Annual farm dairy discharge monitoring activities and charges (all charges exclude GST) 2018/2019

Based on the 2018/2028 Long Term Plan charging provisions the annual farm dairy discharge monitoring of discharges to water and land comprises the following activities:

a) Discharges to Land

These include spray irrigation, honey wagons, and sumps/holding ponds

- Monitoring preparation - identifying systems to be monitored that day
- Travel to farm
- At farm gate check the compliance history on laptop
- Enter the property and take every practicable measure to locate the consent holder (farm owner) or occupier (sharemilker/worker) to notify the inspection. Show warrant. Establish cow numbers being milked and compare with consent limit.
- Check dairy shed to ensure facility discharges to a sump. This includes adjoining races that may be washed and the sand trap. Also check the stormwater diversion device.
- Follow the pipe from the sump/storage facility to the irrigation device and check for leaks.
- Inspect the state of the irrigation device, to ensure appropriately maintained so as to meet consent conditions.
- Inspect the pasture surface of current and past irrigation areas. Check for evidence of overloading, ponding, and runoff to adjoining steams. Photograph the device and pasture surface, including runoff only if non compliance is occurring.
- Check the irrigation area and ensure there is at least 3 ha for each 100 cows being milked, ensure the proximity of the irrigation device to stream, houses, property boundary, and wells/bores/springs.
- Walk back to vehicle and fill in the inspection sheet in laptop. Printout inspection notice and supply to owner/occupier or leave in a prominent position (farm dairy, house, letterbox or post notice out).
- Leave farm and travel to the next inspection.
- Download pictures from monitoring inspection and enter into Council data base
- Auditing of compliance monitoring may be undertaken by inspector and programme manager.
- Management and reporting of the farm dairy monitoring programme to Council and community.

b) Discharges to Water (no sampling)

These include oxidation ponds and tertiary treatment systems

- Monitoring preparation- identifying systems to be monitored that day
- Travel to farm
- At farm gate check the compliance history on laptop
- Enter the property and take every practicable measure to locate the consent holder (farm owner) or occupier (sharemilker/worker) to notify the inspection. Show warrant. Establish cow numbers being milked and compare with consent limit.

- Check dairy shed to ensure facility discharges to a sump. This includes adjoining races that may be washed and the sand trap. Also check the stormwater diversion device.
- Follow the pipe from the sump to the oxidation pond and check for leaks.
- Inspect the pond by walking the perimeter and check for pond wall integrity, odour, colour, solids levels and fencing. Check there is a pipe and baffle between the first and second ponds, and that there is at least 500 mm freeboard to ensure there are no pond overflows. Check for unauthorised material in the ponds (e.g. dead stock or litter). Photograph the ponds only if non compliance is occurring.
- Inspect the discharge outlet pipe, discharge and mixing zone below the discharge point. Visually check the dilution rate. Photograph the mixing zone if discolouration or sewage fungus is present – sample if necessary.
- Walk back to vehicle and fill in the inspection sheet in laptop. Printout inspection notice and supply to owner/occupier or leave in a prominent position (farm dairy, house, letterbox or post notice out).
- Leave farm and travel to the next inspection.
- Download pictures from monitoring inspection and enter into council data base
- Auditing of compliance monitoring may be undertaken by inspector and programme manager.
- Management and reporting of the farm dairy monitoring programme to Council and community.

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Annual Inspection Charge

The above activities ((a)-(b)) can vary from property to property and it is not appropriate or efficient to set up an individual job number per consent and record and invoice the cost of the monitoring. Hence, the above inspections, auditing and management of the farm dairy discharge monitoring programme is based on the following actual and reasonable charge:

2.0 hour of inspector preparation and in field @ $87/hour	$174.00
0.8 hour of professional staff for reporting, auditing @ $108/hour	$86.00
0.3 hours of programme manager @ $157/ hour	$47.00
	$307.00

c) Discharges to Land with the contingency to Water (with no sampling)

There are about 7% of consent holders who are consented to discharge to land and water. This means that compliance monitoring must address discharges to water and land as set out above. However, there are some of the monitoring activities that are duplicated and the cost is less than the combined cost of the discharge to water (with sampling) and land monitoring programmes. However, each consent will be assessed individually to determine the appropriate monitoring.

The charge in the Annual Plan is based on the discharge to water ($307) and 0.6 hour of inspector @ $87/hour, making a total cost of **$357**

d) Discharges to Water (sampling)

A dedicated officer is to undertake the sampling early on the same day the inspection is undertaken. Experience elsewhere in NZ has shown this is the most efficient way to sample and get the samples back to the laboratory. The addition of sampling adds significantly to the cost of monitoring and involves:

- Preparation for field work and travel time.
- Taking the sampling kit on the inspection.
- Sampling the discharge, and the receiving water above and below the discharge at the edge of the mixing zone. Measure the temperature at the edge of the mixing zone (for ammonia toxicity calculation).
- Fill in the sampling sheet noting environmental conditions and sampling details.
- Appropriately store samples in the vehicle.
- Transport samples to laboratory and unload into laboratory.
- Analyse the discharge sample for BOD, ammonia, suspended solids, and conductivity.
- Analyse the receiving water samples for pH, BOD, ammonia, turbidity and conductivity. Conductivity levels allow the dilution ratio to be calculated.
- Check the results for consent compliance and update the database.
- Download pictures from monitoring inspection and enter into council data base

2.75 hours of office administration and sampling in field	
@ $87/hour	$239.00
Sample handling and analysis costs	$457.00
Compliance assessment	
and reporting - 1.5 hour @ $108/hour	$162.00
Programme manager – 0.4 hour @ $157/hour	$62.00
	$920.00

e) Discharges to Land with the contingency to Water (with sampling)

As stated in paragraph (c), there are about 7% of consent holders who are consented to discharge to land and water. This means that compliance monitoring must address discharges to water and land as set out above. However, there are some of the monitoring activities that are duplicated and the cost is less than the combined cost of the discharge to water (with sampling) and land monitoring programmes. However, each consent will be assessed individually to determine the appropriate monitoring. These consents will be sampled alongside the discharge to water consents.

The addition of sampling adds significantly to the cost of monitoring and involves:

- Taking the sampling kit on the inspection.
- Sampling the discharge, and the receiving water above and below the discharge at the edge of the mixing zone. Measure the temperature at the edge of the mixing zone (for ammonia toxicity calculation).
- Fill in the sampling sheet noting environmental conditions and sampling details.
- Appropriately store samples in the vehicle.
- Transport samples to laboratory and unload into laboratory.
- Analyse the receiving water samples for pH, BOD, ammonia, and chloride, and the discharge for chloride. Chloride levels allow the dilution ratio to be calculated.
- Check the results for consent compliance and update the database.
- Download pictures from monitoring inspection and enter into council data base

The charge in the Annual Plan is based on the discharge to water including sampling ($920) and 0.75 hour of inspector @ $87/hour, making a total cost of **$986**.