

RADIOLOGICAL MONITORING, MEASUREMENT, AND CONTROL FORMS

1. INTRODUCTION

a. The FRMAC Monitoring and Sampling Working Group has developed universal radiological field monitoring and sampling forms that may be used by a variety of emergency response organizations. Although designed by the FRMAC, input was gathered from the ARG, the RAP, and other emergency response agencies to ensure that the forms may be applied to a variety of organizations. These forms can be found at:

<http://www.nv.doe.gov/nationalsecurity/homelandsecurity/frmac/forms.aspx>

b. The working group hopes that radiological emergency response organizations throughout the nation are able to incorporate these forms into their organization's response procedures. During an emergency response, different agencies often work together and share a common workforce. Common forms allow for better exchange of data and few entry errors during a major radiological emergency response.

2. FORMS

a. FRMAC Form 1: Field Monitoring Log. This log is used by Monitoring and Sampling Teams to record field monitoring data and sample collection by sample number.

b. FRMAC Form 2: Sample Control Form. This form is used to document appropriate information as a sample and is collected by a Monitoring and Sampling Team. One form accompanies each sample to the Sample Receiving Line and from there to the laboratory. Use only one form for each sample.

c. FRMAC Form 3: Team, Instrument, and Equipment Information Log. This form is completed and submitted to the Field Team Supervisor before leaving the FRMAC.

d. FRMAC Form 4: Daily Instrument QC Checks Form. This form is used to record QC information for each instrument at the beginning and the end of every shift.

e. FRMAC Form 5: Data Acquisition Log. This log and/or form is used by the Data Acquisition Officer to record field monitoring data reported by Monitoring and Sampling Teams.

f. FRMAC Form 6: Local Area Monitoring (LAM) Thermo-Luminescent Dosimeter (TLD) Form. This form is used to record information on the deployment and retrieval of environmental TLDs, called Local Area Monitoring (LAMs).

g. FRMAC Form 7: Personnel TLD Data Sheet. This form is used to record deployment and retrieval information for personnel TLDs.

3. INSTRUCTIONS FOR FRMAC FORM 1: FIELD MONITORING LOG

a. The FRMAC FORM 1: Field Monitoring Log (see Figure 1.) is completed for a series of measurements. This form is intended for legal size paper (8.5" x 14").

b. Before leaving the FRMAC, complete Team Number (1), Monitors' Names, and Date.

c. Form Fields.

- (1) Team Number. Number designated by Field Team Supervisor.
- (2) Time of Measurement. Military time. Time zone is FRMAC time.
- (3) Location. Survey location; street address, town, highway, farm, sector, distance, etc.
- (4) Latitude. In degrees, minutes, and decimal minutes.
- (5) Longitude. In degrees, minutes, and decimal minutes.
- (6) Instrument ID. Number located on day glow sticker.
- (7) Measurement. Data acquired through measurements.
- (8) Units. Units in which the instrument reads; CPM, DPM, $\mu\text{Ci}/\text{m}^2$, Microroentgen (μR)/hr, mR/hr, etc.
- (9) Radiation Type/Energy. α , β/γ , X-ray, neutron, 60 keV γ , Am-241, etc.
- (10) Measurement Surface. Examples include filter, soil, grass, etc.
- (11) Remarks. Any factors pertinent to instrument measurements and any other environmental conditions. Also include information about samples taken at this site.

Figure 1. FRMAC Form 1: Field Monitoring Log

FIELD MONITORING LOG

(I) Team Number: _____ Date(MM/DD/YYYY): _____
 Monitor's Names: _____ Reviewed By: _____

	Instrument and Probe Model & Type:	Entry & Exit QC checks: _____ (initial on return) QC Check Logbook Page #:	GPS Information (if used) Instrument ID: Manufacturer / Model: Deployment Site QA/QC checks: Site: _____ Lat: _____ Long: _____								
	Instrument and Probe Model & Type:	Entry & Exit QC checks: _____ (initial on return) QC Check Logbook Page #:	Remarks: Include ALL pertinent measurement factors. Environmental: Ground Conditions, mist, rain, etc. If samples are collected at this site, Note Sample ID and type here (11)								
	Instrument and Probe Model & Type:	Entry & Exit QC checks: _____ (initial on return) QC Check Logbook Page #:		Radiation Type / Energy (9)	Units (8)	Measurement (7)	Inst ID (6)	Longitude (5)	Latitude (4)	Location Description (Location/Flag ID if used) (Attach map/drawing if necessary) (3)	Time (Military) (2)
(A)											
(B)											
(C)											
(D)											
(E)											
(F)											
(G)											
(H)											
(I)											

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4. INSTRUCTIONS FOR FRMAC FORM 2: SAMPLE CONTROL FORM

The FRMAC Form 2: Sample Control Form (see Figure 2.) is used to document appropriate information as a sample is collected by a Monitoring and Sampling Team. One form accompanies each sample to the Sample Receiving Line and from there to the Radioanalysis Laboratory. USE ONLY ONE FORM FOR EACH SAMPLE.

- a. Top Part. Appropriate sampling team, sample location, and sample type information.
- b. Remarks Section. Information that does not fit in any blank above or any additional pertinent information.
- c. Shaded Part. For use by Sample Control and Radioanalysis Laboratory.
- d. Chain of Custody. Fill in this part of the form every time custody of the sample is changed.

Figure 2. FRMAC Form 2: Sample Control Form

SAMPLE CONTROL FORM & CHAIN OF CUSTODY				<i>"Sample Control Barcode"</i>		
Sampling Information (to be filled out by the Field Team)						
Collection Team ID:		Collector's Name:		Org:		
Location:	<input type="checkbox"/> GPS	Latitude: _____	Description: _____			
		Longitude: _____				
Collection Date:		Collection Time (Military):		# of Containers	Contact Dose Rate:	
Remarks: _____						
Sample Type (use only once)	Air	Sampler ID #		Type:	Filter size & Type:	
		Date ON:		Time ON:	Date OFF:	Time OFF:
		Start Flow:		Stop Flow:		OR Total Volume:
	Milk	<input type="checkbox"/> Cow <input type="checkbox"/> Goat <input type="checkbox"/> Other _____		<input type="checkbox"/> Stored Feed	<input type="checkbox"/> Pasture	<input type="checkbox"/> Other _____
		Milking Date:		Milking Time:		Number of Animals sampled:
	Ground	Depth of soil sample: _____ cm		Vegetation collected with soil samples? <input type="checkbox"/> Yes <input type="checkbox"/> No		
		Sample surface area:		If vegetation in separate container, provide sample #:		
	Water	<input type="checkbox"/> Surface	<input type="checkbox"/> Ground / Well	<input type="checkbox"/> Portable / Tap	<input type="checkbox"/> Other:	
	Other	<input type="checkbox"/> Vegetation	<input type="checkbox"/> Feed	<input type="checkbox"/> Produce	<input type="checkbox"/> Swipe	<input type="checkbox"/> Other:
	Describe: _____					
Sample Receiving (to be filled out by sample receiving technician)						
Processing Priority:		Dup Sample #:		Split Sample #:		
Screening Value:				<input type="checkbox"/> Contamination Check: Forms and sample bags surveyed		
Sample Remarks: _____						
Analysis Requested:				<input type="checkbox"/> Sample Preparation Required, send to sample preparation area before laboratory		
Laboratory Assignment: _____						
Special Instructions: _____						
Custody Transfer (Signatures)						
Relinquished By:		Date	Time	Received By:		
Relinquished By:		Date	Time	Received By:		
Relinquished By:		Date	Time	Received By:		
Relinquished By:		Date	Time	Received By:		

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5. INSTRUCTIONS FOR FRMAC FORM 3: TEAM, INSTRUMENT, AND EQUIPMENT INFORMATION LOG

The FRMAC Form 3: Team, Instrument, And Equipment Information Log (see Figure 3.) is completed and submitted to the Field Team Supervisor before leaving the FRMAC.

- a. Top Part. Complete with team member information.
- b. Bottom Part. Complete with instrument and equipment information, including license information of vehicle(s).

Figure 3. FRMAC Form 3: Team, Instrument, and Equipment Information Log

TEAM, INSTRUMENT, & EQUIPMENT INFORMATION LOG			
Field Team Supervisor Initials _____			
Team Number			
Today's Date		Start Time	
Team Leader (Last, First, MI)			
Team Leader Organization			
TEAM MEMBERS			
	Name (Last, First, Middle Initials)	Organization	
1			
2			
3			
4			
5			
INSTRUMENT AND EQUIPMENT INFORMATION			
Instrument / Equipment Number	Instrument / Equipment Type	Instrument / Equipment Number	Instrument / Equipment Type
Cellular Phone		Radio Number	
Serial Number	Phone Number		
VEHICLE INFORMATION			
License Plate Number	State	License Plate Number	State

This form must be completed and turned in to the Field Team Supervisor prior to field deployment
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6. INSTRUCTIONS FOR FRMAC FORM 4: DAILY INSTRUMENT QC CHECKS FORM

The FRMAC Form 4: Daily Instrument QC Checks Form (see Figure 4.) is used to record QC information for each instrument at the beginning and end of every shift.

- a. Team # . Write team number.
- b. Event. Write name of event.
- c. Instrument Number. Write instrument number from day glow sticker.
- d. Instrument Type. Write instrument type from day glow sticker.
- e. Depart Date/Time. Record departure date and time using military notation
Example: 02 Sep 1997 / 1745
- f. QC Check Source Type. Write the type of check source used (Am-241, background, Pu-238, etc.).
- g. Check Source ID #. Include number of check source, if available.
- h. Check Source Activity. Record activity of source and units. If instrument has different scales, record scale used.
- i. Acceptable Operating Range. Write acceptable range of operation.
- j. Depart Actual Reading. Record actual meter reading (Reading x Scale) at time of departure.
- k. Return Date/Time. Record return date and time following the example in paragraph 6.e., above.
- l. Return Actual Reading. Record actual meter reading (Reading x Scale) on return.

7. INSTRUCTIONS FOR THE FRMAC FORM 5: DATA ACQUISITION LOG

The FRMAC Form 5: Data Acquisition Log (see Figure 5.) is used by the Data Acquisition Officer to record field monitoring data reported by Monitoring and Sampling Teams. Columns on the Data Acquisition Log correspond to those on the Field Monitoring Log. Therefore, report data in the order recorded on the Field Monitoring Log.

- a. (1) Team #. Number of Monitoring and Sampling team reporting data.
- b. (2) Time of Day. In military time. Time zone is FRMAC time.
- c. (3) Location. Description of survey; i.e., street address, town, highway, sector, distance, if applicable.
- d. (4) Latitude. In degrees, minutes, and decimal minutes.
- e. (5) Longitude. In degrees, minutes, and decimal minutes.
- f. (6) Instrument ID. Number located on day glow sticker.
- g. (7) Measurement. Data acquired through measurements.
- h. (8) Units. Units in which instrument reads.
- i. (9) Radiation Type/Energy. Type of radiation/energy measured.
- j. (10) Measurement Surface. Examples: grass, soil, filter, etc.
- k. (11) Remarks. For any factors pertinent to instrument measurements, and any other environmental conditions.

8. INSTRUCTIONS FOR THE FRMAC FORM 6: LAM TLDs FORM

The FRMAC Form 6: LAM TLDs Form (see Figure 6.) is used to record information on the deployment and retrieval of environmental TLDs, called LAMs.

- a. Top Part. Enter information when LAMs are deployed and again when they are retrieved.
- b. Under Station, record:
 - (1) #. The number of the station.
 - (2) Description. Location information.
 - (3) Latitude and Longitude. Latitude and longitude of the station.
- c. Under TLDs, record:
 - (1) Number 1. The number of one of the LAMs.
 - (2) Number 2. The number of the other LAM.
 - (3) Deployed and Retrieved.
 - (a) Date and initial when the LAMs are deployed
 - (b) Date and initial when the LAMs are retrieved.
- d. Under Remarks, include any additional, pertinent information.
- e. Chain of Custody. To be signed when relinquishing LAMs.

9. INSTRUCTIONS FOR THE FRMAC FORM 7: PERSONNEL TLD DATA SHEET

The FRMAC Form 7: Personnel TLD Data Sheet (see Figure 7.) is used to record deployment and retrieval information for personnel TLDs.

- a. Top Part. Complete as TLDs are assigned.
- b. TLD #. Record number.
- c. Location and Deployed Information. Record "N.A." (not applicable) if person is mobile rather than at one location. Collected Complete when TLD is retrieved.
- d. Remarks. Any additional information pertinent to TLD, location, or any other environmental information.
- e. Names and Addresses. Include names of all persons at one location receiving TLDs.
- f. Chain of Custody. To be signed when relinquishing TLD.

Figure 7. FRMAC Form 7: Personnel TLD Data Sheet

PERSONNEL TLD DATA SHEET

Privacy Act Statement: *The information on this form is protected by the Privacy Act of 1974. The purpose of requesting this information is to conduct dose tracking. This information will be used by the U.S. Department of Energy, Nevada Operations Office, its contractors, and the home organization of the participant. Failure to provide this information will result in not receiving a dose assessment or proper dose tracking.*

Personnel TLD Data Sheet

Personnel TLD Data Sheet #



40134

Event	TLD #	Latitude	Longitude	Deployed		Retrieved	
				Date/Time (Military)	Initials	Date/Time (Military)	Initials
Location Description:							
Name	Last		First		Middle		
Mailing Address		City		State		Zip Code	
Phone Number (with area code)		Social Security Number *		Date of Birth		Sex	
						M F	
Remarks (Issue/Retrieval):							
CHAIN OF CUSTODY							
Relinquished By:		Received By:		Transit Numbers:			
Date/Time (Military)		Date/Time (Military)		Date/Time (Military)			
Relinquished By:		Received By:		Transit Numbers:			
Date/Time (Military)		Date/Time (Military)		Date/Time (Military)			
Relinquished By:		Received By:		Transit Numbers:			
Date/Time (Military)		Date/Time (Military)		Date/Time (Military)			
Relinquished By:		Received By:		Transit Numbers:			
Date/Time (Military)		Date/Time (Military)		Date/Time (Military)			

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