



DEPARTMENT OF THE AIR FORCE
36th MEDICAL OPERATIONS SQUADRON (PACAF)

15 Jan 13

MEMORANDUM FOR 554 RHS/DES

FROM: 36 MDOS/SGOAB

SUBJECT: Radioactive Material Storage Survey, 554 RHS, Red Horse, North West Field

1. On 13 Dec 12, SSgt Kristian Atkinson from Bioenvironmental Engineering performed an annual radioactive material storage survey for 554 RHS. This memorandum summarizes our assessment.
2. The survey was performed in accordance with AFI 48-148, *Ionizing Radiation Protection*. We observed the following:
 - a. A storage conex, located within the gated compound at North West Field, is used to store three (3) Troxler Moisture/Density gauges under USAF Radioactive Material Permit# GU-0030.
 - b. The entrances to the compound as well as the conex were kept locked.
 - c. Warning signs and markings posted outside the storage door area: "Caution Radioactive Material" sign; emergency contact list displaying names, agencies, and phone numbers to contact in the event of a radioactive material emergency); and NRC Form 3, *Notice to Employees* and NRC Form 3 Supplement.
3. All postings met the requirements set by the USAF Radioisotope Committee. Based on field measurements, radiation levels in the area are below exposure standards for the general public (2 millirem in any one hour and radiation dose not exceeding 100 millirem in a year). Additional details can be found in Attachment 1, *General Purpose Ionizing Radiation Survey Form* and Attachment 2, *Dose Rate Calculation*.
4. If there are questions or concerns regarding this letter, please call our office at DSN 366-7166.

A handwritten signature in black ink, appearing to read "Khai H. Vuong", is written over a horizontal line.

KHAI H. VUONG, Maj, USAF, BSC
Installation Radiation Safety Officer

2 Attachments:

1. General Purpose Ionizing Radiation Survey Form
2. Dose Rate Calculation

ATTACHMENT 1

GENERAL PURPOSE IONIZING RADIATION SURVEY FORM

WORKPLACE ID: 554 RHS **DATE:** 13 Dec 12

BASE: ANDERSEN AFB **ORGANIZATION:** 554 RHS

WORKPLACE: Red Horse

BUILDING NUMBER: N/A **ROOM/AREA:** NWF Compound

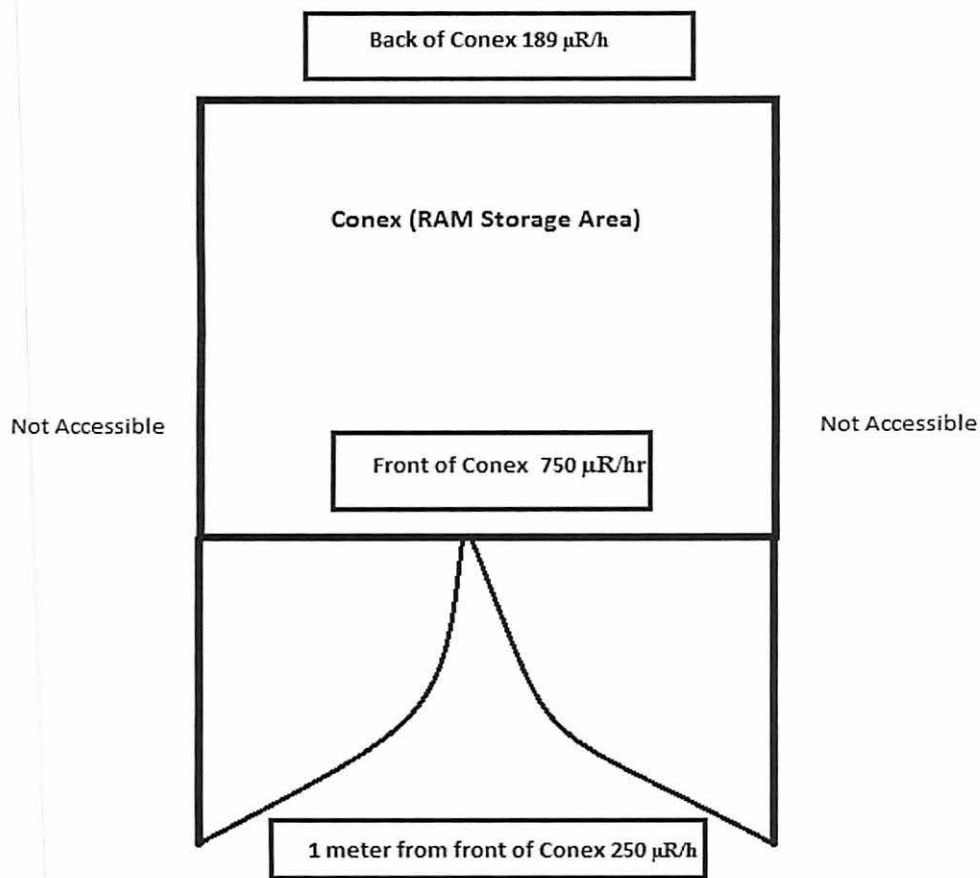
EQUIPMENT USED

Manufacturer	Model Number	Serial Number	Date Calibrated
Fluke Biomedical	451P	0000001862	16 Jul 12



STORAGE AREA SKETCH AND MEASUREMENTS:

Radioactive Material Storage Area, NWF compound

Survey Location	Description	Results
1	Front of Conex (at surface)	750 μ R/h
2	Front of Conex (at 1 meter away)	250 μ R/h
3	Back of Conex	195 μ R/h



ATTACHMENT 2

DOSE RATE CALCULATION		
Radioactive Material (RAM) Storage Location	Maximum Meter Reading Outside RAM Storage Location	Background Radiation Measurement
Front of Conex (at surface)	750 μ R/hr	15 μ R/hr
Front of Conex (at 1 meter away)	250 μ R/hr	15 μ R/hr
Back of Conex	189 μ R/hr	15 μ R/hr
<p align="center"><i>(Please note the following assumption for calculations below: 1 mrem = 1 mR.)</i></p> <p align="center">Dose Rate Formula #1, Hourly Exposure Rate: (Maximum Meter Reading) - (Background Reading) x (Occupancy Factor) 750 uR/hr – 15 uR/hr = 735 x 0.0625= 45.94 uR/hr or an hourly dose of 0.046 mrem/hr 250 uR/hr – 15 uR/hr = 235 x 0.0625= 14.69 uR/hr or an hourly dose of 0.015 mrem/hr 189 uR/hr – 15 uR/hr = 174 x 0.0625= 10.88 uR/hr or an hourly dose of 0.011 mrem/hr</p> <p align="center">Dose Rate Formula #2 Weekly Dose Rate Formula: (Hourly Exposure Rate) x (Shift Length in Hours) x (5 Day Work Week) (0.046) x (8) x (5) = a weekly dose of 1.84 mrem/week (0.015) x (8) x (5) = a weekly dose of 0.6 mrem/week (0.011) x (8) x (5) = a weekly dose of 0.44 mrem/week</p> <p align="center">Dose Rate Formula #3, Annual Dose Rate Formula: (52) x (Weekly Dose Rate) (52weeks/year) x (1.84 mrem/week) = an annual dose of 96 mrem/year (52weeks/year) x (0.6 mrem/week) = an annual dose of 31 mrem/year (52weeks/year) x (0.44 mrem/week) = an annual dose of 23 mrem/year</p>		
Dose Rate Limit	Highest Calculated Dose Rate	Dose Rate Limit Exceeded?
2 mrem/hr	0.046 mrem/hr	No
100 mrem/year	96 mrem/year	No
PREPARED BY		REVIEWED BY
 KRISTIAN M. ATKINSON, SSgt, USAF Bioenvironmental Engineering Craftsman		 KHAI H. VUONG, Maj, USAF, BSC Installation Radiation Safety Officer