Public Health Command Europe

Laboratory Sciences

Customer Guide for Biological and Chemical Analysis

Version 2 · 2 March 2021

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1. INTRODUCTION

1.1 LABORATORY SCIENCES

LS of PHCE encompasses four divisions: Biological Analysis Division [BAD], Chemical Analysis Division [CAD], Laboratory Operations Division [LOD], and Quality Assurance Office [QAO].

Mission Statement

To safeguard and improve the health of supported military populations through analytical laboratory support for food and drinking water safety, disease surveillance and diagnostics, and occupational and environmental health.

The Public Health Command Europe (PHCE) Department of Laboratory Sciences (LS) maintains an ISO/IEC 17025:2017 accredited laboratory. LS provides quality public health surveillance services supporting the Public Health Programs of our National Military Strategy in the US European Command **(**EUCOM), US Central Command (CENTCOM), and US Africa Command (AFRICOM**)** areas of responsibility (AOR).

ISO/IEC 17025:2017 Accredited Testing Laboratory

ACCREDITED BIOLOGICAL TESTING LABORATORY (BTL)
Registrar: American Association for Laboratory Accreditation (A2LA)
A2LA Certificate Number: 2138.01

ACCREDITED CHEMICAL TESTING LABORATORY (CTL)
Registrar: American Association for Laboratory Accreditation (A2LA)
A2LA Certificate Number: 2138.02

To view LS' scope of accreditation, please visit **https://www.a2la.org/** then search for accredited organizations (Organization Name: US Army Public Health Command Europe, Laboratory Sciences).

1.2 CUSTOMER BASE

Laboratory Sciences' primary mission is to support Army public health programs internal to PHCE.

1.3 MATRICES ANALYZED

Matrices routinely analyzed by LS and our US and German Contract Laboratories:

Food

Bottled Water (BW)	Ice (I)	Fish/Seafood (FS)
Meats (M)	Cheeses (C)	Cultured Dairy (CD)
Dairy (D)	Ice Cream (IC)	Bottled (B)
Fruits & Vegetables (FV)	Surface Swabs (SS)	

Environmental

Potable Water (P)	Non-Potable Water (NP)	Soil / Bulk Solids (S)
MCE Filters (MF)	Dust Wipes (W)	

1.4 ANALYSES AVAILABLE

A list of the analyses available at LS is included in each table as applicable to the type of sample submitted. We may be able to accommodate other requests through qualified contract laboratories. **Please contact LOD (see section 2) for more information regarding contract analysis or off-scope analysis.**

1.5 SAMPLE ANALYSIS PRIORITY AND TURNAROUND TIME (TAT) GOALS

LS provides in-house and Contract (German and US) laboratory analytical services at three levels of sample priority:

Routine (30 day TAT): Standard laboratory priority
Immediate (14 day TAT): Elevated laboratory priority based upon potential health risk, environmental damage risk, or high cost for delay. A brief written justification is required.
Emergent (7 day TAT): Highest laboratory priority based upon the potential acute health risk, environmental damage risk, or excessive cost for delay. A written justification is required.

To avoid delays in processing, ensure that the required paperwork is accurate and complete and submitted with samples (See Section 4 Sample Submission). Incomplete paperwork with sample discrepancies or incorrect paperwork will result in delays in sample processing. The TAT begins when the laboratory receives ALL required, accurately completed paperwork to log the samples.

Sample workload and laboratory staffing may impact the ability of the laboratory to meet the TAT agreed upon during contract review. Therefore, turnaround times are goals and are not guaranteed.

TAT is expressed in calendar days and is defined as the time from receipt of samples at the laboratory performing the analysis (PHC Europe LS, German Contract or CONUS contract laboratory) to the dispatch of analytical data to the customer.

Shipping to most German contract labs (CL) generally requires 1 work day and 2 work days to CONUS CLs. The shipment times are not included in the respective laboratory's published TAT goals. Samples sent to CL may exceed turnaround time goals.

Emergent Priority turnaround time is method dependent. It is important to note that some analyses are time intensive and require a minimum of four days for obtaining final results. TAT for testing of selected target analytes (Gross Alpha/Beta, Radium-226/228 for example) **exceed** Routine TAT goals.

1.6 SAMPLE COLLECTION KITS

Sample collection kits for water and soil analytes that contain bottles, preservatives, ice packs, media, and coolers are available directly from LS for a fee. The request for sample collection kits should be made on the Request for Laboratory Services (LOD Form 1)**.** If you cannot use the sample collection kit at the expected time, the preservatives are stable for one year from preparation date. Please do not use an expired sampling kit. Contact LOD to obtain the procedures for returning a kit for proper disposal or to obtain a new, in-date kit. If you prefer to use your own materials, please contact LOD prior to sampling.

2. HOW TO CONTACT LS

2.1 LABORATORY OPERATIONS DIVISION (LOD)

Duty hours: Monday to Friday from 0730 to 1630

Please direct all communication to the LS Hotline.

usarmy.landstuhl.medcom-ph-e.mbx.ls-hotline@mail.mil

Telephone

DSN: 314-590-9710
Civilian: 06371-9464-9710 (In Germany, DE)
Civilian Outside DE: (+49) 6371-9464-9710
Civilian from the US: 011-49-6371-9464-9710

Military Postal Shipping Address

Public Health Command-Europe
Laboratory Sciences (LS)
ATTN: Laboratory Operations Division
Unit 33105
APO AE 09180

German Postal Shipping Address

Public Health Command-Europe
Laboratory Sciences (LS)
ATTN: Laboratory Operations Division
Kirchberg Kaserne Gebäude 3809, Raum N202
D-66849 Landstuhl, Germany

Please visit **https://rhce.amedd.army.mil/phce/LaboratorySciences.html** for the latest forms and updates to the Customer Guide.

2.2 FINANCE

Submit a Military Interdepartmental Purchase Request (MIPR, DD Form 448) to G-8, Regional Health Command Europe. G-8 will monitor your financial status and return any unused balances based on customer invoicing. Please note, MIPR submission only applies to reimbursable work which is not attributable to Operations and Maintenance, Army (OMA) cost center.

A price list as well as price quotes for special projects can requested by contacting LOD. Customers can be provided periodic statements that include status of their billing or shipping charges.

3. CUSTOMER SATISFACTION

3.1 LS values you as a customer. Customers will receive a link to the LS customer satisfaction survey with their sample results. You may also provide comments or complaints directly to the LS Hotline, by telephone, during face to face conversations or meetings with LS staff, or by attaching a note to your request form.

3.2 All LS customers have the opportunity to establish a Memorandum of Understanding (MOU) with LS to supplement any existing support agreements and/or this Customer Guide. Contact LS for further details.

4. SAMPLE SUBMISSION

4.1 OVERVIEW

To avoid delays in processing, ensure that the required paperwork is accurate and complete and submitted with samples. Incomplete paperwork with sample discrepancies or incorrect paperwork will result in delays in sample processing. The TAT begins when the laboratory receives ALL required, accurately completed paperwork to log the samples.

The next step in sample submission is to submit an LOD Form 1 Request for Laboratory Services (RLS). The request will be reviewed by LOD and given a Service Request Number (SRN). One of the technical managers will review the request, and the submitter will be contacted if there are any questions or modifications that are needed.

Once the RLS form has been accepted, LOD personnel will notify the customer by providing a signed copy of the LOD Form 1, which is now a contract between the lab and the customer. Submission of samples to LS on the agreed upon date may now occur.

Sampling events should be scheduled to prevent the delivery of samples to LS after 1200 hours on Fridays, Holidays, and weekends to ensure samples can be analyzed within hold times and without additional cost for weekend processing. Sample delivery after duty hours on week days, weekends or holiday delivery **MUST** be coordinated with LOD. Samples will only be accepted outside of duty hours under special circumstances. Please note: If samples arrive after the scheduled date, the laboratory reserves the right to reject the samples.

Please contact LOD to update and re-accept the RLS and if you need to change the scheduled work (i.e., number of samples submitted, analyses requested, or the agreed delivery date).

All submissions must be accompanied by appropriate submission forms to ensure accurate and efficient processing into the LS system.

4.2 INSTRUCTIONS FOR LS SAMPLE SUBMISSION FORMS

LOD FORM 1 – REQUEST FOR LABORATORY SERVICES (RLS)

A RLS form with all information fields filled out completely **MUST** be sent to LS for all samples. Forms should be submitted as far in advance as possible but no later than two weeks prior to the sampling event (three weeks if you are requesting a sampling kit). The form must accompany the sample(s) when submitted to the lab.

If additional space is needed, complete LOD Form 1 Request for Laboratory Services Supplement and submit along with LOD Form 1.

The RLS should be sent electronically to the LS Hotline: **usarmy.landstuhl.medcom-ph-e.mbx.ls-hotline@mail.mil.** For quarterly, semi-annual and annual monitoring events, you can submit your requests up to two months before the scheduled sampling date.

When requesting changes or inquiring about the status of your samples, please use the SRN provided in the LS e-mail notification of RLS acceptance for your project. If you request changes to your RLS, the review process described earlier must be completed again to ensure LS can meet your needs.

NOTE: The project number is a customer defined field. You can use up to 20 characters including spaces.

The request will be evaluated against analysis availability and sample load at the predicted date of sample submission. If high anticipated workload or lack of required resources will prevent analysis at the requested time and/or with requested priority, technical managers will contact you in order to identify alternatives such as different submission date, lower priority or sub-contracting, or to inform you that LS is not able to accept the request.

Once completed and accepted the RLS serves as the formal **contract** for analytical services between LS and the customer. The customer generated RLS communicates the specific customer requirements and expectations to the laboratory. LS either accepts, modifies or rejects the RLS to document our ability to satisfy the stipulated requirements and returns a PDF copy of the RLS. After the contract (RLS) is approved and accepted by both LS and the customer, any subsequent changes to the accepted RLS **must** be coordinated and agreed to by **both** parties.

Overdue RLS forms will be reviewed by LOD staff. If samples are not received within 90 days of the scheduled delivery date entered on the RLS form (180 days for Program 47 deployment samples), the original request shall be considered invalid and a new **RLS** form must be submitted to LOD.

DA Form 7539 – Request for Veterinary Laboratory Testing & Food Sample Record

Use the DA Form 7539 for the submission of all food and bottled water samples. The form **must** accompany the sample(s) when submitted to the lab.

Complete all available information for the sample submission. The information will be entered into our laboratory software and may be required for higher level reporting.

LOD Form 3 – Request for Laboratory Determination for Rabies

Use this form for the submission of animals and animal tissue for identification of the presence of rabies.

Use one form per animal.

Provide all available information on the document.

In part D, enter if the animal is associated with a human exposure and the circumstances of the event. Limit the amount of possible patient related information.

LS QA Form 1 – LS Decision Rule Implementation

LS **must** discuss and establish a "decision rule" with customers regarding what will be agreeable to both parties regarding conformity assessment, i.e., consideration of method uncertainty, with respect to Maximum Contamination Limits (MCL) or other applicable specification or regulatory limit. This requires an agreement on if and how method uncertainty will be included on the LS Final Report. LS must also ensure that the test procedure employed can meet the regulatory or specification limit required. Changes or modifications to laboratory test procedures (e.g., by lowering the method detection limit) may also be discussed to address the decision rule.

In this issue of conformity, LS must have an educated discussion with its customers or regulators before and during the negotiation of a contract for analytical services. It is a risk to both parties concerned, which must be duly assessed and decided upon when the reported measurement is found to be outside the regulatory or specification limit stipulated. This agreement between LS and its Customers will be discussed and formalized using LS QA Form 1 LS Decision Rule Implementation Form. Any changes to the decision rule established must be requested on LOD Form 1, or other applicable sample submission form, during contract review.

4.3 SAMPLE HANDLING & COLLECTION

GENERAL NOTES

Ensure you clearly mark all samples and annotate the paperwork when known contaminants such as Hydrogen Sulfide are present in the samples or if you suspect or have noticed an unusual odor or physical characteristic of the samples. These observations are important in protecting the health of all individuals who handle the samples.

When requesting water analysis, please ensure that the selected matrix matches with the actual sample matrix. Selecting the correct matrix and communicating the type/source of water helps to prevent delays in performing sample analysis, the generation of invalid analytical data, and damage or even destruction of trace level analytical instrumentation.

Samples suspected to be contaminated with or collected from areas suspected to have been previously contaminated with Chemical Warfare (CW) / Biological Warfare (BW) agents or exposed to Toxic Industrial Chemicals (TIC) / Toxic Industrial Materials (TIM) must be SCREENED and found to be NEGATIVE prior to shipment to LS. The screen findings must be marked as such on the sample container and on the accompanying paperwork. **Do not send samples suspected to be contaminated with CW/BW agents or BSL 3 or BSL 4 infectious material.**

Avoid transporting samples (water, soil, or air sampling media) for the analysis of volatile organic compounds in an enclosed vehicle trunk. Fuel fumes and exhaust gases are likely sources of contamination

PROPER SAMPLE LABELING

Use **indelible ink** on labels and use a clearly defined sample identification numbering scheme known to the project officer.

Include the following:

- Sample ID or customer Field ID and Project Number should be limited to 20 characters including spaces and dashes, as this is the character limit of our Laboratory Information Management System (LIMS) for Field ID and Project Number Fields. If your Field ID or Project Number exceeds 20 characters LS will truncate it at the 20th character.
- Sample location.
- Date (see Sampling Date Protocol below for LS' preferred date protocol).

- Time collected as Coordinated Universal Time (UTC) formerly known as Greenwich Mean Time (GMT) or state **XX.XX Hrs Local Time** to allow LOD to convert to our time zone.
- Additional information such as GPS data, DOEHRS ID or ARLOC or WIC codes for Army and Air Force, respectively should be included when available.
- Accurately reference each sample on the forms submitted to LS.

SAMPLING DATE PROTOCOL

LS recommends customers use the following protocol for recording the date of sample collection:
Day / Month (3 Letter Abbreviation) / Year (4 digits).

Recommended date format example: 01 Jan 2020

4.4 SHIPPING AND PROPER SAMPLE PACKAGING

SAMPLE SHIPMENT AND DELIVERY

LOD can assist you in arranging sample shipment with a commercial carrier. Sample shipments billed to our commercial shipping account number will be invoiced to your account. Please complete LOD Form 2 – Shipping request and contact LOD staff for current contract information.

Sample delivery after duty hours on week days, weekends or holiday delivery **must** be coordinated with LOD well in advance of the requested delivery date and time. Sampling and shipment of samples with holding times less than 7 calendar days and/or samples that must be kept at 1 – 6° C require planning and coordination with LOD and the carrier to ensure that sample delivery is not delayed by weekends or by US or host nation Holidays.

Hand carried samples with short holding times **must** be delivered to LOD prior to 1400 hours Monday through Friday to ensure samples are processed into the LIMS (Laboratory Information Management System) and released to the analytical division prior to the close of business on the day of sample receipt. **After hours, weekend or holiday delivery is only available in special circumstances when the customer has coordinated with LOD well in advance of the requested non-duty delivery date or time.**

RECOMMENDED SAMPLE SHIPMENT METHODS	
• With long holding times • Not requiring refrigeration	• For immediate or emergent analysis • With short holding times • That must be refrigerated
— Can be sent by —	**— Should be sent by —**

• Commercial Carrier
  ○ Within Germany: United Parcel Service (UPS)
  ○ Outside Germany: Federal Express (FedEx)
• Hand Carry
• Air Mobility Command (AMC)
• Military Postal Service
• U.S. Postal System
	• Overnight service via Commercial Carrier
	  ○ Within Germany: United Parcel Service (UPS)
	  ○ Outside Germany: Federal Express (FedEx)
	• Hand Carry

Check with the carrier to ensure delivery date!	

PROPER SAMPLE PACKAGING

Check that all sample bottle lids are on tight and not leaking.

Line the appropriate size cooler generously with packing material.

Wrap glass containers individually with sufficient packing material to prevent container breakage.

Include frozen ice packs for samples that require cooling. Ice packs should be frozen for at least 24 hours prior to use.

- Large Ice Chest (~70 quarts) use approximately 24 large cooler packs (weight of large pack ~0.65 Kg each)
- Medium Ice Chest (~48-52 quarts) use approximately 18 large cooler packs (weight of large pack ~0.65 Kg each)
- Small Ice Chest (~20 quarts) use approximately 6 large cooler packs (weight of large pack ~0.65 Kg each)

Do not use ice unless cooler packs are unavailable. If you do use ice, double bag it so the bottle labels do not get wet.

Please refer to the sample bottles for temperature requirements to ensure that samples reach PHCE, LS within required temperature range. If you are collecting samples and the ambient outside temperature is above 15°C (> 59°F), it is recommended that you "pre-cool" your samples (if possible). The samples should be placed in a refrigerator designated for environmental samples (i.e., no food or drink) and cooled to between 1 - 6 °C before packing.

Place completed forms inside a sealed plastic bag within the cooler.

Shipping Frozen Items

The most important item is a good insulated container. An inexpensive Styrofoam cooler from the grocery store will rarely work. It breaks easily and usually is not the right shape for shipping. A thick polystyrene box or cooler will reduce the amount of dry ice needed and allow extended shipping times.

Use dry ice for shipping **FROZEN** goods as dry ice will freeze everything in the shipping box.

QUANTITY OF DRY ICE REQUIRED FOR SHIPPING FROZEN				
Sample Quantity	**Time in Transit**			
	4 Hours	**12 Hours**	**24 Hours**	**48 Hours**
2 lb	*2 lb Dry Ice*	*3 lb Dry Ice*	*5 lb Dry Ice*	*10 lb Dry Ice*
5 lb	*3 lb Dry Ice*	*4 lb Dry Ice*	*8 lb Dry Ice*	*15 lb Dry Ice*
10 lb	*4 lb Dry Ice*	*5 lb Dry Ice*	*10 lb Dry Ice*	*20 lb Dry Ice*
20 lb	*5 lb Dry Ice*	*8 lb Dry Ice*	*15 lb Dry Ice*	*25 lb Dry Ice*
50 lb	*10 lb Dry Ice*	*15 lb Dry Ice*	*20 lb Dry Ice*	*30 lb Dry Ice*
For each additional day add 8 to 16 pounds (lb) more Dry Ice				

When packing items in the container put dry ice and the product as close together as possible with the dry ice on top. Fill any empty space with wadded newspaper or the latest bubble packs, as any "dead-air-space" will cause the dry ice to sublimate faster.

Secure your samples in such a way that when the dry ice sublimates, they will not move freely inside of the insulated box. This can be accomplished by wedging your samples in place with cardboard or Styrofoam. Fragile containers such as glass tubes or vials should be wrapped with cushioning material.
If shipping by air, be sure to check with the airlines ahead of time to find out their procedures and regulations regarding dry ice.

Dry ice shipments can be made with FedEx and DHL. UPS and the U.S. Postal Service have extremely restrictive policies concerning shipments of hazardous materials; do not ship dry ice with UPS or the U.S. Postal Service. Note: Dry ice requires a UN1845 label on the outside of the box.

Information and Regulations:

- **US Postal Service Guidelines for Shipping with Dry Ice**
- FedEx (USA shipping) **Guidelines for Shipping with Dry Ice**
- FedEx **Packaging Perishable Shipments**
- UPS **Guidelines for Shipping with Dry Ice**

4.5 SAMPLE RECEIPT AND PROCESSING

A copy of the RLS and/or DA Form 7539 **MUST** accompany samples when submitted to the lab. Upon receipt by LOD the samples and associated paperwork will be checked against the original RLS. After verification of sample integrity, the samples will be processed into the LIMS and receive unique LS sample numbers, if needed.

LOD personnel shall inform the customer of any deviation from requirements according to method [holding time exceeded, temperature or pH requirements not met, presence of free Chlorine, air bubbles in VOC, or EDB/DBCP samples, or missing blanks] that may compromise the analytical results.

If the condition of a submitted sample does not allow the generation of valid analytical data (for example the use of incorrect sampling container/IH sampling media or insufficient sample amount) or the samples were damaged, LOD will inform the customer that the sample was rejected.

4.6 SAMPLE RETENTION AND DISPOSAL

Samples and sample extracts will remain under refrigeration or other appropriate storage in LS for at least 14 days.

4.7 RESULTS

Sample results (data) will only be released to the project officer or designated representative (**must be authorized, in writing, by the project officer and provided to LOD**). If requested, preliminary results will be reported as an Electronic Data Deliverable (EDD) or preliminary report as individual sets of analyses are completed. The official LS Final Report will be delivered via electronic mail to project officer(s).

5. FOOD

5.1 GENERAL INFORMATION ABOUT FOOD COLLECTION & SUBMISSION

Customers must pre-coordinate sample submissions using the Request of Laboratory Services Form 1 at least 2 weeks prior to sampling. Pre-coordination avoids delays in analysis and potential loss of samples due to inability of arranging contract lab analysis.

Samples for routine analysis should be received by Wednesday of the testing week. **If samples arrive after the scheduled date, the laboratory reserves the right to reject the samples.**

Products must arrive at the laboratory prior to their expiration/ use by/sell by/best by date. If products are received after that date, they may not be tested. Please specify on LOD Form 1 if you would like the lab to proceed with analyses if samples arrive outside of recommended hold time/tolerance.

Guidance on current US Army action limits can be found in MEDCOM Circular 40- 1, Appendix O. Further guidance can be obtained from the Veterinary Services Portfolio, or supervisory Food Safety Warrant Officers.

The condition of food received for examination at the lab is of primary importance. All samples should be collected aseptically and with sterile implements. The use of sterile gloves and sterile sample containers is highly recommended. If the samples are not properly collected, are mishandled during transport to the lab, or are not representative of the sampled lot, then there is an increased likelihood that laboratory results will be meaningless.

With customer complaint samples, when possible, submit a corresponding sample that is considered to be acceptable along with the sample in question.

Samples received without a necessary temperature pilot or received outside of proper temperature parameters ***may*** be discarded upon coordination with submitter to maintain laboratory safety and due to questionable data quality.

This PHCE, LS Customer Guide follows the food categories given by the Federal Supply Classes and used in Appendix O as given below. This naming scheme is used consistently from the request forms through the Final Report. It also defines the type of testing performed at LS.

For samples that require analysis at contract laboratories, please provide sufficient amount and number of sub-samples to the lab, because PHCE, LS will not perform sample splitting on food samples.

PHCE, LS and its contract laboratories may be able to test other food categories or perform additional tests if needed. In this case, please contact LOD.

5.2 FOOD ANALYSES

Routine Laboratory Analyses																		
Category		**PHCE Analyses**										**Contract Lab (CL) Analyses**						
Food Group	**Food Type**	**Aerobic Plate Count**	**Bacillus cereus**	**Campylobacter coli/ jejuni**	**Coliforms**	**Clostridium perfringens**	**Escherichia coli**	**Escherichia coli O157:H7**	**Listeria monocytogenes**	**Salmonella spp.**	**Staphylococcus aureus**	**Standard Plate Count**	**Clostridium botulinum toxin**	**Vibrio spp.**	**Chloramphenicol**	**Histamine**	**Methylmercury**	**Polychlorinated Biphenyls**	**Water Phase Salt**
Fish/ Seafood	All fish not otherwise listed									**100g**	**100g**		**100g**					**200g**	
	Cured /salted/ smoked fish									**100g**	**100g**		**100g**					**200g**	**300g**
	Cured/ salted/ smoked fish - anaerobic ***E***					**100g**				**100g**	**100g**		**100g**					**200g**	**300g**
	Imported shellfish ***F***	**100g**					**100g**			**100g**	**100g**		**100g**	**100g**				**200g**	
	Raw fish /seafood									**100g**	**100g**		**100g**		**100g**		**60g**	**200g**	
	RTE Fish ***G***								**100g**	**100g**	**100g**		**100g**	**100g**				**200g**	
	Tuna Mahi-Mahi and related fish									**100g**	**100g**		**100g**			**50g**		**200g**	
An individual package must be provided for EACH Contract Lab analysis!																			

Routine Laboratory Analyses																			
Category		**PHCE Analyses**											**Contract Lab (CL) Analyses**						
Food Group	**Food Type**	**Aerobic Plate Count**	**Bacillus cereus**	**Campylobacter coli/ jejuni**	**Coliforms**	**Clostridium perfringens**	**Escherichia coli**	**Escherichia coli O157:H7**	**Listeria monocytogenes**	**Salmonella spp.**	**Staphylococcus aureus**	**Standard Plate Count**	**Clostridium botulinum toxin**	**Clostridium Perfringens toxin**	**Chloramphenicol**	**Histamine**	**Methylmercury**	**Polychlorinated Biphenyls**	**Vibrio spp.**
Meats* Includes Eggs	Anaerobic Packaged (Non Beef) ***L***		**100g**	**100g**		**100g**			**100g**	**100g**	**100g**		**100g**	**100g**					
	Anaerobic Packaged (Beef) ***L***		**100g**	**100g**		**100g**		**100g**	**100g**	**100g**	**100g**		**100g**	**100g**					
	Eggs ***M***									**100g**									
	Raw Meats (Beef) ***N***				**100g**		**100g**	**100g**		**100g**		**100g**							
	Raw Meats (Non Beef) ***N***	**100g**																	
	RTE Meats (Beef) ***L***		**100g**	**100g**				**100g**	**100g**	**100g**	**100g**		**100g**	**100g**					
	RTE Meats (Non Beef) ***L***		**100g**	**100g**					**100g**	**100g**	**100g**		**100g**	**100g**					
An individual package must be provided for EACH Contract Lab analysis!																			

Routine laboratory analyses												
Category		**PHCE Analyses**									**Contract Lab (CL)**	
Food group	**Food type**	**Bacillus cereus**	**Coliforms**	**Escherichia coli**	**Escherichia Coli O157:H7**	**Listeria monocytogenes**	**Salmonella spp.**	**Staphylococcus Aureus**	**Standard plate Count**	**Yeast and mold**	**Alkaline phosphatase**	**B lactam**
Cheeses	Cottage cheese		**100g**							**100g**		
	Hard cheese	**100g**		**100g**	**100g**	**100g**	**100g**	**100g**				
	Natural cheese	**100g**		**100g**	**100g**	**100g**	**100g**	**100g**				
	Processed cheese	**100g**		**100g**	**100g**	**100g**	**100g**	**100g**				
	Ricotta cheese		**100g**									
	Soft cheese	**100g**		**100g**	**100g**	**100g**	**100g**	**100g**				
Cultured Dairy	Buttermilk *a*		**100g**									
	Chilled yogurt		**100g**							**100g**		
	Frozen yogurt – Flavored		**100g**							**100g**		
	Sour cream		**100g**							**100g**		
	Yogurt drinks		**100g**							**100g**		
Dairy	Butter		**100mL**									
	Cream *b*		**100mL**						**100mL**		**250mL**	**1L**
	Condensed/ concentrated milk *c*		**100mL**									
	Eggnog		**100mL**									
	Flavored milk		**100mL**						**100mL**			**1L**
	Grade A pasteurized milk		**100mL**						**100mL**		**250mL**	**1L**
	Low-fat milk		**100mL**						**100mL**		**250mL**	**1L**
	Skim milk		**100mL**						**100mL**		**250mL**	**1L**
	Ultra pasteurized milk *d*		**100mL**						**100mL**			**1L**
	Whole milk		**100mL**						**100mL**		**250mL**	**1L**
Ice cream	Ice cream soft serve *i*		**100g**				**100g**		**100g**			
	Flavored ice cream mix *k*		**100g**				**100g**		**100g**			
An individual package must be provided for EACH Contract Lab analysis!												

Routine Laboratory Analyses							
Category		**PHCE Analyses**					
Food Group	**Food Type**	**E.coli**	**E.coli O157:H7**	**Listeria monocytogenes**	**Salmonella spp.**	**Staphylococcus aureus**	
Bottled	Juice/Drink (Non-Pasteurized)	**100mL**	**100mL**		**100mL**		
	Juice/Drink (Pasteurized)	**100mL**	**100mL**		**100mL**		
	Smoothies (non-dairy)	**100mL**	**100mL**		**100mL**		
Fruits & Vegetables	Bagged Salad	**100g**	**100g**	**100g**	**100g**	**100g**	
	Fresh Fruits and Vegetables ***H***	**100g**	**100g**	**100g**	**100g**	**100g**	
	Processed Fruits and Vegetables ***I***	**100g**	**100g**	**100g**	**100g**	**100g**	
An individual package must be provided for EACH Contract Lab analysis!							

Routine Laboratory Analyses											
Category		**PHCE Analyses**									
Food Group	**Food Type**	**Aerobic Plate Count**	**Bacillus cereus**	**Campylobacter coli/ jejuni**	**Coliforms**	**Clostridium perfringens**	**Escherichia coli**	**Escherichia coli O157:H7**	**Listeria monocytogenes**	**Salmonella spp.**	**Staphylococcus aureus**
Animal Feed	Dry Pet Food and Treats									**100g**	
	Fresh Pet Food									**100g**	
Canned	Powdered Infant Formula	**100g**	**100g**		**100g**			**100g**	**100g**	**100g**	**100g**
Prepared Foods	Caterer (anaerobic + beef)		**100g**			**100g**		**100g**	**100g**	**100g**	**100g**
	Caterer (anaerobic)		**100g**			**100g**			**100g**	**100g**	**100g**
	Caterer (no beef + aerobic)		**100g**						**100g**	**100g**	**100g**
	Caterer (with beef)		**100g**					**100g**	**100g**	**100g**	**100g**
	Kimchee/ Kimchi		**100g**		**100g**		**100g**		**100g**	**100g**	**100g**

	Ready to Cook (Beef) ***Q***		**100g**					**100g**	**100g**	**100g**	**100g**
	Ready to Cook Non Beef) ***Q***		**100g**						**100g**	**100g**	**100g**
	Ready to Cook – Anaerobic ***Q***		**100g**			**100g**			**100g**	**100g**	**100g**
	Ready to Cook – Anaerobic (with beef) ***Q***		**100g**			**100g**		**100g**	**100g**	**100g**	**100g**
Prepared Foods	RTE Foods ***P***		**100g**	**100g**					**100g**	**100g**	**100g**
	RTE Foods (anaerobic)		**100g**	**100g**		**100g**			**100g**	**100g**	**100g**
	RTE Foods w/beef		**100g**	**100g**				**100g**	**100g**	**100g**	**100g**
	RTE Foods w/beef (anaerobic)		**100g**	**100g**		**100g**		**100g**	**100g**	**100g**	**100g**
	Salad ***Q***		**100g**	**100g**					**100g**	**100g**	**100g**
	Sandwich		**100g**	**100g**					**100g**	**100g**	**100g**
	Sandwich w/beef		**100g**	**100g**				**100g**	**100g**	**100g**	**100g**
An individual package must be provided for EACH Contract Lab analysis!											

Additional Analyses													
Category		**Contract Lab (CL) Analyses**											
Food Group	**Food Type**	**Clostridium perfringens toxin**	**Clostridium botulinum toxin**	**Coagulase positive staphylococci**	**Chloramphenicol**	**Fat**	**Histamine**	**Methylmercury**	**Norovirus GI & GII**	**Alkaline phosphatase**	**Pesticides (milk)**	**Vibrio spp.**	**Vitamin A & D**
Fish/ Seafood	All fish not otherwise listed				**100g**		**50g**	**60g**				**100g**	
	Cured /salted/ smoked fish	**100g**			**100g**		**50g**	**60g**				**100g**	
	Cured/ salted/ smoked fish - anaerobic ***E***	**100g**			**100g**		**50g**	**60g**				**100g**	
	Imported shellfish ***F***			**100g**			**50g**	**60g**					
	Raw fish /seafood				**100g**		**50g**					**100g**	
	RTE Fish ***G***			**100g**	**100g**		**50g**	**60g**					
	Tuna Mahi- Mahi and related fish	**100g**		**100g**	**100g**			**60g**				**100g**	
Meats	RTE Meats (Beef) ***L***					**500g**							
	RTE Meats (Non Beef) ***L***					**500g**							
Meats	Anaerobic Packaged (Non Beef) ***L***					**500g**							
	Anaerobic Packaged (Beef) ***L***					**500g**							
	Raw Meats (Beef) ***N***	**100g**	**100g**			**500g**							
	Raw Meats (Non Beef) ***N***	**100g**	**100g**			**500g**							

Additional Analyses													
Category		**Contract Lab (CL) Analyses**											
Food Group	**Food Type**	**Clostridium perfringens toxin**	**Clostridium botulinum toxin**	**Coagulase positive staphylococci**	**Chloramphenicol**	**Fat**	**Histamine**	**Methylmercury**	**Norovirus GI & GII**	**Alkaline phosphatase**	**Pesticides (milk)**	**Vibrio spp.**	**Vitamin A & D**
Dairy	Cream ***b***										**50mL**		**200mL**
	Grade A pasteurized milk										**50mL**		**200mL**
	Low-fat milk										**50mL**		**200mL**
	Skim milk										**50mL**		**200mL**
	Whole milk										**50mL**		**200mL**
	Ultra pasteurized milk ***d***									**250mL**	**50mL**		**200mL**
Fruits & Vegetables	Fresh Fruits and Vegetables ***H***	**100g**	**100g**	**50g**					**200g**				
Prepared Foods	Kimchee/ Kimchi	**100g**		**50g**									
	RTE Foods ***P***	**100g**		**50g**									
	RTE Foods (anaerobic)	**100g**		**50g**									
	Salad ***Q***	**100g**	**100g**	**50g**									
	Sandwich	**100g**	**100g**	**50g**									
	Caterer (anaerobic)	**100g**		**50g**									
	Caterer (no beef + aerobic)	**100g**		**50g**									
Canned	Powdered Infant Formula	**100g**	**100g**	**50g**									
Please contact the LOD prior to requesting any of the additional analyses. An individual package must be provided for EACH Contract Lab analysis!													

5.3 OTHER MICROBIOLOGICAL AND FOOD SAFETY TESTING

PHCE, LS offers in-house testing of surface swabs.

Please use 10 mL Hi-Cap swabs containing a neutralizing broth for Listeria spp. and / or Salmonella spp. testing. Swabs containing only a neutralizing buffer instead of broth cannot be tested for Listeria spp. or Salmonella spp.

The Sponge-Stick method has replaced the swabbing method for environmental sampling. VHS Food Technical Communication-310 provides detailed information for conducting Sponge-Stick procedures. TC-310 is located on the Army Veterinary Services milSuite page - Food Protection - APHC Technical Communications.

PHCE, LS cannot support you with supplies. Please contact your Regional Warrant Officer for more assistance, if necessary.

SURFACE SWAB TESTING PANEL								
Category		**Analyses**						**Sample Requirements**
Food Group	**Food Type**	**Aerobic Plate Count**	**Coliforms**	**E.coli**	**Listeria spp**	**Salmonella spp**	**E coli O157:H7**	
Surface Monitoring	Europe APC/Coliform Swab	X	X					At least one swab in the appropriate storage medium
	Europe Listeria Swab				X			
	Europe Routine Swab	X	X	X	X			
	Europe Sponge-Stick				X	X	X	One sample consists of three sponge-sticks, one for each test.
Surface swab of food service equipment- military establishments only								

PHCE, LS is able to perform a variety of qualitative microbiological and chemical tests for the identification of foreign particles and material of unknown composition and origin. Please coordinate with LOD the submission of such materials.

5.4 BOTTLED WATER AND ICE

PHCE, LS provides microbiological and chemical testing of bottled water and ice to meet requirements of Appendix O.

Please see the table below for all microbiological and chemical testing performed for these matrices.

All bottled water and ice submissions must be coordinated with LOD. LOD Form 1 should be submitted as far in advance as possible but no later than two weeks prior to the sampling event. A completed DA Form 7539 must be shipped with each bottled water and ice submission.

Analysis will not be performed on sparkling water.

A minimum of 16 liters (500ml bottles preferred) is required for complete chemical and microbiological testing listed in the CFR.

When ice is shipped frozen, ensure that sealed, watertight containers are used. The minimal volume of liquid as required must be accounted for when shipping unthawed ice.

Bottled Water and Ice – Test Panels (FSC 8960)				
			Matrix	
			Bottled Water	**Ice**
Type of Testing	**Parameter**	**Volume Required**	**16 L**	**2 L**
Microbiological Testing	E. coli		X	X
	Coliforms		X	X
	Heterotrophic Bacteria		X	X
	Enterococcus		X	X
	P. aeruginosa		X	X
Metals and other Elements	Aluminum (Al)		X	--
	Antimony (SB)		X	X
	Arsenic (As)		X	X
	Barium (Ba)		X	X
	Beryllium (Be)		X	X
	Cadmium (Cd)		X	X
	Chromium (Cr)		X	X
	Copper (Cu)		X	X
	Iron (Fe)		X	--
	Lead (Pb)		X	X
	Manganese (Mn)		X	X
	Mercury (Hg)		X	X

Bottled Water and Ice – Test Panels (FSC 8960)				
			Matrix	
			Bottled Water	Ice
Type of Testing	**Parameter**	**Volume Required**	**16 L**	**2 L**
	Nickel (Ni)		X	X
	Selenium (Se)		X	X
	Silver (Ag)		X	--
	Thallium (Tl)		X	X
	Uranium (U)		X	X
	Zn (Zn)		X	X
Ions	Chloride		X	X
	Fluoride		X	X
	Nitrate		X	--
	Nitrite		X	--
	Sulfate		X	X
	Total Nitrate/Nitrite		X	X
Other Inorganics	Cyanide, free		X	X
	Color		X	--
	Odor		X	--
	Total Dissolved Solids (TDS)		X	--
	Turbidity		X	X
Volatile Organic Chemicals (VOC)	Benzene		X	--
	Bromodichloromethane		X	--
	Bromoform		X	--
	Carbon tetrachloride		X	--
	Chlorodibromomethane		X	--
	o-dichlorobenzene		X	--
	p-dichlorobenzene		X	--
	1,2-Dichloroethane		X	--
	1,1-Dichloroethylene		X	--
	cis-1,2-dichloroethylene		X	--
	trans-1,2-Dichloroethene		X	--
	Dichloromethane		X	--
	1,2-Dichloropropane		X	--

Bottled Water and Ice – Test Panels (FSC 8960)				
			Matrix	
			Bottled Water	Ice
Type of Testing	**Parameter**	**Volume Required**	**16 L**	**2 L**
	Ethylbenzene		X	--
	Chloroform		X	--
	Monochlorobenze		X	--
	Styrene		X	--
	Tetrachloroethylene		X	--
	Toluene		X	--
	1,2,4-Trichlorobenzene		X	--
	1,1,1-Trichloroethane		X	--
	1,1,2-Trichloroethane		X	--
	Trichloroethylene		X	--
	Trihalomethane, total		X	--
	Vinyl chloride		X	--
	Xylenes. total		X	--
Synthetic Organic Chemicals (SOC)	Alachlor		X	--
	Atrazine		X	--
	Benzo[a]pyrene		X	--
	Carbofuran		X	--
	Chlordane		X	--
	Dalapon		X	--
	1,2-Dibromo-3-chloropropane (DBCP)		X	--
	2,4-D		X	--
	Di(2-ethylhexyl)adipate		X	--
	Di(2-ethylhexyl)phthalate		X	--
	Dinoseb		X	--
	Endrin		X	--
	Ethylene Dibromide		X	--
	Glyphosate / Aminomethylphosphonic acid (AMPA)		X	--
	Heptachlor		X	--
	Heptachlor epoxide		X	--

Bottled Water and Ice – Test Panels (FSC 8960)				
			Matrix	
			Bottled Water	Ice
Type of Testing	**Parameter**	**Volume Required**	**16 L**	**2 L**
	Hexachlorobenzene		X	--
	Hexachlorocyclopentadiene		X	--
	Lindane (gamma-BHC)		X	--
	Methoxychlor		X	--
	Oxamyl (Vydate)		X	--
	Pentachlorophenol		X	--
	PCB (as Aroclors)		X	--
	Picloram		X	--
	Simazine		X	--
	Toxaphene		X	--
	2,4,5-TP (Silvex)		X	--
Contract Laboratory Testing				
Optional Synthetic Organic Chemicals (SOC)	Dioxin (2,2,7,8-TCDD)		X	--
	Diquat		X	--
Disinfection Byproducts & Residual Disinfectants	Bromate		X	--
	Chlorite		X	--
	Haloacetic Acids Five		X	--
	Residual Chlorine, Total		X	--
Radiological Testing	Gross Alpha/Beta		X	--
	Radium-226/228		X	--
Note: Radiological testing will exceed requested turnaround time.				

6. VECTORS

LS only accepts arthropods for testing. Blood, tissues, etc., will NOT be accepted for vector borne disease testing.

Arthropod vectors are required to arrive at the laboratory dead and in an alcohol preservative; 70% ethanol is the ideal preservative. Enough alcohol preservative volume to cover the arthropod must be used. **Any live arthropod or arthropod not submitted in an alcohol preservative may be rejected by PHCE, LS to maintain laboratory safety!**

Vector-borne Disease Tests			
Test	**Matrix**	**Method**	**# of individuals per sample**
Anaplasma phagocytophilum	**Tick (larva, nymph, or adult)**	rt-PCR	1 per tube
Borrelia sp. (Lyme disease)		rt-PCR	1 per tube
Crimean-Congo Hemorrhagic Fever		RT rt-PCR	1 per tube
Ehrlichia sp.		rt-PCR	1 per tube
Tick-borne encephalitis virus (TBE)		RT rt-PCR	1 per tube
West Nile virus	**Mosquito**	RT rt-PCR	5 per tube
Chikungunya virus		RT rt-PCR	5 per tube
Dengue fever virus (all sub-types)		RT rt-PCR	5 per tube
Plasmodium sp.(malaria)		rt-PCR	5 per tube
Zika virus		rt-PCR	5 per tube
Leishmania sp.	**Sandfly**	rt-PCR	5 per tube
Sicilian Sandfly Fever virus		RT rt-PCR	5 per tube

7. RABIES

7.1 SPECIMEN PREPARATION GUIDELINES

Immediately upon death of the animal, remove its head unless it is a small animal. Use an absorbent material to remove any excess blood. Place the head in a heavy duty, plastic, leak-proof bag and then place this into a second leak- proof bag for additional protection against leakage. Do NOT remove the brain as that more readily exposes you, your staff, and shipping personnel to rabies virus if the sample is positive.

After double bagging the head, cool the specimen immediately. If the specimen will reach LS within two days, keep it at 0 to 4°C by transporting it with multiple freezer packs in a Styrofoam™ insulated box. Do not freeze the specimen unless it will be over 2 days before reaching the laboratory.

Dry ice may be used in order to maintain sample integrity during shipping (see Section 4.4).

For small animals (such as bats or rodents), ship the entire carcass.

Dogs or cats that bit a human *should* be quarantined, if practical, for ten days. If signs suggestive of rabies develop, the quarantined animal should be euthanized and the head removed and submitted for rabies testing.

7.2 RABIES SPECIMEN SHIPMENT GUIDELINES

It is essential that you **telephone** the Biological Analysis Division +49 (0)162- 2519643 and / or the LOD +49 (0)162)-2703071 when you know that you will be sending in a specimen for rabies diagnosis.

Prior notification will enable us to trace shipments that are overdue and ensures that cases involving human exposure are given the highest priority.

Please provide the following information when contacting the laboratory:

- Mode of shipment
- Date and time of shipment
- Location and estimated time of arrival
- Tracking number if shipped through a commercial carrier, Transportation Control Number (TCN) if shipped through AMC, or mission number for CCAT flights.

Provide a telephone number and email that is staffed 24 hours every day for notification of laboratory results. If no such number is available, you must provide an after-duty-hours telephone number, such as the local emergency room handling the bite report or the home residence of the veterinary officer.

Rabies Specimens shipped AMC

Specimens shipped to LS on AMC flights should be coded: **"999 Signature Service" "Life or Death Impact"**

Packages that are so marked with these designations will not be bumped off at stopovers in route. "Signature Service" provides personalized handling of the pack- age with an accountable receipt at both ends of the shipment.

AMC flights to Ramstein Air Base are preferred as our laboratory is located 8 km from Ramstein AB.

To avoid possible rejection of the sample for shipment, refer to it as a "Class 6.2 Biological Substance, Category B" when arranging for AMC shipment. **Do NOT put "Rabies" on the box.**

If more expedited methods for shipping a rabies specimen are unavailable, use of the DoD Postal Service is authorized. Contact your installation's official mail manager to arrange for express shipment if this method is used. However, this method is discouraged due to long delays. If this method is the only one available, please contact the LS so that we are aware that this method of shipment is being used.

8. ENVIRONMENTAL AND INDUSTRIAL HYGIENE

8.1 COLLECTION OF LIQUID SAMPLES

Pre-preserved Containers:

Some sampling containers supplied by LS contain required preservatives. **Do not rinse** the containers prior to filling, and do not allow overflowing.

Preserving Samples During or After Collection:

Some samples require preservatives to be added ***during*** or ***after*** the sample collection. Ensure the correct sequence of sampling and preservation is followed.

Analytical Blanks:

Blanks are often required to check for cross contamination from sampling and/or transit to and from the sampling site.

All blanks should meet the same preservation and storage requirements as the corresponding samples.

Trip blanks:

Provided by LOD with sampling kits, they must never be opened and should always be kept with the samples unless otherwise noted. Ensures no contamination during transit.

Field blanks:

Collected at the time of sampling with certified target analyte-free water. Ensures no contamination during sample collection.

Equipment blanks:

Collected to ensure equipment has not caused contamination or interference with the sample.

Volatile Organic Compounds (VOC), TTHM and EDB/DBCP Samples.

Minimize the turbidity and the generation of air bubbles during sample collection.

Ensure there is no headspace once the vial is sealed, which may result in loss of target analytes.

Collect samples in triplicate.

Immediately following collection, samples should be cooled to the appropriate temperature when necessary. If samples are to be frozen, leave sufficient space for water expansion.

8.2 COLLECTION OF SOIL, SLUDGE, AND BULK SOLID SAMPLES

Instructions are provided by LS with soil sampling kits and should be followed carefully to ensure preservation and integrity requirements are maintained.

8.3 COLLECTION OF MULTI-PHASIC SAMPLES

Samples received with multiple phases (oil/water mixtures, water with sediment, etc.) will be assessed by the laboratory and analyzed as appropriate, with customer guidance when necessary. Samples that do not meet in house testing requirements will be sent to contract lab for analysis.

8.4 ANALYTES

Availability of in house testing may vary due to equipment functionality, sample workload, and laboratory staffing. LS will do our best to accommodate testing through a qualified contract lab. Please contact LOD (see section 2) for more information regarding contract analysis or off-scope analysis.

NOTE: This summary of the LS Chemical Scope of Accreditation is provided for convenience and information only. It is accurate as of the date of approval on this document. Please contact LS or utilize the link to A2LA in Section 1.1 for the current scope of accreditation.

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
Ions						
Ammonia as N	ASTM D6919	ASTMD6919	--------	--------	--------	28 days
Bromide	EPA 300.0	EPA 300.0	--------	--------	--------	28 days
Chloride	EPA 300.0	EPA 300.0	--------	--------	--------	28 days
Fluoride	EPA 300.0	EPA 300.0	--------	--------	--------	28 days
Nitrite / Nitrate as N, Unpreserved	EPA 300.0	EPA 300.0	--------	--------	--------	48 hours
Nitrite / Nitrate as N, Preserved	EPA 300.0	EPA 300.0	--------	--------	--------	28 Days
o-Phosphate as P	EPA 300.0	EPA 300.0	--------	--------	--------	48 hours
Sulfate	EPA 300.0	EPA 300.0	--------	--------	--------	28 days
Total Nitrate / Nitrite (as N), Unpreserved	EPA 300.0	EPA 300.0	--------	--------	--------	48 hours
Total Nitrate / Nitrite (as N), Preserved	EPA 300.0	EPA 300.0	--------	--------	--------	28 Days
Metals, Preserved						
Aluminum	EPA 200.7 EPA 200.8	EPA 200.7	--------	EPA 6010C	--------	6 months
Antimony	EPA 200.8	EPA 200.7	--------	--------	--------	6 months
Arsenic	EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010 C	--------	6 months
Barium	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	--------	--------	6 months
Beryllium	EPA 200.7	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
	EPA 200.8					
Boron	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Cadmium	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Calcium	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Chromium	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Cobalt	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Copper	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Iron	EPA 200.7	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Lead	EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Magnesium	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Manganese	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010 C	EPA 6010C	EPA 6010C	6 months
Mercury	EPA 200.8		EPA 7473	--------	--------	28 days
Molybdenum	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	-------	6 months
Nickel	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	EPA 6010C	6 months
Phosphorus, Total	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Potassium	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Selenium	EPA 200.8	EPA 200.7	EPA 6010C	--------	--------	6 months
Silicon	EPA 200.7	EPA 200.7	--------	--------	--------	6 months
Silver	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	--------	--------	6 months
Sodium	EPA 200.7	EPA 200.7	--------	--------	--------	6 months

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
Thallium	EPA 200.8	EPA 200.7	EPA 6010C	--------	--------	6 months
Tin	EPA 200.7 EPA 200.8	EPA 200.7	--------	EPA 6010C	--------	6 months
Uranium	EPA 200.8	EPA 200.7	EPA 6010 C	--------	--------	6 months
Vanadium	EPA 200.7 EPA 200.8	EPA 200.7	--------	--------	--------	6 months
Zinc	EPA 200.7 EPA 200.8	EPA 200.7	EPA 6010C	EPA 6010C	--------	6 months
Note: Holding time for unpreserved metals is 14 days.						
Wet Chemistry						
Alkalinity	SM 2320B (20th)	SM 2320B (20th)	--------	--------	--------	7 days
Chlorine, Total	SM 4500-Cl-G (21st)	--------	--------	--------	--------	48 hours
Color (Apparent)	SM 2120B (20th)	SM 2120B (20th)	--------	--------	--------	48 hours
Conductivity	SM 2510	SM 2510	--------	--------	--------	28 days
Cyanide, Free	OIA 1677	OIA 1677	--------	--------	--------	14 days
Hardness, Total	SM 2340B	SM 2340B	--------	--------	--------	6 months
Odor	SM 2150 B	SM 2150 B	--------	--------	--------	48 hours
Percent Dry Weight	--------	--------	EPA 3540 C	--------	--------	6 months
pH	EPA 150.1	EPA 150.1	In-house SOP 3-IC59	--------	--------	7 days
Saturation Index (Langelier) (Requires Ca, Alkalinity, TDS, Field pH & Temperature)	3-IC49	--------	--------	--------	--------	7 days
Total Dissolved Solids	SM 2540C	--------	--------	--------	--------	7 days
Total Suspended Solids	SM2540D	SM2540D	--------	--------	--------	7 days
Turbidity	EPA 180.1	EPA 180.1	--------	--------	--------	48 hours

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
Purgeable Organics (Volatiles)						
Benzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Bromobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Bromodichloromethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Bromochloromethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Bromoform	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Bromomethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
n-Butylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
sec-Butylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
tert-Butylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Carbon tetrachloride	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Monochlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Chlorodibromomethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Chloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Chloroform	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Chloromethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
2-Chlorotoluene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
4-Chlorotoluene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1 EPA 524.4	EPA 8260D EPA 8260D	EPA 8260D EPA 8260D	--------	--------	14 days
Dibromomethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2-Dibromoethane (EDB)	EPA 504.1 EPA 524.4	EPA 8260D EPA 8260D	EPA 8260D EPA 8260D	--------	--------	14 days
o-Dichlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
m-Dichlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
p-Dichlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Dichlorodifluoro methane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1-Dichloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
1,2-Dichloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1-Dichloroethene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
cis-1,2-Dichloroethene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
trans-1,2-dichloroethylene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2-Dichloropropane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,3-Dichloropropane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
2,2-Dichloropropane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1-Dichloropropene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
cis-1,3-Dichloropropene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
trans-1,3-Dichloropropene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Ethylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Trichlorofluoromethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Hexachlorobutadiene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Isopropylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
4-Isopropyltoluene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Dichloromethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Methyl tert-butyl ether	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Naphthalene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
n-Propylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Styrene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1,1,2-Tetrachloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1,2,2-Tetrachloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Tetrachloroethene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Toluene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2,3-Trichlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2,4-Trichlorobenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
1,1,1-Trichloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,1,2-Trichloroethane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Trichloroethylene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2,3-Trichloropropane	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,2,4-Trimethylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
1,3,5-Trimethylbenzene	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Trihalomethane, Total	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Vinyl chloride	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Xylenes, Total	EPA 524.4	EPA 8260D	EPA 8260D	--------	--------	14 days
Extractable Organics (Semivolatiles)						
Benz[a]anthracene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				
Benzo[b]fluoranthene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				
Benzo[k]fluoranthene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				
Benzo[g,h,i]perylene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				
Benzo[a]pyrene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				
Chrysene	EPA 550 UV/FLD	EPA 550 UV/FLD	--------	--------	--------	7 days
	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS				

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
4,4'-DDD	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS	--------	--------	--------	7 days
4,4'-DDE	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS	--------	--------	--------	7 days
4,4'-DDT	EPA 525.2 (Modified) GC/MS	EPA 525.2 (Modified) GC/MS	--------	--------	--------	7 days
Di (2-ethylhexyl) adipate	EPA 525.2 EPA 525.2 (Modified) GC/MS	EPA 525.2 EPA 525.2 (Modified) GC/MS	--------	--------	--------	14 days
Di (2-ethylhexyl) phthalate	EPA 525.2 EPA 525.2 (Modified) GC/MS	EPA 525.2 EPA 525.2 (Modified) GC/MS	--------	--------	--------	14 days
Indeno[1,2,3-cd]pyrene	EPA 550 UV/FLD EPA 525.2 (Modified) GC/MS	EPA 550 UV/FLD EPA 525.2 (Modified) GC/MS	--------	--------	--------	7 days
Pesticides / Herbicides / PCBs						
Aldicarb	EPA 531.2	EPA 531.2	--------	--------	-------	28 days
Aldicarb Sulfone	EPA 531.2	EPA 531.2	--------	--------	-------	28 days
Aldicarb Sulfoxide	EPA 531.2	EPA 531.2	--------	--------	-------	28 days
Aldrin	EPA 505	EPA 505	--------	--------	-------	14 days
Alachlor	EPA 505	EPA 505	--------	--------	--------	14 days
Aminomethylphosphonic acid (AMPA)	EPA 547	EPA 547	--------	--------	--------	14 days
Atrazine	EPA 505 (Modified)	EPA 505 (Modified)	--------	--------	--------	7 days
Baygon (Propoxur)	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Bentazon	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Carbaryl	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Carbofuran	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Chlordane	EPA 505	EPA 505	--------	--------	--------	14 days
2,4-D	EPA 515.4	EPA 515.4	--------	--------	--------	14 days

Parameter / Analyte	Potable Water	Non-Potable Water	Soils/Bulk Solids	MCE Filters	Dust Wipes	Holding Time
Dalapon	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Dichlorprop	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Dieldrin	EPA 505	EPA 505	--------	--------	--------	14 days
Dinoseb	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Endrin	EPA 505	EPA 505	--------	--------	--------	14 days
Glyphosate	EPA 547	EPA 547	--------	--------	--------	14 days
Heptachlor	EPA 505	EPA 505	--------	--------	--------	7 days
Heptachlor epoxide	EPA 505	EPA 505	--------	--------	--------	14 days
Hexachlorobenzene	EPA 505	EPA 505	--------	--------	--------	14 days
Hexachlorocyclopentadiene	EPA 505	EPA 505	--------	--------	--------	14 days
3-Hydroxycarbofuran	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Lindane (gamma- BHC)	EPA 505	EPA 505	---------	--------	--------	14 days
Methiocarb	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Methomyl	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
Methoxychlor	EPA 505	EPA 505	--------	--------	--------	14 days
Oxamyl (Vydate)	EPA 531.2	EPA 531.2	--------	--------	--------	28 days
PCB (as Aroclors)	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1016	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1221	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1232	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1242	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1248	EPA 505	EPA 505	--------	--------	--------	14 days
PCB-1254	EPA 505	EPA 505	--------	--------	--------	14 days
Pentachlorophenol	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Picloram	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
Simazine	EPA 505 (Modified)	EPA 505 (Modified)	--------	--------	--------	7 days
Toxaphene	EPA 505	EPA 505	--------	--------	--------	14 days
2,4,5-T	EPA 515.4	EPA 515.4	--------	--------	--------	14 days
2,4,5-TP (Silvex)	EPA 515.4	EPA 515.4	------	--------	--------	14 days

Commonly Requested Potable Water Profiles				
Profile	**Analytes**			
Carbamates	Aldicarb	Aldicarb Sulfone	Aldicarb Sulfoxide	Baygon (Propoxur)
	Carbaryl	Carbofuran	3-Hydroxycarbofuran	Methiocarb
	Methomyl	Oxamyl (Vydate)		
Pesticides/PCBs	Aldrin	Atrazine	Alachlor	Chlordane
	Dieldrin	Endrin	Heptachlor	Heptachlor epoxide
	Hexachlorobenzene	Hexachlorocyclopentadiene	Lindane (gamma-BHC)	Methoxychlor
	PCB (as Aroclors)	Simazine	Toxaphene	
Glyphosate	Aminomethylphosphonic acid (AMPA)	Glyphosate		
Herbicides	Bentazon	Dalapon	Dichlorprop	Dinoseb
	PCP	Picloram	2,4,5-T	2,4,5-TP (Silvex)
	2,4-D			
EDBs	1,2-Dibromoethane (EDB)	1,2-Dibromo-3-chloropropane (DBCP)		
VOCs, Regulated	Benzene	Carbon tetrachloride	Dichloromethane	Ethylbenzene
	o-Dichlorobenzene	p-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloroethane
	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	1,2-Dichloropropane	1,2,4-Trichlorobenzene
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Monochlorobenzene	Styrene
	Tetrachloroethylene	Toluene	Trichloroethylene	Vinyl chloride
	Xylenes, Total			
TTHMs	Bromoform	Bromodichloromethane	Chlorodibromomethane	Chloroform
PAH	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene
	Benzo[g,h,i]perylene	Chrysene	Indeno[1,2,3-cd]pyrene	Naphthalene
SVOCs	Di(2-ethylhexyl) adipate	Di(2-ethylhexyl) phthalate		
Metals A	EPA 200.7			
	Aluminum (Al)	Barium (Ba)	Beryllium (Be)	Boron (B)
	Cadmium (Cd)	Calcium (Ca)	Chromium (Total)	Cobalt (Co)
	Copper (Cu)	Iron (Fe)	Magnesium (Mg)	Manganese (Mn)
	Molybdenum (Mo)	Nickel (Ni)	Phosphorus (P)	Potassium (K)
	Silicon (Si)	Silver (Ag)	Sodium (Na)	Tin (Sn)
	Vanadium (V)	Zinc (Zn)		
	EPA 200.8			
	Antimony (Sb)	Arsenic (As)	Lead (Pb)	Mercury (Hg)
	Selenium (Se)	Thallium (Tl)	Uranium (U)	

Commonly Requested Potable Water Profiles				
Profile	**Analytes**			
Metals M	EPA 200.8			
	Aluminum (Al)	Antimony (Sb)	Arsenic (As)	Barium (Ba)
	Beryllium (Be)	Cadmium (Cd)	Chromium (Total)	Cobalt (Co)
	Cadmium (Cd)	Chromium (Total)	Cobalt (Co)	Copper (Cu)
	Lead (Pb)	Manganese (Mn)	Molybdenum (Mo)	Nickel (Ni)
	Selenium (Se)	Silver (Ag)	Thallium (Tl)	Tin (Sn)
	Uranium (U)	Vanadium (V)	Zinc (Zn)	
	EPA 200.7			
	Boron (B)	Calcium (Ca)	Iron (Fe)	Sodium (Na)
	Phosphorus (P)	Potassium (K)	Silicon (Si)	Magnesium (Mg)

9. AMC SHIPPING

9.1 AIR MOBILITY COMMAND (AMC)

Samples can be sent to U.S. Army, Public Health Command Europe LS via Air Mobility Command (AMC) flights. However, this should be your last option as many times these flights are delayed, diverted or canceled. Deployed locations electing to use AMC flights to deliver samples need to check with AMC to ensure this option is available.

LS prefers to send sample collection kits via commercial carriers because they can easily be tracked using the internet; however, sampling collection kits can also be sent to customers via AMC flights. To ship sampling kits via AMC, LS will need the customer's DODAAC, Unit address with APO, DSN phone number and the POE (three letter destination code).

9.2 TRANSPORTATION CONTROL AND MOVEMENT DOCUMENT (TCMD)

The DD Form 1384 (TCMD) is used to request a shipment via AMC. Contact your local Air Mobility Command Flight for procedures and applicable codes. Use the following table to complete the TCMD.

Transportation Control Document - DD Form 1384		
Block	Block ID	Enter This Information
1	Document ID	TX1
2	TRLR Cont	0000
3	Consignor	Your DODAAC, Your Unit, Your APO
4	Comm: Spec. Handling	MZ
5	Air Dim	A
6	POE	Enter three letter destination code from Table B.2
7	POD	RMS (Ramstein)
8	Mode	F
9	Pack	BX
10	Transportation Control Number (TCN)	DODDAC, Julian date, shipment number e.g., WK4UPX82340001XXX
11	Consignee	WK4UPX, USAPHC, PHCR-Europe, CMR 402, APO AE 09180
12	Priority	1
13	RDD	If shipment requires re-icing – 999 If no special handling is required – leave blank
15	Date Shipped	Julian date of shipment
17	Tr. Account	A2DR
18	Carrier	AMC
21	Remarks	Contents of parcel
22	Pieces	Total number of pieces in shipment
23	Weight	Combined weight in shipment
24	Cube	Combined cubic measurement of shipment
31	Remarks	Public Health Command Europe
		Laboratory Sciences (LS), ATTN: Laboratory Operations Division

Transportation Control Document - DD Form 1384		
Block	Block ID	Enter This Information
		Unit 33105 APO, AE 09180
		(DSN 314-590-9710)

Table 8.2 — Point of Embarkment / Destination Codes	
POE/ POD Code	Location
ADA	Incirlik and Izmir, Turkey
AVB	Aviano, Italy
CHQ	Souda Bay, Greece
NAP	Naples, Italy
RMS	Ramstein, Germany
SIZ	Sigonella, Italy (also used for Vicenza, Italy)

9.3 MILITARY SHIPMENT LABEL

Each piece of the shipment must have a Military Shipment Label (**DD Form 1387**), contact your local TMO for help) attached to the side of the parcel. Use the following table to complete the shipment label.

Table 8.3 — Military Shipment Label - DD Form 1387		
Block	Block ID	Enter This Information
1	TCN	The TCN used on the TCMD
2	Postage Data	Leave Blank
3	From	Your DODAAC, Your Unit, Your APO
4	Type Service	Leave Blank
5	Ship To (POE)	Three letter code from Table B.2
6	Transportation Priority	1
7	POD	RMS
8	Project	Leave Blank
9	Ultimate Consignee	Public Health Command Europe
		Laboratory Sciences (LS), ATTN: Laboratory Operations Division
		Unit 33105 APO, AE 09180
		(DSN 314-590-9710)
10	Weight	Weight of this piece
11	RDD	If shipment requires re-icing – 999 If no special handling is required – leave blank
12	Cube	Cubic measurement of this piece
13	Charges	Leave Blank
14	Date Shipped	Julian date of the shipment
15	FMS Case Number	Leave Blank
16	Piece Number	Number of this piece
17	Total Pieces	Total number of pieces in this shipment

9.4 DECLARING DANGEROUS GOODS

Class 8 Dangerous Goods in Excepted Quantities must be declared. All liquid preservatives used are Class 8 Dangerous Goods. The requirements for Excepted Quantities are defined as: No more than 30 mL of preservative for primary container (sample container) and no more than 1 L total preservative for secondary container (ice chest). LS sampling kits conform to these requirements.

The following statement must be added to the TCMD and the Shipment Label:

Hazardous materials in excepted and limited quantities in accordance with Air Force Interservice Manual 24-204, TM 38-250, NAVSUP PUB 505, MCO P4030.19I, DLAI 4145.3, DCMAD1, CH3.4 (HM24) 12 October 2004