Hydrology Operations Manual

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

1. OVERVIEW:

From May 2025 Horizons Regional Council (Horizons) started to use ArcGIS Survey 123 for its digital field capture, sample registration and laboratory sample submission for its monthly; State of Environment, Point Discharge, Coastal and Estuary Discrete Water Quality Sampling.

The Rest of this document shall now detail how to complete the form.

2. SELECTING THE CORRECT SURVEY:

Before you leave the office ensure you are logged into your ArcGIS Account. Check that you have the correct Discrete Surface Water 20250224 Survey downloaded, and that there are no outstanding updates:

Records: 326

Discrete Surface Water 20250224
by zhilltopuser_horizonsrc

3. COMPLETING THE SURVEY:

When you arrive at your sample site and you have deemed it safe to proceed, deploy your Aquatroll and prepare your field equipment. Start a new Survey. The Survey's layout order matches that of undertaking a sample.

3.1 SAMPLE SITE LOG-IN:

SAMPLE DATE: Select the date from the date field – pressing this field should automatically set the date as the date of your device. Otherwise you can select the date from the calendar view. This should match the date in Sampler.

RUN NAME, SAMPLE NUMBER & SAMPLE NAME: These are automatically completed by scanning the QR code. Simply scan the QR code for the site (either via label or print out). Check that you have scanned the correct QR site and you are where you are meant to be before proceeding.

General Information

DBentley_Hewitt_HorizonsRC
Person logged in to the device

If the above is not you, please log out of survey123 and log back in as yourself

Date

Tuesday, 6 May 2025

Scan the QR code
Tap here to scan the QR code for this site/sample

Run Name:
Test Run for SOP

Sample Number: *
20252431

Site Name:
z Sampler Dummy Site

| | **Hydrology Operations Manual** | |

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys
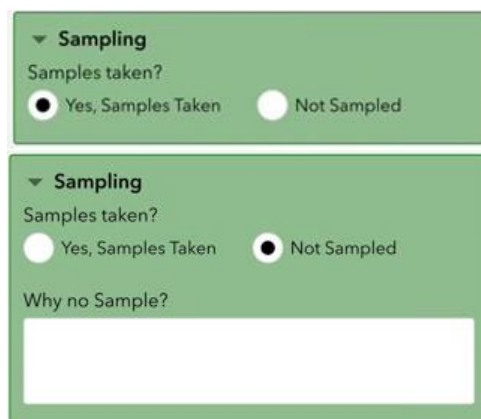
MANUAL QR ENTRY: If you are unable to scan the QR code (i.e. you have lost the QR code or have technical issues with your device) you can manually enter the site data. Note you cannot submit the survey without entering a sample number.

- Press the arrow icon to open the *Manual QR Entry* part of the survey
- Select ← *Click Here* to expand the survey
- Enter the Sample Number - make sure it is correct
- Enter the Site Name – ensure your spelling is correct

3.2 CAN A SAMPLE BE TAKEN:

- The survey is defaulted to *'Yes, Samples Taken'*.

- If you cannot take a sample (i.e. discharge is not operating, the channel is dry, it's too unsafe or you have no access etc.) select *'No'*. This will prompt you for a reason. The Survey then skips the Sample Bottles and Sample Information sections of the Survey.

Version No:	01		Section No:	15.2
Issue Date:	06/05/2025	**Horizons Regional Council**	Appendix:	10
Portfolio:	Discrete WQ Data		Page:	3 of 9

horizons
regional council

Hydrology Operations Manual

horizons
regional council

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

3.3 SAMPLE BOTTLES:

NUMBER OF PRE-LABELLED EUROFINS BOTTLES: Enter the number of Sample Bottles being sent to Eurofins (ELS). This should match the number of labels printed via Sampler and the number confirmed in the Ops Manuals Bottle Guide.

EXTRA ELS SAMPLES: The default setting is *'No'*. When selecting *'Yes'* enter additional details. Upon return to the office consult with the Discrete WQ Portfolio Holder or proxy.

BOTTLE SCAN: This is currently not required and can be ignored.

NOTE: The Survey is only concerned with ELS Sample Bottles.

3.4 SAMPLE INFORMATION: It is expected that all fields are completed in this section of the Survey with every sample

SOURCE TYPE: Select the appropriate type for your sample. Selecting *'other'* opens a field where you can manually enter the source type.
WEATHER: Select the arrow button to scroll and select the appropriate option. Selecting *'other'* will open a separate text field for you to complete.
% CLOUD COVER: Select and type in the value. The Survey will warn you if you enter more than 100%.
WIND SPEED: Select the most appropriate speed.
WIND DIRECTION: Select the applicable wind direction at the sample site. Use *'N/A'* for calm conditions and *'Don't Know'* if you can't confirm the direction. Note that various apps can be used to define the wind direction however the wind direction at the sample site may differ due to local conditions.

Version No:	01		Section No:	15.2
Issue Date:	06/05/2025	**Horizons Regional Council**	Appendix:	10
Portfolio:	Discrete WQ Data		Page:	4 of 9

Hydrology Operations Manual

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

SAMPLED AT EXPECTED LOCATION: This is defined as the location confirmed in the Run Guide, the Survey is defaulted to *'yes'*. If you are not at the expected location select *'No'*, this will open a text box - enter the actual location and reason(s) why. Reasons can include alternative access used due to flow conditions, stock movement, tree fall etc. NEMS requires a consistent sample location.

SAMPLED POINT: Select the appropriate sample point. As per NEMS a RUN is preferred for river sampling with POOLS being avoided if possible. Selecting *'other'* will open a text box to enter the sample point used.

SAMPLE POLE: Select *'Yes'* if a sample pole was used, otherwise select *'No'*.

REPRESENTATION: Select what's most applicable. Selecting either; *Not Fully Representative* or, *Compromised* will open a text box – enter additional details here. NEMS requires samples to be collected from a fully mixed representative part of the channel. Examples such a sampling in a back eddy, a braided channel or downstream of a disturbance, discharge or contaminant has a negative impact on the samples representation and should be noted. In addition ensure the sample photos include any of these reasons.

GENERAL CLARITY: Select the most applicable option, further definitions are provided below:

- Tannins: Yellow to brown colour caused by natural compounds in water, also applicable for humic conditions, i.e. not clear but not cloudy due to suspended particles.
- Turbid (cloudy): Cloudy or murky due to suspended particles such as sediment.
- Discoloured: Consistently discoloured/opaque due to suspended particles such as sediment

ESG: If there is an ESG at the sample point record the value in mm.

ESG ERROR: Include the +/- error in the ESG reading in mm.

FLOW LEVEL: Select the most applicable value for the flow level of the sample site at the time of

sampling. The scale is relative to normal for the site. If you are unsure of the normal site conditions or aren't confident in your answer select *'N/A'*.
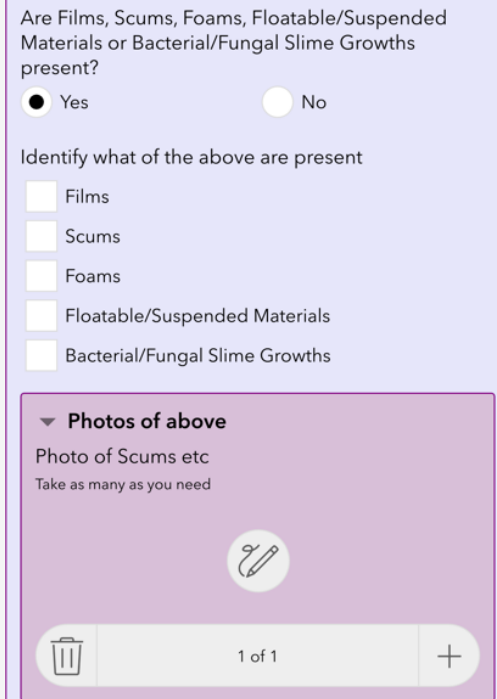
horizons regional council

Hydrology Operations Manual

horizons regional council

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

---

ARE FILMS, SCUMS, FOAMS, FLOATABLE/SUSPENDED MATERIALS OR BACTERIAL/FUNGAL SLIME GROWTHS PRESENT: During sampling staff may come across situations of interest for compliance purposes. A standard Horizons consent condition is to record the presence films, scums, floatable/suspended materials or bacterial/fungal slime growths, as such this has been incorporated into the Survey.

- By selecting '*Yes*' a list of options will expand,
- Select the appropriate option(s) and take at least one photo by selecting the pencil icon.
- Additional photos can be selected by selecting the '+' button.

3.5 OBSERVATIONS: When selecting either '*surface'* or *'other'* as the Source Type in the Survey the Observations section will appear. This is where the Visual Clarity and Bed Substrate observations are recorded.

3.5.1 VISUAL CLARITY:

MEASURED CLARITY METHOD: Select the method to be used. NOTE: Black Disc is the primary method that should be used. Refer to the relevant SOP's in the Ops Manual.

Version No:	01	**Horizons Regional Council**	Section No:	15.2
Issue Date:	06/05/2025		Appendix:	10
Portfolio:	Discrete WQ Data		Page:	6 of 9

horizons regional council

Hydrology Operations Manual

horizons regional council

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

BLACK DISC: Select this method when using Black Disc

BLACK DISC NUMBER: This is displayed on the yellow tag attached to the disc's frame and the tag attached to the viewer.

BLACK DISC SIZE: Select the size disc used, the measurement range for each is displayed.
LIGHT CONDITIONS: Select the appropriate option. Avoid dappled light.

BLACK DISC MEASUREMENTS: Record each measurement in metres. The average is automatically calculated. If there is a difference >10% you will be reminded to check your results, if needed repeat the measurements.

CLARITY TUBE: Select this method when using Black Disc

REASON FOR NOT USING CLARITY TUBE: As Black Disc is the primary method a reason why Clarity Tube needs to be confirmed prior to taking measurements. The most likely reasons are listed, for any other reason select *'other'* and enter the reason.

CLARITY TUBE NUMBER: This is displayed on the yellow tag attached to the case.

LIGHT CONDITIONS: Select the appropriate option. Avoid dappled light.

CLARITY TUBE MEASUREMENTS: Record each measurement in metres. The average is automatically calculated. If there is a difference >10% you will be reminded to check your results, if needed repeat the measurements.

6

horizons regional council

Hydrology Operations Manual

horizons regional council

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

---

NO MEASUREMENT: Select this when it is not possible to complete any visual clarity observation. This could be due to missing equipment or hygiene concerns (i.e. downstream discharge points).
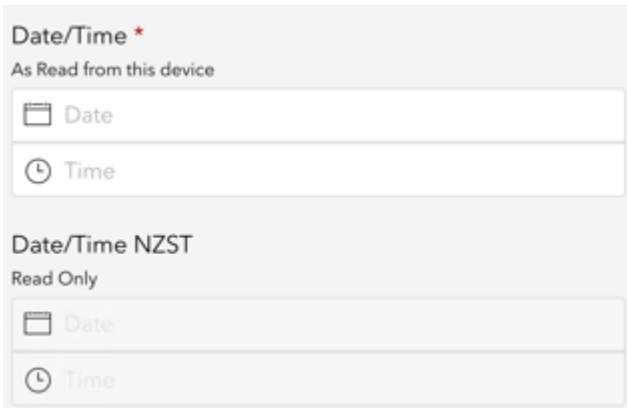

3.5.2 BED SUBSTRATE:

- Observations should be recorded every quarter or after significant flow events. ==The observations should be taken from a representative section from where the sample is taken.==
- The total is auto-populated and should equal 100%.

3.6 SAMPLE DATE/TIME:

In accordance with NEMS the sample date/time is the date/time when the Aquatroll readings are recorded. ==This data is collected after collecting the water samples and recording other observations to allow for the Aquatroll readings to stabilise.==

- Simply select either the time or date field and the time and date of your device (NZDT) will be recorded.
- The read only time will automatically populate. This is to NZST.
- You can adjust the date/time if required.

horizons
regional council

Hydrology Operations Manual

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys
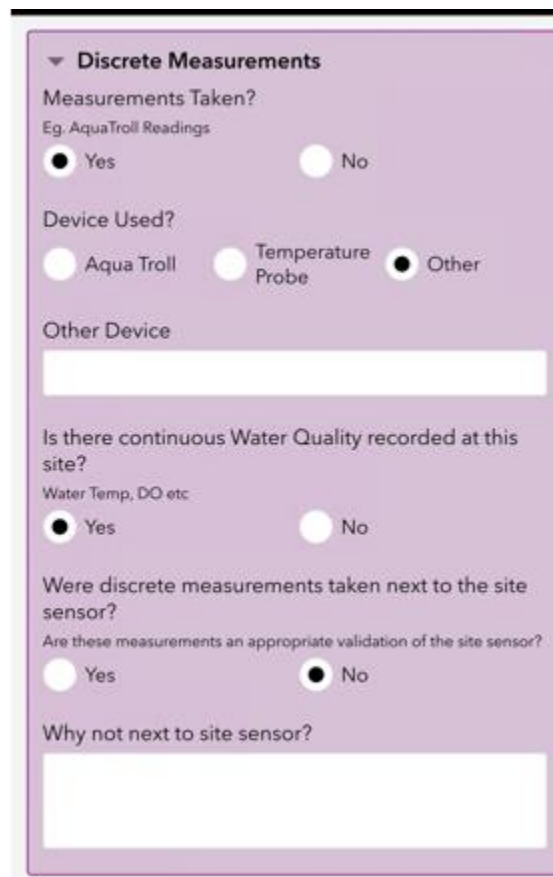
3.7 DISCRETE MEASUREMENTS:

This section of the Survey confirms the details of the instrument used for the following recordings. The default setting is for Aquatroll:

MEASUREMENTS TAKEN: Select *'No'* if no recordings taken, otherwise leave the default setting as *'yes'*. Add comments at the end of the Survey explaining why no measurements were taken.

DEVICE USED: Select the type of device you are using and then enter the device number into the field. For a device other than Aquatroll or Temperature Probe select *'other'* and enter the device name into the field that pops up.

IS THERE CONTINUOUS WATER QUALITY RECORDED AT THIS SITE: If you are sampling from a site that also has continuous water quality measured such as a Hydro site select *'Yes'*, otherwise leave the default *'No'* selected. When selecting *'Yes'* you will be asked if the sample measurements were taken next to the site sensor. This is to confirm whether the data can also be used as check data for the Hydro site sensor(s). If you select '*No'* a text box will pop up – confirm why you weren't able to sample at the sensor (this is typically the sample location)

3.8 MEASUREMENTS:

In this section of the Survey enter the data from you instrument (i.e. Aquatroll). For each parameter the Survey has low and high error bands that will flag suspicious values. Double check your readings after entering them. Add a comment at the end of the Survey regarding any that have warnings but are valid.

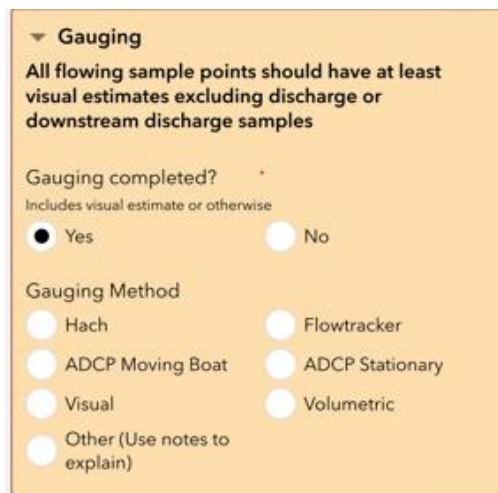| Version No: 01 Issue Date: 06/05/2025 Portfolio: Discrete WQ Data	**Horizons Regional Council**	Section No: 15.2 Appendix: 10 Page: 9 of 9

Hydrology Operations Manual

Survey 123 Guide: State of Environment, Point Discharge, Coastal and Estuary Surveys

3.9 FLOW GAUGINGS: If you have taken a sample and selected the source type as *'surface'*, the Gauging section of the Survey will appear. You will be asked if a gauging has been completed.

GAUGING COMPLETED: Confirm whether you have completed a gauging with the sample.

GAUGING METHOD: If you selected *'Yes'* the Survey will expand and display method options. Select the applicable method.

Selecting either '*Visual'* or '*Volumetric'* will further expand the Survey allowing you to add your measurements if you wish. ==You will still need to enter a gauging in Hilltop Manager==.

3.10 GENERAL PHOTOS: One of the most visible advantages of using Digital Surveys over Paper - based Forms is the ability to include site photos within the Survey. ==It is expected that photos will be taken for all Surveys==, this should include the sample site (i.e. including the streambed) and both upstream and downstream views. Additional photos of anything of interest are highly encouraged.

To take a photo select the pencil icon, the survey will access your devices camera for you to take a photo. Additional photos can be taken by pressing the '+', to delete photos select the bin icon.

3.11 GENERAL COMMENTS: ==Comments are encouraged for all surveys==. Any additional commentary and context regarding the sample can be incredibly helpful when the data is under review.

Previous comments made in the Survey from the various 'other' text fields will automatically populate in the General Comments text box. This is because only one comments field is later imported into Hilltop. When there are no comments the text box will display ' ,,,,,,,' – this is perfectly normal, there is no need to remove or edit these.

4. FINISHING THE SURVEY: Check your Survey for any errors and when happy select the tick icon to submit the Survey. You will need cellular coverage or Wi-Fi to submit Surveys.

==Once you send the Survey further edits can only be made by ED's Data team back at Regional House. Any edits need to be communicated the same day as sampling==.