Exceptional service in the national interest

SAND2013-8907C

Sandia National Laboratories

FRMAC
Laboratory Analysis Division
What Every Laboratory Needs to Know

Laboratory Analysis Working Group

Sandia National Laboratories

SAND-2013-XXXXX

U.S. DEPARTMENT OF ENERGY

National Nuclear Security Administration

Excellence RSL REMOTE SENSING LABORATORY

Lawrence Livermore National Laboratory

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Who are we?

- Federal Radiological Monitoring and Assessment Center (FRMAC) –Laboratory Analysis Division
- Responsibilities
  - Begin
    - When FRMAC responds
    - Sample is dropped off at the hotline
  - End
    - Recovery phase – turned over to EPA with reduced FRMAC presence
    - Sample results are V&V'd from laboratory and uploaded into FRMAC database (RAMS)
      - Data utilized by FRMAC Assessment Division for dose assessments

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FRMAC
Laboratory Analysis Manual

Available at:
http://www.nv.doe.gov/nationalsecurity/homelandsecurity/frmac

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Lab Analysis Manual

- Describes LA Division and Operations
- Responsibilities
- Laboratory Selection Methods and Procedures
- Sample Control Processes
- Laboratory Data Quality Control
- Logistical Requirements

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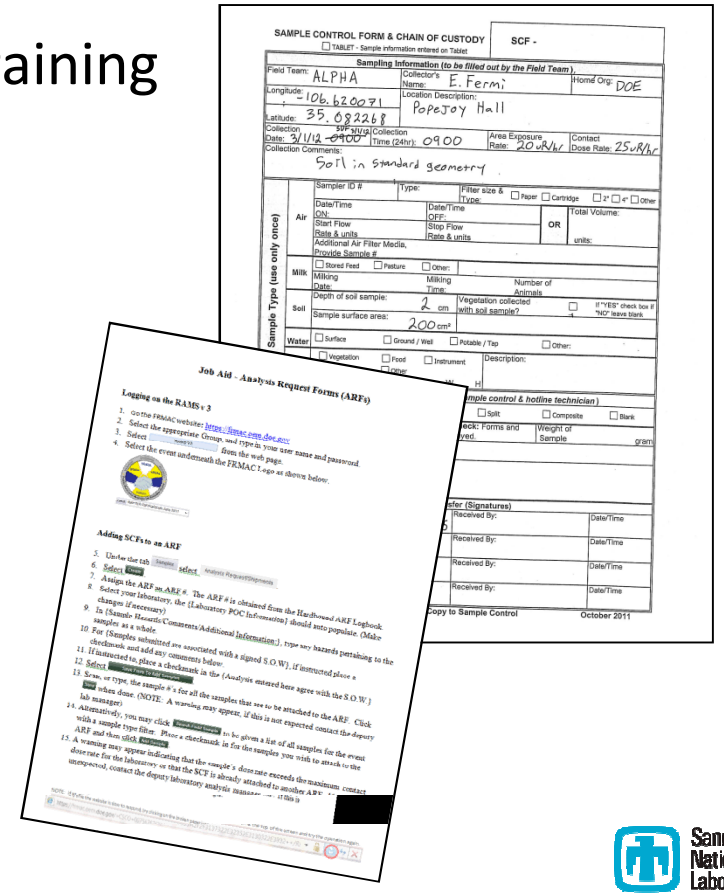
Recent Manual Updates Appendices

2 Appendices → 8 Appendices

- Detailed Position Description & Training
- Data Quality Objectives
  - Assessment DRL → AAL → Lc
- Electronic Data Deliverable (EDD)
- RAMS Operations
- Added Forms
  - Data Verification Review Form
  - Analysis Request Form
  - Initial Laboratory Questionnaire
  - Non Conformance Form



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Appendix B
Data Quality Objectives

	Air ($\mu Ci/m^3$)	Food ($\mu Ci/kg_{wet}$)	Forage ($\mu Ci/kg_{wet}$)	Milk ($\mu Ci/kg_{wet}$)	ST Soil (µCi/Sample)	LT Soil (µCi/Sample)	Water (µCi/L)	Tap Water (pCi/L)
DRL Type APPLIED	Dp_DRL "Short Term"	DIL	$Milk\_DRL_{mass}$	DIL	Dp_DRL "Short Term"	Dp_DRL "Long Term"	$Milk\_DRL_{water}$	EPA guidelines
Am-241	1.8E-06	5.4E-05	7.5E-01	5.4E-05	1.8E-02	1.0E-02	6.2E-01	Contact FRMAC Assessment for appropriate value
Ba-140	1.6E-04	1.9E-01	9.0E+00	1.9E-01	1.6E+00	1.2E-01	7.5E+00	
Ce-141	2.3E-03	1.9E-01	1.4E+02	1.9E-01	2.3E+01	2.0E+00	1.2E+02	
Ce-144	1.8E-04	1.3E-02	9.4E+00	1.3E-02	1.8E+00	1.3E-01	7.8E+00	

* Soil – Critical Levels will be expressed in concentration on the Analysis Request Form

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Determining Measurement Quality Objectives (MQOs)

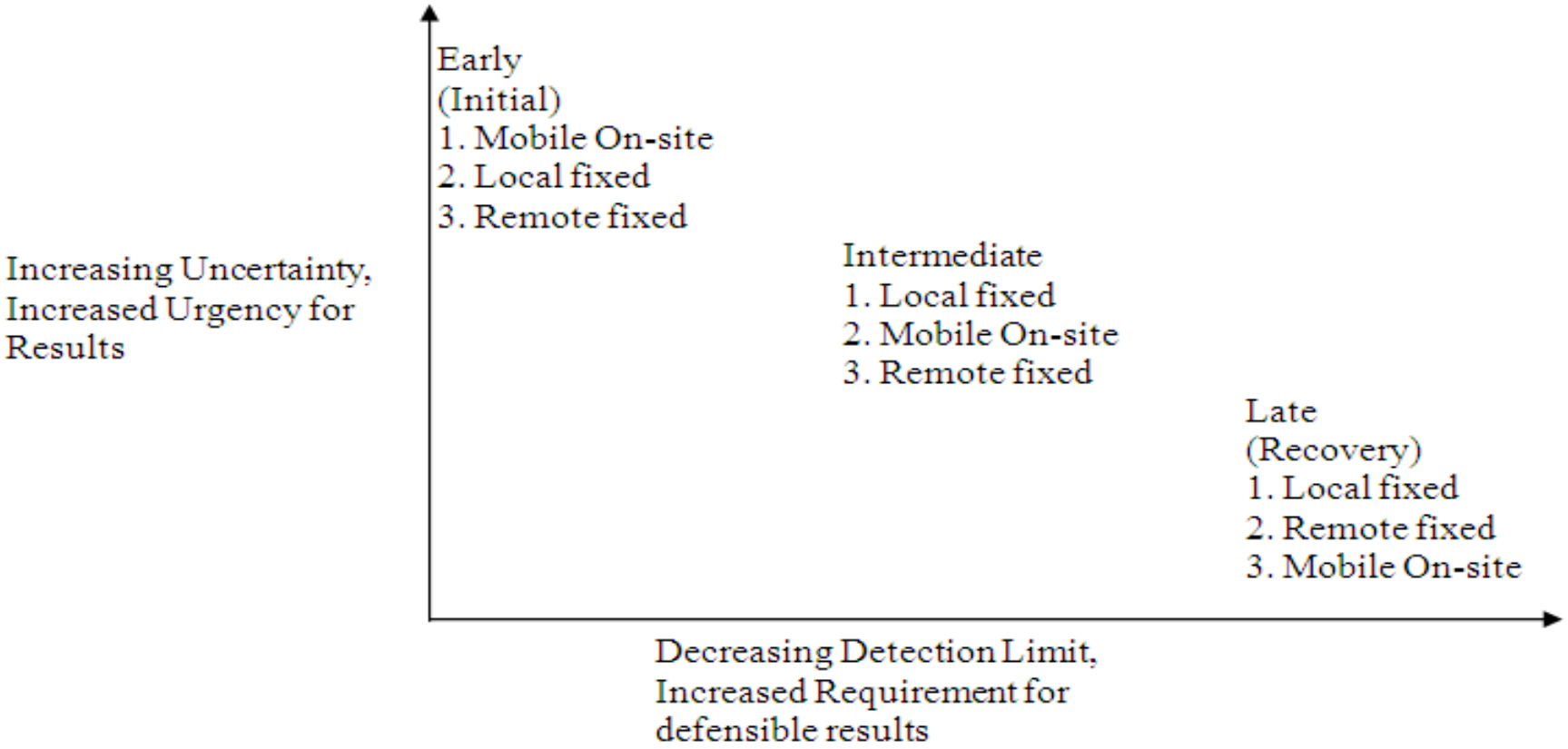

Figure 4-2. Phase-related MQOs & Laboratory Asset Role

Laboratory Selection Guidelines

- FRMAC Experience
- FRMAC LAWG member lab or contractor
- Member of ICLN Laboratory Network?
- Proficiency Test Performance
- Permits, accreditations, certifications
- Matrices
- Meet DQO's and Turn-Around-Times
- Throughput

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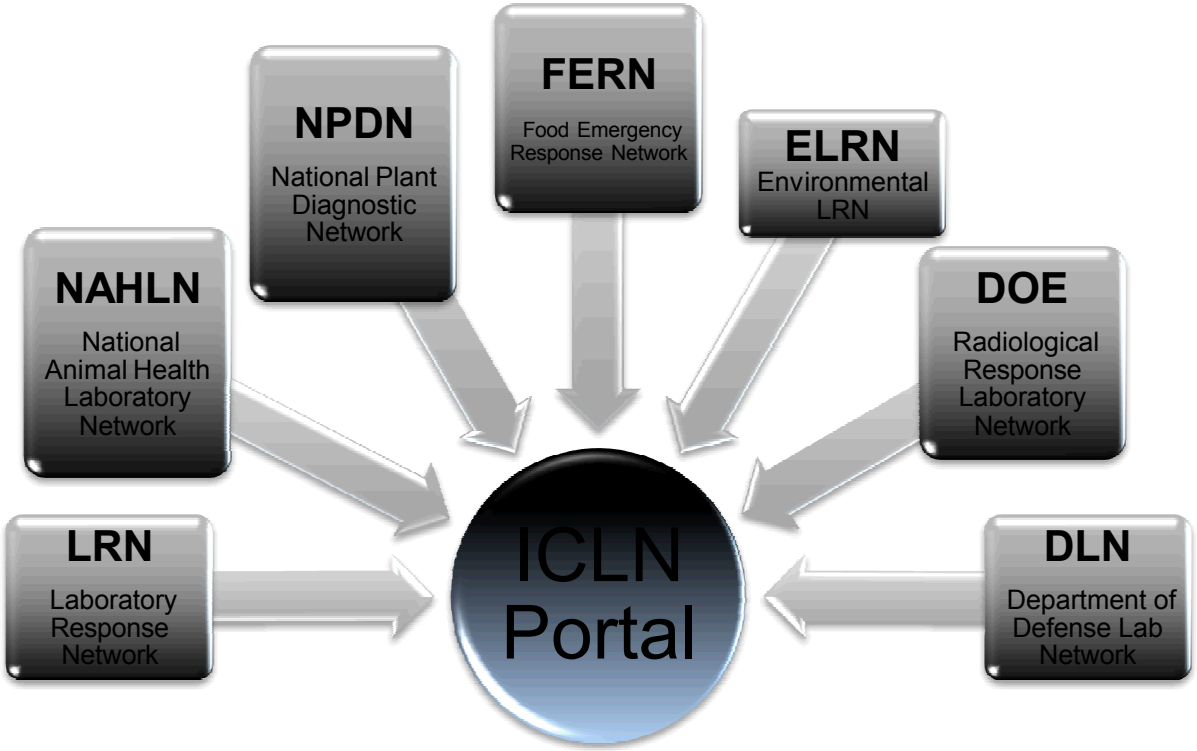
Integrated Consortium of Laboratory Networks (ICLN)

Headed by Department of Homeland Security (DHS)

Comprised of laboratory networks from all federal agencies



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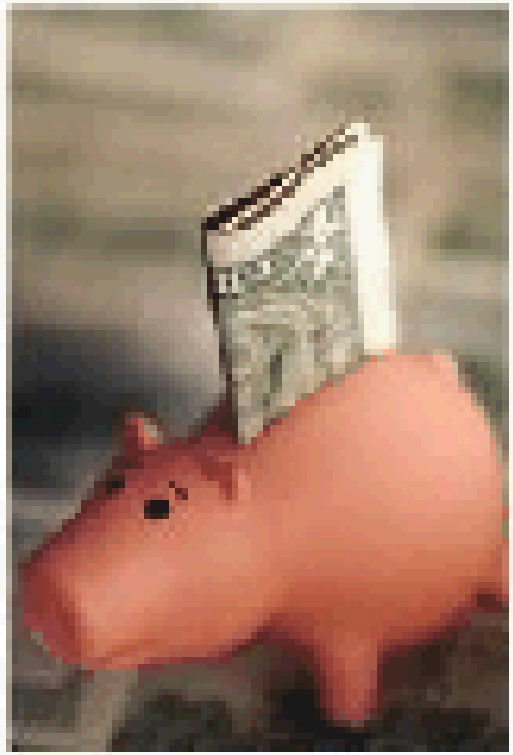
Laboratory Analysis Goal

- We only want what every laboratory customer wants;
  - ✓ the **HIGHEST** quality data…
  - ✓ in the **LEAST** amount of time
  - ✓ for the **CHEAPEST** price…



BETTER – CHEAPER – FASTER !

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Be Flexible !!

Lessons Learned from Fukushima
How can you prepare your laboratory?

- Plan for MQOs in Lab Analysis Manual
- Can you provide FRMAC Requirements
- Do you have the required USDA permits if needed?
- 24/7 Staffing
- Be prepared to provide:
  - Total Propagated Uncertainty
  - Validation Packages
  - Qualifications and Training
  - Procedures
  - Level 4 data package

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How Do I Get Involved or Prepare?

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THE END

Questions, Comments, Complaints?

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