 5921 | 1 | 42 | 2/13/06 | 13:33 | 4 | 120 | 15 |
| BETA | 1C100101S | 5855 | [redacted] | 5921 | 2 | 43 | 2/13/06 | 7:31 | 189 | 60 | 1811 |



F271/686

# T-BLDG. STATICS 1C10

*RSDS#* MT-06-0180 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Alpha** | 43-68 BKG: | 0 | EFF: | 0.211 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| **Beta** | 43-68 BKG: | 0 | EFF: | 0.1657 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| **Alpha Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| **Beta Scan** | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| BETA | 1C100102S | 5855 | [redacted] | 5921 | 2 | 44 | 2/13/06 | 7:36 | 279 | 60 | 2673 |
| BETA | 1C100103S | 5855 | [redacted] | 5921 | 2 | 45 | 2/13/06 | 7:40 | 230 | 60 | 2203 |
| BETA | 1C100104S | 5855 | [redacted] | 5921 | 2 | 46 | 2/13/06 | 7:44 | 260 | 60 | 2491 |
| BETA | 1C100105S | 5855 | [redacted] | 5921 | 2 | 47 | 2/13/06 | 7:48 | 166 | 60 | 1590 |
| BETA | 1C100106S | 5855 | [redacted] | 5921 | 2 | 48 | 2/13/06 | 7:52 | 218 | 60 | 2088 |
| BETA | 1C100107S | 5855 | [redacted] | 5921 | 2 | 49 | 2/13/06 | 7:56 | 365 | 60 | 3496 |
| BETA | 1C100108S | 5855 | [redacted] | 5921 | 2 | 50 | 2/13/06 | 8:00 | 171 | 60 | 1638 |
| BETA | 1C100109S | 5855 | [redacted] | 5921 | 2 | 51 | 2/13/06 | 8:03 | 156 | 60 | 1494 |
| BETA | 1C100110S | 5855 | [redacted] | 5921 | 2 | 52 | 2/13/06 | 8:07 | 190 | 60 | 1820 |
| ~~BETA~~ | ~~1C100111S~~ | ~~5855~~ | ~~[redacted]~~ | ~~5921~~ | ~~2~~ | ~~53~~ | ~~2/13/06~~ | ~~8:11~~ | ~~706~~ | ~~60~~ | ~~6763~~ |
| BETA | 1C100112S | 5855 | [redacted] | 5921 | 2 | 54 | 2/13/06 | 8:20 | 165 | 60 | 1581 |
| BETA | 1C100113S | 5855 | [redacted] | 5921 | 2 | 55 | 2/13/06 | 8:26 | 120 | 60 | 1150 |
| BETA | 1C100114S | 5855 | [redacted] | 5921 | 2 | 56 | 2/13/06 | 9:23 | 126 | 60 | 1207 |
| BETA | 1C100115S | 5855 | [redacted] | 5921 | 2 | 57 | 2/13/06 | 9:27 | 107 | 60 | 1025 |
| BETA | 1C100116S | 5855 | [redacted] | 5921 | 2 | 58 | 2/13/06 | 9:32 | 101 | 60 | 968 |
| BETA | 1C100117S | 5855 | [redacted] | 5921 | 2 | 59 | 2/13/06 | 9:35 | 125 | 60 | 1197 |
| BETA | 1C100118S | 5855 | [redacted] | 5921 | 2 | 60 | 2/13/06 | 9:40 | 147 | 60 | 1408 |
| BETA | 1C100119S | 5855 | [redacted] | 5921 | 2 | 61 | 2/13/06 | 9:43 | 199 | 60 | 1906 |
| BETA | 1C100120S | 5855 | [redacted] | 5921 | 2 | 62 | 2/13/06 | 9:47 | 149 | 60 | 1427 |
| BETA | 1C100201S | 5855 | [redacted] | 5921 | 2 | 63 | 2/13/06 | 9:53 | 140 | 60 | 1341 |
| BETA | 1C100202S | 5855 | [redacted] | 5921 | 2 | 64 | 2/13/06 | 9:58 | 155 | 60 | 1485 |
| BETA | 1C100203S | 5855 | [redacted] | 5921 | 2 | 65 | 2/13/06 | 10:06 | 153 | 60 | 1466 |
| BETA | 1C100204S | 5855 | [redacted] | 5921 | 2 | 66 | 2/13/06 | 10:12 | 148 | 60 | 1418 |
| BETA | 1C100205S | 5855 | [redacted] | 5921 | 2 | 67 | 2/13/06 | 10:18 | 142 | 60 | 1360 |
| BETA | 1C100206S | 5855 | [redacted] | 5921 | 2 | 68 | 2/13/06 | 11:59 | 146 | 60 | 1399 |
| BETA | 1C100207S | 5855 | [redacted] | 5921 | 2 | 69 | 2/13/06 | 12:14 | 130 | 60 | 1245 |
| BETA | 1C100208S | 5855 | [redacted] | 5921 | 2 | 70 | 2/13/06 | 12:20 | 137 | 60 | 1312 |
| BETA | 1C100209S | 5855 | [redacted] | 5921 | 2 | 71 | 2/13/06 | 12:24 | 118 | 60 | 1130 |
| BETA | 1C100210S | 5855 | [redacted] | 5921 | 2 | 72 | 2/13/06 | 12:28 | 118 | 60 | 1130 |
| BETA | 1C100211S | 5855 | [redacted] | 5921 | 2 | 73 | 2/13/06 | 12:33 | 135 | 60 | 1293 |
| BETA | 1C100212S | 5855 | [redacted] | 5921 | 2 | 74 | 2/13/06 | 12:37 | 152 | 60 | 1456 |
| BETA | 1C100213S | 5855 | [redacted] | 5921 | 2 | 75 | 2/13/06 | 12:41 | 118 | 60 | 1130 |
| BETA | 1C100214S | 5855 | [redacted] | 5921 | 2 | 76 | 2/13/06 | 12:45 | 122 | 60 | 1169 |
| BETA | 1C100215S | 5855 | [redacted] | 5921 | 2 | 77 | 2/13/06 | 12:49 | 115 | 60 | 1102 |
| BETA | 1C100216S | 5855 | [redacted] | 5921 | 2 | 78 | 2/13/06 | 12:53 | 93 | 60 | 891 |
| BETA | 1C100217S | 5855 | [redacted] | 5921 | 2 | 79 | 2/13/06 | 12:57 | 127 | 60 | 1217 |
| BETA | 1C100218S | 5855 | [redacted] | 5921 | 2 | 80 | 2/13/06 | 13:14 | 118 | 60 | 1130 |
| BETA | 1C100219S | 5855 | [redacted] | 5921 | 2 | 81 | 2/13/06 | 13:19 | 121 | 60 | 1159 |
| BETA | 1C100220S | 5855 | [redacted] | 5921 | 2 | 82 | 2/13/06 | 13:24 | 169 | 60 | 1619 |
| BETA | 1C100221S | 5855 | [redacted] | 5921 | 2 | 83 | 2/13/06 | 13:30 | 137 | 60 | 1312 |
| BETA | 1C100222S | 5855 | [redacted] | 5921 | 2 | 84 | 2/13/06 | 13:34 | 117 | 60 | 1121 ✓ |
| | | | | | | | | | | | |
| | | | | | | | | | | | |



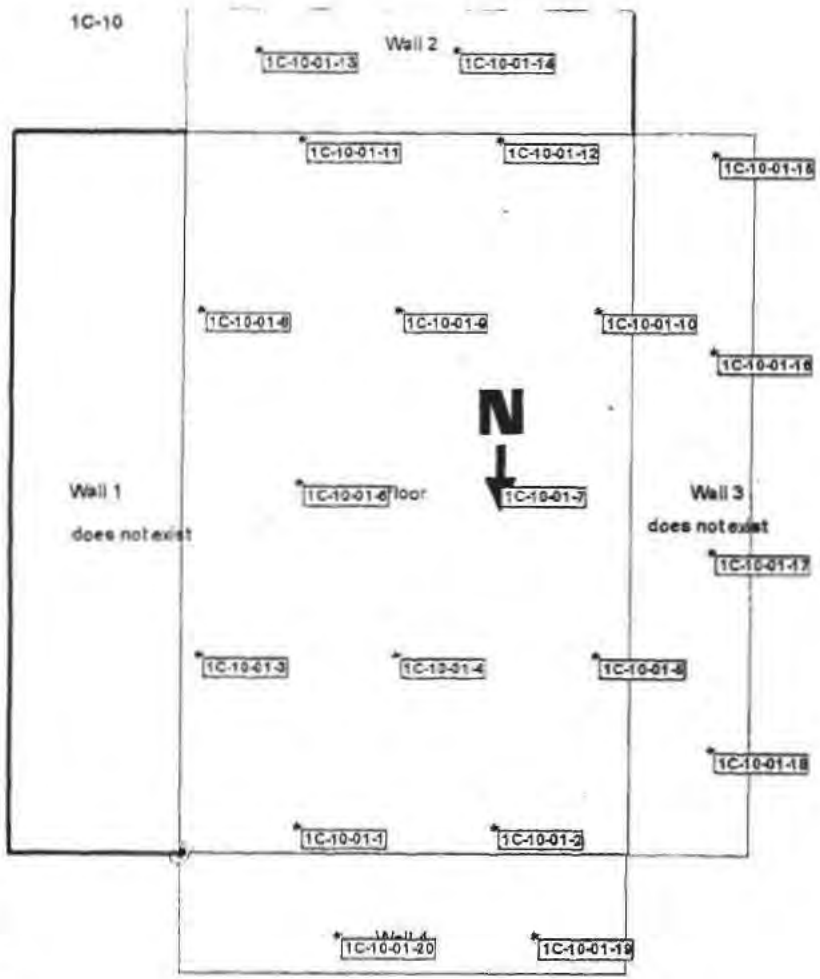
F-272/686

10 of 13
MT-06-0180

1C-10-01

floor and lower wall static measurement locations

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at each static location on the floor.
Composite bulk sample with bulk samples taken at judgmental locations on the floor.




F-323/686

MT-06-0180

**1C-10-01**

**floor and lower wall static measurement locations**

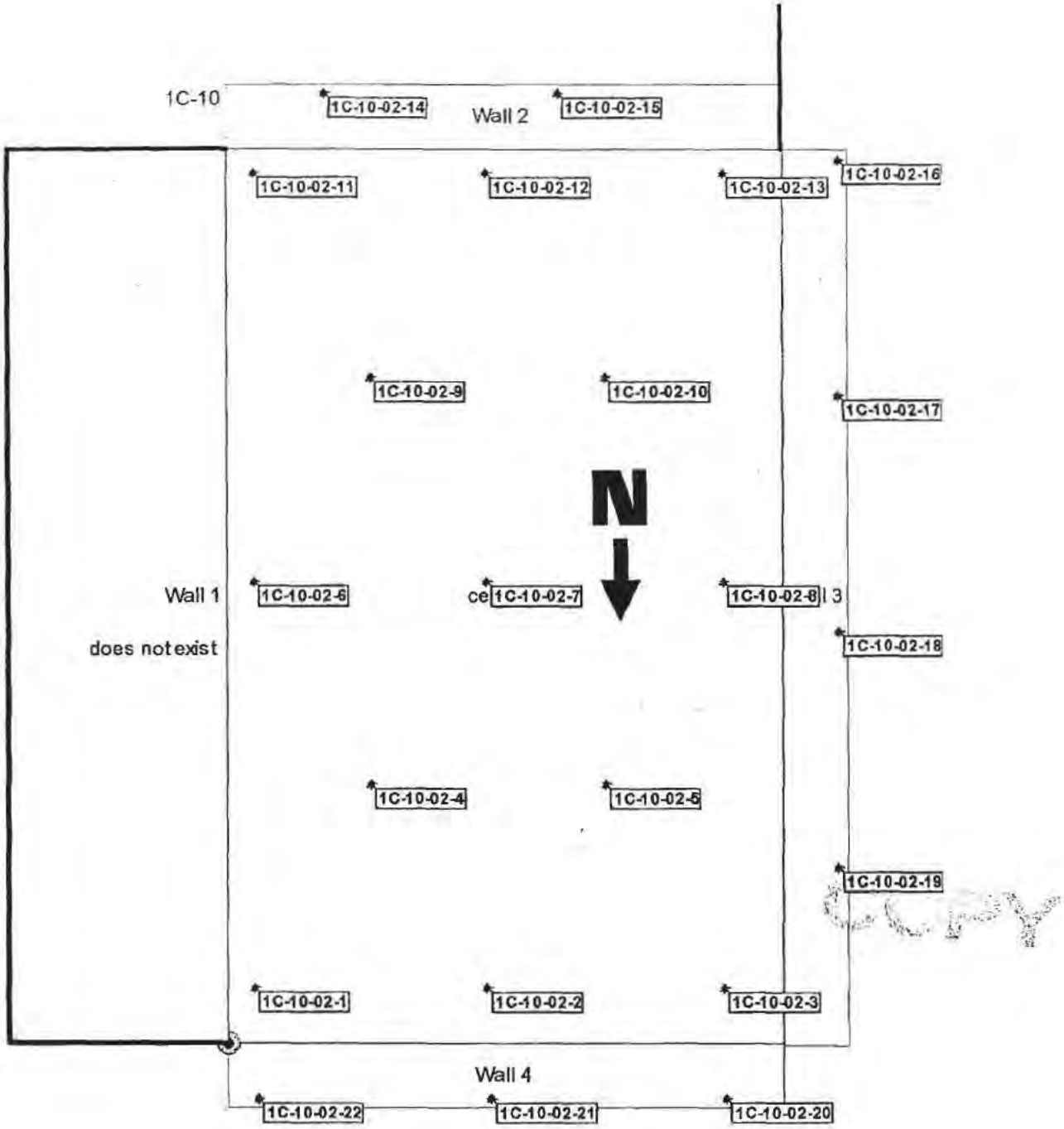
| Area: 1C-10 | | | | | |
|---|---|---|---|---|---|
| Label | Type | Surface | LX | LY | |
| 1C-10-01-1 | Systematic | Floor | 7 | 2 | |
| 1C-10-01-2 | Systematic | Floor | 18 ~~18~~ | 1 ~~2~~ | moved 1ft N - sump |
| 1C-10-01-3 | Systematic | Floor | 1 | 11 | |
| 1C-10-01-4 | Systematic | Floor | 12 ~~10~~ ~~12~~ | 13 ~~7~~ ~~11~~ | 2ft S. sump |
| 1C-10-01-5 | Systematic | Floor | 24 | 11 | |
| 1C-10-01-6 | Systematic | Floor | 7 | 21 | |
| 1C-10-01-7 | Systematic | Floor | 18 | 21 | |
| 1C-10-01-8 | Systematic | Floor | 1 | 31 | |
| 1C-10-01-9 | Systematic | Floor | 12 | 31 | |
| 1C-10-01-10 | Systematic | Floor | 24 | 31 | |
| 1C-10-01-11 | Systematic | Floor | 7 | 41 | |
| 1C-10-01-12 | Systematic | Floor | 18 | 41 | |
| 1C-10-01-13 | Systematic | Wall 2 | 4 | 5 | |
| 1C-10-01-14 | Systematic | Wall 2 | 16 | 5 | |
| 1C-10-01-15 | Systematic | Wall 3 | 1 | 5 | |
| 1C-10-01-16 | Systematic | Wall 3 | 13 | 5 | |
| 1C-10-01-17 | Systematic | Wall 3 | ~~24~~ | 5 | |
| 1C-10-01-18 | Systematic | Wall 3 | 33 ~~35~~ | 5 | 2ft S. - no well |
| 1C-10-01-19 | Systematic | Wall 4 | 5 | 5 | |
| 1C-10-01-20 | Systematic | Wall 4 | 17 | 5 | |
| | | | | | |

COPY

**1C-10-02**

**ceiling and upper wall static measurement locations**

scan an area of approximately 1 square meter around each ceiling location



**1C-10-02**
**ceiling and upper wall static measurement locations**

| Area: 1C-10 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-10-02-1 | Systematic | ceiling-f | 1 | 3 |
| 1C-10-02-2 | Systematic | ceiling-f | 8 ~~12~~ | 3 |
| 1C-10-02-3 | Systematic | ceiling-f | 23 | 3 |
| 1C-10-02-4 | Systematic | ceiling-f | 7 | 12 |
| 1C-10-02-5 | Systematic | ceiling-f | 18 | 12 |
| 1C-10-02-6 | Systematic | ceiling-f | 1 | 21 |
| 1C-10-02-7 | Systematic | ceiling-f | 12 | 21 |
| 1C-10-02-8 | Systematic | ceiling-f | 23 | 21 |
| 1C-10-02-9 | Systematic | ceiling-f | 7 | 31 |
| 1C-10-02-10 | Systematic | ceiling-f | 18 | 31 |
| 1C-10-02-11 | Systematic | ceiling-f | 1 | 40 |
| 1C-10-02-12 | Systematic | ceiling-f | 12 | 40 |
| 1C-10-02-13 | Systematic | ceiling-f | 23 | 40 |
| 1C-10-02-14 | Systematic | Wall 2 | 5 | 3 |
| 1C-10-02-15 | Systematic | Wall 2 | 15 | 3 |
| 1C-10-02-16 | Systematic | Wall 3 | 1 | 3 |
| 1C-10-02-17 | Systematic | Wall 3 | 11 | 3 |
| 1C-10-02-18 | Systematic | Wall 3 | 22 | 3 |
| 1C-10-02-19 | Systematic | Wall 3 | 33 | 3 |
| 1C-10-02-20 | Systematic | Wall 4 | 3 | 3 |
| 1C-10-02-21 | Systematic | Wall 4 | 14 | 3 |
| 1C-10-02-22 | Systematic | Wall 4 | 24 | 3 |

moved 4 feet due to hole in floor

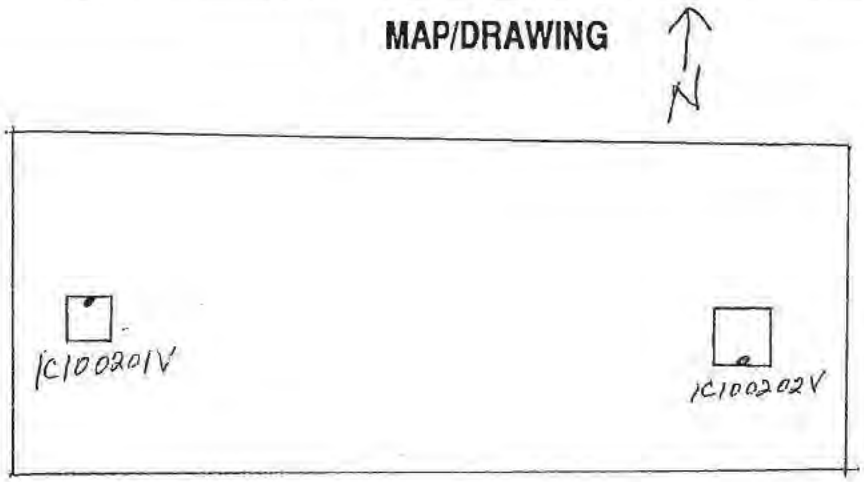
COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBLDG T-48 | SURVEY NO. MT-06-0297 |
| PURPOSE: Re survey of 2 Vents: 1C100201V & 1C100202V 1C10 | RWP NO. N/A |
| | DATE: 3/11/06 |
| | TIME: 1300 |

## MAP/DRAWING




COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm$^2$

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5889/5890 | 1/17/07 |
| | | |
| | N A | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones Dave Hellard | [redacted] | Date: 3/11/06 |
| Completed by: (Print Name) WAYNE JONES Jeffrey Larson | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | F-277/6B6 |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 4-5-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No.
MT-06-0297



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COPY

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-278/686

ML-9620 (4-98)

# T-Building Resurvey of Vents1c10-0201v &1c10- 0202v

*RSDS# _mt-06-0297_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1695 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C100201V | 5889 | | 5890 | 1 | 1 | 3/11/06 | 12:39 | 5 | 120 | 19 |
| ALPHA | 1C100202V | 5889 | | 5890 | 1 | 2 | 3/11/06 | 12:47 | 2 | 120 | 7 |
| BETA | 1C100201V | 5889 | | 5890 | 2 | 1 | 3/11/06 | 12:40 | 47 | 60 | 440 |
| BETA | 1C100202V | 5889 | | 5890 | 2 | 2 | 3/11/06 | 12:48 | 52 | 60 | 487 |

N

A

COPY



F2 77/686

# RADIOLOGICAL SURVEY DATA SHEET

 3-29-06

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG. T-CAP | SURVEY NO. MT-06-0316 |
| PURPOSE: RES-RAD STATICS 1C08, 1C09, 1C10 E AND W | RWP NO. N/A |
| | DATE: 3-15-06 |
| | TIME: 1500 |

## MAP/DRAWING

SEE ATTACHED SHEETS

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
# = mrem/hr neutron
# = air sample number
# = swipe number
#/α or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854 | 7-28-06 |
| 43-68 | 5861 | 7-28-06 |
| | | |
| | N A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Nursick | HP# [redacted] | Date: 3-15-06 |
| Completed by: (Print Name) B. NURSICK | | |
| Counted by: (Signature) SEE ATTACHED SHEETS | HP# N/A | Date: N/A |
| Counted by: (Print Name) SEE ATTACHED SHEETS | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 3-30-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

F289/686

Survey No.
MT-06-0316


nc
3-28-06

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE ATTACHED | | SHEETS | 1C10E 0001 |
| 2 | | | | 1C10E 0002 |
| 3 | | | | 1C10E 0003 |
| 4 | | | | 1C10E 0004 |
| 5 | | | | 1C10E 0005 |
| 6 | | | | 1C10W 0001 |
| 7 | | | | 1C10W 0002 |
| 8 | | | | 1C10E 0006 |
| 9 | | | | 1C10E 0007 |
| 10 | | | | 1C10E 0008 |
| 11 | SEE ATTACHED | | SHEETS | 1C10W 0003 |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

F281/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060315_1607.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0316.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: LSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F-282/688

MARSSIM Smear Data

MT-06-0316

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/15/06 | 4:07:51 PM | -1 | 10.00 | 12 | 11 | 12 | 7 | 621.97 | 0 | 18.4 | B | 1 |
| 3/15/06 | 4:18:40 PM | 0 | 2.00 | 339 | 320 | 0 | 0 | 551.61 | 653 | 7.8 | | 1 |
| 3/15/06 | 4:21:22 PM | 1 | 2.00 | 0 | 0 | 1 | 0 | 637.46 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:24:04 PM | 2 | 2.00 | 0 | 0 | 1 | 0 | 589.87 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:26:46 PM | 3 | 2.00 | 0 | 0 | 0 | 8 | 587.89 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:29:27 PM | 4 | 2.00 | 0 | 0 | 0 | 0 | 603.57 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:32:09 PM | 5 | 2.00 | 0 | 0 | 0 | 0 | 598.05 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:34:51 PM | 6 | 2.00 | 0 | 0 | 0 | 0 | 594.16 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:37:33 PM | 7 | 2.00 | 0 | 0 | 0 | 0 | 620.78 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:40:15 PM | 8 | 2.00 | 0 | 0 | 0 | 11 | 569.08 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:42:58 PM | 9 | 2.00 | 0 | 0 | 0 | 8 | 504.52 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:45:40 PM | 10 | 2.00 | 0 | 0 | 0 | 9 | 602.33 | 0 | 0.0 | | 1 |
| 3/15/06 | 4:48:23 PM | 11 | 2.00 | 0 | 0 | 0 | 6 | 638.71 | 0 | 0.0 | | 1 |

BR

F-283/0806

pg. 5 of 11
nc
3-29-06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_037
Batch Ended: 3/15/06 13:33
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0316 [11] NURSICK 3-15-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.38 | 1.85 | |
| A2 | 2 | 0.00 | 2.01 | | 0.36 | 1.65 | |
| A3 | 3 | 0.00 | 2.30 | | 1.55 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 6 | 0.00 | 1.91 | | 2.71 | 2.23 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.07 | | 0.00 | 1.27 | |
| C2 | 10 | 1.61 | 1.95 | | 1.47 | 1.99 | |
| C3 ✓ | 11 | 0.00 | 2.12 | | 0.00 | 1.27 | |

BR BR

BR 3-17-06
~~Page 1 of 1~~

F284/686

RLH

# T-Cap 1C10 Res-Rad Statics 1C08, 1C09, 1C10 East & West

*RSDS#* MT-06-0316 *RCT:* [redacted] *RCT:* N/A

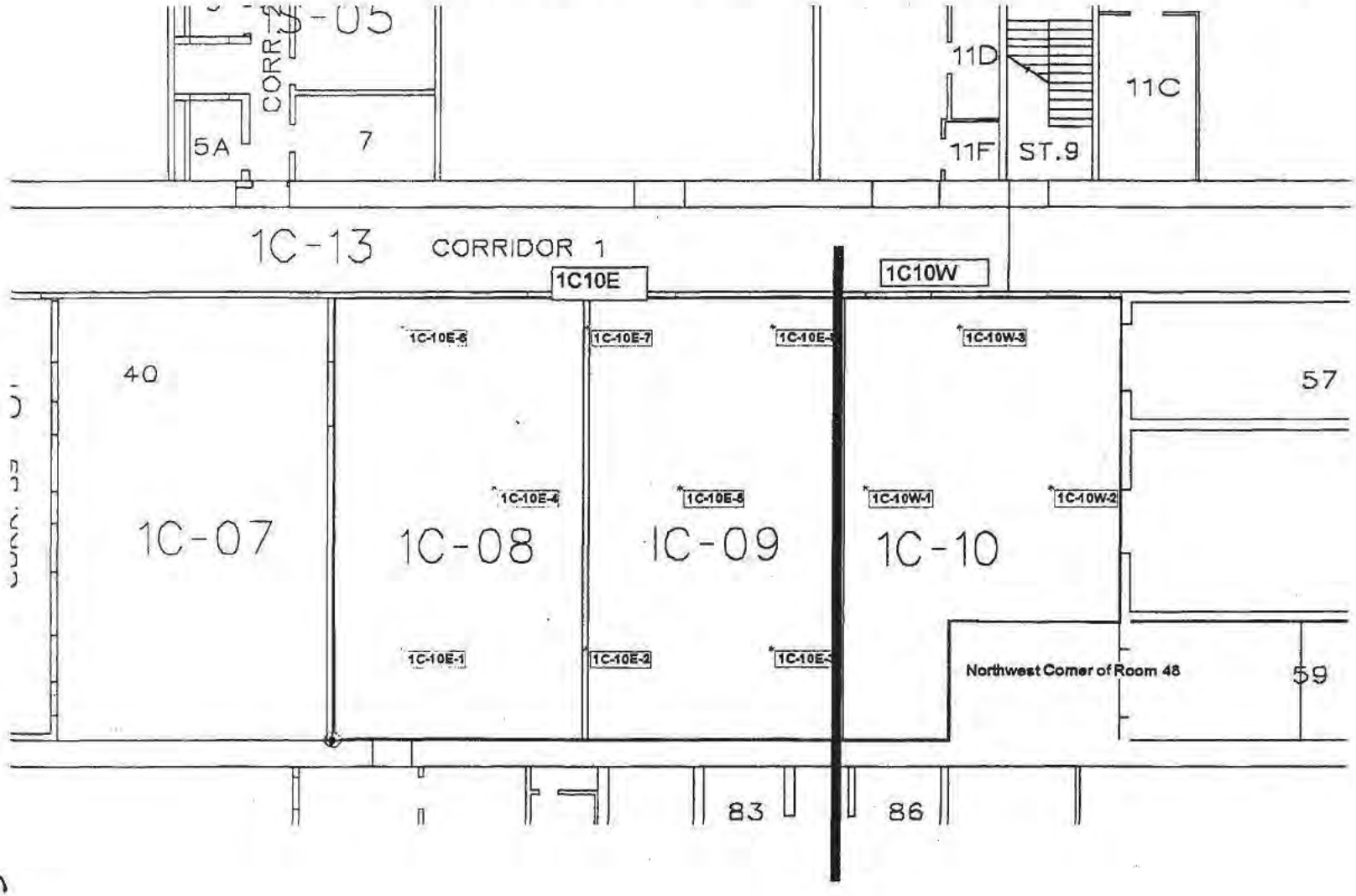
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C10E0001 | 5854 | [redacted] | 5861 | 1 | 1 | 3/15/06 | 9:41 | 8 | 120 | 31 | |
| ALPHA | 1C10E0002 | 5854 | [redacted] | 5861 | 1 | 2 | 3/15/06 | 9:45 | 5 | 120 | 19 | |
| ALPHA | 1C10E0003 | 5854 | [redacted] | 5861 | 1 | 3 | 3/15/06 | 9:49 | 8 | 120 | 31 | |
| ALPHA | 1C10E0004 | 5854 | [redacted] | 5861 | 1 | 4 | 3/15/06 | 9:54 | 9 | 120 | 35 | |
| ALPHA | 1C10E0005 | 5854 | [redacted] | 5861 | 1 | 5 | 3/15/06 | 9:58 | 7 | 120 | 27 | |
| ALPHA | 1C10W0001 | 5854 | [redacted] | 5861 | 1 | 6 | 3/15/06 | 10:02 | 8 | 120 | 31 | |
| ALPHA | 1C10W0002 | 5854 | [redacted] | 5861 | 1 | 7 | 3/15/06 | 10:06 | 4 | 120 | 15 | |
| ALPHA | 1C10E0006 | 5854 | [redacted] | 5861 | 1 | 8 | 3/15/06 | 10:10 | 10 | 120 | 39 | |
| ALPHA | 1C10E0007 | 5854 | [redacted] | 5861 | 1 | 9 | 3/15/06 | 10:15 | 6 | 120 | 23 | |
| ALPHA | 1C10E0008 | 5854 | [redacted] | 5861 | 1 | 10 | 3/15/06 | 10:19 | 11 | 120 | 43 | |
| ALPHA | 1C10W0003 | 5854 | [redacted] | 5861 | 1 | 11 | 3/15/06 | 10:23 | 9 | 120 | 35 ✓ | |
| BETA | 1C10E0001 | 5854 | [redacted] | 5861 | 2 | 1 | 3/15/06 | 9:42 | 140 | 60 | 1363 | |
| BETA | 1C10E0002 | 5854 | [redacted] | 5861 | 2 | 2 | 3/15/06 | 9:47 | 136 | 60 | 1324 | |
| BETA | 1C10E0003 | 5854 | [redacted] | 5861 | 2 | 3 | 3/15/06 | 9:51 | 162 | 60 | 1578 | |
| BETA | 1C10E0004 | 5854 | [redacted] | 5861 | 2 | 4 | 3/15/06 | 9:55 | 139 | 60 | 1354 | |
| BETA | 1C10E0005 | 5854 | [redacted] | 5861 | 2 | 5 | 3/15/06 | 9:59 | 177 | 60 | 1724 | |
| BETA | 1C10W0001 | 5854 | [redacted] | 5861 | 2 | 6 | 3/15/06 | 10:03 | 190 | 60 | 1850 | |
| BETA | 1C10W0002 | 5854 | [redacted] | 5861 | 2 | 7 | 3/15/06 | 10:07 | 818 | 60 | 7966 | |
| BETA | 1C10E0008 ~~86~~ | 5854 | [redacted] | 5861 | 2 | 8 | 3/15/06 | 10:12 | 153 | 60 | 1490 | |
| BETA | 1C10E0009 ~~87~~ | 5854 | [redacted] | 5861 | 2 | 9 | 3/15/06 | 10:16 | 140 | 60 | 1363 | |
| BETA | 1C10E0010 ~~08~~ | 5854 | [redacted] | 5861 | 2 | 10 | 3/15/06 | 10:20 | 146 | 60 | 1422 | |
| BETA | 1C10W0003 | 5854 | [redacted] | 5861 | 2 | 11 | 3/15/06 | 10:24 | 177 | 60 | 1724 ✓ | |
| | | | | | N | A | | | | | | |



HC 3-29-06

F225/686

1C-10E and 1C-10W
After a direct alpha and beta measurement are taken and the smear is taken,
Collect samples at a depth of 15 cm at locations 1C-10E1 through 7 and composite with 3 judgmentals
Collect samples at a depth of 15 cm at locations 1C-10W1 through 3 and composite with 3 judgmentals




F2896/886

1C-10E and 1C-10W
After a direct alpha and beta measurement are taken and the smear is taken,
Collect samples 1C-10E1 through 7 and composite with 3 judgmentals
Collect samples 1C-10W1 through 3 and composite with 3 judgmentals

| Area: Room 48 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-10E-1 | Systematic | Floor | 6 | 9 |
| 1C-10E-2 | Systematic | Floor | 24 | 9 |
| 1C-10E-3 | Systematic | Floor | 41 | 9 |
| 1C-10E-4 | Systematic | Floor | 15 | 24 |
| 1C-10E-5 | Systematic | Floor | 33 | 24 |
| 1C-10E-6 | Systematic | Floor | 6 | 39 |
| 1C-10E-7 | Systematic | Floor | 24 | 39 |
| 1C-10E-8 | Systematic | Floor | 41 | 39 |
| 1C-10W-1 | Systematic | Floor | 50 | 24 |
| 1C-10W-2 | Systematic | Floor | 67 | 24 |
| 1C-10W-3 | Systematic | Floor | 59 | 39 |

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL10932
**File ID:** 25000127.s0
**Priority:** Yes

**Description\Location**
0601108 T-48 1C10E
Long Count

**Collector:**
**Date Received:** 03/22/06
**Date Collected:** 03/20/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | * | 0.13 | 0.18 |
| Cs-137 | * | 0.02 | 0.07 |
| Pb-210 | * | 0.28 | 0.55 |
| Ra-226 | * | 0.57 | 0.69 |
| Ac-227 (D) | * | 0.05 | 0.28 |
| Th-230 | * | 2.42 | 5.1 |
| Th-232 (D) | * | 0 | 0.77 |
| Pu-238 | * | 0.17 | 4.18 |
| Am-241 | * | 0.04 | 0.05 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.05 |
| Bi-207 | 0.02 | 0.05 |
| Bi-210m | 0.07 | 0.05 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 15.48 pCi/g MDA

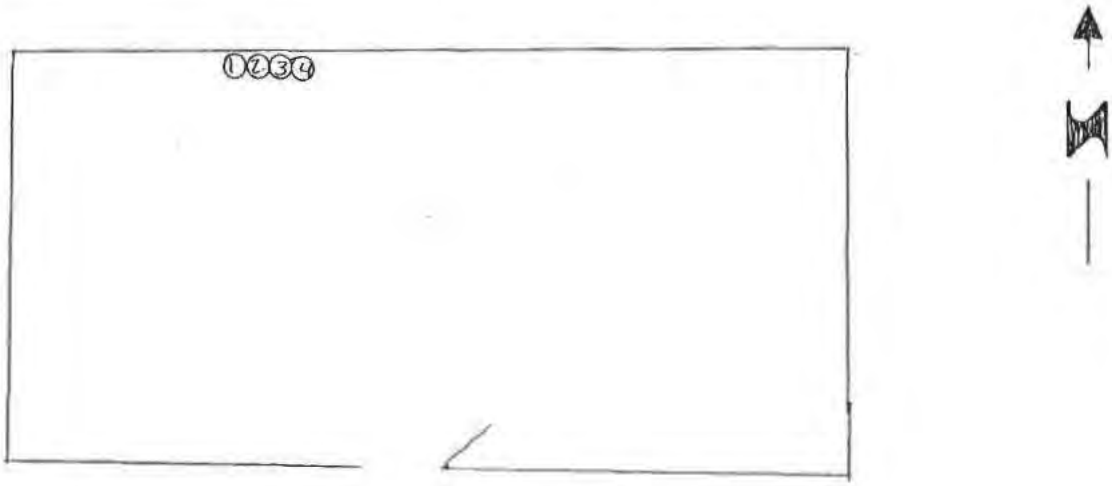
Date: 03/24/06 Counted By: Analyzed By: Initials CB

# RADIOLOGICAL SURVEY DATA SHEET 3-16-06



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Room T-248 | SURVEY NO. MT-06-0321 |
| PURPOSE: Post Rad Remediation Survey 1C10 | RWP NO. N/A |
| | DATE: 3-16-06 |
| | TIME: 10:00 |

## MAP/DRAWING




Refer to MT-05-1356 for 1C10 0110W Survey Cig.
Refer to MT 05 1357 to 1C10 0112W Survey Cig
Scanned 1 meter²
No Elevated Readings α / β⁻ During scan

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
# = mrem/hr neutron
# = air sample number
# = swipe number
#/α or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5904/5905 | 3-13-07 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Julie Kardas | | Date: 3-16-06 |
| Completed by: (Print Name) Julie Kardas RM Givens | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) Results | | F289/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 4-3-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-06-0321



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | | 1C100110WPR1 |
| 2 | ↓ | ↓ | ↓ | 1C100110WPR2 |
| 3 | ↓ | ↓ | ↓ | 1C100112WPR1 |
| 4 | See | Attached | | 1C100112WPR2 |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F290/686

ML-9620 (4-98)

J.K 3-20-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060317_1140.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0321.001 J.K
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

Page 3 of 7

Page 1 of 686

J.K 3.20.06

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/17/06 | 11:40:52 AM | -1 | 10.00 | 8 | 7 | 11 | 1 | 631.27 | 0 | 23.0 | B | 2 |
| 3/17/06 | 11:51:41 AM | 0 | 2.00 | 142 | 135 | 0 | 0 | 559.39 | 271 | 12.3 | | 2 |
| 3/17/06 | 11:54:23 AM | 1 | 2.00 | 2 | 3 | 0 | 0 | 663.90 | 4 | 201.1 | | 2 |
| 3/17/06 | 11:57:04 AM | 2 | 2.00 | 0 | 0 | 0 | 0 | 575.18 | 0 | 0.0 | | 2 |
| 3/17/06 | 11:59:55 AM | 3 | 2.00 | 0 | 0 | 0 | 0 | 641.13 | 1 | 971.4 | | 2 |
| 3/17/06 | 12:02:37 PM | 4 | 2.00 | 0 | 0 | 0 | 0 | 654.80 | 0 | 0.0 | | 2 |

JK

COPY

F 892/686

page 4 of 7
MT-06-0321

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_044
Batch Ended: 3/17/06 10:14
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0321 [4] KARDAS 3-17-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.32 | |
| A2 | 2 | 1.79 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.30 | | 1.55 | 2.18 | |
| A4 | 4 | 0.00 | 2.13 | | 1.78 | 2.09 | |

3-20-06



COPY

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686

# T-Building Survey of wall removed 1C10 Room T 48

***RSDS#*** MT-06-0321 ***RCT:*** [redacted] ***RCT:*** N/A

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C100110WPR1 | 5904 | [redacted] | 5905 | 1 | 1 | 3/16/06 | 13:06 | 6 | 120 | 23 | |
| ALPHA | 1C100110WPR2 | 5904 | [redacted] | 5905 | 1 | 2 | 3/16/06 | 13:12 | 8 | 120 | 30 | |
| ALPHA | 1C100112WPR1 | 5904 | [redacted] | 5905 | 1 | 3 | 3/16/06 | 13:16 | 11 | 120 | 42 | |
| ALPHA | 1C100112WPR2 | 5904 | [redacted] | 5905 | 1 | 4 | 3/16/06 | 13:19 | 23 | 120 | 87 | |
| BETA | 1C100110WPR1 | 5904 | [redacted] | 5905 | 2 | 5 | 3/16/06 | 13:07 | 203 | 60 | 1953 | |
| BETA | 1C100110WPR2 | 5904 | [redacted] | 5905 | 2 | 6 | 3/16/06 | 13:13 | 183 | 60 | 1760 | |
| BETA | 1C100112WPR1 | 5904 | [redacted] | 5905 | 2 | 7 | 3/16/06 | 13:17 | 198 | 60 | 1905 | |
| BETA | 1C100112WPR2 | 5904 | [redacted] | 5905 | 2 | 8 | 3/16/06 | 13:20 | 437 | 60 | 4204 | |

N A



COPY 1204/686

Survey Unit Number: 1C10



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0321
RCT INT/HP I.K [redacted]

| Label | Room 4-3-06 | Surface | LX | LY |
|---|---|---|---|---|
| 1C10 0110WPR1 | T-248 | Wall | See | MAP |
| 1C10 0110WPR2 | | | | |
| 1C10 0112WPR1 | 4-3-06 | | | |
| 1C10 0112WPR2 | T-248 | Wall | See | MAP |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F295/686

NCS 3-24-06

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-48 1C10 EAST | SURVEY NO. MT-06-0329 |
| PURPOSE: SURVEY ELEVATED LOCATIONS FOR COMPOSITE RESRAD SAMPLE | RWP NO. N/A |
| | DATE: 3-18-06 |
| | TIME: 1300 |

MAP / DRAWING

SEE ATTACHED

- REFERENCE MT-06-0316 FOR SMEAR AND STATIC COUNT RESULTS FOR LOCATIONS 1C10E1 THROUGH 1C10E8.
- LOCATIONS 1C10E9 THROUGH 1C10E12 ARE JUDGEMENTALS
- LOCATIONS 1C10E10 THROUGH 1C10E12 HAVE ELEVATED ACTIVITY

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854/5861 | 7-28-06 |
| 3030 | 5825 | 4-13-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) Neal Reynolds | HP# [redacted] | Date: 3-18-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE | HP# N | Date: A |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 3-24-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F 296/686

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Survey No. MT-06-0329

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C10E9 |
| 2 | | SEE | | 1C10E10 |
| 3 | | ATTA | CHED | 1C10E11 |
| 4 | | | | 1C10E12 |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | N | | |
| 23 | | | A | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | N | | |
| 56 | | | A | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-50036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F291/686

MI 0820 (4-98)

3/24/06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060320_0954.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0329.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

Copy

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MT-06-0329
6/24/06

I-398/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/20/06 | 9:54:35 AM | -1 | 10.00 | 10 | 9 | 9 | 5 | 631.40 | 0 | 20.1 | B | 1 |
| 3/20/06 | 10:05:24 AM | 0 | 2.00 | 300 | 284 | 3 | 0 | 560.93 | 573 | 8.3 | | 1 |
| 3/20/06 | 10:08:05 AM | 1 | 2.00 | 0 | 0 | 0 | 14 | 581.14 | 0 | 0.0 | | 1 |
| 3/20/06 | 10:10:46 AM | 2 | 2.00 | 0 | 0 | 0 | 22 | 593.32 | 0 | 0.0 | | 1 |
| 3/20/06 | 10:13:29 AM | 3 | 2.00 | 0 | 0 | 0 | 29 | 614.73 | 0 | 2613.2 | | 1 |
| 3/20/06 | 10:16:43 AM | 4 | 2.00 | 0 | 0 | 1 | 5 | 647.39 | 0 | 5402.4 | | 1 |

COPY

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MT-06-0327

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_050
Batch Ended: 3/20/06 9:15
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0329 [4] REYNOLDS 3-20-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.91 | | 1.44 | 2.06 | |
| B2 | 2 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 3 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 4 | 0.00 | 2.03 | | 4.24 | 2.68 | |

✓ nr ✓ nr

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~~Page 1 of 1~~
3-24-06

PAGE 5 OF 29
MT-06-0329 RLH

F-300/086

Survey Unit Number: 1C11



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0111
RCT INT/HP J.K [redacted]
K.A
R.B

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C11-0130I | 57 | Concrete | See | map |
| 1C11-0131I | | | | |
| 1C11-0132I | | | | |
| 1C11-0133I | | | | |
| 1C11-0134I | | | | |
| 1C11-0135I | | | | |
| 1C11-0136I | 57 | Concrete | See | map |
| | | NA | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

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F 372/686

# RADIOLOGICAL SURVEY DATA SHEET


7/24/08

| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-57 1C11 | SURVEY NO. MT-06-0115 |
| PURPOSE: SURVEY SAMPLING LOCATIONS FOR RESRAD | RWP NO. N/A |
| | DATE 1-31-06 |
| | TIME 0900 |

MAP / DRAWING

SEE ATTACHED

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·— = radiological boundary

COPY

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5673/5862 | 8-4-06 |
| 30-30 | 5825 | 4-13-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 1-31-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE ATTACHED | HP# N | Date: A |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 2-13-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor F373/686 | | |

Survey No. MT-06-0115

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C11 0101S |
| 2 | | | | 0102S |
| 3 | | | | 0103S |
| 4 | | | | 0104S |
| 5 | | | | 0105S |
| 6 | | | | 0106S |
| 7 | | | | 0107S |
| 8 | | | | 0108S |
| 9 | | SEE ATTACHED | | 0109S |
| 10 | | | | 0110E |
| 11 | | | | 0111E |
| 12 | | | | 0112E |
| 13 | | | | 0113E |
| 14 | | | | 0114E |
| 15 | | | | 0115E |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | N/A | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | N/A | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060131_1642.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0115.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

F 345/286

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021306

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/31/06 | 4:43:06 PM | -1 | 10.00 | 9 | 8 | 11 | 6 | 632.95 | 0 | 21.2 | B | 3 |
| 1/31/06 | 4:53:55 PM | 0 | 2.00 | 380 | 362 | 0 | 0 | 549.86 | 734 | 7.4 | | 3 |
| 1/31/06 | 4:56:36 PM | 1 | 2.00 | 0 | 0 | 0 | 0 | 596.40 | 0 | 0.0 | | 3 |
| 1/31/06 | 4:59:20 PM | 2 | 2.00 | 1 | 1 | 4 | 0 | 623.74 | 1 | 744.7 | | 3 |
| 1/31/06 | 5:02:01 PM | 3 | 2.00 | 6 | 6 | 0 | 0 | 608.65 | 11 | 94.4 | | 3 |
| 1/31/06 | 5:04:43 PM | 4 | 2.00 | 0 | 0 | 0 | 8 | 610.30 | 0 | 0.0 | | 3 |
| 1/31/06 | 5:07:25 PM | 5 | 2.00 | 0 | 0 | 0 | 0 | 629.18 | 0 | 0.0 | | 3 |
| 1/31/06 | 5:10:06 PM | 6 | 2.00 | 0 | 0 | 0 | 0 | 592.83 | 0 | 0.0 | | 3 |
| 1/31/06 | 5:12:50 PM | 7 | 2.00 | 3 | 2 | 0 | 0 | 614.02 | 6 | 167.3 | | 3 |
| 1/31/06 | 5:15:32 PM | 8 | 2.00 | 0 | 0 | 0 | 0 | 617.30 | 0 | 0.0 | | 3 |
| 1/31/06 | 5:18:15 PM | 9 | 2.00 | 1 | 1 | 0 | 5 | 609.42 | 1 | 744.7 | | 3 |
| 1/31/06 | 5:20:58 PM | 10 | 2.00 | 0 | 1 | 0 | 0 | 613.41 | 1 | 1623.2 | | 3 |
| 1/31/06 | 5:23:40 PM | 11 | 2.00 | 1 | 1 | 0 | 0 | 607.03 | 1 | 744.7 | | 3 |
| 1/31/06 | 5:26:22 PM | 12 | 2.00 | 0 | 0 | 0 | 10 | 605.60 | 0 | 0.0 | | 3 |
| 1/31/06 | 5:29:04 PM | 13 | 2.00 | 1 | 1 | 0 | 5 | 613.41 | 1 | 744.7 | | 3 |
| 1/31/06 | 5:31:47 PM | 14 | 2.00 | 3 | 3 | 1 | 4 | 605.23 | 6 | 167.3 | | 3 |
| 1/31/06 | 5:34:30 PM | 15 | 2.00 | 0 | 0 | 0 | 6 | 629.39 | 0 | 0.0 | | 3 |

√ nr

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MT-06-0115
7-24-06

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F376/2086

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_087
Batch Ended: 1/31/06 15:48
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0115 REYNOLDS (15) 01/31/06 TAS

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.01 | | 0.34 | 1.64 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 1.66 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.99 | | 1.60 | 2.07 | |
| C1 | 9 | 0.00 | 2.10 | | 3.94 | 2.75 | |
| C2 | 10 | 0.00 | 1.91 | | 0.00 | 1.12 | |
| C3 | 11 | 0.00 | 2.10 | | 2.70 | 2.43 | |
| C4 | 12 | 0.00 | 1.96 | | 0.62 | 1.59 | |
| D1 | 13 | 0.00 | 2.11 | | 5.28 | 3.07 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.19 | |
| D3 | 15 | 0.00 | 2.13 | | 2.66 | 2.48 | |

nr nr

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F3471/686

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MT-06-0115

02B0L9

~~Page 1 of 1~~

# T-57 Survey of RESRAD sampling locations

*RSDS# _MT-06-0115_____ RCT: _____ RCT: _N/A_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.208 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1632 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110101S | 5673 | | 5862 | 1 | 1 | 1/31/06 | 12:12 | 14 | 120 | 53 |
| ALPHA | 1C110102S | 5673 | | 5862 | 1 | 2 | 1/31/06 | 12:17 | 8 | 120 | 31 |
| ALPHA | 1C110103S | 5673 | | 5862 | 1 | 3 | 1/31/06 | 12:21 | 6 | 120 | 23 |
| ALPHA | 1C110104S | 5673 | | 5862 | 1 | 4 | 1/31/06 | 12:25 | 7 | 120 | 27 |
| ALPHA | 1C110105S | 5673 | | 5862 | 1 | 5 | 1/31/06 | 12:31 | 7 | 120 | 27 |
| ALPHA | 1C110106S | 5673 | | 5862 | 1 | 6 | 1/31/06 | 12:36 | 27 | 120 | 103 |
| ALPHA | 1C110107S | 5673 | | 5862 | 1 | 7 | 1/31/06 | 12:42 | 8 | 120 | 31 |
| ALPHA | 1C110108S | 5673 | | 5862 | 1 | 8 | 1/31/06 | 12:46 | 11 | 120 | 42 |
| ALPHA | 1C110109S | 5673 | | 5862 | 1 | 9 | 1/31/06 | 12:51 | 6 | 120 | 23 |
| ALPHA | 1C110110E | 5673 | | 5862 | 1 | 10 | 1/31/06 | 12:56 | 7 | 120 | 27 |
| ALPHA | 1C110111E | 5673 | | 5862 | 1 | 11 | 1/31/06 | 13:00 | 24 | 120 | 92 |
| ALPHA | 1C110112E | 5673 | | 5862 | 1 | 12 | 1/31/06 | 13:04 | 21 | 120 | 80 |
| ALPHA | 1C110113E | 5673 | | 5862 | 1 | 13 | 1/31/06 | 13:11 | 7 | 120 | 27 |
| ALPHA | 1C110114E | 5673 | | 5862 | 1 | 14 | 1/31/06 | 13:15 | 19 | 120 | 72 |
| ALPHA | 1C110115E | 5673 | | 5862 | 1 | 15 | 1/31/06 | 13:19 | 19 | 120 | 72 |
| BETA | 1C110101S | 5673 | | 5862 | 2 | 1 | 1/31/06 | 12:13 | 218 | 60 | 2120 |
| BETA | 1C110102S | 5673 | | 5862 | 2 | 2 | 1/31/06 | 12:18 | 396 | 60 | 3852 |
| BETA | 1C110103S | 5673 | | 5862 | 2 | 3 | 1/31/06 | 12:22 | 176 | 60 | 1712 |
| BETA | 1C110104S | 5673 | | 5862 | 2 | 4 | 1/31/06 | 12:26 | 175 | 60 | 1702 |
| BETA | 1C110105S | 5673 | | 5862 | 2 | 5 | 1/31/06 | 12:32 | 146 | 60 | 1420 |
| BETA | 1C110106S | 5673 | | 5862 | 2 | 6 | 1/31/06 | 12:37 | 675 | 60 | 6565 |
| BETA | 1C110107S | 5673 | | 5862 | 2 | 7 | 1/31/06 | 12:43 | 160 | 60 | 1556 |
| BETA | 1C110108S | 5673 | | 5862 | 2 | 8 | 1/31/06 | 12:47 | 150 | 60 | 1459 |
| BETA | 1C110109S | 5673 | | 5862 | 2 | 9 | 1/31/06 | 12:52 | 194 | 60 | 1887 |
| BETA | 1C110110E | 5673 | | 5862 | 2 | 10 | 1/31/06 | 12:57 | 182 | 60 | 1770 |
| BETA | 1C110111E | 5673 | | 5862 | 2 | 11 | 1/31/06 | 13:01 | 991 | 60 | 9639 |
| BETA | 1C110112E | 5673 | | 5862 | 2 | 12 | 1/31/06 | 13:05 | 1145 | 60 | 11136 |
| BETA | 1C110113E | 5673 | | 5862 | 2 | 13 | 1/31/06 | 13:12 | 726 | 60 | 7061 |
| BETA | 1C110114E | 5673 | | 5862 | 2 | 14 | 1/31/06 | 13:16 | 209 | 60 | 2033 |
| BETA | 1C110115E | 5673 | | 5862 | 2 | 15 | 1/31/06 | 13:20 | 173 | 60 | 1683 |
| | S=Static | | | | | | | | | | |
| | E=Elevated | | | | | | | | | | |

**COPY**

**1C-11-01 Room 57**

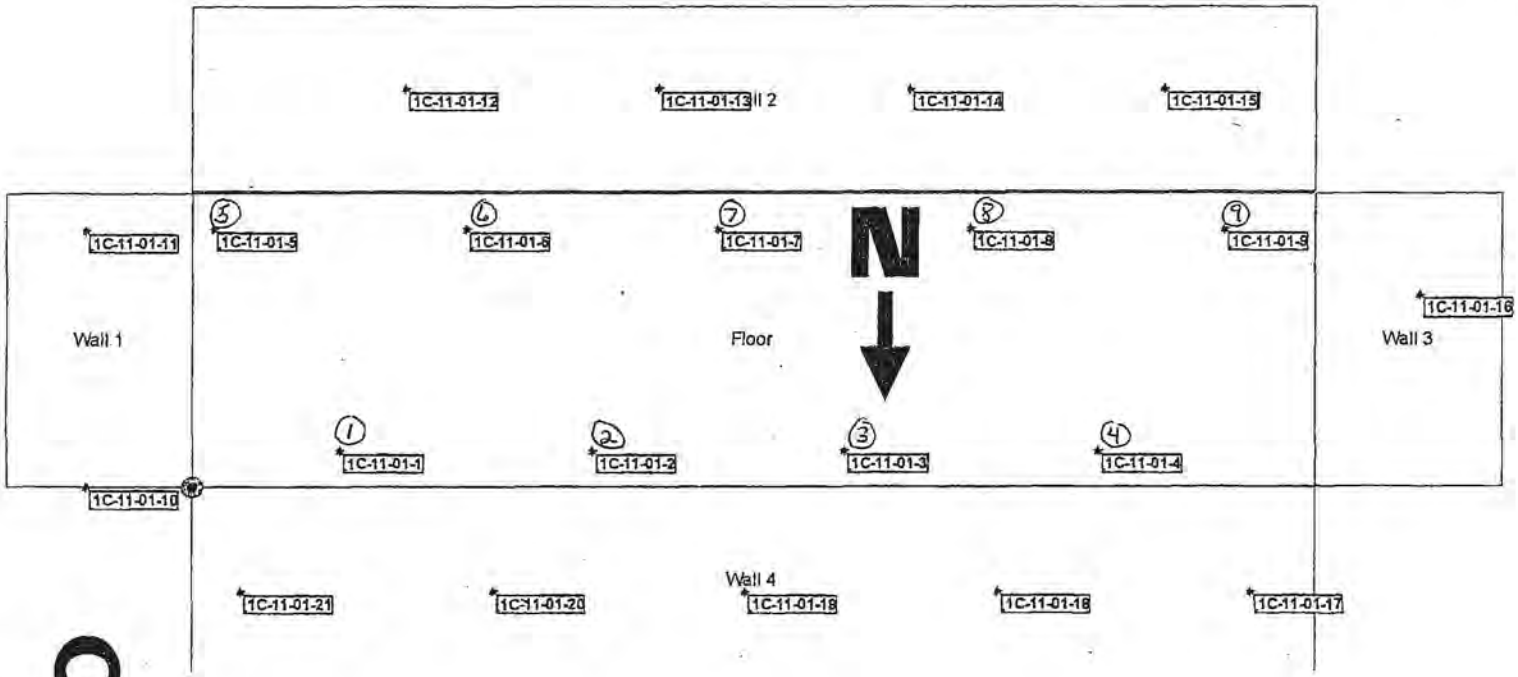
**floor and lower wall static measurement locations**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at each static location on the floor.

Room 57

Composite bulk sample with bulk samples taken at judgmental locations on the floor.

| Area: Room 57 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-11-01-1 | Systematic | Floor | 6 | 1 |
| 1C-11-01-2 | Systematic | Floor | 15 | 1 |
| 1C-11-01-3 | Systematic | Floor | 25 | 1 |
| 1C-11-01-4 | Systematic | Floor | 34 | 1 |
| 1C-11-01-5 | Systematic | Floor | 1 | 10 |
| 1C-11-01-6 | Systematic | Floor | 10 | 10 |
| 1C-11-01-7 | Systematic | Floor | 20 | 10 |
| 1C-11-01-8 | Systematic | Floor | 30 | 10 |
| 1C-11-01-9 | Systematic | Floor | 39 | 10 |




COPY

F379/88

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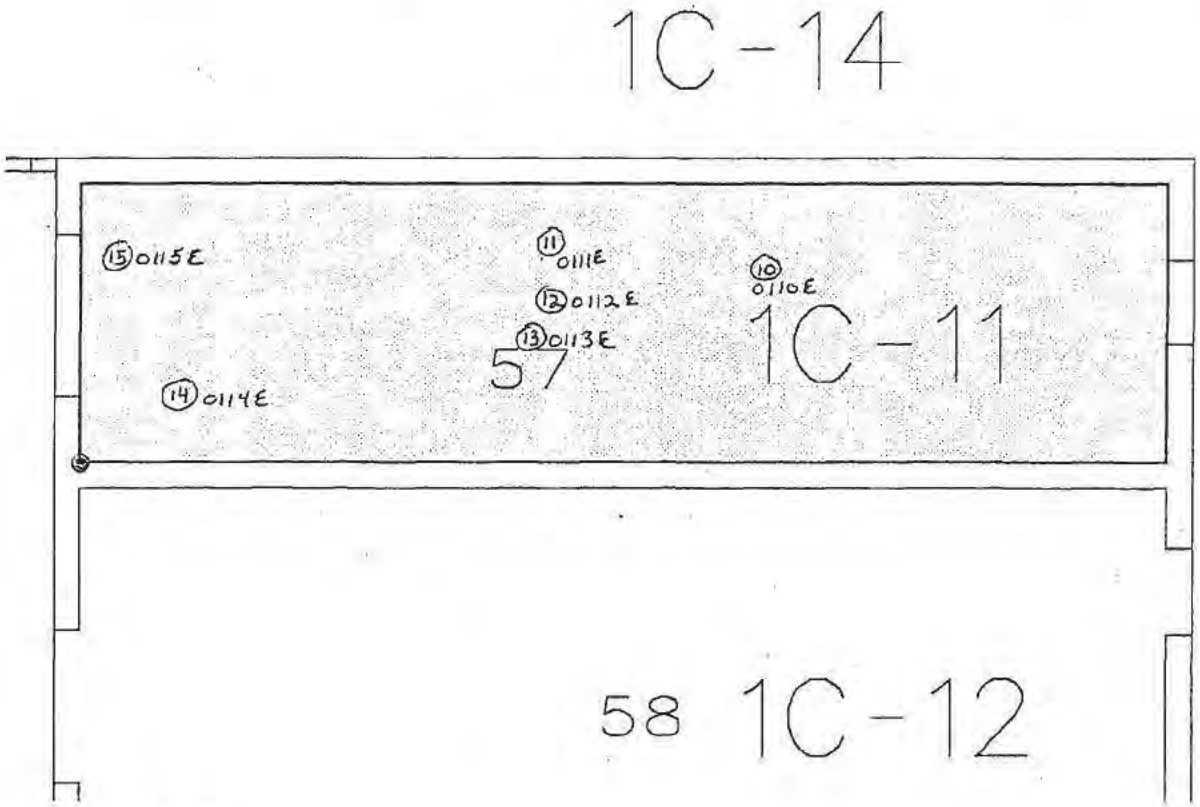
M-06-0115

7-29-05

**1C-11**
**Class 1**

**Room 57** After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at the highest 20% (maximum # of 10) elevated activity areas identified on the floor. Composite bulk sample with bulk samples taken at static locations on the floor.




| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C11-0110E | T-57 | Floor | | |
| 0111E | | | | |
| 0112E | | | N | |
| 0113E | | | | A |
| 0114E | | | | |
| 0115E | | | | |
| | | N | | |
| | | A | | |

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F3 80/686

PAGE 8 OF 10

M-06-0115

Survey Unit Number: 1C11


7-24-06

(Supplemental sheet for biased measurements.)

RSDS # mT-06-0115
RCT INT/HP XR [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C11 0110 E | T-57 | Floor | | |
| 0111 E | | | | |
| 0112 E | | | N | |
| 0113 E | | | | A |
| 0114 E | | | | |
| 0115 E | | | | |
| | | N | A | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F 381/686

1"

# SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL09829
File ID: 25000116.s0
Priority: Yes

**Description\Location**
0600575 Resrad T-57 Concrete Dust
Long Count

Collector: 7728
Date Received: 02/06/06
Date Collected: 02/03/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | * | 0.09 | 0.13 |
| Cs-137 | | 0.91 | 0.1 |
| Pb-210 | * | 0.26 | 0.45 |
| Ra-226 | * | 0.73 | 0.79 |
| Ac-227 (D) | * | 0.13 | 0.22 |
| Th-230 | * | 0 | 6.83 |
| Th-232 (D) | * | 0.19 | 0.26 |
| Pu-238 | * | 0 | 4.85 |
| Am-241 | * | 0.01 | 0.06 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.06 |
| Bi-207 | 0.04 | 0.04 |
| Bi-210m | 0.12 | 0.06 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 12.59 pCi/g MDA

COPY

Date: 02/07/06 Counted By: Analyzed By: Initials SB

F381A/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg 1C11 Rm 57 | SURVEY NO. MT-06-0158 |
| PURPOSE: Investigation elevated measurements | RWP NO. NA |
| | DATE: 2/9/06 |
| RESRAD | TIME: 1300 |

## MAP / DRAWING

See Attached

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

Note: Readings taken numeric order

Reference MT-06-0111 for original elevated readings

1C110103 β average 3467 dpm/100cm²

1C110105 β average 1834 dpm/100cm²

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

COPY

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2360 43-68 | 5889 5890 | 1/17/07 |
| | | |
| | | A |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) | | | Date: 2/9/06 |
| Completed by: (Print Name) Georgeweissenberger S Richardson | | | |
| Counted by: (Signature) see Attached | HP# N/A | | Date: N/A |
| Counted by: (Print Name) sheets | | | F382/686 |
| Reviewed/Approved by: (Signature) | | | Date: 2-16-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

Survey No.
MT-06-0158



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 ~~1C110103~~ | see | Attached | | 1C110103I |
| 2 ~~1C110105~~ | | sheets | | 1C110105I |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A
N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

F 383/686

1-8-10 MT-06 0158 2-12



MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060214_1412.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0158.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

538/686

MT-06- 0158

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/14/06 | 2:13:13 PM | -1 | 10.00 | 8 | 7 | 9 | 7 | 622.57 | 0 | 22.0 | B | 2 |
| 2/14/06 | 2:24:01 PM | 0 | 2.00 | 201 | 188 | 3 | 2 | 546.99 | 388 | 10.2 | | 2 |
| 2/14/06 | 2:26:44 PM | 1 | 2.00 | 2 | 3 | 2 | 10 | 635.88 | 3 | 282.7 | | 2 |
| 2/14/06 | 2:29:26 PM | 2 | 2.00 | 0 | 0 | 0 | 7 | 609.91 | 0 | 0.0 | | 2 |

COPY

F 385/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_059
Batch Ended: 2/14/06 10:45
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0158 [2] RICHARDSON 2-14-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 2 | 0.00 | 1.91 | | 2.43 | 2.23 | |

GW GW

COPY

F386/686

# T-Building Investigate elevated spots marked by shonka >5K<15K

*RSDS#* MT-06-0158 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1695 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 1 | 2/9/06 | 13:21 | 19 | 120 | 71 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 2 | 2/9/06 | 13:25 | 7 | 120 | 26 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 3 | 2/9/06 | 13:28 | 6 | 120 | 22 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 4 | 2/9/06 | 13:32 | 5 | 120 | 19 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 5 | 2/9/06 | 13:35 | 5 | 120 | 19 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 6 | 2/9/06 | 13:39 | 9 | 120 | 34 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 7 | 2/9/06 | 13:42 | 5 | 120 | 19 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 8 | 2/9/06 | 13:46 | 9 | 120 | 34 |
| ALPHA | 1C110103I | 5889 | [redacted] | 5890 | 1 | 9 | 2/9/06 | 13:49 | 3 | 120 | 11 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 10 | 2/9/06 | 14:39 | 12 | 120 | 45 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 11 | 2/9/06 | 14:42 | 2 | 120 | 7 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 12 | 2/9/06 | 14:46 | 7 | 120 | 26 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 13 | 2/9/06 | 14:49 | 5 | 120 | 19 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 14 | 2/9/06 | 14:53 | 8 | 120 | 30 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 15 | 2/9/06 | 14:56 | 3 | 120 | 11 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 16 | 2/9/06 | 14:59 | 7 | 120 | 26 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 17 | 2/9/06 | 15:03 | 9 | 120 | 34 |
| ALPHA | 1C110105I | 5889 | [redacted] | 5890 | 1 | 18 | 2/9/06 | 15:06 | 8 | 120 | 30 ✓ |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 1 | 2/9/06 | 13:22 | 755 | 60 | 7070 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 2 | 2/9/06 | 13:26 | 242 | 60 | 2266 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 3 | 2/9/06 | 13:30 | 255 | 60 | 2388 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 4 | 2/9/06 | 13:33 | 452 | 60 | 4233 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 5 | 2/9/06 | 13:36 | 654 | 60 | 6124 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 6 | 2/9/06 | 13:40 | 205 | 60 | 1920 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 7 | 2/9/06 | 13:43 | 209 | 60 | 1957 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 8 | 2/9/06 | 13:47 | 355 | 60 | 3324 |
| BETA | 1C110103I | 5889 | [redacted] | 5890 | 2 | 9 | 2/9/06 | 13:50 | 205 | 60 | 1920 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 10 | 2/9/06 | 14:40 | 520 | 60 | 4870 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 11 | 2/9/06 | 14:43 | 197 | 60 | 1845 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 12 | 2/9/06 | 14:47 | 161 | 60 | 1508 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 13 | 2/9/06 | 14:50 | 133 | 60 | 1245 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 14 | 2/9/06 | 14:54 | 146 | 60 | 1367 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 15 | 2/9/06 | 14:57 | 134 | 60 | 1255 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 16 | 2/9/06 | 15:01 | 139 | 60 | 1302 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 17 | 2/9/06 | 15:04 | 155 | 60 | 1452 |
| BETA | 1C110105I | 5889 | [redacted] | 5890 | 2 | 18 | 2/9/06 | 15:07 | 177 | 60 | 1658 ✓ |
| | | | | | | N | | | | | |
| | | | | | | | A | | | | |

COPY



F387/686

Survey Unit Number: 1C11



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0158
RCT INT/HP GW [redacted] ;SR [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C1101031 | 57 | metal | SEE | map |
| 1C1101051 | 57 | metal | SEE | map |
| | | | | |
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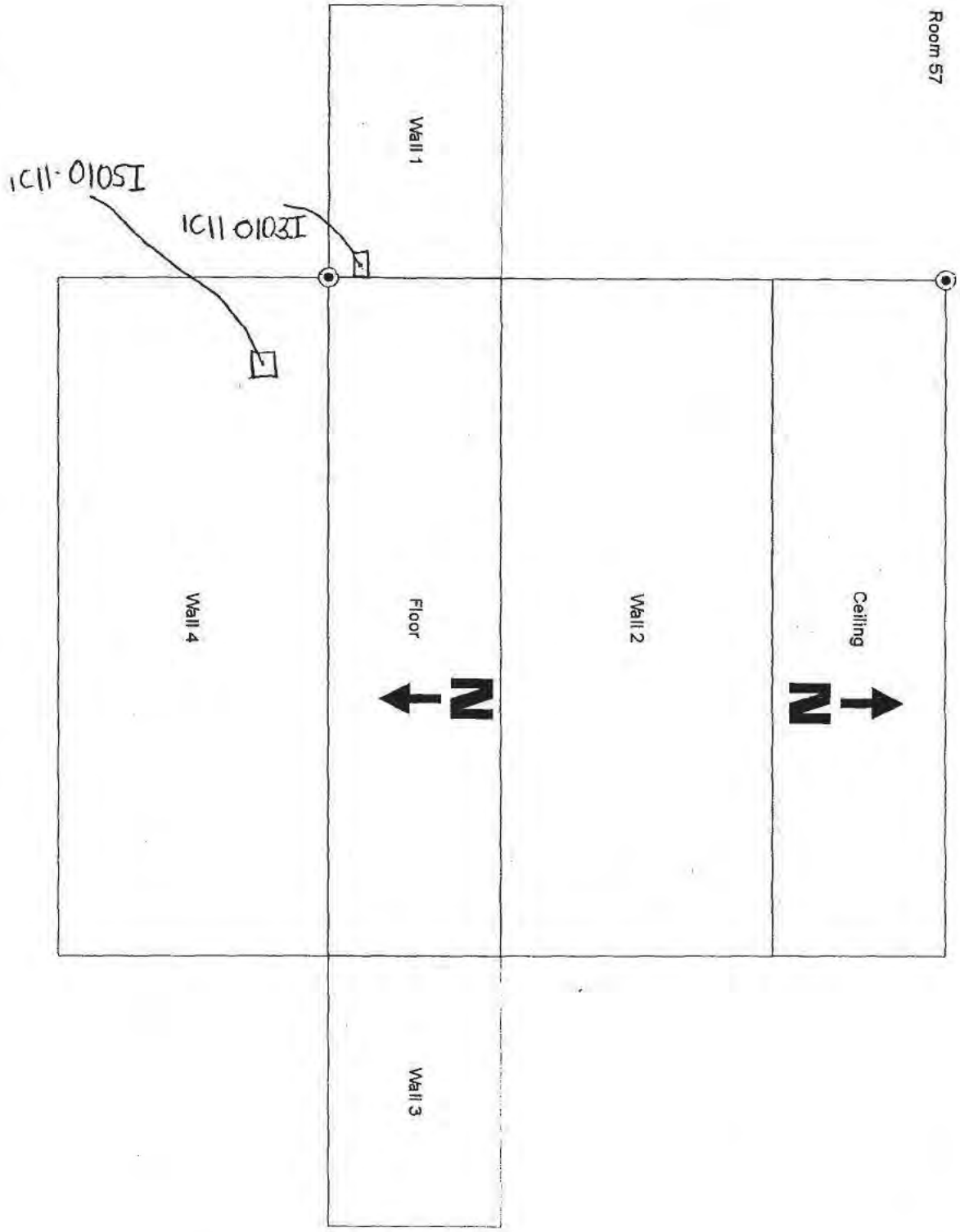
J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F-382/686


Room 57
Ceiling
N
Wall 2
Floor
N
Wall 3
Wall 1
Wall 4
1C11-0105I
1C11 0103I

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg 1C11 RM 57 | SURVEY NO. MT-06-0168 |
| PURPOSE: Marsems investigation elevated measurements | RWP NO. N A |
| | DATE: 2/10/06 |
| RESRAD | TIME: 1600 |

## MAP / DRAWING

see Attached

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

Readings TAKEN IN this order

1C110106E $B^-$ on 2-14-06 5212 dpm/100 cm² N 2-16-06
1C110106E $B^-$ average ~~4895~~ 2/16/06 dpm ppm/100 cm²
1C110107E $B^-$ average ~~3355~~ 2/16/06 dpm dpm/100 cm²
3572 N 2-16-06

Reference MT-06-0111 for original readings

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary

COPY

△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 43-68 | 5423 / 5862 | 5/17/06 |
| | | |
| | N | A |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) [redacted] | | | Date: 2-13-06 |
| Completed by: (Print Name) Goo Ras Wesser S Richardson | | | |
| Counted by: (Signature) See Attached | HP# N/A | | Date: N/A |
| Counted by: (Print Name) sheets | | | E-390686 |
| Reviewed/Approved by: (Signature) [redacted] | | | Date: 2-16-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | | |

Survey No.
MT-06-0168



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | ATTACHED | | 1C110106E |
| 2 | | SHEETS | | 1C110107E |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A
N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F391/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060213_1113.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0168.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F392/686

COPY

Rtd

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 11:14:25 AM | -1 | 10.00 | 8 | 7 | 11 | 5 | 630.51 | 0 | 22.5 | B | 4 |
| 2/13/06 | 11:25:15 AM | 0 | 2.00 | 204 | 192 | 0 | 0 | 551.45 | 393 | 10.1 | | 4 |
| 2/13/06 | 11:27:57 AM | 1 | 2.00 | 0 | 0 | 0 | 6 | 595.74 | 0 | 2426.9 | | 4 |
| 2/13/06 | 11:30:39 AM | 2 | 2.00 | 0 | 0 | 0 | 0 | 625.17 | 1 | 1105.9 | | 4 |

2-14-06

COPY

F393/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_040
Batch Ended: 2/13/06 8:50
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0168 [2] RICHARDSON 2-13-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 2 | 1.54 | 1.85 | | 0.00 | 1.12 | |

GW 2-14-06

GW 2-14-06

COPY

F-3941/686

GW 2-14-06

# T-Building RM 57 INVESTIGATION ELEVATED READINGS

*RSDS#* MT-06-168 *RCT:* [redacted] *RCT:* _____

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2073 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1578 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 1 | 2/10/06 | 13:29 | 76 | 120 | 291 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 2 | 2/10/06 | 13:33 | 27 | 120 | 103 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 3 | 2/10/06 | 13:36 | 4 | 120 | 15 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 4 | 2/10/06 | 13:39 | 5 | 120 | 19 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 5 | 2/10/06 | 13:43 | 8 | 120 | 31 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 6 | 2/10/06 | 13:46 | 8 | 120 | 31 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 7 | 2/10/06 | 13:52 | 4 | 120 | 15 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 8 | 2/10/06 | 13:56 | 3 | 120 | 11 |
| ALPHA | 1C110106E | 5923 | [redacted] | 5925 | 1 | 9 | 2/10/06 | 14:40 | 10 | 120 | 38 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 10 | 2/10/06 | 14:46 | 10 | 120 | 38 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 11 | 2/10/06 | 14:49 | 5 | 120 | 19 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 12 | 2/10/06 | 14:52 | 36 | 120 | 138 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 13 | 2/10/06 | 14:55 | 8 | 120 | 31 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 14 | 2/10/06 | 15:01 | 5 | 120 | 19 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 15 | 2/10/06 | 15:05 | 9 | 120 | 34 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 16 | 2/10/06 | 15:09 | 8 | 120 | 31 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 17 | 2/10/06 | 15:12 | 4 | 120 | 15 |
| ALPHA | 1C110107E | 5923 | [redacted] | 5925 | 1 | 18 | 2/10/06 | 15:16 | 4 | 120 | 15 ✓ |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 1 | 2/10/06 | 13:30 | 1226 | 60 | 12332 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 2 | 2/10/06 | 13:34 | 387 | 60 | 3893 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 3 | 2/10/06 | 13:37 | 248 | 60 | 2495 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 4 | 2/10/06 | 13:41 | 242 | 60 | 2434 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 5 | 2/10/06 | 13:44 | 265 | 60 | 2666 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 6 | 2/10/06 | 13:47 | 349 | 60 | 3511 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 7 | 2/10/06 | 13:53 | 234 | 60 | 2354 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 8 | 2/10/06 | 13:57 | 633 | 60 | 6367 |
| BETA | 1C110106E | 5923 | [redacted] | 5925 | 2 | 9 | 2/10/06 | 14:41 | 1079 | 60 | 10854 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 10 | 2/10/06 | 14:50 | 412 | 60 | 4144 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 11 | 2/10/06 | 14:53 | 488 | 60 | 4909 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 12 | 2/10/06 | 14:56 | 527 | 60 | 5301 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 13 | 2/10/06 | 15:02 | 330 | 60 | 3319 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 14 | 2/10/06 | 15:06 | 254 | 60 | 2555 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 15 | 2/10/06 | 15:10 | 177 | 60 | 1780 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 16 | 2/10/06 | 15:14 | 540 | 60 | 5432 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 17 | 2/10/06 | 15:17 | 270 | 60 | 2716 |
| BETA | 1C110107E | 5923 | [redacted] | 5925 | 2 | 18 | 2/10/06 | 15:20 | 198 | 60 | 1992 ✓ |

COPY



F395/686

Survey Unit Number: 1C11



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0168 ~~MT-06-0168~~ 2.1.4.06

RCT INT/HP GW [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C110106E | 57 | metal | see | map |
| 1C110107E | 57 | metal | see | map |

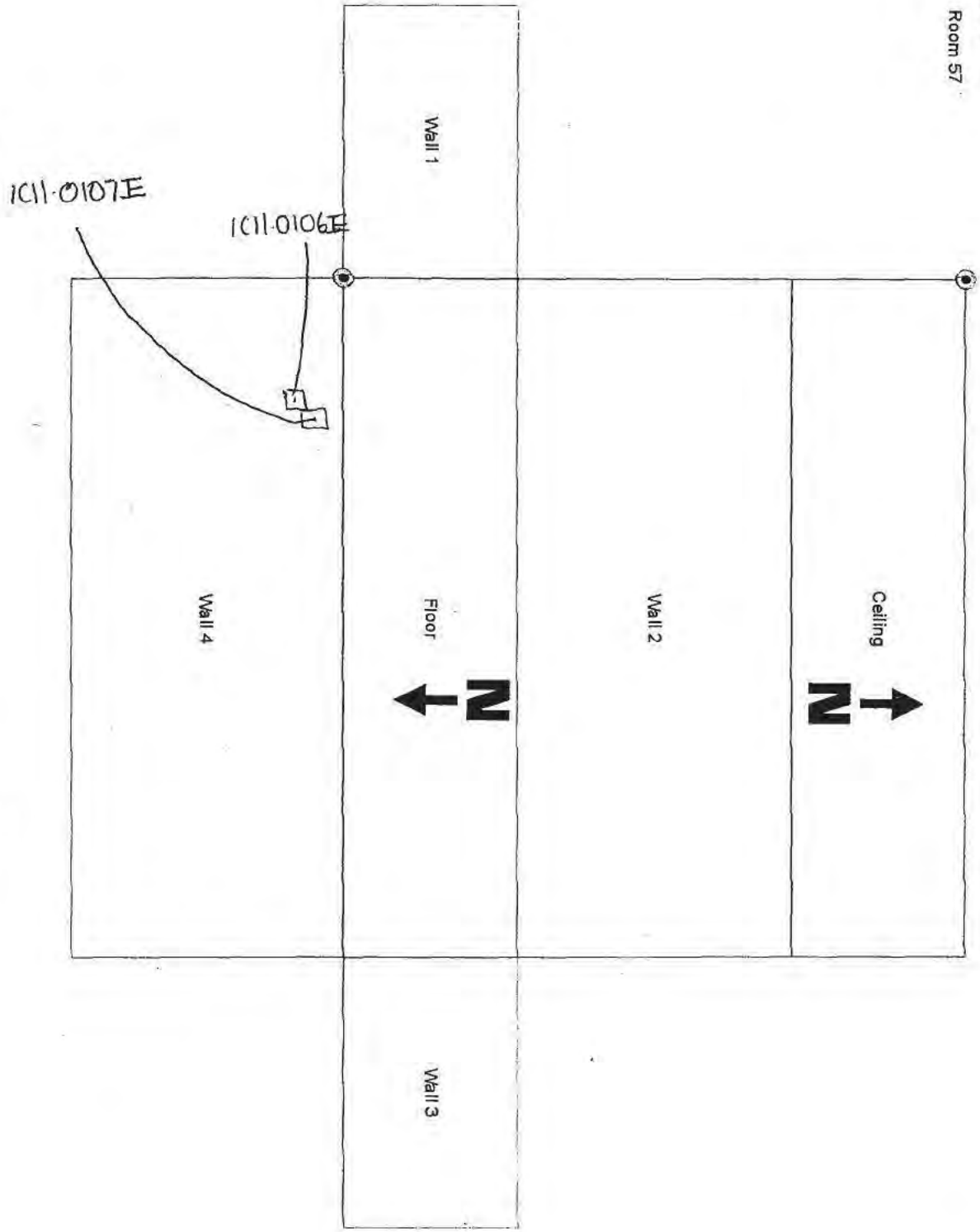
A

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F 596/686

pg 8 OF 8
MT-06-0168




COPY

E397/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-Bldg 1C11 Rm 57 | SURVEY NO. MT-06-0174 |
| PURPOSE: Investigation elevated reading | RWP NO. NA |
| | DATE: 2/13/06 |
| RESRAD | TIME: 1530 |

## MAP / DRAWING

-see Attached

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

NOTE: Readings Taken in numeric order

Reference MT-06-011 for elevated readings

1C110111E β⁻ average - 6407 dpm/100 cm²
1C110110E β⁻ average - 12812 dpm/100 cm²
1C110118E β⁻ average - 2155 dpm/100 cm²
1C110104E β⁻ average - 2782 dpm/100 cm²

WALL SANDBLASTED

NOTE: 1C110110E ONLY 8 READINGS TAKEN

this AREA WAS REMEDIATED AND SURVEYED

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·- = radiological boundary

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△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 4368 | 5904 5905 | 2/22/06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) S Richardson | | Date: 2/13/06 |
| Completed by: (Print Name) George Weissenberger S Richardson | | |
| Counted by: (Signature) See | HP# N/A | Date: N/A |
| Counted by: (Print Name) attachments | | F398/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | HP# | Date: 2/16/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0174



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | | 1C110111E |
| 2 | | sheets | | 1C110110E |
| 3 | | | | 1C110108E |
| 4 | See | Attached | | 1C110104E |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-399/686

COPY

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060213_1133.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0174.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F-4009/686

COPY

PM 3 of 9

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 11:34:19 AM | -1 | 10.00 | 9 | 8 | 12 | 10 | 615.65 | 0 | 20.7 | B | 1 |
| 2/13/06 | 11:45:08 AM | 0 | 2.00 | 492 | 469 | 0 | 0 | 581.38 | 926 | 6.4 | | 1 |
| 2/13/06 | 11:47:50 AM | 1 | 2.00 | 0 | 0 | 0 | 0 | 621.77 | 0 | 0.0 | | 1 |
| 2/13/06 | 11:50:31 AM | 2 | 2.00 | 3 | 4 | 0 | 4 | 653.26 | 6 | 167.5 | | 1 |
| 2/13/06 | 11:53:11 AM | 3 | 2.00 | 1 | 2 | 0 | 5 | 631.31 | 2 | 458.9 | | 1 |
| 2/13/06 | 11:56:01 AM | 4 | 2.00 | 2 | 1 | 0 | 5 | 650.71 | 3 | 298.3 | | 1 |

COPY
F4/61/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_041
Batch Ended: 2/13/06 8:58
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0174 [4] RICHARDSON 2-13-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |

2-14-06

~~Page 1 of 1~~

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F402/686

Pg 5 of 9

# T-Building Investigate elevated

*RSDS#* MT-06-0174 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110111E 1 | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 7:05 | 29 | 120 | 110 |
| ALPHA | 1C110111E 2 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:08 | 13 | 120 | 49 |
| ALPHA | 1C110111E 3 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:14 | 10 | 120 | 38 |
| ALPHA | 1C110111E 4 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:17 | 19 | 120 | 72 |
| ALPHA | 1C110111E 5 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:20 | 36 | 120 | 136 |
| ALPHA | 1C110111E 6 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:24 | 30 | 120 | 113 |
| ALPHA | 1C110111E 7 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:27 | 35 | 120 | 132 |
| ALPHA | 1C110111E 8 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:31 | 21 | 120 | 79 |
| ALPHA | 1C110111E 9 | 5904 | | 5905 | 1 | 1 | 2/13/06 | 7:34 | 30 | 120 | 113 |
| ALPHA | 1C110110E 1 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 7:47 | 25 | 120 | 94 |
| ALPHA | 1C110110E 2 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 7:53 | 16 | 120 | 60 |
| ALPHA | 1C110110E 3 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 7:57 | 15 | 120 | 57 |
| ALPHA | 1C110110E 4 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 8:14 | 12 | 120 | 45 |
| ALPHA | 1C110110E 5 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 8:18 | 31 | 120 | 117 |
| ALPHA | 1C110110E 6 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 8:21 | 51 | 120 | 193 |
| ALPHA | 1C110110E 7 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 8:25 | 25 | 120 | 94 |
| ALPHA | 1C110110E 8 | 5904 | | 5905 | 1 | 2 | 2/13/06 | 8:28 | 23 | 120 | 87 |
| ALPHA | 1C110118E 1 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:35 | 28 | 120 | 106 |
| ALPHA | 1C110118E 2 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:39 | 12 | 120 | 45 |
| ALPHA | 1C110118E 3 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:43 | 4 | 120 | 15 |
| ALPHA | 1C110118E 4 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:46 | 8 | 120 | 30 |
| ALPHA | 1C110118E 5 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:50 | 8 | 120 | 30 |
| ALPHA | 1C110118E 6 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:53 | 12 | 120 | 45 |
| ALPHA | 1C110118E 7 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 9:56 | 19 | 120 | 72 |
| ALPHA | 1C110118E 8 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 10:00 | 6 | 120 | 23 |
| ALPHA | 1C110118E 9 | 5904 | | 5905 | 1 | 3 | 2/13/06 | 10:03 | 4 | 120 | 15 |
| ALPHA | 1C110104E 1 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:08 | 21 | 120 | 79 |
| ALPHA | 1C110104E 2 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:11 | 4 | 120 | 15 |
| ALPHA | 1C110104E 3 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:14 | 2 | 120 | 8 |
| ALPHA | 1C110104E 4 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:18 | 5 | 120 | 19 |
| ALPHA | 1C110104E 5 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:21 | 10 | 120 | 38 |
| ALPHA | 1C110104E 6 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:24 | 5 | 120 | 19 |
| ALPHA | 1C110104E 7 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:28 | 11 | 120 | 42 |
| ALPHA | 1C110104E 8 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:31 | 14 | 120 | 53 |
| ALPHA | 1C110104E 9 | 5904 | | 5905 | 1 | 4 | 2/13/06 | 10:34 | 23 | 120 | 87 ✓ |
| BETA | 1C110111E 1 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:06 | 940 | 60 | 8526 |
| BETA | 1C110111E 2 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:09 | 676 | 60 | 6132 |
| BETA | 1C110111E 3 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:15 | 580 | 60 | 5261 |
| BETA | 1C110111E 4 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:18 | 475 | 60 | 4308 |
| BETA | 1C110111E 5 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:22 | 844 | 60 | 7655 |
| BETA | 1C110111E 6 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:25 | 803 | 60 | 7283 |
| BETA | 1C110111E 7 | 5904 | | 5905 | 2 | 1 | 2/13/06 | 7:28 | 808 | 60 | 7329 ✓ |



F403/686 COPY

# T-Building Investigate elevated

*RSDS#* MT-06-0174 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| BETA | 1C110111E 8 | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 7:32 | 551 | 60 | 4998 |
| BETA | 1C110111E 9 | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 7:35 | 680 | 60 | 6168 |
| BETA | 1C110110E 1 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 7:48 | 199 | 60 | 1805 |
| BETA | 1C110110E 2 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 7:54 | 205 | 60 | 1859 |
| BETA | 1C110110E 3 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 7:58 | 181 | 60 | 1642 |
| BETA | 1C110110E 4 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 8:15 | 330 | 60 | 2993 |
| BETA | 1C110110E 5 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 8:19 | 405 | 60 | 3673 |
| BETA | 1C110110E 6 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 8:22 | 9046 | 60 | 82050 |
| BETA | 1C110110E 7 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 8:26 | 2047 | 60 | 18567 |
| BETA | 1C110110E 8 | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 8:29 | 300 | 60 | 2721 |
| BETA | 1C110118E 1 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:36 | 860 | 60 | 7800 |
| BETA | 1C110118E 2 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:40 | 160 | 60 | 1451 |
| BETA | 1C110118E 3 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:44 | 162 | 60 | 1469 |
| BETA | 1C110118E 4 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:47 | 174 | 60 | 1578 |
| BETA | 1C110118E 5 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:51 | 166 | 60 | 1506 |
| BETA | 1C110118E 6 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:54 | 164 | 60 | 1488 |
| BETA | 1C110118E 7 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 9:57 | 146 | 60 | 1324 |
| BETA | 1C110118E 8 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 10:01 | 155 | 60 | 1406 |
| BETA | 1C110118E 9 | 5904 | [redacted] | 5905 | 2 | 3 | 2/13/06 | 10:04 | 151 | 60 | 1370 |
| BETA | 1C110104E 1 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:09 | 546 | 60 | 4952 |
| BETA | 1C110104E 2 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:12 | 416 | 60 | 3773 |
| BETA | 1C110104E 3 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:15 | 141 | 60 | 1279 |
| BETA | 1C110104E 4 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:19 | 150 | 60 | 1361 |
| BETA | 1C110104E 5 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:22 | 529 | 60 | 4798 |
| BETA | 1C110104E 6 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:26 | 184 | 60 | 1669 |
| BETA | 1C110104E 7 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:29 | 270 | 60 | 2449 |
| BETA | 1C110104E 8 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:32 | 321 | 60 | 2912 |
| BETA | 1C110104E 9 | 5904 | [redacted] | 5905 | 2 | 4 | 2/13/06 | 10:35 | 203 | 60 | 1841 |

N A



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F404/686

Survey Unit Number: 1C11



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0174
RCT INT/HP 6W [redacted] (R [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C110111E | 57 | concrete | see | maps |
| 1C110118E | 57 | concrete | } | } |
| 1C110104E | 57 | concrete | see | maps |
| | | N/A | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F405/686
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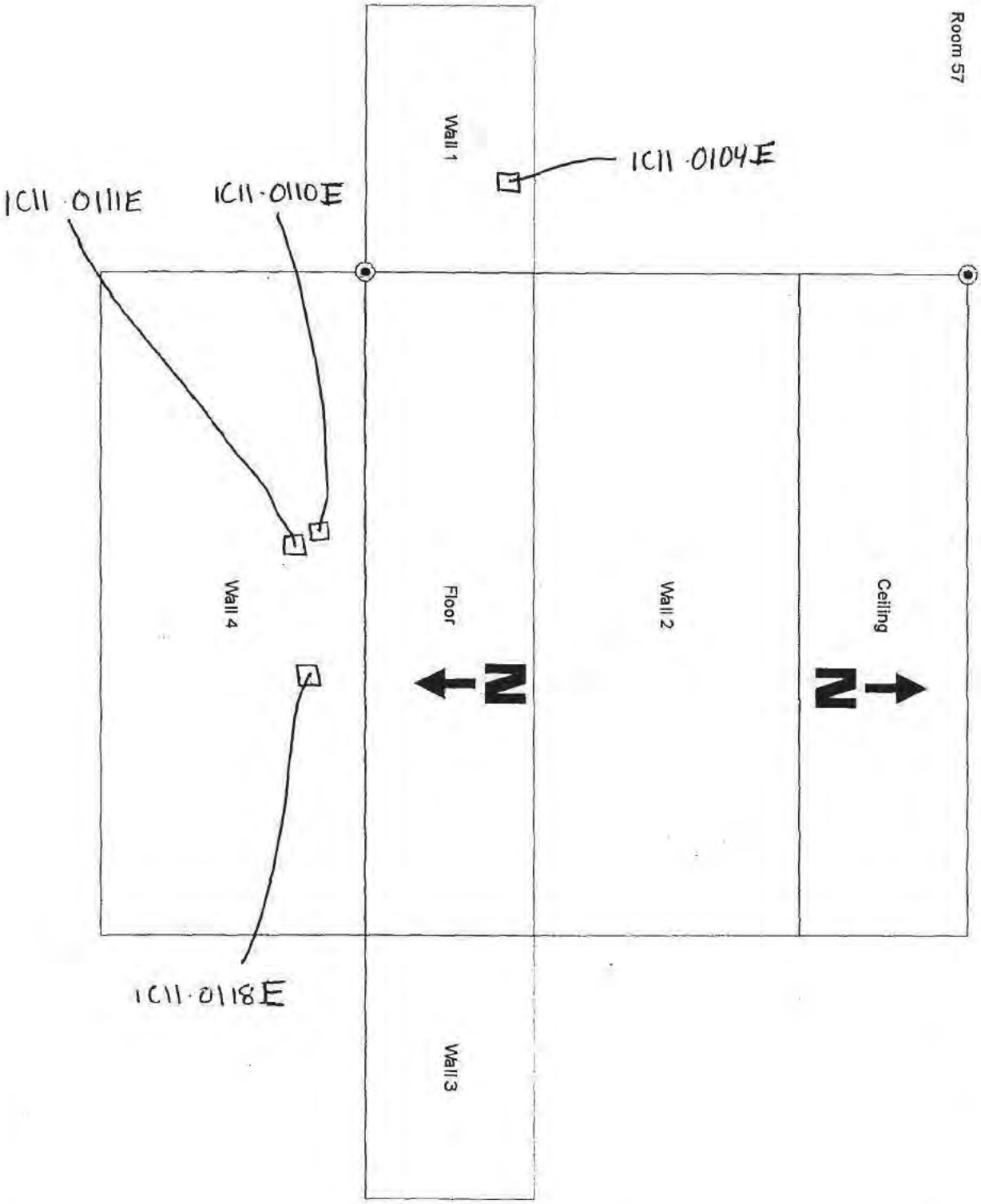
pg 9 of 9
mT-06-0174

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# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) 1 Bldg 1C11 Rm 57 | SURVEY NO. MT-06-0179 |
| PURPOSE: investigate elevated readings<br>RESRAD | RWP NO. NA |
| | DATE: 2/13/06 |
| | TIME: 1600 |

## MAP / DRAWING

See Attachment

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |

NOTE: Readings taken in numerical order

Reference MT-06-0111 for elevated

1C11010SE - β average 5372 dpm/100cm²
1C11011SE β average 2341 dpm/100cm²

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

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(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 4366 | 5904 5905 | 2/22/06 |
| | | |
| | | |
| | | |

| | | | |
|---|---|---|---|
| Completed by: (Signature) | | | Date: 2-14-06 |
| Completed by: (Print Name) Georgo Weissabig Stephen Richardson | | | |
| Counted by: (Signature) see Attached | HP# N/A | | Date: N/A |
| Counted by: (Print Name) sheets | | | |
| Reviewed/Approved by: (Signature) | | | Date: 2-16-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor K467 1686 | | | |

Survey No. MT-06-0179



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | See | | 1C110108E |
| 2 | | Attached | | 1C110114E |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

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NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

F408/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060213_1828.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0179.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/13/06 | 6:28:39 PM | -1 | 10.00 | 10 | 9 | 12 | 7 | 624.57 | 0 | 20.1 | B | 2 |
| 2/13/06 | 6:39:29 PM | 0 | 2.00 | 208 | 196 | 0 | 2 | 549.44 | 402 | 10.1 | | 2 |
| 2/13/06 | 6:42:10 PM | 1 | 2.00 | 1 | 1 | 0 | 5 | 626.40 | 1 | 771.7 | | 2 |
| 2/13/06 | 6:44:53 PM | 2 | 2.00 | 0 | 0 | 0 | 7 | 637.68 | 0 | 0.0 | | 2 |

COPY

F4/10/686

pg 4 of 8
MT.06.0179

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_052
Batch Ended: 2/13/06 16:21
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0179 RICHARDSON [2] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.47 | 1.84 | |
| A2 | 2 | 0.00 | 2.03 | | 1.51 | 2.01 | |

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F-411/686

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2-14-06

# T-Building RM57 INVESTIGATION ELEVATED MEASUREMENTS

*RSDS#* MT-06-0179 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:20 | 5 | 120 | 19 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:24 | 22 | 120 | 83 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:28 | 39 | 120 | 147 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:32 | 23 | 120 | 87 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:36 | 3 | 120 | 11 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:39 | 6 | 120 | 23 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:43 | 42 | 120 | 159 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:46 | 39 | 120 | 147 |
| ALPHA | 1C110108E | 5904 | [redacted] | 5905 | 1 | 1 | 2/13/06 | 12:50 | 3 | 120 | 11 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 12:55 | 24 | 120 | 91 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 12:58 | 4 | 120 | 15 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:01 | 9 | 120 | 34 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:05 | 18 | 120 | 68 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:08 | 14 | 120 | 53 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:12 | 39 | 120 | 147 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:18 | 20 | 120 | 76 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:22 | 21 | 120 | 79 |
| ALPHA | 1C110114E | 5904 | [redacted] | 5905 | 1 | 2 | 2/13/06 | 13:26 | 10 | 120 | 38 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:21 | 495 | 60 | 4490 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:25 | 606 | 60 | 5497 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:29 | 898 | 60 | 8145 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:33 | 917 | 60 | 8317 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:37 | 627 | 60 | 5687 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:40 | 195 | 60 | 1769 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:44 | 802 | 60 | 7274 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:47 | 587 | 60 | 5324 |
| BETA | 1C110108E | 5904 | [redacted] | 5905 | 2 | 1 | 2/13/06 | 12:51 | 203 | 60 | 1841 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 12:56 | 449 | 60 | 4073 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 12:59 | 262 | 60 | 2376 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:03 | 245 | 60 | 2222 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:06 | 216 | 60 | 1959 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:10 | 224 | 60 | 2032 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:13 | 397 | 60 | 3601 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:19 | 179 | 60 | 1624 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:23 | 172 | 60 | 1560 |
| BETA | 1C110114E | 5904 | [redacted] | 5905 | 2 | 2 | 2/13/06 | 13:27 | 179 | 60 | 1624 |

N/A

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C4/12/686

Survey Unit Number: 1C11



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0179
RCT INT/HP GW [redacted] [redacted]

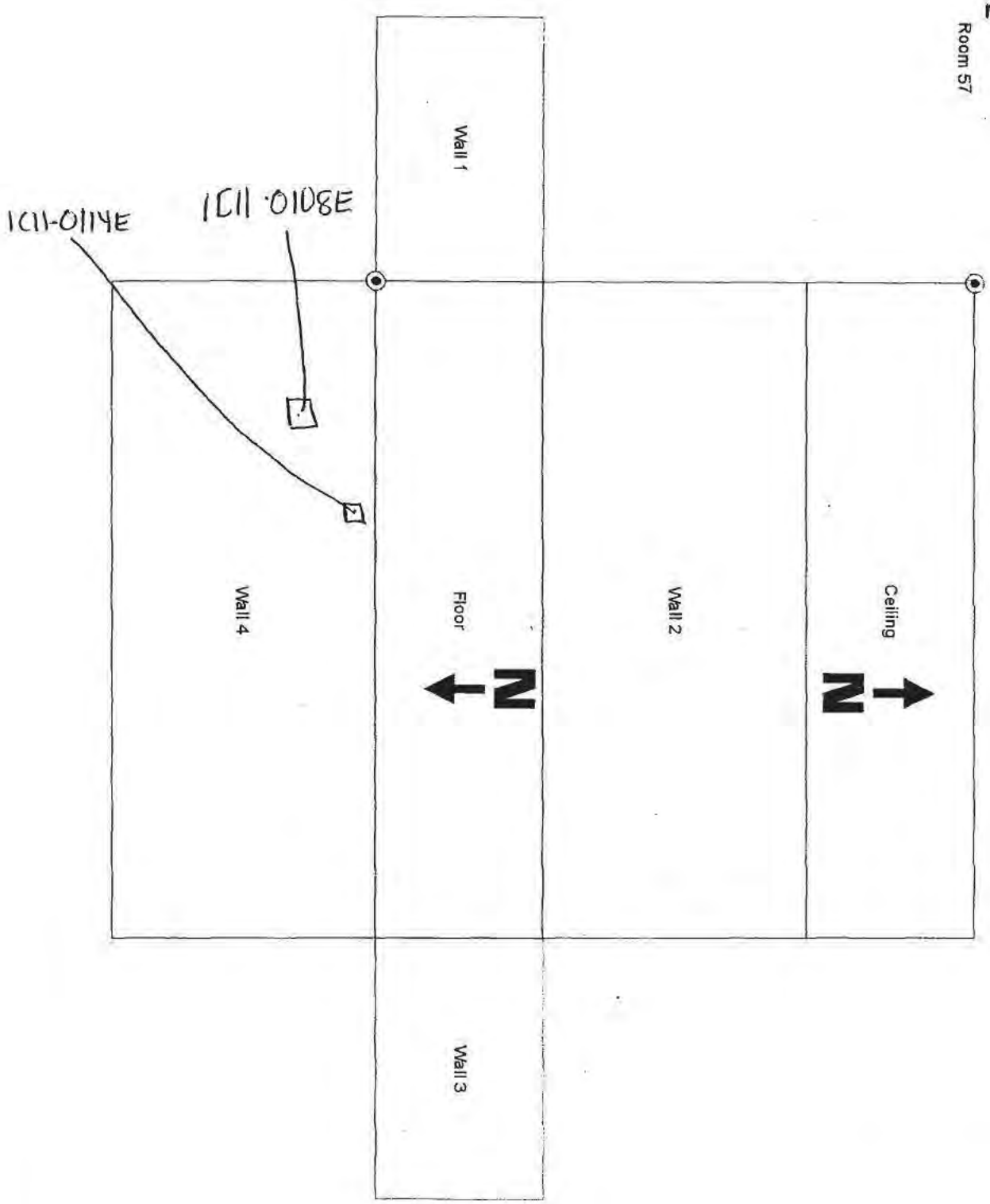
| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C110108E | 57 | concrete | see maps | |
| 1C110114E | 57 | concrete | see maps | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F413/686

Pg 8 of 8
MT-06-0179




COPY

F-4/14/686

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 10 4/12/06

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-B406 Rm 57 | SURVEY NO. MT-06-0412 |
| PURPOSE: SHONKA SCAN WALLS SCM 23 INVESTIGATE ELEVATED SHONKA (9 areas) | RWP NO. N/A |
| | DATE: 4-9-06 |
| IC11 | TIME: 1400 |

## MAP/DRAWING

SHONKA SCM 23 SCAN OF WALLS (POST SAND BLAST) 4-7-06 MAP Pg 9 of 10 4/12/06
SCm summary attached

SEE ATTACHED.

SCANNED INSIDE AND AROUND AREAS IDENTIFIED BY SHONKA, α|β-. READINGS WERE OBTAINED AT the highest β- READING per AREA.

COPY

POST SANDBLASTING OF RM 57
Follow up survey to elevated beta readings: IC110104I
See RSDS MT-06-0414 IC110107I

Refer RSDS # MT-06-0593 for post remediation follow up for 0106I, 0109I

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+n+γ) extremity on contact
# = mrem/hr neutron
# = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

| INSTRUMENT | Serial # | CAL DUE DATE |
|---|---|---|
| SCM 23 | C-180 | 6-1-06 |

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | S922 S926 | 5/18/06 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | HP# | Date: 4-9-06 |
| Completed by: (Print Name) SKIMMERSON | | |
| Counted by: (Signature) SEE ATTACHED | HP# N/A | Date: N/A |
| Counted by: (Print Name) SHEETS | F4/5/686 | |
| Reviewed/Approved by: (Signature) Jerry Taylor | HP# | Date: 4-12-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No.
MT-06-0412



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE ATTACHED | | | 0101 I |
| 2 | | | | 0102 I |
| 3 | | | | 0103 I |
| 4 | | | | 0104 I |
| 5 | | | | 0105 I |
| 6 | | | | 0106 I |
| 7 | | | | 0107 I |
| 8 | | | | 0108 I |
| 9 | SEE ATTACHED | | | 0109 I |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-416/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060410_1049.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0412.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY 4/17/06

pg 3 of 8 10

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/10/06 | 10:50:30 AM | -1 | 10.00 | 9 | 8 | 11 | 2 | 609.66 | 0 | 21.0 | B | 2 |
| 4/10/06 | 11:01:20 AM | 0 | 2.00 | 77 | 74 | 4 | 1 | 545.04 | 149 | 17.2 | | 2 |
| 4/10/06 | 11:04:02 AM | 1 | 2.00 | 1 | 2 | 1 | 0 | 541.47 | 2 | 390.7 | | 2 |
| 4/10/06 | 11:06:44 AM | 2 | 2.00 | 1 | 1 | 0 | 0 | 607.06 | 3 | 355.8 | | 2 |
| 4/10/06 | 11:09:27 AM | 3 | 2.00 | 1 | 0 | 0 | 0 | 537.26 | 2 | 543.1 | | 2 |
| 4/10/06 | 11:12:10 AM | 4 | 2.00 | 1 | 1 | 0 | 0 | 619.51 | 2 | 543.1 | | 2 |
| 4/10/06 | 11:14:52 AM | 5 | 2.00 | 5 | 5 | 0 | 0 | 606.77 | 9 | 115.7 | | 2 |
| 4/10/06 | 11:17:34 AM | 6 | 2.00 | 2 | 1 | 0 | 0 | 621.35 | 4 | 242.5 | | 2 |
| 4/10/06 | 11:20:16 AM | 7 | 2.00 | 6 | 5 | 0 | 0 | 612.76 | 11 | 96.7 | | 2 |
| 4/10/06 | 11:22:58 AM | 8 | 2.00 | 0 | 0 | 0 | 0 | 612.19 | 0 | 0.0 | | 2 |
| 4/10/06 | 11:25:40 AM | 9 | 2.00 | 0 | 0 | 0 | 0 | 563.40 | 0 | 0.0 | | 2 |

COPY
1-4/8/06

Pg 4 of 8 9/10
MT-06-6412

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_116
Batch Ended: 4/10/06 7:56
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0412 [9] RICHARDSON 4-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 2 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 3 | 0.00 | 2.22 | | 1.59 | 2.30 | |
| B4 | 4 | 1.68 | 1.97 | | 0.45 | 1.69 | |
| C1 | 5 | 0.00 | 2.09 | | 1.11 | 2.18 | |
| C2 | 6 | 0.00 | 1.95 | | 1.63 | 1.99 | |
| C3 | 7 | 2.01 | 2.20 | | 6.59 | 3.35 | |
| C4 | 8 | 0.00 | 2.01 | | 2.71 | 2.27 | |
| D1 | 9 | 0.00 | 2.05 | | 0.00 | 1.26 | |

~~Page 1 of 1~~
4-11-06

COPY
F-419/686

10
A 5 of 8
4/12/06

# T-Building Investigate elevated shonka

***RSDS#*** MT-06-0412 ***RCT:*** [redacted] ***RCT:*** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2074 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1747 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110101I | 5922 | [redacted] | 5926 | 1 | 1 | 4/9/06 | 8:05 | 4 | 120 | 15 |
| ALPHA | 1C110102I | 5922 | [redacted] | 5926 | 1 | 2 | 4/9/06 | 8:16 | 8 | 120 | 31 |
| ALPHA | 1C110103I | 5922 | [redacted] | 5926 | 1 | 3 | 4/9/06 | 8:25 | 2 | 120 | 8 |
| ALPHA | 1C110104I | 5922 | [redacted] | 5926 | 1 | 4 | 4/9/06 | 8:32 | 26 | 120 | 99 |
| ALPHA | 1C110105I | 5922 | [redacted] | 5926 | 1 | 5 | 4/9/06 | 8:36 | 3 | 120 | 11 |
| ALPHA | 1C110106I | 5922 | [redacted] | 5926 | 1 | 6 | 4/9/06 | 8:42 | 60 | 120 | 230 |
| ALPHA | 1C110107I | 5922 | [redacted] | 5926 | 1 | 7 | 4/9/06 | 8:49 | 7 | 120 | 27 |
| ALPHA | 1C110108I | 5922 | [redacted] | 5926 | 1 | 8 | 4/9/06 | 8:56 | 28 | 120 | 107 |
| ALPHA | 1C110109I | 5922 | [redacted] | 5926 | 1 | 9 | 4/9/06 | 9:02 | 39 | 120 | 149 |
| BETA | 1C110101I | 5922 | [redacted] | 5926 | 2 | 1 | 4/9/06 | 8:06 | 440 | 60 | 3998 |
| BETA | 1C110102I | 5922 | [redacted] | 5926 | 2 | 2 | 4/9/06 | 8:17 | 370 | 60 | 3362 |
| BETA | 1C110103I | 5922 | [redacted] | 5926 | 2 | 3 | 4/9/06 | 8:26 | 166 | 60 | 1508 |
| BETA | 1C110104I | 5922 | [redacted] | 5926 | 2 | 4 | 4/9/06 | 8:33 | 908 | 60 | 8250 |
| BETA | 1C110105I | 5922 | [redacted] | 5926 | 2 | 5 | 4/9/06 | 8:38 | 321 | 60 | 2917 |
| BETA | 1C110106I | 5922 | [redacted] | 5926 | 2 | 6 | 4/9/06 | 8:43 | 1866 | 60 | 16954 |
| BETA | 1C110107I | 5922 | [redacted] | 5926 | 2 | 7 | 4/9/06 | 8:50 | 1307 | 60 | 11875 |
| BETA | 1C110108I | 5922 | [redacted] | 5926 | 2 | 8 | 4/9/06 | 8:57 | 444 | 60 | 4034 |
| BETA | 1C110109I | 5922 | [redacted] | 5926 | 2 | 9 | 4/9/06 | 9:03 | 5001 | 60 | 45438 |

N
A

COPY



F-420/686

Survey Unit Number 1C11

Page 7 of ~~9~~ 10 4/12/06

(Supplemental sheet for biased measurements)

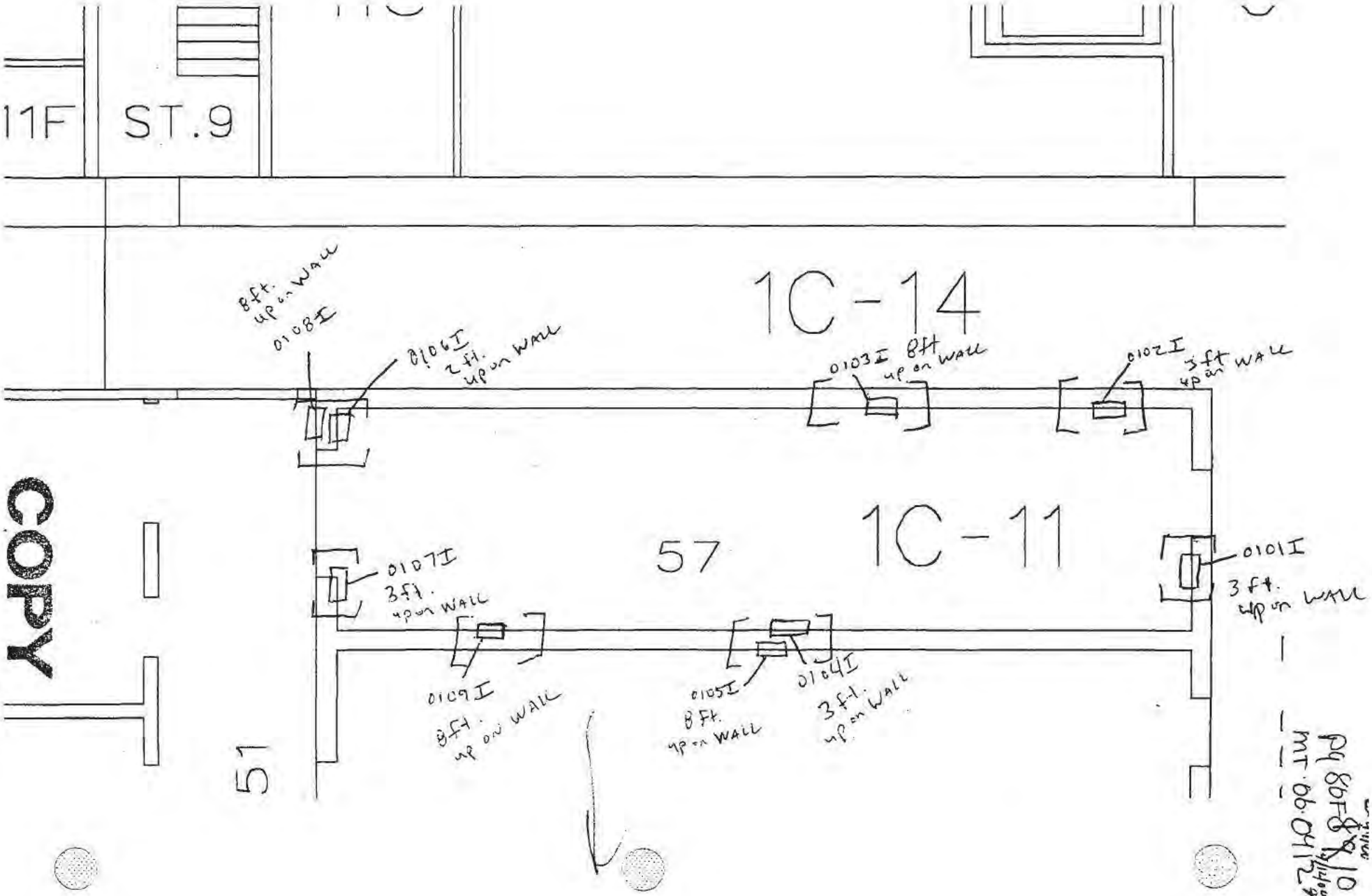
RSDS # MT 06 0412
RCT INT/HP JR [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 0101I | 57 | CONCRETE | SEE MAPS | |
| 0102I | | | | |
| 0103I | | | | |
| 0104I | | | | |
| 0105I | | | | |
| 0106I | | | | |
| 0107I | | | | |
| 0108I | | | | |
| 0109I | | CONCRETE | SEE MAPS | |
| | | NA | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

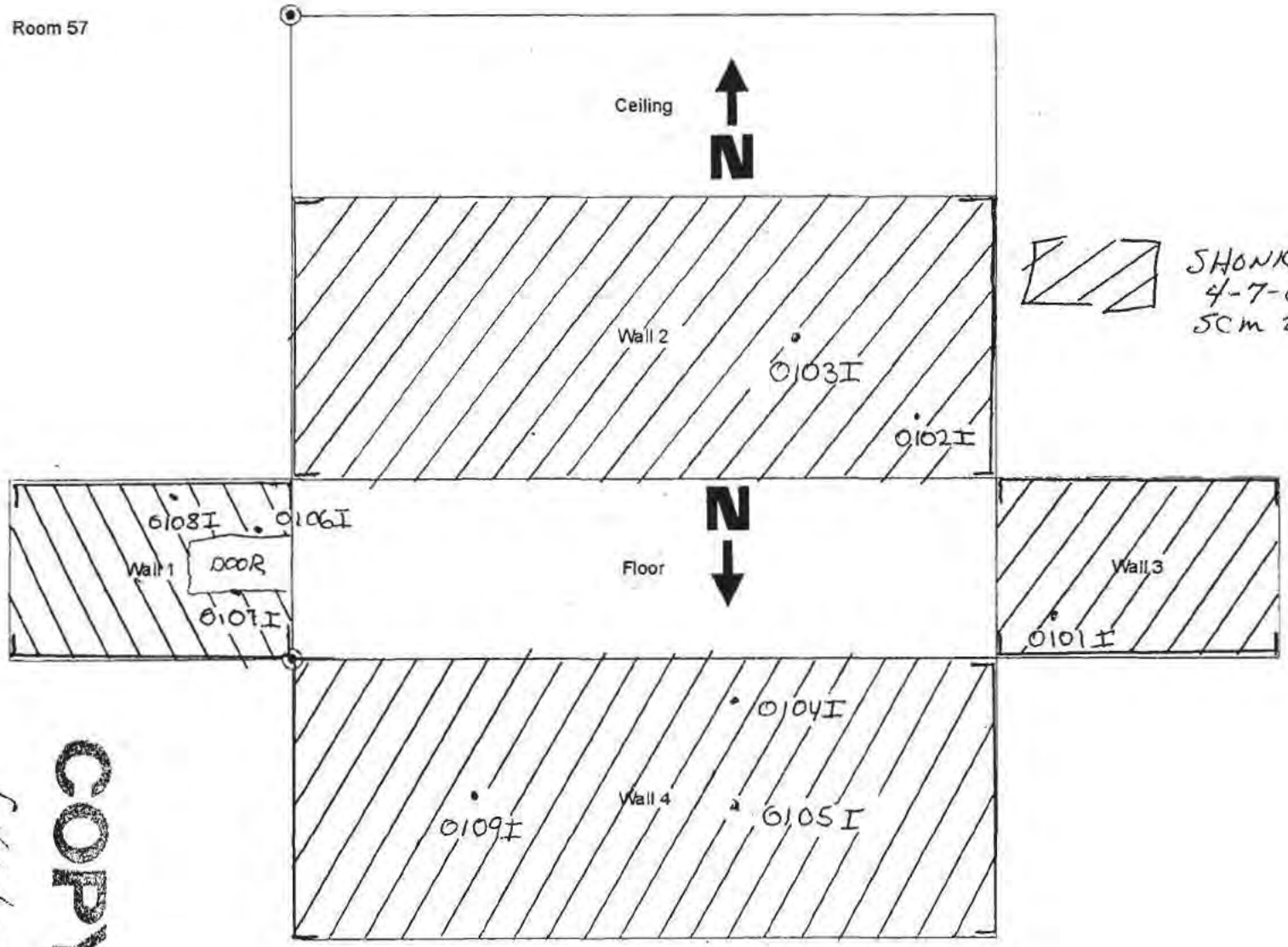
COPY
F 4/21/686

**1C-11 Room 57**
**Class 1**




COPY

Room 57




SHONKA SCAN WALLS (Accessible)
4-7-06 CALDUE AREAS
SCM 23 C-180 6-1-06 ✓

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F 4/23/686

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pg 9 of 9 4/12/06
MT-06-04112

# Surface Contamination Monitor Survey Investigation Summary Revision 0

| | |
|---|---|
| Survey Unit: 1C-11 | SCM Survey Unit: 1C-11 |
| SCM ID | SCM 23 |
| Calibration Due Date | 06-01-06 |

| Room | Surface | *Spots Marked from SCM Surveys | *HH Investigations |
|---|---|---|---|
| Room 57 | Floor – N/A | N/A | N/A |
| Room 57** | Walls - Corner | 12 | 9 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

*Due to the close proximity of spots one mark may include more than one spot resulting in a different number of Hand Held investigations performed.

Name Javid Kelley

Signature

Date 4-12-06

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG. Rm. 57 IC-11 | SURVEY NO. MT-06-0414 |
| PURPOSE: FOLLOW-UP OF INVESTIGATIVE ELEVATED SHONKA READINGS (AVERAGE) RESRAD | RWP NO. N/A |
| | DATE: 4-10-06 |
| | TIME: 1430 |

## MAP / DRAWING

IC-11 0104 ELEVATED β READING ABOVE 15K DETECTED IN 1 m² SCAN AROUND 9 POINT READINGS. AREA NEEDS TO BE REMEDIATED

IC-11 0107 AVERAGED BELOW 5K β

REF. RSDS MT-06-0412
SEE ATTACHED SHEETS

IC-11 0104

| | | |
|---|---|---|
| G 7 | F 6 | E 5 |
| H 8 | A 1 | D 4 |
| I 9 | B 2 | C 3 |

J 10

K 11

Follow-up Post Remediation Survey MT-06-0557

IC-11 0107

| | | |
|---|---|---|
| C 3 | B 2 | I 9 |
| D 4 | A 1 | H 8 |
| E 5 | F 6 | G 7 |

| | | | |
|---|---|---|---|
| 1. 8316 dpm | 10. 7479 dpm | 1 11919 dpm | |
| 2. 2970 dpm | 11. 16438 dpm | 2. 1519 dpm | |
| 3. 3778 dpm | | 3 1724 dpm | |
| 4. 2863 dpm | | 4. 1860 dpm | |
| 5. 1548 dpm | | 5. 1938 dpm | |
| 6. 1948 dpm | | 6. 3613 dpm | |
| 7. 1188 dpm | | 7. 2201 dpm | |
| 8. 1519 dpm | | 8. 2629 dpm | |
| 9. 2425 dpm | | 9. 3905 dpm | |
| TOTAL 26555 | AVG. 2950.5 | TOTAL 31308 | AVG. 3478.6 |

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary

COPY

△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854 | 7-28-06 |
| 43-68 | 5861 | 7-28-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Nursick / BJ Roe | | Date: 4-10-06 |
| Completed by: (Print Name) B. NURSICK / BJ Roe | | |
| Counted by: (Signature) SEE ATTACHED SHEETS | HP# N/A | Date: N/A |
| Counted by: (Print Name) SEE ATTACHED SHEETS | | E 4/25/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 4-12-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No.
MT-06-0414



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE ATTACHED SHEETS | | | 1C11 0104 |
| 2 | SEE ATTACHED SHEETS | | | 1C11 0107 |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N / A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F426/686

ML-9620 (4-98)

MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060410_1539.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0414.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.1sa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial ✓ BN |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

4/27/06

MARSSIM Smear Data

MT-06-0414

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/10/06 | 3:40:04 PM | -1 | 10.00 | 8 | 7 | 10 | 10 | 608.96 | 0 | 22.6 | B | 1 |
| 4/10/06 | 3:50:55 PM | 0 | 2.00 | 283 | 274 | 0 | 0 | 536.54 | 553 | 8.5 | | 1 |
| 4/10/06 | 3:53:38 PM | 1 | 2.00 | 2 | 2 | 0 | 0 | 536.97 | 3 | 276.6 | | 1 |
| 4/10/06 | 3:56:20 PM | 2 | 2.00 | 2 | 1 | 0 | 5 | 580.56 | 4 | 218.6 | | 1 |

BN

1438/686

COPY

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_000
Batch Ended: 4/10/06 14:06
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0414 [2] NURSICK 4-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 2 | 0.00 | 1.85 | | 0.00 | 1.12 | |

✓ BN ✓ BN


BN 4-11-06

E 439/686

# T-Bldg. Follow-up of Investigative Elevated Shonka Readings

*RSDS#* MT-06-0414 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110104A | 5854 | [redacted] | 5861 | 1 | 1 | 4/10/06 | 8:11 | 33 | 120 | 128 |
| ALPHA | 1C110104B | 5854 | [redacted] | 5861 | 1 | 2 | 4/10/06 | 8:19 | 8 | 120 | 31 |
| ALPHA | 1C110104C | 5854 | [redacted] | 5861 | 1 | 3 | 4/10/06 | 8:23 | 18 | 120 | 70 |
| ALPHA | 1C110104D | 5854 | [redacted] | 5861 | 1 | 4 | 4/10/06 | 8:26 | 7 | 120 | 27 |
| ALPHA | 1C110104E | 5854 | [redacted] | 5861 | 1 | 5 | 4/10/06 | 8:30 | 4 | 120 | 15 |
| ALPHA | 1C110104F | 5854 | [redacted] | 5861 | 1 | 6 | 4/10/06 | 9:37 | 9 | 120 | 35 |
| ALPHA | 1C110104G | 5854 | [redacted] | 5861 | 1 | 7 | 4/10/06 | 9:41 | 11 | 120 | 43 |
| ALPHA | 1C110104H | 5854 | [redacted] | 5861 | 1 | 8 | 4/10/06 | 9:44 | 9 | 120 | 35 |
| ALPHA | 1C110104I | 5854 | [redacted] | 5861 | 1 | 9 | 4/10/06 | 9:48 | 17 | 120 | 66 |
| ALPHA | 1C110107A | 5854 | [redacted] | 5861 | 1 | 10 | 4/10/06 | 10:24 | 6 | 120 | 23 |
| ALPHA | 1C110107B | 5854 | [redacted] | 5861 | 1 | 11 | 4/10/06 | 10:28 | 5 | 120 | 19 |
| ALPHA | 1C110107C | 5854 | [redacted] | 5861 | 1 | 12 | 4/10/06 | 10:31 | 5 | 120 | 19 |
| ALPHA | 1C110107D | 5854 | [redacted] | 5861 | 1 | 13 | 4/10/06 | 10:35 | 6 | 120 | 23 |
| ALPHA | 1C110107E | 5854 | [redacted] | 5861 | 1 | 14 | 4/10/06 | 10:38 | 5 | 120 | 19 |
| ALPHA | 1C110107F | 5854 | [redacted] | 5861 | 1 | 15 | 4/10/06 | 10:42 | 9 | 120 | 35 |
| ALPHA | 1C110107G | 5854 | [redacted] | 5861 | 1 | 16 | 4/10/06 | 12:18 | 8 | 120 | 31 |
| ALPHA | 1C110107H | 5854 | [redacted] | 5861 | 1 | 17 | 4/10/06 | 12:22 | 4 | 120 | 15 |
| ALPHA | 1C110107I | 5854 | [redacted] | 5861 | 1 | 18 | 4/10/06 | 12:25 | 3 | 120 | 12 |
| ALPHA | 1C110104J | 5854 | [redacted] | 5861 | 1 | 19 | 4/10/06 | 12:34 | 39 | 120 | 151 |
| ALPHA | 1C110104K | 5854 | [redacted] | 5861 | 1 | 20 | 4/10/06 | 12:38 | 101 | 120 | 391 |
| BETA | 1C110104A | 5854 | [redacted] | 5861 | 2 | 1 | 4/10/06 | 8:12 | 854 | 60 | 8316 |
| BETA | 1C110104B | 5854 | [redacted] | 5861 | 2 | 2 | 4/10/06 | 8:20 | 305 | 60 | 2970 |
| BETA | 1C110104C | 5854 | [redacted] | 5861 | 2 | 3 | 4/10/06 | 8:24 | 388 | 60 | 3778 |
| BETA | 1C110104D | 5854 | [redacted] | 5861 | 2 | 4 | 4/10/06 | 8:28 | 294 | 60 | 2863 |
| BETA | 1C110104E | 5854 | [redacted] | 5861 | 2 | 5 | 4/10/06 | 8:31 | 159 | 60 | 1548 |
| BETA | 1C110104F | 5854 | [redacted] | 5861 | 2 | 6 | 4/10/06 | 9:38 | 200 | 60 | 1948 |
| BETA | 1C110104G | 5854 | [redacted] | 5861 | 2 | 7 | 4/10/06 | 9:42 | 122 | 60 | 1188 |
| BETA | 1C110104H | 5854 | [redacted] | 5861 | 2 | 8 | 4/10/06 | 9:46 | 156 | 60 | 1519 |
| BETA | 1C110104I | 5854 | [redacted] | 5861 | 2 | 9 | 4/10/06 | 9:49 | 249 | 60 | 2425 |
| BETA | 1C110107A | 5854 | [redacted] | 5861 | 2 | 10 | 4/10/06 | 10:26 | 1224 | 60 | 11919 |
| BETA | 1C110107B | 5854 | [redacted] | 5861 | 2 | 11 | 4/10/06 | 10:29 | 156 | 60 | 1519 |
| BETA | 1C110107C | 5854 | [redacted] | 5861 | 2 | 12 | 4/10/06 | 10:33 | 177 | 60 | 1724 |
| BETA | 1C110107D | 5854 | [redacted] | 5861 | 2 | 13 | 4/10/06 | 10:36 | 191 | 60 | 1860 |
| BETA | 1C110107E | 5854 | [redacted] | 5861 | 2 | 14 | 4/10/06 | 10:40 | 199 | 60 | 1938 |
| BETA | 1C110107F | 5854 | [redacted] | 5861 | 2 | 15 | 4/10/06 | 10:43 | 371 | 60 | 3613 |
| BETA | 1C110107G | 5854 | [redacted] | 5861 | 2 | 16 | 4/10/06 | 12:19 | 226 | 60 | 2201 |
| BETA | 1C110107H | 5854 | [redacted] | 5861 | 2 | 17 | 4/10/06 | 12:23 | 270 | 60 | 2629 |
| BETA | 1C110107I | 5854 | [redacted] | 5861 | 2 | 18 | 4/10/06 | 12:26 | 401 | 60 | 3905 |
| BETA | 1C110104J | 5854 | [redacted] | 5861 | 2 | 19 | 4/10/06 | 12:35 | 768 | 60 | 7479 |
| BETA | 1C110104K | 5854 | [redacted] | 5861 | 2 | 20 | 4/10/06 | 12:39 | 1688 | 60 | 16438 |
| | | | | | | | | | | | |
| | | | N | | | | | A | | | |
| | | | | | | | | | | | |

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F430/686

MT-06-414
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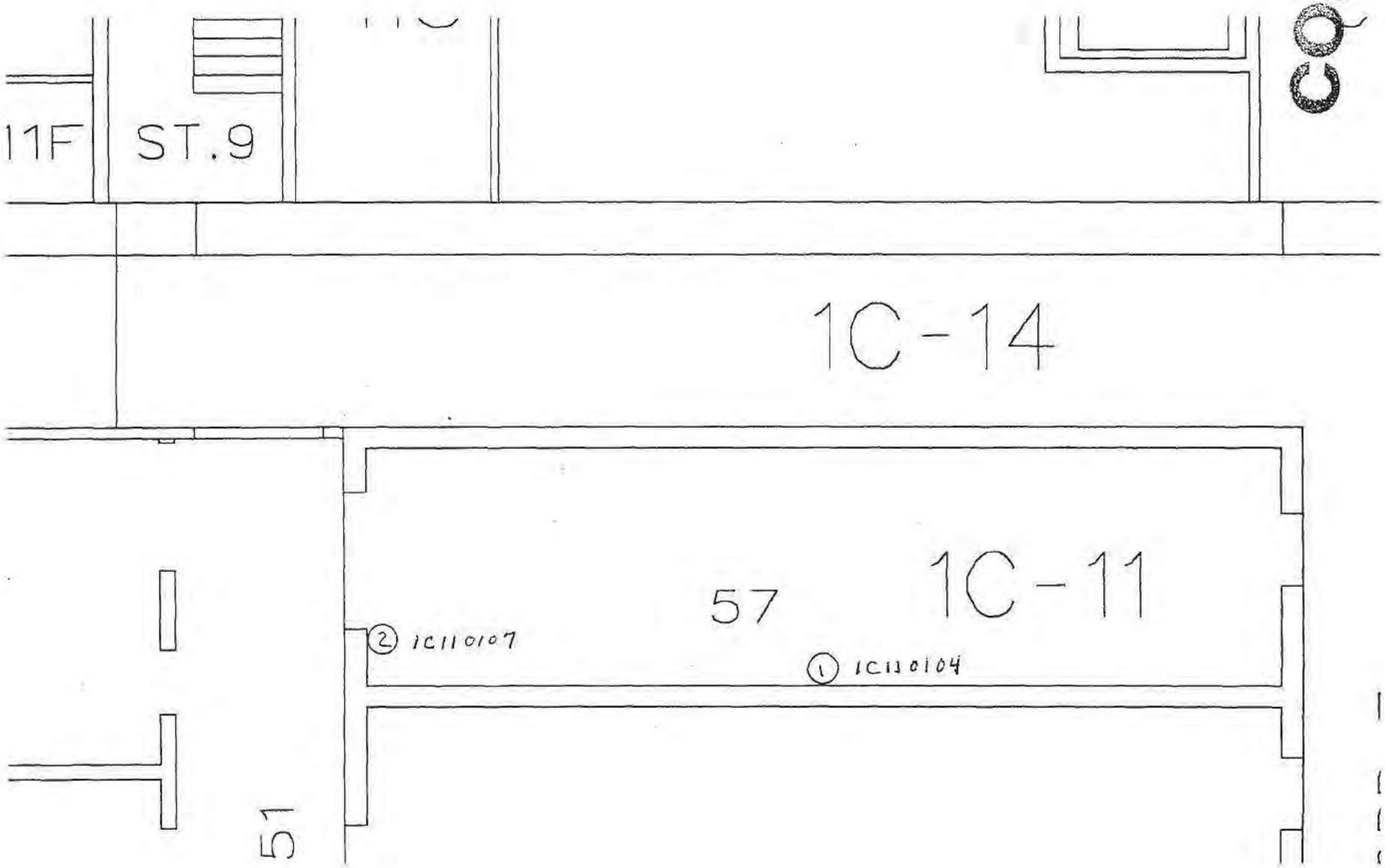
COPY

**1C-11 Room 57**
**Class 1**




F431/686

# RADIOLOGICAL SURVEY DATA SHEET

 NK 5-23-06

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-57 1C11 | SURVEY NO. MT-06-0526 |
| PURPOSE: STATIC AND ELEVATED LOCATIONS SURVEYED FOR RESRAD SAMPLING | RWP NO. N/A |
| | DATE: 5-17-06 |
| | TIME: 0930 |

## MAP/DRAWING

SEE ATTACHED

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895/5896 | 1-17-07 |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 5-17-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE | HP# N | Date: A |
| Counted by: (Print Name) ATTACHED F432/686 | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 5-22-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No.
MT-06-0526



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1011 0101S |
| 2 | | | | 0102S |
| 3 | | | | 0103S |
| 4 | | | | 0104S |
| 5 | | | | 0105S |
| 6 | | | | 0106S |
| 7 | | | | 0107S |
| 8 | | SEE | | 0108S |
| 9 | | ATT | ACHED | 0109S |
| 10 | | | | 0110E |
| 11 | | | | 0111E |
| 12 | | | | 0112E |
| 13 | | | | 0113E |
| 14 | | | | 0114E |
| 15 | | | | 0115E |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS:
S = STATIC LOCATION
E = ELEVATED LOCATION

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

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ML-9620 (4-98)

F433/686

5-22-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060518_0915.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0526.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MT-06-0526

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MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/18/06 | 9:16:29 AM | -1 | 10.00 | 7 | 7 | 12 | 6 | 611.96 | 0 | 24.2 | B | 2 |
| 5/18/06 | 9:27:18 AM | 0 | 2.00 | 55 | 53 | 0 | 2 | 542.09 | 107 | 20.4 | | 2 |
| 5/18/06 | 9:30:01 AM | 1 | 2.00 | 0 | 0 | 2 | 0 | 615.67 | 0 | 0.0 | | 2 |
| 5/18/06 | 9:32:46 AM | 2 | 2.00 | 5 | 5 | 0 | 0 | 607.56 | 10 | 100.0 | | 2 |
| 5/18/06 | 9:35:27 AM | 3 | 2.00 | 3 | 4 | 0 | 0 | 655.53 | 6 | 138.8 | | 2 |
| 5/18/06 | 9:38:10 AM | 4 | 2.00 | 0 | 0 | 0 | 0 | 630.73 | 0 | 0.0 | | 2 |
| 5/18/06 | 9:40:52 AM | 5 | 2.00 | 3 | 3 | 3 | 0 | 601.80 | 5 | 173.3 | | 2 |
| 5/18/06 | 9:43:35 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 628.46 | 0 | 0.0 | | 2 |
| 5/18/06 | 9:46:17 AM | 7 | 2.00 | 2 | 2 | 0 | 0 | 649.90 | 4 | 207.9 | | 2 |
| 5/18/06 | 9:49:01 AM | 8 | 2.00 | 1 | 1 | 0 | 0 | 620.14 | 2 | 363.7 | | 2 |
| 5/18/06 | 9:51:44 AM | 9 | 2.00 | 1 | 1 | 0 | 0 | 629.28 | 1 | 584.6 | | 2 |
| 5/18/06 | 9:54:27 AM | 10 | 2.00 | 2 | 2 | 0 | 0 | 655.20 | 4 | 207.9 | | 2 |
| 5/18/06 | 9:57:10 AM | 11 | 2.00 | 2 | 2 | 0 | 0 | 624.09 | 3 | 262.8 | | 2 |
| 5/18/06 | 9:59:52 AM | 12 | 2.00 | 2 | 1 | 0 | 0 | 629.38 | 3 | 287.0 | | 2 |
| 5/18/06 | 10:02:35 AM | 13 | 2.00 | 2 | 2 | 0 | 0 | 632.48 | 3 | 278.2 | | 2 |
| 5/18/06 | 10:05:18 AM | 14 | 2.00 | 0 | 0 | 0 | 0 | 638.13 | 0 | 0.0 | | 2 |
| 5/18/06 | 10:08:00 AM | 15 | 2.00 | 0 | 0 | 0 | 0 | 631.84 | 0 | 0.0 | | 2 |

VNR

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F-425/686

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MT-06-0524

MT-23-24

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_118
Batch Ended: 5/18/06 7:55
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0526 [15] REYNOLDS 5-18-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.30 | | 1.55 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.87 | | 0.48 | 1.58 | |
| B4 | 7 | 0.00 | 1.97 | | 0.66 | 1.69 | |
| D1 | 8 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 9 | 0.00 | 2.18 | | 1.51 | 2.07 | |
| D3 | 10 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 11 | 0.00 | 2.04 | | 0.00 | 1.18 | |
| D1 | 12 | 0.00 | 2.06 | | 0.28 | 1.77 | |
| D2 | 13 | 1.93 | 2.17 | | 0.17 | 1.69 | |
| D3 | 14 | 1.68 | 2.10 | | 0.10 | 1.76 | |
| D4 | 15 | 0.00 | 2.06 | | 1.57 | 2.03 | |

✓ MR ✓ MR

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F-4360/686

# T-57 Survey of locations for RESRAD sampling 1C11

*RSDS# _MT-06-0526_____ RCT: [redacted]_____ RCT: _N/A_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110101S | 5895 | [redacted] | 5896 | 1 | 1 | 5/17/06 | 9:57 | 10 | 120 | 38 |
| ALPHA | 1C110102S | 5895 | [redacted] | 5896 | 1 | 2 | 5/17/06 | 10:06 | 26 | 120 | 98 |
| ALPHA | 1C110103S | 5895 | [redacted] | 5896 | 1 | 3 | 5/17/06 | 10:12 | 13 | 120 | 49 |
| ALPHA | 1C110104S | 5895 | [redacted] | 5896 | 1 | 4 | 5/17/06 | 10:16 | 6 | 120 | 23 |
| ALPHA | 1C110105S | 5895 | [redacted] | 5896 | 1 | 5 | 5/17/06 | 10:23 | 13 | 120 | 49 |
| ALPHA | 1C110106S | 5895 | [redacted] | 5896 | 1 | 6 | 5/17/06 | 10:33 | 15 | 120 | 57 |
| ALPHA | 1C110107S | 5895 | [redacted] | 5896 | 1 | 7 | 5/17/06 | 14:16 | 9 | 120 | 34 |
| ALPHA | 1C110108S | 5895 | [redacted] | 5896 | 1 | 8 | 5/17/06 | 14:20 | 14 | 120 | 53 |
| ALPHA | 1C110109S | 5895 | [redacted] | 5896 | 1 | 9 | 5/17/06 | 14:24 | 6 | 120 | 23 |
| ALPHA | 1C110110E | 5895 | [redacted] | 5896 | 1 | 10 | 5/17/06 | 14:28 | 7 | 120 | 26 |
| ALPHA | 1C110111E | 5895 | [redacted] | 5896 | 1 | 11 | 5/17/06 | 14:33 | 10 | 120 | 38 |
| ALPHA | 1C110112E | 5895 | [redacted] | 5896 | 1 | 12 | 5/17/06 | 14:37 | 19 | 120 | 72 |
| ALPHA | 1C110113E | 5895 | [redacted] | 5896 | 1 | 13 | 5/17/06 | 14:41 | 15 | 120 | 57 |
| ALPHA | 1C110114E | 5895 | [redacted] | 5896 | 1 | 14 | 5/17/06 | 14:46 | 8 | 120 | 30 |
| ALPHA | 1C110115E | 5895 | [redacted] | 5896 | 1 | 15 | 5/17/06 | 14:51 | 7 | 120 | 26 ✓ |
| BETA | 1C110101S | 5895 | [redacted] | 5896 | 2 | 1 | 5/17/06 | 9:58 | 120 | 60 | 1169 |
| BETA | 1C110102S | 5895 | [redacted] | 5896 | 2 | 2 | 5/17/06 | 10:07 | 282 | 60 | 2746 |
| BETA | 1C110103S | 5895 | [redacted] | 5896 | 2 | 3 | 5/17/06 | 10:13 | 126 | 60 | 1227 |
| BETA | 1C110104S | 5895 | [redacted] | 5896 | 2 | 4 | 5/17/06 | 10:17 | 125 | 60 | 1217 |
| BETA | 1C110105S | 5895 | [redacted] | 5896 | 2 | 5 | 5/17/06 | 10:24 | 112 | 60 | 1091 |
| BETA | 1C110106S | 5895 | [redacted] | 5896 | 2 | 6 | 5/17/06 | 10:34 | 386 | 60 | 3759 |
| BETA | 1C110107S | 5895 | [redacted] | 5896 | 2 | 7 | 5/17/06 | 14:17 | 120 | 60 | 1169 |
| BETA | 1C110108S | 5895 | [redacted] | 5896 | 2 | 8 | 5/17/06 | 14:21 | 108 | 60 | 1052 |
| BETA | 1C110109S | 5895 | [redacted] | 5896 | 2 | 9 | 5/17/06 | 14:25 | 106 | 60 | 1032 |
| BETA | 1C110110E | 5895 | [redacted] | 5896 | 2 | 10 | 5/17/06 | 14:29 | 110 | 60 | 1071 |
| BETA | 1C110111E | 5895 | [redacted] | 5896 | 2 | 11 | 5/17/06 | 14:34 | 640 | 60 | 6232 |
| BETA | 1C110112E | 5895 | [redacted] | 5896 | 2 | 12 | 5/17/06 | 14:38 | 727 | 60 | 7080 |
| BETA | 1C110113E | 5895 | [redacted] | 5896 | 2 | 13 | 5/17/06 | 14:42 | 448 | 60 | 4363 |
| BETA | 1C110114E | 5895 | [redacted] | 5896 | 2 | 14 | 5/17/06 | 14:48 | 170 | 60 | 1655 |
| BETA | 1C110115E | 5895 | [redacted] | 5896 | 2 | 15 | 5/17/06 | 14:52 | 127 | 60 | 1237 ✓ |

COPY

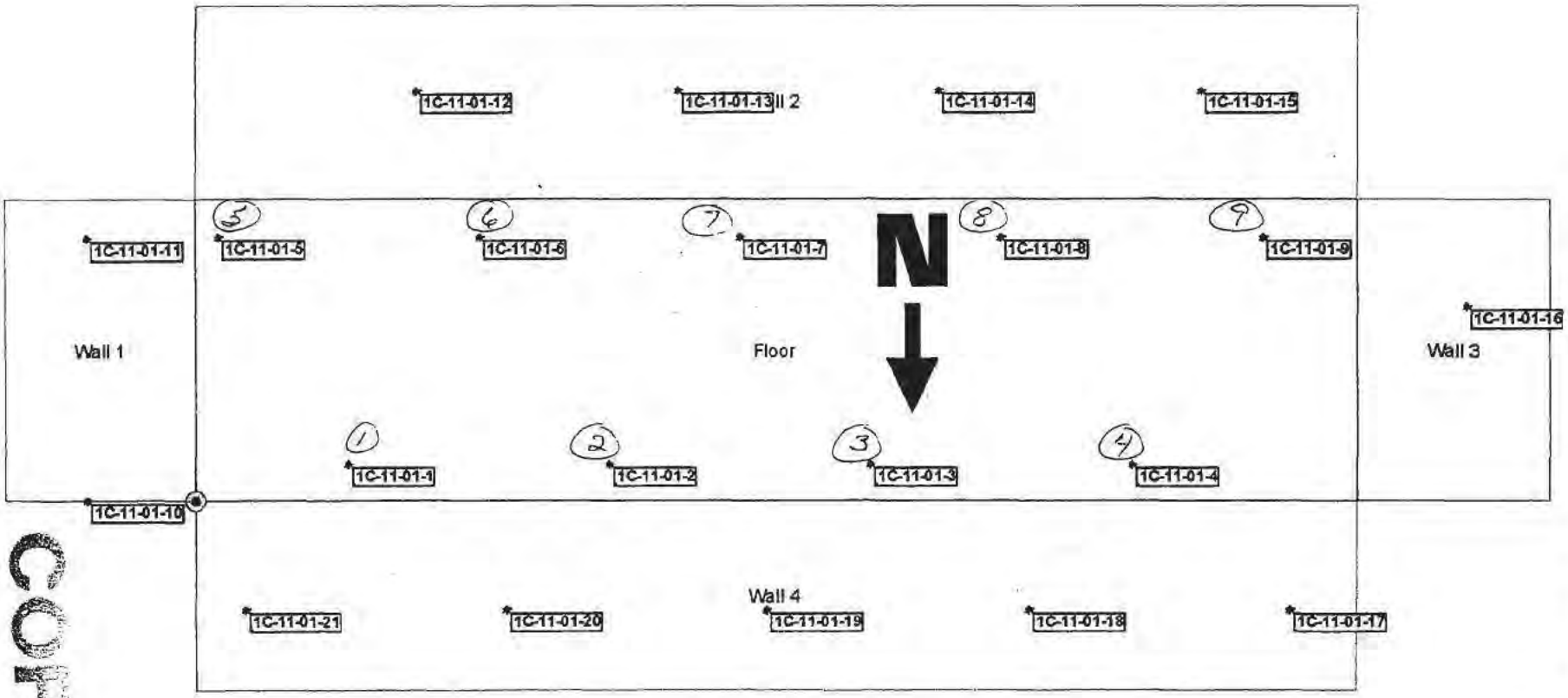


mr 5-23-06

F 437/686

**1C-11-01 Room 57**
**floor and lower wall static measurement locations**

Room 57

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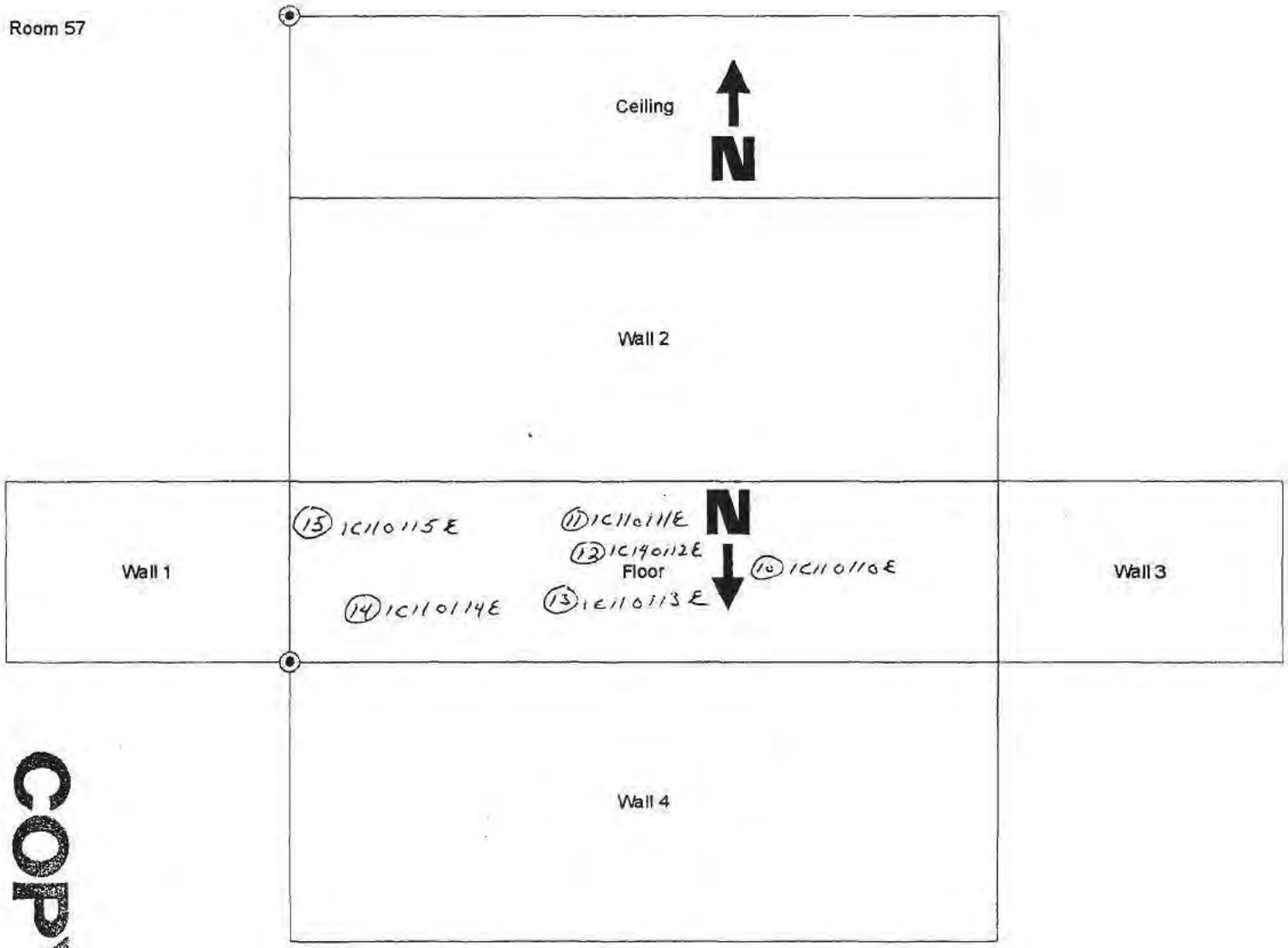
Room 57

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M-06-0526

5-23-06

**1C-11-01 Room 57**
**floor and lower wall static measurement locations**

| Area: Room 57 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-11-01-1 | Systematic | Floor | 6 | 1 |
| 1C-11-01-2 | Systematic | Floor | 15 | 1 |
| 1C-11-01-3 | Systematic | Floor | 25 | 1 |
| 1C-11-01-4 | Systematic | Floor | 34 | 1 |
| 1C-11-01-5 | Systematic | Floor | 1 | 10 |
| 1C-11-01-6 | Systematic | Floor | 10 | 10 |
| 1C-11-01-7 | Systematic | Floor | 20 | 10 |
| 1C-11-01-8 | Systematic | Floor | 30 | 10 |
| 1C-11-01-9 | Systematic | Floor | 39 | 10 |
| 1C-11-01-10 | Systematic | Wall 1 | 0 | 4 |
| 1C-11-01-11 | Systematic | Wall 1 | 10 | 4 |
| 1C-11-01-12 | Systematic | Wall 2 | N 8 | 4 |
| 1C-11-01-13 | Systematic | Wall 2 | A 18 | 4 |
| 1C-11-01-14 | Systematic | Wall 2 | 27 | 4 |
| 1C-11-01-15 | Systematic | Wall 2 | 37 | 4 |
| 1C-11-01-16 | Systematic | Wall 3 | 4 | 4 |
| 1C-11-01-17 | Systematic | Wall 4 | 2 | 4 |
| 1C-11-01-18 | Systematic | Wall 4 | 12 | 4 |
| 1C-11-01-19 | Systematic | Wall 4 | 22 | 4 |
| 1C-11-01-20 | Systematic | Wall 4 | 31 | 4 |
| 1C-11-01-21 | Systematic | Wall 4 | 41 | 4 |

FLOOR STATICS TAKEN FOR USE IN RESRAD SAMPLING

COPY

F 440/686

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL11407
**File ID:** 25000143.s0
**Priority:** Yes

**Description\Location**
0601459 T-57 Resrad
Long Count 6" DEEP

**Collector:**
**Date Received:** 05/22/06
**Date Collected:** 05/21/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 0.17 | 0.04 |
| Cs-137 | | 0.72 ✓ | 0.05 |
| Pb-210 | * | 0.25 | 0.38 |
| Ra-226 | | 0.7 | 0.68 |
| Ac-227 (D) | * | 0.04 | 0.19 |
| Th-230 | * | 0 | 4.87 |
| Th-232 (D) | * | 0.11 | 0.22 |
| Pu-238 | * | 1.65 | 4.02 |
| Am-241 | * | 0 | 0.05 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.05 |
| Bi-207 | 0 | 0.04 |
| Bi-210m | 0.14 | 0.04 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 12.29 pCi/g MDA

Date: 05/22/06 Counted By: [redacted] Analyzed By: [redacted] Initials GS

COPY
F441/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG. / ROOM / AREA) T-57 | SURVEY NO. MT-06-0528 |
| PURPOSE: 1C11 UPPER STATICS | RWP NO. N A |
| | DATE: 5-23-06 |
| | TIME: 1330 |

## MAP / DRAWING

SEE ATTACHED

NOTE: SCANNED AREA 1 $M^2$ CENTERED ON EACH STATIC LOCATION. READINGS TAKEN AT HIGHEST DETECTABLE SPOT WITHIN THAT 1 $M^2$ AREA. NO ELEVATED READINGS WERE FOUND DURING THAT SCAN.

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
# = air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 $cm^2$

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5892/5893 | 2-14-07 ✓ |
| N | | |
| | | |
| | | A |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 5-25-06 |
| Completed by: (Print Name) JOHN BAKO | | |
| Counted by: (Signature) SEE | HP# N/A | Date: N/A |
| Counted by: (Print Name) ATTACHED | | F 442/686 |
| Reviewed/Approved by: (Signature) | | Date: 6/8/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No.
MT-06-0528



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 19/102 01S |
| 2 | | | | 02S |
| 3 | | | | 03S |
| 4 | | | | 04S |
| 5 | | | | 05S |
| 6 | | | | 06S |
| 7 | | | | 07S |
| 8 | | | | 08S |
| 9 | | | | 09S |
| 10 | | | | 10S |
| 11 | | | | 11S |
| 12 | | | | 12S |
| 13 | | | | 13S |
| 14 | | | | 14S |
| 15 | | | | 15S |
| 16 | | | | 16S |
| 17 | | | | 17S |
| 18 | | | | 18S |
| 19 | | | | 19S |
| 20 | | | | 20S |

SEE ATTACHED

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

COMMENTS: N/A

COPY

F 443/686

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

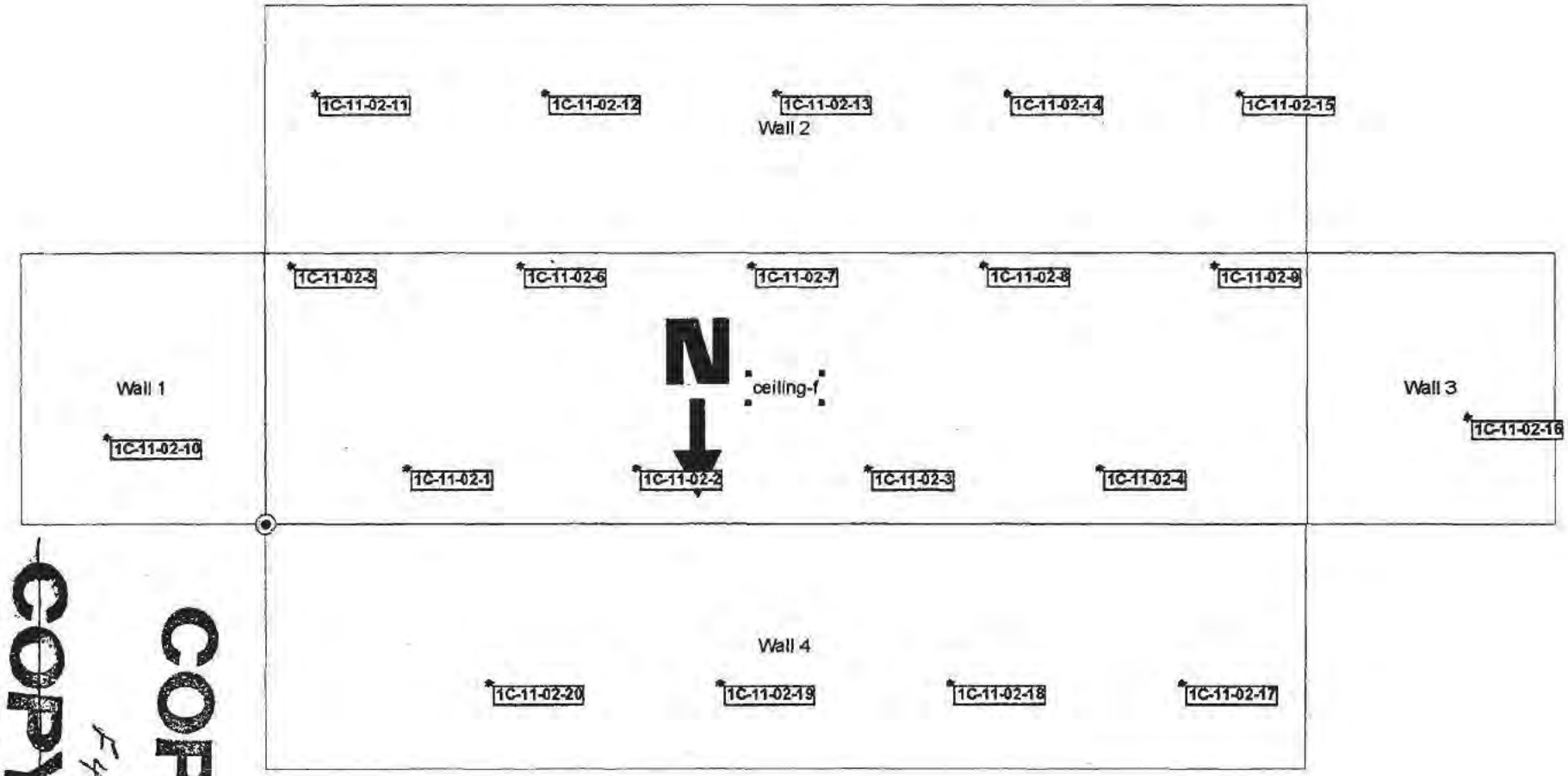
ML-9620A (4-98)

1C-11-02 Room 57

ceiling and upper wall static measurement locations

scan 1m$^2$ area around each ceiling location

57




COPY
COPY
F44471686
6/18/01

MT-06-0528

Pg 3 of 8

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_133
Batch Ended: 5/24/06 8:38
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0528 [20] BAKO 5-24-06 RLH ✓

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| B1 | 1 | 0.00 | 1.91 | | 1.44 | 2.06 | |
| B2 | 2 | 0.00 | 1.87 | | 0.48 | 1.58 | |
| B3 | 3 | 0.00 | 2.22 | | 1.59 | 2.30 | |
| B4 | 4 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 8 | 0.00 | 1.99 | | 1.85 | 2.07 | |
| B1 | 9 | 0.00 | 1.91 | | 1.44 | 2.06 | |
| B2 | 10 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 11 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 12 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| B1 | 13 | 0.00 | 1.91 | | 1.44 | 2.06 | |
| B2 | 14 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 15 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 16 | 0.00 | 2.01 | | 3.04 | 2.39 | |
| B1 | 17 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 18 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 19 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 ✓ | 20 | 0.00 | 1.99 | | 1.85 | 2.07 | |



COPY

F4/15/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: C:\Packard\TriCarb\Results\~MARSSIMS
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060524_1016.results
Comma-Delimited File Name: C:\Packard\TriCarb\Results\~MARSSIMS\MT-06-0528.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

P 5 of 8

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/24/06 | 10:17:21 AM | -1 | 10.00 | 8 | 8 | 11 | 15 | 623.03 | 0 | 21.9 | B | 3 |
| 5/24/06 | 10:28:10 AM | 0 | 2.00 | 206 | 195 | 1 | 1 | 554.57 | 396 | 10.1 | | 3 |
| 5/24/06 | 10:30:53 AM | 1 | 2.00 | 4 | 2 | 3 | 4 | 630.42 | 6 | 148.0 | | 3 |
| 5/24/06 | 10:33:35 AM | 2 | 2.00 | 0 | 0 | 0 | 6 | 657.31 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:36:17 AM | 3 | 2.00 | 2 | 1 | 0 | 0 | 576.10 | 3 | 310.6 | | 3 |
| 5/24/06 | 10:39:00 AM | 4 | 2.00 | 0 | 0 | 1 | 8 | 628.42 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:41:42 AM | 5 | 2.00 | 0 | 0 | 0 | 7 | 660.65 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:44:24 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 618.12 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:47:07 AM | 7 | 2.00 | 7 | 6 | 4 | 0 | 665.46 | 13 | 81.4 | | 3 |
| 5/24/06 | 10:49:49 AM | 8 | 2.00 | 0 | 0 | 1 | 0 | 584.88 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:52:32 AM | 9 | 2.00 | 3 | 2 | 0 | 5 | 545.59 | 5 | 193.9 | | 3 |
| 5/24/06 | 10:55:14 AM | 10 | 2.00 | 0 | 0 | 0 | 0 | 674.98 | 0 | 0.0 | | 3 |
| 5/24/06 | 10:57:56 AM | 11 | 2.00 | 5 | 4 | 2 | 0 | 663.95 | 8 | 116.4 | | 3 |
| 5/24/06 | 11:00:42 AM | 12 | 2.00 | 1 | 1 | 0 | 0 | 600.44 | 2 | 410.1 | | 3 |
| 5/24/06 | 11:03:24 AM | 13 | 2.00 | 1 | 1 | 2 | 0 | 611.16 | 1 | 671.1 | | 3 |
| 5/24/06 | 11:06:08 AM | 14 | 2.00 | 4 | 4 | 0 | 0 | 678.31 | 7 | 128.2 | | 3 |
| 5/24/06 | 11:08:50 AM | 15 | 2.00 | 1 | 1 | 0 | 0 | 644.13 | 1 | 620.7 | | 3 |
| 5/24/06 | 11:11:33 AM | 16 | 2.00 | 0 | 0 | 0 | 0 | 613.86 | 0 | 0.0 | | 3 |
| 5/24/06 | 11:14:21 AM | 17 | 2.00 | 0 | 0 | 0 | 0 | 651.53 | 0 | 0.0 | | 3 |
| 5/24/06 | 11:17:03 AM | 18 | 2.00 | 3 | 0 | 0 | 0 | 669.42 | 5 | 189.8 | | 3 |
| 5/24/06 | 11:19:46 AM | 19 | 2.00 | 0 | 0 | 0 | 0 | 665.48 | 0 | 0.0 | | 3 |
| 5/24/06 | 11:22:29 AM | 20 | 2.00 | 0 | 0 | 0 | 0 | 652.38 | 0 | 0.0 | | 3 |

B

MT-06-0528 Pg 6058

COPY

Filing 686

# T-57 1C11 Upper Statics

*RSDS# __MT-06-0528_ RCT: _____ RCT: ___N/A_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110201S | 5892 | | 5893 | 1 | 1 | 5/23/06 | 9:55 | 6 | 120 | 22 |
| ALPHA | 1C110202S | 5892 | | 5893 | 1 | 2 | 5/23/06 | 10:01 | 9 | 120 | 34 |
| ALPHA | 1C110203S | 5892 | | 5893 | 1 | 3 | 5/23/06 | 10:05 | 8 | 120 | 30 |
| ALPHA | 1C110204S | 5892 | | 5893 | 1 | 4 | 5/23/06 | 10:10 | 7 | 120 | 26 |
| ALPHA | 1C110205S | 5892 | | 5893 | 1 | 5 | 5/23/06 | 10:15 | 3 | 120 | 11 |
| ALPHA | 1C110206S | 5892 | | 5893 | 1 | 6 | 5/23/06 | 10:20 | 4 | 120 | 15 |
| ALPHA | 1C110207S | 5892 | | 5893 | 1 | 7 | 5/23/06 | 10:25 | 11 | 120 | 41 |
| ALPHA | 1C110208S | 5892 | | 5893 | 1 | 8 | 5/23/06 | 10:30 | 5 | 120 | 19 |
| ALPHA | 1C110209S | 5892 | | 5893 | 1 | 9 | 5/23/06 | 10:35 | 7 | 120 | 26 |
| ALPHA | 1C110210S | 5892 | | 5893 | 1 | 10 | 5/23/06 | 12:22 | 4 | 120 | 15 |
| ALPHA | 1C110211S | 5892 | | 5893 | 1 | 11 | 5/23/06 | 12:26 | 10 | 120 | 37 |
| ALPHA | 1C110212S | 5892 | | 5893 | 1 | 12 | 5/23/06 | 12:30 | 8 | 120 | 30 |
| ALPHA | 1C110213S | 5892 | | 5893 | 1 | 13 | 5/23/06 | 12:34 | 6 | 120 | 22 |
| ALPHA | 1C110214S | 5892 | | 5893 | 1 | 14 | 5/23/06 | 12:40 | 5 | 120 | 19 |
| ALPHA | 1C110215S | 5892 | | 5893 | 1 | 15 | 5/23/06 | 12:44 | 10 | 120 | 37 |
| ALPHA | 1C110216S | 5892 | | 5893 | 1 | 16 | 5/23/06 | 12:49 | 11 | 120 | 41 |
| ALPHA | 1C110217S | 5892 | | 5893 | 1 | 17 | 5/23/06 | 12:52 | 3 | 120 | 11 |
| ALPHA | 1C110218S | 5892 | | 5893 | 1 | 18 | 5/23/06 | 12:57 | 11 | 120 | 41 |
| ALPHA | 1C110219S | 5892 | | 5893 | 1 | 19 | 5/23/06 | 13:01 | 5 | 120 | 19 |
| ALPHA | 1C110220S | 5892 | | 5893 | 1 | 20 | 5/23/06 | 13:05 | 3 | 120 | 11 ✓ |
| BETA | 1C110201S | 5892 | | 5893 | 2 | 1 | 5/23/06 | 9:56 | 141 | 60 | 1348 |
| BETA | 1C110202S | 5892 | | 5893 | 2 | 2 | 5/23/06 | 10:02 | 119 | 60 | 1138 |
| BETA | 1C110203S | 5892 | | 5893 | 2 | 3 | 5/23/06 | 10:07 | 141 | 60 | 1348 |
| BETA | 1C110204S | 5892 | | 5893 | 2 | 4 | 5/23/06 | 10:11 | 142 | 60 | 1358 |
| BETA | 1C110205S | 5892 | | 5893 | 2 | 5 | 5/23/06 | 10:16 | 152 | 60 | 1453 |
| BETA | 1C110206S | 5892 | | 5893 | 2 | 6 | 5/23/06 | 10:21 | 136 | 60 | 1300 |
| BETA | 1C110207S | 5892 | | 5893 | 2 | 7 | 5/23/06 | 10:26 | 140 | 60 | 1339 |
| BETA | 1C110208S | 5892 | | 5893 | 2 | 8 | 5/23/06 | 10:31 | 156 | 60 | 1492 |
| BETA | 1C110209S | 5892 | | 5893 | 2 | 9 | 5/23/06 | 10:36 | 145 | 60 | 1386 |
| BETA | 1C110210S | 5892 | | 5893 | 2 | 10 | 5/23/06 | 12:24 | 133 | 60 | 1272 |
| BETA | 1C110211S | 5892 | | 5893 | 2 | 11 | 5/23/06 | 12:27 | 150 | 60 | 1434 |
| BETA | 1C110212S | 5892 | | 5893 | 2 | 12 | 5/23/06 | 12:31 | 128 | 60 | 1224 |
| BETA | 1C110213S | 5892 | | 5893 | 2 | 13 | 5/23/06 | 12:35 | 128 | 60 | 1224 |
| BETA | 1C110214S | 5892 | | 5893 | 2 | 14 | 5/23/06 | 12:41 | 156 | 60 | 1492 |
| BETA | 1C110215S | 5892 | | 5893 | 2 | 15 | 5/23/06 | 12:45 | 152 | 60 | 1453 |
| BETA | 1C110216S | 5892 | | 5893 | 2 | 16 | 5/23/06 | 12:50 | 142 | 60 | 1358 |
| BETA | 1C110217S | 5892 | | 5893 | 2 | 17 | 5/23/06 | 12:54 | 151 | 60 | 1444 |
| BETA | 1C110218S | 5892 | | 5893 | 2 | 18 | 5/23/06 | 12:58 | 151 | 60 | 1444 |
| BETA | 1C110219S | 5892 | | 5893 | 2 | 19 | 5/23/06 | 13:02 | 138 | 60 | 1320 |
| BETA | 1C110220S | 5892 | | 5893 | 2 | 20 | 5/23/06 | 13:06 | 131 | 60 | 1253 ✓ |

COPY

F448/686

COPY

ORIGINAL 6/8/06

1C-11-02 Room 57
ceiling and upper wall static measurement locations
scan 1m$^2$ area around each ceiling location

| Area: 57 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-11-02-1 | Systematic | ceiling-f | 6 | 2 |
| 1C-11-02-2 | Systematic | ceiling-f | 15 | 2 |
| 1C-11-02-3 | Systematic | ceiling-f | 25 | 2 |
| 1C-11-02-4 | Systematic | ceiling-f | 34 | 2 |
| 1C-11-02-5 | Systematic | ceiling-f | 1 | 10 |
| 1C-11-02-6 | Systematic | ceiling-f | 10 | 10 |
| 1C-11-02-7 | Systematic | ceiling-f | 20 | 10 |
| 1C-11-02-8 | Systematic | ceiling-f | 29 | 10 |
| 1C-11-02-9 | Systematic | ceiling-f | 39 | 10 |
| 1C-11-02-10 | Systematic | Wall 1 | 4 | 6 |
| 1C-11-02-11 | Systematic | Wall 2 | 2 | 6 |
| 1C-11-02-12 | Systematic | Wall 2 | 11 | 6 |
| 1C-11-02-13 | Systematic | Wall 2 | 21 | 6 |
| 1C-11-02-14 | Systematic | Wall 2 | 30 | 6 |
| 1C-11-02-15 | Systematic | Wall 2 | 40 | 6 |
| 1C-11-02-16 | Systematic | Wall 3 | 7 | 6 |
| 1C-11-02-17 | Systematic | Wall 4 | 5 | 6 |
| 1C-11-02-18 | Systematic | Wall 4 | 14 | 6 |
| 1C-11-02-19 | Systematic | Wall 4 | 24 | 6 |
| 1C-11-02-20 | Systematic | Wall 4 | 33 | 6 |

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-57 1C11 | SURVEY NO. MT-06-0542 |
| PURPOSE: FLOOR & LOWER WALL STATICS | RWP NO. N/A |
| | DATE: 5-23-06 |
| | TIME: 0930 |

## MAP/DRAWING

SEE ATTACHED

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5857/5859 | 10/4/06 ✓ |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 5-23-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | F450/686 |
| Counted by: (Signature) SEE | HP# N | Date: A |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 6-6-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-06-0542



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1011 0101 S |
| 2 | | | | 0102 S |
| 3 | | | | 0103 S |
| 4 | | | | 0104 S |
| 5 | | | | 0105 S |
| 6 | | | | 0106 S |
| 7 | | | | 0107 S |
| 8 | | | | 0108 S |
| 9 | | | | 0109 S |
| 10 | | | | 0110 S |
| 11 | | SEE | ATTACHED | 0111 S |
| 12 | | | | 0112 S |
| 13 | | | | 0113 S |
| 14 | | | | 0114 S |
| 15 | | | | 0115 S |
| 16 | | | | 0116 S |
| 17 | | | | 0117 S |
| 18 | | | | 0118 S |
| 19 | | | | 0119 S |
| 20 | | | | 0120 S |
| 21 | | | | 0121 S |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

COPY

F-451/686

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060524_1126.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0542 001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

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MT-06-0542

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/24/06 | 11:26:57 AM | -1 | 10.00 | 10 | 8 | 11 | 31 | 627.31 | 0 | 20.1 | B | 4 |
| 5/24/06 | 11:37:48 AM | 0 | 2.00 | 128 | 122 | 0 | 3 | 540.20 | 250 | 13.0 | | 4 |
| 5/24/06 | 11:40:31 AM | 1 | 2.00 | 0 | 2 | 0 | 5 | 659.15 | 1 | 1072.0 | | 4 |
| 5/24/06 | 11:43:14 AM | 2 | 2.00 | 0 | 0 | 0 | 0 | 620.26 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:45:58 AM | 3 | 2.00 | 0 | 0 | 0 | 6 | 651.66 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:48:40 AM | 4 | 2.00 | 0 | 0 | 0 | 0 | 648.00 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:51:22 AM | 5 | 2.00 | 0 | 1 | 0 | 0 | 643.01 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:54:04 AM | 6 | 2.00 | 0 | 0 | 0 | 11 | 653.26 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:56:46 AM | 7 | 2.00 | 0 | 0 | 0 | 0 | 638.79 | 0 | 0.0 | | 4 |
| 5/24/06 | 11:59:29 AM | 8 | 2.00 | 0 | 0 | 0 | 5 | 639.47 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:02:13 PM | 9 | 2.00 | 0 | 0 | 0 | 11 | 651.10 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:04:56 PM | 10 | 2.00 | 0 | 1 | 0 | 0 | 665.44 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:07:38 PM | 11 | 2.00 | 0 | 1 | 0 | 0 | 648.66 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:10:21 PM | 12 | 2.00 | 0 | 0 | 0 | 0 | 656.57 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:13:03 PM | 13 | 2.00 | 0 | 1 | 0 | 0 | 651.82 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:15:45 PM | 14 | 2.00 | 1 | 2 | 0 | 0 | 643.96 | 1 | 630.4 | | 4 |
| 5/24/06 | 12:18:27 PM | 15 | 2.00 | 0 | 0 | 0 | 0 | 663.59 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:21:10 PM | 16 | 2.00 | 3 | 4 | 0 | 0 | 647.23 | 5 | 205.9 | | 4 |
| 5/24/06 | 12:24:17 PM | 17 | 2.00 | 2 | 4 | 0 | 0 | 643.12 | 3 | 321.7 | | 4 |
| 5/24/06 | 12:27:00 PM | 18 | 2.00 | 0 | 0 | 1 | 0 | 654.81 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:29:43 PM | 19 | 2.00 | 3 | 5 | 0 | 0 | 661.23 | 6 | 163.2 | | 4 |
| 5/24/06 | 12:32:24 PM | 20 | 2.00 | 0 | 0 | 0 | 0 | 629.45 | 0 | 0.0 | | 4 |
| 5/24/06 | 12:35:07 PM | 21 | 2.00 | 0 | 0 | 0 | 0 | 643.26 | 0 | 0.0 | | 4 |

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F453/686

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MI-06-0542

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_134
Batch Ended: 5/24/06 9:20
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0542 [21] REYNOLDS 5-24-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.32 | |
| A2 | 2 | 0.00 | 2.01 | | 0.36 | 1.65 | |
| A3 | 3 | 2.01 | 2.27 | | 0.00 | 1.27 | |
| A4 | 4 | 1.90 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.09 | | 1.11 | 2.18 | |
| C2 | 10 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 11 | 0.00 | 2.14 | | 0.45 | 1.79 | |
| C4 | 12 | 0.00 | 2.00 | | 1.58 | 1.97 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.21 | | 3.89 | 2.67 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 0.00 | 2.04 | | 0.00 | 1.18 | |
| C1 | 17 | 0.00 | 2.08 | | 0.00 | 1.78 | |
| C2 | 18 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 19 | 0.00 | 2.12 | | 0.00 | 1.27 | |
| C4 | 20 | 0.00 | 1.99 | | 0.45 | 1.61 | |
| D1 | 21 | 0.00 | 2.06 | | 0.28 | 1.77 | |

Vna Vnc

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F4544/686



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MT-06-0542

# T-57 Floor and Lower wall Statics 1C11

*RSDS# _MT-06-0542_____ RCT: [redacted] _____ RCT: _N/A_____*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.208 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.164 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C110101S | 5857 | [redacted] | 5859 | 1 | 1 | 5/23/06 | 9:53 | 6 | 120 | 23 | |
| ALPHA | 1C110102S | 5857 | [redacted] | 5859 | 1 | 2 | 5/23/06 | 9:57 | 9 | 120 | 34 | |
| ALPHA | 1C110103S | 5857 | [redacted] | 5859 | 1 | 3 | 5/23/06 | 10:01 | 7 | 120 | 27 | |
| ALPHA | 1C110104S | 5857 | [redacted] | 5859 | 1 | 4 | 5/23/06 | 10:05 | 13 | 120 | 50 | |
| ALPHA | 1C110105S | 5857 | [redacted] | 5859 | 1 | 5 | 5/23/06 | 10:10 | 7 | 120 | 27 | |
| ALPHA | 1C110106S | 5857 | [redacted] | 5859 | 1 | 6 | 5/23/06 | 10:14 | 14 | 120 | 53 | |
| ALPHA | 1C110107S | 5857 | [redacted] | 5859 | 1 | 7 | 5/23/06 | 10:18 | 13 | 120 | 50 | |
| ALPHA | 1C110108S | 5857 | [redacted] | 5859 | 1 | 8 | 5/23/06 | 10:23 | 7 | 120 | 27 | |
| ALPHA | 1C110109S | 5857 | [redacted] | 5859 | 1 | 9 | 5/23/06 | 10:28 | 14 | 120 | 53 | |
| ALPHA | 1C110110S | 5857 | [redacted] | 5859 | 1 | 10 | 5/23/06 | 12:29 | 6 | 120 | 23 | |
| ALPHA | 1C110111S | 5857 | [redacted] | 5859 | 1 | 11 | 5/23/06 | 12:35 | 5 | 120 | 19 | |
| ALPHA | 1C110112S | 5857 | [redacted] | 5859 | 1 | 12 | 5/23/06 | 12:43 | 6 | 120 | 23 | |
| ALPHA | 1C110113S | 5857 | [redacted] | 5859 | 1 | 13 | 5/23/06 | 12:53 | 3 | 120 | 11 | |
| ALPHA | 1C110114S | 5857 | [redacted] | 5859 | 1 | 14 | 5/23/06 | 12:58 | 5 | 120 | 19 | |
| ALPHA | 1C110115S | 5857 | [redacted] | 5859 | 1 | 15 | 5/23/06 | 13:05 | 11 | 120 | 42 | |
| ALPHA | 1C110116S | 5857 | [redacted] | 5859 | 1 | 16 | 5/23/06 | 13:27 | 9 | 120 | 34 | |
| ALPHA | 1C110117S | 5857 | [redacted] | 5859 | 1 | 17 | 5/23/06 | 13:33 | 7 | 120 | 27 | |
| ALPHA | 1C110118S | 5857 | [redacted] | 5859 | 1 | 18 | 5/23/06 | 13:38 | 9 | 120 | 34 | |
| ALPHA | 1C110119S | 5857 | [redacted] | 5859 | 1 | 19 | 5/23/06 | 14:35 | 12 | 120 | 46 | |
| ALPHA | 1C110120S | 5857 | [redacted] | 5859 | 1 | 20 | 5/23/06 | 14:43 | 6 | 120 | 23 | |
| ALPHA | 1C110121S | 5857 | [redacted] | 5859 | 1 | 21 | 5/23/06 | 14:49 | 6 | 120 | 23 | |
| BETA | 1C110101S | 5857 | [redacted] | 5859 | 2 | 1 | 5/23/06 | 9:54 | 173 | 60 | 1674 | |
| BETA | 1C110102S | 5857 | [redacted] | 5859 | 2 | 2 | 5/23/06 | 9:58 | 289 | 60 | 2797 | |
| BETA | 1C110103S | 5857 | [redacted] | 5859 | 2 | 3 | 5/23/06 | 10:02 | 171 | 60 | 1655 | |
| BETA | 1C110104S | 5857 | [redacted] | 5859 | 2 | 4 | 5/23/06 | 10:06 | 169 | 60 | 1636 | |
| BETA | 1C110105S | 5857 | [redacted] | 5859 | 2 | 5 | 5/23/06 | 10:11 | 149 | 60 | 1442 | |
| BETA | 1C110106S | 5857 | [redacted] | 5859 | 2 | 6 | 5/23/06 | 10:15 | 447 | 60 | 4326 | |
| BETA | 1C110107S | 5857 | [redacted] | 5859 | 2 | 7 | 5/23/06 | 10:19 | 132 | 60 | 1278 | |
| BETA | 1C110108S | 5857 | [redacted] | 5859 | 2 | 8 | 5/23/06 | 10:24 | 154 | 60 | 1491 | |
| BETA | 1C110109S | 5857 | [redacted] | 5859 | 2 | 9 | 5/23/06 | 10:29 | 166 | 60 | 1607 | |
| BETA | 1C110110S | 5857 | [redacted] | 5859 | 2 | 10 | 5/23/06 | 12:30 | 140 | 60 | 1355 | |
| BETA | 1C110111S | 5857 | [redacted] | 5859 | 2 | 11 | 5/23/06 | 12:36 | 138 | 60 | 1336 | |
| BETA | 1C110112S | 5857 | [redacted] | 5859 | 2 | 12 | 5/23/06 | 12:45 | 147 | 60 | 1423 | |
| BETA | 1C110113S | 5857 | [redacted] | 5859 | 2 | 13 | 5/23/06 | 12:54 | 145 | 60 | 1403 | |
| BETA | 1C110114S | 5857 | [redacted] | 5859 | 2 | 14 | 5/23/06 | 13:00 | 168 | 60 | 1626 | |
| BETA | 1C110115S | 5857 | [redacted] | 5859 | 2 | 15 | 5/23/06 | 13:06 | 145 | 60 | 1403 | |
| BETA | 1C110116S | 5857 | [redacted] | 5859 | 2 | 16 | 5/23/06 | 13:28 | 168 | 60 | 1626 | |
| BETA | 1C110117S | 5857 | [redacted] | 5859 | 2 | 17 | 5/23/06 | 13:34 | 148 | 60 | 1432 | |
| BETA | 1C110118S | 5857 | [redacted] | 5859 | 2 | 18 | 5/23/06 | 13:39 | 132 | 60 | 1278 | |
| BETA | 1C110119S | 5857 | [redacted] | 5859 | 2 | 19 | 5/23/06 | 14:36 | 274 | 60 | 2652 | |
| BETA | 1C110120S | 5857 | [redacted] | 5859 | 2 | 20 | 5/23/06 | 14:44 | 168 | 60 | 1626 | |
| BETA | 1C110121S | 5857 | [redacted] | 5859 | 2 | 21 | 5/23/06 | 14:50 | 164 | 60 | 1587 | |

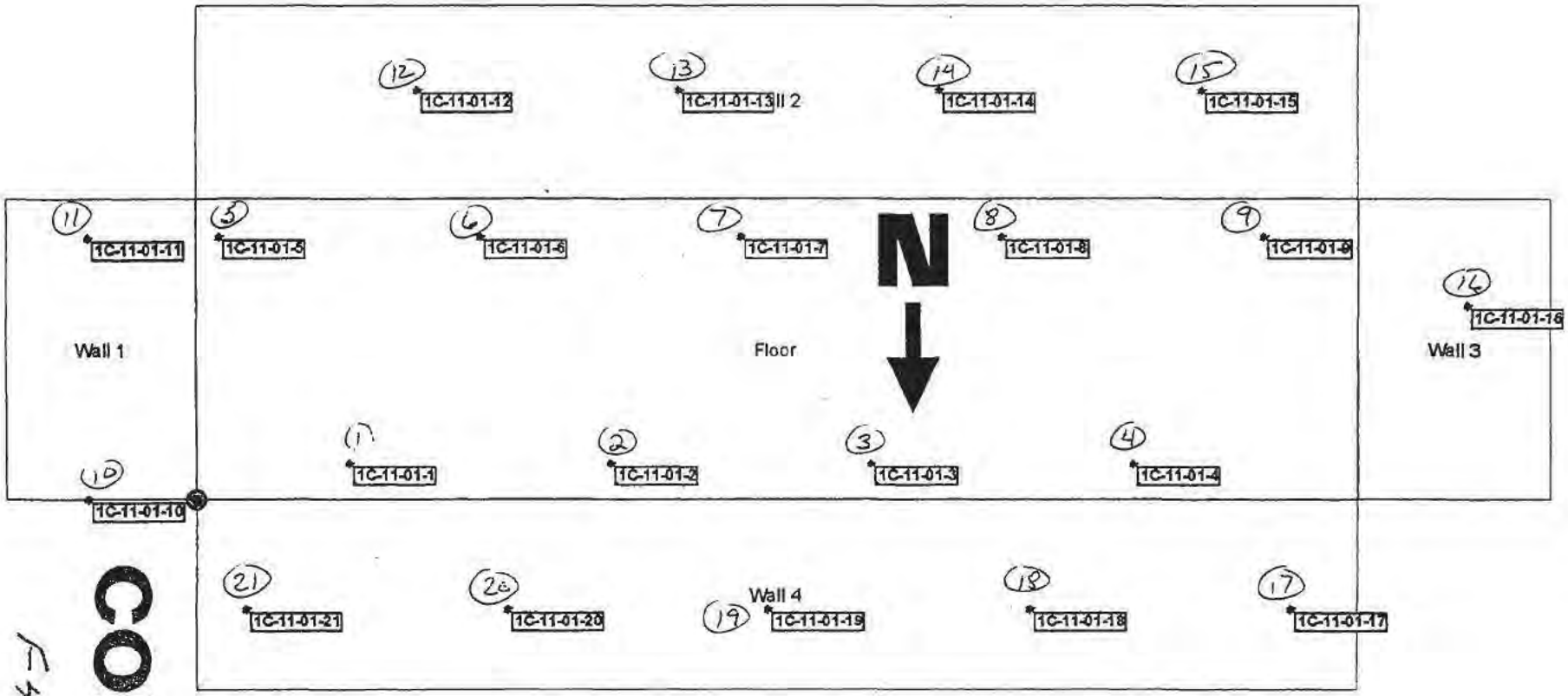


F 455/686

COPY

1C-11-01 Room 57
floor and lower wall static measurement locations

Room 57

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M-06-0542

**1C-11-01 Room 57**
**floor and lower wall static measurement locations**

| Area: Room 57 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-11-01-1 | Systematic | Floor | 6 | 1 |
| 1C-11-01-2 | Systematic | Floor | 15 | 1 |
| 1C-11-01-3 | Systematic | Floor | 25 | 1 |
| 1C-11-01-4 | Systematic | Floor | 34 | 1 |
| 1C-11-01-5 | Systematic | Floor | 1 | 10 |
| 1C-11-01-6 | Systematic | Floor | 10 | 10 |
| 1C-11-01-7 | Systematic | Floor | 20 | 10 |
| 1C-11-01-8 | Systematic | Floor | 30 | 10 |
| 1C-11-01-9 | Systematic | Floor | 39 | 10 |
| 1C-11-01-10 | Systematic | Wall 1 | 0 | 4 |
| 1C-11-01-11 | Systematic | Wall 1 | 10 | 4 |
| 1C-11-01-12 | Systematic | Wall 2 | 8 | 4 |
| 1C-11-01-13 | Systematic | Wall 2 | 18 | 4 |
| 1C-11-01-14 | Systematic | Wall 2 | 27 | 4 |
| 1C-11-01-15 | Systematic | Wall 2 | 37 | 4 |
| 1C-11-01-16 | Systematic | Wall 3 | 4 | 4 |
| 1C-11-01-17 | Systematic | Wall 4 | 2 | 4 |
| 1C-11-01-18 | Systematic | Wall 4 | 12 | 4 |
| 1C-11-01-19 | Systematic | Wall 4 | 22 | 4 |
| 1C-11-01-20 | Systematic | Wall 4 | 31 | 4 |
| 1C-11-01-21 | Systematic | Wall 4 | 41 | 4 |

COPY
F-457/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG. / ROOM / AREA) T-57 | SURVEY NO. MT-06-0544 |
| PURPOSE: LOWER AND UPPER JUDGEMENTALS 1C11 RESRAD | RWP NO. N/A |
| | DATE: 5-24-06 |
| | TIME: 1345 |

**MAP / DRAWING**

SEE ATTACHED

Follow-up MT-06-0549 FOR 1C110201J ∞

**COPY**

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
# = air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5892/5893 | 2-14-07 |
| N | | |
| | | |
| | | A |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 5-30-06 |
| Completed by: (Print Name) JOHN BAKO | | |
| Counted by: (Signature) SEE | HP# N/A | Date: N/A |
| Counted by: (Print Name) ATTACHED | | E458/686 |
| Reviewed/Approved by: (Signature) | | Date: 6-6-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

AN

Survey No. MT-06-0544



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C11 0101J |
| 2 | | | | 0102J |
| 3 | | | | 0103J |
| 4 | | | | 0104J |
| 5 | | | | 0105J |
| 6 | | | | 0106J |
| 7 | | | | 0107J |
| 8 | | | | 0108J |
| 9 | | | | 0109J |
| 10 | SEE | | | 0110J |
| 11 | ATTACHED | | | 0201J |
| 12 | | | | 0202J |
| 13 | | | | 0203J |
| 14 | | | | 0204J |
| 15 | | | | 0205J |
| 16 | | | | 0206J |
| 17 | | | | 0207J |
| 18 | | | | 0208J |
| 19 | | | | 0209J |
| 20 | | | | 0210J |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | | |

COMMENTS:

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F 459/686

ML-9620A (4-98)

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_137
Batch Ended: 5/24/06 15:46
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0544 BAKO (20) AG ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.01 | | 0.36 | 1.65 | |
| A3 | 3 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 1.73 | 2.07 | | 0.00 | 1.27 | |
| C2 | 10 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 11 | 0.00 | 2.16 | | 2.97 | 2.53 | |
| C4 | 12 | 0.00 | 1.98 | | 0.00 | 1.14 | |
| D1 | 13 | 0.00 | 2.08 | | 2.78 | 2.50 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 0.00 | 2.05 | | 0.40 | 1.66 | |
| A1 | 17 | 0.00 | 2.20 | | 0.38 | 1.85 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 19 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | ✓20 | 0.00 | 2.10 | | 0.00 | 1.21 | |

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F 46/686

Pg 3058



AD

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060525_0638.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0544.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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F461/686

Pg 458

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/25/06 | 6:38:56 AM | -1 | 10.00 | 10 | 9 | 12 | 15 | 607.84 | 0 | 20.2 | B | 1 |
| 5/25/06 | 6:49:46 AM | 0 | 2.00 | 254 | 241 | 1 | 1 | 536.17 | 497 | 9.1 | | 1 |
| 5/25/06 | 6:52:28 AM | 1 | 2.00 | 1 | 2 | 1 | 5 | 605.79 | 2 | 422.9 | | 1 |
| 5/25/06 | 6:55:11 AM | 2 | 2.00 | 0 | 0 | 2 | 0 | 603.70 | 0 | 0.0 | | 1 |
| 5/25/06 | 6:57:54 AM | 3 | 2.00 | 0 | 0 | 0 | 0 | 599.68 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:00:36 AM | 4 | 2.00 | 0 | 0 | 0 | 0 | 577.00 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:03:19 AM | 5 | 2.00 | 0 | 0 | 0 | 8 | 582.59 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:06:01 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 584.88 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:08:44 AM | 7 | 2.00 | 0 | 0 | 0 | 6 | 600.38 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:11:27 AM | 8 | 2.00 | 0 | 1 | 0 | 5 | 582.91 | 0 | 2399.6 | | 1 |
| 5/25/06 | 7:14:10 AM | 9 | 2.00 | 0 | 0 | 0 | 7 | 605.54 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:16:53 AM | 10 | 2.00 | 0 | 0 | 0 | 0 | 565.79 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:19:35 AM | 11 | 2.00 | 0 | 0 | 0 | 5 | 646.14 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:22:17 AM | 12 | 2.00 | 0 | 0 | 0 | 0 | 632.20 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:25:00 AM | 13 | 2.00 | 1 | 1 | 0 | 0 | 605.66 | 2 | 464.3 | | 1 |
| 5/25/06 | 7:27:42 AM | 14 | 2.00 | 0 | 0 | 0 | 0 | 660.24 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:30:25 AM | 15 | 2.00 | 0 | 0 | 0 | 6 | 611.72 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:33:08 AM | 16 | 2.00 | 0 | 0 | 0 | 0 | 553.69 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:35:56 AM | 17 | 2.00 | 0 | 0 | 0 | 0 | 654.97 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:38:40 AM | 18 | 2.00 | 0 | 0 | 0 | 0 | 539.25 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:41:22 AM | 19 | 2.00 | 0 | 0 | 0 | 0 | 657.32 | 0 | 0.0 | | 1 |
| 5/25/06 | 7:44:04 AM | 20 | 2.00 | 0 | 0 | 0 | 0 | 613.59 | 0 | 0.0 | | 1 |

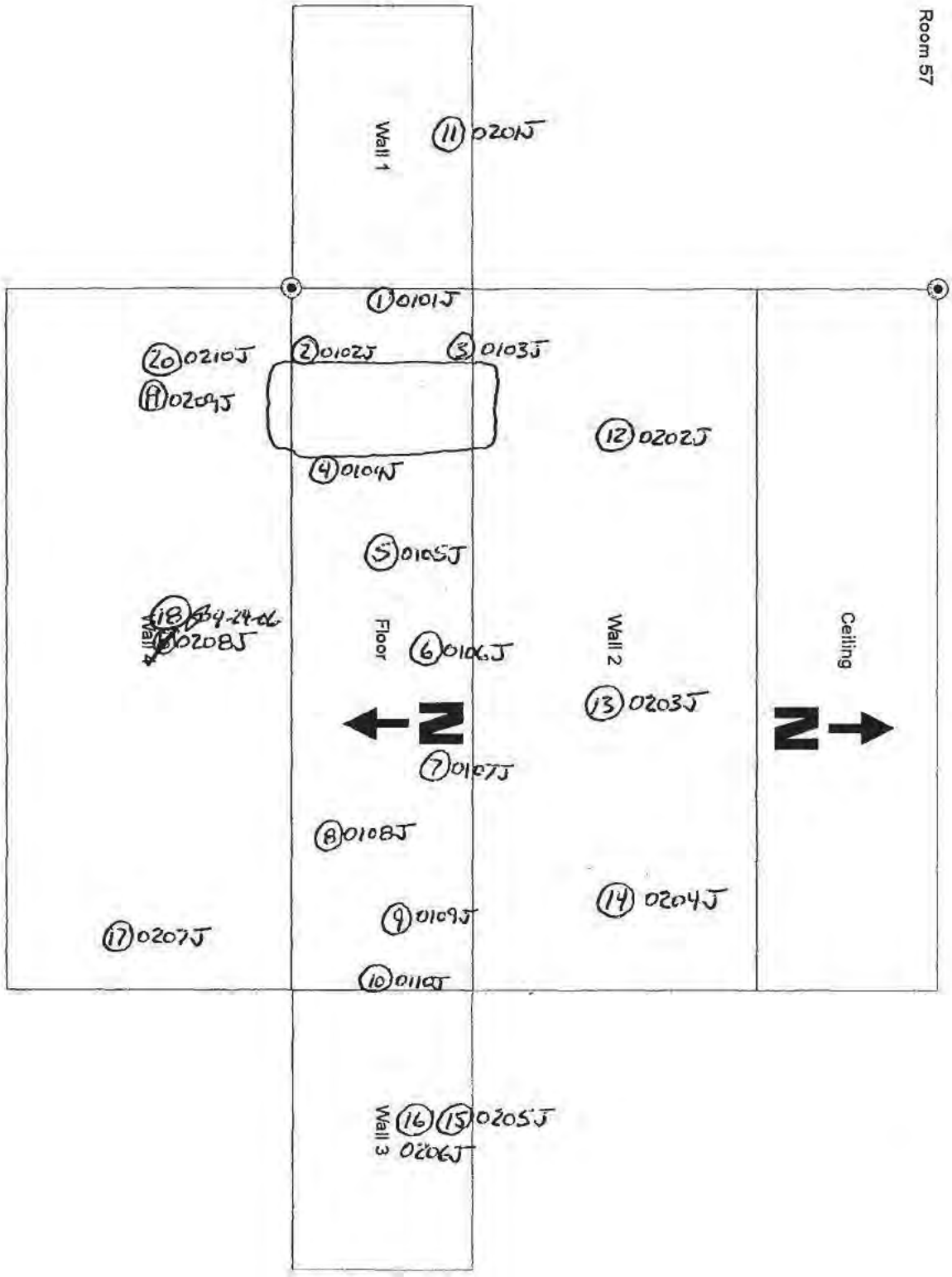
MT-06-0544

Pg 5 of 8

COPY

F-462/686

MT-06-0544 Pg 60 of 8

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# T-57 1C11 Lower and Upper Judgementals

*RSDS# _MT-06-0544_ RCT: _[redacted]_ RCT: _N/A_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110101J | 5892 | [redacted] | 5893 | 1 | 1 | 5/24/06 | 7:33 | 7 | 120 | 26 |
| ALPHA | 1C110102J | 5892 | [redacted] | 5893 | 1 | 2 | 5/24/06 | 7:37 | 2 | 120 | 7 |
| ALPHA | 1C110103J | 5892 | [redacted] | 5893 | 1 | 3 | 5/24/06 | 7:42 | 6 | 120 | 22 |
| ALPHA | 1C110104J | 5892 | [redacted] | 5893 | 1 | 4 | 5/24/06 | 7:46 | 8 | 120 | 30 |
| ALPHA | 1C110105J | 5892 | [redacted] | 5893 | 1 | 5 | 5/24/06 | 7:50 | 10 | 120 | 37 |
| ALPHA | 1C110106J | 5892 | [redacted] | 5893 | 1 | 6 | 5/24/06 | 7:54 | 7 | 120 | 26 |
| ALPHA | 1C110107J | 5892 | [redacted] | 5893 | 1 | 7 | 5/24/06 | 7:58 | 10 | 120 | 37 |
| ALPHA | 1C110108J | 5892 | [redacted] | 5893 | 1 | 8 | 5/24/06 | 8:01 | 6 | 120 | 22 |
| ALPHA | 1C110109J | 5892 | [redacted] | 5893 | 1 | 9 | 5/24/06 | 8:05 | 10 | 120 | 37 |
| ALPHA | 1C110110J | 5892 | [redacted] | 5893 | 1 | 10 | 5/24/06 | 8:09 | 8 | 120 | 30 |
| ALPHA | 1C110201J | 5892 | [redacted] | 5893 | 1 | 11 | 5/24/06 | 10:34 | 39 | 120 | 146 |
| ALPHA | 1C110202J | 5892 | [redacted] | 5893 | 1 | 12 | 5/24/06 | 10:40 | 8 | 120 | 30 |
| ALPHA | 1C110203J | 5892 | [redacted] | 5893 | 1 | 13 | 5/24/06 | 12:38 | 4 | 120 | 15 |
| ALPHA | 1C110204J | 5892 | [redacted] | 5893 | 1 | 14 | 5/24/06 | 12:44 | 16 | 120 | 60 |
| ALPHA | 1C110205J | 5892 | [redacted] | 5893 | 1 | 15 | 5/24/06 | 12:54 | 6 | 120 | 22 |
| ALPHA | 1C110206J | 5892 | [redacted] | 5893 | 1 | 16 | 5/24/06 | 13:00 | 8 | 120 | 30 |
| ALPHA | 1C110207J | 5892 | [redacted] | 5893 | 1 | 17 | 5/24/06 | 13:07 | 10 | 120 | 37 |
| ALPHA | 1C110208J | 5892 | [redacted] | 5893 | 1 | 18 | 5/24/06 | 13:13 | 11 | 120 | 41 |
| ALPHA | 1C110209J | 5892 | [redacted] | 5893 | 1 | 19 | 5/24/06 | 13:18 | 8 | 120 | 30 |
| ALPHA | 1C110210J | 5892 | [redacted] | 5893 | 1 | 20 | 5/24/06 | 13:25 | 12 | 120 | 45 |
| BETA | 1C110101J | 5892 | [redacted] | 5893 | 2 | 1 | 5/24/06 | 7:34 | 182 | 60 | 1740 |
| BETA | 1C110102J | 5892 | [redacted] | 5893 | 2 | 2 | 5/24/06 | 7:38 | 150 | 60 | 1434 |
| BETA | 1C110103J | 5892 | [redacted] | 5893 | 2 | 3 | 5/24/06 | 7:43 | 192 | 60 | 1836 |
| BETA | 1C110104J | 5892 | [redacted] | 5893 | 2 | 4 | 5/24/06 | 7:48 | 313 | 60 | 2993 |
| BETA | 1C110105J | 5892 | [redacted] | 5893 | 2 | 5 | 5/24/06 | 7:51 | 146 | 60 | 1396 |
| BETA | 1C110106J | 5892 | [redacted] | 5893 | 2 | 6 | 5/24/06 | 7:55 | 139 | 60 | 1329 |
| BETA | 1C110107J | 5892 | [redacted] | 5893 | 2 | 7 | 5/24/06 | 7:59 | 146 | 60 | 1396 |
| BETA | 1C110108J | 5892 | [redacted] | 5893 | 2 | 8 | 5/24/06 | 8:03 | 146 | 60 | 1396 |
| BETA | 1C110109J | 5892 | [redacted] | 5893 | 2 | 9 | 5/24/06 | 8:07 | 169 | 60 | 1616 |
| BETA | 1C110110J | 5892 | [redacted] | 5893 | 2 | 10 | 5/24/06 | 8:10 | 163 | 60 | 1559 |
| BETA | 1C110201J | 5892 | [redacted] | 5893 | 2 | 11 | 5/24/06 | 10:35 | 496 | 60 | 4743 |
| BETA | 1C110202J | 5892 | [redacted] | 5893 | 2 | 12 | 5/24/06 | 10:42 | 153 | 60 | 1463 |
| BETA | 1C110203J | 5892 | [redacted] | 5893 | 2 | 13 | 5/24/06 | 12:39 | 150 | 60 | 1434 |
| BETA | 1C110204J | 5892 | [redacted] | 5893 | 2 | 14 | 5/24/06 | 12:45 | 140 | 60 | 1339 |
| BETA | 1C110205J | 5892 | [redacted] | 5893 | 2 | 15 | 5/24/06 | 12:55 | 145 | 60 | 1386 |
| BETA | 1C110206J | 5892 | [redacted] | 5893 | 2 | 16 | 5/24/06 | 13:02 | 158 | 60 | 1511 |
| BETA | 1C110207J | 5892 | [redacted] | 5893 | 2 | 17 | 5/24/06 | 13:08 | 147 | 60 | 1406 |
| BETA | 1C110208J | 5892 | [redacted] | 5893 | 2 | 18 | 5/24/06 | 13:14 | 281 | 60 | 2687 |
| BETA | 1C110209J | 5892 | [redacted] | 5893 | 2 | 19 | 5/24/06 | 13:19 | 136 | 60 | 1300 |
| BETA | 1C110210J | 5892 | [redacted] | 5893 | 2 | 20 | 5/24/06 | 13:26 | 172 | 60 | 1645 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |



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Survey Unit Number:

1C-11-01 minimum of 10

~~1X~~ 1C-11-02 minimum of 10

6/6/06 gw

(Supplemental sheet for biased measurements.)



RSDS # MT-06-0544

RCT INT/HP JB/[redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C11 0101J | T-57 | FLOOR | | A |
| 0102J | | | | |
| 0103J | | | | |
| 0104J | | | | |
| 0105J | | | | |
| 0106J | | | | |
| 0107J | | | | |
| 0108J | | | | |
| 0109J | | | | |
| 0110J | | | | |
| 0201J | | WALL 1 | | |
| 0202J | | WALL 2 | | |
| 0203J | | | | |
| 0204J | | | | |
| 0205J | | WALL 3 | | |
| 0206J | | | | |
| 0207J | | WALL 4 | | |
| 0208J | | | | |
| 0209J | | | | |
| 0210J | | | N | |
| N | | | | |
| | | | | A |

J- designator represents measurement as judgmental location

E-designator represents measurement as potentially elevated activity.

D-designator represents measurement at a drain.

V-designator represents measurement on ventilation system.

U-designator represents measurement on a utility drop.

COPY

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# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG. / ROOM / AREA) T-57 | SURVEY NO. MT-06-0549 |
| PURPOSE: INVESTIGATION OF ELEVATED READING AT 1C11-0201J (RSDS MT-06-0544) RESRAD | RWP NO. N A |
| | DATE: 5-25-06 |
| | TIME: 0745 |

## MAP / DRAWING

* ABOVE (100/α) AND/OR (5000/β)

| | | | | |
|---|---|---|---|---|
| P | Q | R | S | T |
| O | * D | * E | * F | U |
| N | * B | * A | C | V |
| M | * G | H | I | |
| L | * K | * J | W | |
| Ø | Z | Y | X | |

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LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · - = radiological boundary
△# = mrem/hr neutron
# = air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5892/5893 | 2-14-07 |
| N | | |
| | | |
| | | A |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 5-30-06 |
| Completed by: (Print Name) JOHN BARO | | |
| Counted by: (Signature) SEE | HP# N/A | Date: N/A |
| Counted by: (Print Name) ATTACHED | | E 466/686 |
| Reviewed/Approved by: (Signature) | | Date: 6-8-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0549



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | ATTACHED | | #1C11 0201JB 5-25-06 |
| N | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| N | | | | |

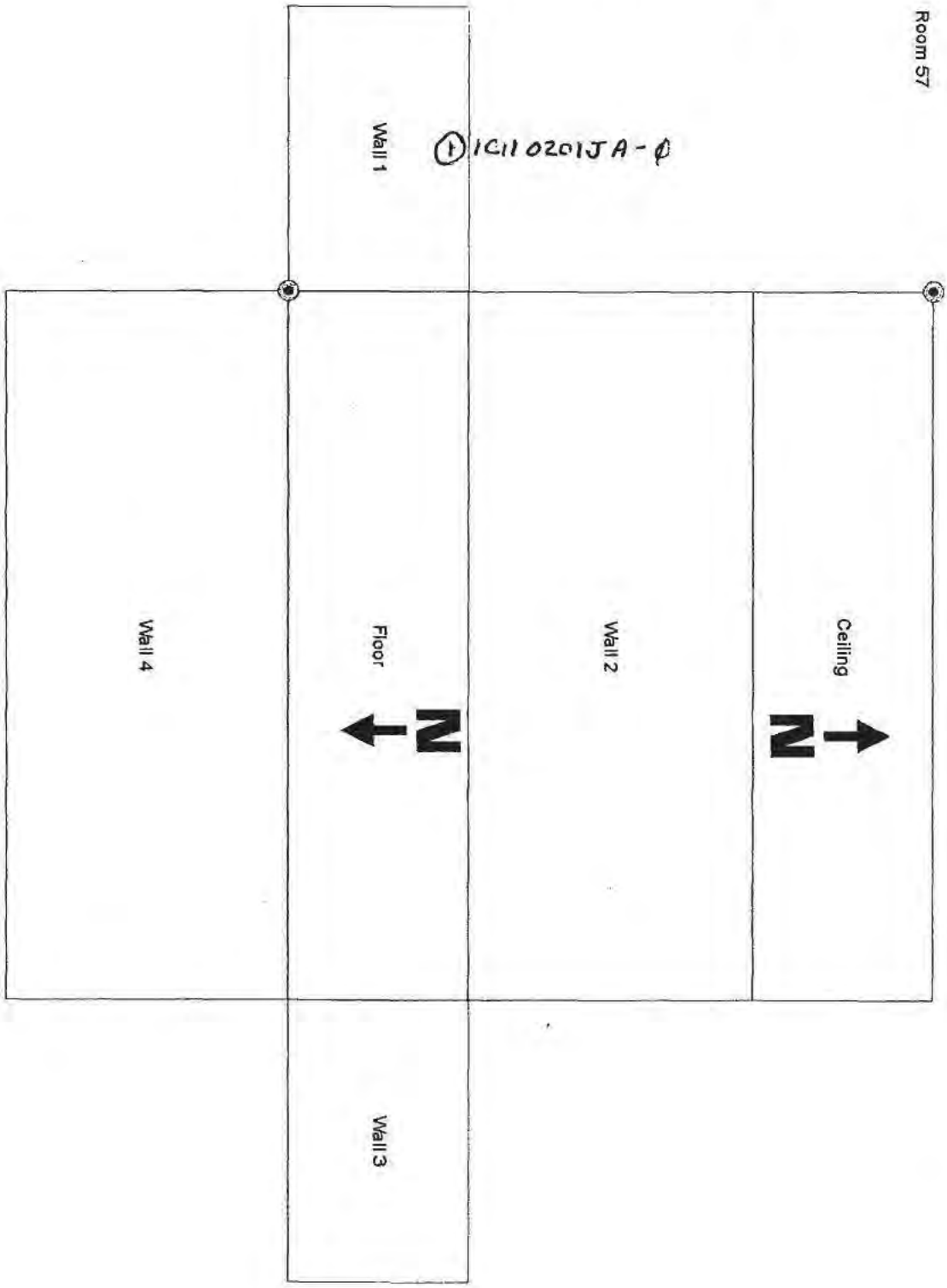
COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F461/686

ML-9620A (4-98)


Room 57
Ceiling
N
Wall 2
Floor
N
Wall 1
1C11 0201JA-0
Wall 3
Wall 4

COPY

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_139
Batch Ended: 5/25/06 13:12
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0549 [1] BAKO 5-25-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B2 | 1 | 0.00 | 1.87 | | 0.48 | 1.58 | |

COPY

 5-30-06

MT-06-0549
26966

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060525_1429.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0549.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MT-06-0549

0549

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/25/06 | 2:29:43 PM | -1 | 10.00 | 9 | 8 | 12 | 4 | 612.45 | 0 | 21.4 | B | 2 |
| 5/25/06 | 2:40:33 PM | 0 | 2.00 | 50 | 47 | 0 | 2 | 541.63 | 96 | 22.1 | | 2 |
| 5/25/06 | 2:43:16 PM | 1 | 2.00 | 0 | 1 | 0 | 0 | 606.01 | 1 | 1676.8 | | 2 |

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COPY
5/11/06

# T-57 1C11-0201J Investigation (see MT-06-0544)

*RSDS# __MT-06-0549_ RCT: _____ RCT: __N/A_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110201JA | 5892 | | 5893 | 1 | 1 | 5/25/06 | 7:48 | 45 | 120 | 168 |
| ALPHA | 1C110201JB | 5892 | | 5893 | 1 | 2 | 5/25/06 | 7:52 | 41 | 120 | 153 |
| ALPHA | 1C110201JC | 5892 | | 5893 | 1 | 3 | 5/25/06 | 7:57 | 20 | 120 | 75 |
| ALPHA | 1C110201JD | 5892 | | 5893 | 1 | 4 | 5/25/06 | 8:01 | 33 | 120 | 123 |
| ALPHA | 1C110201JE | 5892 | | 5893 | 1 | 5 | 5/25/06 | 8:05 | 18 | 120 | 67 |
| ALPHA | 1C110201JF | 5892 | | 5893 | 1 | 6 | 5/25/06 | 8:09 | 29 | 120 | 108 |
| ALPHA | 1C110201JG | 5892 | | 5893 | 1 | 7 | 5/25/06 | 8:14 | 48 | 120 | 179 |
| ALPHA | 1C110201JH | 5892 | | 5893 | 1 | 8 | 5/25/06 | 8:17 | 17 | 120 | 63 |
| ALPHA | 1C110201JI | 5892 | | 5893 | 1 | 9 | 5/25/06 | 8:21 | 23 | 120 | 86 |
| ALPHA | 1C110201JJ | 5892 | | 5893 | 1 | 10 | 5/25/06 | 9:39 | 28 | 120 | 104 |
| ALPHA | 1C110201JK | 5892 | | 5893 | 1 | 11 | 5/25/06 | 9:43 | 36 | 120 | 134 |
| ALPHA | 1C110201JL | 5892 | | 5893 | 1 | 12 | 5/25/06 | 9:47 | 9 | 120 | 34 |
| ALPHA | 1C110201JM | 5892 | | 5893 | 1 | 13 | 5/25/06 | 9:52 | 7 | 120 | 26 |
| ALPHA | 1C110201JN | 5892 | | 5893 | 1 | 14 | 5/25/06 | 9:56 | 9 | 120 | 34 |
| ALPHA | 1C110201JO | 5892 | | 5893 | 1 | 15 | 5/25/06 | 10:00 | 7 | 120 | 26 |
| ALPHA | 1C110201JP | 5892 | | 5893 | 1 | 16 | 5/25/06 | 10:05 | 14 | 120 | 52 |
| ALPHA | 1C110201JQ | 5892 | | 5893 | 1 | 17 | 5/25/06 | 10:09 | 14 | 120 | 52 |
| ALPHA | 1C110201JR | 5892 | | 5893 | 1 | 18 | 5/25/06 | 10:13 | 14 | 120 | 52 |
| ALPHA | 1C110201JS | 5892 | | 5893 | 1 | 19 | 5/25/06 | 10:16 | 9 | 120 | 34 |
| ALPHA | 1C110201JT | 5892 | | 5893 | 1 | 20 | 5/25/06 | 10:20 | 11 | 120 | 41 |
| ALPHA | 1C110201JU | 5892 | | 5893 | 1 | 21 | 5/25/06 | 10:24 | 15 | 120 | 56 |
| ALPHA | 1C110201JV | 5892 | | 5893 | 1 | 22 | 5/25/06 | 10:28 | 17 | 120 | 63 |
| ALPHA | 1C110201JW | 5892 | | 5893 | 1 | 23 | 5/25/06 | 10:33 | 14 | 120 | 52 |
| ALPHA | 1C110201JX | 5892 | | 5893 | 1 | 24 | 5/25/06 | 10:37 | 20 | 120 | 75 |
| ALPHA | 1C110201JY | 5892 | | 5893 | 1 | 25 | 5/25/06 | 10:41 | 11 | 120 | 41 |
| ALPHA | 1C110201JZ | 5892 | | 5893 | 1 | 26 | 5/25/06 | 10:44 | 16 | 120 | 60 |
| ALPHA | 1C110201J0 | 5892 | | 5893 | 1 | 27 | 5/25/06 | 10:48 | 9 | 120 | 34 |
| BETA | 1C110201JA | 5892 | | 5893 | 2 | 1 | 5/25/06 | 7:50 | 589 | 60 | 5632 |
| BETA | 1C110201JB | 5892 | | 5893 | 2 | 2 | 5/25/06 | 7:53 | 448 | 60 | 4284 |
| BETA | 1C110201JC | 5892 | | 5893 | 2 | 3 | 5/25/06 | 7:58 | 360 | 60 | 3442 |
| BETA | 1C110201JD | 5892 | | 5893 | 2 | 4 | 5/25/06 | 8:03 | 638 | 60 | 6101 |
| BETA | 1C110201JE | 5892 | | 5893 | 2 | 5 | 5/25/06 | 8:06 | 563 | 60 | 5383 |
| BETA | 1C110201JF | 5892 | | 5893 | 2 | 6 | 5/25/06 | 8:10 | 880 | 60 | 8415 |
| BETA | 1C110201JG | 5892 | | 5893 | 2 | 7 | 5/25/06 | 8:15 | 539 | 60 | 5154 |
| BETA | 1C110201JH | 5892 | | 5893 | 2 | 8 | 5/25/06 | 8:18 | 299 | 60 | 2859 |
| BETA | 1C110201JI | 5892 | | 5893 | 2 | 9 | 5/25/06 | 8:22 | 237 | 60 | 2266 |
| BETA | 1C110201JJ | 5892 | | 5893 | 2 | 10 | 5/25/06 | 9:40 | 278 | 60 | 2658 |
| BETA | 1C110201JK | 5892 | | 5893 | 2 | 11 | 5/25/06 | 9:44 | 445 | 60 | 4255 |
| BETA | 1C110201JL | 5892 | | 5893 | 2 | 12 | 5/25/06 | 9:48 | 142 | 60 | 1358 |
| BETA | 1C110201JM | 5892 | | 5893 | 2 | 13 | 5/25/06 | 9:53 | 140 | 60 | 1339 |
| BETA | 1C110201JN | 5892 | | 5893 | 2 | 14 | 5/25/06 | 9:58 | 147 | 60 | 1406 |
| BETA | 1C110201JO | 5892 | | 5893 | 2 | 15 | 5/25/06 | 10:02 | 183 | 60 | 1750 |



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F412/686

# T-57 1C11-0201J Investigation (see MT-06-0544)

***RSDS# __MT-06-0549_ RCT: _____ RCT: __N/A_____***

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | F | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| BETA | 1C110201JP | 5892 | | 5893 | 2 | 16 | 5/25/06 | 10:06 | 154 | 60 | 1473 | |
| BETA | 1C110201JQ | 5892 | | 5893 | 2 | 17 | 5/25/06 | 10:10 | 198 | 60 | 1893 | |
| BETA | 1C110201JR | 5892 | | 5893 | 2 | 18 | 5/25/06 | 10:14 | 182 | 60 | 1740 | |
| BETA | 1C110201JS | 5892 | | 5893 | 2 | 19 | 5/25/06 | 10:17 | 143 | 60 | 1367 | |
| BETA | 1C110201JT | 5892 | | 5893 | 2 | 20 | 5/25/06 | 10:21 | 171 | 60 | 1635 | |
| BETA | 1C110201JU | 5892 | | 5893 | 2 | 21 | 5/25/06 | 10:25 | 257 | 60 | 2457 | |
| BETA | 1C110201JV | 5892 | | 5893 | 2 | 22 | 5/25/06 | 10:30 | 240 | 60 | 2295 | |
| BETA | 1C110201JW | 5892 | | 5893 | 2 | 23 | 5/25/06 | 10:34 | 224 | 60 | 2142 | |
| BETA | 1C110201JX | 5892 | | 5893 | 2 | 24 | 5/25/06 | 10:38 | 202 | 60 | 1932 | |
| BETA | 1C110201JY | 5892 | | 5893 | 2 | 25 | 5/25/06 | 10:42 | 190 | 60 | 1817 | |
| BETA | 1C110201JZ | 5892 | | 5893 | 2 | 26 | 5/25/06 | 10:45 | 266 | 60 | 2544 | |
| BETA | 1C110201J0 | 5892 | | 5893 | 2 | 27 | 5/25/06 | 10:49 | 145 | 60 | 1386 | |

**COPY**

Survey Unit Number:
1C-11-01 minimum of 10
1C-11-02 minimum of 10
(Supplemental sheet for biased measurements.)



RSDS # MT-06-0549
RCT INT/HP JB[redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C11-0201JA | T-57 | WALL 1 | | A |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |
| G | | | | |
| H | | | | |
| I | | | | |
| J | | | | |
| K | | | | |
| L | | | | |
| M | | | | |
| N | | | | |
| O | | | | |
| P | | | | |
| Q | | | | |
| R | | | | |
| S | | | | |
| T | | WALL 2 | | |
| U | | | | |
| V | | | | |
| W | | WALL 1 | | |
| X | | | | |
| Y | | | | |
| Z | | | | |
| Ø | | | | |
| N | | A | N | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventilation system.
U-designator represents measurement on a utility drop.

COPY
F474/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBLDG Rm 57 | SURVEY NO. MT-06-0557 |
| PURPOSE: Post Remediation of Spot in Rm 57 IC11 | RWP NO. N/A |
| | DATE: 6/1/06 |
| | TIME: 1010 |

## MAP / DRAWING

Reference MT-06-0414 (IC110104K)

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

COPY

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5920/5929 | 11/15/06 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones | [redacted] | Date: 6/1/06 |
| Completed by: (Print Name) WAYNE JONES | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 6-6-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

E475/686

Survey No. MT-06-0557



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | IC110104PR |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | | |

COMMENTS: N/A

COPY

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-476/686

ML-9620 (4-98)

MT-06-0557 PS 3087

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_145
Batch Ended: 6/1/06 10:19
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0557 [1] W. JONES 6-1-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A2 | A2-01 | 0.00 | 2.03 | | 1.52 | 2.02 | |

WJ WJ

COPY

E-477/686



WJ 6/1/06

RLH

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060601_1116.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0557.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/1/06 | 11:16:58 AM | -1 | 10.00 | 8 | 8 | 12 | 2 | 613.55 | 0 | 22.5 | B | 2 |
| 6/1/06 | 11:27:48 AM | 0 | 2.00 | 46 | 43 | 0 | 1 | 537.62 | 89 | 23.0 | | 2 |
| 6/1/06 | 11:30:32 AM | 1 | 2.00 | 15 | 12 | 0 | 0 | 618.78 | 27 | 47.1 | | 2 |

WOJ

COPY

FH79/686

Pg 5 of 7

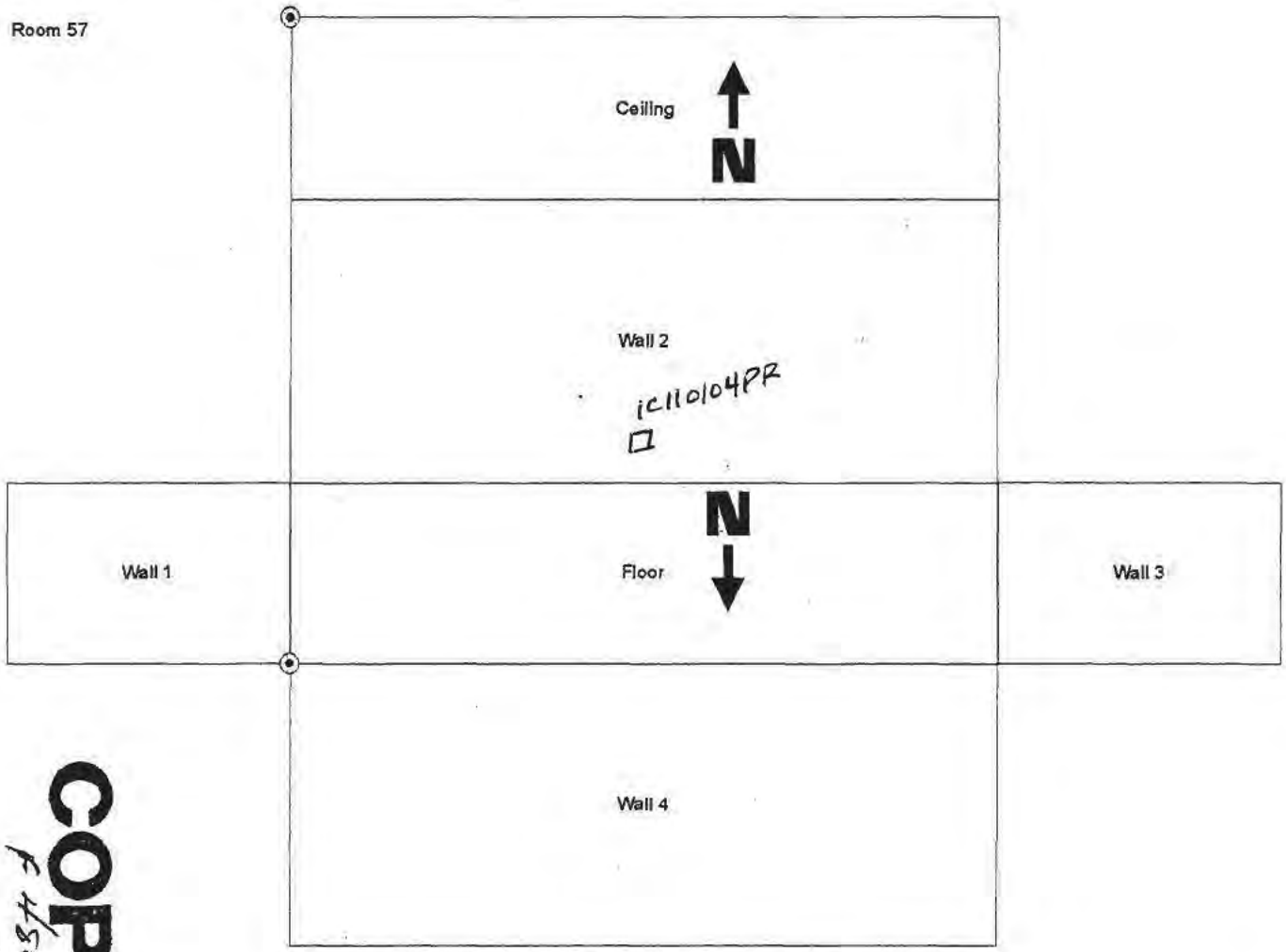
**1C-11** **Room 57**

**Class 1** ~~100% of floor and lower walls up to 2 meters~~ 6/6/06

~~25% scan of walls above 2 meters~~ 6/6/06

~~Scan an area of approximately 1 m2 around each static measurement on the ceiling~~ 6/6/06

Room 57




MT-06-0557

pg 687

989/0377

COPY

# T-Building Post Remediation Survey in Rm 57 1C11(1C110104K)

*RSDS# _MT-06-0557_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.16 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C110104PR | 5920 | | 5929 | 1 | 1 | 6/1/06 | 9:45 | 8 | 120 | 30 | |
| BETA | 1C110104PR | 5920 | | 5929 | 2 | 1 | 6/1/06 | 9:46 | 102 | 60 | 1012 | |

N N



F481/686

COPY

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-57 1C11 | SURVEY NO. MT-06-0588 |
| PURPOSE: DOSE RATE SURVEY | RWP NO. N/A |
| | DATE: 6-16-06 |
| | TIME: 0900 |

## MAP/DRAWING

REFERENCE RSDS MT-06-0524 AND MT-06-0115 FOR RELEVANT MAPS.

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| MICRO REM | 1491 | 4-25-07 |
| | | |
| | N/A | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 6-16-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HPs N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | | Date: 6-19-06 |
| Reviewed/Approved by: (Print Name) Ronald R Daily | K 482/1686 | |

ML-9620 (2-98)

Survey No.
MT-06-0588



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A. F-483/686

ML-9620 (4-98)

57

**1C-11**

Using the Bicron Analyst Micro R meter collect background reading
collect measurement on contact with each location identified on RSDS
multiply contact measurement by 16 and record as 1 cm measurement value
collect measurement at 30 cm at each location identified on RSDS
Collect measurement at 1 meter (3.3 feet approximately waist high) at each location identified on RSDS

| Label | Room | Surface | RSDS# | Background MicroR/hr | Measured MicroR/hr @ on floor | Measured MicroR/hr @ 1cm (floor value X 16) | Measured MicroR/hr @ 30 cm | Measured MicroR/hr @ 1 m |
|---|---|---|---|---|---|---|---|---|
| 1C110111E | 57 | floor | 06-0526 | 5 | 5 | 80 | 5 | 5 |
| 1C110112E | 57 | floor | 06-0526 | 5 | 5 | 80 | 5 | 5 |
| 1C110106S | 57 | floor | 06-0115 | 5 | 5 | 80 | 5 | 5 |
| ~~1C110111S~~ | ~~57~~ | ~~floor~~ | ~~06-0115~~ | ~~5~~ | ~~5~~ | ~~80~~ | ~~5~~ | ~~5~~ |
| ~~1C110112S~~ | ~~57~~ | ~~floor~~ | ~~06-0115~~ | ~~5~~ | ~~5~~ | ~~80~~ | ~~5~~ | ~~5~~ |
| 1C110113~~S~~ E | 57 | ~~floor~~ | 06-0115 | 5 | 5 | 80 | 5 | 5 |

NR 6-16-06

← Floor

COPY

PAGE 3 of 3
MT-06-0588

1484/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG rm 57 | SURVEY NO. MT-06-0593 |
| PURPOSE: Post Remediation follow up 1C11 | RWP NO. N/A |
| | DATE: 6-20-06 |
| | TIME: 1100 |

## MAP / DRAWING

SEE ATTACHED

SCANNED AROUND areas > 1 m²
α/β⁻ (INSIDE OF REMEDIATION AREA)
NO ELEVATED α/β⁻ DETECTED

Reference RSDS MT-06-0412 for
Pre-remediation for 0106PR, 0109PR

Refer RSDS MT-06-0111 for
Pre-remediation for 0101 PR, 0102 PR
0119 PR, 0120 PR, 0123 PR, 0125PR

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5920/5929 | 11/15/06 |
| | | |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) | [redacted] | Date: 6-20-06 |
| Completed by: (Print Name) | | |
| Counted by: (Signature) SEE ATTACHED | HP# | Date: |
| Counted by: (Print Name) SHEETS | | |
| Reviewed/Approved by: (Signature) | [redacted] | Date: 6-21-06 |
| Reviewed/Approved by: (Print Name) | | E 485/686 |

AO

Survey No. MT 06-0593



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | ATTACHED | | 0106 PR |
| 2 | | | | 0109 PR |
| 3 | | | | 0101 PR |
| 4 | | | | 0102 PR |
| 5 | | | | 0119 PR |
| 6 | | | | 0120 PR |
| 7 | | | | 0123 PR |
| 8 | SEE | ATTACHED | | 0125 PR |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

COMMENTS: N/A

COPY

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F 486/686

ML-9620 (4-98)

Pg 388

MT-06-0593

COPY

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_172
Batch Ended: 6/20/06 10:48
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0593 [8] RICHARDSON 6-20-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.32 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.13 | | 1.78 | 2.09 | |
| B1 | 5 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 1.91 | 2.20 | | 0.05 | 1.88 | |
| B4 | 8 | 1.68 | 1.95 | | 0.00 | 1.20 | |

wg wg

 wg 6/21/06

4487/686

RLH

wg 6/21/06

COPY

MT-06-0593 pg 408

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060620_1131.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0593.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

686/887-5

RW

wg 6/21/0

COPY

MT-06-0593 pg 58 of

## MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/20/06 | 11:32:30 AM | -1 | 10.00 | 8 | 7 | 12 | 5 | 605.75 | 0 | 22.5 | B | 1 |
| 6/20/06 | 11:43:21 AM | 0 | 2.00 | 245 | 233 | 0 | 0 | 530.39 | 481 | 9.2 | | 1 |
| 6/20/06 | 11:46:03 AM | 1 | 2.00 | 2 | 2 | 0 | 0 | 632.69 | 3 | 290.2 | | 1 |
| 6/20/06 | 11:48:46 AM | 2 | 2.00 | 0 | 0 | 0 | 0 | 640.91 | 0 | 0.0 | | 1 |
| 6/20/06 | 11:51:29 AM | 3 | 2.00 | 0 | 0 | 0 | 8 | 634.07 | 0 | 0.0 | | 1 |
| 6/20/06 | 11:54:11 AM | 4 | 2.00 | 1 | 1 | 0 | 0 | 627.39 | 1 | 721.9 | | 1 |
| 6/20/06 | 11:56:55 AM | 5 | 2.00 | 0 | 0 | 0 | 6 | 630.40 | 0 | 0.0 | | 1 |
| 6/20/06 | 11:59:39 AM | 6 | 2.00 | 0 | 0 | 0 | 0 | 625.78 | 0 | 0.0 | | 1 |
| 6/20/06 | 12:02:21 PM | 7 | 2.00 | 0 | 0 | 1 | 0 | 648.81 | 0 | 0.0 | | 1 |
| 6/20/06 | 12:05:04 PM | 8 | 2.00 | 0 | 0 | 0 | 0 | 620.04 | 0 | 0.0 | | 1 |

wg

5 of 8 686

# T-Building follow up post remediation 1C11

*RSDS#* MT-06-0593 *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.16 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110106PR | 5920 | [redacted] | 5929 | 1 | 1 | 6/20/06 | 8:13 | 5 | 120 | 19 |
| ALPHA | 1C110109PR | 5920 | [redacted] | 5929 | 1 | 2 | 6/20/06 | 8:17 | 10 | 120 | 38 |
| ALPHA | 1C110101PR | 5920 | [redacted] | 5929 | 1 | 3 | 6/20/06 | 8:29 | 5 | 120 | 19 |
| ALPHA | 1C110102PR | 5920 | [redacted] | 5929 | 1 | 4 | 6/20/06 | 8:33 | 11 | 120 | 42 |
| ALPHA | 1C110119PR | 5920 | [redacted] | 5929 | 1 | 5 | 6/20/06 | 9:12 | 5 | 120 | 19 |
| ALPHA | 1C110120PR | 5920 | [redacted] | 5929 | 1 | 6 | 6/20/06 | 9:18 | 5 | 120 | 19 |
| ALPHA | 1C110123PR | 5920 | [redacted] | 5929 | 1 | 7 | 6/20/06 | 9:26 | 5 | 120 | 19 |
| ALPHA | 1C110125PR | 5920 | [redacted] | 5929 | 1 | 8 | 6/20/06 | 9:32 | 4 | 120 | 15 ✓ |
| BETA | 1C110106PR | 5920 | [redacted] | 5929 | 2 | 1 | 6/20/06 | 8:14 | 121 | 60 | 1200 |
| BETA | 1C110109PR | 5920 | [redacted] | 5929 | 2 | 2 | 6/20/06 | 8:18 | 150 | 60 | 1488 |
| BETA | 1C110101PR | 5920 | [redacted] | 5929 | 2 | 3 | 6/20/06 | 8:30 | 270 | 60 | 2679 |
| BETA | 1C110102PR | 5920 | [redacted] | 5929 | 2 | 4 | 6/20/06 | 8:34 | 386 | 60 | 3829 |
| BETA | 1C110119PR | 5920 | [redacted] | 5929 | 2 | 5 | 6/20/06 | 9:13 | 92 | 60 | 913 |
| BETA | 1C110120PR | 5920 | [redacted] | 5929 | 2 | 6 | 6/20/06 | 9:19 | 110 | 60 | 1091 |
| BETA | 1C110123PR | 5920 | [redacted] | 5929 | 2 | 7 | 6/20/06 | 9:27 | 172 | 60 | 1706 |
| BETA | 1C110125PR | 5920 | [redacted] | 5929 | 2 | 8 | 6/20/06 | 9:33 | 183 | 60 | 1815 |

M
A



COPY

F 490/686

Survey Unit Number



(Supplemental sheet for biased measurements)

RSDS # MT-06-0593
RCT INT/HP SR [redacted]

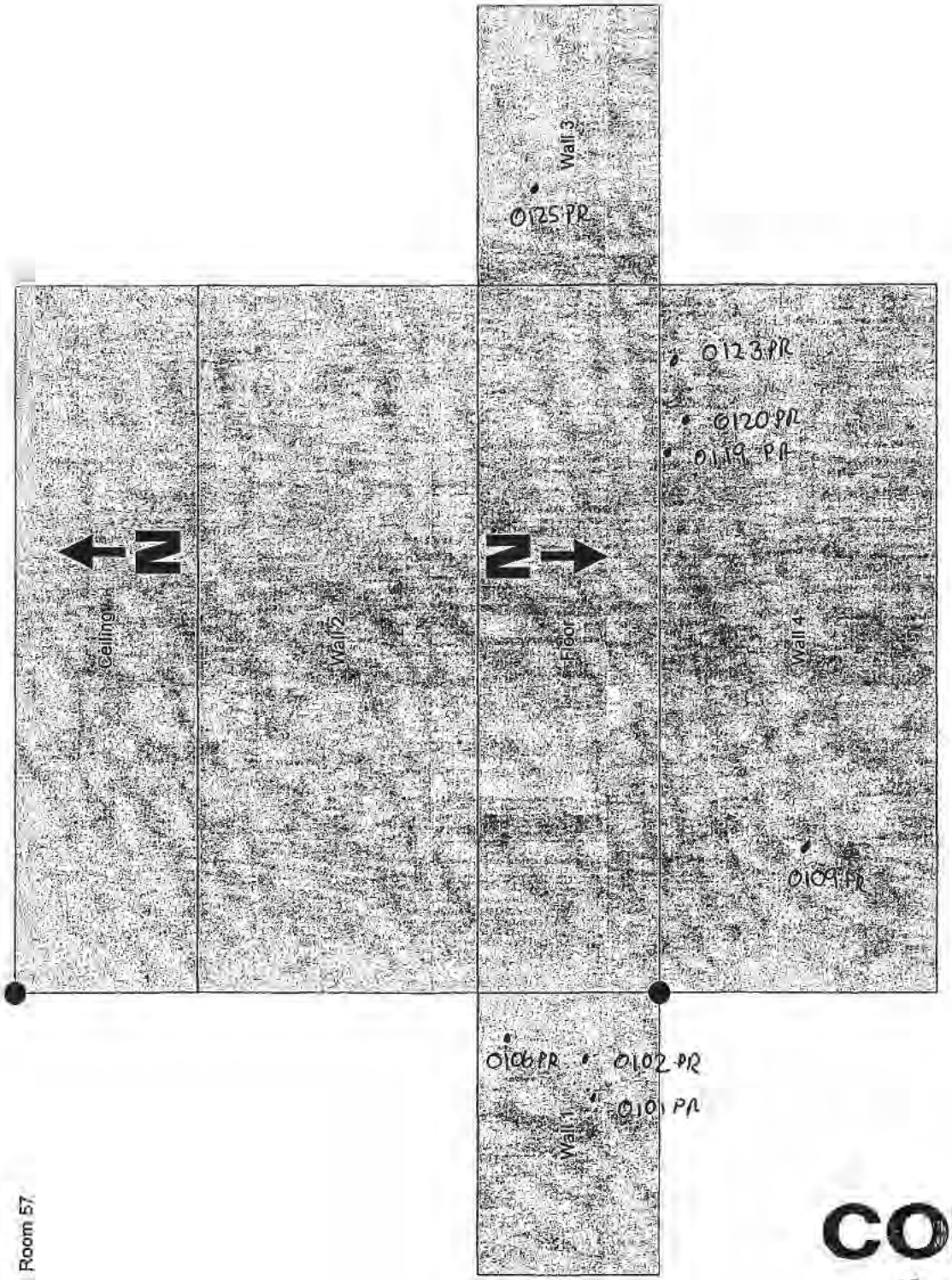
| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 0106 P.R | 57 | CONCRETE | SEE MAPS | |
| 0109 P.R | | | | |
| 0101 PR | | | | |
| 0102 PR | | | | |
| 0119 PR | | | | |
| 0120 PR | | | | |
| 0123 PR | | | | |
| 0125 PR | 57 | CONCRETE | SEE MAPS | |
| | | N/A | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

F-491/686

Pg 8 of 8
MT-06-0593




1C-11

Room 57

COPY

F 492/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBLDG Rm 57 | SURVEY NO. MT-06-0594 |
| PURPOSE: Post Remediation Survey IC11 | RWP NO. N/A |
| | DATE: 6/20/06 |
| | TIME: 1200 |

## MAP / DRAWING

Reference MT-06-0111 for original location

IC110106I, IC110108I, IC110110I, IC110109I

IC110111I, IC110126I, IC110127I, IC110128I, IC110129I, IC110131I

all areas scanned for α/β
6/21/06 WJ
~~Not~~ NO ELEVATED α/β Detected during scan

See attached map

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · — = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5889/5890 | 1/17/07 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones Scott Hollab | | Date: 6/20/06 |
| Completed by: (Print Name) WAYNE JONES / SCOTT HOLLABAUGH | | |
| Counted by: (Signature) See attached | HP# | Date: |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | | Date: 6-21-06 |
| Reviewed/Approved by: (Print Name) Ernest R Daily | F-493/686 | |

RD

Survey No. MT-06-0594



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C110106PR |
| 2 | | | | 1C110108PR |
| 3 | | | | 1C110109PR |
| 4 | | | | 1C110110PR |
| 5 | | | | 1C110111PR |
| 6 | | | | 1C110126PR |
| 7 | | | | 1C110127PR |
| 8 | | | | 1C110128PR |
| 9 | | | | 1C110129PR |
| 10 | | | | 1C110131PR |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | | |

COPY

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-494/686

ML-9620 (4-98)

MT-06-0594 pg 3087

COPY

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_171
Batch Ended: 6/20/06 10:44
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0594 [10] W. JONES 6-20-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.68 | 2.26 | |
| A2 | 2 | 1.79 | 2.02 | | 0.20 | 1.65 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 1.68 | 1.95 | | 0.00 | 1.20 | |
| D1 | 9 | 0.00 | 2.06 | | 0.28 | 1.77 | |
| D2 | 10 | 0.00 | 2.17 | | 0.32 | 1.69 | |

WJ WJ

WJ 6/21/06



F 485/686

RLH

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060620_1207.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0594.001
Assay File Name: C:\Packard\TriCarb\Assays\~~MARSSIM_Smear~~_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MT-06-0594 Pg 4 of 7

WJ 6/21/06

RLH

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/20/06 | 12:08:05 PM | -1 | 10.00 | 8 | 8 | 11 | 5 | 616.85 | 0 | 22.1 | B | 2 |
| 6/20/06 | 12:18:54 PM | 0 | 2.00 | 151 | 143 | 0 | 1 | 549.12 | 291 | 11.9 | | 2 |
| 6/20/06 | 12:21:38 PM | 1 | 2.00 | 0 | 0 | 0 | 7 | 534.87 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:24:20 PM | 2 | 2.00 | 0 | 0 | 0 | 0 | 619.95 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:27:04 PM | 3 | 2.00 | 1 | 1 | 0 | 0 | 630.36 | 2 | 544.6 | | 2 |
| 6/20/06 | 12:29:46 PM | 4 | 2.00 | 0 | 0 | 0 | 8 | 640.51 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:32:31 PM | 5 | 2.00 | 0 | 0 | 0 | 6 | 581.23 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:35:14 PM | 6 | 2.00 | 0 | 0 | 0 | 0 | 639.93 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:37:58 PM | 7 | 2.00 | 1 | 2 | 0 | 0 | 639.09 | 2 | 350.4 | | 2 |
| 6/20/06 | 12:40:40 PM | 8 | 2.00 | 0 | 0 | 0 | 0 | 633.25 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:43:23 PM | 9 | 2.00 | 0 | 0 | 0 | 0 | 604.47 | 0 | 0.0 | | 2 |
| 6/20/06 | 12:46:06 PM | 10 | 2.00 | 0 | 0 | 0 | 0 | 618.73 | 0 | 0.0 | | 2 |

wg

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MT-06-0594 Pg 5 of 7

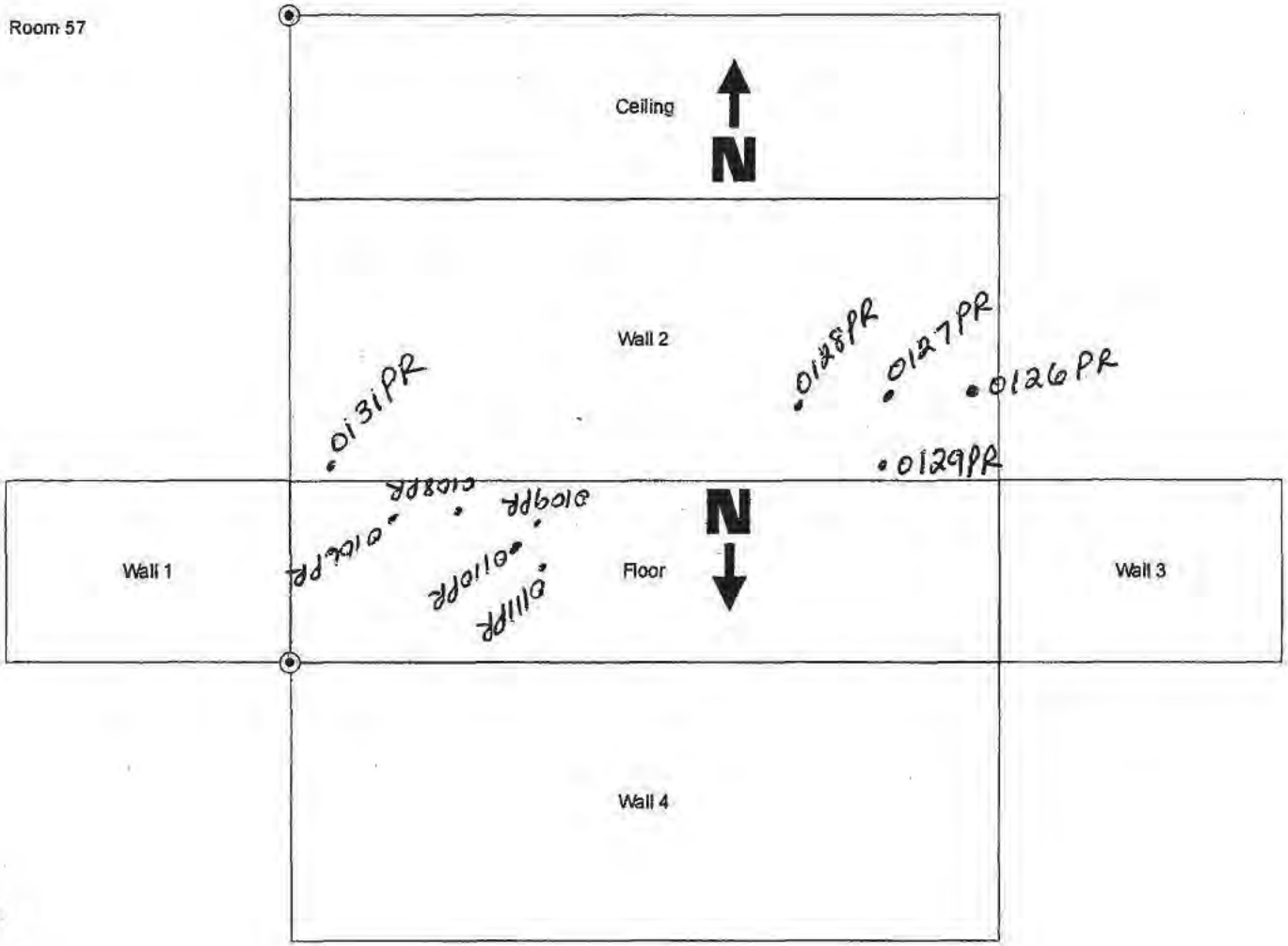
F449/686

1C-11 Room 57 Post Remediation Survey

Class 1 ~~100% of floor and lower walls up to 2 meters~~

~~25% scan of walls above 2 meters~~ WJ 6/20/06

~~Scan an area of approximately 1 m2 around each static measurement on the ceiling~~




COPY

MT-06-0594 Pg 6 of 7

F 498/686

# T-Building Post Remediation Survey Rm 57 1C11

*RSDS# _MT-06-0594_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.212 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.169 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C110106PR | 5889 | | 5890 | 1 | 1 | 6/20/06 | 9:02 | 4 | 120 | 15 |
| ALPHA | 1C110108PR | 5889 | | 5890 | 1 | 2 | 6/20/06 | 9:11 | 5 | 120 | 19 |
| ALPHA | 1C110109PR | 5889 | | 5890 | 1 | 3 | 6/20/06 | 9:20 | 5 | 120 | 19 |
| ALPHA | 1C110110PR | 5889 | | 5890 | 1 | 4 | 6/20/06 | 9:23 | 7 | 120 | 26 |
| ALPHA | 1C110111PR | 5889 | | 5890 | 1 | 5 | 6/20/06 | 9:27 | 10 | 120 | 37 |
| ALPHA | 1C110126PR | 5889 | | 5890 | 1 | 6 | 6/20/06 | 9:40 | 9 | 120 | 34 |
| ALPHA | 1C110127PR | 5889 | | 5890 | 1 | 7 | 6/20/06 | 9:44 | 5 | 120 | 19 |
| ALPHA | 1C110128PR | 5889 | | 5890 | 1 | 8 | 6/20/06 | 9:48 | 2 | 120 | 7 |
| ALPHA | 1C110129PR | 5889 | | 5890 | 1 | 9 | 6/20/06 | 9:52 | 6 | 120 | 22 |
| ALPHA | 1C110131PR | 5889 | | 5890 | 1 | 10 | 6/20/06 | 9:56 | 2 | 120 | 7 |
| BETA | 1C110106PR | 5889 | | 5890 | 2 | 1 | 6/20/06 | 9:03 | 151 | 60 | 1418 |
| BETA | 1C110108PR | 5889 | | 5890 | 2 | 2 | 6/20/06 | 9:12 | 157 | 60 | 1475 |
| BETA | 1C110109PR | 5889 | | 5890 | 2 | 3 | 6/20/06 | 9:21 | 132 | 60 | 1240 |
| BETA | 1C110110PR | 5889 | | 5890 | 2 | 4 | 6/20/06 | 9:25 | 124 | 60 | 1165 |
| BETA | 1C110111PR | 5889 | | 5890 | 2 | 5 | 6/20/06 | 9:28 | 114 | 60 | 1071 |
| BETA | 1C110126PR | 5889 | | 5890 | 2 | 6 | 6/20/06 | 9:41 | 155 | 60 | 1456 |
| BETA | 1C110127PR | 5889 | | 5890 | 2 | 7 | 6/20/06 | 9:45 | 156 | 60 | 1465 |
| BETA | 1C110128PR | 5889 | | 5890 | 2 | 8 | 6/20/06 | 9:49 | 136 | 60 | 1277 |
| BETA | 1C110129PR | 5889 | | 5890 | 2 | 9 | 6/20/06 | 9:53 | 128 | 60 | 1202 |
| BETA | 1C110131PR | 5889 | | 5890 | 2 | 10 | 6/20/06 | 9:57 | 119 | 60 | 1118 |

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F499/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg 1C12 Rm 58 | SURVEY NO. MT-05-617 |
| PURPOSE: Vents Drains and Utilities. 1C12 | RWP NO. N/A |
| | DATE: 8/8/05 |
| | TIME: 0025 |

## MAP/DRAWING

Survey of vents, Drains, and Utilities in 1C12 Rm 58. resulted in no elevated Readings.

Drains were done after the flood of the 1st floor

DISCREPANCIES ~~DESCRAPENCES~~ 6/12/05

VOID To MANY

See new RSDS

MT-06-0519

VOID

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LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+n+γ) extremity on contact
⚠# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5855/5864 | 6/9/06 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) MDRowe | [redacted] | Date: 8/8/05 |
| Completed by: (Print Name) MDRowe / J Kenyra | | 4/11/05 |
| Counted by: (Signature) See | HP# N/A | Date: |
| Counted by: (Print Name) attach | | |
| Reviewed/Approved by: (Signature) | [redacted] | Date: 8-10-05 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-0620 (2-98)

F500/686

Survey No. MT-05-617



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| | Swipes (dpm/100cm²) | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | see attached sheet | | | K12-02-01U |
| 2 | ↓ | ↓ | ↓ | K12-02-02U |
| 3 | | | | K12-02-03U |
| 4 | | | | K12-02-04U |
| 5 | | | | K12-02-05U |
| 6 | | | | K12-02-06U |
| 7 | | | | K12-02-07U |
| 8 | | | | K12-02-08U |
| 9 | | | | K12-02-09U |
| 10 | | | | K12-02-10U |
| 11 | | | | K12-02-11U |
| 12 | | | | K12-02-12U |
| 13 | | | | K12-02-01V |
| 14 | | | | K12-[illegible]-01D |
| 15 | ↓ | ↓ | ↓ | K12-07-02D |

VOID

N/A

| Removable Contamination | | | | |
|---|---|---|---|---|
| | Swipes (dpm/100cm²) | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F501/686

ML-9620A (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20050809_1418.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-0617.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY 5502/686

8/9/05 3:12:47 PM QuantaSmart (TM) 1.31 - Serial# 423022 Page # ~~2~~ JK 080905

Protocol# 1 - MARSSIM_Smear_1.lsa User: 5801

MARSSIM Smear Data

MT-05-617

B
C

RSDS #

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/9/05 | 2:19:00 PM | -1 | 10.00 | 8 | 8 | 12 | 2 | 621.30 | 0 | 21.8 | B | 1 |
| 8/9/05 | 2:29:48 PM | 0 | 2.00 | 594 | 552 | 0 | 0 | 554.45 | 1142 | 5.9 | | 1 |
| 8/9/05 | 2:32:30 PM | 1 | 2.00 | 36 | 32 | 0 | 0 | 565.84 | 68 | 26.8 | | 1 |
| 8/9/05 | 2:35:13 PM | 2 | 2.00 | 89 | 81 | 0 | 1 | 493.76 | 180 | 15.8 | | 1 |
| 8/9/05 | 2:37:56 PM | 3 | 2.00 | 29 | 26 | 0 | 3 | 577.73 | 55 | 30.4 | | 1 |
| 8/9/05 | 2:40:38 PM | 4 | 2.00 | 91 | 84 | 0 | 1 | 546.17 | 176 | 15.6 | | 1 |
| 8/9/05 | 2:43:20 PM | 5 | 2.00 | 139 | 129 | 2 | 1 | 567.87 | 265 | 12.4 | | 1 |
| 8/9/05 | 2:46:02 PM | 6 | 2.00 | 107 | 99 | 0 | 0 | 562.05 | 204 | 14.3 | | 1 |
| 8/9/05 | 2:48:44 PM | 7 | 2.00 | 62 | 57 | 0 | 1 | 601.18 | 114 | 19.4 | | 1 |
| 8/9/05 | 2:51:27 PM | 8 | 2.00 | 70 | 65 | 0 | 1 | 555.47 | 135 | 18.1 | | 1 |
| 8/9/05 | 2:54:09 PM | 9 | 2.00 | 9 | 8 | 0 | 3 | 586.92 | 17 | 69.3 | | 1 |
| 8/9/05 | 2:56:51 PM | 10 | 2.00 | 27 | 24 | 0 | 3 | 583.45 | 50 | 32.2 | | 1 |
| 8/9/05 | 2:59:33 PM | 11 | 2.00 | 20 | 19 | 0 | 0 | 590.23 | 38 | 38.6 | | 1 |
| 8/9/05 | 3:02:15 PM | 12 | 2.00 | 7 | 7 | 0 | 3 | 413.61 | 16 | 80.5 | | 1 |
| 8/9/05 | 3:04:56 PM | 13 | 2.00 | 5 | 5 | 0 | 4 | 551.62 | 10 | 107.0 | | 1 |
| 8/9/05 | 3:07:40 PM | 14 | 2.00 | 3 | 3 | 0 | 0 | 273.09 | 10 | 164.7 | | 1 |
| 8/9/05 | 3:10:23 PM | 15 | 2.00 | 0 | 0 | 0 | 7 | 349.14 | 0 | 0.0 | | 1 |

JK

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F 503/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_042
Batch Ended: 8/9/05 8:02
Cal. Due Date: 11/17/05
Serial Number: 26966-3

Batch ID: MT-05-0617 ROWE (15) 08/09/05 TAS ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| A2 | 2 | 0.00 | 2.02 | | 0.42 | 1.65 | |
| A3 | 3 | 0.00 | 2.30 | | 1.98 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.22 | |
| B1 | 5 | 0.00 | 1.96 | | 4.10 | 2.67 | |
| B2 | 6 | 0.00 | 1.87 | | 0.00 | 1.59 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 | 8 | 0.00 | 2.09 | | 6.13 | 3.18 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.92 | | 0.47 | 1.59 | |
| C3 | 11 | 0.00 | 2.07 | | 0.27 | 1.72 | |
| C4 | 12 | 0.00 | 2.00 | | 3.99 | 2.52 | |
| D1 | 13 | 0.00 | 2.07 | | 1.54 | 2.16 | |
| D2 | 14 | 1.74 | 2.15 | | 0.00 | 1.19 | |
| D3 ✓ | 15 | 0.00 | 2.10 | | 0.18 | 1.75 | |
| | | σ/k | | | σ/k | | |

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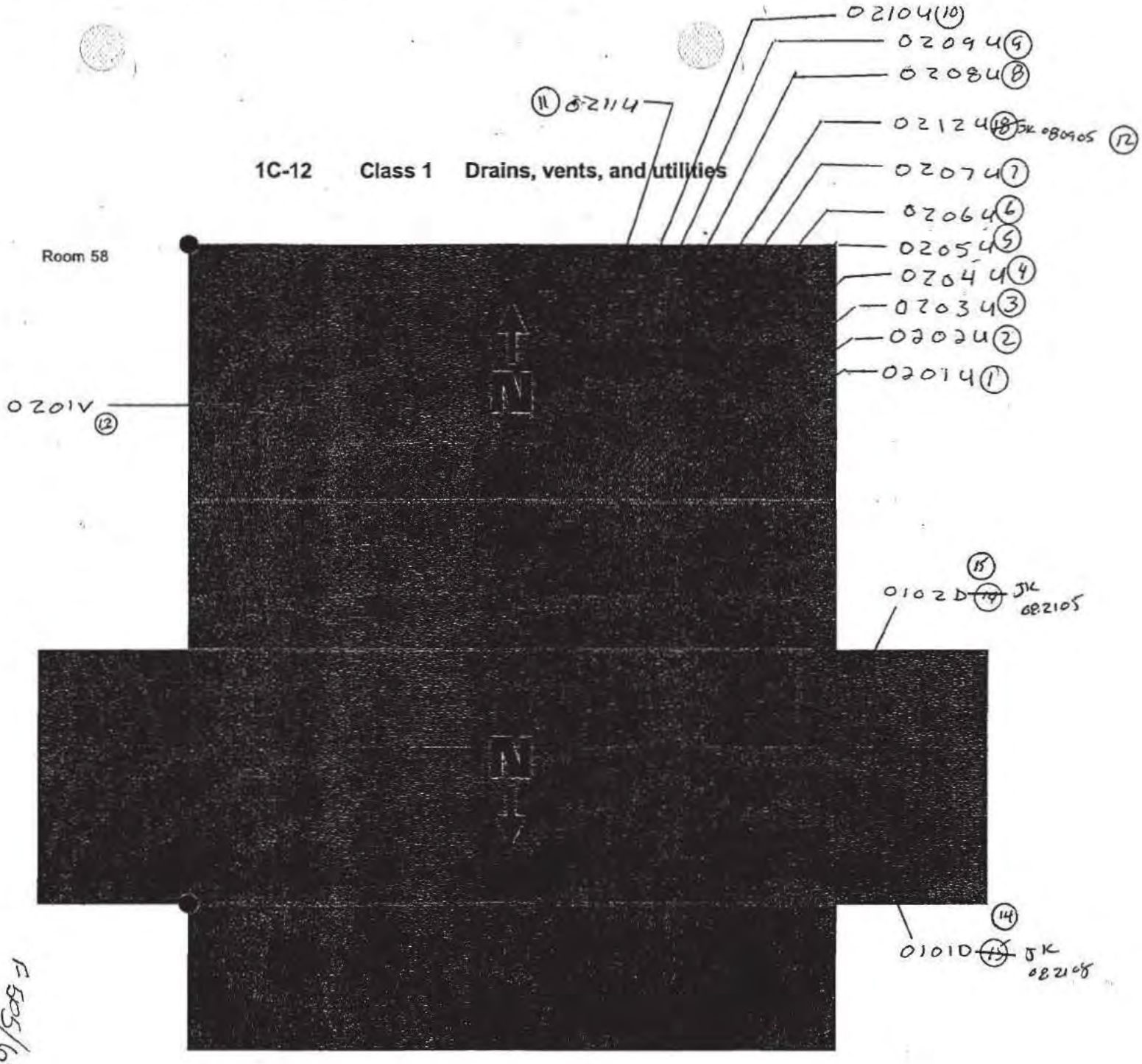
F 504/686

MT-05-617

1C-12 Class 1 Drains, vents, and utilities




COPY

F 505/686

Med 6-24-06

# T-Bldg Rm 58,1C,S12, Drains, Vents, and Utilities

***RSDS#*** MT-05-617 ***RCT:*** [redacted] ***RCT:*** [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.1988 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C120201U | 5855 | [redacted] | 5864 | 1 | 1 | 8/7/05 | 21:50 | 7 | 120 | 28 |
| ALPHA | 1C120202U | 5855 | [redacted] | 5864 | 1 | 2 | 8/7/05 | 21:54 | 3 | 120 | 12 |
| ALPHA | 1C120203U | 5855 | [redacted] | 5864 | 1 | 3 | 8/7/05 | 21:58 | 3 | 120 | 12 |
| ALPHA | 1C120204U | 5855 | [redacted] | 5864 | 1 | 4 | 8/7/05 | 22:01 | 4 | 120 | 16 |
| ALPHA | 1C120205U | 5855 | [redacted] | 5864 | 1 | 5 | 8/7/05 | 22:05 | 2 | 120 | 8 |
| ALPHA | 1C120206U | 5855 | [redacted] | 5864 | 1 | 6 | 8/7/05 | 22:09 | 5 | 120 | 20 |
| ALPHA | 1C120207U | 5855 | [redacted] | 5864 | 1 | 7 | 8/7/05 | 22:22 | 4 | 120 | 16 |
| ALPHA | 1C120208U | 5855 | [redacted] | 5864 | 1 | 8 | 8/7/05 | 22:26 | 2 | 120 | 8 |
| ALPHA | 1C120209U | 5855 | [redacted] | 5864 | 1 | 9 | 8/7/05 | 22:30 | 3 | 120 | 12 |
| ALPHA | 1C120210U | 5855 | [redacted] | 5864 | 1 | 10 | 8/7/05 | 22:34 | 3 | 120 | 12 |
| ALPHA | 1C120211U | 5855 | [redacted] | 5864 | 1 | 11 | 8/7/05 | 22:37 | 1 | 120 | 4 |
| ALPHA | 1C120212U | 5855 | [redacted] | 5864 | 1 | 12 | 8/7/05 | 23:41 | 0 | 120 | 0 |
| ALPHA | 1C120201V | 5855 | [redacted] | 5864 | 1 | 13 | 8/7/05 | 23:50 | 2 | 120 | 8 |
| ALPHA | 1C120101D | 5855 | [redacted] | 5864 | 1 | 14 | 8/7/05 | 23:55 | 4 | 120 | 16 |
| ALPHA | 1C120102D | 5855 | [redacted] | 5864 | 1 | 15 | 8/7/05 | 23:59 | 10 | 120 | 40 |
| BETA | 1C120201U | 5855 | [redacted] | 5864 | 2 | 1 | 8/7/05 | 21:52 | 77 | 60 | 741 |
| BETA | 1C120202U | 5855 | [redacted] | 5864 | 2 | 2 | 8/7/05 | 21:55 | 74 | 60 | 712 |
| BETA | 1C120203U | 5855 | [redacted] | 5864 | 2 | 3 | 8/7/05 | 21:59 | 102 | 60 | 981 |
| BETA | 1C120204U | 5855 | [redacted] | 5864 | 2 | 4 | 8/7/05 | 22:03 | 78 | 60 | 750 |
| BETA | 1C120205U | 5855 | [redacted] | 5864 | 2 | 5 | 8/7/05 | 22:07 | 71 | 60 | 683 |
| BETA | 1C120206U | 5855 | [redacted] | 5864 | 2 | 6 | 8/7/05 | 22:10 | 81 | 60 | 779 |
| BETA | 1C120207U | 5855 | [redacted] | 5864 | 2 | 7 | 8/7/05 | 22:23 | 67 | 60 | 645 |
| BETA | 1C120208U | 5855 | [redacted] | 5864 | 2 | 8 | 8/7/05 | 22:27 | 86 | 60 | 827 |
| BETA | 1C120209U | 5855 | [redacted] | 5864 | 2 | 9 | 8/7/05 | 22:31 | 93 | 60 | 895 |
| BETA | 1C120210U | 5855 | [redacted] | 5864 | 2 | 10 | 8/7/05 | 22:35 | 89 | 60 | 856 |
| BETA | 1C120211U | 5855 | [redacted] | 5864 | 2 | 11 | 8/7/05 | 22:38 | 108 | 60 | 1039 |
| BETA | 1C120212U | 5855 | [redacted] | 5864 | 2 | 12 | 8/7/05 | 23:42 | 80 | 60 | 770 |
| BETA | 1C120201V | 5855 | [redacted] | 5864 | 2 | 13 | 8/7/05 | 23:51 | 73 | 60 | 702 |
| BETA | 1C120101D | 5855 | [redacted] | 5864 | 2 | 14 | 8/7/05 | 23:56 | 100 | 60 | 962 |
| BETA | 1C120102D | 5855 | [redacted] | 5864 | 2 | 15 | 8/8/05 | 0:00 | 120 | 60 | 1154 ✓ |

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F506/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-58 1C12 | SURVEY NO. MT-05-1195 |
| PURPOSE: PRE JOB SURVEY OF DRILL LOCATIONS FOR RESRAD SAMPLING | RWP NO. N/A |
| | DATE: 11-15-05 |
| | TIME: 1300 |

## MAP/DRAWING

FOR STATIC COUNT LOCATIONS AND RESULTS, SEE ATTACHED.

FOR ANALYTICAL RESULTS (α, γ SPEC) SEE PAGES 5, 6, AND 7

NO REMOVABLE CONTAMINATION FOUND AFTER DRILLING! FOR RESULTS REFERENCE MT-05-1203

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+n+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 2-22-06 |
| | | |
| | N | |
| | A | |
| | All | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 11-15-05 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 12-16-05 |
| Reviewed/Approved by: (Print Name) J. HOLLABAUGH | | |

F507/686

ML-0620 (2-98)

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Survey No. MT-05-1195

MC 12-20-05



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | N/A | |

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

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# T-Bldg. Rm. 58 survey for sampling locations

*RSDS#* ___*MT-05-1195*_____ *RCT:* ___[redacted]_____ *RCT:* ___*N/A*_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.175 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C120101Y | 5904 | [redacted] | 5905 | 1 | 1 | 11/15/05 | 13:00 | 13 | 120 | 49 | |
| ALPHA | 1C120102Y | 5904 | [redacted] | 5905 | 1 | 2 | 11/15/05 | 13:05 | 8 | 120 | 30 | |
| ALPHA | 1C120103Y | 5904 | [redacted] | 5905 | 1 | 3 | 11/15/05 | 13:10 | 14 | 120 | 53 | |
| ALPHA | 1C120104Y | 5904 | [redacted] | 5905 | 1 | 4 | 11/15/05 | 13:14 | 13 | 120 | 49 | |
| ALPHA | 1C120105Y | 5904 | [redacted] | 5905 | 1 | 5 | 11/15/05 | 13:21 | 19 | 120 | 72 | |
| ALPHA | 1C120106Y | 5904 | [redacted] | 5905 | 1 | 6 | 11/15/05 | 13:26 | 26 | 120 | 98 | |
| ALPHA | 1C120107Y | 5904 | [redacted] | 5905 | 1 | 7 | 11/15/05 | 13:32 | 32 | 120 | 121 | |
| ALPHA | 1C120108Y | 5904 | [redacted] | 5905 | 1 | 8 | 11/15/05 | 13:38 | 39 | 120 | 147 | |
| ALPHA | 1C120109Y | 5904 | [redacted] | 5905 | 1 | 9 | 11/15/05 | 13:46 | 38 | 120 | 144 | |
| ALPHA | 1C120110Y | 5904 | [redacted] | 5905 | 1 | 10 | 11/15/05 | 13:52 | 40 | 120 | 151 | |
| ALPHA | 1C120111Y | 5904 | [redacted] | 5905 | 1 | 11 | 11/15/05 | 14:39 | 26 | 120 | 98 | |
| ALPHA | 1C120112Y | 5904 | [redacted] | 5905 | 1 | 12 | 11/15/05 | 14:45 | 36 | 120 | 136 | |
| ALPHA | 1C120113Y | 5904 | [redacted] | 5905 | 1 | 13 | 11/15/05 | 14:51 | 59 | 120 | 223 | |
| ALPHA | 1C120114Y | 5904 | [redacted] | 5905 | 1 | 14 | 11/15/05 | 14:57 | 48 | 120 | 181 | |
| ALPHA | 1C120115Y | 5904 | [redacted] | 5905 | 1 | 15 | 11/15/05 | 15:02 | 46 | 120 | 174 | |
| ALPHA | 1C120116Y | 5904 | [redacted] | 5905 | 1 | 16 | 11/15/05 | 15:07 | 68 | 120 | 257 | |
| ALPHA | 1C120117Y | 5904 | [redacted] | 5905 | 1 | 17 | 11/15/05 | 15:14 | 27 | 120 | 102 | |
| ALPHA | 1C120118Y | 5904 | [redacted] | 5905 | 1 | 18 | 11/15/05 | 15:19 | 35 | 120 | 132 | |
| BETA | 1C120101Y | 5904 | [redacted] | 5905 | 2 | 1 | 11/15/05 | 13:01 | 154 | 60 | 1397 | |
| BETA | 1C120102Y | 5904 | [redacted] | 5905 | 2 | 2 | 11/15/05 | 13:06 | 162 | 60 | 1469 | |
| BETA | 1C120103Y | 5904 | [redacted] | 5905 | 2 | 3 | 11/15/05 | 13:11 | 151 | 60 | 1370 | |
| BETA | 1C120104Y | 5904 | [redacted] | 5905 | 2 | 4 | 11/15/05 | 13:15 | 185 | 60 | 1678 | |
| BETA | 1C120105Y | 5904 | [redacted] | 5905 | 2 | 5 | 11/15/05 | 13:22 | 189 | 60 | 1714 | |
| BETA | 1C120106Y | 5904 | [redacted] | 5905 | 2 | 6 | 11/15/05 | 13:27 | 301 | 60 | 2730 | |
| BETA | 1C120107Y | 5904 | [redacted] | 5905 | 2 | 7 | 11/15/05 | 13:33 | 562 | 60 | 5098 | |
| BETA | 1C120108Y | 5904 | [redacted] | 5905 | 2 | 8 | 11/15/05 | 13:39 | 380 | 60 | 3447 | |
| BETA | 1C120109Y | 5904 | [redacted] | 5905 | 2 | 9 | 11/15/05 | 13:47 | 583 | 60 | 5288 | |
| BETA | 1C120110Y | 5904 | [redacted] | 5905 | 2 | 10 | 11/15/05 | 13:53 | 466 | 60 | 4227 | |
| BETA | 1C120111Y | 5904 | [redacted] | 5905 | 2 | 11 | 11/15/05 | 14:41 | 561 | 60 | 5088 | |
| BETA | 1C120112Y | 5904 | [redacted] | 5905 | 2 | 12 | 11/15/05 | 14:46 | 421 | 60 | 3819 | |
| BETA | 1C120113Y | 5904 | [redacted] | 5905 | 2 | 13 | 11/15/05 | 14:52 | 1675 | 60 | 15193 | |
| BETA | 1C120114Y | 5904 | [redacted] | 5905 | 2 | 14 | 11/15/05 | 14:58 | 1518 | 60 | 13769 | |
| BETA | 1C120115Y | 5904 | [redacted] | 5905 | 2 | 15 | 11/15/05 | 15:03 | 1034 | 60 | 9379 | |
| BETA | 1C120116Y | 5904 | [redacted] | 5905 | 2 | 16 | 11/15/05 | 15:08 | 498 | 60 | 4517 | |
| BETA | 1C120117Y | 5904 | [redacted] | 5905 | 2 | 17 | 11/15/05 | 15:15 | 293 | 60 | 2658 | |
| BETA | 1C120118Y | 5904 | [redacted] | 5905 | 2 | 18 | 11/15/05 | 15:20 | 374 | 60 | 3392 | |

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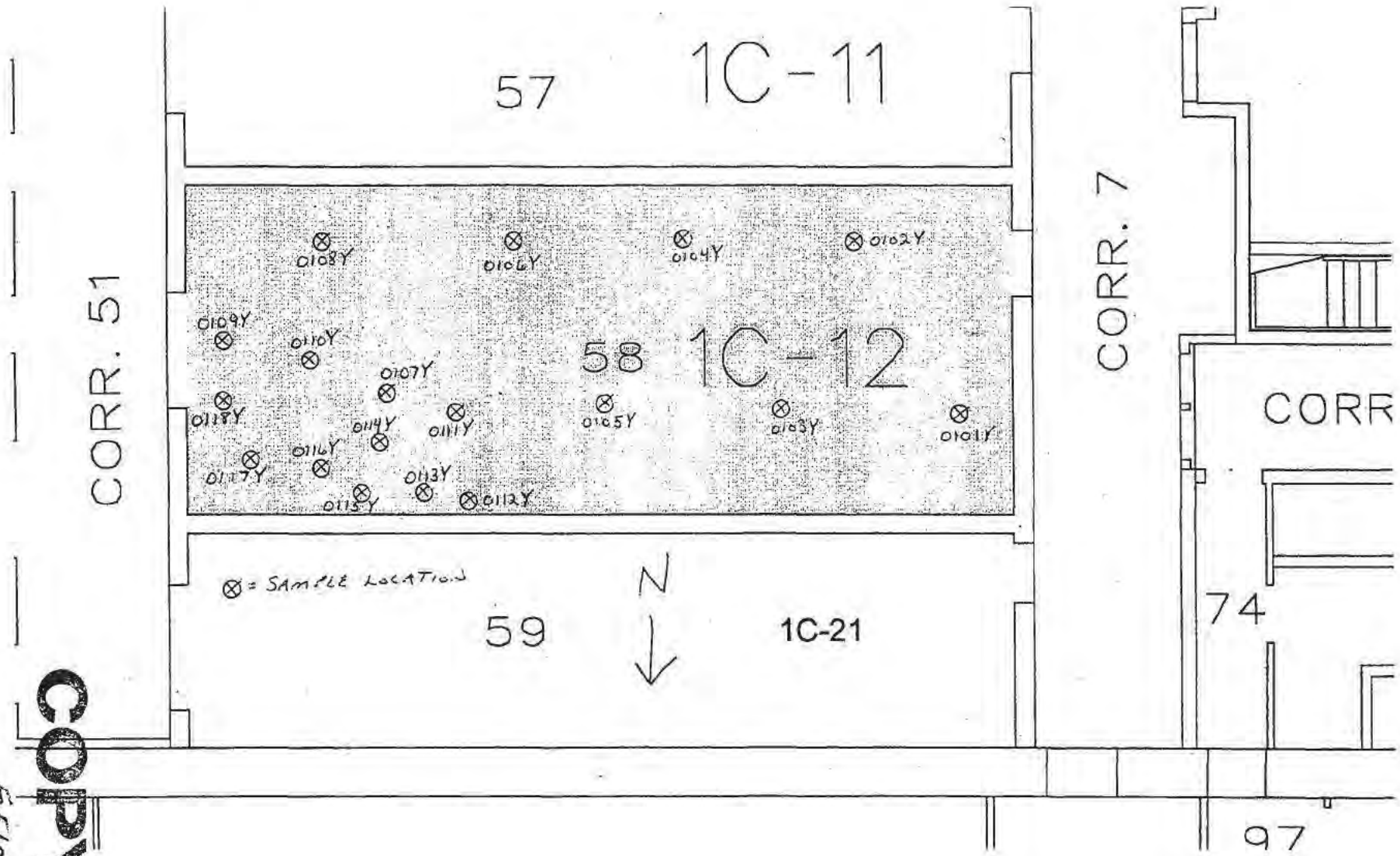
1C-12 Class 1

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CH2MHILL

# ANALYTICAL SERVICES REQUEST FOR ANALYSIS

| DATE: | SAMPLE TYPE: | COLLECTED BY: | NUMBER OF SAMPLES: |
|---|---|---|---|
| 11/30/05 | CONCRETE DUST | REYNOLDS | 1 |
| PROJECT/FUNCTION: | PRIMARY CONTACT/PHONE NO.: | | |
| CHARGE NUMBER: | DATE(S) COLLECTED: | RSDS# (if applicable): | ATTACHMENTS (list): |
| | 11/17/05 | N/A | N/A |

ANALYSES REQUESTED (check):

- ☐ $^3H$
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimated Volume for release:_____ Approved by:_____
- ☑ Gross α
- ☐ pH
- ☐ Moisture
- ☐ Isotopic Analysis: Pu_____ U_____ Th ✓ Am_____ Other_____
- ☐ Other _____

Additional Information:

NOTE: Attach additional information (e.g. RSDS, collection data, and gamma spec. results) if applicable

| LAB IDENTIFICATION | SAMPLE LOCATION | SAMPLE NUMBER | RESULTS |
|---|---|---|---|
| 0506479 | T-50 | 01 | 1.0g Th ALPHA SPEC |

COMMENTS:

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| ANALYZED BY: | DATE: |
|---|---|
| | |

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**Laboratory ID#:** 0506479
**Project/function:** T Bldg.
**Submitted:** Nov. 17, 2005
**Submitted by:** Reynolds
**Point of Contact:** R. Coblentz 608-8206
**RSDS#:** Concrete Dust
**Date:** Dec. 13, 2005

| Lab ID | 0506479 | | |
|---|---|---|---|
| Sample Location | T-58 | | |
| Isotope | pCi/g | Uncertainty +/- | LDL |
| Th-227 | 0.03 | 0.01 | 0.03 |
| Th-228 | 0.23 | 0.03 | 0.03 |
| Th-230 | 0.38 | 0.04 | 0.03 |
| Th-232 | 0.23 | 0.03 | 0.02 |

Charles A. Phillips — [redacted] — 12/15/05
Analyst — HP# — Date

Jeri Ness — [redacted] — 2-15-05
Data Verification — HP# — Date

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# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL08746
**File ID:** 25000096.s0
**Priority:** Yes

**Description\Location**
T-58 Concrete for RESRAD
Long Count

**Collector:** [redacted]
**Date Received:** 11/21/05
**Date Collected:** 11/17/05

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 1.48 | 0.38 |
| Cs-137 | | 0.46 | 0.04 |
| Pb-210 | * | 0.46 | 0.64 |
| Ra-226 | * | 0.55 | 0.81 |
| Ac-227 (D) | * | 0 | 0.37 |
| Th-230 | * | 2.79 | 6.25 |
| Th-232 (D) | * | 0.29 | 0.76 |
| Pu-238 | * | 0 | 5.43 |
| Am-241 | * | 0 | 0.07 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Bi-207 | 0.11 | 0.06 |
| Bi-210m | 0.39 | 0.06 |

$\Sigma_{DOT}$ 0.02 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:**

Date: 11/22/05 Counted By: [redacted] Analyzed By: [redacted] Initials GB

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# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-58 1C12 | SURVEY NO. MT-05-1208 |
| PURPOSE: POST JOB SURVEY AFTER CONCRETE SAMPLING FOR RESRAD | RWP NO. 1686 REV. 0 |
| | DATE: 11-17-05 |
| | TIME: 1230 |

## MAP / DRAWING

FOR SMEAR RESULTS AND MAP SEE ATTACHED.

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·— = radiological boundary

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△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2360 | 5705/5791 | 1-26-06 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 11-17-05 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE | HP# N/A | Date: |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) | | Date: 12-16-05 |
| Reviewed/Approved by: (Print Name) J. HOLLABAUGH | | |

ML-9620 (2-98)

K514/686

Survey No. MT- 05- 1208



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | DRILL LOCATION 0101Y |
| 2 | | | | 0102Y |
| 3 | | | | 0103Y |
| 4 | | | | 0104Y |
| 5 | | | | 0105Y |
| 6 | | | | 0106Y |
| 7 | | SEE | | 0107Y |
| 8 | | | | 0108Y |
| 9 | | ATT | ACHED | 0109Y |
| 10 | | | | 0110Y |
| 11 | | | | 0111Y |
| 12 | | | | 0112Y |
| 13 | | | | 0113Y |
| 14 | | | | 0114Y |
| 15 | | | | 0115Y |
| 16 | | | | 0116Y |
| 17 | | | | 0117Y |
| 18 | | | | 0118Y |
| | | N | | |
| | | | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | | |
| | | | A | |

COMMENTS: N/A

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NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

F 515/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20051117_1807.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1208.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/17/05 | 6:08:09 PM | -1 | 10.00 | 10 | 9 | 11 | 11 | 609.88 | 0 | 20.4 | B | 2 |
| 11/17/05 | 6:19:01 PM | 0 | 2.00 | 506 | 476 | 0 | 0 | 580.33 | 952 | 6.4 | | 2 |
| 11/17/05 | 6:21:43 PM | 1 | 2.00 | 0 | 0 | 0 | 22 | 521.55 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:24:26 PM | 2 | 2.00 | 3 | 2 | 0 | 15 | 534.18 | 6 | 172.5 | | 2 |
| 11/17/05 | 6:27:10 PM | 3 | 2.00 | 2 | 2 | 0 | 13 | 543.30 | 4 | 273.6 | | 2 |
| 11/17/05 | 6:29:52 PM | 4 | 2.00 | 9 | 10 | 0 | 5 | 587.44 | 18 | 68.9 | | 2 |
| 11/17/05 | 6:32:36 PM | 5 | 2.00 | 0 | 0 | 0 | 29 | 480.44 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:35:19 PM | 6 | 2.00 | 0 | 0 | 0 | 44 | 452.56 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:38:04 PM | 7 | 2.00 | 0 | 0 | 1 | 44 | 328.61 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:40:48 PM | 8 | 2.00 | 0 | 0 | 0 | 18 | 464.65 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:43:32 PM | 9 | 2.00 | 1 | 0 | 2 | 10 | 452.92 | 2 | 643.2 | | 2 |
| 11/17/05 | 6:46:15 PM | 10 | 2.00 | 0 | 0 | 0 | 27 | 482.68 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:48:57 PM | 11 | 2.00 | 8 | 8 | 5 | 8 | 477.91 | 17 | 74.9 | | 2 |
| 11/17/05 | 6:51:41 PM | 12 | 2.00 | 0 | 0 | 2 | 17 | 521.52 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:54:26 PM | 13 | 2.00 | 0 | 0 | 0 | 29 | 309.53 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:57:10 PM | 14 | 2.00 | 0 | 0 | 0 | 16 | 477.12 | 0 | 0.0 | | 2 |
| 11/17/05 | 6:59:53 PM | 15 | 2.00 | 0 | 1 | 0 | 20 | 414.54 | 1 | 1239.9 | | 2 |
| 11/17/05 | 7:02:36 PM | 16 | 2.00 | 0 | 0 | 0 | 21 | 496.90 | 0 | 0.0 | | 2 |
| 11/17/05 | 7:05:41 PM | 17 | 2.00 | 1 | 1 | 0 | 5 | 592.53 | 2 | 557.6 | | 2 |
| 11/17/05 | 7:08:24 PM | 18 | 2.00 | 0 | 0 | 0 | 15 | 485.13 | 0 | 0.0 | | 2 |

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11-05-1208

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# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_069
Batch Ended: 11/17/05 16:56
Cal. Due Date: 11/17/05
Serial Number: 26966-3

Batch ID: MT-05-1208 REYNOLDS (18) AG

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.23 | | 2.30 | 2.62 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.18 | |
| A3 | 3 | 0.00 | 2.30 | | 1.98 | 2.18 | |
| A4 | 4 | 1.71 | 2.12 | | 0.16 | 1.71 | |
| B1 | 5 | 2.61 | 2.69 | | 3.68 | 2.67 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.13 | |
| B3 | 7 | 6.23 | 3.85 | | 7.59 | 3.77 | |
| B4 | 8 | 1.28 | 2.82 | | 4.73 | 2.94 | |
| C1 | 9 | 0.00 | 2.07 | | 1.49 | 2.13 | |
| C2 | 10 | 0.00 | 1.99 | | 6.08 | 2.98 | |
| C3 | 11 | 0.00 | 2.08 | | 1.49 | 2.11 | |
| C4 | 12 | 0.00 | 1.96 | | 0.62 | 1.59 | |
| D1 | 13 | 1.75 | 2.07 | | 1.39 | 2.16 | |
| D2 | 14 | 0.00 | 2.19 | | 2.77 | 2.38 | |
| D3 | 15 | 1.72 | 2.12 | | 1.26 | 2.15 | |
| D4 | 16 | 0.00 | 2.10 | | 4.88 | 2.88 | |
| A1 | 17 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| A2 | 18 | 1.57 | 2.02 | | 0.26 | 1.65 | |

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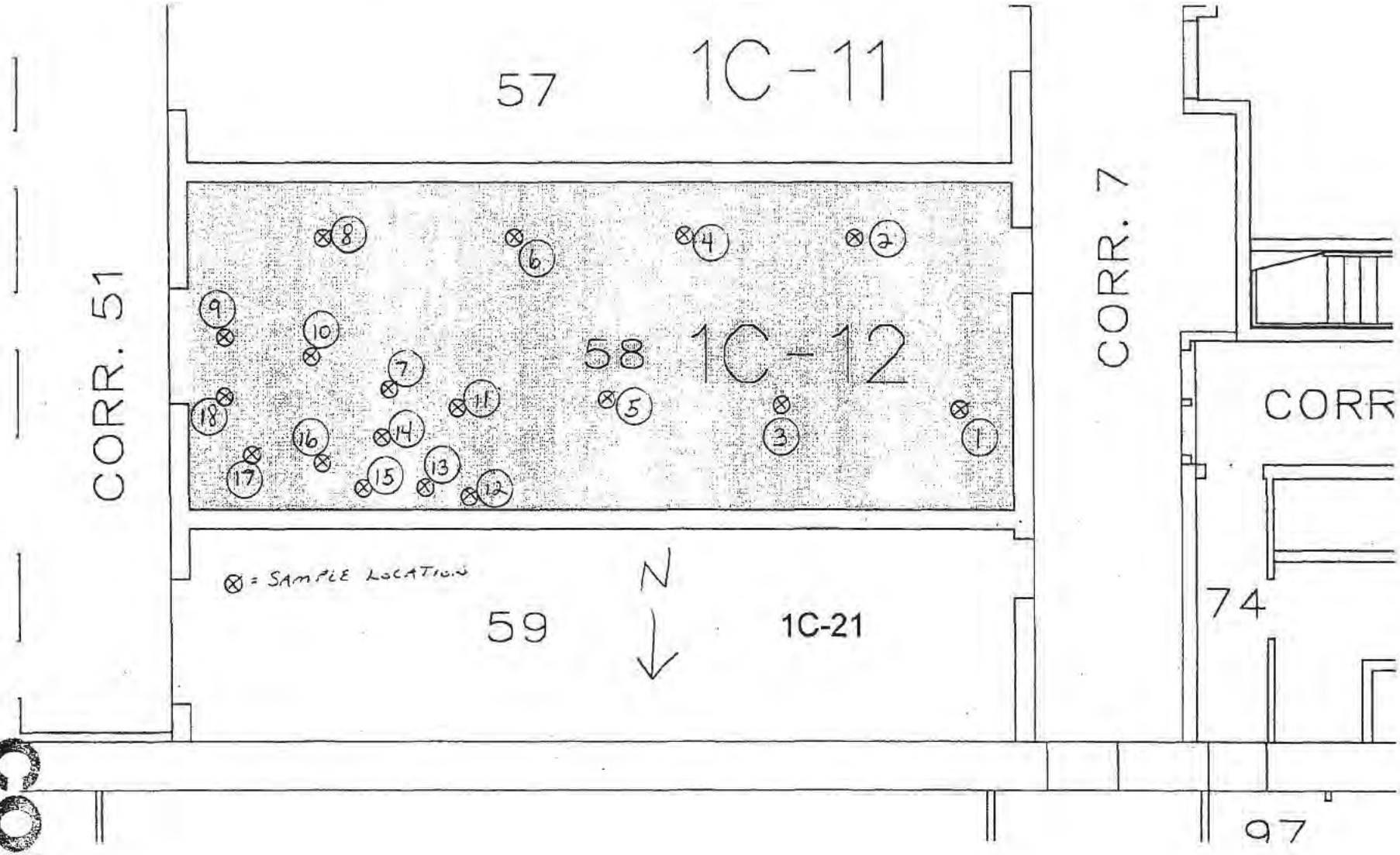
11-28-05

1C-12 Class 1

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MT-05-1288

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-58 1C12 | SURVEY NO. MT-06-039 |
| PURPOSE: SURVEY OF LOCATIONS FOR RESRAD SAMPLING | RWP NO. N/A |
| | DATE: 4-5-06 |
| | TIME: 0930 |

## MAP/DRAWING

SEE ATTACHED

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LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5857/5859 | 10/4/06 |
| 30-30 | 5901 | 3/20/07 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 4-5-06 |
| Completed by: (Print Name) NEAL REYNOLDS DONNA WATSON | | |
| Counted by: (Signature) SEE ATTACHED | HP# N/A | Date: F520/686 |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 5-11-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-06-0397



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C12 0101R |
| 2 | | | | 0102R |
| 3 | | | | 0103R |
| 4 | | | | 0104R |
| 5 | | | | 0105R |
| 6 | | | | 0106R |
| 7 | | | | 0107R |
| 8 | | | | 0108R |
| 9 | | | | 0109R |
| 10 | | SEE | | 0110R |
| 11 | | ATT | ACHED | 0111R |
| 12 | | | | 0112R |
| 13 | | | | 0113R |
| 14 | | | | 0114R |
| 15 | | | | 0115R |
| 16 | | | | 0116R |
| 17 | | | | 0117R |
| 18 | | | | 0118R |
| | | N | | |
| | | | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | | |
| | | | A | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F521/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060406_1423.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0397.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

FD 22/686

PAGE 3 OF 8
MT-06-0397

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/6/06 | 2:24:20 PM | -1 | 10.00 | 9 | 9 | 11 | 3 | 623.29 | 0 | 21.0 | B | 3 |
| 4/6/06 | 2:35:10 PM | 0 | 2.00 | 260 | 245 | 0 | 0 | 559.15 | 498 | 9.0 | | 3 |
| 4/6/06 | 2:37:53 PM | 1 | 2.00 | 0 | 0 | 0 | 8 | 625.12 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:40:35 PM | 2 | 2.00 | 0 | 0 | 1 | 7 | 592.35 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:43:17 PM | 3 | 2.00 | 0 | 0 | 0 | 0 | 605.53 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:46:00 PM | 4 | 2.00 | 4 | 4 | 2 | 0 | 619.03 | 8 | 132.6 | | 3 |
| 4/6/06 | 2:48:42 PM | 5 | 2.00 | 0 | 0 | 2 | 6 | 562.50 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:51:25 PM | 6 | 2.00 | 0 | 0 | 0 | 0 | 575.83 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:54:08 PM | 7 | 2.00 | 0 | 0 | 0 | 38 | 507.05 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:56:51 PM | 8 | 2.00 | 0 | 0 | 0 | 13 | 545.00 | 0 | 0.0 | | 3 |
| 4/6/06 | 2:59:34 PM | 9 | 2.00 | 0 | 0 | 0 | 6 | 524.78 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:02:17 PM | 10 | 2.00 | 1 | 0 | 0 | 5 | 551.90 | 1 | 952.0 | | 3 |
| 4/6/06 | 3:04:58 PM | 11 | 2.00 | 0 | 0 | 0 | 8 | 612.90 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:07:40 PM | 12 | 2.00 | 4 | 4 | 0 | 0 | 628.76 | 8 | 128.2 | | 3 |
| 4/6/06 | 3:10:23 PM | 13 | 2.00 | 0 | 0 | 4 | 22 | 392.43 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:13:05 PM | 14 | 2.00 | 0 | 0 | 0 | 0 | 591.83 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:15:48 PM | 15 | 2.00 | 0 | 0 | 3 | 25 | 425.08 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:18:31 PM | 16 | 2.00 | 0 | 0 | 0 | 9 | 443.76 | 0 | 0.0 | | 3 |
| 4/6/06 | 3:21:18 PM | 17 | 2.00 | 1 | 1 | 0 | 0 | 514.67 | 2 | 507.5 | | 3 |
| 4/6/06 | 3:24:02 PM | 18 | 2.00 | 0 | 0 | 0 | 0 | 612.41 | 0 | 0.0 | | 3 |

✓ MR

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5523/686

Page 4 of 8
MI-06-0397

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_105
Batch Ended: 4/6/06 13:40
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0397 [18] WATSON 4-6-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.32 | |
| A2 | 2 | 1.79 | 2.03 | | 1.36 | 2.02 | |
| A3 | 3 | 0.00 | 2.31 | | 2.81 | 2.52 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.93 | | 2.62 | 2.38 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.26 | | 4.24 | 2.97 | |
| B4 | 8 | 0.00 | 1.97 | | 0.66 | 1.69 | |
| C1 | 9 | 0.00 | 2.12 | | 3.62 | 2.82 | |
| C2 | 10 | 0.00 | 1.94 | | 0.48 | 1.63 | |
| C3 | 11 | 0.00 | 2.12 | | 0.00 | 1.27 | |
| C4 | 12 | 0.00 | 2.00 | | 1.58 | 1.97 | |
| D1 | 13 | 0.00 | 2.06 | | 0.28 | 1.77 | |
| D2 | 14 | 0.00 | 2.17 | | 0.32 | 1.69 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 1.71 | 2.04 | | 0.00 | 1.18 | |
| D1 | 17 | 1.73 | 2.05 | | 0.00 | 1.26 | |
| D2 ✓ | 18 | 0.00 | 2.15 | | 0.00 | 1.20 | |

✓ RL ✓ RL

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1534/686

~~Page 1 of 1~~
5-11-06

PAGE 5 OF 8
MT-06-0397

# T-BLDG Static and Judgementals for ResRad Sampling in-58 1C12

*RSDS# MT-06-0397* _____ *RCT:* [redacted] _____ *RCT:* [redacted] _____

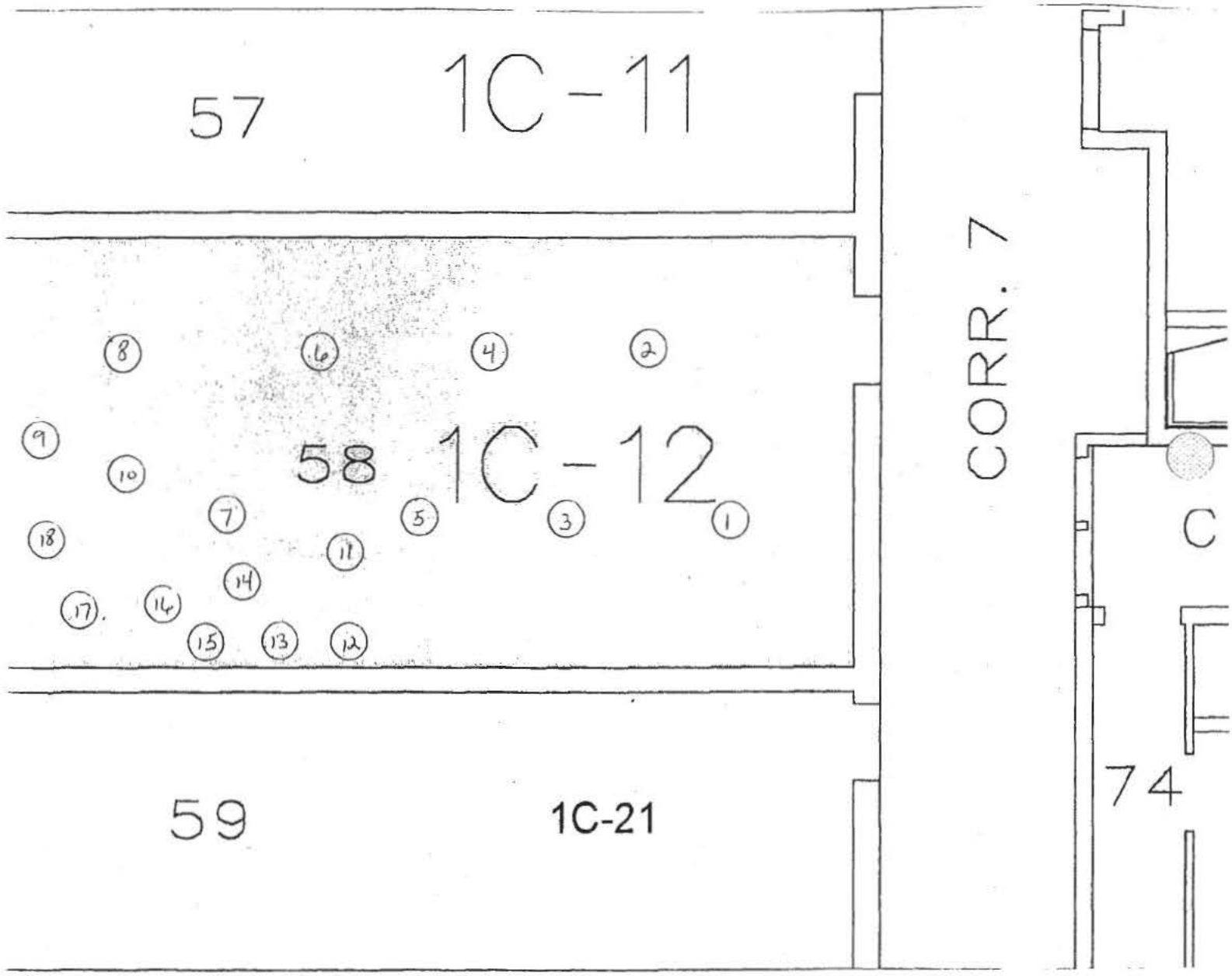
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.208 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.164 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C120101R | 5857 | [redacted] | 5859 | 1 | 1 | 4/5/06 | 9:40 | 6 | 120 | 23 |
| ALPHA | 1C120102R | 5857 | [redacted] | 5859 | 1 | 2 | 4/5/06 | 9:46 | 10 | 120 | 38 |
| ALPHA | 1C120103R | 5857 | [redacted] | 5859 | 1 | 3 | 4/5/06 | 9:59 | 3 | 120 | 11 |
| ALPHA | 1C120104R | 5857 | [redacted] | 5859 | 1 | 4 | 4/5/06 | 10:03 | 7 | 120 | 27 |
| ALPHA | 1C120105R | 5857 | [redacted] | 5859 | 1 | 5 | 4/5/06 | 10:13 | 10 | 120 | 38 |
| ALPHA | 1C120106R | 5857 | [redacted] | 5859 | 1 | 6 | 4/5/06 | 10:24 | 28 | 120 | 107 |
| ALPHA | 1C120107R | 5857 | [redacted] | 5859 | 1 | 7 | 4/5/06 | 10:29 | 26 | 120 | 99 |
| ALPHA | 1C120108R | 5857 | [redacted] | 5859 | 1 | 8 | 4/5/06 | 10:34 | 75 | 120 | 286 |
| ALPHA | 1C120109R | 5857 | [redacted] | 5859 | 1 | 9 | 4/5/06 | 12:40 | 27 | 120 | 103 |
| ALPHA | 1C120110R | 5857 | [redacted] | 5859 | 1 | 10 | 4/5/06 | 12:46 | 12 | 120 | 46 |
| ALPHA | 1C120111R | 5857 | [redacted] | 5859 | 1 | 11 | 4/5/06 | 12:56 | 41 | 120 | 156 |
| ALPHA | 1C120112R | 5857 | [redacted] | 5859 | 1 | 12 | 4/5/06 | 13:07 | 41 | 120 | 156 |
| ALPHA | 1C120113R | 5857 | [redacted] | 5859 | 1 | 13 | 4/5/06 | 14:36 | 138 | 120 | 527 |
| ALPHA | 1C120114R | 5857 | [redacted] | 5859 | 1 | 14 | 4/5/06 | 14:43 | 37 | 120 | 141 |
| ALPHA | 1C120115R | 5857 | [redacted] | 5859 | 1 | 15 | 4/5/06 | 14:48 | 45 | 120 | 172 |
| ALPHA | 1C120116R | 5857 | [redacted] | 5859 | 1 | 16 | 4/5/06 | 14:52 | 68 | 120 | 259 |
| ALPHA | 1C120117R | 5857 | [redacted] | 5859 | 1 | 17 | 4/5/06 | 14:57 | 16 | 120 | 61 |
| ALPHA | 1C120118R | 5857 | [redacted] | 5859 | 1 | 18 | 4/5/06 | 15:01 | 17 | 120 | 65 ✓ |
| BETA | 1C120101R | 5857 | [redacted] | 5859 | 2 | 1 | 4/5/06 | 9:41 | 151 | 60 | 1461 |
| BETA | 1C120102R | 5857 | [redacted] | 5859 | 2 | 2 | 4/5/06 | 9:47 | 157 | 60 | 1520 |
| BETA | 1C120103R | 5857 | [redacted] | 5859 | 2 | 3 | 4/5/06 | 10:00 | 146 | 60 | 1413 |
| BETA | 1C120104R | 5857 | [redacted] | 5859 | 2 | 4 | 4/5/06 | 10:05 | 191 | 60 | 1849 |
| BETA | 1C120105R | 5857 | [redacted] | 5859 | 2 | 5 | 4/5/06 | 10:14 | 170 | 60 | 1645 |
| BETA | 1C120106R | 5857 | [redacted] | 5859 | 2 | 6 | 4/5/06 | 10:25 | 473 | 60 | 4578 |
| BETA | 1C120107R | 5857 | [redacted] | 5859 | 2 | 7 | 4/5/06 | 10:30 | 425 | 60 | 4113 |
| BETA | 1C120108R | 5857 | [redacted] | 5859 | 2 | 8 | 4/5/06 | 10:35 | 548 | 60 | 5304 |
| BETA | 1C120109R | 5857 | [redacted] | 5859 | 2 | 9 | 4/5/06 | 12:41 | 540 | 60 | 5226 |
| BETA | 1C120110R | 5857 | [redacted] | 5859 | 2 | 10 | 4/5/06 | 12:47 | 242 | 60 | 2342 |
| BETA | 1C120111R | 5857 | [redacted] | 5859 | 2 | 11 | 4/5/06 | 12:57 | 381 | 60 | 3688 |
| BETA | 1C120112R | 5857 | [redacted] | 5859 | 2 | 12 | 4/5/06 | 13:08 | 290 | 60 | 2807 |
| BETA | 1C120113R | 5857 | [redacted] | 5859 | 2 | 13 | 4/5/06 | 14:37 | 1974 | 60 | 19106 |
| BETA | 1C120114R | 5857 | [redacted] | 5859 | 2 | 14 | 4/5/06 | 14:44 | 271 | 60 | 2623 |
| BETA | 1C120115R | 5857 | [redacted] | 5859 | 2 | 15 | 4/5/06 | 14:49 | 351 | 60 | 3397 |
| BETA | 1C120116R | 5857 | [redacted] | 5859 | 2 | 16 | 4/5/06 | 14:53 | 366 | 60 | 3542 |
| BETA | 1C120117R | 5857 | [redacted] | 5859 | 2 | 17 | 4/5/06 | 14:58 | 293 | 60 | 2836 |
| BETA | 1C120118R | 5857 | [redacted] | 5859 | 2 | 18 | 4/5/06 | 15:02 | 348 | 60 | 3368 ✓ |

N/A

COPY



F 525/686




N

COPY
F526/686

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL11319
**File ID:** 25000138.s0
**Priority:** Yes

**Description\Location**
0601328 T-58
Long Count

**Collector:**
**Date Received:** 04/07/06
**Date Collected:** 04/06/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 0.2 | 0.02 |
| Cs-137 | | 0.09 | 0.03 |
| Pb-210 | | 0.29 | 0.26 |
| Ra-226 | | 0.89 | 0.4 |
| Ac-227 (D) | * | 0.08 | 0.12 |
| Th-230 | * | 0.07 | 3.61 |
| Th-232 (D) | | 0.18 | 0.14 |
| Pu-238 | * | 0 | 2.42 |
| Am-241 | * | 0 | 0.04 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.03 |
| Bi-207 | 0.03 | 0.03 |
| Bi-210m | 0.17 | 0.03 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

COPY

**Comments:** U-238d 0 pCi/g 7.9 pCi/g MDA

Date: 04/07/06 Counted By: [redacted] Analyzed By: [redacted] Initials GD

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T BLDG Rm 58 | SURVEY NO. MT-06-0506 |
| PURPOSE: upper and lower subgemental RESRAD 1C12 | RWP NO. N/A |
| | DATE: 5/10/06 |
| | TIME: 1210 |

## MAP / DRAWING

see attached map

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary

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△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 3/13/07 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones George Hodges | | Date: 5/10/06 |
| Completed by: (Print Name) WAYNE JONES George Hodges | | |
| Counted by: (Signature) see attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) | | E528/686 |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 6-22-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0506



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C120101J |
| 2 | | | | 1C120102J |
| 3 | | | | 1C120103J |
| 4 | | | | 1C120104J |
| 5 | | | | 1C120105J |
| 6 | | | | 1C120106J |
| 7 | | | | 1C120107J |
| 8 | | | | 1C120108J |
| 9 | | | | 1C120109J |
| 10 | | | | 1C120110J |
| 11 | | | | 1C120201J |
| 12 | | | | 1C120202J |
| 13 | | | | 1C120203J |
| 14 | | | | 1C120204J |
| 15 | | | | 1C120205J |
| 16 | | | | 1C120206J |
| 17 | | | | 1C120207J |
| 18 | | | | 1C120208J |
| 19 | | | | 1C120209J |
| 20 | | | | 1C120210J |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

COMMENTS:

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F529/686

ML-9620 (4-98)

MT-06-0506 Pg 378

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_087
Batch Ended: 5/10/06 12:21
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0506 [20] W. JONES 5-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.95 | 2.25 | | 4.11 | 2.93 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 2.01 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.13 | | 1.78 | 2.09 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.89 | | 1.59 | 1.93 | |
| B3 | 7 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 8 | 0.00 | 1.97 | | 0.66 | 1.69 | |
| C1 | 9 | 0.00 | 2.12 | | 3.62 | 2.82 | |
| C2 | 10 | 0.00 | 1.94 | | 0.48 | 1.63 | |
| C3 | 11 | 0.00 | 2.15 | | 1.71 | 2.19 | |
| C4 | 12 | 0.00 | 2.00 | | 1.58 | 1.97 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 15 | 1.68 | 2.12 | | 1.34 | 2.15 | |
| D4 | 16 | 1.71 | 2.07 | | 1.43 | 2.03 | |
| C1 | 17 | 0.00 | 2.08 | | 0.00 | 1.78 | |
| C2 | 18 | 0.00 | 1.98 | | 3.92 | 2.58 | |
| C3 | 19 | 0.00 | 2.12 | | 0.00 | 1.27 | |
| C4 | 20 | 0.00 | 1.99 | | 0.45 | 1.61 | |

WJ WJ

COPY

5/30/06



MT-06-0506 Pg 378

MARSSIM Smear Data

COPY

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060510_1304.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0506.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

MT-06-0506 pg 4 of 8

F-531/686

MARSSIM Smear Data

MT-06-0506 PS 508

COPY

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/10/06 | 1:04:37 PM | -1 | 10.00 | 9 | 9 | 13 | 2 | 613.47 | 0 | 21.3 | B | 2 |
| 5/10/06 | 1:15:27 PM | 0 | 2.00 | 61 | 57 | 0 | 1 | 542.61 | 119 | 19.6 | | 2 |
| 5/10/06 | 1:18:11 PM | 1 | 2.00 | 0 | 0 | 0 | 6 | 580.51 | 0 | 0.0 | | 2 |
| 5/10/06 | 1:20:53 PM | 2 | 2.00 | 0 | 0 | 0 | 6 | 593.69 | 0 | 0.0 | | 2 |
| 5/10/06 | 1:23:36 PM | 3 | 2.00 | 4 | 3 | 2 | 4 | 619.16 | 8 | 130.3 | | 2 |
| 5/10/06 | 1:26:18 PM | 4 | 2.00 | 7 | 5 | 0 | 6 | 583.53 | 14 | 81.8 | | 2 |
| 5/10/06 | 1:29:02 PM | 5 | 2.00 | 4 | 3 | 0 | 12 | 620.32 | 7 | 145.6 | | 2 |
| 5/10/06 | 1:31:45 PM | 6 | 2.00 | 13 | 11 | 0 | 5 | 641.05 | 23 | 53.7 | | 2 |
| 5/10/06 | 1:34:28 PM | 7 | 2.00 | 9 | 7 | 0 | 3 | 635.04 | 16 | 72.0 | | 2 |
| 5/10/06 | 1:37:12 PM | 8 | 2.00 | 9 | 6 | 0 | 3 | 605.12 | 16 | 71.6 | | 2 |
| 5/10/06 | 1:39:55 PM | 9 | 2.00 | 42 | 37 | 0 | 7 | 628.77 | 76 | 24.4 | | 2 |
| 5/10/06 | 1:42:39 PM | 10 | 2.00 | 25 | 21 | 0 | 1 | 589.83 | 46 | 34.0 | | 2 |
| 5/10/06 | 1:45:21 PM | 11 | 2.00 | 114 | 105 | 3 | 1 | 549.38 | 219 | 13.9 | | 2 |
| 5/10/06 | 1:48:05 PM | 12 | 2.00 | 337 | 302 | 0 | 0 | 581.88 | 634 | 7.8 | | 2 |
| 5/10/06 | 1:50:48 PM | 13 | 2.00 | 33 | 29 | 0 | 1 | 619.37 | 60 | 28.5 | | 2 |
| 5/10/06 | 1:53:31 PM | 14 | 2.00 | 41 | 35 | 0 | 1 | 596.28 | 76 | 24.9 | | 2 |
| 5/10/06 | 1:56:14 PM | 15 | 2.00 | 62 | 59 | 0 | 2 | 537.48 | 121 | 19.4 | | 2 |
| 5/10/06 | 1:58:57 PM | 16 | 2.00 | 16 | 14 | 0 | 2 | 589.64 | 29 | 46.3 | | 2 |
| 5/10/06 | 2:01:46 PM | 17 | 2.00 | 7 | 4 | 0 | 0 | 537.81 | 13 | 88.1 | | 2 |
| 5/10/06 | 2:04:29 PM | 18 | 2.00 | 32 | 28 | 1 | 7 | 604.18 | 59 | 28.7 | | 2 |
| 5/10/06 | 2:07:12 PM | 19 | 2.00 | 81 | 74 | 0 | 4 | 581.12 | 152 | 16.7 | | 2 |
| 5/10/06 | 2:09:54 PM | 20 | 2.00 | 29 | 24 | 0 | 4 | 568.30 | 55 | 30.8 | | 2 |

wg

1 of 1

MT-06-0506

Survey Unit Number 1C12



(Supplemental sheet for biased measurements)

RSDS # MT-06-0506
RCT INT/HP [redacted] WJ [redacted] GH

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C120101J | 58 | FLOOR | | |
| 1C120102J | 58 | FLOOR | | |
| 1C120103J | 58 | FLOOR | | |
| 1C120104J | 58 | FLOOR | | |
| 1C120105J | 58 | FLOOR | | |
| 1C120106J | 58 | WALL 4 | | |
| 1C120107J | 58 | WALL 1 | | |
| 1C120108J | 58 | WALL 2 | | |
| 1C120109J | 58 | WALL 2 | | |
| 1C120110J | 58 | WALL 3 | | |
| 1C120201J | 58 | WALL 3 | | |
| 1C120202J | 58 | WALL 4 | | |
| 1C120203J | 58 | WALL 4 | N | |
| 1C120204J | 58 | WALL 4 | | A |
| 1C120205J | 58 | WALL 4 | | |
| 1C120206J | 58 | WALL 1 | | |
| 1C120207J | 58 | WALL 2 | | |
| 1C120208J | 58 | WALL 2 | | |
| 1C120209J | 58 | WALL 2 | | |
| 1C120210J | 58 | WALL 2 | | |
| | N | | | |
| | A | | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

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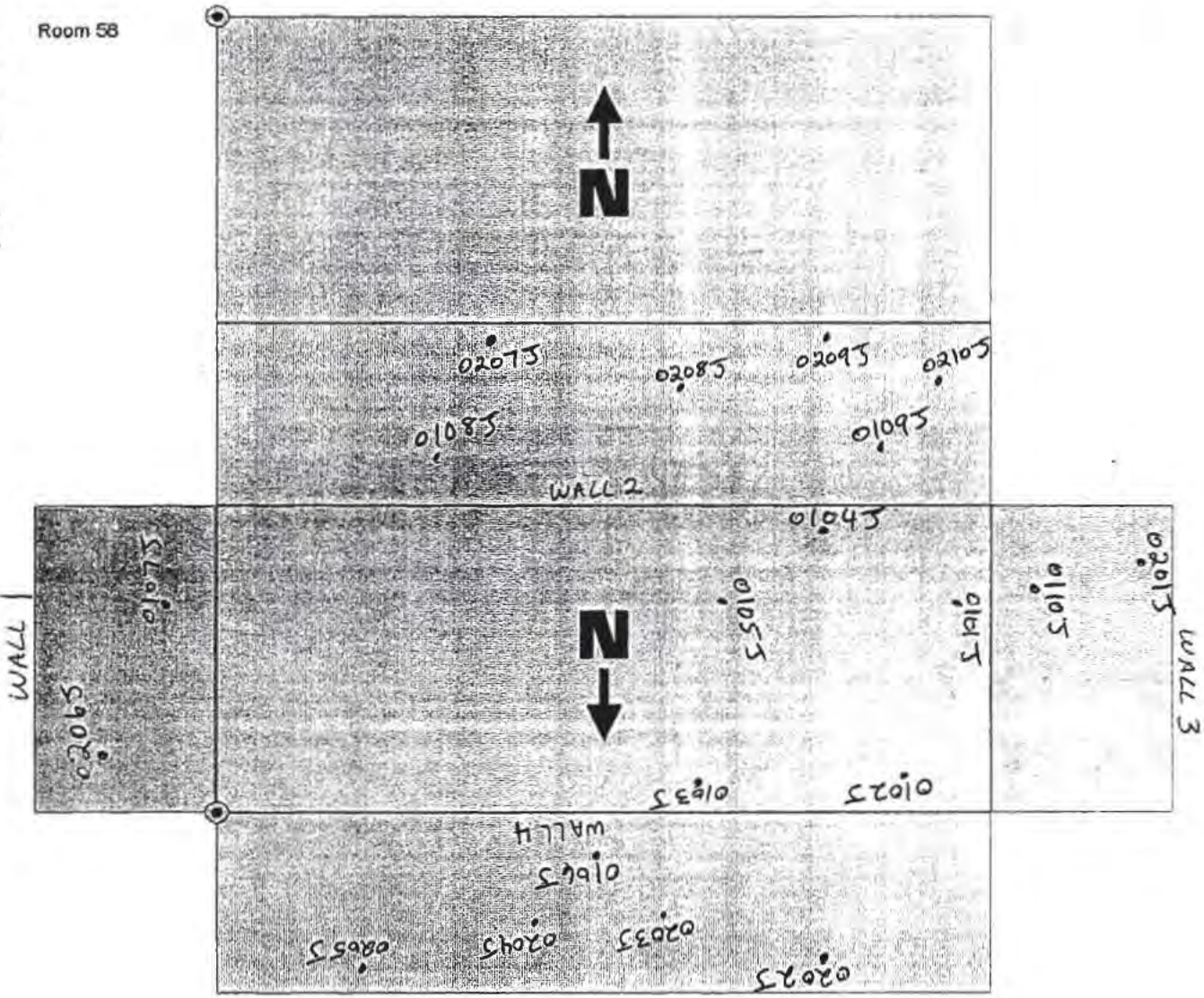
MT-06-0506 Pg 7 of 8

COPY

F-534/686

1C-12 Class 1 Judgementals

Room 58



# T-Building Upper and Lower Judgementals Survey 1C12 Rm58

*RSDS# _MT-06-0506_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C120101J | 5904 | | 5905 | 1 | 1 | 5/8/06 | 17:26 | 15 | 120 | 57 |
| ALPHA | 1C120102J | 5904 | | 5905 | 1 | 2 | 5/8/06 | 17:30 | 17 | 120 | 64 |
| ALPHA | 1C120103J | 5904 | | 5905 | 1 | 3 | 5/8/06 | 17:34 | 10 | 120 | 38 |
| ALPHA | 1C120104J | 5904 | | 5905 | 1 | 4 | 5/8/06 | 17:37 | 19 | 120 | 72 |
| ALPHA | 1C120105J | 5904 | | 5905 | 1 | 5 | 5/8/06 | 17:41 | 12 | 120 | 45 |
| ALPHA | 1C120106J | 5904 | | 5905 | 1 | 6 | 5/8/06 | 17:45 | 9 | 120 | 34 |
| ALPHA | 1C120107J | 5904 | | 5905 | 1 | 7 | 5/8/06 | 17:49 | 3 | 120 | 11 |
| ALPHA | 1C120108J | 5904 | | 5905 | 1 | 8 | 5/8/06 | 17:53 | 9 | 120 | 34 |
| ALPHA | 1C120109J | 5904 | | 5905 | 1 | 9 | 5/8/06 | 17:58 | 6 | 120 | 23 |
| ALPHA | 1C120110J | 5904 | | 5905 | 1 | 10 | 5/8/06 | 18:02 | 3 | 120 | 11 |
| ALPHA | 1C120201J | 5904 | | 5905 | 1 | 11 | 5/8/06 | 19:02 | 7 | 120 | 26 |
| ALPHA | 1C120202J | 5904 | | 5905 | 1 | 12 | 5/8/06 | 19:06 | 9 | 120 | 34 |
| ALPHA | 1C120203J | 5904 | | 5905 | 1 | 13 | 5/8/06 | 19:10 | 8 | 120 | 30 |
| ALPHA | 1C120204J | 5904 | | 5905 | 1 | 14 | 5/8/06 | 19:14 | 7 | 120 | 26 |
| ALPHA | 1C120205J | 5904 | | 5905 | 1 | 15 | 5/8/06 | 19:18 | 3 | 120 | 11 |
| ALPHA | 1C120206J | 5904 | | 5905 | 1 | 16 | 5/8/06 | 19:23 | 8 | 120 | 30 |
| ALPHA | 1C120207J | 5904 | | 5905 | 1 | 17 | 5/8/06 | 19:27 | 9 | 120 | 34 |
| ALPHA | 1C120208J | 5904 | | 5905 | 1 | 18 | 5/8/06 | 19:31 | 8 | 120 | 30 |
| ALPHA | 1C120209J | 5904 | | 5905 | 1 | 19 | 5/8/06 | 19:35 | 6 | 120 | 23 |
| ALPHA | 1C120210J | 5904 | | 5905 | 1 | 20 | 5/8/06 | 19:39 | 5 | 120 | 19 ✓ |
| BETA | 1C120101J | 5904 | | 5905 | 2 | 1 | 5/8/06 | 17:27 | 185 | 60 | 1780 |
| BETA | 1C120102J | 5904 | | 5905 | 2 | 2 | 5/8/06 | 17:31 | 171 | 60 | 1645 |
| BETA | 1C120103J | 5904 | | 5905 | 2 | 3 | 5/8/06 | 17:35 | 301 | 60 | 2896 |
| BETA | 1C120104J | 5904 | | 5905 | 2 | 4 | 5/8/06 | 17:39 | 179 | 60 | 1722 |
| BETA | 1C120105J | 5904 | | 5905 | 2 | 5 | 5/8/06 | 17:42 | 173 | 60 | 1664 |
| BETA | 1C120106J | 5904 | | 5905 | 2 | 6 | 5/8/06 | 17:46 | 91 | 60 | 875 |
| BETA | 1C120107J | 5904 | | 5905 | 2 | 7 | 5/8/06 | 17:50 | 111 | 60 | 1068 |
| BETA | 1C120108J | 5904 | | 5905 | 2 | 8 | 5/8/06 | 17:54 | 103 | 60 | 991 |
| BETA | 1C120109J | 5904 | | 5905 | 2 | 9 | 5/8/06 | 17:59 | 111 | 60 | 1068 |
| BETA | 1C120110J | 5904 | | 5905 | 2 | 10 | 5/8/06 | 18:03 | 114 | 60 | 1097 |
| BETA | 1C120201J | 5904 | | 5905 | 2 | 11 | 5/8/06 | 19:03 | 132 | 60 | 1270 |
| BETA | 1C120202J | 5904 | | 5905 | 2 | 12 | 5/8/06 | 19:07 | 113 | 60 | 1087 |
| BETA | 1C120203J | 5904 | | 5905 | 2 | 13 | 5/8/06 | 19:11 | 137 | 60 | 1318 |
| BETA | 1C120204J | 5904 | | 5905 | 2 | 14 | 5/8/06 | 19:15 | 107 | 60 | 1029 |
| BETA | 1C120205J | 5904 | | 5905 | 2 | 15 | 5/8/06 | 19:19 | 154 | 60 | 1481 |
| BETA | 1C120206J | 5904 | | 5905 | 2 | 16 | 5/8/06 | 19:24 | 147 | 60 | 1414 |
| BETA | 1C120207J | 5904 | | 5905 | 2 | 17 | 5/8/06 | 19:28 | 162 | 60 | 1558 |
| BETA | 1C120208J | 5904 | | 5905 | 2 | 18 | 5/8/06 | 19:32 | 141 | 60 | 1356 |
| BETA | 1C120209J | 5904 | | 5905 | 2 | 19 | 5/8/06 | 19:36 | 123 | 60 | 1183 |
| BETA | 1C120210J | 5904 | | 5905 | 2 | 20 | 5/8/06 | 19:40 | 110 | 60 | 1058 ✓ |
| | | | | | N | | | | | | |
| | | | | | | A | | | | | |



COPY

F 535/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T BLDG Rm 58 | SURVEY NO. MT-06-0518 |
| PURPOSE: upper and lower statics in Rm 58 RESRAD 1C12 | RWP NO. N/A |
| | DATE: 5/12/06 |
| | TIME: 1205 |

## MAP / DRAWING

1 $m^2$ Surveyed Around Ceiling STATICS

See attached map

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

COPY

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 $cm^2$

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 3/13/07 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones | [redacted] | Date: 5/12/06 |
| Completed by: (Print Name) WAYNE JONES | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) | 536/686 | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 5-22-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0518



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | see | attached | | 1C1201015 |
| 2 | | | | 1C1201025 |
| 3 | | | | 1C1201035 |
| 4 | | | | 1C1201045 |
| 5 | | | | 1C1201055 |
| 6 | | | | 1C1201065 |
| 7 | | | | 1C1201075 |
| 8 | | | | 1C1201085 |
| 9 | | | | 1C1201095 |
| 10 | | | | 1C1201105 |
| 11 | | | | 1C1201115 |
| 12 | | | | 1C1201125 |
| 13 | | | | 1C1201135 |
| 14 | | | | 1C1201145 |
| 15 | | | | 1C1201155 |
| 16 | | | | 1C1201165 |
| 17 | | | | 1C1201175 |
| 18 | | | | 1C1201185 |
| 19 | | | | 1C1201195 |
| 20 | | | | 1C1201205 |
| 21 | | | | 1C1202015 |
| 22 | | | | 1C1202025 |
| 23 | | | | 1C1202035 |
| 24 | | | | 1C1202045 |
| 25 | | | | 1C1202055 |
| 26 | | | | 1C1202065 |
| 27 | | | | 1C1202075 |
| 28 | | | | 1C1202085 |
| 29 | | | | 1C1202095 |
| 30 | | | | 1C1202105 |
| 31 | | | | 1C1202115 |
| 32 | | | | 1C1202125 |
| 33 | | | | 1C1202135 |
| 34 | | | | 1C1202145 |
| 35 | | | | 1C1202155 |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | see | attached | | 1C1202165 |
| 37 | | | | 1C1202175 |
| 38 | | | | 1C1202185 |
| 39 | | | | 1C1202195 |
| 40 | | | | 1C1202205 |
| 41 | | | | 1C1202215 |
| | | N | | |
| | | | A | |

COMMENTS: N/A

COPY

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F537/686

ML-9620 (4-98)

MT-06-0518 pg 30 of 13

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_096
Batch Ended: 5/12/06 12:42
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0518 [41] W. JONES 5-12-06 RLH ✓

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.95 | 2.20 | | 0.20 | 1.85 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 4 | 0.00 | 2.11 | | 0.58 | 1.71 | |
| B1 | 5 | 1.58 | 1.93 | | 2.41 | 2.38 | |
| B2 | 6 | 0.00 | 1.95 | | 4.93 | 2.74 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.07 | | 0.00 | 1.27 | |
| C2 | 10 | 0.00 | 1.94 | | 0.48 | 1.63 | |
| C3 | 11 | 0.00 | 2.14 | | 0.45 | 1.79 | |
| C4 | 12 | 0.00 | 1.98 | | 0.00 | 1.14 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 15 | 0.00 | 2.09 | | 0.00 | 1.25 | |
| D4 | 16 | 0.00 | 2.05 | | 0.40 | 1.66 | |
| A1 | 17 | 0.00 | 2.23 | | 2.98 | 2.62 | |
| A2 | 18 | 1.79 | 2.02 | | 0.20 | 1.65 | |
| A3 | 19 | 0.00 | 2.30 | | 1.55 | 2.18 | |
| A4 | 20 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 21 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 22 | 0.00 | 1.89 | | 1.59 | 1.93 | |
| B3 | 23 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 24 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 25 | 0.00 | 2.07 | | 0.00 | 1.27 | |
| C2 | 26 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 27 | 0.00 | 2.15 | | 1.71 | 2.19 | |

WJ WJ



1-538/686

RLH

MT-06-0518 pg 4 of 13

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_096
Batch Ended: 5/12/06 12:42
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0518 [41] W. JONES 5-12-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C4 | 28 | 0.00 | 1.99 | | 0.45 | 1.61 | |
| D1 | 29 | 1.73 | 2.09 | | 2.63 | 2.50 | |
| D2 | 30 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 31 | 0.00 | 2.12 | | 1.50 | 2.15 | |
| D4 | 32 | 0.00 | 2.06 | | 1.57 | 2.03 | |
| B1 | 33 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 34 | 0.00 | 1.87 | | 0.48 | 1.58 | |
| B3 | 35 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 | 36 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 37 | 1.73 | 2.07 | | 0.00 | 1.27 | |
| C2 | 38 | 0.00 | 1.94 | | 0.48 | 1.63 | |
| C3 | 39 | 2.02 | 2.15 | | 1.56 | 2.19 | |
| C4 | 40 | 0.00 | 1.99 | | 0.45 | 1.61 | |
| D1 | 41 | 0.00 | 2.05 | | 0.00 | 1.26 | |

WG WG

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WG 5/15/06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060512_1523.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0518.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/12/06 | 3:24:05 PM | -1 | 10.00 | 11 | 9 | 13 | 13 | 622.78 | 0 | 19.2 | B | 4 |
| 5/12/06 | 3:34:55 PM | 0 | 2.00 | 132 | 126 | 0 | 2 | 542.96 | 257 | 12.9 | | 4 |
| 5/12/06 | 3:37:40 PM | 1 | 2.00 | 3 | 4 | 0 | 48 | 348.70 | 7 | 195.8 | | 4 |
| 5/12/06 | 3:40:22 PM | 2 | 2.00 | 1 | 2 | 0 | 0 | 610.44 | 2 | 461.6 | | 4 |
| 5/12/06 | 3:43:05 PM | 3 | 2.00 | 0 | 0 | 0 | 7 | 558.75 | 0 | 0.0 | | 4 |
| 5/12/06 | 3:45:49 PM | 4 | 2.00 | 2 | 4 | 0 | 0 | 524.29 | 4 | 247.2 | | 4 |
| 5/12/06 | 3:48:31 PM | 5 | 2.00 | 0 | 0 | 0 | 0 | 531.39 | 0 | 0.0 | | 4 |
| 5/12/06 | 3:51:16 PM | 6 | 2.00 | 0 | 0 | 0 | 6 | 497.54 | 0 | 0.0 | | 4 |
| 5/12/06 | 3:53:58 PM | 7 | 2.00 | 154 | 137 | 173 | 1 | 626.00 | 279 | 11.9 | | 4 |
| 5/12/06 | 3:56:42 PM | 8 | 2.00 | 0 | 0 | 3 | 0 | 547.33 | 0 | 0.0 | | 4 |
| 5/12/06 | 3:59:25 PM | 9 | 2.00 | 3 | 3 | 0 | 0 | 638.50 | 5 | 211.0 | | 4 |
| 5/12/06 | 4:02:08 PM | 10 | 2.00 | 0 | 1 | 2 | 0 | 612.05 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:04:50 PM | 11 | 2.00 | 5 | 6 | 0 | 0 | 618.16 | 9 | 117.0 | | 4 |
| 5/12/06 | 4:07:33 PM | 12 | 2.00 | 0 | 0 | 0 | 7 | 601.33 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:10:16 PM | 13 | 2.00 | 2 | 3 | 0 | 0 | 633.94 | 3 | 342.8 | | 4 |
| 5/12/06 | 4:12:58 PM | 14 | 2.00 | 0 | 0 | 0 | 0 | 602.33 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:15:42 PM | 15 | 2.00 | 0 | 0 | 0 | 0 | 574.69 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:18:25 PM | 16 | 2.00 | 3 | 2 | 0 | 0 | 577.71 | 5 | 199.6 | | 4 |
| 5/12/06 | 4:21:14 PM | 17 | 2.00 | 0 | 0 | 0 | 0 | 633.32 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:23:56 PM | 18 | 2.00 | 0 | 0 | 0 | 0 | 612.44 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:26:39 PM | 19 | 2.00 | 0 | 0 | 0 | 0 | 640.84 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:29:21 PM | 20 | 2.00 | 0 | 0 | 0 | 0 | 626.28 | 0 | 0.0 | | 4 |
| 5/12/06 | 4:32:05 PM | 21 | 2.00 | 48 | 46 | 0 | 0 | 587.35 | 91 | 22.9 | | 4 |
| 5/12/06 | 4:34:48 PM | 22 | 2.00 | 44 | 41 | 0 | 1 | 594.45 | 82 | 24.2 | | 4 |
| 5/12/06 | 4:37:32 PM | 23 | 2.00 | 38 | 36 | 0 | 1 | 570.42 | 72 | 26.7 | | 4 |
| 5/12/06 | 4:40:15 PM | 24 | 2.00 | 33 | 33 | 0 | 1 | 596.64 | 62 | 29.0 | | 4 |
| 5/12/06 | 4:42:57 PM | 25 | 2.00 | 25 | 23 | 0 | 1 | 616.34 | 45 | 35.2 | | 4 |
| 5/12/06 | 4:45:40 PM | 26 | 2.00 | 31 | 28 | 0 | 1 | 621.50 | 57 | 30.0 | | 4 |
| 5/12/06 | 4:48:23 PM | 27 | 2.00 | 10 | 9 | 0 | 0 | 658.71 | 18 | 67.0 | | 4 |
| 5/12/06 | 4:51:06 PM | 28 | 2.00 | 3 | 3 | 0 | 0 | 627.10 | 6 | 180.3 | | 4 |
| 5/12/06 | 4:53:48 PM | 29 | 2.00 | 4 | 5 | 0 | 0 | 650.60 | 7 | 141.1 | | 4 |
| 5/12/06 | 4:56:31 PM | 30 | 2.00 | 14 | 14 | 0 | 0 | 625.40 | 25 | 53.3 | | 4 |
| 5/12/06 | 4:59:14 PM | 31 | 2.00 | 72 | 69 | 0 | 0 | 598.74 | 134 | 18.1 | | 4 |

COPY

MT-06-0518

Pg 6 of 13

154/686

Protocol# 4 - MARSSIM_Smear_4.1sa User: 5801

## MARSSIM Smear Data

| | | | | | | | | | DPm 1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/12/06 | 5:01:57 PM | 32 | 2.00 | 16 | 15 | 0 | 2 | 581.65 | 31 | 46.9 | 4 |
| 5/12/06 | 5:04:40 PM | 33 | 2.00 | 18 | 17 | 0 | 0 | 634.75 | 33 | 43.6 | 4 |
| 5/12/06 | 5:07:22 PM | 34 | 2.00 | 18 | 17 | 0 | 0 | 597.82 | 34 | 43.5 | 4 |
| 5/12/06 | 5:10:10 PM | 35 | 2.00 | 116 | 59 | 0 | 70 | 633.06 | 209 | 13.8 | 4 |
| 5/12/06 | 5:12:54 PM | 36 | 2.00 | 41 | 39 | 0 | 1 | 604.54 | 76 | 25.3 | 4 |
| 5/12/06 | 5:15:38 PM | 37 | 2.00 | 145 | 138 | 0 | 0 | 614.90 | 265 | 12.3 | 4 |
| 5/12/06 | 5:18:21 PM | 38 | 2.00 | 21 | 21 | 0 | 2 | 653.44 | 38 | 39.1 | 4 |
| 5/12/06 | 5:21:04 PM | 39 | 2.00 | 22 | 21 | 0 | 0 | 620.77 | 39 | 38.5 | 4 |
| 5/12/06 | 5:23:46 PM | 40 | 2.00 | 38 | 34 | 0 | 2 | 607.54 | 70 | 26.7 | 4 |
| 5/12/06 | 5:26:30 PM | 41 | 2.00 | 108 | 102 | 0 | 0 | 577.91 | 203 | 14.4 | 4 |

WQ

VII-00 · 0518 PB 7015

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**1C-12**

**floor and lower walls up to 2m static measurement locations**

| Area: Room 58 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-12-01-1 | Systematic | Floor | 9 | 7 |
| 1C-12-01-2 | Systematic | Floor | 19 | 7 |
| 1C-12-01-3 | Systematic | Floor | 28 | 7 |
| 1C-12-01-4 | Systematic | Floor | 38 | 7 |
| 1C-12-01-5 | Systematic | Floor | 5 | 15 |
| 1C-12-01-6 | Systematic | Floor | 14 | 15 |
| 1C-12-01-7 | Systematic | Floor | 24 | 15 |
| 1C-12-01-8 | Systematic | Floor | 33 | 15 |
| 1C-12-01-9 | Systematic | Wall 1 | 9 | 1 |
| 1C-12-01-10 | Systematic | Wall 2 | 1 | 1 |
| 1C-12-01-11 | Systematic | Wall 2 | 11 | 1 |
| 1C-12-01-12 | Systematic | Wall 2 | 20 | 1 |
| 1C-12-01-13 | Systematic | Wall 2 | 30 | 1 |
| 1C-12-01-14 | Systematic | Wall 2 | 39 | 1 |
| 1C-12-01-15 | Systematic | Wall 3 | 6 | 1 |
| 1C-12-01-16 | Systematic | Wall 3 | 15 | 1 |
| 1C-12-01-17 | Systematic | Wall 4 | 8 | 1 |
| 1C-12-01-18 | Systematic | Wall 4 | 17 | 1 |
| 1C-12-01-19 | Systematic | Wall 4 | 27 | 1 |
| 1C-12-01-20 | Systematic | Wall 4 | 36 | 1 |

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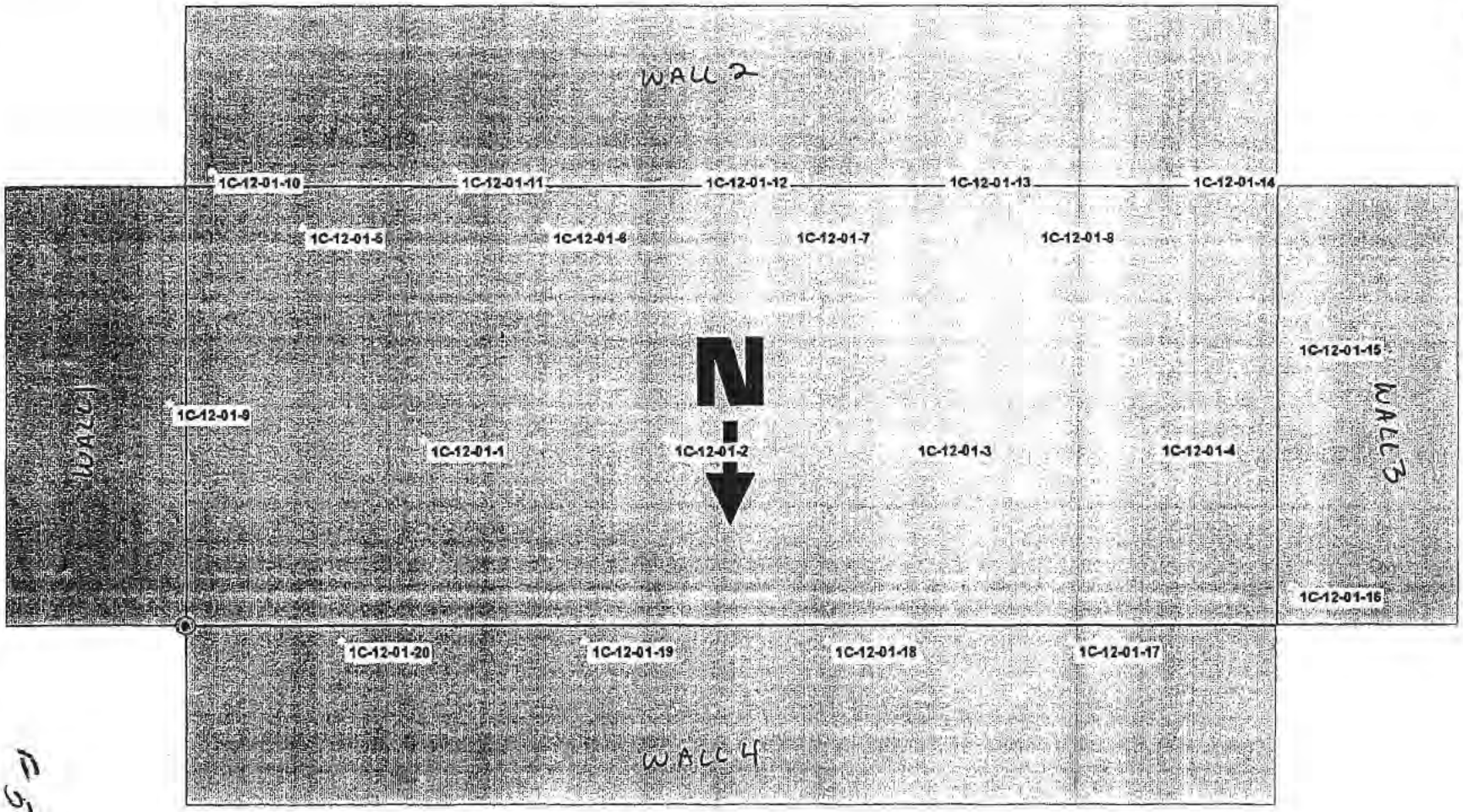
COPY

**1C-12-01 floor and lower walls up to 2m static measurement locations**
**Class 1 Area Room 58**

Room 58




E 524/686

**1C-12-02** **ceiling and upper walls up to 2m static measurement locations**
**Class 1 Area** **Room 58**

| Area: Room 58 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-12-02-1 | Systematic | ceiling-f | 6 | 5 |
| 1C-12-02-2 | Systematic | ceiling-f | 16 | 5 |
| 1C-12-02-3 | Systematic | ceiling-f | 27 | 5 |
| 1C-12-02-4 | Systematic | ceiling-f | 37 | 5 |
| 1C-12-02-5 | Systematic | ceiling-f | 1 | 14 |
| 1C-12-02-6 | Systematic | ceiling-f | 11 | 14 |
| 1C-12-02-7 | Systematic | ceiling-f | 22 | 14 |
| 1C-12-02-8 | Systematic | ceiling-f | 32 | 14 |
| 1C-12-02-9 | Systematic | ~~Floor~~ ceiling | 42 | 14 |
| 1C-12-02-10 | Systematic | Wall 1 | 2 | 3 |
| 1C-12-02-11 | Systematic | Wall 1 | 13 | 3 |
| 1C-12-02-12 | Systematic | Wall 2 | 6 | 3 |
| 1C-12-02-13 | Systematic | Wall 2 | 17 | 3 |
| 1C-12-02-14 | Systematic | Wall 2 | 27 | 3 |
| 1C-12-02-15 | Systematic | Wall 2 | 38 | 3 |
| 1C-12-02-16 | Systematic | Wall 3 | 6 | 3 |
| 1C-12-02-17 | Systematic | Wall 3 | 16 | 3 |
| 1C-12-02-18 | Systematic | Wall 4 | 10 | 3 |
| 1C-12-02-19 | Systematic | Wall 4 | 20 | 3 |
| 1C-12-02-20 | Systematic | Wall 4 | 31 | 3 |
| 1C-12-02-21 | Systematic | Wall 4 | 41 | 3 |

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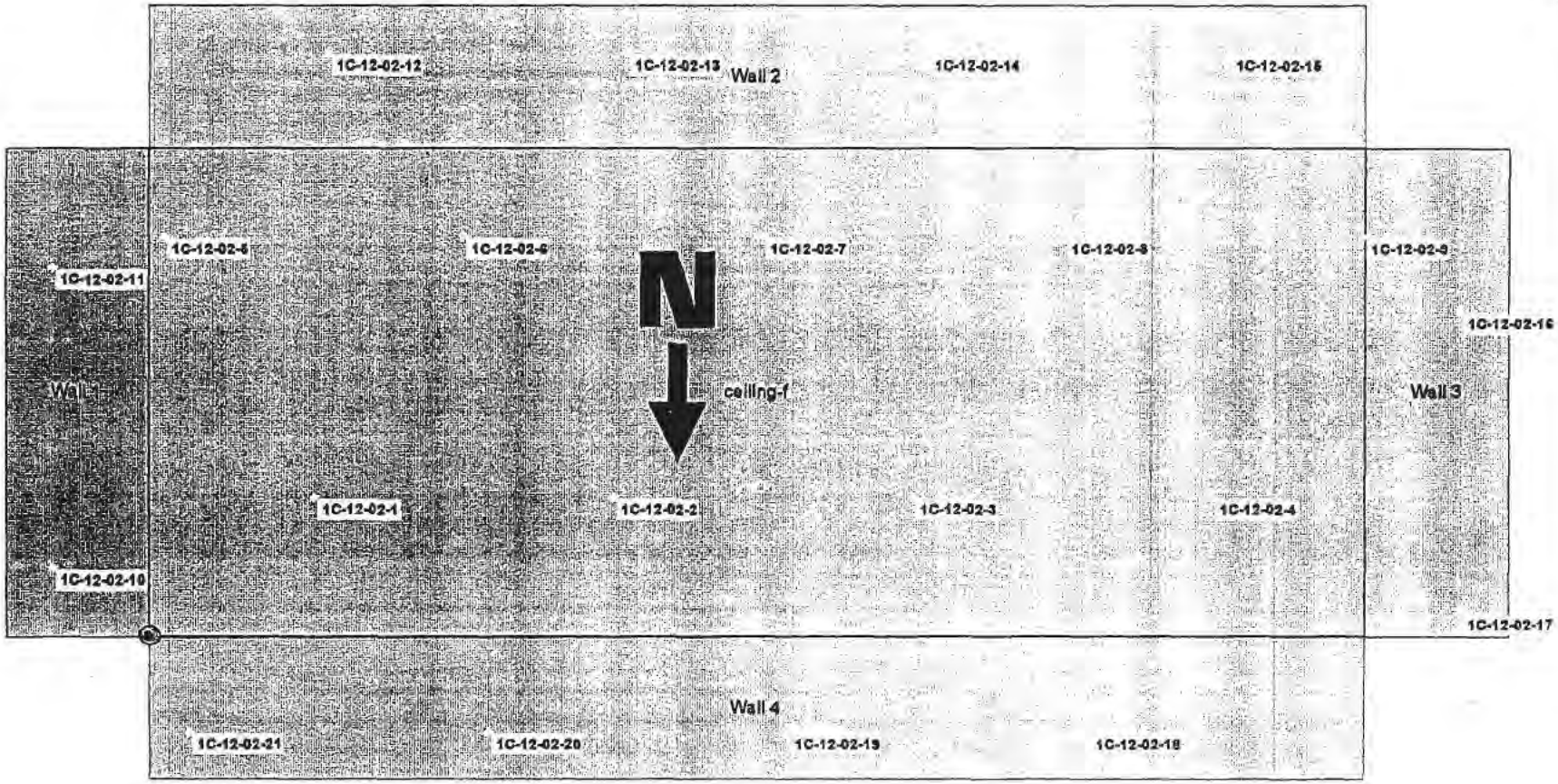
**1C-12-02 ceiling and upper walls up to 2m static measurement locations**
**Class 1 Area Room 58**
**scan an area of approximately 1m2 around each ceiling measurement location**

Room 58




COPY

1 of 686

# T-Building Upper and Lower Static Survey 1C12 Rm58

*RSDS#* _MT-06-0518_ *RCT:* [redacted] *RCT:* N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C120101S | 5904 | [redacted] | 5905 | 1 | 1 | 5/9/06 | 21:50 | 24 | 120 | 91 |
| ALPHA | 1C120102S | 5904 | [redacted] | 5905 | 1 | 2 | 5/9/06 | 21:55 | 15 | 120 | 57 |
| ALPHA | 1C120103S | 5904 | [redacted] | 5905 | 1 | 3 | 5/9/06 | 22:01 | 5 | 120 | 19 |
| ALPHA | 1C120104S | 5904 | [redacted] | 5905 | 1 | 4 | 5/9/06 | 22:05 | 8 | 120 | 30 |
| ALPHA | 1C120105S | 5904 | [redacted] | 5905 | 1 | 5 | 5/9/06 | 22:15 | 39 | 120 | 147 |
| ALPHA | 1C120106S | 5904 | [redacted] | 5905 | 1 | 6 | 5/9/06 | 22:19 | 21 | 120 | 79 |
| ALPHA | 1C120107S | 5904 | [redacted] | 5905 | 1 | 7 | 5/9/06 | 22:23 | 8 | 120 | 30 |
| ALPHA | 1C120108S | 5904 | [redacted] | 5905 | 1 | 8 | 5/10/06 | 0:02 | 15 | 120 | 57 |
| ALPHA | 1C120109S | 5904 | [redacted] | 5905 | 1 | 9 | 5/10/06 | 0:11 | 8 | 120 | 30 |
| ALPHA | 1C120110S | 5904 | [redacted] | 5905 | 1 | 10 | 5/10/06 | 0:16 | 16 | 120 | 60 |
| ALPHA | 1C120111S | 5904 | [redacted] | 5905 | 1 | 11 | 5/10/06 | 0:21 | 4 | 120 | 15 |
| ALPHA | 1C120112S | 5904 | [redacted] | 5905 | 1 | 12 | 5/10/06 | 0:26 | 13 | 120 | 49 |
| ALPHA | 1C120113S | 5904 | [redacted] | 5905 | 1 | 13 | 5/10/06 | 0:31 | 8 | 120 | 30 |
| ALPHA | 1C120114S | 5904 | [redacted] | 5905 | 1 | 14 | 5/10/06 | 16:18 | 13 | 120 | 49 |
| ALPHA | 1C120115S | 5904 | [redacted] | 5905 | 1 | 15 | 5/10/06 | 16:24 | 6 | 120 | 23 |
| ALPHA | 1C120116S | 5904 | [redacted] | 5905 | 1 | 16 | 5/10/06 | 16:30 | 9 | 120 | 34 |
| ALPHA | 1C120117S | 5904 | [redacted] | 5905 | 1 | 17 | 5/10/06 | 16:35 | 5 | 120 | 19 |
| ALPHA | 1C120118S | 5904 | [redacted] | 5905 | 1 | 18 | 5/10/06 | 16:40 | 4 | 120 | 15 |
| ALPHA | 1C120119S | 5904 | [redacted] | 5905 | 1 | 19 | 5/10/06 | 16:45 | 6 | 120 | 23 |
| ALPHA | 1C120120S | 5904 | [redacted] | 5905 | 1 | 20 | 5/10/06 | 16:50 | 5 | 120 | 19 |
| ALPHA | 1C120201S | 5904 | [redacted] | 5905 | 1 | 21 | 5/10/06 | 17:12 | 5 | 120 | 19 |
| ALPHA | 1C120202S | 5904 | [redacted] | 5905 | 1 | 22 | 5/10/06 | 17:19 | 14 | 120 | 53 |
| ALPHA | 1C120203S | 5904 | [redacted] | 5905 | 1 | 23 | 5/10/06 | 17:25 | 6 | 120 | 23 |
| ALPHA | 1C120204S | 5904 | [redacted] | 5905 | 1 | 24 | 5/10/06 | 17:30 | 4 | 120 | 15 |
| ALPHA | 1C120205S | 5904 | [redacted] | 5905 | 1 | 25 | 5/10/06 | 17:36 | 5 | 120 | 19 |
| ALPHA | 1C120206S | 5904 | [redacted] | 5905 | 1 | 26 | 5/10/06 | 17:40 | 7 | 120 | 26 |
| ALPHA | 1C120207S | 5904 | [redacted] | 5905 | 1 | 27 | 5/10/06 | 17:45 | 10 | 120 | 38 |
| ALPHA | 1C120208S | 5904 | [redacted] | 5905 | 1 | 28 | 5/10/06 | 17:50 | 12 | 120 | 45 |
| ALPHA | 1C120209S | 5904 | [redacted] | 5905 | 1 | 29 | 5/10/06 | 17:55 | 5 | 120 | 19 |
| ALPHA | 1C120210S | 5904 | [redacted] | 5905 | 1 | 30 | 5/10/06 | 19:03 | 1 | 120 | 4 |
| ALPHA | 1C120211S | 5904 | [redacted] | 5905 | 1 | 31 | 5/10/06 | 19:08 | 9 | 120 | 34 |
| ALPHA | 1C120212S | 5904 | [redacted] | 5905 | 1 | 32 | 5/10/06 | 19:11 | 15 | 120 | 57 |
| ALPHA | 1C120213S | 5904 | [redacted] | 5905 | 1 | 33 | 5/10/06 | 19:15 | 4 | 120 | 15 |
| ALPHA | 1C120214S | 5904 | [redacted] | 5905 | 1 | 34 | 5/10/06 | 19:19 | 4 | 120 | 15 |
| ALPHA | 1C120215S | 5904 | [redacted] | 5905 | 1 | 35 | 5/10/06 | 19:23 | 7 | 120 | 26 |
| ALPHA | 1C120216S | 5904 | [redacted] | 5905 | 1 | 36 | 5/10/06 | 19:27 | 3 | 120 | 11 |
| ALPHA | 1C120217S | 5904 | [redacted] | 5905 | 1 | 37 | 5/10/06 | 19:31 | 12 | 120 | 45 |
| ALPHA | 1C120218S | 5904 | [redacted] | 5905 | 1 | 38 | 5/10/06 | 19:35 | 8 | 120 | 30 |
| ALPHA | 1C120219S | 5904 | [redacted] | 5905 | 1 | 39 | 5/10/06 | 19:38 | 6 | 120 | 23 |
| ALPHA | 1C120220S | 5904 | [redacted] | 5905 | 1 | 40 | 5/10/06 | 19:43 | 5 | 120 | 19 |
| ALPHA | 1C120221S | 5904 | [redacted] | 5905 | 1 | 41 | 5/10/06 | 19:47 | 7 | 120 | 26 ✓ |
| BETA | 1C120101S | 5904 | [redacted] | 5905 | 2 | 1 | 5/9/06 | 21:51 | 353 | 60 | 3396 ✓ |



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# T-Building Upper and Lower Static Survey 1C12 Rm58

***RSDS# MT-06-0518*** ***RCT:*** [redacted] ***RCT:*** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| BETA | 1C120102S | 5904 | [redacted] | 5905 | 2 | 2 | 5/9/06 | 21:57 | 219 | 60 | 2107 |
| BETA | 1C120103S | 5904 | | 5905 | 2 | 3 | 5/9/06 | 22:02 | 170 | 60 | 1635 |
| BETA | 1C120104S | 5904 | | 5905 | 2 | 4 | 5/9/06 | 22:07 | 211 | 60 | 2030 |
| BETA | 1C120105S | 5904 | | 5905 | 2 | 5 | 5/9/06 | 22:16 | 413 | 60 | 3973 |
| BETA | 1C120106S | 5904 | | 5905 | 2 | 6 | 5/9/06 | 22:20 | 282 | 60 | 2713 |
| BETA | 1C120107S | 5904 | | 5905 | 2 | 7 | 5/9/06 | 22:24 | 211 | 60 | 2030 |
| BETA | 1C120108S | 5904 | | 5905 | 2 | 8 | 5/10/06 | 0:03 | 208 | 60 | 2001 |
| BETA | 1C120109S | 5904 | | 5905 | 2 | 9 | 5/10/06 | 0:12 | 176 | 60 | 1693 |
| BETA | 1C120110S | 5904 | | 5905 | 2 | 10 | 5/10/06 | 0:17 | 205 | 60 | 1972 |
| BETA | 1C120111S | 5904 | | 5905 | 2 | 11 | 5/10/06 | 0:22 | 129 | 60 | 1241 |
| BETA | 1C120112S | 5904 | | 5905 | 2 | 12 | 5/10/06 | 0:27 | 150 | 60 | 1443 |
| BETA | 1C120113S | 5904 | | 5905 | 2 | 13 | 5/10/06 | 0:32 | 212 | 60 | 2039 |
| BETA | 1C120114S | 5904 | | 5905 | 2 | 14 | 5/10/06 | 16:19 | 125 | 60 | 1203 |
| BETA | 1C120115S | 5904 | | 5905 | 2 | 15 | 5/10/06 | 16:25 | 137 | 60 | 1318 |
| BETA | 1C120116S | 5904 | | 5905 | 2 | 16 | 5/10/06 | 16:31 | 136 | 60 | 1308 |
| BETA | 1C120117S | 5904 | | 5905 | 2 | 17 | 5/10/06 | 16:36 | 412 | 60 | 3963 |
| BETA | 1C120118S | 5904 | | 5905 | 2 | 18 | 5/10/06 | 16:41 | 187 | 60 | 1799 |
| BETA | 1C120119S | 5904 | | 5905 | 2 | 19 | 5/10/06 | 16:46 | 204 | 60 | 1962 |
| BETA | 1C120120S | 5904 | | 5905 | 2 | 20 | 5/10/06 | 16:51 | 134 | 60 | 1289 |
| BETA | 1C120201S | 5904 | | 5905 | 2 | 21 | 5/10/06 | 17:13 | 131 | 60 | 1260 |
| BETA | 1C120202S | 5904 | | 5905 | 2 | 22 | 5/10/06 | 17:20 | 126 | 60 | 1212 |
| BETA | 1C120203S | 5904 | | 5905 | 2 | 23 | 5/10/06 | 17:26 | 121 | 60 | 1164 |
| BETA | 1C120204S | 5904 | | 5905 | 2 | 24 | 5/10/06 | 17:31 | 107 | 60 | 1029 |
| BETA | 1C120205S | 5904 | | 5905 | 2 | 25 | 5/10/06 | 17:37 | 110 | 60 | 1058 |
| BETA | 1C120206S | 5904 | | 5905 | 2 | 26 | 5/10/06 | 17:42 | 120 | 60 | 1154 |
| BETA | 1C120207S | 5904 | | 5905 | 2 | 27 | 5/10/06 | 17:47 | 107 | 60 | 1029 |
| BETA | 1C120208S | 5904 | | 5905 | 2 | 28 | 5/10/06 | 17:51 | 84 | 60 | 808 |
| BETA | 1C120209S | 5904 | | 5905 | 2 | 29 | 5/10/06 | 17:56 | 123 | 60 | 1183 |
| BETA | 1C120210S | 5904 | | 5905 | 2 | 30 | 5/10/06 | 19:04 | 139 | 60 | 1337 |
| BETA | 1C120211S | 5904 | | 5905 | 2 | 31 | 5/10/06 | 19:09 | 146 | 60 | 1405 |
| BETA | 1C120212S | 5904 | | 5905 | 2 | 32 | 5/10/06 | 19:12 | 150 | 60 | 1443 |
| BETA | 1C120213S | 5904 | | 5905 | 2 | 33 | 5/10/06 | 19:16 | 131 | 60 | 1260 |
| BETA | 1C120214S | 5904 | | 5905 | 2 | 34 | 5/10/06 | 19:20 | 138 | 60 | 1328 |
| BETA | 1C120215S | 5904 | | 5905 | 2 | 35 | 5/10/06 | 19:24 | 139 | 60 | 1337 |
| BETA | 1C120216S | 5904 | | 5905 | 2 | 36 | 5/10/06 | 19:28 | 156 | 60 | 1501 |
| BETA | 1C120217S | 5904 | | 5905 | 2 | 37 | 5/10/06 | 19:32 | 112 | 60 | 1077 |
| BETA | 1C120218S | 5904 | | 5905 | 2 | 38 | 5/10/06 | 19:36 | 138 | 60 | 1328 |
| BETA | 1C120219S | 5904 | | 5905 | 2 | 39 | 5/10/06 | 19:40 | 136 | 60 | 1308 |
| BETA | 1C120220S | 5904 | | 5905 | 2 | 40 | 5/10/06 | 19:44 | 133 | 60 | 1279 |
| BETA | 1C120221S | 5904 | | 5905 | 2 | 41 | 5/10/06 | 19:48 | 143 | 60 | 1376 |
| | | N | | | | | | N | | | |
| | | A | | | | | | | A | | |



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# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBLDG Rm 58 | SURVEY NO. MT-06-0519 |
| PURPOSE: DRAINS, VENT & UTILITIES RESRAD 1C12 | RWP NO. N/A |
| | DATE: 5/13/06 |
| | TIME: 0810 |

## MAP / DRAWING

NO ELEVATED α/β⁻ detected during scan

see attached map

LEGEND: # = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

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△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904/5905 | 3/13/07 |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones Roy L Mowan | [redacted] | Date: 5/13/06 |
| Completed by: (Print Name) WAYNE JONES ROY L MOWAN | | |
| Counted by: (Signature) see attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) ↓ | | 5/19/06 |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 5-22-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0519



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | see | attached | | 1C120101D |
| 2 | | | | 1C120102D |
| 3 | | | | 1C120201U |
| 4 | | | | 1C120202U |
| 5 | | | | 1C120203U |
| 6 | | | | 1C120204U |
| 7 | | | | 1C120205U |
| 8 | | | | 1C120206U |
| 9 | | | | 1C120201V |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

COMMENTS: N/A

COPY

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F 550/686

ML-9620 (4-98)

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# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_098
Batch Ended: 5/15/06 8:54
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0519 [9] W. JONES 5-15-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| B1 | 1 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 2 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 3 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 4 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 5 | 0.00 | 2.07 | | 0.00 | 1.27 | |
| C2 | 6 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 7 | 0.00 | 2.15 | | 1.71 | 2.19 | |
| C4 | 8 | 0.00 | 2.03 | | 3.84 | 2.54 | |
| D1 | 9 | 0.00 | 2.07 | | 1.53 | 2.17 | |

WJ WJ

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5551/686



RLH

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060515_1044.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0519.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MARSSIM Smear Data

MT-06-0514 pg 5 of 8

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5/15/06 | 10:44:35 AM | -1 | 10.00 | 8 | 8 | 12 | 4 | 606.52 | 0 | 21.8 | B | 2 |
| 5/15/06 | 10:55:24 AM | 0 | 2.00 | 56 | 54 | 0 | 8 | 538.69 | 109 | 20.6 | | 2 |
| 5/15/06 | 10:58:07 AM | 1 | 2.00 | 1 | 1 | 1 | 6 | 498.19 | 1 | 749.5 | | 2 |
| 5/15/06 | 11:00:51 AM | 2 | 2.00 | 0 | 0 | 0 | 8 | 411.31 | 0 | 0.0 | | 2 |
| 5/15/06 | 11:03:34 AM | 3 | 2.00 | 7 | 6 | 0 | 3 | 593.72 | 12 | 87.3 | | 2 |
| 5/15/06 | 11:06:17 AM | 4 | 2.00 | 12 | 10 | 0 | 3 | 636.11 | 21 | 56.7 | | 2 |
| 5/15/06 | 11:08:59 AM | 5 | 2.00 | 27 | 25 | 0 | 3 | 648.22 | 47 | 32.2 | | 2 |
| 5/15/06 | 11:11:41 AM | 6 | 2.00 | 24 | 21 | 0 | 2 | 659.10 | 42 | 34.4 | | 2 |
| 5/15/06 | 11:14:25 AM | 7 | 2.00 | 39 | 36 | 0 | 1 | 651.80 | 70 | 25.4 | | 2 |
| 5/15/06 | 11:17:08 AM | 8 | 2.00 | 7 | 6 | 0 | 3 | 635.90 | 12 | 87.3 | | 2 |
| 5/15/06 | 11:19:50 AM | ✓9 | 2.00 | 2 | 2 | 0 | 5 | 622.85 | 4 | 233.2 | | 2 |

WJ

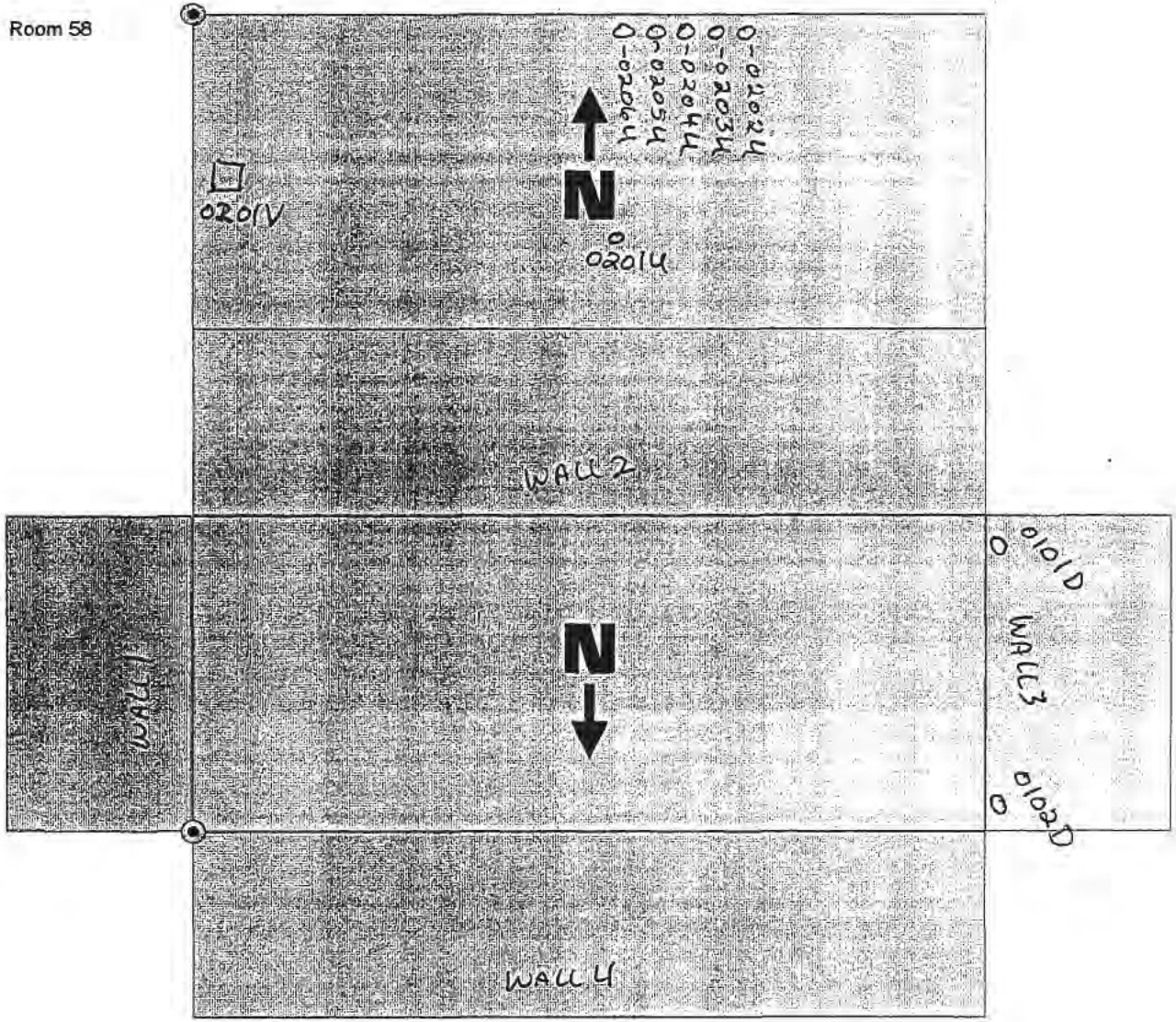
COPY 555/686

MT06-0519 Pg 608

COPY

1C-12 Class 1 Drains, vents, and utilities

Room 58



Survey Unit Number 1C12



(Supplemental sheet for biased measurements)

RSDS # MT-06-0519
RCT INT/HP WS [redacted] Rm [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C120101D | 58 | WALL 3 metal | | |
| 1C120102D | 58 | WALL 3 metal | | |
| 1C120201U | 58 | Ceiling Airline | | |
| 1C120202U | 58 | Ceiling NITROGEN | | |
| 1C120203U | 58 | Ceiling H2O | | |
| 1C120204U | 58 | Ceiling H2O | | |
| 1C120205U | 58 | Ceiling AIR | | |
| 1C120206U | 58 | Ceiling (Copper lines) | | |
| 1C120201V | 58 | Ceiling metal | | |
| | | | | N |
| | | | | A |
| | N | | | |
| | A | | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

COPY

# T-Building DRAINS, VENT, and UTILITIES SURVEY 1C12 RM 58

*RSDS#* __*MT-06-0519*_____ *RCT:* _____ *RCT:* _____

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C120101D | 5904 | | 5905 | 1 | 1 | 5/11/06 | 16:14 | 5 | 120 | 19 |
| ALPHA | 1C120102D | 5904 | | 5905 | 1 | 2 | 5/11/06 | 16:20 | 12 | 120 | 45 |
| ALPHA | 1C120201U | 5904 | | 5905 | 1 | 3 | 5/11/06 | 16:27 | 4 | 120 | 15 |
| ALPHA | 1C120202U | 5904 | | 5905 | 1 | 4 | 5/11/06 | 16:34 | 3 | 120 | 11 |
| ALPHA | 1C120203U | 5904 | | 5905 | 1 | 5 | 5/11/06 | 16:51 | 4 | 120 | 15 |
| ALPHA | 1C120204U | 5904 | | 5905 | 1 | 6 | 5/11/06 | 16:55 | 5 | 120 | 19 |
| ALPHA | 1C120205U | 5904 | | 5905 | 1 | 7 | 5/11/06 | 16:59 | 4 | 120 | 15 |
| ALPHA | 1C120206U | 5904 | | 5905 | 1 | 8 | 5/11/06 | 17:02 | 2 | 120 | 8 |
| ALPHA | 1C120201V | 5904 | | 5905 | 1 | 9 | 5/11/06 | 17:07 | 3 | 120 | 11 |
| BETA | 1C120101D | 5904 | | 5905 | 2 | 1 | 5/11/06 | 16:16 | 146 | 60 | 1405 |
| BETA | 1C120102D | 5904 | | 5905 | 2 | 2 | 5/11/06 | 16:21 | 135 | 60 | 1299 |
| BETA | 1C120201U | 5904 | | 5905 | 2 | 3 | 5/11/06 | 16:28 | 92 | 60 | 885 |
| BETA | 1C120202U | 5904 | | 5905 | 2 | 4 | 5/11/06 | 16:36 | 111 | 60 | 1068 |
| BETA | 1C120203U | 5904 | | 5905 | 2 | 5 | 5/11/06 | 16:52 | 137 | 60 | 1318 |
| BETA | 1C120204U | 5904 | | 5905 | 2 | 6 | 5/11/06 | 16:56 | 114 | 60 | 1097 |
| BETA | 1C120205U | 5904 | | 5905 | 2 | 7 | 5/11/06 | 17:00 | 133 | 60 | 1279 |
| BETA | 1C120206U | 5904 | | 5905 | 2 | 8 | 5/11/06 | 17:04 | 127 | 60 | 1222 |
| BETA | 1C120201V | 5904 | | 5905 | 2 | 9 | 5/11/06 | 17:08 | 98 | 60 | 943 |

N A

COPY



F556/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-58 1C12 | SURVEY NO. MT-06-0586 |
| PURPOSE: DOSE RATE SURVEY | RWP NO. N/A |
| | DATE: 6-16-06 |
| | TIME: 1200 |

## MAP/DRAWING

REFERENCE RSDS MT-06-0397 AND MT-05-1195 FOR RELEVANT MAPS

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| MICROREM | 1491 | 4-25-07 |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 6-16-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | | Date: 6-19-06 |
| Reviewed/Approved by: (Print Name) Donald R Pairy | | F-557/686 |

ML-9620 (2-98)

Survey No. MT-06-0584



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-558/686

ML-9620 (4-98)

5-8

**1C-12**

Using the Bicron Analyst Micro R meter collect background reading
collect measurement on contact with each location identified on RSDS
multiply contact measurement by 16 and record as 1 cm measurement value
collect measurement at 30 cm at each location identified on RSDS
Collect measurement at 1 meter (3.3 feet approximately waist high) at each location identified on RSDS

floor value X 16

| Label | Room | Surface | RSDS# | Background MicroR/hr | Measured MicroR/hr @ on floor | Measured MicroR/hr @ 1cm | Measured MicroR/hr @ 30 cm | Measured MicroR/hr @ 1 m |
|---|---|---|---|---|---|---|---|---|
| 1C120107Y | 58 | floor | 05-1195 | 5 | 5 | 80 | 5 | 5 |
| 1C120109Y | 58 | floor | 05-1195 | 5 | 5 | 80 | 5 | 5 |
| 1C120113Y | 58 | floor | 05-1195 | 5 | 5 | 80 | 5 | 5 |
| 1C120114Y | 58 | floor | 05-1195 | 5 | 5 | 80 | 5 | 5 |
| 1C120115Y | 58 | floor | 05-1195 | 5 | 5 | 80 | 5 | 5 |
| 1C120108R | 58 | floor | 06-0397 | 5 | 5 | 80 | 5 | 5 |
| 1C120109R | 58 | floor | 06-0397 | 5 | 5 | 80 | 5 | 5 |
| 1C120113R | 58 | floor | 06-0397 | 5 | 5 | 80 | 5 | 5 |

COPY

1559/686

PAGE 3 OF 3
MT-07-0580

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg T59 (C21) | SURVEY NO. MT-05-0368 |
| PURPOSE: MARSSIMS (STATIC MEASUREMENTS - CEILING) | RWP NO. NA |
| | DATE: 6-10-05 |
| | TIME: 0900 |

## MAP / DRAWING

1 M² SCANNED AROUND EACH SURVEY POINT

No elevated α/β levels detected during scan

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · — = radiological boundary

(#) = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5922 5924 | 5/18/06 |
| | | |
| | N A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 6-10-05 |
| Completed by: (Print Name) G. Hodges / M. Reynolds / C. ZACCONE | | |
| Counted by: (Signature) SEE | HP# N | Date: A |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) [redacted] | | Date: 7-19-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

F 860/686

ML-9620 (2-98)

Survey No. MT-05-0368



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C21 0201S |
| 2 | | | | 0202S |
| 3 | | | | 0203S |
| 4 | | | | 0204S |
| 5 | | SEE | | 0205S |
| 6 | | ATT | ACHED | 0206S |
| 7 | | | | 0207S |
| 8 | | | | 0208S |
| 9 | | | | 0209S |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F561/686

ML-9620A (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20050610_1416.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-0368.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

PAGE 3 OF 8
MT-05-0368

5801
6/10/05

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/10/05 | 2:17:30 PM | -1 | 10.00 | 8 | 8 | 11 | 2 | 635.86 | 0 | 22.0 | B | 3 |
| 6/10/05 | 2:28:13 PM | 0 | 2.00 | 536 | 508 | 0 | 0 | 539.39 | 1043 | 6.2 | | 3 |
| 6/10/05 | 2:30:54 PM | 1 | 2.00 | 26 | 23 | 0 | 1 | 600.58 | 49 | 32.4 | | 3 |
| 6/10/05 | 2:33:37 PM | 2 | 2.00 | 83 | 73 | 0 | 1 | 608.68 | 152 | 16.5 | | 3 |
| 6/10/05 | 2:36:19 PM | 3 | 2.00 | 43 | 38 | 0 | 1 | 603.06 | 80 | 23.8 | | 3 |
| 6/10/05 | 2:39:02 PM | 4 | 2.00 | 46 | 42 | 1 | 1 | 577.44 | 86 | 23.1 | | 3 |
| 6/10/05 | 2:41:43 PM | 5 | 2.00 | 64 | 54 | 0 | 1 | 613.88 | 118 | 19.0 | | 3 |
| 6/10/05 | 2:44:25 PM | 6 | 2.00 | 120 | 110 | 0 | 0 | 596.83 | 223 | 13.4 | | 3 |
| 6/10/05 | 2:47:08 PM | 7 | 2.00 | 219 | 195 | 1 | 0 | 583.07 | 412 | 9.8 | | 3 |
| 6/10/05 | 2:49:50 PM | 8 | 2.00 | 52 | 45 | 0 | 1 | 605.45 | 96 | 21.3 | | 3 |
| 6/10/05 | 2:52:32 PM | 9 | 2.00 | 42 | 38 | 0 | 1 | 594.64 | 79 | 24.2 | | 3 |

✓ NK

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MT-05-0368

F 563/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_011
Batch Ended: 6/10/05 12:58
Cal. Due Date: 11/17/05
Serial Number: 26966-3

Batch ID: MT-05-368 [9] HODGES 6-10-05 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| A2 | 2 | 0.00 | 2.03 | | 1.59 | 2.02 | |
| A3 | 3 | 0.00 | 2.27 | | 0.00 | 1.27 | |
| A4 | 4 | 1.71 | 2.12 | | 0.16 | 1.71 | |
| B1 | 5 | 0.00 | 1.92 | | 1.73 | 2.07 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.13 | |
| B3 | 7 | 1.92 | 2.24 | | 2.74 | 2.66 | |
| B4 | 8 | 0.00 | 2.01 | | 1.56 | 2.08 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |

✓ nr ✓ nr

PAGE 5 OF 8
MT-05-0368

F 5641/686

# T-BLDB. 59 static measurements (1C21-02)

*RSDS#* MT-05-368 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2074 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1747 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210201S | 5922 | [redacted] | 5926 | 1 | 1 | 6/10/05 | 10:00 | 4 | 120 | 15 |
| ALPHA | 1C210202S | 5922 | [redacted] | 5926 | 1 | 2 | 6/10/05 | 10:04 | 4 | 120 | 15 |
| ALPHA | 1C210203S | 5922 | [redacted] | 5926 | 1 | 3 | 6/10/05 | 10:08 | 3 | 120 | 11 |
| ALPHA | 1C210204S | 5922 | [redacted] | 5926 | 1 | 4 | 6/10/05 | 10:13 | 9 | 120 | 34 |
| ALPHA | 1C210205S | 5922 | [redacted] | 5926 | 1 | 5 | 6/10/05 | 10:18 | 2 | 120 | 8 |
| ALPHA | 1C210206S | 5922 | [redacted] | 5926 | 1 | 6 | 6/10/05 | 10:22 | 3 | 120 | 11 |
| ALPHA | 1C210207S | 5922 | [redacted] | 5926 | 1 | 7 | 6/10/05 | 10:26 | 7 | 120 | 27 |
| ALPHA | 1C210208S | 5922 | [redacted] | 5926 | 1 | 8 | 6/10/05 | 10:30 | 6 | 120 | 23 |
| ALPHA | 1C210209S | 5922 | [redacted] | 5926 | 1 | 9 | 6/10/05 | 10:33 | 2 | 120 | 8 ✓ |
| BETA | 1C210201S | 5922 | [redacted] | 5926 | 2 | 1 | 6/10/05 | 10:01 | 184 | 60 | 1672 |
| BETA | 1C210202S | 5922 | [redacted] | 5926 | 2 | 2 | 6/10/05 | 10:05 | 200 | 60 | 1817 |
| BETA | 1C210203S | 5922 | [redacted] | 5926 | 2 | 3 | 6/10/05 | 10:10 | 186 | 60 | 1690 |
| BETA | 1C210204S | 5922 | [redacted] | 5926 | 2 | 4 | 6/10/05 | 10:14 | 192 | 60 | 1744 |
| BETA | 1C210205S | 5922 | [redacted] | 5926 | 2 | 5 | 6/10/05 | 10:19 | 183 | 60 | 1663 |
| BETA | 1C210206S | 5922 | [redacted] | 5926 | 2 | 6 | 6/10/05 | 10:23 | 200 | 60 | 1817 |
| BETA | 1C210207S | 5922 | [redacted] | 5926 | 2 | 7 | 6/10/05 | 10:27 | 233 | 60 | 2117 |
| BETA | 1C210208S | 5922 | [redacted] | 5926 | 2 | 8 | 6/10/05 | 10:31 | 175 | 60 | 1590 |
| BETA | 1C210209S | 5922 | [redacted] | 5926 | 2 | 9 | 6/10/05 | 10:35 | 189 | 60 | 1717 ✓ |

N/A



F 565/686

**1C-21-02 Room 59**
**ceiling and upper wall static measurements**
**scan 1m2 area around each ceiling location**

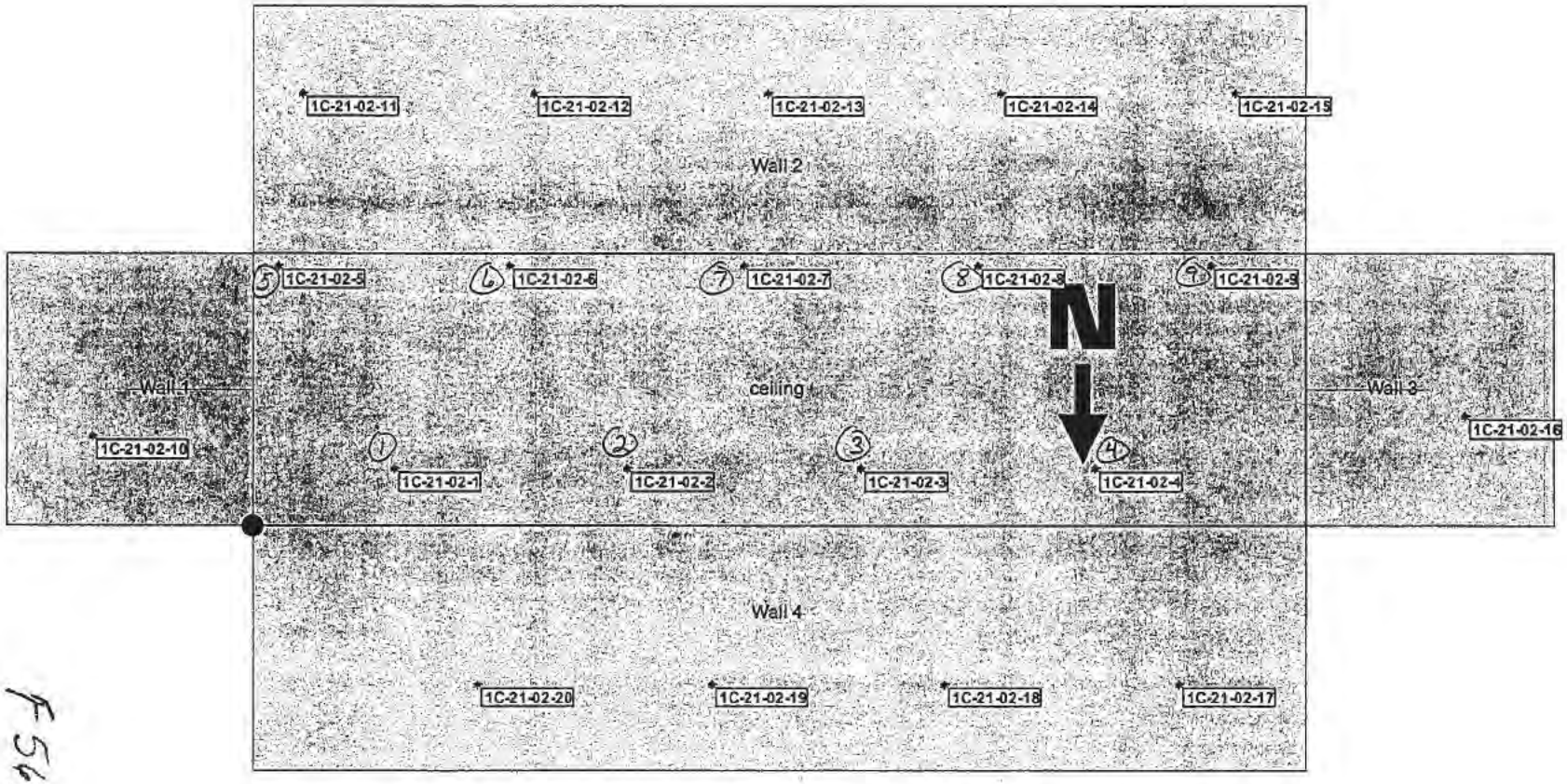
| Area: 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21-02-1 | Systematic | ceiling | 6 | 2 |
| 1C-21-02-2 | Systematic | ceiling | 15 | 2 |
| 1C-21-02-3 | Systematic | ceiling | 25 | 2 |
| 1C-21-02-4 | Systematic | ceiling | 34 | 2 |
| 1C-21-02-5 | Systematic | ceiling | 1 | 10 |
| 1C-21-02-6 | Systematic | ceiling | 10 | 10 |
| 1C-21-02-7 | Systematic | ceiling | 20 | 10 |
| 1C-21-02-8 | Systematic | ceiling | 29 | 10 |
| 1C-21-02-9 | Systematic | ceiling | 39 | 10 |
| 1C-21-02-10 | Systematic | Wall 1 | 4 | 6 |
| 1C-21-02-11 | Systematic | Wall 2 | 2 | 6 |
| 1C-21-02-12 | Systematic | Wall 2 | 11 | 6 |
| 1C-21-02-13 | Systematic | Wall 2 | 21 | 6 |
| 1C-21-02-14 | Systematic | Wall 2 | 30 | 6 |
| 1C-21-02-15 | Systematic | Wall 2 | 40 | 6 |
| 1C-21-02-16 | Systematic | Wall 3 | 7 | 6 |
| 1C-21-02-17 | Systematic | Wall 4 | 5 | 6 |
| 1C-21-02-18 | Systematic | Wall 4 | 14 | 6 |
| 1C-21-02-19 | Systematic | Wall 4 | 24 | 6 |
| 1C-21-02-20 | Systematic | Wall 4 | 33 | 6 |

ONLY CEILING STATICS Completed
because of scaffolding in T-59

**1C-21-02 Room 59**
**ceiling and upper wall static measurements**
**Scan an area of approximately 1m2 around each static measurement on ceiling**

59

Because of scaffolding in position only ceiling static points completed.




F 5a7/666

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M1-03-0368

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 7 8

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T 1C21 (Rm 59) | SURVEY NO. MT-05-369 |
| PURPOSE: JUDGEMENTALS ON CEILING | RWP NO.: N/A |
| | DATE: 6-10-05 |
| | TIME: 1230 |

## MAP/DRAWING

NO ELEVATED α, β- ACTIVITY ABOVE ALARM SETPOINTS DURING SCAN OR DIRECT COUNT.

NO REMOVABLE CONTAMINATION.

1 m² α, β- SCAN PERFORMED AROUND EACH JUDGEMENTAL LOCATION, NO ELEVATED ACTIVITY DETECTED.

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5922/5924 | ~~4-29-06~~ 5-18-06 |
| | | |
| | N | |
| | A | |
| | | |

Completed by: (Signature) Curtis Bacon / Neal Reynolds / Hodge — Date: 6-10-05

Completed by: (Print Name) NEAL REYNOLDS Curtis Bacon / G. Hodge

Counted by: (Signature) SEE — HP# N — Date: A

Counted by: (Print Name) ATTACHED 568/686

Reviewed/Approved by: (Signature) Jarell Hallabaugh — Date: 6-15-05

Reviewed/Approved by: (Print Name) J. HALLABAUGH

ML-0620 (2-98)

Survey No. MT-05-369



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | ← | SEE | | 1C21020 1J |
| 2 | | ATTACHED → | | 1C21020 2J |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F 569/686

ML-9620A (4-98)

MR 6-14-05

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20050610_1357.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-0369.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

PAGE 3 of 8

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/10/05 | 1:58:18 PM | -1 | 10.00 | 9 | 9 | 10 | 2 | 632.45 | 0 | 20.7 | B | 2 |
| 6/10/05 | 2:09:02 PM | 0 | 2.00 | 572 | 529 | 2 | 0 | 583.38 | 1074 | 6.0 | | 2 |
| 6/10/05 | 2:11:43 PM | 1 | 2.00 | 39 | 36 | 0 | 1 | 617.34 | 72 | 25.6 | | 2 |
| 6/10/05 | 2:14:26 PM | 2 | 2.00 | 91 | 78 | 0 | 0 | 544.20 | 177 | 15.7 | | 2 |

PAGE 4 of 8
RSDS #MT-05-369

6/7/06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_012
Batch Ended: 6/10/05 12:59
Cal. Due Date: 11/17/05
Serial Number: 26966-3

Batch ID: MT-05-369 [2] REYNOLDS 6-10-05 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| D1 | 1 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 2 | 1.74 | 2.15 | | 0.00 | 1.19 | |

√ nr √ nr

PAGE 3 OF 8

F 572/606

~~Page 1 of 1~~
nr 6-14-05

# T-Building judgemental measurements (1C21)

***RSDS#*** MT-05-369 ***RCT:*** [redacted] ***RCT:*** [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2074 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1747 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210201J | 5922 | [redacted] | ~~5922~~ 5926 | 1 | 1 | 6/10/05 | 12:41 | 1 | 120 | 4 |
| ALPHA | 1C210202J | 5922 | [redacted] | ~~5922~~ 5926 | 1 | 2 | 6/10/05 | 12:45 | 3 | 120 | 11 |
| BETA | 1C210201J | 5922 | [redacted] | 5926 | 2 | 3 | 6/10/05 | 12:42 | 182 | 60 | 1654 |
| BETA | 1C210202J | 5922 | [redacted] | 5926 | 2 | 4 | 6/10/05 | 12:46 | 170 | 60 | 1545 |

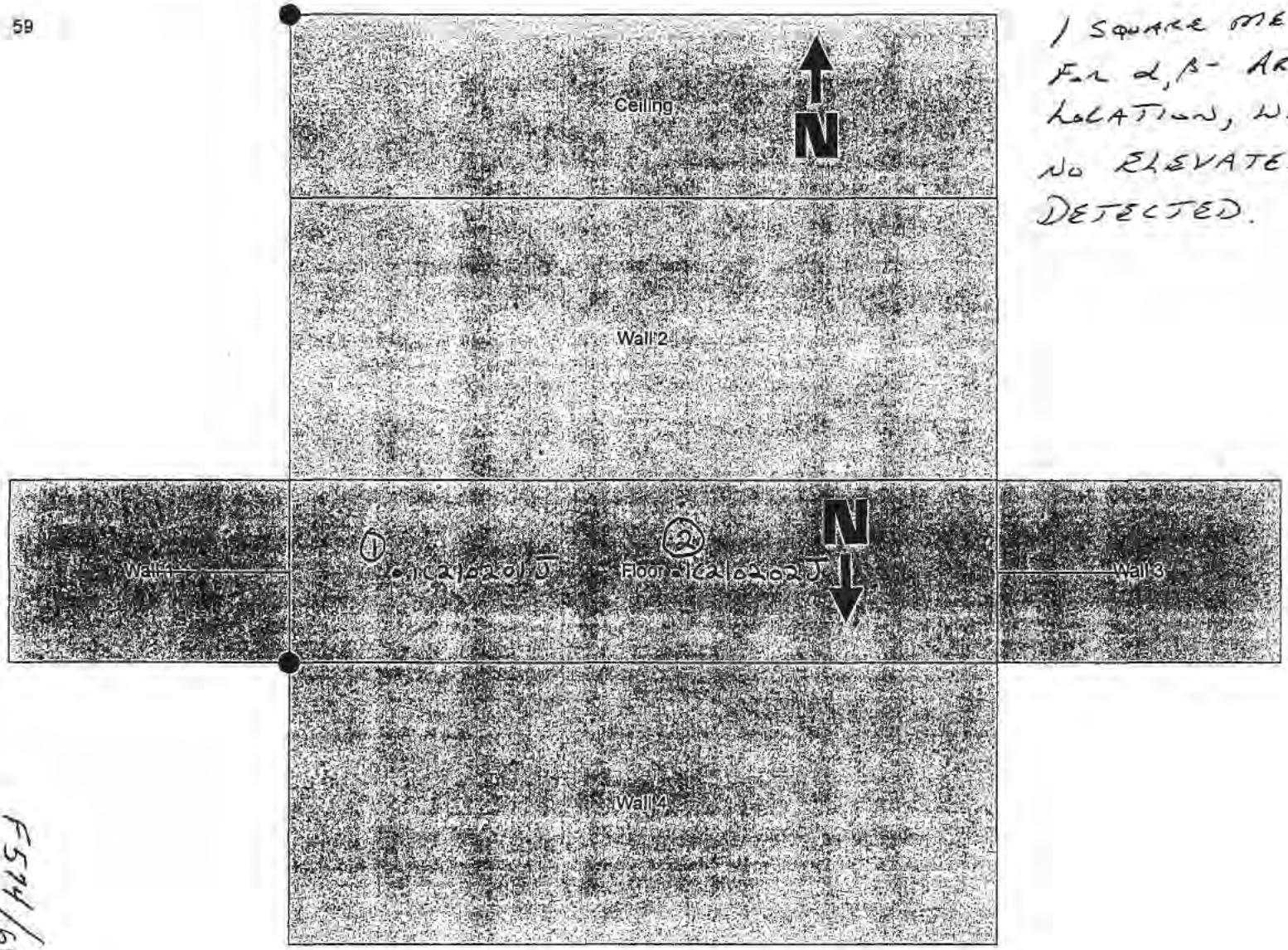
N/A



F513/686

1C-21

59




1 SQUARE METER SCAN PERFORMED FOR α, β- AROUND EACH LOCATION, WITH 5922/5926. SMEAR/DIRECT
NO ELEVATED ACTIVITY DETECTED.

PAGE 7 OF 8
RSDS # 117-05-369

F594/686

**Survey Unit Number:**



(Supplemental sheet for biased measurements.)

RSDS # MT-05-369
RCT INT/HP MR [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C21 0201J | J-59 | CEILING | | |
| 1C21 0202J | J-59 | CEILING | | |
| | N/A | | N/A | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-Bldg. Room 59 | SURVEY NO. MT-05-427 |
| PURPOSE: | RWP NO. N/A |
| | DATE: 6-24-05 |
| 1C-21-02 Upper Wall Scan 25% | TIME: 1420 |

## MAP/DRAWING

Room 59 upper Wall Scan 25%
No elevated α/β levels detected during scan

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+n+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | ~~5925~~ 5923 | 5-17-06 |
| 43-68 | 5925 | 5-17-06 |
| 2350 | 5924 | 5-9-06 |
| 43-68 | 5929 | 5-9-06 |
| N/A | N/A | N/A |

| | | |
|---|---|---|
| Completed by: (Signature) [signature] | UPN [redacted] | Date: 6-24-05 |
| Completed by: (Print Name) Sandy Seals | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | F 5-26/6 06 |
| Reviewed/Approved by: (Signature) [signature] | [redacted] | Date: 1-19-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-0620 (2-98)

Survey No. MT-05-427



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A
N/A

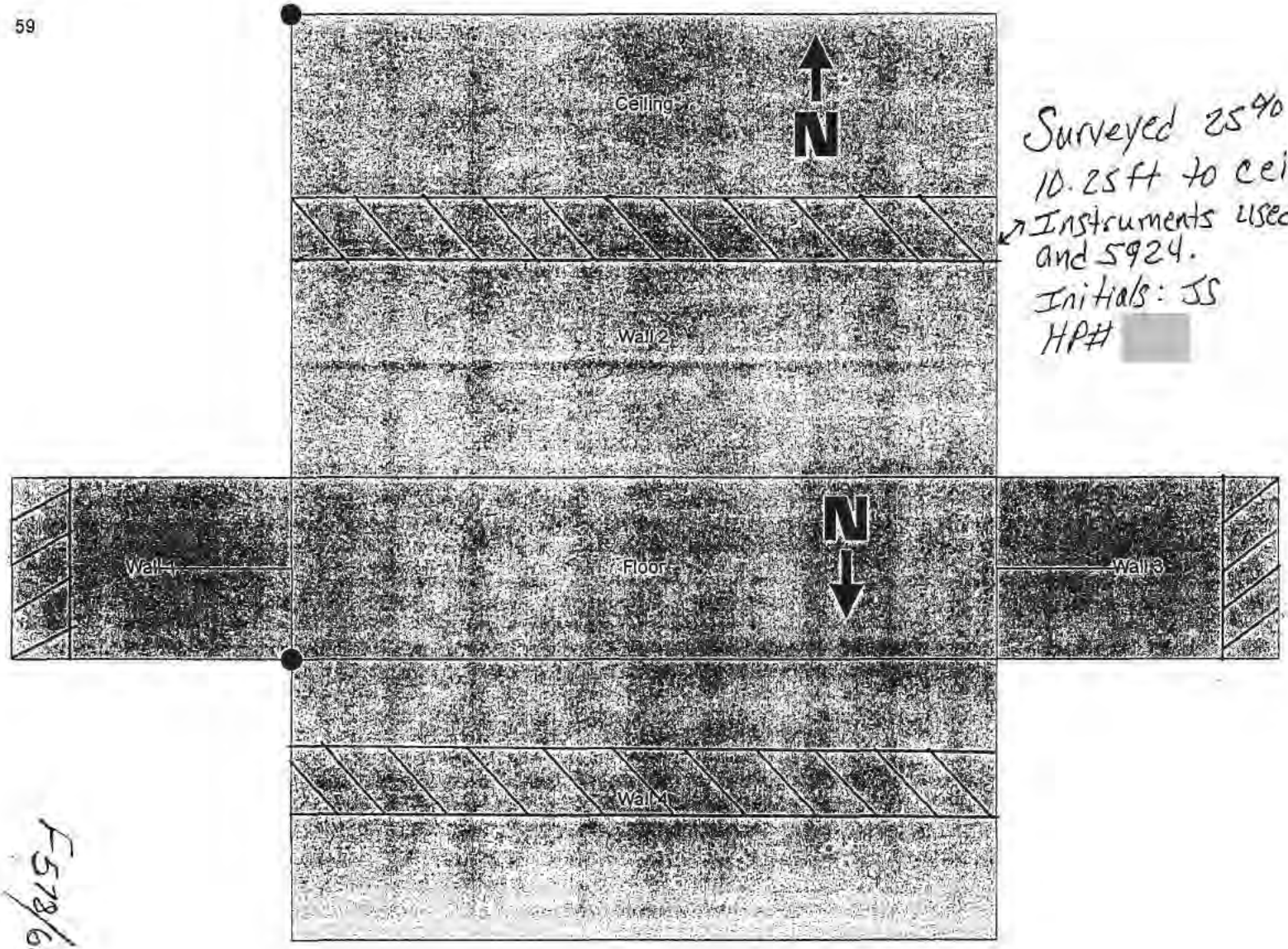
NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

F577/686

ML-9620A (4-98)

T-Bldg. 1C-21 Room 59

59




Surveyed 25% of upper walls from 10.25ft to ceiling for α/β
Instruments used: 2350 Serial#5923 and 5924.
6/24/05
Initials: JS
HP# [redacted]

F578/686

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MT-05-0427

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 1C21 | SURVEY NO. MT-05-1269 |
| PURPOSE: SURVEY FOR RESRAD SAMPLE LOCATIONS | RWP NO. N/A |
| | DATE: 12-5-05 |
| | TIME: 1200 |

## MAP/DRAWING

FOR SMEAR AND STATIC COUNT RESULTS AND SAMPLE ANALYSIS, SEE ATTACHED

COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) = dpm/β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5923/5925 | 5-17-06 |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | DATE: 12-5-05 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE | HI # N | DATE: A |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) | | DATE: 2-7-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

F579/680

Survey No. MT-05-1269

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C21 0101Y STATICS |
| 2 | | | | 0102Y |
| 3 | | | | 0103Y |
| 4 | | | | 0104Y |
| 5 | | | | 0105Y |
| 6 | | | | 0106Y |
| 7 | | SEE | | 0107Y |
| 8 | | ATTACHED | | 0108Y |
| 9 | | | | 0109Y |
| 10 | | | | 1C21 0110Y SHONKA |
| 11 | | | | 0111Y |
| 12 | | | | 0112Y |
| 13 | | | | 0113Y |
| 14 | | | | 0114Y |
| 15 | | | | 0115Y |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | N | |
| 25 | | | A | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | N | | |
| 57 | | | A | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A. F-580/686

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20051206_1124.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1269.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MT-05-1269

1-684/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/6/05 | 11:24:47 AM | -1 | 10.00 | 9 | 9 | 11 | 7 | 621.40 | 0 | 21.2 | B | 1 |
| 12/6/05 | 11:35:34 AM | 0 | 2.00 | 465 | 436 | 3 | 1 | 552.59 | 896 | 6.6 | | 1 |
| 12/6/05 | 11:38:17 AM | 1 | 2.00 | 2 | 2 | 0 | 0 | 643.84 | 4 | 236.3 | | 1 |
| 12/6/05 | 11:40:59 AM | 2 | 2.00 | 2 | 1 | 0 | 0 | 630.17 | 3 | 318.2 | | 1 |
| 12/6/05 | 11:43:41 AM | 3 | 2.00 | 0 | 0 | 0 | 0 | 594.45 | 0 | 0.0 | | 1 |
| 12/6/05 | 11:46:25 AM | 4 | 2.00 | 1 | 1 | 0 | 0 | 565.58 | 2 | 459.0 | | 1 |
| 12/6/05 | 11:49:09 AM | 5 | 2.00 | 0 | 0 | 0 | 0 | 590.98 | 0 | 0.0 | | 1 |
| 12/6/05 | 11:51:52 AM | 6 | 2.00 | 0 | 0 | 0 | 15 | 349.61 | 0 | 0.0 | | 1 |
| 12/6/05 | 11:54:35 AM | 7 | 2.00 | 0 | 0 | 0 | 0 | 583.47 | 0 | 0.0 | | 1 |
| 12/6/05 | 11:57:18 AM | 8 | 2.00 | 1 | 1 | 0 | 5 | 571.26 | 2 | 522.0 | | 1 |
| 12/6/05 | 12:00:01 PM | 9 | 2.00 | 0 | 0 | 0 | 0 | 565.89 | 0 | 8018.2 | | 1 |
| 12/6/05 | 12:02:43 PM | 10 | 2.00 | 1 | 2 | 0 | 0 | 560.80 | 3 | 342.2 | | 1 |
| 12/6/05 | 12:05:24 PM | 11 | 2.00 | 0 | 0 | 0 | 6 | 578.97 | 0 | 0.0 | | 1 |
| 12/6/05 | 12:08:07 PM | 12 | 2.00 | 0 | 0 | 0 | 0 | 558.76 | 0 | 0.0 | | 1 |
| 12/6/05 | 12:10:50 PM | 13 | 2.00 | 0 | 1 | 0 | 5 | 597.17 | 1 | 1312.4 | | 1 |
| 12/6/05 | 12:13:33 PM | 14 | 2.00 | 2 | 1 | 0 | 0 | 630.79 | 4 | 245.7 | | 1 |
| 12/6/05 | 12:16:21 PM | ✓15 | 2.00 | 0 | 0 | 6 | 11 | 244.77 | 0 | 0.0 | | 1 |

✓nr

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MT-05-1269

F 582/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_006
Batch Ended: 12/6/05 8:28
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1269 (15) REYNOLDS 12/06/05 TAS

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.72 | 2.21 | | 1.60 | 2.26 | |
| A2 | 2 | 0.00 | 2.04 | | 2.67 | 2.33 | |
| A3 | 3 | 0.00 | 2.33 | | 4.18 | 2.81 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.93 | | 2.41 | 2.38 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.97 | | 0.40 | 1.69 | |
| C1 | 9 | 0.00 | 2.05 | | 0.00 | 1.23 | |
| C2 | 10 | 0.00 | 1.93 | | 1.59 | 1.95 | |
| C3 | 11 | 0.00 | 2.06 | | 0.00 | 1.22 | |
| C4 | 12 | 0.00 | 1.95 | | 0.00 | 1.12 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.19 | |
| D3 ✓ | 15 | 1.72 | 2.14 | | 3.73 | 2.78 | |

✓nr ✓nr

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TAS

F583/6886

# T-BLDG. Rm. 59 survey of RESRAD sample locations

*RSDS#* __*MT-05-1269*_____ *RCT:* _____ *RCT:* __*N/A*_____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2073 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1578 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C210101Y | 5923 | | 5925 | 1 | 1 | 12/05/05 | 12:47 | 18 | 120 | 69 | |
| ALPHA | 1C210102Y | 5923 | | 5925 | 1 | 2 | 12/05/05 | 12:52 | 10 | 120 | 38 | |
| ALPHA | 1C210103Y | 5923 | | 5925 | 1 | 3 | 12/05/05 | 12:55 | 3 | 120 | 11 | |
| ALPHA | 1C210104Y | 5923 | | 5925 | 1 | 4 | 12/05/05 | 13:00 | 6 | 120 | 23 | |
| ALPHA | 1C210105Y | 5923 | | 5925 | 1 | 5 | 12/05/05 | 13:05 | 0 | 120 | 0 | |
| ALPHA | 1C210106Y | 5923 | | 5925 | 1 | 6 | 12/05/05 | 13:09 | 47 | 120 | 180 | |
| ALPHA | 1C210107Y | 5923 | | 5925 | 1 | 7 | 12/05/05 | 13:13 | 7 | 120 | 27 | |
| ALPHA | 1C210108Y | 5923 | | 5925 | 1 | 8 | 12/05/05 | 13:18 | 8 | 120 | 31 | |
| ALPHA | 1C210109Y | 5923 | | 5925 | 1 | 9 | 12/05/05 | 13:22 | 2 | 120 | 8 | |
| ALPHA | 1C210110Y | 5923 | | 5925 | 1 | 10 | 12/05/05 | 13:29 | 6 | 120 | 23 | |
| ALPHA | 1C210111Y | 5923 | | 5925 | 1 | 11 | 12/05/05 | 13:35 | 7 | 120 | 27 | |
| ALPHA | 1C210112Y | 5923 | | 5925 | 1 | 12 | 12/05/05 | 13:42 | 10 | 120 | 38 | |
| ALPHA | 1C210113Y | 5923 | | 5925 | 1 | 13 | 12/05/05 | 14:41 | 17 | 120 | 65 | |
| ALPHA | 1C210114Y | 5923 | | 5925 | 1 | 14 | 12/05/05 | 14:47 | 23 | 120 | 88 | |
| ALPHA | 1C210115Y | 5923 | | 5925 | 1 | 15 | 12/05/05 | 14:57 | 89 | 120 | 341 ✓ | |
| BETA | 1C210101Y | 5923 | | 5925 | 2 | 1 | 12/05/05 | 12:48 | 479 | 60 | 4818 | |
| BETA | 1C210102Y | 5923 | | 5925 | 2 | 2 | 12/05/05 | 12:53 | 150 | 60 | 1509 | |
| BETA | 1C210103Y | 5923 | | 5925 | 2 | 3 | 12/05/05 | 12:57 | 129 | 60 | 1298 | |
| BETA | 1C210104Y | 5923 | | 5925 | 2 | 4 | 12/05/05 | 13:01 | 126 | 60 | 1267 | |
| BETA | 1C210105Y | 5923 | | 5925 | 2 | 5 | 12/05/05 | 13:06 | 162 | 60 | 1630 | |
| BETA | 1C210106Y | 5923 | | 5925 | 2 | 6 | 12/05/05 | 13:10 | 849 | 60 | 8540 | |
| BETA | 1C210107Y | 5923 | | 5925 | 2 | 7 | 12/05/05 | 13:15 | 167 | 60 | 1680 | |
| BETA | 1C210108Y | 5923 | | 5925 | 2 | 8 | 12/05/05 | 13:19 | 229 | 60 | 2303 | |
| BETA | 1C210109Y | 5923 | | 5925 | 2 | 9 | 12/05/05 | 13:23 | 136 | 60 | 1368 | |
| BETA | 1C210110Y | 5923 | | 5925 | 2 | 10 | 12/05/05 | 13:30 | 487 | 60 | 4899 | |
| BETA | 1C210111Y | 5923 | | 5925 | 2 | 11 | 12/05/05 | 13:36 | 428 | 60 | 4305 | |
| BETA | 1C210112Y | 5923 | | 5925 | 2 | 12 | 12/05/05 | 13:43 | 235 | 60 | 2364 | |
| BETA | 1C210113Y | 5923 | | 5925 | 2 | 13 | 12/05/05 | 14:42 | 551 | 60 | 5542 | |
| BETA | 1C210114Y | 5923 | | 5925 | 2 | 14 | 12/05/05 | 14:48 | 10133 | 60 | 101927 | |
| BETA | 1C210115Y | 5923 | | 5925 | 2 | 15 | 12/05/05 | 14:58 | 2904 | 60 | 29211 ✓ | |
| | Y used for RESRAD sample locations | | | | | | | | | | | |



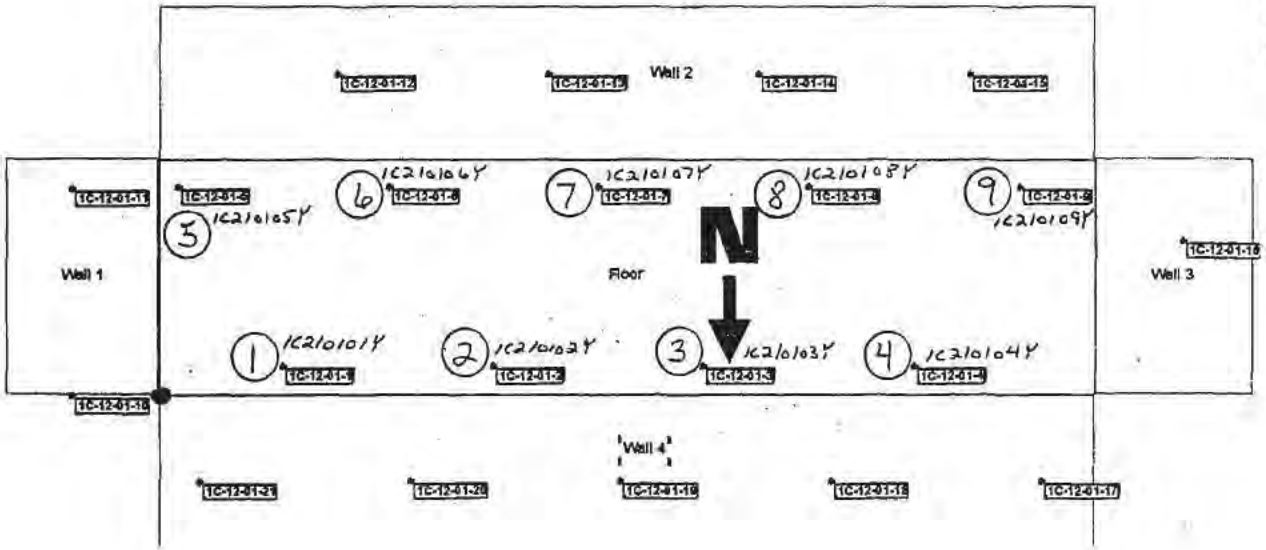
F-584/686

59

**1C-21-01 Static measurement locations**
**Class 1 Area** **Room 59**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at each static location on the floor.
Composite bulk sample with bulk samples taken at judgmental locations on the floor.

| Area: 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21-01-1 | Systematic | Floor | 6 | 1 |
| 1C-21-01-2 | Systematic | Floor | 15 | 1 |
| 1C-21-01-3 | Systematic | Floor | 25 | 1 |
| 1C-21-01-4 | Systematic | Floor | 34 | 1 |
| 1C-21-01-5 | Systematic | Floor | 1 | 10 |
| 1C-21-01-6 | Systematic | Floor | 10 | 10 |
| 1C-21-01-7 | Systematic | Floor | 20 | 10 |
| 1C-21-01-8 | Systematic | Floor | 30 | 10 |
| 1C-21-01-9 | Systematic | Floor | 39 | 10 |
| 1C-21-01-10 | Systematic | Wall 1 | 0 | 4 |

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ORIGINAL 3/14/06

585/686

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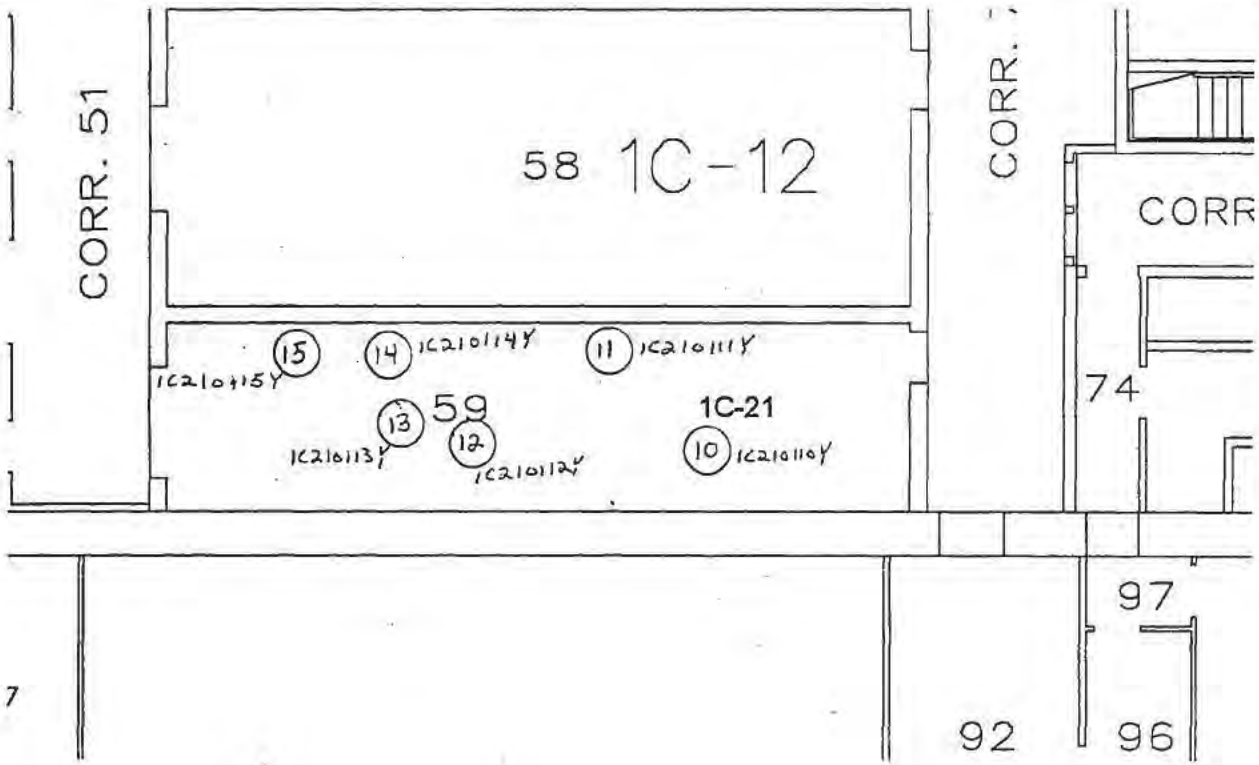
M1-05-1269

**1C-21 Class 1**

**After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample at the highest 20% (maximum # of 10) elevated activity areas identified on the floor. Composite bulk sample with bulk samples taken at static locations on the floor.**




| Area: 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C21 0110Y | | Floor | | |
| 0111Y | | | | |
| 0112Y | | | | |
| 0113Y | N | | N | |
| 0114Y | | | | A |
| 0115Y | A | | | |
| N | | N | | |
| A | | A | | |

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ORIGINAL 3/11/06

PAGE 8 OF 10
MT-05-1269

F586/686

CH2MHILL

# ANALYTICAL SERVICES REQUEST FOR ANALYSIS

| DATE: | SAMPLE TYPE: | COLLECTED BY: | NUMBER OF SAMPLES: |
|---|---|---|---|
| 12/14/05 | Concrete Dust | Neal Reynolds | 1 |

| PROJECT/FUNCTION: | PRIMARY CONTACT/PHONE NO.: |
|---|---|
| T Bldg MARSSIM | Bob Coblentz |

| CHARGE NUMBER: | DATE(S) COLLECTED: | RSDS# (if applicable): | ATTACHMENTS (list): |
|---|---|---|---|
| | 12-8-05 | | |

ANALYSES REQUESTED (check):

- ☐ $^3H$
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimated Volume for release:_____ Approved by:_____
- ☐ Gross α
- ☐ pH
- ☐ Moisture
- ☒ Isotopic Analysis: Pu____ U____ Th ✓ Am____ Other____
- ☐ Other _____

COPY

Additional Information:

3.27

NOTE: Attach additional information (e.g. RSDS, collection data, and gamma spec. results) if applicable

| LAB IDENTIFICATION | SAMPLE LOCATION | SAMPLE NUMBER | RESULTS |
|---|---|---|---|
| 0506665 | T-59 | 1 | Th232 0.14 pCi/g +/- 0.02 LDL 0.02 |
| | | | Th228 0.16 pCi/g +/- 0.02 LDL 0.02 |
| | | | Th230 0.34 pCi/g +/- 0.04 LDL 0.02 |
| | | | Th227 0.02 pCi/g +/- 0.01 LDL 0.02 |

COMMENTS: Chamber 3:1 GMD 12/19/05

| ANALYZED BY: | DATE: |
|---|---|
| CAP | 12/20/05 |

F-587/686

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL09126
**File ID:** 25000099.s0
**Priority:** Yes

**Description\Location**
T-59 Concrete 250 Chem Bottle
Long Count

**Collector:**
**Date Received:** 12/12/05
**Date Collected:** 12/12/05

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 68.75 | 0.34 |
| Cs-137 | | 1.14 | 0.18 |
| Pb-210 | * | 0.57 | 0.96 |
| Ra-226 | * | 0.9 | 1.29 |
| Ac-227 (D) | * | 0.05 | 0.47 |
| Th-230 | * | 0 | 9.62 |
| Th-232 (D) | * | 0 | 2.12 |
| Pu-238 | * | 2.78 | 6.91 |
| Am-241 | * | 0 | 0.1 |

Other Nuclides

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Bi-207 | 0.88 | 0.13 |
| Bi-210m | 3.36 | 0.1 |

$\sum_{DOT}$ 0.10 nCi/g

Instrument type: High Purity Germanium

$\sum_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:**

Date: 12/15/05 Counted By: [redacted] Analyzed By: [redacted] Initials GM

F588/686

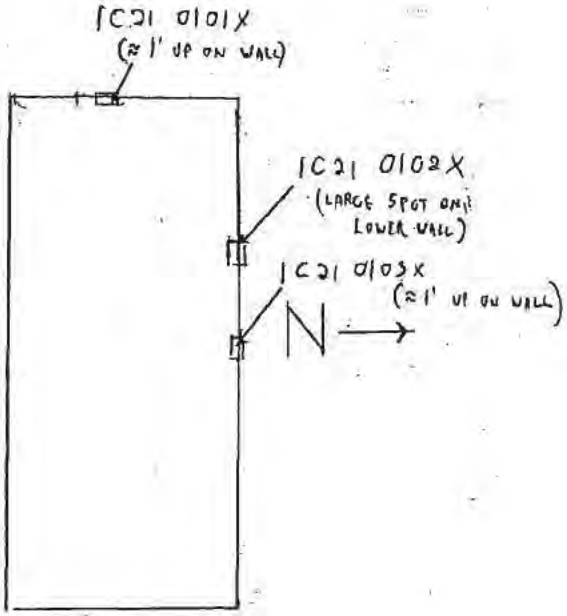
# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Room 59 N+W Walls (IC21) | SURVEY NO. MT-05-1327 |
| PURPOSE: Investigative Survey of Suspected Elevated Spots | RWP NO. N/A |
| | DATE: 12-15-05 |
| | TIME: 1300 |

## MAP / DRAWING

No elevated α/β readings detected during scanning
See Attachments.




COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·· = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895 w 5896 | 2-5-06 |
| N/A | N/A | N/A |
| ↓ | ↓ | ↓ |
| ↓ | ↓ | ↓ |

| | | |
|---|---|---|
| Completed by: (Signature) T. King | [redacted] | Date: 12-15-05 |
| Completed by: (Print Name) T. King | | |
| Counted by: (Signature) See Attachments | HP# | Date: |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) | H [redacted] | Date: 12/16/05 |
| Reviewed/Approved by: (Print Name) JESS Griffin | F 589/686 | |

Survey No. MT-05-1327



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | Sheets | 1C21 0101X |
| 2 | ↓ | ↓ | ↓ | 1C21 0102X |
| 3 | | | | 1C21 0103 X |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

COMMENTS:

N/A

NOTES:

1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620A (4-98)

F590/686

3 of 8

Protocol# 3 - MARSSIM_Smear_3.lsa User: 5801

MARSSIM Smear Data

P.K. 12-16-05

Assay Definition-

Assay Description:
MARSSIM Smear Data

MT-05-1327

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20051215_1456.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-05-1327.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F591/686

7 of 8
2/10/06

MARSSIM Smear Data

JH
12-16-05

MT-05-1327

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/15/05 | 2:57:16 PM | -1 | 10.00 | 8 | 8 | 10 | 4 | 618.76 | 0 | 22.1 | B | 3 |
| 12/15/05 | 3:08:02 PM | 0 | 2.00 | 183 | 173 | 2 | 1 | 535.46 | 358 | 10.7 | | 3 |
| 12/15/05 | 3:10:46 PM | 1 | 2.00 | 2 | 3 | 0 | 0 | 581.30 | 5 | 205.8 | | 3 |
| 12/15/05 | 3:13:29 PM | 2 | 2.00 | 1 | 1 | 0 | 0 | 611.99 | 2 | 543.8 | | 3 |
| 12/15/05 | 3:16:14 PM | 3 | 2.00 | 0 | 1 | 3 | 6 | 484.70 | 1 | 1505.5 | | 3 |

JH

F-572/086

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_065
Batch Ended: 12/15/05 14:04
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-05-1327 [3] KING 12-15-05 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| C1 | 1 | 0.00 | 2.06 | | 0.26 | 1.74 | |
| C2 | 2 | 1.41 | 1.92 | | 0.31 | 1.59 | |
| C3 | 3 | 0.00 | 2.06 | | 0.00 | 1.22 | |

2.K 2.K

5 of ~~8~~ 2/1006 gm



2.K.
12-16-05

5/03/06

# T-Building Room 59;1C21; Survey of Suspected Elevated Spots;N & W Walls

**RSDS#** MT-05-1327 **RCT:** [redacted] **RCT:** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.17 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210101X | 5895 | [redacted] | 5896 | 1 | 1 | 12/15/05 | 10:21 | 8 | 120 | 29 |
| ALPHA | 1C210102X | 5895 | [redacted] | 5896 | 1 | 2 | 12/15/05 | 12:46 | 7 | 120 | 26 |
| ALPHA | 1C210103X | 5895 | [redacted] | 5896 | 1 | 3 | 12/15/05 | 12:56 | 23 | 120 | 84 |
| BETA | 1C210101X | 5895 | [redacted] | 5896 | 2 | 1 | 12/15/05 | 10:22 | 119 | 60 | 1111 |
| BETA | 1C210102X | 5895 | [redacted] | 5896 | 2 | 2 | 12/15/05 | 12:47 | 99 | 60 | 924 |
| BETA | 1C210103X | 5895 | [redacted] | 5896 | 2 | 3 | 12/15/05 | 12:57 | 245 | 60 | 2288 |

N

A



2/10/06

F-594/686

Survey Unit Number: 1C21



(Supplemental sheet for biased measurements.)

RSDS # MT-05-1327
RCT INT/HP TK [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C21010 1X | 59 | West Wall | | |
| 1C21010 2X | 59 | North Wall | | |
| 1C21010 3X | 59 | North Wall | | |
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J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

# Surface Contamination Monitor Survey Investigation Summary

| | |
|---|---|
| Survey Unit | 1C-21 |
| SCM ID (Circle One) | SCM 53<br>(SCM 23) |
| Calibration Due Date | 06-01-06 |

| Room | Surface | Investigations |
|---|---|---|
| Room 59 | Floor | 6 |
| " | Walls | 7 |
| | | |
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| | | |

Name Sherry Oran

Signature Sherry Oran

Date 11-29-05

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBldg (IC21) RM. T59 | SURVEY NO. MT-06-0020 |
| PURPOSE: Follow up Survey of potential Hot Spots detected by Shonka | RWP NO. NA |
| | DATE: 1/6/06 |
| | TIME: 1100 |

## MAP/DRAWING

See Attached Sheets for Survey Results.
See Attached Sheets for Survey Locations

Area Scaned No Elevated α or β⁻ Readings Detected.

COPY

LEGEND: # = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact

△# = mrem/hr neutron

# = air sample number

(#) = swipe number

(#/α) or/β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5928/5927 | 5/24/06 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) K Abercrombie | [redacted] | DATE: 1/6/06 |
| Completed by: (Print Name) K Abercrombie | | |
| Counted by: (Signature) See Attached | BI'# | DATE: N/A |
| Counted by: (Print Name) See Attached | | ES 97/636 |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | DATE: 2-9-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-06-0020

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | |
| 1 | See | attac | hed | 1C210104X |
| 2 | | | | 1C210105X |
| 3 | | | | 1C210106X |
| 4 | | | | 1C210107X |
| 5 | | | | 1C210108X |
| 6 | | | | 1C210109X |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
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| 12 | | | | |
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| 15 | | | | |
| 16 | | | | |
| 17 | | N | A | |
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| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
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| 51 | | N | A | |
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| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COMMENTS: N A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F598/686

ML-0620 (4-98)

KA 1/12/06

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MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060110_0842.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0020.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

1-599/686

GWP

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/10/06 | 8:42:56 AM | -1 | 10.00 | 10 | 9 | 11 | 1 | 617.32 | 0 | 20.1 | B | 3 |
| 1/10/06 | 8:53:39 AM | 0 | 2.00 | 161 | 154 | 0 | 0 | 526.63 | 317 | 11.5 | | 3 |
| 1/10/06 | 8:56:22 AM | 1 | 2.00 | 12 | 12 | 0 | 2 | 387.21 | 29 | 56.1 | | 3 |
| 1/10/06 | 8:59:04 AM | 2 | 2.00 | 10 | 8 | 0 | 25 | 486.93 | 20 | 66.7 | | 3 |
| 1/10/06 | 9:01:46 AM | 3 | 2.00 | 13 | 12 | 0 | 2 | 489.00 | 26 | 55.4 | | 3 |
| 1/10/06 | 9:04:26 AM | 4 | 2.00 | 4 | 4 | 1 | 4 | 547.03 | 8 | 138.7 | | 3 |
| 1/10/06 | 9:07:07 AM | 5 | 2.00 | 18 | 17 | 0 | 2 | 485.30 | 36 | 43.5 | | 3 |
| 1/10/06 | 9:09:51 AM | 6 | 2.00 | 6 | 6 | 0 | 3 | 426.55 | 13 | 98.5 | | 3 |

KA

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MT-06-0020
F 609/686

Page 5 of 8

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_012
Batch Ended: 1/9/06 16:02
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0020 ABERCROMBIE [6] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.24 | | 4.38 | 2.92 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 1.93 | 2.30 | | 1.49 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.04 | 1.68 | |
| B2 | 6 | 0.00 | 1.87 | | 0.21 | 1.58 | |

KA KA

F601/1086

~~Page 1 of 1~~
KA 1/12/06

GWP

# T-Building Follow Up Survey of Potential Hot Spots (1C21)

*RSDS#* Mt-06-0020 *RCT:* [redacted] *RCT:* NA

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.22 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : |
| Beta | 43-68 BKG: | 0 | EFF: | 0.168 ✓ | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210104X | 5928 | [redacted] | 5927 | 1 | 1 | 01/06/06 | 9:54 | 6 | 120 | 22 |
| ALPHA | 1C210105X | 5928 | [redacted] | 5927 | 1 | 2 | 01/06/06 | 10:11 | 5 | 120 | 18 |
| ALPHA | 1C210106X | 5928 | [redacted] | 5927 | 1 | 3 | 01/06/06 | 10:27 | 3 | 120 | 11 |
| ALPHA | 1C210107X | 5928 | [redacted] | 5927 | 1 | 4 | 01/06/06 | 10:33 | 2 | 120 | 7 |
| ALPHA | 1C210108X | 5928 | [redacted] | 5927 | 1 | 5 | 01/06/06 | 10:37 | 5 | 120 | 18 |
| ALPHA | 1C210109X | 5928 | [redacted] | 5927 | 1 | 6 | 01/06/06 | 10:41 | 6 | 120 | 22 ✓ |
| BETA | 1C210104X | 5928 | [redacted] | 5927 | 2 | 1 | 01/06/06 | 9:55 | 86 | 60 | 813 |
| BETA | 1C210105X | 5928 | [redacted] | 5927 | 2 | 2 | 01/06/06 | 10:12 | 78 | 60 | 737 |
| BETA | 1C210106X | 5928 | [redacted] | 5927 | 2 | 3 | 01/06/06 | 10:28 | 72 | 60 | 680 |
| BETA | 1C210107X | 5928 | [redacted] | 5927 | 2 | 4 | 01/06/06 | 10:34 | 73 | 60 | 690 |
| BETA | 1C210108X | 5928 | [redacted] | 5927 | 2 | 5 | 01/06/06 | 10:38 | 59 | 60 | 557 |
| BETA | 1C210109X | 5928 | [redacted] | 5927 | 2 | 6 | 01/06/06 | 10:42 | 62 | 60 | 586 ✓ |

F602/686

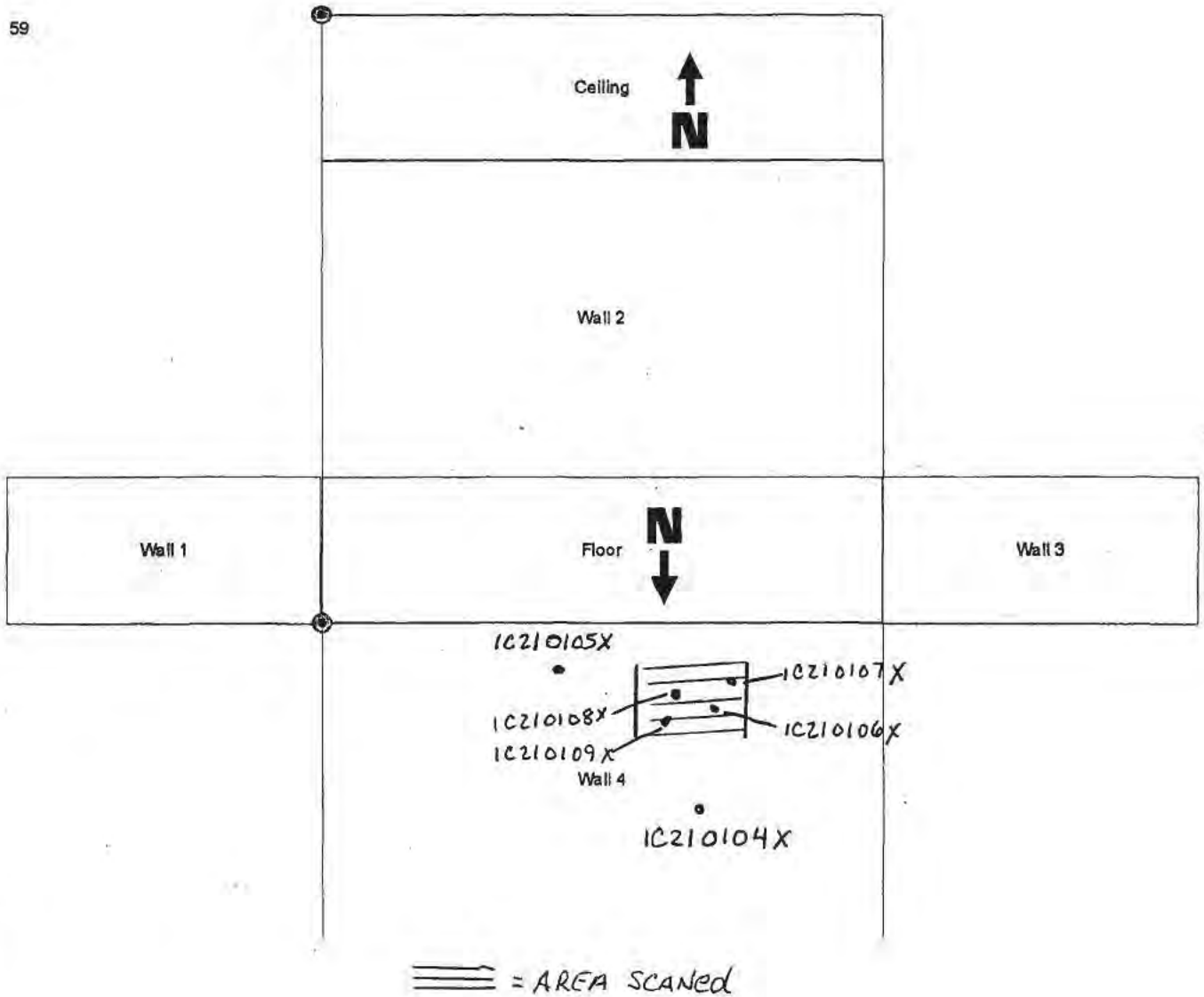
**1C-21** **Class 1** **Room 59**

~~100% of floor and lower walls up to 2 meters~~ 2/9/06 gm

~~25% scan of walls above 2 meters~~ 2/9/06 gm

~~Scan an area of approximately 1 m2 around each static measurement on the ceiling~~ 2/9/06 gm

59




MT-06-0020

2350-1 ~~522~~ 5928/5927 5/24/06

KA 1-12-06

KA

Page 7 of 8

F603/686

Survey Unit Number: 1C-21



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0020
RCT INT/HP KA [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C210104X | 59 | NORTHWALL#4 | | |
| 1C210105X | | | | |
| 1C210106X | | | | |
| 1C210107X | | | | |
| 1C210108X | | | | |
| 1C210109X | | | | |
| | | | N | |
| | | | | A |
| | N | | | |
| | A | | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

F-604/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T Bldg Room 39 (1C-21) | SURVEY NO. MT-06-0022 |
| PURPOSE: Characterization | RWP NO. NA |
| | DATE: 1-6-06 |
| | TIME: 1500 |

## MAP / DRAWING

survey of elevated areas on South wall prior To remediation by sandblasting.

Survey performed on previously inaccessible area. area surveyed after paint removed.

No wipes Taken.

follow-up surveys on
MT-06-0596
MT-06-0597

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5858/5860 | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | [redacted] | Date: 1-6-06 |
| Completed by: (Print Name) George S. Hodges | | |
| Counted by: (Signature) | HP# | Date: |
| Counted by: (Print Name) | F605/686 | |
| Reviewed/Approved by: (Signature) | [redacted] | Date: 2-9-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0022



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | | N/A | |

COMMENTS: N/A

NOTES:
1. See MD-80036-10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-0620A (4-98)

F606/686

# T-Building Characterization unit 1C21 south wall

***RSDS#*** MT-06-0022 ***RCT:*** [redacted] ***RCT:*** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | N/A | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210101E | 5858 | [redacted] | 5860 | 1 | 1 | 1/6/06 | 13:14 | 16 | 120 | 63 |
| ALPHA | 1C210102E | 5858 | [redacted] | 5860 | 1 | 2 | 1/6/06 | 13:22 | 19 | 120 | 75 |
| BETA | 1C210101E | 5858 | [redacted] | 5860 | 2 | 1 | 1/6/06 | 13:15 | 884 | 60 | 8453 |
| BETA | 1C210102E | 5858 | [redacted] | 5860 | 2 | 2 | 1/6/06 | 13:23 | 6917 | 60 | 66141 |

N/A



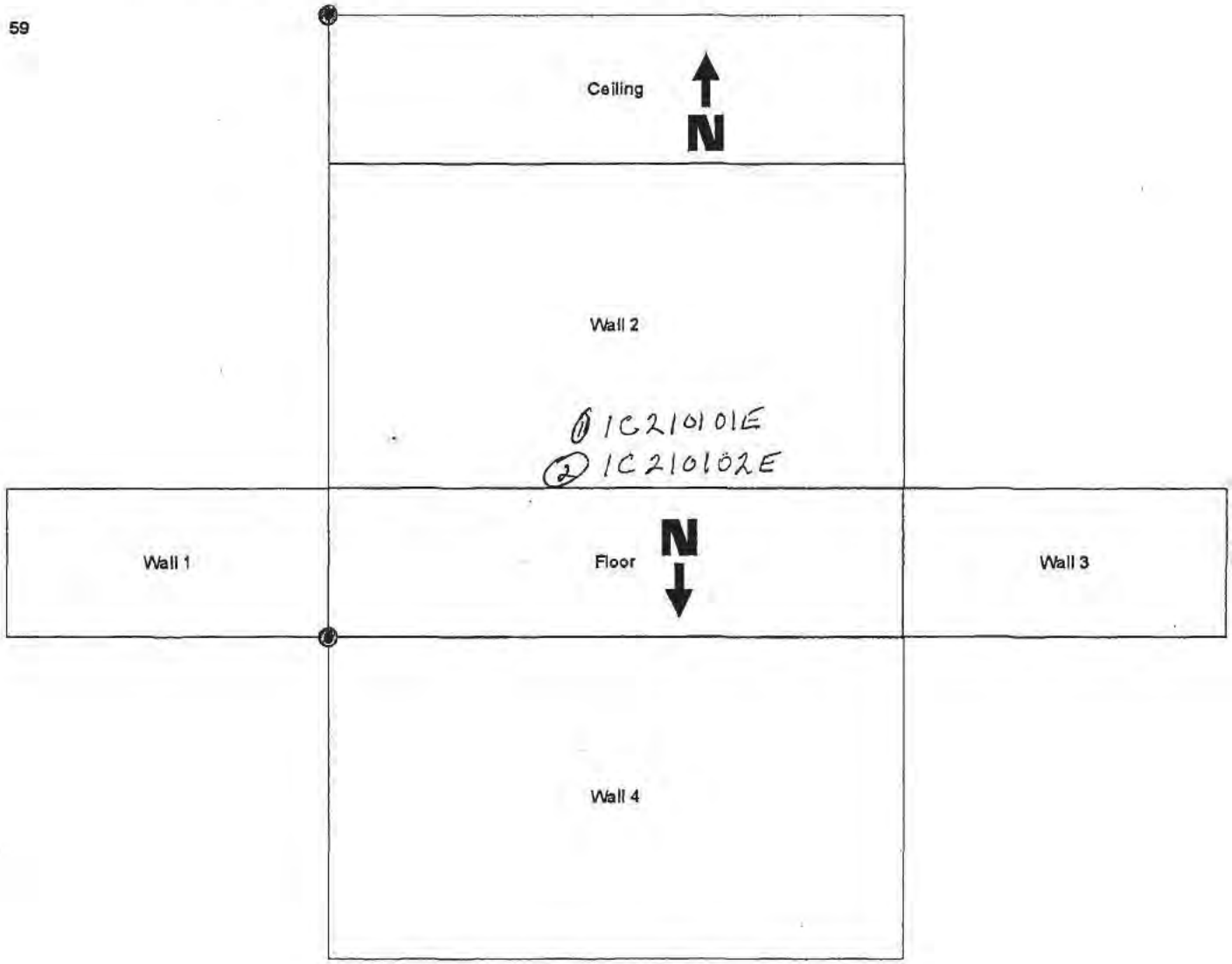
F607/686

1C-21 ~~Judgmentals~~ GH 2-1-06

~~Perform at minimum 10 on lower surfaces~~ GH 2-1-06

~~Perform a minimum of 10 on upper surfaces~~ GH 2-1-06

59




MT-06-00272

Page 4 of 4

7608/686

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 8 14 13 PW 3-22-06

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 - IC21 Bldg | SURVEY NO. MT-06-0289 |
| PURPOSE: T-59 EAST Res Rad Sampling Ref- MT-05-1269 | RWP NO. N/A |
| | DATE: 3-10-06 |
| | TIME: 0600 |

## MAP/DRAWING

IN Addition to 11 NEW STATIC LOCATIONS, STATIC IC21-0114yRes WAS Added. Ref- MT-05-1269.

ELEVATED Readins See Attached Sheets.
ANALYTICAL Results attached

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5892/5893 | 2-14-07 |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Donna Watson Neal Reynolds | [redacted] | Date: 3-14-06 |
| Completed by: (Print Name) DONNA WATSON NEAL REYNOLDS | | |
| Counted by: (Signature) See Attached Sheets | HP# N/A | Date: N/A |
| Counted by: (Print Name) | F-609/686 | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 3/23/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor RPT | | |

ML-9620 (2-98)

Survey No. MT-06-0289



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attach | Sheets | 1C210114Y |
| 2 | ↓ | ↓ | ↓ | 1C21E1 Res |
| 3 | | | | 1C21E2 Res |
| 4 | | | | 1C21E3 Res |
| 5 | | | | 1C21E4 Res |
| 6 | | | | 1C21E5 Res |
| 7 | | | | 1C21E6 Res |
| 8 | | | | 1C21E7 Res |
| 9 | | | | 1C21E8 Res |
| 10 | | | | 1C21E9 Res |
| 11 | | | | 1C21E10 Res |
| 12 | | | | 1C21E11 Res |

N/A

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |

N/A

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F610/686

3 of 8 Da
3-14-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060314_0954.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0289.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F 6/1/06

MARSSIM Smear Data

3-14-06

MT-06-0289

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/14/06 | 9:55:10 AM | -1 | 10.00 | 8 | 7 | 11 | 1 | 643.28 | 0 | 22.7 | B | 4 |
| 3/14/06 | 10:05:58 AM | 0 | 2.00 | 182 | 176 | 3 | 0 | 564.47 | 347 | 10.7 | | 4 |
| 3/14/06 | 10:08:39 AM | 1 | 2.00 | 1 | 0 | 0 | 0 | 620.98 | 3 | 315.2 | | 4 |
| 3/14/06 | 10:11:20 AM | 2 | 2.00 | 1 | 2 | 0 | 0 | 548.22 | 2 | 362.3 | | 4 |
| 3/14/06 | 10:14:02 AM | 3 | 2.00 | 7 | 7 | 0 | 0 | 559.23 | 14 | 79.2 | | 4 |
| 3/14/06 | 10:16:43 AM | 4 | 2.00 | 2 | 2 | 0 | 0 | 611.89 | 4 | 211.9 | | 4 |
| 3/14/06 | 10:19:25 AM | 5 | 2.00 | 3 | 3 | 1 | 0 | 518.96 | 5 | 177.3 | | 4 |
| 3/14/06 | 10:22:06 AM | 6 | 2.00 | 7 | 7 | 3 | 0 | 556.35 | 14 | 79.2 | | 4 |
| 3/14/06 | 10:24:55 AM | 7 | 2.00 | 4 | 4 | 0 | 0 | 559.86 | 9 | 117.9 | | 4 |
| 3/14/06 | 10:27:37 AM | 8 | 2.00 | 5 | 6 | 0 | 0 | 559.82 | 10 | 102.4 | | 4 |
| 3/14/06 | 10:30:19 AM | 9 | 2.00 | 3 | 3 | 0 | 0 | 569.75 | 6 | 160.1 | | 4 |
| 3/14/06 | 10:33:57 AM | 10 | 2.00 | 0 | 0 | 0 | 7 | 543.19 | 0 | 0.0 | | 4 |
| 3/14/06 | 10:36:39 AM | 11 | 2.00 | 0 | 0 | 0 | 0 | 631.06 | 0 | 0.0 | | 4 |
| 3/14/06 | 10:39:21 AM | 12 | 2.00 | 0 | 0 | 0 | 0 | 587.15 | 0 | 0.0 | | 4 |

DW

F 1121/686

5 of 8 14 Bw 3-22-06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_028
Batch Ended: 3/13/06 16:01
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0289 WATSON [12] GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.21 | | 1.78 | 2.26 | |
| A2 | 2 | 0.00 | 2.01 | | 0.34 | 1.64 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.11 | | 0.48 | 1.70 | |
| B1 | 5 | 1.52 | 1.89 | | 0.00 | 1.68 | |
| B2 | 6 | 0.00 | 1.97 | | 5.77 | 2.96 | |
| B3 | 7 | 0.00 | 2.24 | | 2.84 | 2.65 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.11 | | 3.22 | 2.54 | |
| C2 | 10 | 0.00 | 1.93 | | 0.00 | 1.20 | |
| C3 | 11 | 0.00 | 2.14 | | 0.00 | 1.32 | |
| C4 | 12 | 0.00 | 1.99 | | 0.47 | 1.63 | |

DW DW

FL 13/686



3-14-06

GWD

# T-59 EAST RESRAD DEEP SAMPLING Survey

*RSDS#* MT-06-0289 *RCT:* [redacted] *RCT* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210114Y | 5892 | [redacted] | 5893 | 1 | 1 | 3/10/06 | 7:23 | 33 | 120 | 123 |
| ALPHA | 1C21E1RES | 5892 | [redacted] | 5893 | 1 | 2 | 3/10/06 | 7:38 | 4 | 120 | 15 |
| ALPHA | 1C21E2RES | 5892 | [redacted] | 5893 | 1 | 3 | 3/10/06 | 12:40 | 7 | 120 | 26 |
| ALPHA | 1C21E3RES | 5892 | [redacted] | 5893 | 1 | 4 | 3/10/06 | 12:44 | 9 | 120 | 34 |
| ALPHA | 1C21E4RES | 5892 | [redacted] | 5893 | 1 | 5 | 3/10/06 | 12:48 | 9 | 120 | 34 |
| ALPHA | 1C21E5RES | 5892 | [redacted] | 5893 | 1 | 6 | 3/10/06 | 12:53 | 4 | 120 | 15 |
| ALPHA | 1C21E6RES | 5892 | [redacted] | 5893 | 1 | 7 | 3/10/06 | 12:59 | 11 | 120 | 41 |
| ALPHA | 1C21E7RES | 5892 | [redacted] | 5893 | 1 | 8 | 3/10/06 | 13:03 | 4 | 120 | 15 |
| ALPHA | 1C21E8RES | 5892 | [redacted] | 5893 | 1 | 9 | 3/10/06 | 13:07 | 10 | 120 | 37 |
| ALPHA | 1C21E9RES | 5892 | [redacted] | 5893 | 1 | 10 | 3/10/06 | 13:11 | 18 | 120 | 67 |
| ALPHA | 1C21E10RES | 5892 | [redacted] | 5893 | 1 | 11 | 3/10/06 | 13:15 | 14 | 120 | 52 |
| ALPHA | 1C21E11RES | 5892 | [redacted] | 5893 | 1 | 12 | 3/10/06 | 13:19 | 18 | 120 | 67 |
| BETA | 1C210114Y | 5892 | [redacted] | 5893 | 2 | 1 | 3/10/06 | 7:25 | 9780 | 60 | 93517 |
| BETA | 1C21E1RES | 5892 | [redacted] | 5893 | 2 | 2 | 3/10/06 | 7:39 | 200 | 60 | 1912 |
| BETA | 1C21E2RES | 5892 | [redacted] | 5893 | 2 | 3 | 3/10/06 | 12:41 | 299 | 60 | 2859 |
| BETA | 1C21E3RES | 5892 | [redacted] | 5893 | 2 | 4 | 3/10/06 | 12:45 | 166 | 60 | 1587 |
| BETA | 1C21E4RES | 5892 | [redacted] | 5893 | 2 | 5 | 3/10/06 | 12:49 | 145 | 60 | 1386 |
| BETA | 1C21E5RES | 5892 | [redacted] | 5893 | 2 | 6 | 3/10/06 | 12:54 | 206 | 60 | 1970 |
| BETA | 1C21E6RES | 5892 | [redacted] | 5893 | 2 | 7 | 3/10/06 | 13:01 | 322 | 60 | 3079 |
| BETA | 1C21E7RES | 5892 | [redacted] | 5893 | 2 | 8 | 3/10/06 | 13:05 | 191 | 60 | 1826 |
| BETA | 1C21E8RES | 5892 | [redacted] | 5893 | 2 | 9 | 3/10/06 | 13:08 | 164 | 60 | 1568 |
| BETA | 1C21E9RES | 5892 | [redacted] | 5893 | 2 | 10 | 3/10/06 | 13:12 | 384 | 60 | 3672 |
| BETA | 1C21E10RES | 5892 | [redacted] | 5893 | 2 | 11 | 3/10/06 | 13:16 | 583 | 60 | 5575 |
| BETA | 1C21E11RES | 5892 | [redacted] | 5893 | 2 | 12 | 3/10/06 | 13:42 | 80 | 60 | 765 |

F 114/686



DW 3-21-06

MT-06-0289

**Static Measurement Locations**

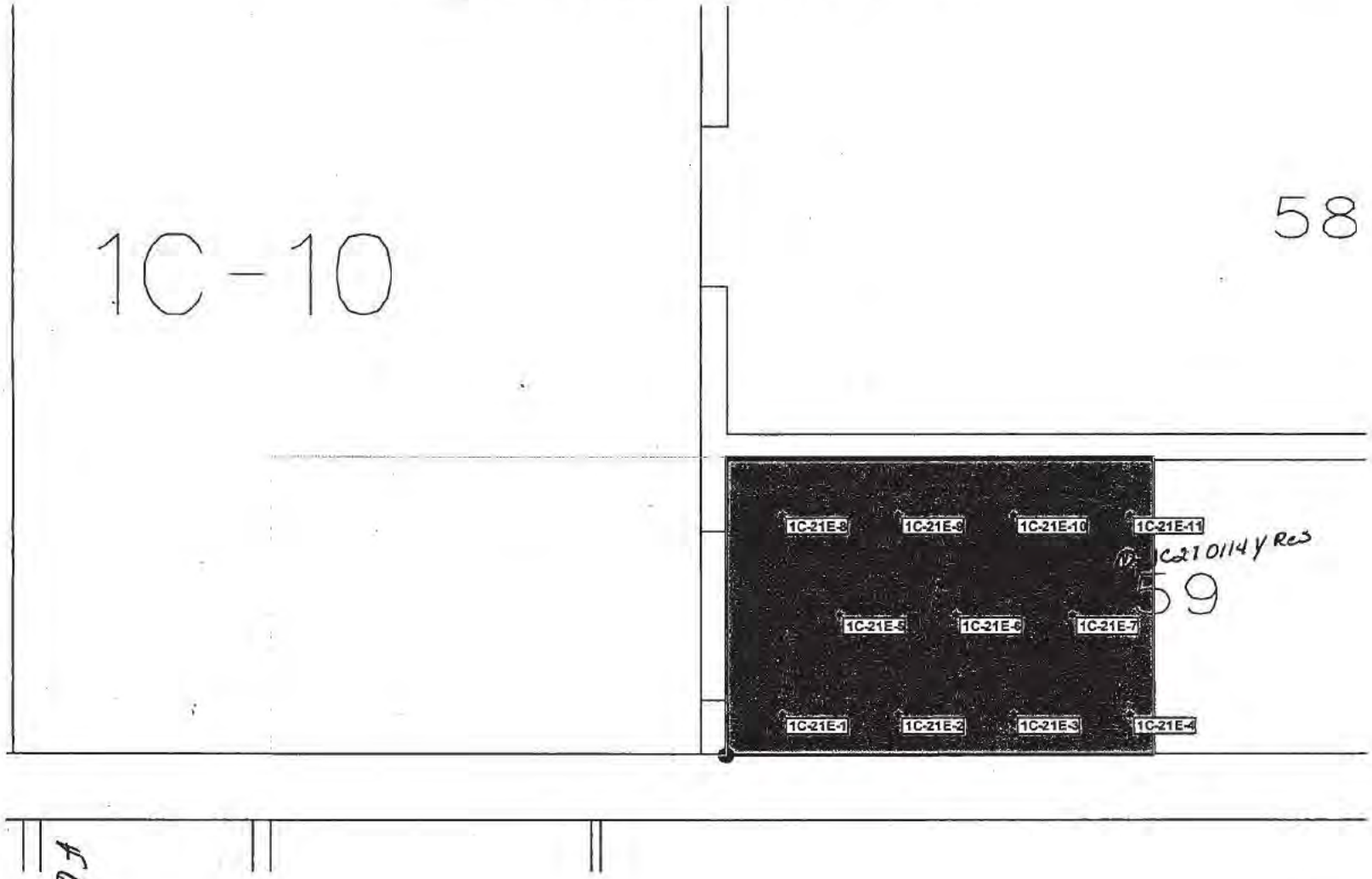
| Area: East End of Room 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21E-1 | Systematic | Floor | 2 | 2 |
| 1C-21E-2 | Systematic | Floor | 6 | 2 |
| 1C-21E-3 | Systematic | Floor | 11 | 2 |
| 1C-21E-4 | Systematic | Floor | 15 | 2 |
| 1C-21E-5 | Systematic | Floor | 4 | 5 |
| 1C-21E-6 | Systematic | Floor | 9 | 5 |
| 1C-21E-7 | Systematic | Floor | 13 | 5 |
| 1C-21E-8 | Systematic | Floor | 2 | 9 |
| 1C-21E-9 | Systematic | Floor | 6 | 9 |
| 1C-21E-10 | Systematic | Floor | 11 | 9 |
| 1C-21E-11 | Systematic | Floor | 15 | 9 |

1C 21-0114Y Res

8 of 8 #13 DW 3-21-06 MT-06-01

**1C-21-01 Static measurement locations**
**Class 1 Area**
**East End of Room 59**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample by drilling 6" deep at each static location on the floor.
Composite samples from 6" location into 1 sample container
Then repeat sampling at each location going a depth of 12".
Composite samples from 12" location into 1 sample container
No judgmentals are required this entire area is elevated




#615/686

CH2MHILL

# ANALYTICAL SERVICES REQUEST FOR ANALYSIS

| DATE: | SAMPLE TYPE: | COLLECTED BY: | NUMBER OF SAMPLES: |
|---|---|---|---|
| 3-13-06 | Concrete | Reynolds | 4 |

| PROJECT/FUNCTION: | PRIMARY CONTACT/PHONE NO.: |
|---|---|
| MARSSIM | Jerry Taylor 3762 |

| CHARGE NUMBER: | DATE(S) COLLECTED: | RSDS# (if applicable): | ATTACHMENTS (list): |
|---|---|---|---|
| | 3-13-06<br>3-14-06 | MT-06-0289<br>~~MT-06-0306~~ 3-22-06 DW | N/A |

ANALYSES REQUESTED (check):

- ☐ $^3H$
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimated Volume for release:_____ Approved by:_____
- ☒ Gross α
- ☐ pH
- ☐ Moisture
- ☐ Isotopic Analysis: Pu_____ U_____ Th_____ Am_____ Other_____
- ☒ Other GAMMA SPEC ~~IDENTIFY ISOTOPES~~ 3/14/06

Additional Information:

NOTE: Attach additional information (e.g. RSDS, collection data, and gamma spec. results) if applicable

| LAB IDENTIFICATION | SAMPLE LOCATION | SAMPLE NUMBER | RESULTS |
|---|---|---|---|
| 0601034 | EAST Bottom | 1 | GL10814 |
| 0601035 | West top | 2 | GL10815 |
| 3/14/06 ~~10~~ 0601036 | EAST Top | 3 | GL10816 |
| 0601037 | West Bottom | 4 | GL10817 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

COMMENTS:

F 617/686

| ANALYZED BY: | DATE: |
|---|---|
| | |

MT-06-0289 10 of 13 3-21-06

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL10816
**File ID:** 25000123.s0
**Priority:** Yes

**Description\Location**
0601036 #3 East Top
Long Count

**Collector:**
**Date Received:** 03/14/06
**Date Collected:** 03/13/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 14.34 | 0.52 |
| Cs-137 | | 0.18 | 0.13 |
| Pb-210 | * | 0.35 | 0.82 |
| Ra-226 | * | 0.36 | 1.11 |
| Ac-227 (D) | * | 0.01 | 0.4 |
| Th-230 | * | 0 | 7.98 |
| Th-232 (D) | | 1.73 | 1.41 |
| Pu-238 | * | 3.6 | 5.83 |
| Am-241 | * | 0 | 0.08 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0.02 | 0.1 |
| Bi-207 | 0.06 | 0.08 |
| Bi-210m | 0.06 | 0.08 |

$\Sigma_{DOT}$ 0.03 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 32.92 pCi/g MDA

F 618/606

Date: 03/15/06 Counted By: Analyzed By: Initials GB

MT-06-0289

16 of 44
13
DW
3-22-06

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL10814
**File ID:** 25000121.s0
**Priority:** Yes

**Description\Location**
0601034 #1 East Bottom
Long Count

**Collector:**
**Date Received:** 03/14/06
**Date Collected:** 03/13/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | * | 0.1 | 0.12 |
| Cs-137 | * | 0 | 0.07 |
| Pb-210 | | 0.42 | 0.4 |
| Ra-226 | | 0.95 | 0.61 |
| Ac-227 (D) | * | 0 | 0.24 |
| Th-230 | * | 2.09 | 4.73 |
| Th-232 (D) | * | 0.17 | 0.18 |
| Pu-238 | * | 0 | 4.49 |
| Am-241 | * | 0 | 0.06 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.05 |
| Bi-207 | 0 | 0.05 |
| Bi-210m | 0 | 0.06 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 16.1 pCi/g MDA

F-619/686

Date: 03/15/06 Counted By: Analyzed By: Initials GD

MT-06-0289 12 of 14 13 3/26/06 DW

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL10815
**File ID:** 25000122.s0
**Priority:** Yes

**Description\Location**
0601035 #2 West Top
Long Count

**Collector:**
**Date Received:** 03/14/06
**Date Collected:** 03/13/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 2.61 | 0.25 |
| Cs-137 | * | 0.01 | 0.1 |
| Pb-210 | * | 0.21 | 0.56 |
| Ra-226 | * | 0 | 0.93 |
| Ac-227 (D) | * | 0 | 0.29 |
| Th-230 | * | 0.01 | 5.79 |
| Th-232 (D) | * | 0.42 | 1.05 |
| Pu-238 | * | 1.27 | 3.97 |
| Am-241 | * | 0 | 0.06 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0.01 | 0.06 |
| Bi-207 | 0 | 0.07 |
| Bi-210m | 0 | 0.06 |

$\Sigma_{DOT}$ 0.02 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 0 pCi/g 24.82 pCi/g MDA

F 620/686

Date: 03/15/06 Counted By: Analyzed By: Initials CJ

MT-06-0289 13 of 13 DW 3-22-

# SOIL ANALYSIS REPORT

**Field Sample ID:**
**Lab Sample ID:** GL10817
**File ID:** 25000124.s0
**Priority:** Yes

**Description\Location**
0601037 #4 West Bottom
Long Count

**Collector:**
**Date Received:** 03/14/06
**Date Collected:** 03/13/06

| Radionuclide | | Activity (pCi/g) | MDA |
|---|---|---|---|
| Co-60 | | 0.23 | 0.2 |
| Cs-137 | * | 0 | 0.1 |
| Pb-210 | * | 0 | 0.6 |
| Ra-226 | * | 0.61 | 0.77 |
| Ac-227 (D) | * | 0.12 | 0.21 |
| Th-230 | * | 2.88 | 5.09 |
| Th-232 (D) | * | 0.58 | 0.69 |
| Pu-238 | * | 0 | 4.43 |
| Am-241 | * | 0 | 0.06 |

**Other Nuclides**

| Radionuclide | Activity (pCi/g) | MDA |
|---|---|---|
| Ag-108m | 0 | 0.07 |
| Bi-207 | 0.01 | 0.04 |
| Bi-210m | 0 | 0.05 |

$\Sigma_{DOT}$ 0.01 nCi/g

Instrument type: High Purity Germanium

$\Sigma_{DOT}$ 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

**Comments:** U-238d 2.02 pCi/g 9 pCi/g MDA

621/686

Date: 03/15/06 Counted By: Analyzed By: Initials GB

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG/AREA/ROOM) T-59 WEST [illegible] | SURVEY NO. MT-06-0294 |
| PURPOSE: SURVEY LOCATIONS FOR RESRAD DEEP SAMPLING | RWP NO. 1697 REV.0 |
| | DATE: 3-10-06 |
| | TIME: 1400 |

MAP / DRAWING

SEE ATTACHED

IN ADDITION TO 13 NEW STATIC LOCATIONS, LOCATION 1C21 10Y AND 1C21 11Y FROM RSDS# MT-05-1269 ARE BEING RESAMPLED. 10Y HAD 6091 DPM/100 cm² β-

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5892/5893 | 2-14-07 |
| 30-30 | 5825 | 4-13-06 |
| 2360 | 5711/5721 | 8-16-06 |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 3-10-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | F 622/686 |
| Counted by: (Signature) SEE | HP# N/A | Date: |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) | | Date: 3-30-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

PBO

Survey No. MT-06-0294

# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | | | | 1C21 W1 |
| 2 | | | | W2 |
| 3 | | | | W3 |
| 4 | | | | W4 |
| 5 | | | | W5 |
| 6 | | | | W6 |
| 7 | | | | W7 |
| 8 | | SEE | | W8 |
| 9 | | ATT | ACHED | W9 |
| 10 | | | | W10 |
| 11 | | | | W11 |
| 12 | | | | W12 |
| 13 | | | | W13 |
| 14 | | | | 10Y |
| 15 | | | | 11Y |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | N | |
| 26 | | | A | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | N | | |
| 57 | | | A | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |
| 61 | | | | |
| 62 | | | | |
| 63 | | | | |
| 64 | | | | |
| 65 | | | | |
| 66 | | | | |
| 67 | | | | |
| 68 | | | | |
| 69 | | | | |
| 70 | | | | |

COMMENTS: N/A

F 623/686

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060314_1042.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0294.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3/14/06 | 10:43:02 AM | -1 | 10.00 | 8 | 7 | 12 | 4 | 619.54 | 0 | 22.7 | B | 1 |
| 3/14/06 | 10:54:16 AM | 0 | 2.00 | 494 | 465 | 0 | 0 | 598.79 | 916 | 6.4 | | 1 |
| 3/14/06 | 10:57:06 AM | 1 | 2.00 | 0 | 0 | 0 | 0 | 628.42 | 0 | 1653.9 | | 1 |
| 3/14/06 | 10:59:56 AM | 2 | 2.00 | 2 | 3 | 0 | 0 | 615.14 | 4 | 203.8 | | 1 |
| 3/14/06 | 11:02:38 AM | 3 | 2.00 | 6 | 6 | 0 | 0 | 608.21 | 11 | 95.3 | | 1 |
| 3/14/06 | 11:05:28 AM | 4 | 2.00 | 7 | 7 | 0 | 0 | 552.34 | 13 | 83.8 | | 1 |
| 3/14/06 | 11:08:10 AM | 5 | 2.00 | 5 | 5 | 0 | 4 | 542.82 | 10 | 104.2 | | 1 |
| 3/14/06 | 11:11:24 AM | 6 | 2.00 | 4 | 4 | 0 | 0 | 562.59 | 8 | 123.4 | | 1 |
| 3/14/06 | 11:14:23 AM | 7 | 2.00 | 0 | 0 | 2 | 0 | 617.92 | 0 | 0.0 | | 1 |
| 3/14/06 | 11:17:30 AM | 8 | 2.00 | 3 | 4 | 0 | 0 | 576.71 | 6 | 155.2 | | 1 |
| 3/14/06 | 11:20:13 AM | 9 | 2.00 | 14 | 13 | 0 | 0 | 538.09 | 27 | 49.3 | | 1 |
| 3/14/06 | 11:23:03 AM | 10 | 2.00 | 2 | 2 | 0 | 0 | 573.46 | 3 | 280.5 | | 1 |
| 3/14/06 | 11:25:44 AM | 11 | 2.00 | 0 | 1 | 0 | 0 | 564.73 | 1 | 1564.0 | | 1 |
| 3/14/06 | 11:28:27 AM | 12 | 2.00 | 1 | 2 | 0 | 0 | 583.04 | 2 | 346.8 | | 1 |
| 3/14/06 | 11:31:08 AM | 13 | 2.00 | 0 | 0 | 0 | 0 | 611.48 | 0 | 0.0 | | 1 |
| 3/14/06 | 11:34:14 AM | 14 | 2.00 | 8 | 8 | 0 | 0 | 618.15 | 14 | 75.2 | | 1 |
| 3/14/06 | 11:36:56 AM | 15 | 2.00 | 1 | 1 | 0 | 0 | 649.26 | 2 | 363.3 | | 1 |

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F 6/25/06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_027
Batch Ended: 3/13/06 15:56
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0294 WATSON [15] GWD

| Detector ID | Sample ID | Alpha Activity DPM | Alpha Activity σ | Alpha Activity flags | Beta Activity DPM | Beta Activity σ | Beta Activity flags |
|---|---|---|---|---|---|---|---|
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 3.60 | 2.83 | | 0.01 | 1.64 | |
| A3 | 3 | 0.00 | 2.30 | | 1.67 | 2.18 | |
| A4 | 4 | 0.00 | 2.13 | | 1.69 | 2.09 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.19 | |
| B2 | 6 | 0.00 | 1.89 | | 1.32 | 1.93 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 1.61 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.09 | | 0.71 | 1.81 | |
| C2 | 10 | 0.00 | 1.93 | | 0.00 | 1.20 | |
| C3 | 11 | 0.00 | 2.14 | | 0.00 | 1.32 | |
| C4 | 12 | 0.00 | 1.98 | | 0.00 | 1.18 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.25 | |
| D2 | 14 | 0.00 | 2.18 | | 1.58 | 2.06 | |
| D3 | 15 | 0.00 | 2.10 | | 0.18 | 1.75 | |

Vna Vna

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GWD

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3/20/06

1-1026/686

# T-59 West RESRAD deep sampling 1C21

*RSDS# _MT-06-0294_____ RCT: [redacted] _____ RCT: __N/A_____*

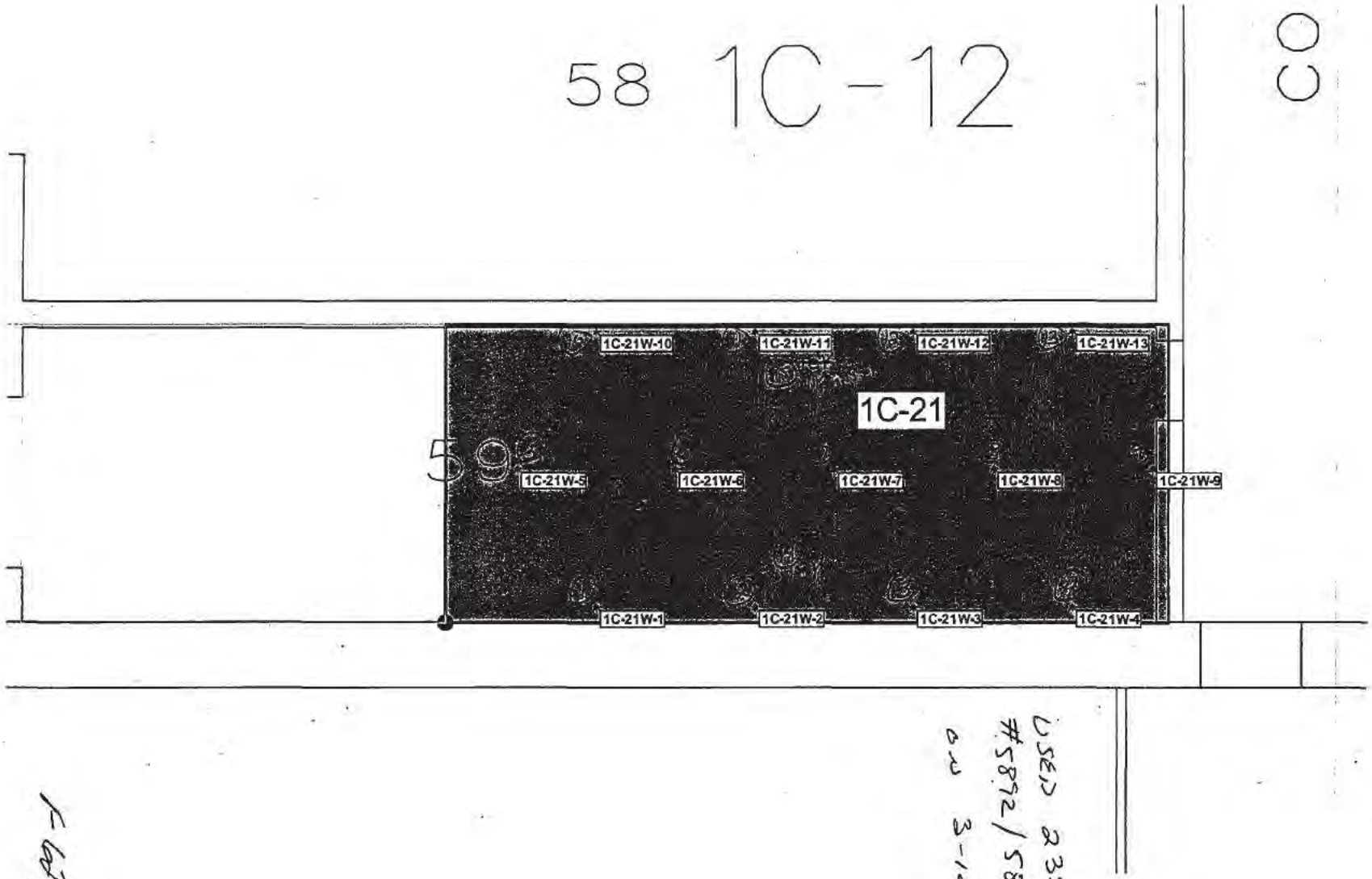
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2127 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.166 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C21W1RES | 5892 | [redacted] | 5893 | 1 | 1 | 3/10/06 | 14:27 | 6 | 120 | 22 | |
| ALPHA | 1C21W2RES | 5892 | [redacted] | 5893 | 1 | 2 | 3/10/06 | 14:31 | 11 | 120 | 41 | |
| ALPHA | 1C21W3RES | 5892 | [redacted] | 5893 | 1 | 3 | 3/10/06 | 14:36 | 9 | 120 | 34 | |
| ALPHA | 1C21W4RES | 5892 | [redacted] | 5893 | 1 | 4 | 3/10/06 | 14:40 | 12 | 120 | 45 | |
| ALPHA | 1C21W5RES | 5892 | [redacted] | 5893 | 1 | 5 | 3/10/06 | 14:44 | 8 | 120 | 30 | |
| ALPHA | 1C21W6RES | 5892 | [redacted] | 5893 | 1 | 6 | 3/10/06 | 14:49 | 8 | 120 | 30 | |
| ALPHA | 1C21W7RES | 5892 | [redacted] | 5893 | 1 | 7 | 3/10/06 | 14:54 | 7 | 120 | 26 | |
| ALPHA | 1C21W8RES | 5892 | [redacted] | 5893 | 1 | 8 | 3/10/06 | 14:58 | 7 | 120 | 26 | |
| ALPHA | 1C21W9RES | 5892 | [redacted] | 5893 | 1 | 9 | 3/10/06 | 15:03 | 8 | 120 | 30 | |
| ALPHA | 1C21W10RES | 5892 | [redacted] | 5893 | 1 | 10 | 3/10/06 | 15:07 | 5 | 120 | 19 | |
| ALPHA | 1C21W11RES | 5892 | [redacted] | 5893 | 1 | 11 | 3/10/06 | 15:16 | 13 | 120 | 49 | |
| ALPHA | 1C21W12RES | 5892 | [redacted] | 5893 | 1 | 12 | 3/10/06 | 15:23 | 14 | 120 | 52 | |
| ALPHA | 1C21W13RES | 5892 | [redacted] | 5893 | 1 | 13 | 3/10/06 | 15:28 | 8 | 120 | 30 | |
| ALPHA | 1C2110YRES | 5892 | [redacted] | 5893 | 1 | 14 | 3/10/06 | 15:36 | 7 | 120 | 26 | |
| ALPHA | 1C2111YRES | 5892 | [redacted] | 5893 | 1 | 15 | 3/10/06 | 15:42 | 6 | 120 | 22 ✓ | |
| BETA | 1C21W1RES | 5892 | [redacted] | 5893 | 2 | 1 | 3/10/06 | 14:28 | 166 | 60 | 1587 | |
| BETA | 1C21W2RES | 5892 | [redacted] | 5893 | 2 | 2 | 3/10/06 | 14:32 | 141 | 60 | 1348 | |
| BETA | 1C21W3RES | 5892 | [redacted] | 5893 | 2 | 3 | 3/10/06 | 14:37 | 142 | 60 | 1358 | |
| BETA | 1C21W4RES | 5892 | [redacted] | 5893 | 2 | 4 | 3/10/06 | 14:41 | 126 | 60 | 1205 | |
| BETA | 1C21W5RES | 5892 | [redacted] | 5893 | 2 | 5 | 3/10/06 | 14:45 | 174 | 60 | 1664 | |
| BETA | 1C21W6RES | 5892 | [redacted] | 5893 | 2 | 6 | 3/10/06 | 14:50 | 141 | 60 | 1348 | |
| BETA | 1C21W7RES | 5892 | [redacted] | 5893 | 2 | 7 | 3/10/06 | 14:55 | 137 | 60 | 1310 | |
| BETA | 1C21W8RES | 5892 | [redacted] | 5893 | 2 | 8 | 3/10/06 | 14:59 | 155 | 60 | 1482 | |
| BETA | 1C21W9RES | 5892 | [redacted] | 5893 | 2 | 9 | 3/10/06 | 15:04 | 153 | 60 | 1463 | |
| BETA | 1C21W10RES | 5892 | [redacted] | 5893 | 2 | 10 | 3/10/06 | 15:08 | 211 | 60 | 2018 | |
| BETA | 1C21W11RES | 5892 | [redacted] | 5893 | 2 | 11 | 3/10/06 | 15:17 | 295 | 60 | 2821 | |
| BETA | 1C21W12RES | 5892 | [redacted] | 5893 | 2 | 12 | 3/10/06 | 15:24 | 234 | 60 | 2238 | |
| BETA | 1C21W13RES | 5892 | [redacted] | 5893 | 2 | 13 | 3/10/06 | 15:29 | 147 | 60 | 1406 | |
| BETA | 1C2110YRES | 5892 | [redacted] | 5893 | 2 | 14 | 3/10/06 | 15:37 | 637 | 60 | 6091 | |
| BETA | 1C2111YRES | 5892 | [redacted] | 5893 | 2 | 15 | 3/10/06 | 15:44 | 518 | 60 | 4953 ✓ | |

RES = RESRAD

F 627/686

**1C-21-01 Static measurement locations**
**Class 1 Area**
**West End of Room 59**

After a direct alpha and beta measurement are taken and the smear is taken, then collect a bulk sample by drilling 6" deep at each static location on the floor. Composite bulk sample with bulk samples taken at judgmental locations on the floor. Then repeat sampling at each location going a depth of 12".




USED 2354
#5892 / 5893
ow 3-10-06

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F-1478/986

**1C-21-01** **West End of Room 59 static measurement locations**
**Class 1 Area**

| Area: West End of Room 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21W-1 | Systematic | Floor | 6 | 1 |
| 1C-21W-2 | Systematic | Floor | 12 | 1 |
| 1C-21W-3 | Systematic | Floor | 17 | 1 |
| 1C-21W-4 | Systematic | Floor | 23 | 1 |
| 1C-21W-5 | Systematic | Floor | 3 | 6 |
| 1C-21W-6 | Systematic | Floor | 9 | 6 |
| 1C-21W-7 | Systematic | Floor | 15 | 6 |
| 1C-21W-8 | Systematic | Floor | 20 | 6 |
| 1C-21W-9 | Systematic | Floor | 26 | 6 |
| 1C-21W-10 | Systematic | Floor | 6 | 11 |
| 1C-21W-11 | Systematic | Floor | 12 | 11 |
| 1C-21W-12 | Systematic | Floor | 17 | 11 |
| 1C-21W-13 | Systematic | Floor | 23 | 11 |
| 1C-21 10Y | N/A | Floor | N/A | N/A |
| 1C21 11Y | N/A | Floor | N/A | N/A |

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) TBLD6 Rm 59 | SURVEY NO. MT-06-0394 |
| PURPOSE: Lower station in Rm 59 | RWP NO. N/A |
| | DATE: 4/4/06 |
| RESRAD 1C21 | TIME: 1445 |

## MAP/DRAWING

see attached map

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
(#) = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5857/5859 | 10/4/06 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Wayne Jones Jackie Jones | [redacted] | Date: 4/4/06 |
| Completed by: (Print Name) Wayne Jones Jackie Jones | | |
| Counted by: (Signature) See attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) | F 630/686 | |
| Reviewed/Approved by: (Signature) Jerry Taylor | H [redacted] | Date: 4-11-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor RPO | | |

ML-9620 (2-98)

Survey No.
MT-06-0394



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See attached | | | 1C2101015 |
| 2 | | | | 1C2101025 |
| 3 | | | | 1C2101035 |
| 4 | | | | 1C2101045 |
| 5 | | | | 1C2101055 |
| 6 | | | | 1C2101065 |
| 7 | | | | 1C2101075 |
| 8 | | | | 1C2101085 |
| 9 | | | | 1C2101095 |
| 10 | | | | 1C2101105 |
| 11 | | | | 1C2101115 |
| 12 | | | | 1C2101125 |
| 13 | | | | 1C2101135 |
| 14 | | | | 1C2101145 |
| 15 | | | | 1C2101155 |
| 16 | | | | 1C2101165 |
| 17 | | | | 1C2101175 |
| 18 | | | | 1C2101185 |
| 19 | | | | 1C2101195 |
| 20 | | | | 1C2101205 |
| 21 | | | | 1C2101215 |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F631/686

ML-9620 (4-98)

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# Smear Analysis

COPY

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_102
Batch Ended: 4/4/06 15:16
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0394 WJ {21} GWD

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.38 | 1.85 | |
| A2 | 2 | 0.00 | 2.01 | | 0.36 | 1.65 | |
| A3 | 3 | 0.00 | 2.30 | | 1.55 | 2.18 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 1.69 | 1.91 | | 2.50 | 2.23 | |
| B3 | 7 | 0.00 | 2.20 | | 0.27 | 1.88 | |
| B4 | 8 | 0.00 | 1.97 | | 0.66 | 1.69 | |
| C1 | 9 | 1.73 | 2.08 | | 0.00 | 1.78 | |
| C2 | 10 | 0.00 | 1.93 | | 0.00 | 1.16 | |
| C3 | 11 | 2.02 | 2.14 | | 0.30 | 1.79 | |
| C4 | 12 | 0.00 | 1.98 | | 0.00 | 1.14 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 15 | 0.00 | 2.12 | | 1.50 | 2.15 | |
| D4 | 16 | 1.71 | 2.07 | | 1.43 | 2.03 | |
| A1 | 17 | 0.00 | 2.18 | | 0.00 | 1.32 | |
| A2 | 18 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 19 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 20 | 0.00 | 2.13 | | 1.78 | 2.09 | |
| B1 | 21 | 0.00 | 1.93 | | 2.62 | 2.38 | |

WJ WJ

Page 1 of 1 WJ 4/6/06

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GWD

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060404_1608.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0394.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

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F-03 3/6/06

RLH

MARSSIM Smear Data

M T-06-0394 pg 50 of

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/4/06 | 4:09:23 PM | -1 | 10.00 | 9 | 8 | 11 | 3 | 616.46 | 0 | 21.5 | B | 2 |
| 4/4/06 | 4:20:13 PM | 0 | 2.00 | 94 | 90 | 3 | 1 | 545.10 | 183 | 15.3 | | 2 |
| 4/4/06 | 4:22:55 PM | 1 | 2.00 | 0 | 0 | 0 | 0 | 608.76 | 0 | 0.0 | | 2 |
| 4/4/06 | 4:25:37 PM | 2 | 2.00 | 3 | 3 | 0 | 0 | 616.09 | 6 | 155.3 | | 2 |
| 4/4/06 | 4:28:21 PM | 3 | 2.00 | 0 | 0 | 0 | 0 | 625.83 | 0 | 2864.5 | | 2 |
| 4/4/06 | 4:31:04 PM | 4 | 2.00 | 1 | 1 | 0 | 0 | 610.19 | 2 | 529.7 | | 2 |
| 4/4/06 | 4:33:46 PM | 5 | 2.00 | 5 | 5 | 0 | 0 | 609.77 | 10 | 104.3 | | 2 |
| 4/4/06 | 4:36:29 PM | 6 | 2.00 | 5 | 4 | 0 | 10 | 565.35 | 10 | 103.8 | | 2 |
| 4/4/06 | 4:39:10 PM | 7 | 2.00 | 0 | 0 | 0 | 0 | 623.93 | 0 | 0.0 | | 2 |
| 4/4/06 | 4:41:52 PM | 8 | 2.00 | 3 | 3 | 0 | 4 | 623.83 | 5 | 194.0 | | 2 |
| 4/4/06 | 4:44:34 PM | 9 | 2.00 | 0 | 0 | 0 | 0 | 616.58 | 1 | 1236.2 | | 2 |
| 4/4/06 | 4:47:17 PM | 10 | 2.00 | 1 | 1 | 0 | 0 | 628.11 | 2 | 541.7 | | 2 |
| 4/4/06 | 4:49:59 PM | 11 | 2.00 | 0 | 0 | 3 | 0 | 550.95 | 0 | 0.0 | | 2 |
| 4/4/06 | 4:52:42 PM | 12 | 2.00 | 2 | 3 | 0 | 0 | 613.80 | 4 | 212.4 | | 2 |
| 4/4/06 | 4:55:25 PM | 13 | 2.00 | 5 | 4 | 0 | 0 | 624.42 | 9 | 113.2 | | 2 |
| 4/4/06 | 4:58:07 PM | 14 | 2.00 | 0 | 0 | 0 | 0 | 641.34 | 1 | 1098.4 | | 2 |
| 4/4/06 | 5:00:49 PM | 15 | 2.00 | 1 | 2 | 0 | 0 | 640.75 | 3 | 343.4 | | 2 |
| 4/4/06 | 5:03:30 PM | 16 | 2.00 | 5 | 4 | 0 | 0 | 630.06 | 10 | 104.3 | | 2 |
| 4/4/06 | 5:06:18 PM | 17 | 2.00 | 0 | 0 | 0 | 0 | 645.71 | 0 | 0.0 | | 2 |
| 4/4/06 | 5:08:58 PM | 18 | 2.00 | 0 | 0 | 0 | 0 | 644.37 | 1 | 981.8 | | 2 |
| 4/4/06 | 5:11:39 PM | 19 | 2.00 | 0 | 0 | 0 | 0 | 634.85 | 0 | 0.0 | | 2 |
| 4/4/06 | 5:14:21 PM | 20 | 2.00 | 3 | 3 | 0 | 0 | 638.21 | 5 | 178.9 | | 2 |
| 4/4/06 | 5:17:04 PM | √21 | 2.00 | 0 | 0 | 0 | 0 | 579.38 | 0 | 0.0 | | 2 |

WJ

F 6/4/06

**1C-21-01** **Room 59 floor and lower wall static measurement locations**
**Class 1 Area**

| Area: 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21-01-1 | Systematic | Floor | 6 | 1 |
| 1C-21-01-2 | Systematic | Floor | 15 | 1 |
| 1C-21-01-3 | Systematic | Floor | 25 | 1 |
| 1C-21-01-4 | Systematic | Floor | 34 | 1 |
| 1C-21-01-5 | Systematic | Floor | 1 | 10 |
| 1C-21-01-6 | Systematic | Floor | 10 | 10 |
| 1C-21-01-7 | Systematic | Floor | 20 | 10 |
| 1C-21-01-8 | Systematic | Floor | 30 | 10 |
| 1C-21-01-9 | Systematic | Floor | 39 | 10 |
| 1C-21-01-10 | Systematic | Wall 1 | 0 | 4 |
| 1C-21-01-11 | Systematic | Wall 1 | 10 | 4 |
| 1C-21-01-12 | Systematic | Wall 2 | 8 | 4 |
| 1C-21-01-13 | Systematic | Wall 2 | 18 | 4 |
| 1C-21-01-14 | Systematic | Wall 2 | 27 | 4 |
| 1C-21-01-15 | Systematic | Wall 2 | 37 | 4 |
| 1C-21-01-16 | Systematic | Wall 3 | 4 | 4 |
| 1C-21-01-17 | Systematic | Wall 4 | 2 | 4 |
| 1C-21-01-18 | Systematic | Wall 4 | 12 | 4 |
| 1C-21-01-19 | Systematic | Wall 4 | 22 | 4 |
| 1C-21-01-20 | Systematic | Wall 4 | 31 | 4 |
| 1C-21-01-21 | Systematic | Wall 4 | 41 | 4 |

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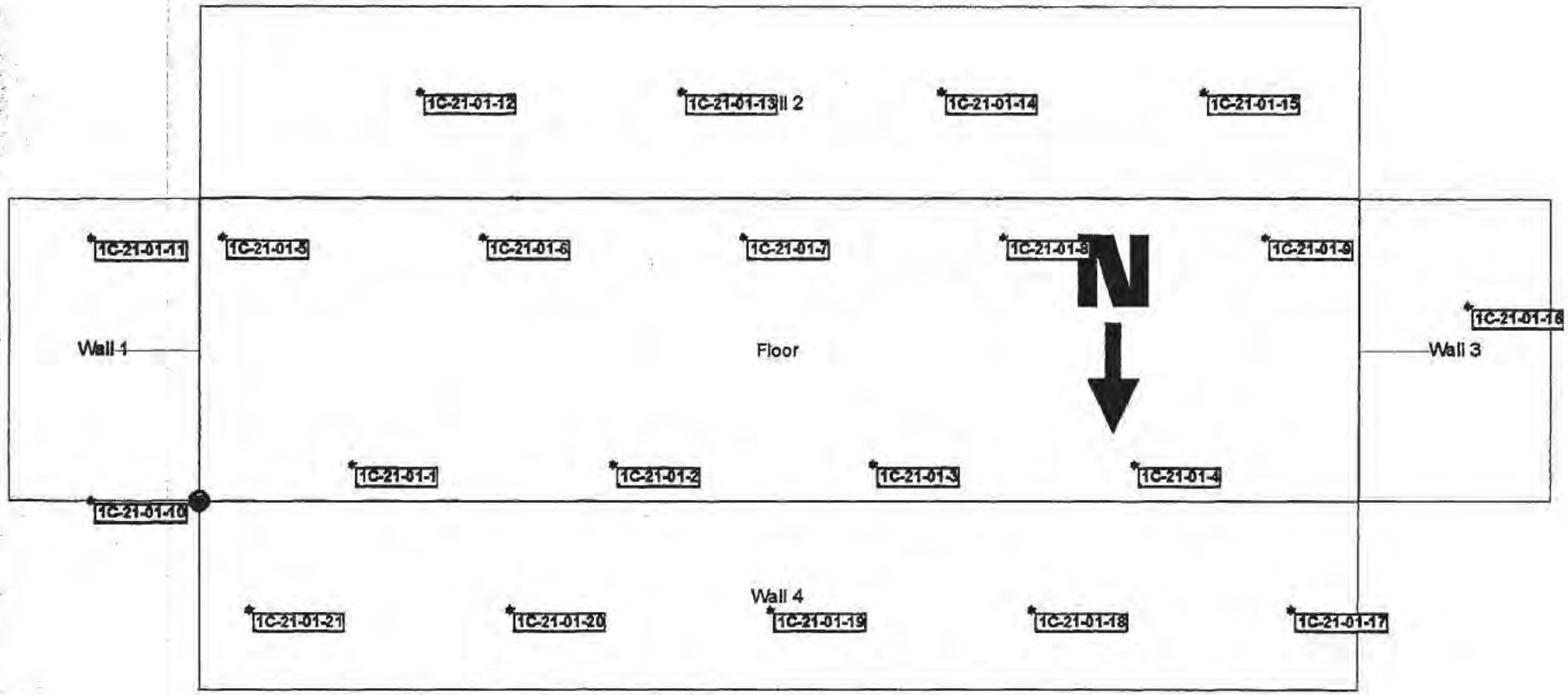
**1C-21-01 Static measurement locations**
**Class 1 Area Room 59**

59




F-U3691-99

# T-Building Lower Static Survey Rm 59 1C-21

*RSDS# _MT-06-0394_____ RCT: __[redacted]_____ RCT: ___[redacted]_____*

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.208 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.164 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210101S | 5857 | [redacted] | 5859 | 1 | 1 | 4/4/06 | 8:09 | 3 | 120 | 11 |
| ALPHA | 1C210102S | 5857 | [redacted] | 5859 | 1 | 2 | 4/4/06 | 8:13 | 10 | 120 | 38 |
| ALPHA | 1C210103S | 5857 | [redacted] | 5859 | 1 | 3 | 4/4/06 | 8:17 | 5 | 120 | 19 |
| ALPHA | 1C210104S | 5857 | [redacted] | 5859 | 1 | 4 | 4/4/06 | 8:21 | 5 | 120 | 19 |
| ALPHA | 1C210105S | 5857 | [redacted] | 5859 | 1 | 5 | 4/4/06 | 8:25 | 5 | 120 | 19 |
| ALPHA | 1C210106S | 5857 | [redacted] | 5859 | 1 | 6 | 4/4/06 | 8:29 | 22 | 120 | 84 |
| ALPHA | 1C210107S | 5857 | [redacted] | 5859 | 1 | 7 | 4/4/06 | 8:33 | 6 | 120 | 23 |
| ALPHA | 1C210108S | 5857 | [redacted] | 5859 | 1 | 8 | 4/4/06 | 8:37 | 7 | 120 | 27 |
| ALPHA | 1C210109S | 5857 | [redacted] | 5859 | 1 | 9 | 4/4/06 | 8:41 | 5 | 120 | 19 |
| ALPHA | 1C210110S | 5857 | [redacted] | 5859 | 1 | 10 | 4/4/06 | 8:45 | 6 | 120 | 23 |
| ALPHA | 1C210111S | 5857 | [redacted] | 5859 | 1 | 11 | 4/4/06 | 8:49 | 7 | 120 | 27 |
| ALPHA | 1C210112S | 5857 | [redacted] | 5859 | 1 | 12 | 4/4/06 | 8:53 | 6 | 120 | 23 |
| ALPHA | 1C210113S | 5857 | [redacted] | 5859 | 1 | 13 | 4/4/06 | 8:56 | 7 | 120 | 27 |
| ALPHA | 1C210114S | 5857 | [redacted] | 5859 | 1 | 14 | 4/4/06 | 9:00 | 7 | 120 | 27 |
| ALPHA | 1C210115S | 5857 | [redacted] | 5859 | 1 | 15 | 4/4/06 | 9:04 | 6 | 120 | 23 |
| ALPHA | 1C210116S | 5857 | [redacted] | 5859 | 1 | 16 | 4/4/06 | 9:08 | 3 | 120 | 11 |
| ALPHA | 1C210117S | 5857 | [redacted] | 5859 | 1 | 17 | 4/4/06 | 9:12 | 8 | 120 | 31 |
| ALPHA | 1C210118S | 5857 | [redacted] | 5859 | 1 | 18 | 4/4/06 | 9:16 | 3 | 120 | 11 |
| ALPHA | 1C210119S | 5857 | [redacted] | 5859 | 1 | 19 | 4/4/06 | 9:20 | 5 | 120 | 19 |
| ALPHA | 1C210120S | 5857 | [redacted] | 5859 | 1 | 20 | 4/4/06 | 9:24 | 2 | 120 | 8 |
| ALPHA | 1C210121S | 5857 | [redacted] | 5859 | 1 | 21 | 4/4/06 | 9:27 | 6 | 120 | 23 ✓ |
| BETA | 1C210101S | 5857 | [redacted] | 5859 | 2 | 22 | 4/4/06 | 8:11 | 138 | 60 | 1336 |
| BETA | 1C210102S | 5857 | [redacted] | 5859 | 2 | 23 | 4/4/06 | 8:14 | 145 | 60 | 1403 |
| BETA | 1C210103S | 5857 | [redacted] | 5859 | 2 | 24 | 4/4/06 | 8:18 | 121 | 60 | 1171 |
| BETA | 1C210104S | 5857 | [redacted] | 5859 | 2 | 25 | 4/4/06 | 8:22 | 122 | 60 | 1181 |
| BETA | 1C210105S | 5857 | [redacted] | 5859 | 2 | 26 | 4/4/06 | 8:26 | 161 | 60 | 1558 |
| BETA | 1C210106S | 5857 | [redacted] | 5859 | 2 | 27 | 4/4/06 | 8:30 | 515 | 60 | 4985 |
| BETA | 1C210107S | 5857 | [redacted] | 5859 | 2 | 28 | 4/4/06 | 8:34 | 155 | 60 | 1500 |
| BETA | 1C210108S | 5857 | [redacted] | 5859 | 2 | 29 | 4/4/06 | 8:38 | 150 | 60 | 1452 |
| BETA | 1C210109S | 5857 | [redacted] | 5859 | 2 | 30 | 4/4/06 | 8:42 | 153 | 60 | 1481 |
| BETA | 1C210110S | 5857 | [redacted] | 5859 | 2 | 31 | 4/4/06 | 8:46 | 181 | 60 | 1752 |
| BETA | 1C210111S | 5857 | [redacted] | 5859 | 2 | 32 | 4/4/06 | 8:50 | 126 | 60 | 1220 |
| BETA | 1C210112S | 5857 | [redacted] | 5859 | 2 | 33 | 4/4/06 | 8:54 | 175 | 60 | 1694 |
| BETA | 1C210113S | 5857 | [redacted] | 5859 | 2 | 34 | 4/4/06 | 8:57 | 192 | 60 | 1858 |
| BETA | 1C210114S | 5857 | [redacted] | 5859 | 2 | 35 | 4/4/06 | 9:01 | 130 | 60 | 1258 |
| BETA | 1C210115S | 5857 | [redacted] | 5859 | 2 | 36 | 4/4/06 | 9:05 | 132 | 60 | 1278 |
| BETA | 1C210116S | 5857 | [redacted] | 5859 | 2 | 37 | 4/4/06 | 9:09 | 154 | 60 | 1491 |
| BETA | 1C210117S | 5857 | [redacted] | 5859 | 2 | 38 | 4/4/06 | 9:13 | 131 | 60 | 1268 |
| BETA | 1C210118S | 5857 | [redacted] | 5859 | 2 | 39 | 4/4/06 | 9:17 | 114 | 60 | 1103 |
| BETA | 1C210119S | 5857 | [redacted] | 5859 | 2 | 40 | 4/4/06 | 9:21 | 122 | 60 | 1181 |
| BETA | 1C210120S | 5857 | [redacted] | 5859 | 2 | 41 | 4/4/06 | 9:25 | 141 | 60 | 1365 |
| BETA | 1C210121S | 5857 | [redacted] | 5859 | 2 | 42 | 4/4/06 | 9:29 | 150 | 60 | 1452 ✓ |



F-637/686

SPEC-40-T11

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Rm. 59 IC-21 | SURVEY NO. MT-06-0398 |
| PURPOSE: Upper STATIC SURVEY Rm. 59 | RWP NO. N/A |
| | DATE: 4-6-06 |
| | TIME: 1445 |

## MAP / DRAWING

NO ELEVATED α β READINGS DETECTED DURING SCAN.

SEE ATTACHED SHEETS

1m² SCAN AROUND CEILING STATIC POINTS

COPY

LEGEND:
# = mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5923 | 5-17-06 |
| 43-68 | 5925 | 5-17-06 |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Nursick / BJ Roe | | Date: 4-6-06 |
| Completed by: (Print Name) B. NURSICK / BJ Roe | | |
| Counted by: (Signature) SEE ATTACHED SHEETS | HP# N/A | Date: N/A |
| Counted by: (Print Name) SEE ATTACHED SHEETS | | F638/6886 |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 4-11-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No. MT-06-0398



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE ATTACHED | | SHEETS | 1C21 0216S |
| 2 | | | | 1C21 0209S |
| 3 | | | | 1C21 0215S |
| 4 | | | | 1C21 0217S |
| 5 | | | | 1C21 0204S |
| 6 | | | | 1C21 0214S |
| 7 | | | | 1C21 0208S |
| 8 | | | | 1C21 0218S |
| 9 | | | | 1C21 0203S |
| 10 | | | | 1C21 0213S |
| 11 | | | | 1C21 0207S |
| 12 | | | | 1C21 0219S |
| 13 | | | | 1C21 0202S |
| 14 | | | | 1C21 0212S |
| 15 | | | | 1C21 0206S |
| 16 | | | | 1C21 0220S |
| 17 | | | | 1C21 0201S |
| 18 | | | | 1C21 0211S |
| 19 | | | | 1C21 0205S |
| 20 | SEE ATTACHED | | SHEETS | 1C21 0210S |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F639/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_4\20060406_1526.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0398.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_4.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial ✓ BN |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

5 of 6

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/6/06 | 3:27:06 PM | -1 | 10.00 | 8 | 7 | 12 | 8 | 628.50 | 0 | 22.5 | B | 4 |
| 4/6/06 | 3:37:57 PM | 0 | 2.00 | 166 | 159 | 5 | 0 | 546.05 | 322 | 11.3 | | 4 |
| 4/6/06 | 3:40:39 PM | 1 | 2.00 | 4 | 4 | 0 | 0 | 573.24 | 8 | 127.1 | | 4 |
| 4/6/06 | 3:43:21 PM | 2 | 2.00 | 22 | 19 | 0 | 0 | 550.39 | 43 | 36.0 | | 4 |
| 4/6/06 | 3:46:03 PM | 3 | 2.00 | 1 | 1 | 0 | 0 | 642.71 | 1 | 669.7 | | 4 |
| 4/6/06 | 3:48:45 PM | 4 | 2.00 | 17 | 16 | 0 | 0 | 598.06 | 32 | 42.6 | | 4 |
| 4/6/06 | 3:51:27 PM | 5 | 2.00 | 15 | 14 | 0 | 0 | 616.04 | 28 | 46.2 | | 4 |
| 4/6/06 | 3:54:09 PM | 6 | 2.00 | 2 | 2 | 0 | 0 | 583.82 | 4 | 229.0 | | 4 |
| 4/6/06 | 3:56:52 PM | 7 | 2.00 | 13 | 12 | 0 | 0 | 570.11 | 24 | 52.6 | | 4 |
| 4/6/06 | 3:59:35 PM | 8 | 2.00 | 14 | 13 | 0 | 0 | 601.78 | 25 | 50.0 | | 4 |
| 4/6/06 | 4:02:17 PM | 9 | 2.00 | 5 | 5 | 0 | 0 | 613.98 | 8 | 115.3 | | 4 |
| 4/6/06 | 4:05:00 PM | 10 | 2.00 | 3 | 4 | 0 | 0 | 570.64 | 7 | 147.1 | | 4 |
| 4/6/06 | 4:07:42 PM | 11 | 2.00 | 4 | 3 | 0 | 0 | 570.29 | 8 | 127.1 | | 4 |
| 4/6/06 | 4:10:25 PM | 12 | 2.00 | 3 | 2 | 0 | 0 | 630.47 | 5 | 188.9 | | 4 |
| 4/6/06 | 4:13:08 PM | 13 | 2.00 | 0 | 1 | 0 | 0 | 627.69 | 1 | 1062.7 | | 4 |
| 4/6/06 | 4:15:49 PM | 14 | 2.00 | 1 | 1 | 0 | 0 | 629.79 | 3 | 321.6 | | 4 |
| 4/6/06 | 4:18:32 PM | 15 | 2.00 | 3 | 4 | 1 | 0 | 622.94 | 6 | 151.7 | | 4 |
| 4/6/06 | 4:21:15 PM | 16 | 2.00 | 2 | 2 | 0 | 0 | 630.70 | 4 | 243.0 | | 4 |
| 4/6/06 | 4:24:02 PM | 17 | 2.00 | 3 | 4 | 0 | 0 | 625.92 | 6 | 149.7 | | 4 |
| 4/6/06 | 4:26:45 PM | 18 | 2.00 | 5 | 5 | 0 | 0 | 611.18 | 9 | 105.8 | | 4 |
| 4/6/06 | 4:29:27 PM | 19 | 2.00 | 5 | 6 | 0 | 0 | 618.09 | 9 | 109.2 | | 4 |
| 4/6/06 | 4:32:09 PM | 20 | 2.00 | 3 | 3 | 0 | 0 | 594.48 | 5 | 188.9 | | 4 |

BN

4/11/06

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_106
Batch Ended: 4/6/06 14:32
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0398 [20] NURSICK 4-6-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.03 | | 1.52 | 2.02 | |
| A3 | 3 | 2.01 | 2.28 | | 0.12 | 1.78 | |
| A4 | 4 | 0.00 | 2.11 | | 0.58 | 1.71 | |
| B1 | 5 | 0.00 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.93 | | 3.82 | 2.50 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.09 | | 1.11 | 2.18 | |
| C2 | 10 | 0.00 | 1.95 | | 1.63 | 1.99 | |
| C3 | 11 | 0.00 | 2.15 | | 1.71 | 2.19 | |
| C4 | 12 | 0.00 | 2.00 | | 1.58 | 1.97 | |
| D1 | 13 | 0.00 | 2.05 | | 0.00 | 1.26 | |
| D2 | 14 | 0.00 | 2.17 | | 0.32 | 1.69 | |
| D3 | 15 | 0.00 | 2.10 | | 0.26 | 1.76 | |
| D4 | 16 | 0.00 | 2.08 | | 2.74 | 2.35 | |
| D1 | 17 | 0.00 | 2.07 | | 1.53 | 2.17 | |
| D2 | 18 | 0.00 | 2.15 | | 0.00 | 1.20 | |
| D3 | 19 | 0.00 | 2.12 | | 1.50 | 2.15 | |
| D4 | 20 | 0.00 | 2.04 | | 0.00 | 1.18 | |

BN BN


BN 4-7-06

F0473
0886

# T-Bldg. Upper Static Survey Rm.59

*RSDS#* MT-06-0398 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.2073 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.1578 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210216S | 5923 | [redacted] | 5925 | 1 | 1 | 4/5/06 | 10:25 | 10 | 120 | 38 |
| ALPHA | 1C210209S | 5923 | [redacted] | 5925 | 1 | 2 | 4/5/06 | 10:34 | 7 | 120 | 27 |
| ALPHA | 1C210215S | 5923 | [redacted] | 5925 | 1 | 3 | 4/5/06 | 10:41 | 6 | 120 | 23 |
| ALPHA | 1C210217S | 5923 | [redacted] | 5925 | 1 | 4 | 4/5/06 | 12:38 | 4 | 120 | 15 |
| ALPHA | 1C210204S | 5923 | [redacted] | 5925 | 1 | 5 | 4/5/06 | 12:45 | 5 | 120 | 19 |
| ALPHA | 1C210214S | 5923 | [redacted] | 5925 | 1 | 6 | 4/5/06 | 12:52 | 5 | 120 | 19 |
| ALPHA | 1C210208S | 5923 | [redacted] | 5925 | 1 | 7 | 4/5/06 | 13:02 | 6 | 120 | 23 |
| ALPHA | 1C210218S | 5923 | [redacted] | 5925 | 1 | 8 | 4/5/06 | 13:09 | 7 | 120 | 27 |
| ALPHA | 1C210203S | 5923 | [redacted] | 5925 | 1 | 9 | 4/5/06 | 13:16 | 6 | 120 | 23 |
| ALPHA | 1C210213S | 5923 | [redacted] | 5925 | 1 | 10 | 4/5/06 | 13:26 | 6 | 120 | 23 |
| ALPHA | 1C210207S | 5923 | [redacted] | 5925 | 1 | 11 | 4/5/06 | 13:33 | 3 | 120 | 11 |
| ALPHA | 1C210219S | 5923 | [redacted] | 5925 | 1 | 12 | 4/6/06 | 7:35 | 12 | 120 | 46 |
| ALPHA | 1C210202S | 5923 | [redacted] | 5925 | 1 | 13 | 4/6/06 | 7:51 | 2 | 120 | 8 |
| ALPHA | 1C210212S | 5923 | [redacted] | 5925 | 1 | 14 | 4/6/06 | 8:17 | 6 | 120 | 23 |
| ALPHA | 1C210206S | 5923 | [redacted] | 5925 | 1 | 15 | 4/6/06 | 8:24 | 5 | 120 | 19 |
| ALPHA | 1C210220S | 5923 | [redacted] | 5925 | 1 | 16 | 4/6/06 | 8:33 | 11 | 120 | 42 |
| ALPHA | 1C210201S | 5923 | [redacted] | 5925 | 1 | 17 | 4/6/06 | 9:56 | 5 | 120 | 19 |
| ALPHA | 1C210211S | 5923 | [redacted] | 5925 | 1 | 18 | 4/6/06 | 10:03 | 7 | 120 | 27 |
| ALPHA | 1C210205S | 5923 | [redacted] | 5925 | 1 | 19 | 4/6/06 | 10:09 | 5 | 120 | 19 |
| ALPHA | 1C210210S | 5923 | [redacted] | 5925 | 1 | 20 | 4/6/06 | 10:15 | 2 | 120 | 8 ✓ |
| BETA | 1C210216S | 5923 | [redacted] | 5925 | 2 | 1 | 4/5/06 | 10:26 | 128 | 60 | 1288 |
| BETA | 1C210209S | 5923 | [redacted] | 5925 | 2 | 2 | 4/5/06 | 10:36 | 168 | 60 | 1690 |
| BETA | 1C210215S | 5923 | [redacted] | 5925 | 2 | 3 | 4/5/06 | 10:43 | 156 | 60 | 1569 |
| BETA | 1C210217S | 5923 | [redacted] | 5925 | 2 | 4 | 4/5/06 | 12:39 | 121 | 60 | 1217 |
| BETA | 1C210204S | 5923 | [redacted] | 5925 | 2 | 5 | 4/5/06 | 12:46 | 137 | 60 | 1378 |
| BETA | 1C210214S | 5923 | [redacted] | 5925 | 2 | 6 | 4/5/06 | 12:53 | 124 | 60 | 1247 |
| BETA | 1C210208S | 5923 | [redacted] | 5925 | 2 | 7 | 4/5/06 | 13:03 | 111 | 60 | 1117 |
| BETA | 1C210218S | 5923 | [redacted] | 5925 | 2 | 8 | 4/5/06 | 13:11 | 102 | 60 | 1026 |
| BETA | 1C210203S | 5923 | [redacted] | 5925 | 2 | 9 | 4/5/06 | 13:17 | 100 | 60 | 1006 |
| BETA | 1C210213S | 5923 | [redacted] | 5925 | 2 | 10 | 4/5/06 | 13:28 | 111 | 60 | 1117 |
| BETA | 1C210207S | 5923 | [redacted] | 5925 | 2 | 11 | 4/5/06 | 13:34 | 108 | 60 | 1086 |
| BETA | 1C210219S | 5923 | [redacted] | 5925 | 2 | 12 | 4/6/06 | 7:37 | 114 | 60 | 1147 |
| BETA | 1C210202S | 5923 | [redacted] | 5925 | 2 | 13 | 4/6/06 | 7:52 | 141 | 60 | 1418 |
| BETA | 1C210212S | 5923 | [redacted] | 5925 | 2 | 14 | 4/6/06 | 8:18 | 161 | 60 | 1619 |
| BETA | 1C210206S | 5923 | [redacted] | 5925 | 2 | 15 | 4/6/06 | 8:25 | 170 | 60 | 1710 |
| BETA | 1C210220S | 5923 | [redacted] | 5925 | 2 | 16 | 4/6/06 | 8:34 | 140 | 60 | 1408 |
| BETA | 1C210201S | 5923 | [redacted] | 5925 | 2 | 17 | 4/6/06 | 9:57 | 146 | 60 | 1469 |
| BETA | 1C210211S | 5923 | [redacted] | 5925 | 2 | 18 | 4/6/06 | 10:04 | 161 | 60 | 1619 |
| BETA | 1C210205S | 5923 | [redacted] | 5925 | 2 | 19 | 4/6/06 | 10:10 | 150 | 60 | 1509 |
| BETA | 1C210210S | 5923 | [redacted] | 5925 | 2 | 20 | 4/6/06 | 10:16 | 165 | 60 | 1660 ✓ |
| | | | | | | | | | | | |
| | | | | N | | | A | | | | |
| | | | | | | | | | | | |

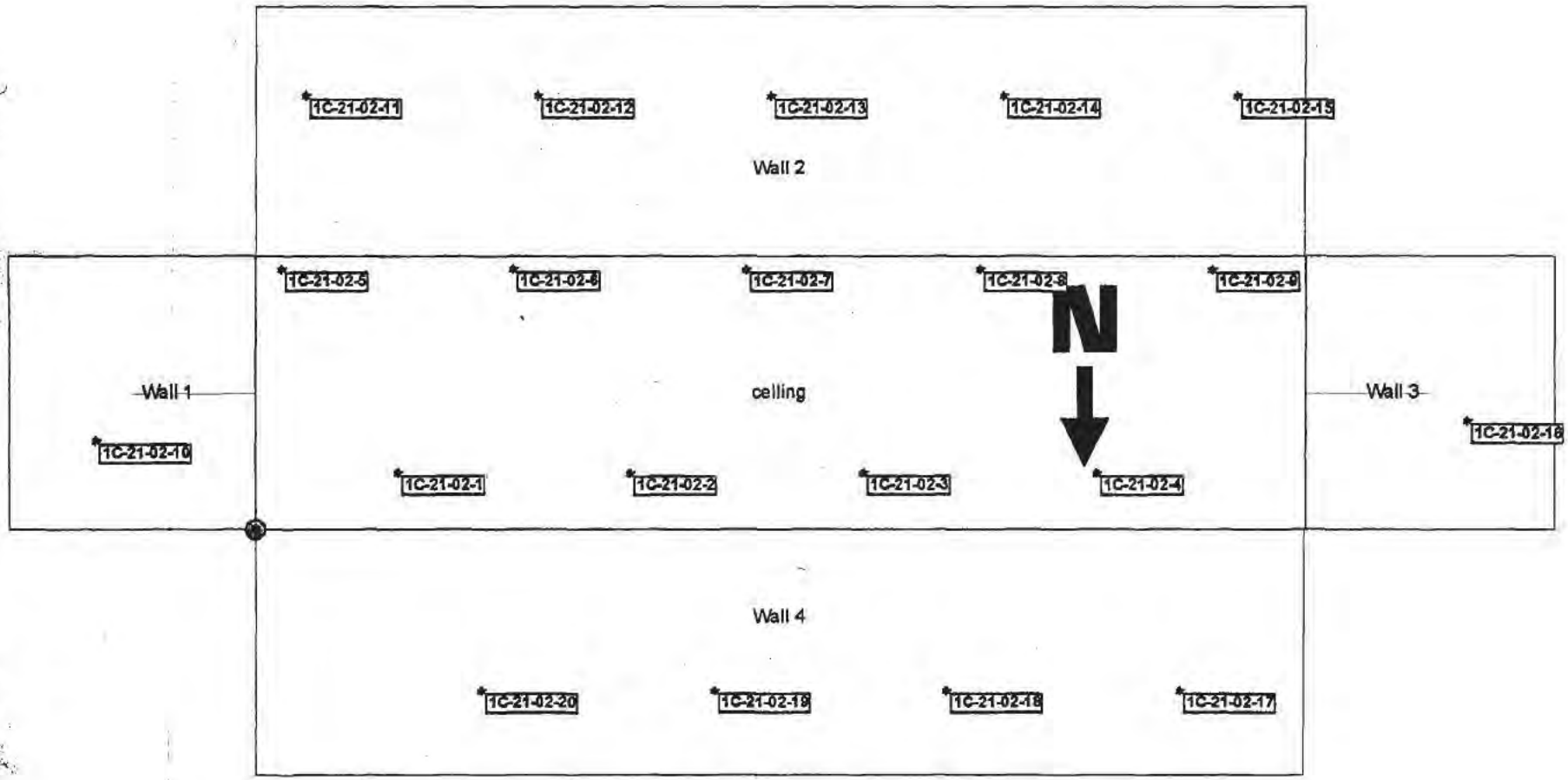


F 643/686

1C-21-01
Class 1 Area

**Room 59 ceiling and upper wall static measurement locations**

59




F 6744/686

**1C-21-01** **Room 59 ceiling and upper wall static measurement locations**
**Class 1 Area**

| Area: 59 | | | | |
|---|---|---|---|---|
| Label | Type | Surface | LX | LY |
| 1C-21-02-1 | Systematic | ceiling | 6 | 2 |
| 1C-21-02-2 | Systematic | ceiling | 15 | 2 |
| 1C-21-02-3 | Systematic | ceiling | 25 | 2 |
| 1C-21-02-4 | Systematic | ceiling | 34 | 2 |
| 1C-21-02-5 | Systematic | ceiling | 1 | 10 |
| 1C-21-02-6 | Systematic | ceiling | 10 | 10 |
| 1C-21-02-7 | Systematic | ceiling | 20 | 10 |
| 1C-21-02-8 | Systematic | ceiling | 29 | 10 |
| 1C-21-02-9 | Systematic | ceiling | 39 | 10 |
| 1C-21-02-10 | Systematic | Wall 1 | 4 | 6 |
| 1C-21-02-11 | Systematic | Wall 2 | 2 | 6 |
| 1C-21-02-12 | Systematic | Wall 2 | 11 | 6 |
| 1C-21-02-13 | Systematic | Wall 2 | 21 | 6 |
| 1C-21-02-14 | Systematic | Wall 2 | 30 | 6 |
| 1C-21-02-15 | Systematic | Wall 2 | 40 | 6 |
| 1C-21-02-16 | Systematic | Wall 3 | 7 | 6 |
| 1C-21-02-17 | Systematic | Wall 4 | 5 | 6 |
| 1C-21-02-18 | Systematic | Wall 4 | 14 | 6 |
| 1C-21-02-19 | Systematic | Wall 4 | 24 | 6 |
| 1C-21-02-20 | Systematic | Wall 4 | 33 | 6 |

F 645/686

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Rm. 59 IC-21 | SURVEY NO. MT-06-0400 |
| PURPOSE: DRAINS, VENTS AND UTILITIES Rm. 59 | RWP NO. N/A |
| | DATE: 4-7-06 |
| | TIME: 1300 |

## MAP / DRAWING

NO ELEVATED α β READINGS DETECTED DURING SCAN.

NO DRAINS OR VENTS IN ROOM.

SEE ATTACHED SHEETS

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

—·—·— = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5854 | 7-28-06 |
| 43-68 | 5861 | 7-28-06 |
| | N | |
| | A | |

| | | |
|---|---|---|
| Completed by: (Signature) B. Nursick / BJ Roe | [redacted] | Date: 4-7-06 |
| Completed by: (Print Name) B. NURSICK / BJ Roe | | |
| Counted by: (Signature) SEE ATTACHED SHEETS | HP# N/A | Date: N/A |
| Counted by: (Print Name) SEE ATTACHED SHEETS | F1 4461/686 | |
| Reviewed/Approved by: (Signature) Jerry Taylor | [redacted] | Date: 4-11-06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

Survey No.
MT-06-0400



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE ATTACHED | | SHEETS | 1C21 0201U |
| 2 | | | | 1C21 0202U |
| 3 | | | | 1C21 0203U |
| 4 | | | | 1C21 0204U |
| 5 | | | | 1C21 0205U |
| 6 | | | | 1C21 0206U |
| 7 | | | | 1C21 0207U |
| 8 | | | | 1C21 0208U |
| 9 | | | | 1C21 0209U |
| 10 | SEE ATTACHED | | SHEETS | 1C21 0210U |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-647/686

ML-9620 (4-98)

MT-06-0400 pg. 38 of 8



MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060407_1618.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0400\001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

F 678/688

MT-06-0400
pg. 4 of 8



MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/7/06 | 4:18:41 PM | -1 | 10.00 | 8 | 7 | 11 | 5 | 608.50 | 0 | 22.2 | B | 1 |
| 4/7/06 | 4:29:31 PM | 0 | 2.00 | 315 | 299 | 1 | 0 | 536.98 | 614 | 8.1 | | 1 |
| 4/7/06 | 4:32:13 PM | 1 | 2.00 | 4 | 4 | 0 | 0 | 618.68 | 7 | 129.2 | | 1 |
| 4/7/06 | 4:34:55 PM | 2 | 2.00 | 1 | 1 | 0 | 0 | 618.37 | 3 | 338.8 | | 1 |
| 4/7/06 | 4:37:38 PM | 3 | 2.00 | 24 | 23 | 2 | 0 | 595.75 | 45 | 33.8 | | 1 |
| 4/7/06 | 4:40:21 PM | 4 | 2.00 | 37 | 36 | 0 | 0 | 607.70 | 69 | 26.0 | | 1 |
| 4/7/06 | 4:43:04 PM | 5 | 2.00 | 30 | 27 | 0 | 0 | 598.65 | 56 | 29.6 | | 1 |
| 4/7/06 | 4:45:46 PM | 6 | 2.00 | 29 | 27 | 0 | 0 | 627.79 | 53 | 30.1 | | 1 |
| 4/7/06 | 4:48:28 PM | 7 | 2.00 | 52 | 48 | 0 | 0 | 610.03 | 95 | 21.4 | | 1 |
| 4/7/06 | 4:51:12 PM | 8 | 2.00 | 7 | 7 | 0 | 0 | 618.49 | 13 | 83.6 | | 1 |
| 4/7/06 | 4:53:55 PM | 9 | 2.00 | 9 | 9 | 0 | 0 | 615.97 | 16 | 67.9 | | 1 |
| 4/7/06 | 4:56:37 PM | 10 | 2.00 | 20 | 19 | 0 | 0 | 611.78 | 37 | 38.0 | | 1 |

BR

# 0475/686

MT-06-0400
pg. 5 of 8

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_109
Batch Ended: 4/7/06 14:43
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0400 B.N. (10) AG

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.38 | 1.85 | |
| A2 | 2 | 0.00 | 2.03 | | 1.52 | 2.02 | |
| A3 | 3 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.89 | | 0.25 | 1.68 | |
| B2 | 6 | 0.00 | 1.87 | | 0.48 | 1.58 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.34 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.09 | | 1.11 | 2.18 | |
| C2 | 10 | 0.00 | 1.95 | | 1.63 | 1.99 | |

BR BR

 BR 4-10-06

AH

# T-Bldg. Drains, Vents and Utilities Rm. 59 1C21

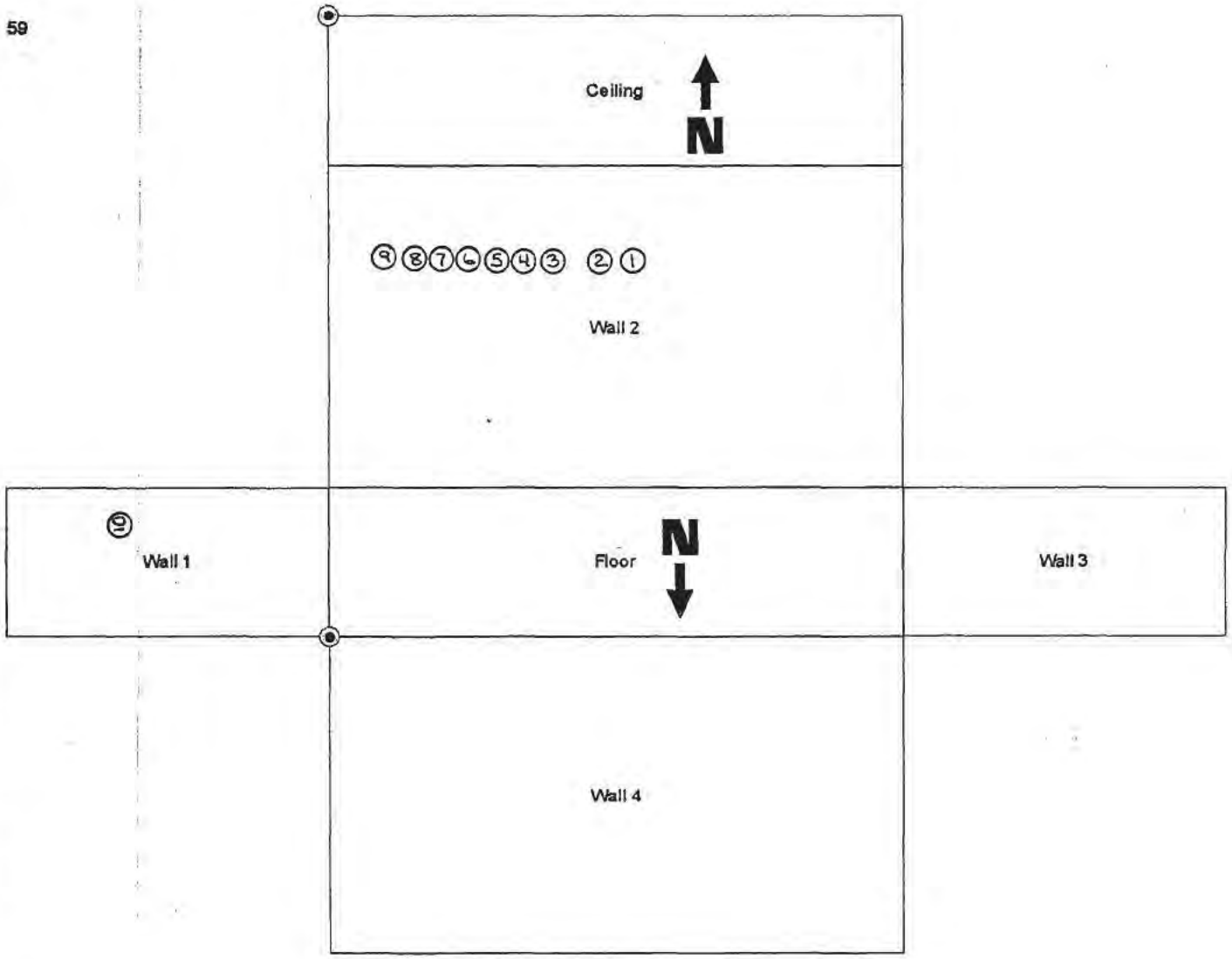
*RSDS#* MT-06-0400 *RCT:* [redacted] *RCT:* [redacted]

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.205 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | cm² | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | cm² | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C210201U | 5854 | [redacted] | 5861 | 1 | 1 | 4/7/06 | 6:50 | 2 | 120 | 8 | |
| ALPHA | 1C210202U | 5854 | [redacted] | 5861 | 1 | 2 | 4/7/06 | 6:54 | 3 | 120 | 12 | |
| ALPHA | 1C210203U | 5854 | [redacted] | 5861 | 1 | 3 | 4/7/06 | 7:02 | 2 | 120 | 8 | |
| ALPHA | 1C210204U | 5854 | [redacted] | 5861 | 1 | 4 | 4/7/06 | 7:06 | 2 | 120 | 8 | |
| ALPHA | 1C210205U | 5854 | [redacted] | 5861 | 1 | 5 | 4/7/06 | 7:10 | 1 | 120 | 4 | |
| ALPHA | 1C210206U | 5854 | [redacted] | 5861 | 1 | 6 | 4/7/06 | 8:11 | 3 | 120 | 12 | |
| ALPHA | 1C210207U | 5854 | [redacted] | 5861 | 1 | 7 | 4/7/06 | 8:15 | 6 | 120 | 23 | |
| ALPHA | 1C210208U | 5854 | [redacted] | 5861 | 1 | 8 | 4/7/06 | 8:19 | 2 | 120 | 8 | |
| ALPHA | 1C210209U | 5854 | [redacted] | 5861 | 1 | 9 | 4/7/06 | 8:24 | 2 | 120 | 8 | |
| ALPHA | 1C210210U | 5854 | [redacted] | 5861 | 1 | 10 | 4/7/06 | 8:36 | 2 | 120 | 8 ✓ | |
| BETA | 1C210201U | 5854 | [redacted] | 5861 | 2 | 1 | 4/7/06 | 6:51 | 167 | 60 | 1626 | |
| BETA | 1C210202U | 5854 | [redacted] | 5861 | 2 | 2 | 4/7/06 | 6:55 | 158 | 60 | 1539 | |
| BETA | 1C210203U | 5854 | [redacted] | 5861 | 2 | 3 | 4/7/06 | 7:03 | 138 | 60 | 1344 | |
| BETA | 1C210204U | 5854 | [redacted] | 5861 | 2 | 4 | 4/7/06 | 7:07 | 131 | 60 | 1276 | |
| BETA | 1C210205U | 5854 | [redacted] | 5861 | 2 | 5 | 4/7/06 | 7:11 | 170 | 60 | 1655 | |
| BETA | 1C210206U | 5854 | [redacted] | 5861 | 2 | 6 | 4/7/06 | 8:12 | 161 | 60 | 1568 | |
| BETA | 1C210207U | 5854 | [redacted] | 5861 | 2 | 7 | 4/7/06 | 8:16 | 121 | 60 | 1178 | |
| BETA | 1C210208U | 5854 | [redacted] | 5861 | 2 | 8 | 4/7/06 | 8:20 | 142 | 60 | 1383 | |
| BETA | 1C210209U | 5854 | [redacted] | 5861 | 2 | 9 | 4/7/06 | 8:25 | 153 | 60 | 1490 | |
| BETA | 1C210210U | 5854 | [redacted] | 5861 | 2 | 10 | 4/7/06 | 8:37 | 111 | 60 | 1081 ✓ | |

N A



F-651/686




1 of 22/686

Survey Unit Number: 1C21 Rm. 59



(Supplemental sheet for biased measurements.)

RSDS # MT-06-0400
RCT INT/HP BN [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C21 0201U | 59 | AIR LINE | | |
| 1C21 0202U | 59 | GAS LINE | | |
| 1C21 0203U | 59 | WATER LINE | | |
| 1C21 0204U | 59 | GAS LINE | | |
| 1C21 0205U | 59 | GAS LINE | | |
| 1C21 0206U | 59 | GAS LINE | | |
| 1C21 0207U | 59 | GAS LINE | | |
| 1C21 0208U | 59 | AIR LINE | | |
| 1C21 0209U | 59 | WATER LINE | | |
| 1C21 0210U | 59 | UTILITY | | |
| | | N A | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

# RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 1 8 4-11-06

| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 | SURVEY NO. MT-060401 |
| PURPOSE: Upper Judgementals 02 Room 59 1C-21 | RWP NO. N/A |
| | DATE: 4-7-06 |
| | TIME: 0800 |

## MAP/DRAWING

See Attached Sheets
No elevated Alpha or Beta Readings

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
# = mrem/hr neutron
# = air sample number
# = swipe number
#/α or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5904 / 5905 | 3-13-07 |
| | | |
| | N A | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) J Jones | | Date: 4-7-06 |
| Completed by: (Print Name) J Jones | F654 / 686 | |
| Counted by: (Signature) See Attached | HP# N/A | Date: N/A |
| Counted by: (Print Name) See Attachments | | |
| Reviewed/Approved by: (Signature) Jerry Taylor | | Date: 4/12/06 |
| Reviewed/Approved by: (Print Name) Jerry Taylor | | |

ML-9620 (2-98)

Survey No. MT-06-0401



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | | 1C210201J |
| 2 | | | | 1C210202J |
| 3 | | | | 1C210203J |
| 4 | | | | 1C210204J |
| 5 | | | | 1C210205J |
| 6 | | | | 1C210206J |
| 7 | | | | 1C210207J |
| 8 | | | | 1C210208J |
| 9 | | | | 1C210209J |
| 10 | | | | 4/12/06 A-10 1C210210J |
| | | | N/A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F-655/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060407_1221.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0401.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

MARSSIM Smear Data

MT-06-0401

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/7/06 | 12:22:17 PM | -1 | 10.00 | 9 | 9 | 10 | 5 | 619.54 | 0 | 20.9 | B | 3 |
| 4/7/06 | 12:33:08 PM | 0 | 2.00 | 242 | 229 | 2 | 0 | 559.21 | 464 | 9.3 | | 3 |
| 4/7/06 | 12:35:50 PM | 1 | 2.00 | 0 | 0 | 3 | 0 | 599.18 | 0 | 0.0 | | 3 |
| 4/7/06 | 12:38:34 PM | 2 | 2.00 | 0 | 0 | 0 | 0 | 634.45 | 0 | 0.0 | | 3 |
| 4/7/06 | 12:41:17 PM | 3 | 2.00 | 1 | 2 | 2 | 0 | 624.60 | 2 | 450.0 | | 3 |
| 4/7/06 | 12:44:00 PM | 4 | 2.00 | 2 | 3 | 0 | 0 | 616.65 | 4 | 221.8 | | 3 |
| 4/7/06 | 12:46:42 PM | 5 | 2.00 | 1 | 1 | 1 | 0 | 606.05 | 2 | 587.3 | | 3 |
| 4/7/06 | 12:49:25 PM | 6 | 2.00 | 0 | 0 | 0 | 0 | 543.51 | 0 | 0.0 | | 3 |
| 4/7/06 | 12:52:08 PM | 7 | 2.00 | 2 | 2 | 0 | 0 | 644.38 | 4 | 221.8 | | 3 |
| 4/7/06 | 12:54:51 PM | 8 | 2.00 | 0 | 1 | 0 | 0 | 640.79 | 1 | 1299.5 | | 3 |
| 4/7/06 | 12:57:33 PM | 9 | 2.00 | 1 | 1 | 0 | 0 | 629.18 | 1 | 587.3 | | 3 |
| 4/7/06 | 1:00:15 PM | 10 | 2.00 | 2 | 2 | 0 | 0 | 634.35 | 4 | 228.1 | | 3 |

F0571/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_107
Batch Ended: 4/7/06 11:41
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0401 J.JONES (10) AG

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 1.95 | 2.20 | | 0.20 | 1.85 | |
| A2 | 2 | 0.00 | 2.04 | | 2.68 | 2.33 | |
| A3 | 3 | 0.00 | 2.26 | | 0.00 | 1.26 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 0.00 | 1.97 | | 5.00 | 2.92 | |
| B2 | 6 | 0.00 | 1.89 | | 1.59 | 1.93 | |
| B3 | 7 | 0.00 | 2.26 | | 4.24 | 2.97 | |
| B4 | 8 | 0.00 | 1.95 | | 0.00 | 1.20 | |
| C1 | 9 | 0.00 | 2.08 | | 0.00 | 1.78 | |
| C2 | 10 | 0.00 | 1.94 | | 0.48 | 1.63 | |

# T-Building Upper Judgementals Room 59

**RSDS#** MT-06-401 **RCT:** [redacted] **RCT:** N/A

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.165 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector #: 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 |
| ALPHA | 1C210201J | 5904 | [redacted] | 5905 | 1 | 1 | 4/7/06 | 7:51 | 5 | 120 | 19 |
| ALPHA | 1C210202J | 5904 | [redacted] | 5905 | 1 | 2 | 4/7/06 | 7:59 | 7 | 120 | 26 |
| ALPHA | 1C210203J | 5904 | [redacted] | 5905 | 1 | 3 | 4/7/06 | 8:05 | 8 | 120 | 30 |
| ALPHA | 1C210204J | 5904 | [redacted] | 5905 | 1 | 4 | 4/7/06 | 8:13 | 5 | 120 | 19 |
| ALPHA | 1C210205J | 5904 | [redacted] | 5905 | 1 | 5 | 4/7/06 | 8:19 | 15 | 120 | 57 |
| ALPHA | 1C210206J | 5904 | [redacted] | 5905 | 1 | 6 | 4/7/06 | 8:28 | 7 | 120 | 26 |
| ALPHA | 1C210207J | 5904 | [redacted] | 5905 | 1 | 7 | 4/7/06 | 8:42 | 9 | 120 | 34 |
| ALPHA | 1C210208J | 5904 | [redacted] | 5905 | 1 | 8 | 4/7/06 | 8:49 | 9 | 120 | 34 |
| ALPHA | 1C210209J | 5904 | [redacted] | 5905 | 1 | 9 | 4/7/06 | 8:54 | 8 | 120 | 30 |
| ALPHA | 1C210210J | 5904 | [redacted] | 5905 | 1 | 10 | 4/7/06 | 9:00 | 8 | 120 | 30 |
| BETA | 1C210201J | 5904 | [redacted] | 5905 | 2 | 1 | 4/7/06 | 7:52 | 155 | 60 | 1491 |
| BETA | 1C210202J | 5904 | [redacted] | 5905 | 2 | 2 | 4/7/06 | 8:00 | 147 | 60 | 1414 |
| BETA | 1C210203J | 5904 | [redacted] | 5905 | 2 | 3 | 4/7/06 | 8:07 | 173 | 60 | 1664 |
| BETA | 1C210204J | 5904 | [redacted] | 5905 | 2 | 4 | 4/7/06 | 8:14 | 149 | 60 | 1433 |
| BETA | 1C210205J | 5904 | [redacted] | 5905 | 2 | 5 | 4/7/06 | 8:20 | 163 | 60 | 1568 |
| BETA | 1C210206J | 5904 | [redacted] | 5905 | 2 | 6 | 4/7/06 | 8:29 | 183 | 60 | 1760 |
| BETA | 1C210207J | 5904 | [redacted] | 5905 | 2 | 7 | 4/7/06 | 8:43 | 177 | 60 | 1703 |
| BETA | 1C210208J | 5904 | [redacted] | 5905 | 2 | 8 | 4/7/06 | 8:50 | 189 | 60 | 1818 |
| BETA | 1C210209J | 5904 | [redacted] | 5905 | 2 | 9 | 4/7/06 | 8:55 | 159 | 60 | 1530 |
| BETA | 1C210210J | 5904 | [redacted] | 5905 | 2 | 10 | 4/7/06 | 9:01 | 163 | 60 | 1568 |

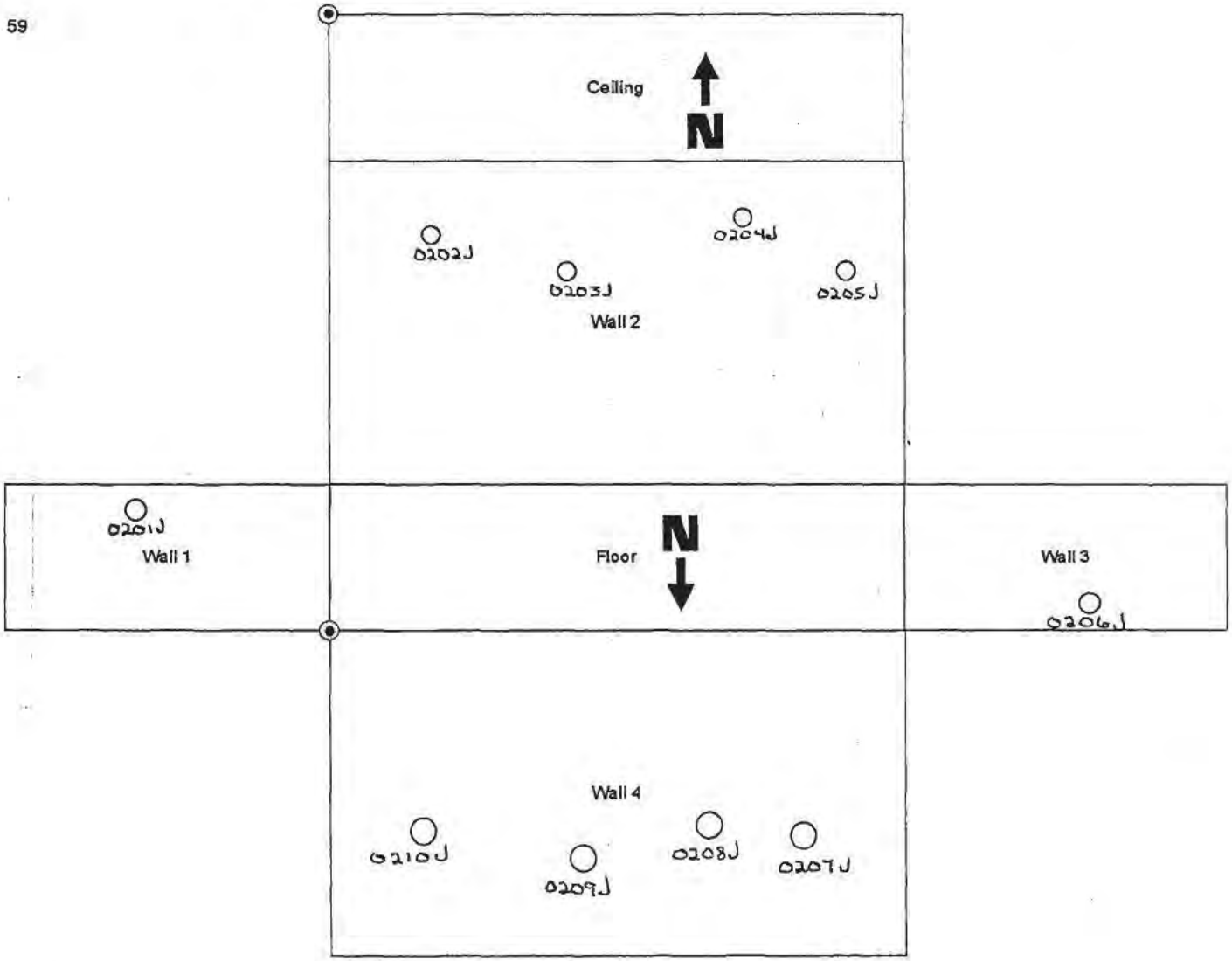
MT-06-0401

**1C-21** **Judgmentals**

~~Perform at minimum 10 on lower surfaces~~ 4/12/06

Perform a minimum of 10 on upper surfaces





Survey Unit Number: 1C-21

Page ~~7~~ of ~~7~~ 4-11-06

Room 59

(Supplemental sheet for biased measurements.)

RSDS # MT06-401

RCT INT/HP [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C21 - 0201J | 59 | Wall 1 | | |
| 1C21 - 0202J | 59 | Wall 2 | | |
| 1C21 - 0203J | 59 | Wall 2 | | |
| 1C21 - 0203J | 59 | Wall 2 | | |
| 1C21 - 0204J | 59 | Wall 2 | | |
| 1C21 - 0205J | 59 | Wall 2 | | |
| 1C21 - 0206J | 59 | Wall 3 | | |
| 1C21 - 0207J | 59 | Wall 4 | | |
| 1C21 - 0208J | 59 | Wall 4 | | |
| 1C21 - 0209J | 59 | Wall 4 | | |
| 1C21 - 0210J | 59 | Wall 4 | | |
| | | | N | |
| | | | | A |
| | N | | | |
| | A | | | |

J- designator represents measurement as judgmental location
E-designator represents measurement as potentially elevated activity.
D-designator represents measurement at a drain.
V-designator represents measurement on ventalation system.
U-designator represents measurement on a utility drop.

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-BLDG Room 59 | SURVEY NO. MT-06-0413 |
| PURPOSE: Lower Judgementals 1C21 | RWP NO. N/A |
| | DATE: 4-10-06 |
| | TIME: 10:30 |

## MAP/DRAWING

COPY

Elevated Reading for 1C210101J on the Floor!
See Attached for MAP & Results

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350-1 | 5895 / 5896 | 3-23-07 |
| | | |
| | | |
| | | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Julie Kordas / Wayne Jones | [redacted] | Date: 4-10-06 |
| Completed by: (Print Name) Julie KARDAS / WAYNE JONES | | |
| Counted by: (Signature) See Attached | HP# | Date: |
| Counted by: (Print Name) Results | 6621686 | |
| Reviewed/Approved by: (Signature) Paul Holley | [redacted] | Date: 5-1-06 |
| Reviewed/Approved by: (Print Name) J.H. LABRANCA | | |

ML-9620 (2-98)

Survey No. MT-06-0413



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | See | Attached | | 1C2101015 |
| 2 | | | | 1C2101025 |
| 3 | | | | 1C2101035 |
| 4 | | | | 1C2101045 |
| 5 | | | | 1C2101055 |
| 6 | | | | 1C2101065 |
| 7 | | | | 1C2101075 |
| 8 | | | | 1C2101085 |
| 9 | | | | 1C2101095 |
| 10 | See | Attached | | 1C2101105 |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | N/A | | | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A. F663/686

ML-9620 (4-98)

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_001
Batch Ended: 4/10/06 15:01
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0413 [10] KARDAS 4-10-06 RLH

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.20 | | 0.38 | 1.85 | |
| A2 | 2 | 0.00 | 2.00 | | 0.00 | 1.17 | |
| A3 | 3 | 0.00 | 2.28 | | 0.30 | 1.78 | |
| A4 | 4 | 0.00 | 2.10 | | 0.00 | 1.21 | |
| B1 | 5 | 1.58 | 1.87 | | 0.00 | 1.20 | |
| B2 | 6 | 0.00 | 1.85 | | 0.00 | 1.12 | |
| B3 | 7 | 0.00 | 2.18 | | 0.00 | 1.33 | |
| B4 | 8 | 0.00 | 1.99 | | 1.85 | 2.07 | |
| C1 | 9 | 0.00 | 2.07 | | 0.00 | 1.27 | |
| C2 | 10 | 0.00 | 1.97 | | 2.78 | 2.30 | |

J.K J.K

COPY

Page 3 of 8

Copy 1/686


J.K 4-18-06

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_3\20060410_1611.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0413.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_3.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

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MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4/10/06 | 4:11:55 PM | -1 | 10.00 | 10 | 10 | 11 | 4 | 618.39 | 0 | 20.3 | B | 3 |
| 4/10/06 | 4:22:44 PM | 0 | 2.00 | 256 | 242 | 0 | 0 | 556.88 | 491 | 9.0 | | 3 |
| 4/10/06 | 4:25:26 PM | 1 | 2.00 | 5 | 5 | 0 | 3 | 603.10 | 10 | 111.5 | | 3 |
| 4/10/06 | 4:28:09 PM | 2 | 2.00 | 1 | 0 | 0 | 0 | 623.03 | 1 | 620.1 | | 3 |
| 4/10/06 | 4:30:50 PM | 3 | 2.00 | 0 | 0 | 0 | 0 | 620.18 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:33:32 PM | 4 | 2.00 | 0 | 0 | 0 | 6 | 618.76 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:36:15 PM | 5 | 2.00 | 1 | 1 | 0 | 0 | 644.16 | 1 | 620.1 | | 3 |
| 4/10/06 | 4:38:57 PM | 6 | 2.00 | 0 | 0 | 1 | 0 | 632.85 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:41:40 PM | 7 | 2.00 | 0 | 0 | 0 | 0 | 638.28 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:44:21 PM | 8 | 2.00 | 0 | 0 | 0 | 0 | 615.16 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:47:02 PM | 9 | 2.00 | 0 | 0 | 0 | 0 | 628.50 | 0 | 0.0 | | 3 |
| 4/10/06 | 4:49:44 PM | 10 | 2.00 | 3 | 1 | 0 | 0 | 620.22 | 5 | 191.6 | | 3 |

J.K

Copy

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MT-06-0413

Page 6 of 686

# T-Building Lower Judgemental Survey 1C21 Rm 59

*RSDS# _MT-06-0413_____ RCT: _____ RCT: _____*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C210101J | 5895 | | 5896 | 1 | 1 | 4/10/06 | 8:22 | 32 | 120 | 121 | |
| ALPHA | 1C210102J | 5895 | | 5896 | 1 | 2 | 4/10/06 | 8:26 | 10 | 120 | 38 | |
| ALPHA | 1C210103J | 5895 | | 5896 | 1 | 3 | 4/10/06 | 8:30 | 2 | 120 | 8 | |
| ALPHA | 1C210104J | 5895 | | 5896 | 1 | 4 | 4/10/06 | 8:34 | 9 | 120 | 34 | |
| ALPHA | 1C210105J | 5895 | | 5896 | 1 | 5 | 4/10/06 | 9:37 | 3 | 120 | 11 | |
| ALPHA | 1C210106J | 5895 | | 5896 | 1 | 6 | 4/10/06 | 9:41 | 12 | 120 | 45 | |
| ALPHA | 1C210107J | 5895 | | 5896 | 1 | 7 | 4/10/06 | 9:45 | 7 | 120 | 26 | |
| ALPHA | 1C210108J | 5895 | | 5896 | 1 | 8 | 4/10/06 | 9:49 | 8 | 120 | 30 | |
| ALPHA | 1C210109J | 5895 | | 5896 | 1 | 9 | 4/10/06 | 9:53 | 5 | 120 | 19 | |
| ALPHA | 1C210110J | 5895 | | 5896 | 1 | 10 | 4/10/06 | 9:56 | 8 | 120 | 30 | |
| BETA | 1C210101J | 5895 | | 5896 | 2 | 11 | 4/10/06 | 8:23 | 249 | 60 | 2425 | |
| BETA | 1C210102J | 5895 | | 5896 | 2 | 12 | 4/10/06 | 8:27 | 109 | 60 | 1061 | |
| BETA | 1C210103J | 5895 | | 5896 | 2 | 13 | 4/10/06 | 8:31 | 126 | 60 | 1227 | |
| BETA | 1C210104J | 5895 | | 5896 | 2 | 14 | 4/10/06 | 8:35 | 98 | 60 | 954 | |
| BETA | 1C210105J | 5895 | | 5896 | 2 | 15 | 4/10/06 | 9:38 | 117 | 60 | 1139 | |
| BETA | 1C210106J | 5895 | | 5896 | 2 | 16 | 4/10/06 | 9:42 | 110 | 60 | 1071 | |
| BETA | 1C210107J | 5895 | | 5896 | 2 | 17 | 4/10/06 | 9:46 | 100 | 60 | 974 | |
| BETA | 1C210108J | 5895 | | 5896 | 2 | 18 | 4/10/06 | 9:50 | 115 | 60 | 1120 | |
| BETA | 1C210109J | 5895 | | 5896 | 2 | 19 | 4/10/06 | 9:54 | 149 | 60 | 1451 | |
| BETA | 1C210110J | 5895 | | 5896 | 2 | 20 | 4/10/06 | 9:57 | 114 | 60 | 1110 | |

COPY

Survey Unit Number: 1C-21

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Room 59

(Supplemental sheet for biased measurements.)

RSDS # MT-06-0413

RCT INT/HP SK [redacted] / WJ [redacted]

| Label | Room | Surface | LX | LY |
|---|---|---|---|---|
| 1C210101J | 59 | FLOOR | See | MAP |
| 1C210102J | 59 | FLOOR | | |
| 1C210103J | 59 | FLOOR | | |
| 1C210104J | 59 | FLOOR | | |
| 1C210105J | 59 | WALL 3 | | |
| 1C210106J | 59 | WALL 4 | | |
| 1C210107J | 59 | WALL 4 | | |
| 1C210108J | 59 | WALL 1 | | |
| 1C210109J | 59 | WALL 2 | | |
| 1C210110J | 59 | WALL 2 | See | MAP |
| | | | | |
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COPY

DA

J- designator represents measurement as judgmental location

E-designator represents measurement as potentially elevated activity.

D-designator represents measurement at a drain.

V-designator represents measurement on ventalation system.

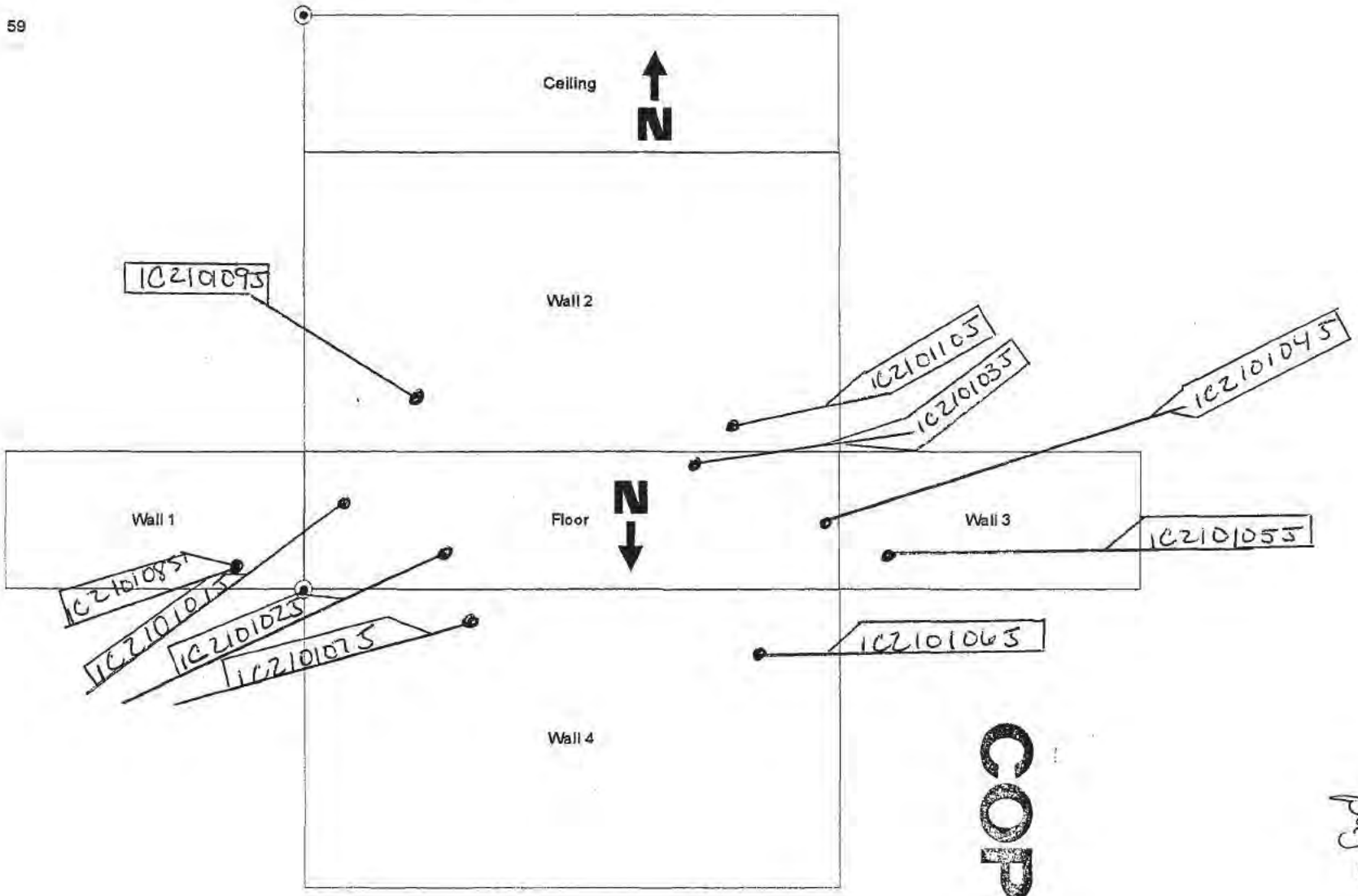
U-designator represents measurement on a utility drop.

**1C-21 Judgmentals**

~~Perform at minimum 10 on lower surfaces~~

~~Perform a minimum of 10 on upper surfaces~~ SKG-18-06

59




COPY

MT-06-046
page 8 of 8

5669 / 6886

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 1C21 | SURVEY NO. MT-06-0587 |
| PURPOSE: DOSE RATE SURVEY | RWP NO. N/A |
| | DATE: 6-19-06 |
| | TIME: 0800 |

## MAP/DRAWING

REFERENCE RSDS MT-05-1269, MT-06-0289, AND MT-06-0294 FOR RELEVANT MAPS.

COPY

LEGEND: # = mrem/hr (γ) whole body
# E = mrem/hr (β+η+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(#/α) or /β = direct cont. measurement in dpm/100cm²

### INSTRUMENTS USED

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| MICRoREM | 3984 | 4-25-07 |
| | | |
| | N | |
| | A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) | | Date: 6-20-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) N/A | HP# N/A | Date: N/A |
| Counted by: (Print Name) N/A | | |
| Reviewed/Approved by: (Signature) | H | Date: 6-20-06 |
| Reviewed/Approved by: (Print Name) Donald R. Cairy | F670/686 | |

ML-9620 (2-98)

Survey No. MT-06-0587



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COMMENTS: N/A

COPY

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

F671/686

ML-9620 (4-98)

1C-21

Using the Bicron Analyst Micro R meter collect background reading
collect measurement on contact with each location identified on RSDS
multiply contact measurement by 16 and record as 1 cm measurement value
collect measurement at 30 cm at each location identified on RSDS
Collect measurement at 1 meter (3.3 feet approximately waist high) at each location identified on RSDS

| | Label | Room | Surface | RSDS# | Background MicroR/hr | Measured MicroR/hr @ on floor | Measured MicroR/hr @ 1cm (floor value X 16) | Measured MicroR/hr @ 30 cm | Measured MicroR/hr @ 1 m |
|---|---|---|---|---|---|---|---|---|---|
| | 1C210106Y | 59 | floor | 05-1269 | 5 | 20 | 320 | 10 | 5 |
| | 1C210113Y | 59 | floor | 05-1269 | 5 | 10 | 160 | 10 | 5 |
| * | 1C210114Y | 59 | floor | 05-1269 | 5 | 200 | 3200 | 50 | 15 |
| | 1C210115Y | 59 | floor | 05-1269 | 5 | 5 | 80 | 5 | 5 |
| * | 1C210114Y | 59 | floor | 06-0289 | 5 | 200 | 3200 | 50 | 15 |
| | 1C21E10RES | 59 | floor | 06-0289 | 5 | 50 | 800 | 30 | 10 |
| | 1C2110YRES | 59 | floor | 06-0294 | 5 | 5 | 80 | 5 | 5 |

* = SAME LOCATION, DIFFERENT SURVEYS

COPY

FC72/686

PAGE 3 OF 3
MT-06-0587

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 1C21 | SURVEY NO. MT-06-0596 |
| PURPOSE: POST REMEDIATION SURVEY | RWP NO. N/A |
| | DATE: 6-23-06 |
| | TIME: 1400 |

**MAP / DRAWING**

SEE ATTACHED

LOCATIONS 1C21016 AND 1C21010 2E STILL HAVE ELEVATED BETA, FOR FOLLOW UP TO THIS SURVEY, REFERENCE MT-06-0597

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 235a | 5895/5896 | 3-23-07 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) [redacted] | | Date: 6-23-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE | HP# N/A | Date: |
| Counted by: (Print Name) ATTACHED | | |
| Reviewed/Approved by: (Signature) | HP# | Date: |
| Reviewed/Approved by: (Print Name) F 673/686 | | |

Survey No. MT-06-0594



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | | | 1621-0101E |
| 2 | | ATTACHED | | ↓ 0102E |
| | | N/A | | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N/A | | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A.

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_2\20060623_1640.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0596.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_2.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

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MT-06-0596

F695/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/23/06 | 4:41:15 PM | -1 | 10.00 | 8 | 8 | 10 | 4 | 613.73 | 0 | 22.5 | B | 2 |
| 6/23/06 | 4:52:05 PM | 0 | 2.00 | 162 | 156 | 2 | 0 | 547.10 | 313 | 11.4 | | 2 |
| 6/23/06 | 4:54:49 PM | 1 | 2.00 | 6 | 5 | 3 | 0 | 614.64 | 10 | 98.4 | | 2 |
| 6/23/06 | 4:57:31 PM | 2 | 2.00 | 4 | 4 | 3 | 0 | 619.93 | 7 | 127.6 | | 2 |

✓ nR

COPY

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MT-06-0556

Page/686

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_174
Batch Ended: 6/23/06 15:55
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0596 REYNOLDS (2) AG

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 0.00 | 2.03 | | 1.52 | 2.02 | |

✓ nR ✓ nR

COPY



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MT-06-0596
A4

RC77/686

# T-59 Post Remediation survey 1C21

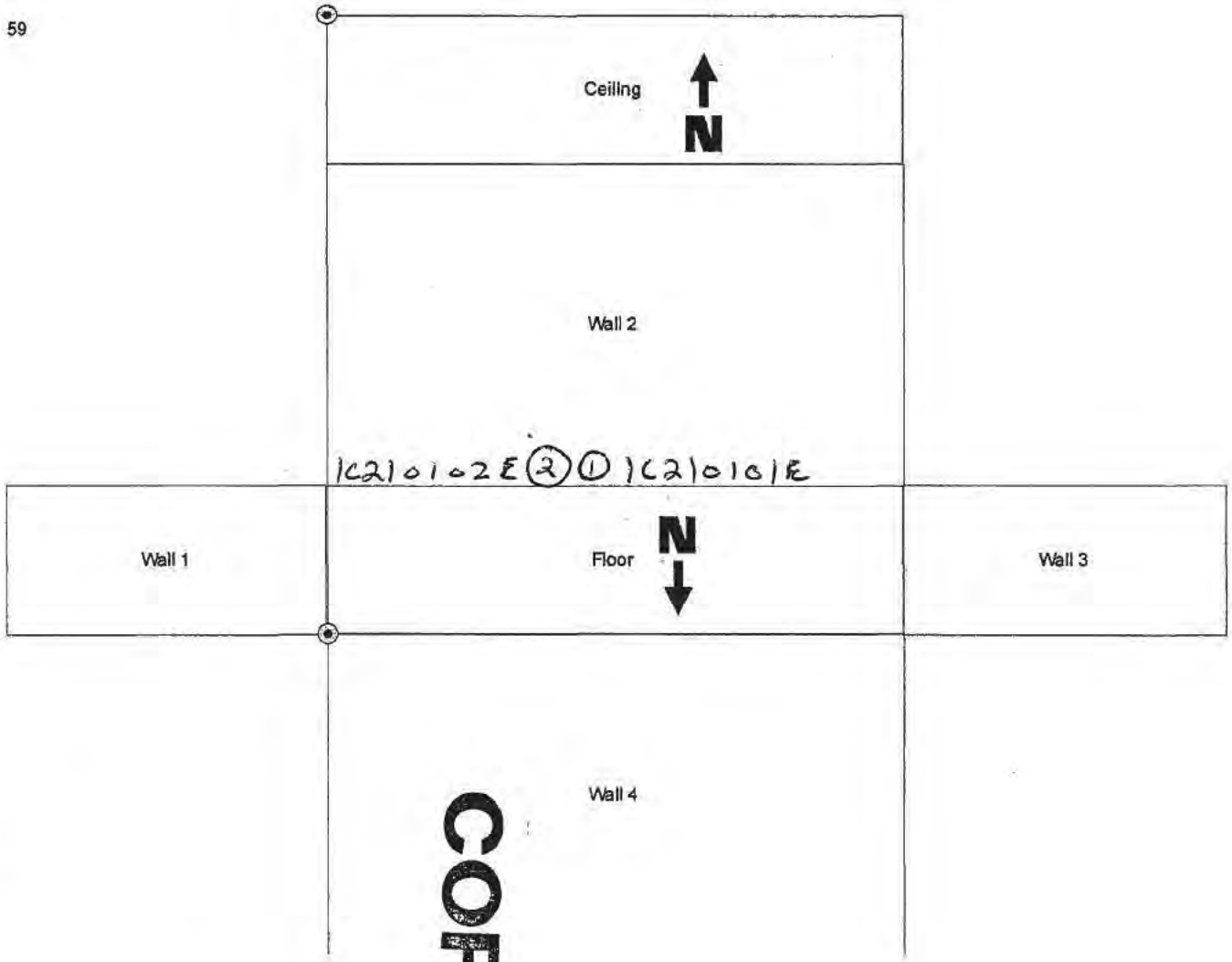
*RSDS# MT-06-0596* _____ *RCT:* [redacted] _____ *RCT: N/A* _____

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | PCT ID | PROBE | DET # | Item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C210101E | 5895 | [redacted] | 5896 | 1 | 1 | 6/23/06 | 14:00 | 3 | 120 | 11 | |
| ALPHA | 1C210102E | 5895 | [redacted] | 5896 | 1 | 2 | 6/23/06 | 14:04 | 4 | 120 | 15 | |
| BETA | 1C210101E | 5895 | [redacted] | 5896 | 2 | 1 | 6/23/06 | 14:02 | 1546 | 60 | 15055 | |
| BETA | 1C210102E | 5895 | [redacted] | 5896 | 2 | 2 | 6/23/06 | 14:05 | 2809 | 60 | 27354 | |

**COPY**

1C-21 Room 59

59




COPY

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MT-02-0596

F 079/086

# RADIOLOGICAL SURVEY DATA SHEET



| | |
|---|---|
| LOCATION: (BLDG./AREA/ROOM) T-59 1C21 | SURVEY NO. MT-06-0597 |
| PURPOSE: INVESTIGATIVE SURVEY | RWP NO. N/A |
| | DATE: 6-24-06 |
| | TIME: |

## MAP / DRAWING

SEE ATTACHED

AREA SCANNED AND DIRECT COUNTS TAKEN ABOVE ELEVATED BETA AREA IN FOUND MT-06-0596. NO ELEVATED ACTIVITY DETECTED.

COPY

LEGEND:

# = mrem/hr (γ) whole body

#E = mrem/hr (β+η+γ) extremity on contact

K = factor of 1000

— · — · · = radiological boundary

△# = mrem/hr neutron

(#) = swipe number

[#] = air sample number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

**INSTRUMENTS USED**

| Instrument | Serial Number | Cal. Due Date |
|---|---|---|
| 2350 | 5895/5896 | 3-23-07 |
| | | |
| | N/A | |
| | | |

| | | |
|---|---|---|
| Completed by: (Signature) Neal Reynolds | | Date: 6-24-06 |
| Completed by: (Print Name) NEAL REYNOLDS | | |
| Counted by: (Signature) SEE ATTACHED | HP# N/A | Date: |
| Counted by: (Print Name) | | |
| Reviewed/Approved by: (Signature) | HP# | Date: |
| Reviewed/Approved by: (Print Name) E680/686 | | |

Survey No. MT-06-0597



# RADIOLOGICAL SURVEY DATA SHEET (cont.)

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| 1 | SEE | | | 1C21-0101E |
| 2 | | ATT | ACHED | 1C21-0102E |
| | | N | A | |

| Removable Contamination | | | | |
|---|---|---|---|---|
| Swipes (dpm/100cm²) | | | | |
| Sample # | β/γ | Alpha | Tritium | Comments |
| | | N | A | |

COPY

COMMENTS: N/A

NOTES:

1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If not needed, mark N/A. F-681/686

ML-9620 (4-98)

MARSSIM Smear Data

Assay Definition-

Assay Description:
MARSSIM Smear Data

Assay Type: DPM (Single)
Report Name: Report1
Output Data Path: D:\MARSSIM_LSC
Raw Results Path: C:\Packard\Tricarb\Results\5801\MARSSIM_Smear_1\20060624_1535.results
Comma-Delimited File Name: D:\MARSSIM_LSC\MT-06-0597.001
Assay File Name: C:\Packard\TriCarb\Assays\MARSSIM_Smear_1.lsa

Count Conditions-

Nuclide: H-3 Mound
Quench Indicator: tSIE/AEC
External Std Terminator (sec): 0.5 2s%
Pre-Count Delay (min): 0.00
Quench Set:
Low Energy: H-3 Smear
Count Time (min): 2.00
Count Mode: Normal
Assay Count Cycles: 1 Repeat Sample Count: 1
#Vials/Sample: 1 Calculate % Reference: Off

Background Subtract: On - 1st Vial
Low CPM Threshold: Off
2 Sigma % Terminator: Off

| Regions | LL | UL | Bkg Subtract |
|---|---|---|---|
| A | 0.5 | 18.6 | 1st Vial |
| B | 2.0 | 18.6 | 1st Vial |
| C | 40.0 | 2000.0 | 1st Vial |

Count Corrections-

Static Controller: On Luminescence Correction: Off
Colored Samples: Off Heterogeneity Monitor: Off
Coincidence Time (nsec): 18 Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---|---|---|---|---|
| A | | | | |

COPY

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MT-06-0597

AP

FO82/686

MARSSIM Smear Data

B
C

Instrument Block Data
Machine=Tri-Carb 2900TR
Version=2.06
423022
MODEL=Tri-Carb 2900TR
VERSION=2.06
SERIAL=423022

Cycle 1 Results

| DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | LUM | tSIE | DPM1 | A:2S% | MESSAGES | P# |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/24/06 | 3:36:28 PM | -1 | 10.00 | 8 | 8 | 11 | 4 | 605.86 | 0 | 22.0 | B | 1 |
| 6/24/06 | 3:47:17 PM | 0 | 2.00 | 218 | 212 | 5 | 0 | 528.32 | 428 | 9.8 | | 1 |
| 6/24/06 | 3:50:00 PM | 1 | 2.00 | 2 | 0 | 0 | 0 | 642.84 | 3 | 280.5 | | 1 |
| 6/24/06 | 3:52:42 PM | 2 | 2.00 | 0 | 0 | 1 | 0 | 646.08 | 0 | 0.0 | | 1 |

Vnr

COPY

F 683/686

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MI-06-0587

# Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Green
Data file name: Mar_175
Batch Ended: 6/24/06 14:55
Cal. Due Date: 11/17/06
Serial Number: 26966-3

Batch ID: MT-06-0597 REYNOLDS (Z) AG

| Detector ID | Sample ID | Alpha Activity | | | Beta Activity | | |
|---|---|---|---|---|---|---|---|
| | | DPM | σ | flags | DPM | σ | flags |
| A1 | 1 | 0.00 | 2.18 | | 0.00 | 1.31 | |
| A2 | 2 | 1.79 | 2.03 | | 1.36 | 2.02 | |

Vna Vna

COPY



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MT-06-0597
AG

R0841/686

# T-59 Investigative Survey 1C21

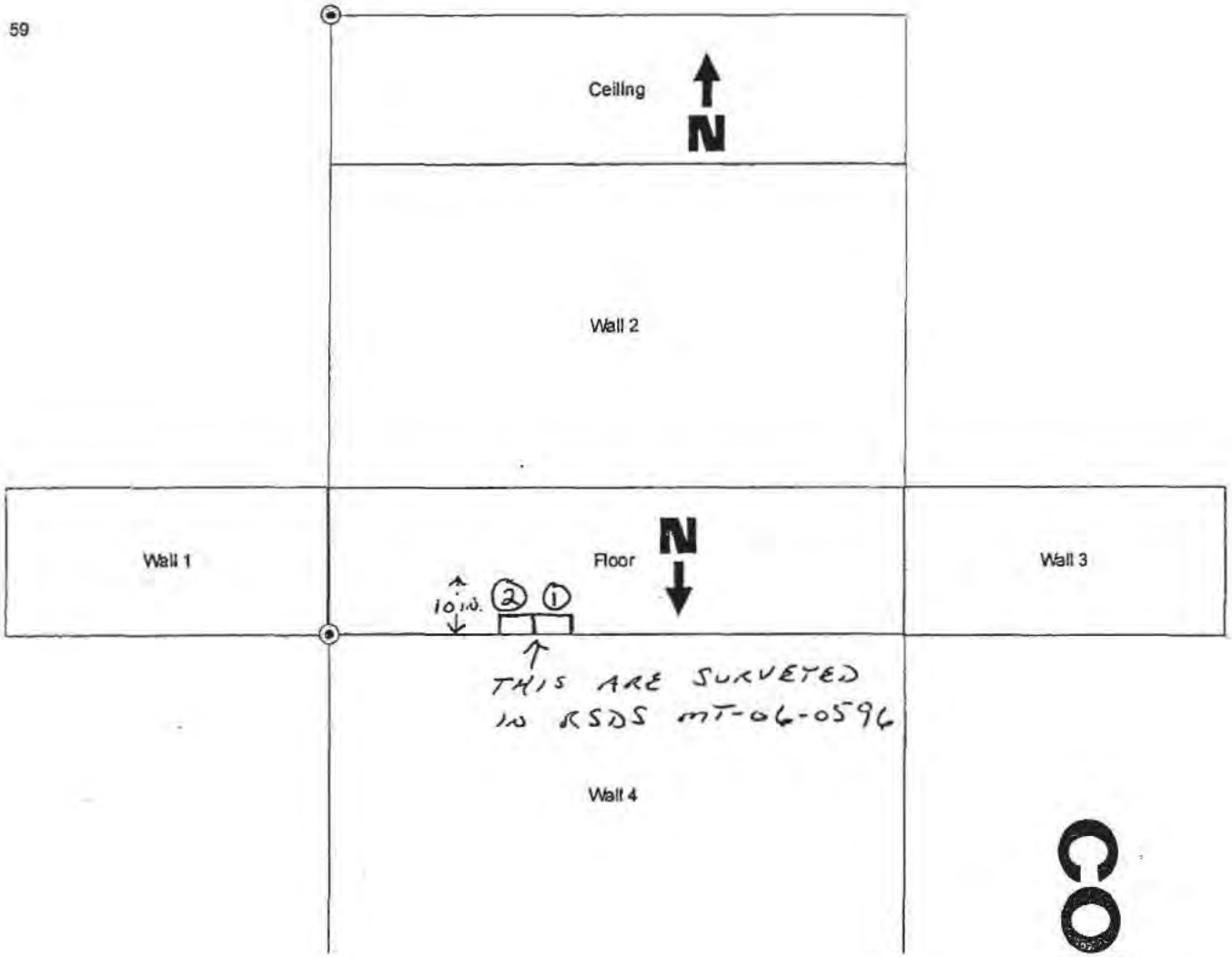
*RSDS# _MT-06-0597_____ RCT: _____ RCT: _N/A_____*

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alpha | 43-68 BKG: | 0 | EFF: | 0.21 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 1 |
| Beta | 43-68 BKG: | 0 | EFF: | 0.163 | PROBE AREA: | 126 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 2 |
| Alpha Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 3 |
| Beta Scan | 43-37 BKG: | 0 | EFF: | 0.22 | PROBE AREA: | 584 | $cm^2$ | Surface Eff: | | 0.5 | Detector # : | 4 |
| TYPE | LOCATION | 2350# | RCT ID | PROBE | DET # | item | DATE | TIME | CNTS | CT TIME | dpm/100cm2 | |
| ALPHA | 1C210101E | 5895 | | 5896 | 1 | 1 | 6/24/06 | 8:28 | 5 | 120 | 19 | |
| ALPHA | 1C210102E | 5895 | | 5896 | 1 | 2 | 6/24/06 | 8:31 | 4 | 120 | 15 | |
| BETA | 1C210101E | 5895 | | 5896 | 2 | 1 | 6/24/06 | 8:29 | 417 | 60 | 4061 | |
| BETA | 1C210102E | 5895 | | 5896 | 2 | 2 | 6/24/06 | 8:33 | 437 | 60 | 4256 | |

**COPY**

1C-21 Room 59

59

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F 686/686