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SoE and Periphyton Monitoring Run Guide

Ohau-Waikawa Run 2 and Ohau-Waikawa Estuary Run

STATE OF ENVIRONMENT

| | | |
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Job Hazard & Task Analysis










Hazard Identification – tick all that apply, write additional hazards identified:

The yellow highlighted hazards are known hazards at the time of compiling this document. This **does not negate** the need to assess for and potentially eliminate or isolate any hazards at *each* sample location at *every* visit

| Hazard | Yes | Hazard | Yes | Hazard | Yes |
|--------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|------------------------------|-------------------------------------|
| Confined space | <input type="checkbox"/> | Suspended loads | <input type="checkbox"/> | Noise – plant and equipment | <input type="checkbox"/> |
| Difficult entry/exit | <input checked="" type="checkbox"/> | Falling objects | <input type="checkbox"/> | Communication – means of | <input checked="" type="checkbox"/> |
| Oxygen deficiency/excess | <input type="checkbox"/> | Working near cranes and crane runways | <input type="checkbox"/> | Remote area | <input checked="" type="checkbox"/> |
| Poisonous fumes/gas | <input type="checkbox"/> | Live rails-gantry cranes | <input type="checkbox"/> | Temperature extremes | <input checked="" type="checkbox"/> |
| Explosive gas | <input type="checkbox"/> | Trip hazards | <input checked="" type="checkbox"/> | Reduced visibility | <input checked="" type="checkbox"/> |
| Flammable materials | <input type="checkbox"/> | Slippery surfaces | <input checked="" type="checkbox"/> | Unauthorized persons | <input type="checkbox"/> |
| Combustible materials | <input type="checkbox"/> | Manual handling | <input type="checkbox"/> | High pressure water | <input type="checkbox"/> |
| Hazardous substances | <input type="checkbox"/> | Sharp materials | <input type="checkbox"/> | Vacuum | <input type="checkbox"/> |
| Drowning | <input checked="" type="checkbox"/> | Line of fire | <input type="checkbox"/> | Air emissions – dust, fumes | <input type="checkbox"/> |
| Engulfment | <input checked="" type="checkbox"/> | Pressurized fluids | <input type="checkbox"/> | General waste | <input type="checkbox"/> |
| UV Radiation | <input checked="" type="checkbox"/> | Pressurized air/gas | <input type="checkbox"/> | Hazardous waste | <input type="checkbox"/> |
| Electrical – low /high voltage | <input checked="" type="checkbox"/> | Traffic / vehicle movements | <input checked="" type="checkbox"/> | Hydrocarbon / chemical spill | <input type="checkbox"/> |
| Multiple electrical feeds | <input type="checkbox"/> | Machinery – mobile plant | <input type="checkbox"/> | Soil disturbance/erosion | <input type="checkbox"/> |
| Working at height | <input type="checkbox"/> | Moving parts | <input type="checkbox"/> | Habitat disruption | <input type="checkbox"/> |
| Ladders | <input type="checkbox"/> | Chemical reaction (Pyrophoric iron) | <input type="checkbox"/> | Lighting | <input type="checkbox"/> |
| Elevated work platforms | <input type="checkbox"/> | Transport of hazardous substances | <input type="checkbox"/> | Weather extremes | <input checked="" type="checkbox"/> |
| Potential for difficult rescue | <input checked="" type="checkbox"/> | Stock/Farm Animals | <input checked="" type="checkbox"/> | | |

Required PPE & Safety Equipment– tick all that apply, write additional PPE required:

The yellow highlighted PPE are known required PPE at the time of compiling this document. This **does not negate** the need to assess for the appropriate required PPE measures at each sample location per visit.

| SAMPLING GLOVES | EAR PROTECTION | HARD HAT | SAFETY GLASSES / GOGGLES | WORK BOOTS / WADERS | PROTECTIVE GLOVES | PERSONAL FLOATATION DEVICE (PFD) |
|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| HI VIZ | SAFETY HARNESS | SUN BLOCK & HAND SANITISER | VHF RADIO | THROW BAG | PERSONAL LOCATOR BEACON | |
|  |  | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |

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| Known Hazard | Significant | | Can it be Eliminated | | Can it be Isolated | | Method of control |
|--------------------------------|-------------|----|----------------------|----|--------------------|----|--|
| | Yes | No | Yes | No | Yes | No | |
| Drowning | ✓ | | | ✓ | | ✓ | Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP 18] |
| UV Radiation | ✓ | | | ✓ | ✓ | | Horizons provide sunscreen and hats. Staff are encouraged to make use of these. [HMP 17] |
| Engulfment | ✓ | | | ✓ | | ✓ | Rivers/streams are prone to flash flooding creating the potential for engulfment. Staff must be alert and aware at all times of how the waterways are behaving around them, especially in areas where water is dammed or has structures such as intakes and aquaducts. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at all times when working around water [HMP18] |
| Difficult Entry/Exit | ✓ | | | ✓ | ✓ | | Entry and exit into waterways poses many risks and should be treated with caution. Sampling must be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. [HMP18] |
| Electrical-Low/High Voltage | ✓ | | | ✓ | ✓ | | Many of the rural sampling sites require traversing across farm paddocks equipped with electric fences that contain stock. If unknown, treat every farm fence as electric and avoid direct contact. Contact the landowner for advise on whether or not the fence is live and discuss alternative routes or options for avoiding the fence if possible. |
| Potential for Difficult Rescue | ✓ | | | ✓ | | ✓ | Sampling must always be done from stable level ground. Staff should use a sample pole if access into the river/stream is unsafe. PFD's must be worn by staff and staff must be trained for working around water. Vehicles must be driven a sensible distance from any river or pond edges. Always carry a throw bag when working around water and have a personal locator beacon on hand. It is always preferable to have someone else with you at |

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| Known Hazard | Significant | | Can it be Eliminated | | Can it be Isolated | | Method of control |
|-------------------------------|-------------|----|----------------------|----|--------------------|----|--|
| | Yes | No | Yes | No | Yes | No | |
| | | | | | | | all times when working around water [HMP18] |
| Trip Hazards | ✓ | | | ✓ | ✓ | | Prior to sampling, staff must check area is clear of items that pose a risk. Trip Hazards should only be moved if safe to do so. Sampling only to commence if the sampler is satisfied that any slip, trip or fall hazards are isolated. |
| Slippery Surfaces | ✓ | | | ✓ | ✓ | | Sampling must be done from stable level. Vehicles must be driven a sensible distance from any river or pond edges. [HMP 18]. Staff driving four wheel drive vehicles must have adequate training [HMP 9] |
| Traffic Vehicle Movements | ✓ | | | ✓ | | ✓ | The designated driver of a vehicle is responsible for ensuring the safety and operational requirements and recommendations are met. All staff working within the road reserve must wear high visibility clothing to AS/NZS 1906.4:2010. This clothing must be fluorescent red orange in colour unless the individual is the site STMS then the garment must be fluorescent lime yellow. [HMP 9] [HMP 16] [HMP 20]. |
| Stock/Farm Animals | ✓ | | | ✓ | ✓ | | Although generally docile, farm animals can still be hazardous. The risk should be isolated by finding alternative access routes to the sample location or contacting the owner for assistance. [HMP26] |
| Communications-Means of | ✓ | | | ✓ | | ✓ | Cell phone coverage is not available at all sites. Staff must be capable of communicating via VHF radio in an equipped vehicle. [HMP 24] |
| Remote Area | ✓ | | | ✓ | | ✓ | Most council vehicles are fitted with the E-Road vehicle locator system. Many vehicles are also fitted with a radio operating on the Horizons digital radio network providing communication and tracking coverages across a majority of the region. [HMP 24] |
| Temperature/ Weather Extremes | ✓ | | | ✓ | | ✓ | During the duration of a sampling run varying types and degrees of weather may be experienced. All sampling staff are to have access within their HRC vehicle to additional and appropriate clothing. Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP 18] |
| Reduced Visibility | ✓ | | | ✓ | | ✓ | If you find you are driving in limited visibility slow your driving speed and turn your fog |

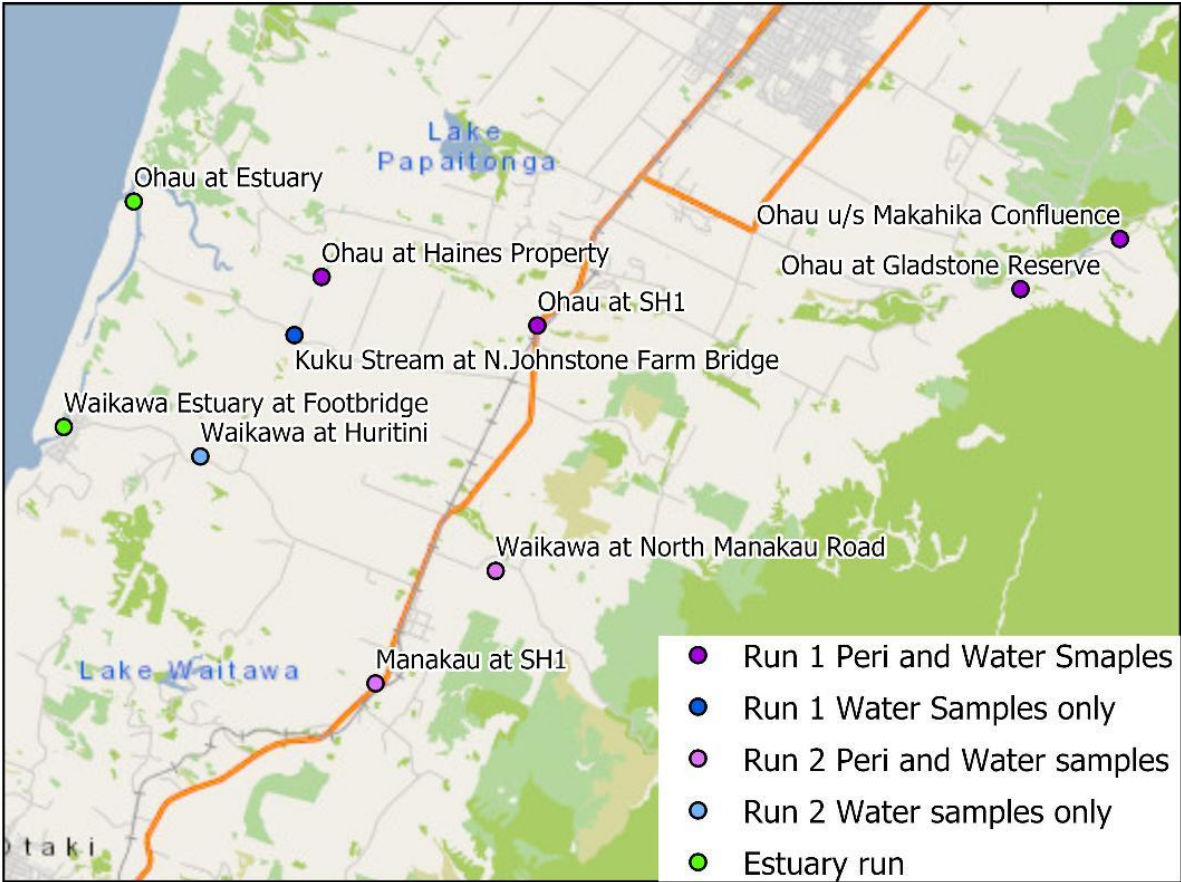
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| Known Hazard | Significant | | Can it be Eliminated | | Can it be Isolated | | Method of control |
|--------------|-------------|----|----------------------|----|--------------------|----|--|
| | Yes | No | Yes | No | Yes | No | |
| | | | | | | | lights on and watch out for vehicles that aren't using their lights. When working in limited visibility if you cease to be able to make out your surrounding environment stop work immediately. If working at night it is advisable to traverse the property in daylight first to map out an action plan outlining walking tracks, vehicle tracks, fence lines, stock positions, ponds, waterways, houses, and sheds as well as other significant items of interest. [HMP12] |

Site Information

| Hilltop Site Name | Easting/Long (NZTM) | Northing/Lat (NZTM) | Comments |
|-------------------------------|---------------------|---------------------|--|
| Waikawa at North Manakau Road | 1788683 | 5491286 | Water Quality Samples SmarTroll, Black disk Chlorophyll a Sample and Visual Assessment |
| Manakau at SH1 | 1786684 | 5489409 | Water Quality Samples SmarTroll, Black disk Chlorophyll a Sample and Visual Assessment |
| Waikawa at Huritini | 1783762 | 5493196 | Water Quality Samples SmarTroll, Black disk |
| Ohau at Estuary | 1782653 | 5497444 | Water Quality Samples, SmarTroll |
| Waikawa Estuary at Footbridge | 1781483 | 5493686 | Water Quality Samples, SmarTroll |

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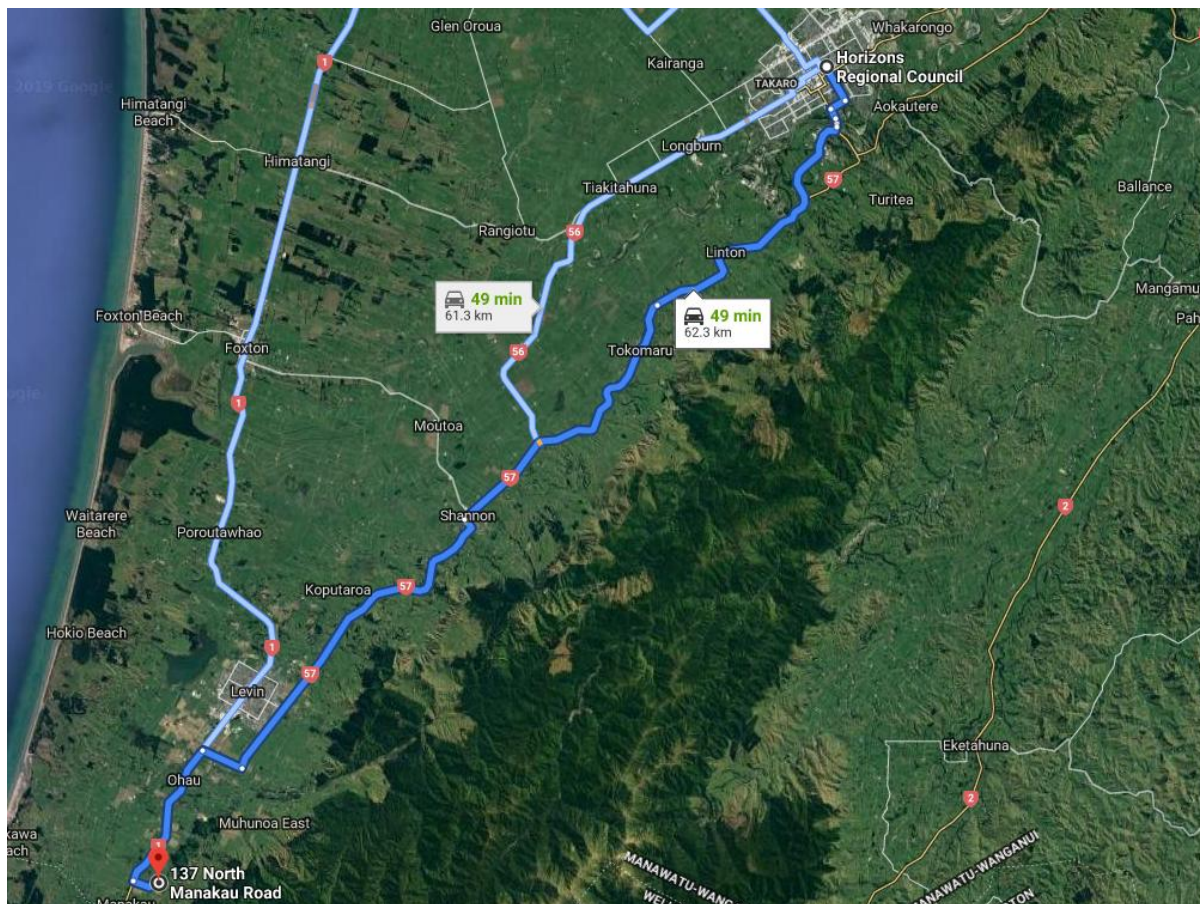
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Equipment Required

| | |
|--|--|
| Sample Bottles | FIVE (5) & TWO (2) sample bottle sets - refer to http://tgm.horizons.govt.nz/Hydrology/SOPs/cd om 15.4 Appendix 4 ELS%20Bottle%20Guide.xlsx |
| | FIVE (Water Quality) TWO (Periphyton) |
| Equipment | <ul style="list-style-type: none"> • 2 SmarTrolls (calibrated) – including iPad • Bathoscope / Viewer • Pottles (Approx 10) • Scrubbing brush, tooth brush, washer bottle, yellow sample bottle lid and ice cream container • Sampling pole • Black disk, viewer, tape measure, clarity tube • Chilly bins and ice-packs • Disinfectant equipment for sampling equipment • Field sampling books • Sampling numbers for Chla and Water samples • Disinfectant equipment for sampling equipment • Alcohol gel • Personal Locator Beacon • 4WD Vehicle equipped with VHF Radio • Throw Bag |
| Additional Comments/ Instructions | <p><u>Estuary sites should be sampled as close to low tide as possible, reverse the run if needed.</u></p> <p>Estuaries need a separate SmarTroll The Estuary sites need to be on a different page in the sampling book and need a different lab form</p> <p>Toilets:</p> <ul style="list-style-type: none"> • Near Manakau at SH1 at the Quarter Acres Café • Near Waikawa at Estuary at the reserve on Manga-Pirau St |

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SITE LOCATION MAP – Waikawa at North Manakau Road



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day):

| | | | |
|------------------------------|--------------------------------|------------------------------|-----------------------------|
| Drowning | UV Radiation | Slippery surfaces | Trip hazards |
| Difficult entry/exit | Potential for difficult rescue | Weather/Temperature Extremes | Traffic / Vehicle Movements |
| Electrical- Low/High Voltage | Machinery- Mobile Plant | Stock/Farm Animals | |

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

| | | | | | | | |
|---------------------|-----|----------------------------|-------------------------|-----------|-----------|--------|--|
| WORK BOOTS / WADERS | PFD | SUNSCREEN & HAND SANITISER | PERSONAL LOCATOR BEACON | THROW BAG | VHF RADIO | HI-VIS | |
|---------------------|-----|----------------------------|-------------------------|-----------|-----------|--------|--|

DIRECTIONS:

- From the Palmerston North office head out along State Highway 57, go through Shannon and continue on towards Levin. Head past Levin and take the turn off to Wellington.
- Head through Ohau and continue on. You will cross the Waikawa stream, over the railway lines and then it is the next turn on the left, just before the Manakau township
- Follow North-Manakau Road until you reach a bridge, directly after the bridge there is a gate to the right. Pull over to the right side of the road, open the gate and drive through.

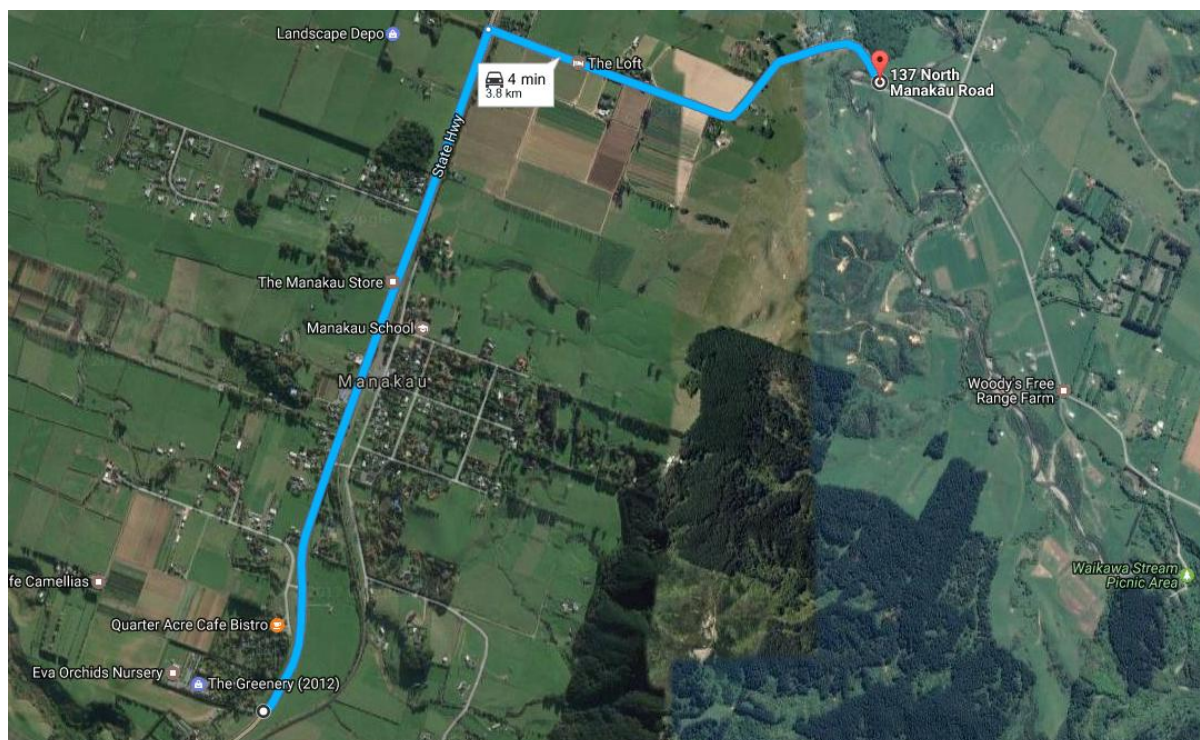
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- Once through the gate follow the grass track to the left and park next to the green Hydro Shed. From here follow the path down to the Waikawa River and sample here.



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SITE LOCATION MAP – Manakau at SH1



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day):

| | | | |
|------------------------------|--------------------------------|------------------------------|-----------------------------|
| Drowning | UV Radiation | Slippery surfaces | Trip hazards |
| Difficult entry/exit | Potential for difficult rescue | Weather/Temperature Extremes | Traffic / Vehicle Movements |
| Electrical- Low/High Voltage | Machinery- Mobile Plant | | |

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

| | | | | | | | |
|---------------------------|-----|-------------------------------------|-------------------------------|-----------|-----------|--------|----------------|
| WORK BOOTS / WADERS | PFD | SUNSCREEN & HAND SANITISER | PERSONAL LOCATOR BEACON | THROW BAG | VHF RADIO | HI-VIS | SAMPLE POLE |
|---------------------------|-----|-------------------------------------|-------------------------------|-----------|-----------|--------|----------------|

DIRECTIONS:

- From the Waikawa at North Manakau road, head back to SH1
- Once you get to the intersection with SH1 turn left towards Wellington and continue for approximately 2.4 km until you reach Quarter Acre Café (this is well sign posted).
- Continue around the bend on SH1 for approximately 100m until you reach The Greenery garden centre on the right. Drive until you find a suitable place to turn around. Turn left down this driveway until you reach a bridge going over the Manakau Stream.
- Take water quality samples and a SmarTroll reading at the bridge.
- From the Hydro Box head back to the gate. Follow the gravel path in the paddock on the left towards SH1. Once near the bridge go underneath it to the river.

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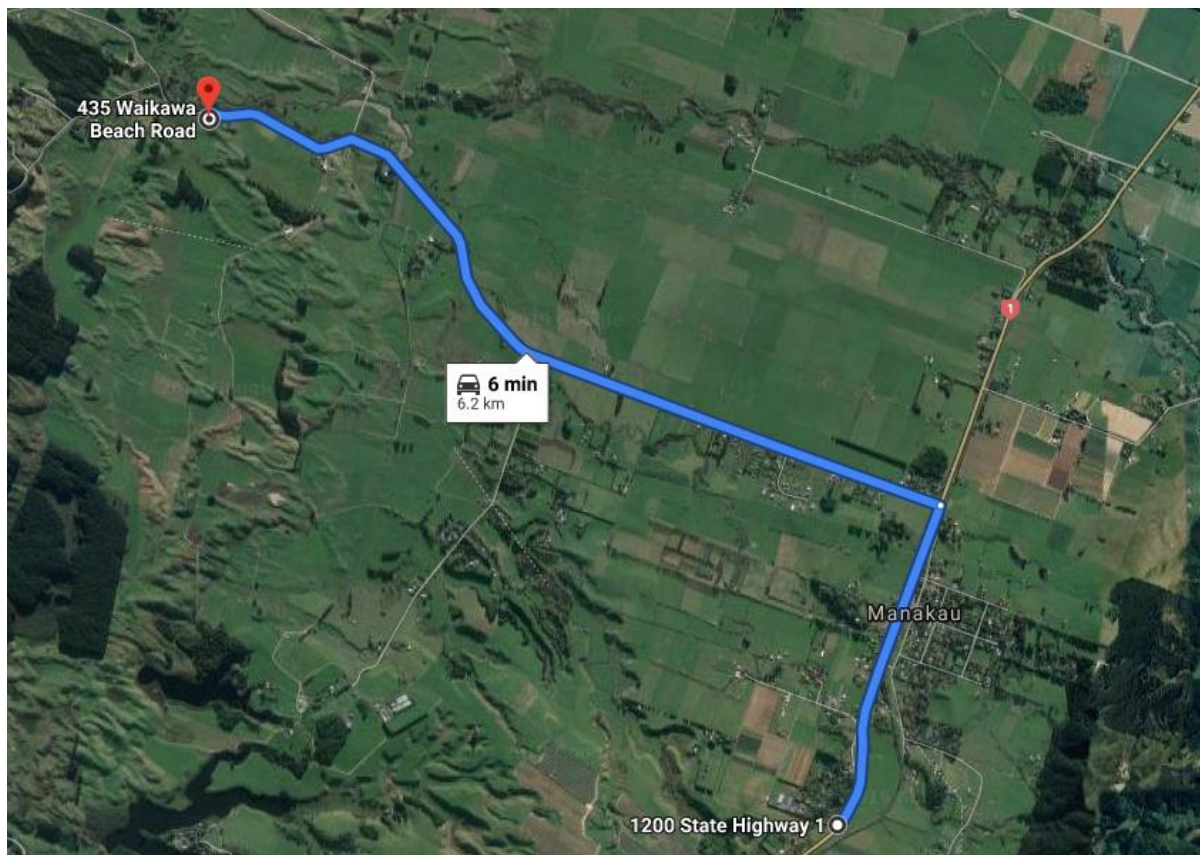


Climb under SH1 Bridge Here



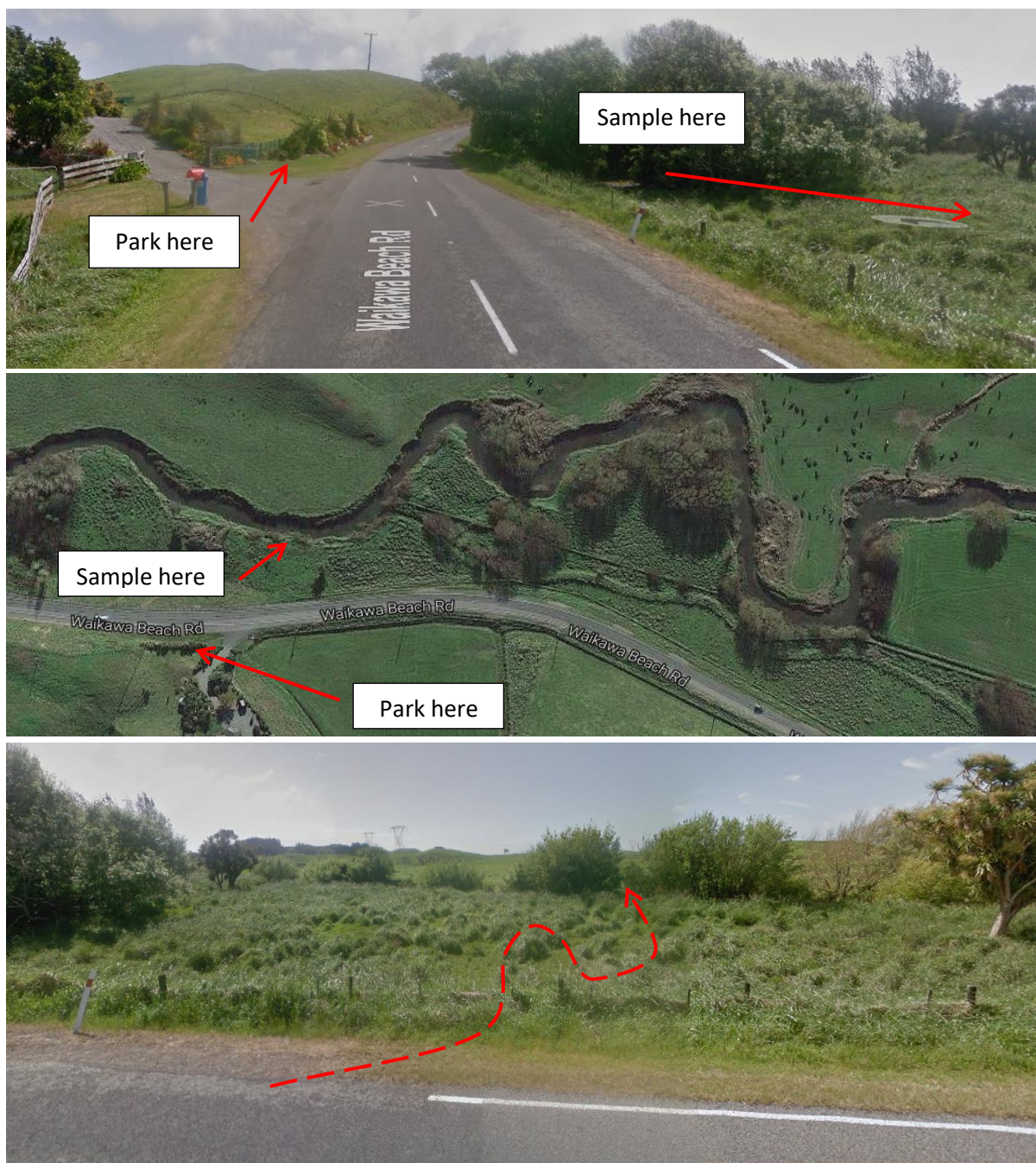
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SITE LOCATION MAP – Waikawa at Huritini



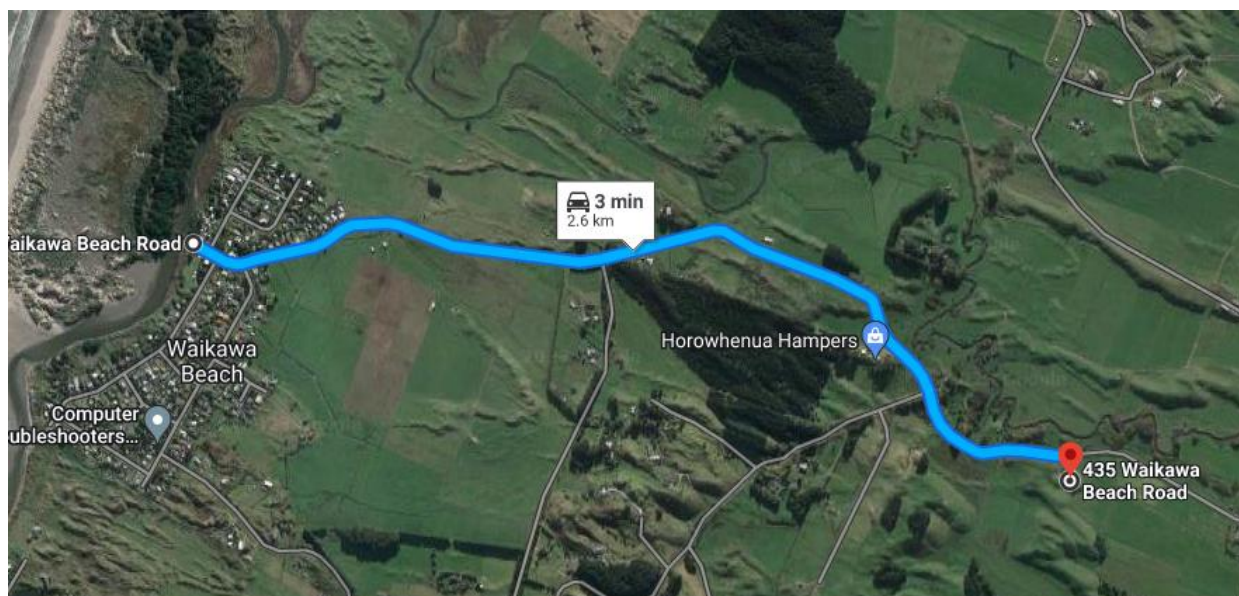
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|---|-----|--------------------------------|-------------------------|------------------------------|-----------|-----------------------------|-------------|
| POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): | | | | | | | |
| Drowning | | UV Radiation | | Slippery surfaces | | Trip hazards | |
| Difficult entry/exit | | Potential for difficult rescue | | Weather/Temperature Extremes | | Traffic / Vehicle Movements | |
| Stock/Farm Animals | | Reduced Visibility | | | | | |
| REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary): | | | | | | | |
| WORK BOOTS / WADERS | PFD | SUNSCREEN & HAND SANITISER | PERSONAL LOCATOR BEACON | THROW BAG | VHF RADIO | HI-VIS | SAMPLE POLE |
| DIRECTIONS: | | | | | | | |
| <ul style="list-style-type: none">Head north, back towards Levin, just out of the Manakau township turn left onto Waikawa Beach rdContinue along Waikawa Beach Road until you reach the mailbox for 435 Waikawa Road. Park on the left near their mail box just on the front grass off the road, clear of the drive way.Cross the road, climb the fence and, walk across the paddock and down the bank to the river.Sample here from a run.Can be very soft near the bank, when you first get in the stream, the banks are quite slumped. | | | | | | | |

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SITE LOCATION MAP – Waikawa Estuary at Footbridge



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day):

| | | | |
|----------------------|--------------------------------|------------------------------|-----------------------------|
| Drowning | UV Radiation | Slippery surfaces | Trip hazards |
| Difficult entry/exit | Potential for difficult rescue | Weather/Temperature Extremes | Traffic / Vehicle Movements |

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

| | | | | | | | |
|---------------------------|-----|-------------------------------------|-------------------------------|--------------|-----------|--------|----------------|
| WORK BOOTS / WADERS | PFD | SUNSCREEN & HAND SANITISER | PERSONAL LOCATOR BEACON | THROW BAG | VHF RADIO | HI-VIS | SAMPLE POLE |
|---------------------------|-----|-------------------------------------|-------------------------------|--------------|-----------|--------|----------------|

DIRECTIONS:

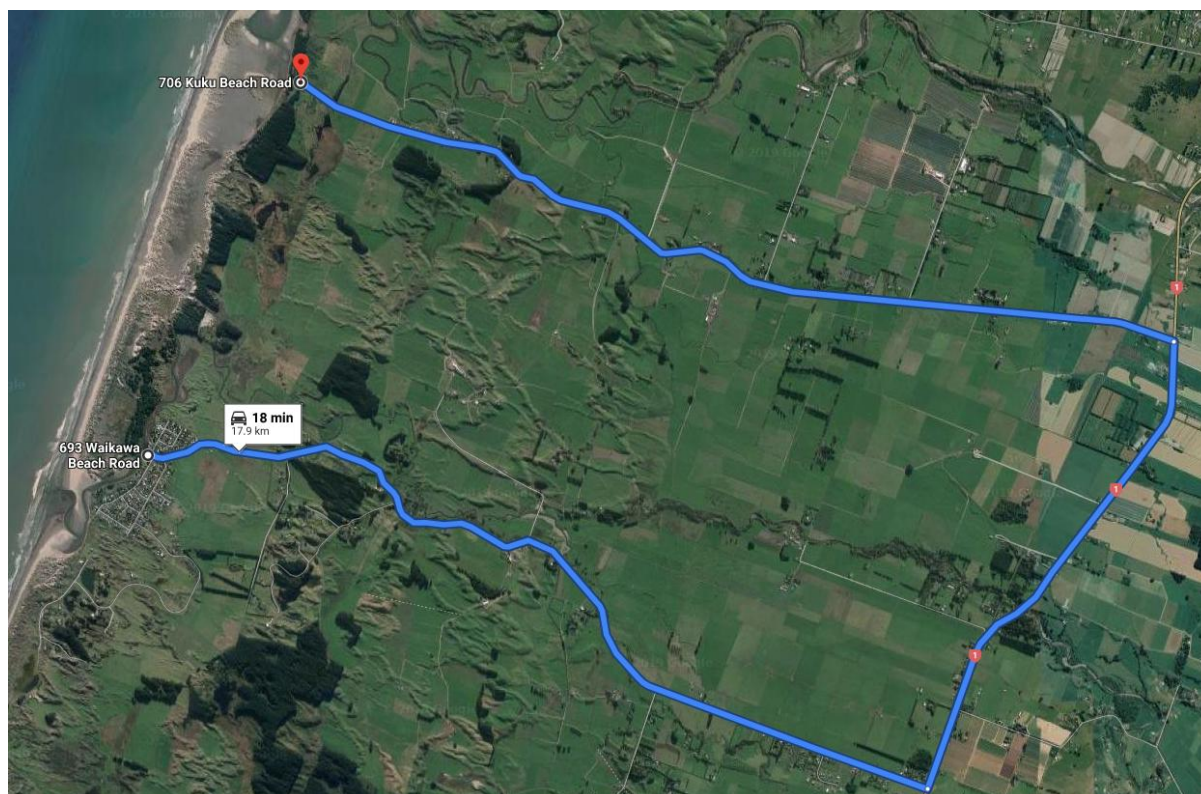
- From the Waikawa at Huritini Site continue west along Waikawa Beach Road towards Waikawa Beach.
- Once you reach Waikawa Township (signposted) continue straight through until you reach the estuary and can see the footbridge directly in front. Park here and sample directly in front of the boat ramp. Caution: boat ramp can be slippery!

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SITE LOCATION MAP – Ohau at Estuary



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day):

| | | | | |
|----------------------|-------------|--------------------------------|------------------------------|------------------------|
| Drowning | Engulfment | UV Radiation | Slippery surfaces | Trip hazards |
| Difficult entry/exit | Remote Area | Potential for difficult rescue | Weather/Temperature Extremes | Communication-means of |

REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

| | | | | | | | |
|---------------------------|-----|-------------------------------------|-------------------------------|-----------|-----------|--------|--|
| WORK BOOTS / WADERS | PFD | SUNSCREEN & HAND SANITISER | PERSONAL LOCATOR BEACON | THROW BAG | VHF RADIO | HI-VIS | |
|---------------------------|-----|-------------------------------------|-------------------------------|-----------|-----------|--------|--|

DIRECTIONS:

- Head back along Waikawa Beach Road to SH1, turn left and head north back towards Levin.
- Drive 4km, then turn left onto Kuku Beach rd. Drive to the end.
- Park in the car park here and walk down the track to the beach.
- You will need to walk across the beach to the estuary (about a 5 minute walk – 700ish meters).
- Sample in the estuary as indicated on the map below.
- Ensure that you are trying to sample the main river stem, not a side stream or pool.

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Head back to the office