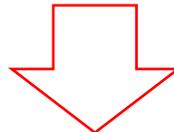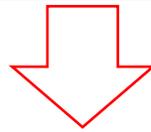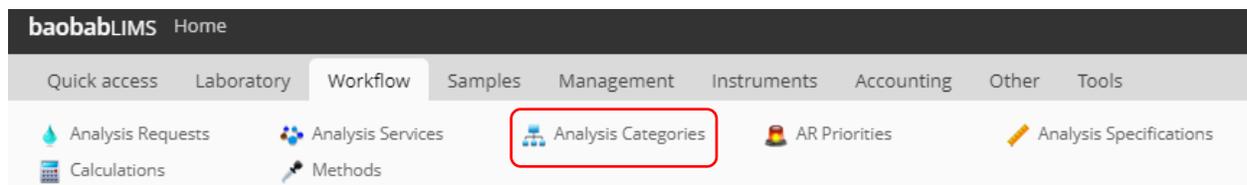# Analysis and analysis requests

If the biobank or laboratory offers an analysis service to a client, analysis can be performed on biospecimens. The first step is to setup the analysis service with respect to category and results reporting.

1. Navigate to Workflow > Analysis Category
2. Analysis categories are the high-level categories in which a service belongs. For example, Nucleic acid analysis may consist of DNA extraction and quantification as well as RNA extraction and quantification. The results of these two services may be represented differently but both fall under the umbrella of Nucleic acid analysis.

3. Navigate to 'Workflow' > 'Analysis Services' and enter the descriptors for the service Eg: HIV diagnostic, DNA quantification, Mass Spectrophotometry etc
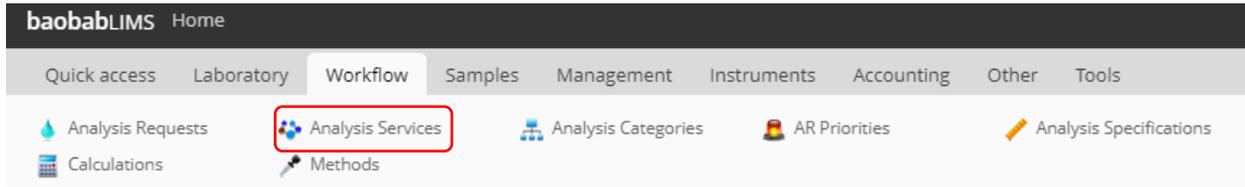
baobabLIMS Home

Quick access | Laboratory | Workflow | Samples | Management | Instruments | Accounting | Other | Tools

Analysis Requests   Analysis Services   Analysis Categories   AR Priorities   Analysis Specifications
Calculations   Methods

Analysis Services   [Add]

Add Analysis Service

[Description] [Analysis] [Method] [Uncertainties] [Result options] [Container and preservation]

■ **Title**

⊗ Title is required, please correct.

Short title
If text is entered here, it is used instead of the title when the service is listed in column headings. HTML formatting is allowed.

Sort Key
Float value from 0.0 - 1000.0 indicating the sort order. Duplicate values are ordered alphabetically.

Commercial ID
The service's commercial ID for accounting purposes

Protocol ID
The service's analytical protocol ID

Description
Used in item listings and search results.

Identifiers for this object
Select identifiers by which this object can be referenced.

Identifier Type *   **Identifier ***   **Description**
✗

[More]

☐ **Scientific name**
If enabled, the name of the analysis will be written in italics.

Unit
The measurement units for this analysis service' results, e.g. mg/l, ppm, dB, mV, etc.

■ **Analysis Keyword**
The unique keyword used to identify the analysis service in import files of bulk AR requests and results imports from instruments. It is also used t   →   Short keyword for the analysis

■ Point of Capture The results of field analyses are captured during sampling at the sample point, e.g. the temperature of a water sample in the river where it is sampled. Lab analyses are done in the laboratory
○ Field
◉ Lab

■ **Analysis Category**
The category the analysis service belongs to   →   Drop down list from the previous step

4. Navigate to the "Analysis Tab". This tab allows for the user to set up a variety of items such as upper and lower detection limits, turn-around time and very importantly, the verification of results. **If a user is logged in as the administrator or the lab manager, they MUST change the default under "self-verification of results" to YES, during set-up of the service. This is very important as results can not be published into a report unless the results are verified by a senior in the laboratory. Admin has the highest system privileges in Baobab LIMS, followed by the lab manager. If this remains defaulted to NO when these members are logged in, no higher rights exist to be able to verify results if entered by the administrator or lab manager. This default can be left as NO if the workflow is that a lab manager or administrator <u>do not</u> enter the initial results.**

5. Navigate to the 'result options' tab

For some analyses, the result will not be entered as a value within a range. For example, a DNA quantification result would be entered as a numerical value with the unit ug/ul. However, an HIV test results will be represented as positive, negative or undetermined (in the case that the test line fails). In cases where results are static for a test, these values can be setup here.

Add Analysis Service

Description | Analysis | Method | Uncertainties | **Result options** | Container and preservation

Result Options
Please list all options for the analysis result if you want to restrict it to specific options only, e.g. 'Positive', 'Negative' and 'Indeterminable'. The option's result value must be a number

Result Value *	Display Value *	
0	Positive	✕
1	Negative	✕
2	undetermined	✕

[More]

> Add the display values with a numerical factor

> More display values can be added to the list by pressing the 'MORE' button

Change note
Enter a comment that describes the changes you made.

[Save] [Cancel]

6. Additional parameters pertaining to the analysis service can be entered in the other tabs ('Method', 'uncertainties') as specified for each service and laboratory specification.
7. Navigate to the 'Workflow' > 'Analysis specification' for the final setup. An analysis specification allows for a result range and permitted error to be captured for an analysis service and is linked to a sample type to a sample type.

Add Analysis Specification

Sample Type

[Blood Plasma ▾]

■ **Title**

[analysisspec.2019-05-24.7598449053]

> Baobab LIMS automatically generates this title. It is preferable to remove this title and add your own descriptive title

Description
Used in item listings and search results.

■ **Specifications**
Click on Analysis Categories (against shaded background to see Analysis Services in each category. Enter minimum and maximum values to indicate a valid results range. Any result outside this range will raise an alert. The % Error field allows for an % uncertainty to be considered when evaluating results against minimum and maximum values. A result out of range but still in range if the % error is taken into consideration, will raise a less severe alert. If the result is below '< Min' the result will be shown as '< [min]'. The same applies for results above '> Max'

Service	Min	Max	Permitted Error %	< Min	> Max
⌄ Genome					
DNA concentration (dnaex)	[ ] mg/l	[ ] mg/l	[ ] %	[ ]	[ ]
	Range remarks:				
HIV test (HIV)	[ ]	[ ]	[ ] %	[ ]	[ ]
	Range remarks:				
> Proteome					

> If results are to be reported as a numerical value in a range, add the minimum and maximum range as well as permitted error
>
> If the results are reported as the display value set in step 5 above, leave these fields blank.
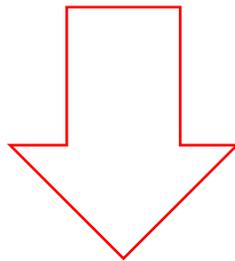
Analysis requests on samples

Now that all information is setup for an analysis, analysis requests can be performed and results captured and reported.

1. Navigate to 'Quick access' > 'Projects' and select the hyperlink for the project of which the client has requested an analysis.
2. Navigate to the "Analysis Request" tab and select the number of analysis request forms you wish to generate [default is 4] and select 'add'

3. This process will generate 'AR' forms

Request new analyses Green Goblin Project

Client * The assigned client of this request	Bellville Medical Centre 🔍
Contact * The primary contact of this analysis request, who will receive notifications and publications via email	[ ] 🔍
CC Contacts The contacts used in CC for email notifications	[ ] 🔍
CC Emails Additional email addresses to be notified	[ ]
Sample Select a sample to create a secondary AR	[ ] 🔍
Volume * The sample volume needed for the analyses.	0.00
Analysis Specification Choose default AR specification values	[ ] 🔍
Environmental conditions The environmental condition during sampling	[ ]
Report as Dry Matter These results can be reported as dry matter	☐
Priority The urgency of this request	[ ] 🔍
Subtotal	R	0.00
VAT	R	0.00
Total	R	0.00

Client contact is compulsory -Drop down list generated

Sample is compulsory -Drop down list generated

Volume of sample used is compulsory – this value will be subtracted from the original recorded volume of the sample and will track sample volume with each analysis performed

Save

Lab Analyses

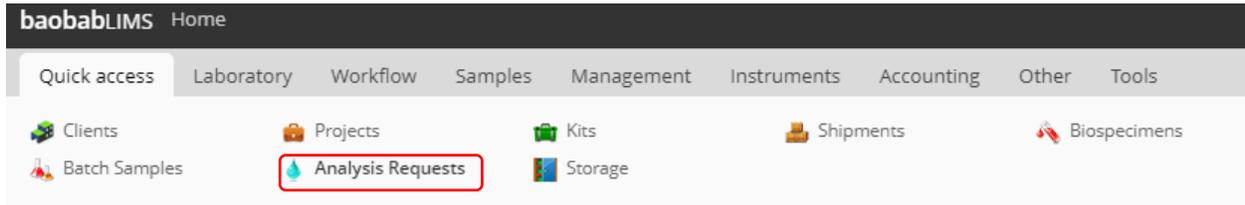| Service		AR 1		
☐ DNA concentration		☐ >min	<max	err%
☐ HIV test		☐ >min	<max	err%

Select the service for this sample by checking the box. If multiple services are selected, then all results will occur on a single report for the sample undergoing analysis.

4. Navigate to 'Quick access' > 'Analysis Requests' to see the list of requests. The notation of a request is the sample barcode followed by R and then a number series (01 for the 1st request, 02 for the second request on the same sample etc).

5. Select the hyperlink to be directed to the form for results capture and the details of the analyst who performed analysis. Remarks can also be included here. Once details have been captured, select the 'Submit' button

6. A supervisor can now log in and view the results and verify by selecting 'verify'
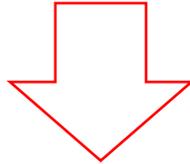

💧 11122212221221-R01

☐ Attachments

🔀 Lab Analyses

☑	Analysis	Result	Specification	Analyst	+-	✔	Captured	Due Date	Status
∨	Genome								
☑	DNA concentration	10.00 *mg/l*	>0,<100,1.0%	Lab Analyst			2019-05-24 08:53	None ⏱	To be verified 🔴
☑	2 Items selected Retract Verify	Positive	>0,<3,0%	»Lab » Manager			2019-05-24 08:53	None ⏱	To be verified 🟠

7. Once a result is verified, the report can be published. Published results will be available in the system for download and/ or email to a client