

Version No: Issue Date: Portfolio:	2.0 26/05/2022 Discrete Water Quality	Horizons Regional Council	Section No: Appendix No: Page:	15.7 XX 1 of 28
horizons regional council		Hydrology Operations Manual		

Version 2.0 26/05/2022

Invertebrate Monitoring Run Guide

TAUMARANUI

STATE OF ENVIRONMENT (Annual Sampling)

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 checked="" 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 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.

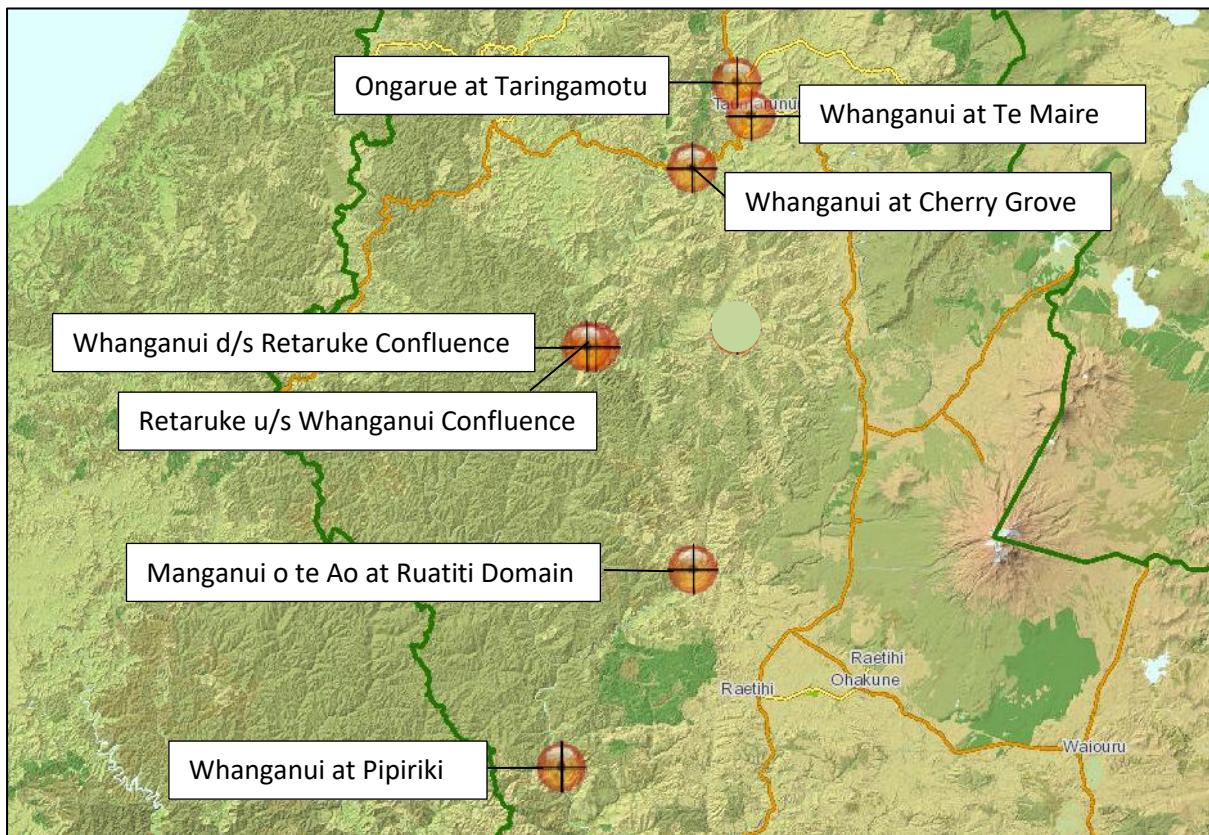
SAMPLING GLOVES	EAR PROTECTION	HARD HAT	SAFETY GLASSES / GOGGLES	WORK BOOTS / WADERS	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<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"/>	

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]
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 advice 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 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]
Manual Handling	✓			✓	✓		Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample treated effluent. Hepatitis B vaccinations are offered by HRC. [HMP 30] [HMP 35]

Known Hazard	Significant		Can it be Eliminated		Can it be Isolated		Method of control
	Yes	No	Yes	No	Yes	No	
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 lights on and watch out for vehicles that aren't using their lights. When working in limited visibility if you cease to 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

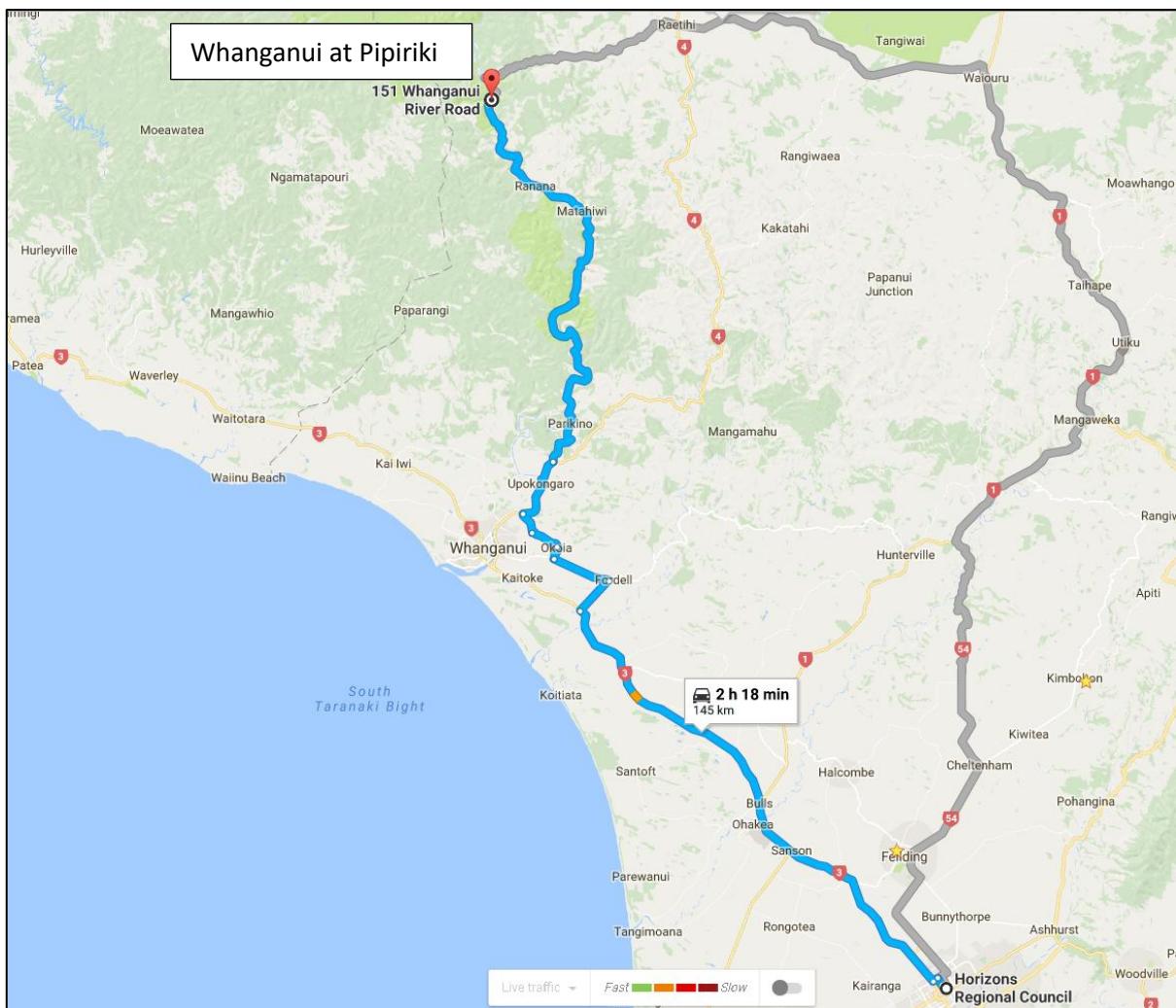
Hilltop Site Name	Easting/Long (NZTM)	Northing/Lat (NZTM)
Whanganui at Pipiriki	1776139	5625783
Manganui o te Ao at Ruatiti Domain	1789690	5646138
Whanganui at Te Maire	1789608	5687404
Ongarue at Taringamotu	1794208	5696249
Whanganui at Cherry Grove +NEMS	1795656	5692798
Retaruke u/s Whanganui Confluence	1779630	5669012
Whanganui d/s Retaruke Confluence	1778754	5669046



Equipment Required

Equipment	<ul style="list-style-type: none"> • Camera and GPS • Kick net • Invertebrate Pottles and Propan-2-ol • White plastic tray • Metal ruler • Gravelometer • Sampling Worksheet and Pencil • Bathoscope / Viewer • Scrubbing brush, tooth brush, washer bottle, yellow sample bottle lid and ice cream container • Pottles (Approx 10), chilly bins and ice-packs • Personal Locator Beacon • 4WD Vehicle equipped with VHF Radio • Throw Bag
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SITE LOCATION MAP – Whanganui at Pipiriki



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	Electrical- low / high voltage		

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 towards Whanganui via SH3. Two kilometres after you drive over the Whangaehu River there will be a road to your right called Warrengate Rd, turn right here.
- Follow Warrengate Rd for about 4.5km to the end and then turn left onto No.2 Line.
- Follow No.2 Line for about 6km and then turn right onto Okoia Rd. Stay on Okoia Rd to the end and then turn left onto No.3 Line.

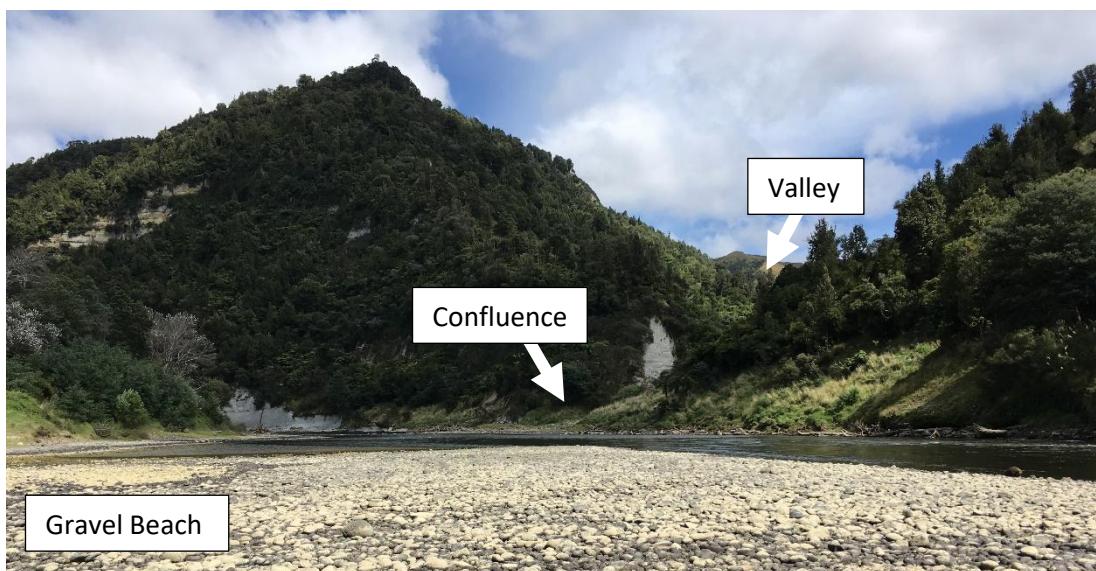
- Follow No.3 Line for about 3km then turn right onto Kaimatira Rd. Stay on Kaimatira Rd to the end and then turn right onto SH4.
- Follow SH4 for about 7.5km until you come to a heavily signposted road on your left called Whanganui River Rd, turn left here.
- Follow Whanganui River Road for about 60km. After about 1 hour of driving you will go through a small community called Jerusalem. Approximately 8.5km after you drive past Jerusalem you will go around a corner which turns slightly to the right, just around the corner of this bend there will be a section to the left of the road where you can pull over and park the car on a grassed over verge- park here.
- To make sure you are at the right spot there are a few land marks you can check for:
 - 1) A trickling waterfall down the side of the cliff on your right.
 - 2) Down the bank there should be a gravel beach on the true left of the Whanganui River where you will sample from.
 - 3) If you look downstream along the Whanganui River approximately 200m away there should be a confluence with another stream which has cut a fairly deep valley along the true right of the river.
 - 4) Just up the road of where you have parked there should be a culvert which runs under the road and flows into a small stream down the bankside.
 - 5) You are roughly around the coordinate location of 1776139E 562578S
- If you have identified all these landmarks at your current spot then congratulations you have arrived at your destination!
- From the car make your way safely down the bank, unfortunately this may involve a bit of bush bashing. When you make it down to the gravel beach find a suitable riffle to sample.



Verge side parking bay.



View of the river when you come over the crest on Whanganui Valley Road. The verge on the side of the road to park on is about ~300m after you see this view (this is if you are accessing the site coming from North (Raetihi) rather than coming from Palmerston North).

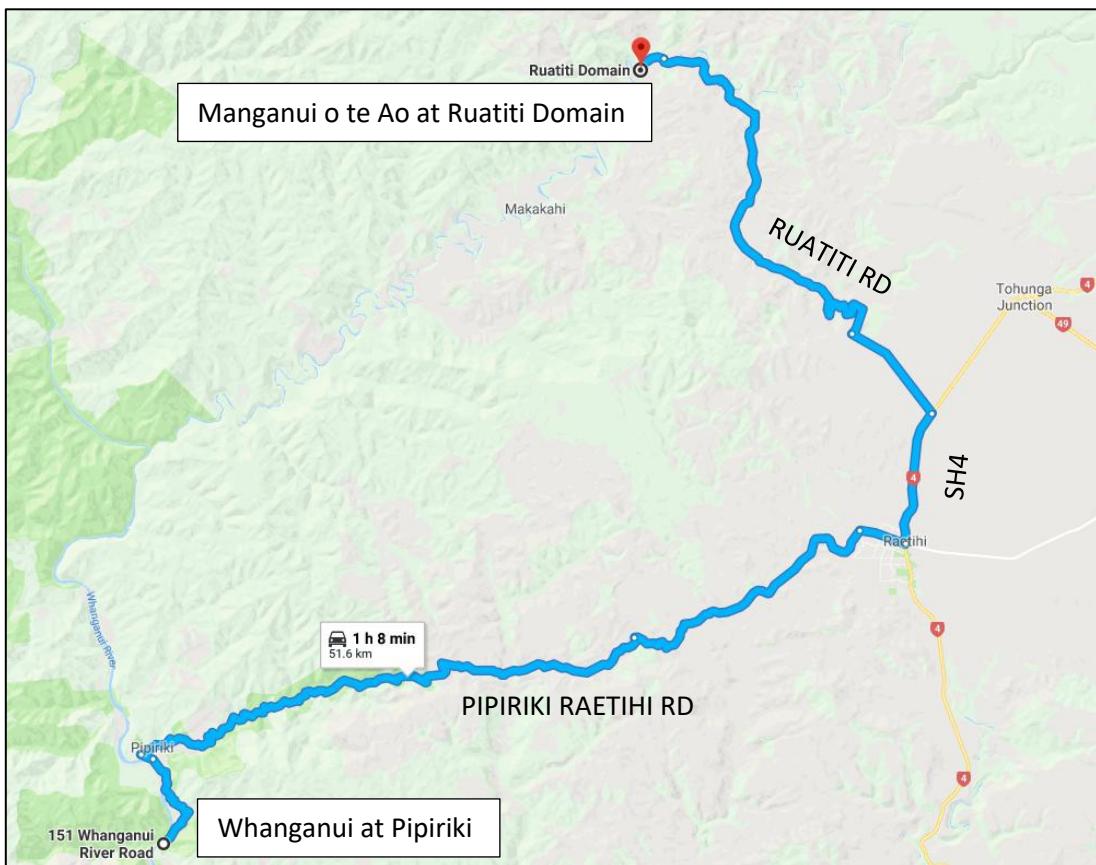


View looking downstream of the Whanganui River.



Birdseye view of location

SITE LOCATION MAP – Manganui o te Ao at Ruatiti Domain



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	Electrical- low / high voltage		

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:

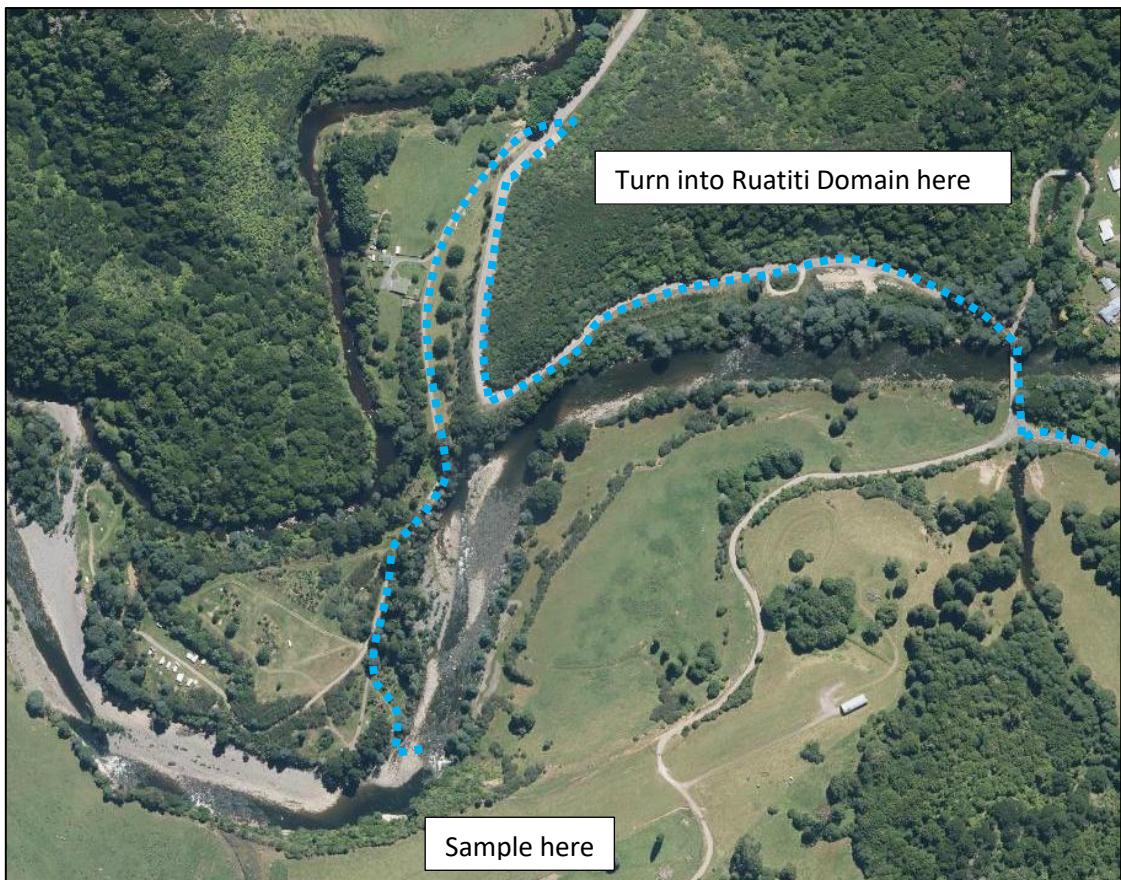
- From the Whanganui at Pipiriki site continue on down Whanganui River Rd for about 10mins until you come into Pipiriki Township.
- In Pipiriki turn right onto Pipiriki-Raetihi Rd and follow for about 25km until you come into Raetihi Township.
- In Raetihi turn left onto SH4 and follow for about 4km until you come to Ruatiti Rd on your left.
- Turn left onto Ruatiti Rd and follow for about 17km, eventually you will see the turn off to Ruatiti Domain on your left- turn in here.
- Follow the track through Ruatiti Domain until you drive past a group of signs and come to a whole lot of picnic tables- Park here.
- You will see a track the heads down to the river, follow this and find a suitable riffle to sample.



Follow signs posted for Ruatiti Domain.



Turn off from Ruatiti Road to Ruatiti Domain.



Drive past Domain signage and park by the track down to the river.

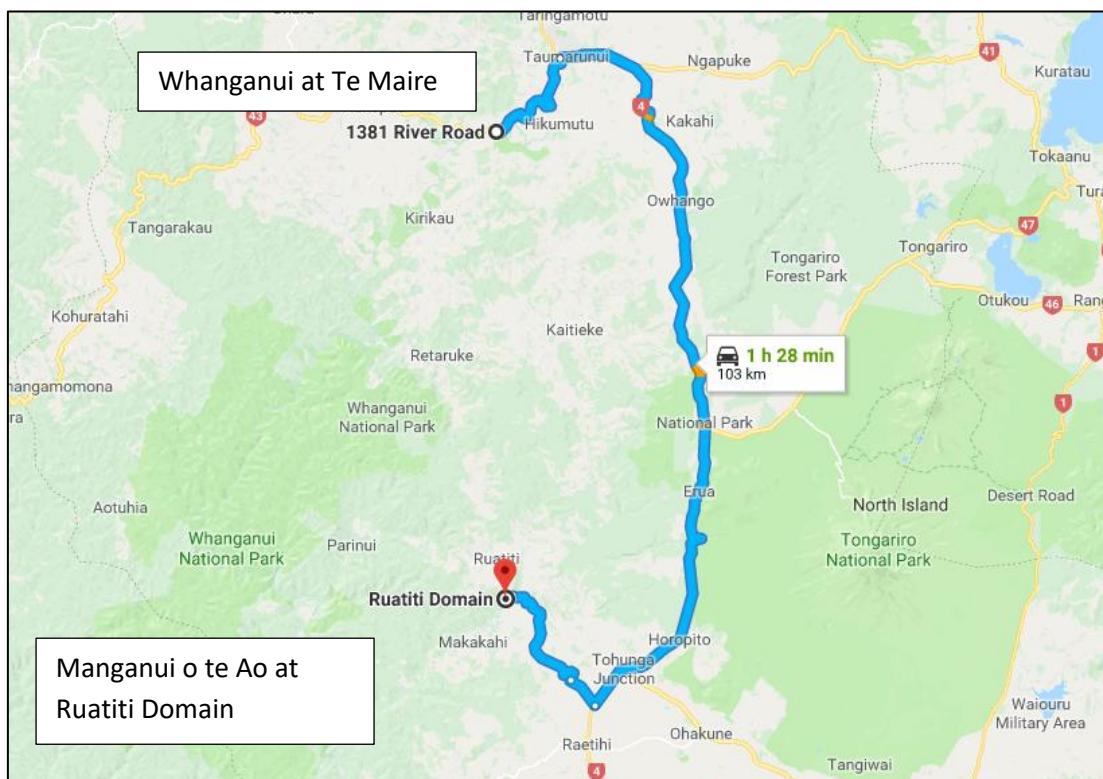


Upstream view of Manganui o te Ao sample site.



Downstream view of Manganui o te Ao.

SITE LOCATION MAP – Whanganui at Te Maire



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):

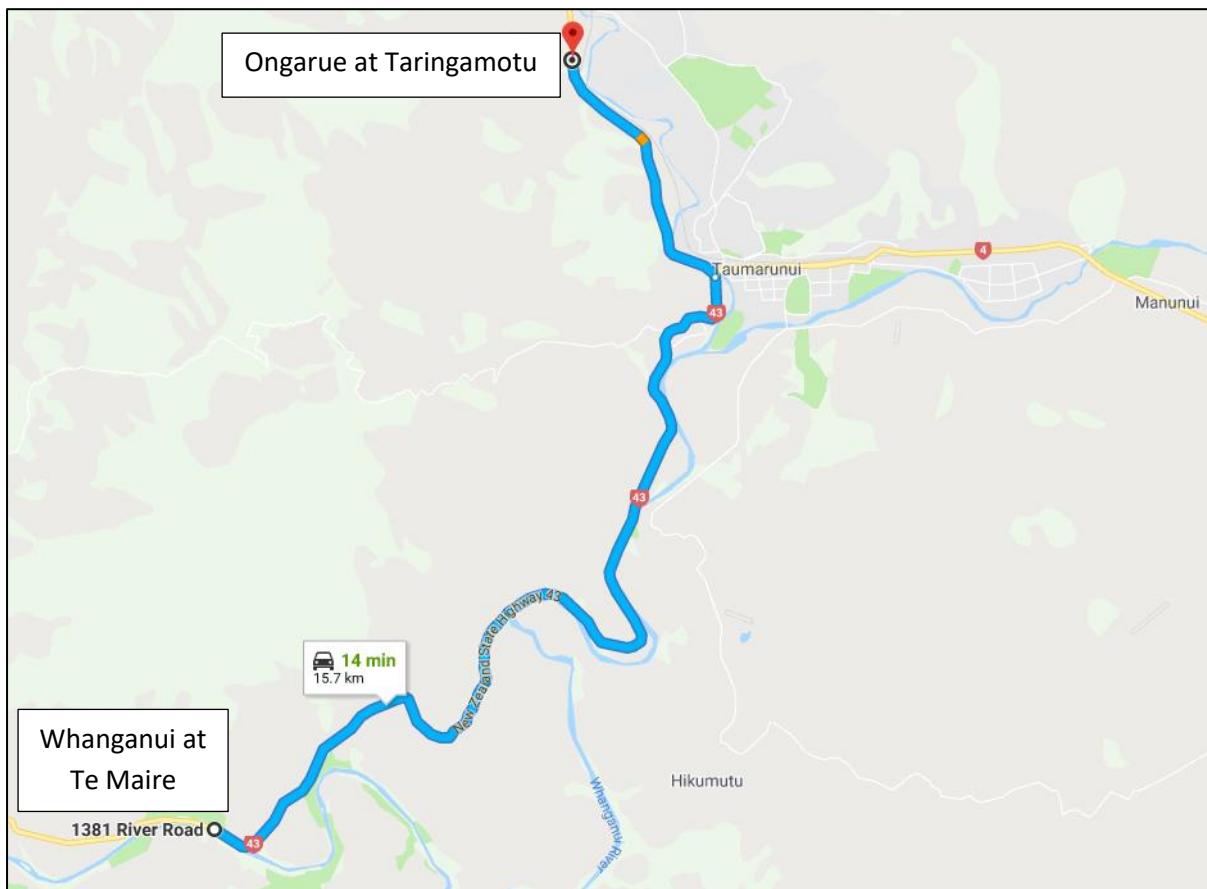
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

- From Ruatiti Domain head back the way you came to the main road and turn right back the way you came down Ruatiti Rd to SH4.
- Turn left onto SH4 and follow for about 70km to Taumarunui.
- Drive through Taumarunui, you will drive past McDonalds and then over the Ongarue River, just after this turn left onto SH43.
- Follow SH43 for about 12km until you see Paparoa Rd (old Wanganui Valley Road) to your left which goes over a bridge, stay on River Road for another 100m and park up on the left of the road.
- Walk back along the side of the road and look for a culvert, you will be able to make your way down the bank to the river here.
- Find a suitable riffle to sample.



SITE LOCATION MAP – Ongarue at Taringamotu



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	Electrical- low / high voltage		

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):

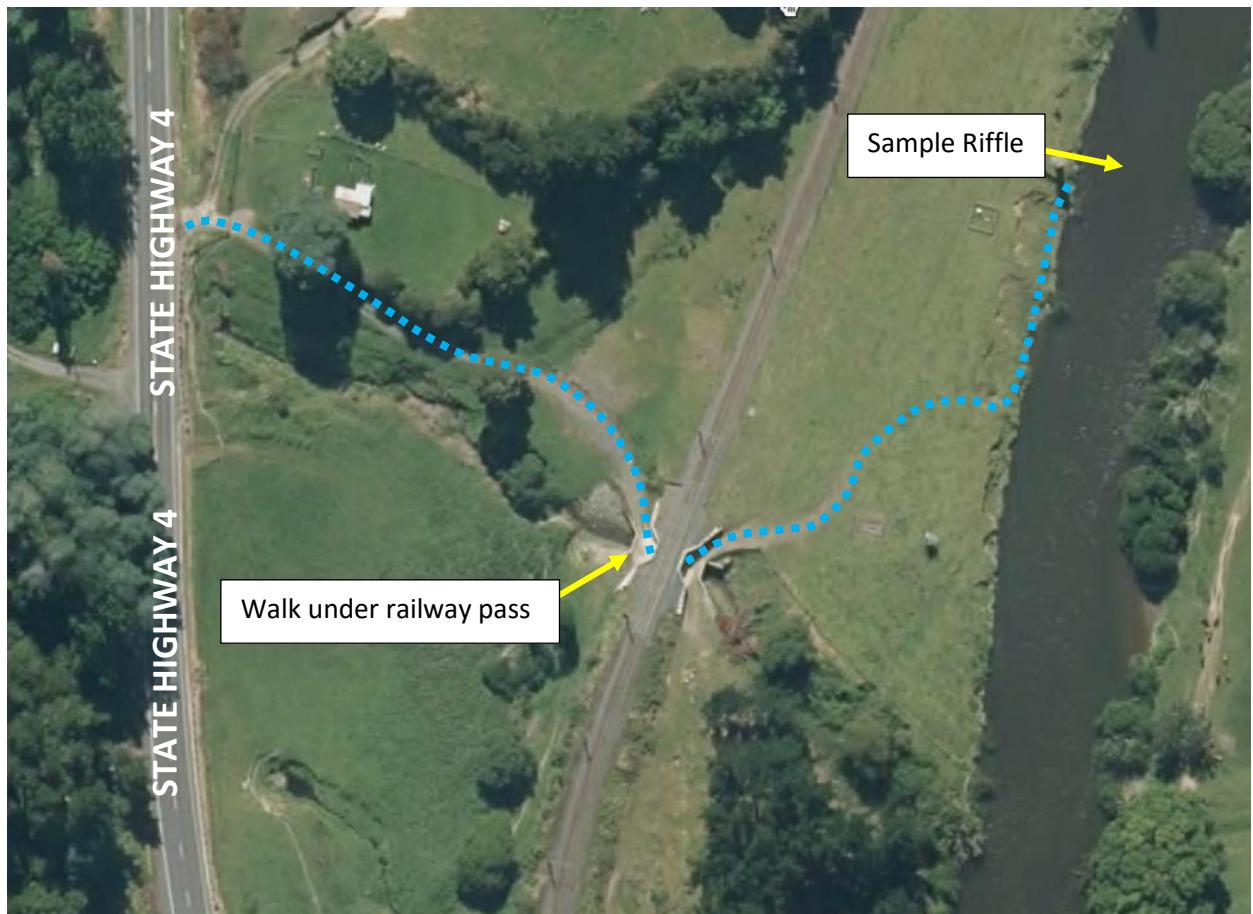
WORK BOOTS / WADERS	PFD	SUNSCREEN & HAND SANITISER	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	

DIRECTIONS:

- From Whanganui at Te Maire head back the way you came down River Road (SH43) back towards Taumarunui. When you come into Taumarunui keep left on SH4.
- Stay on SH4 for about 3.3km (2 mins), you will drive over a small stream- immediately after this turn right into a gated off paddock which runs adjacent to this small stream. You will see a railway underpass for cattle to safely travel under the railways lines, the truck won't fit through here. Park up and follow the farm track though the under pass.
- You will see the Ongarue River as you continue to follow the farm track, find a suitable riffle to sample.



Turn into this driveway off SH4



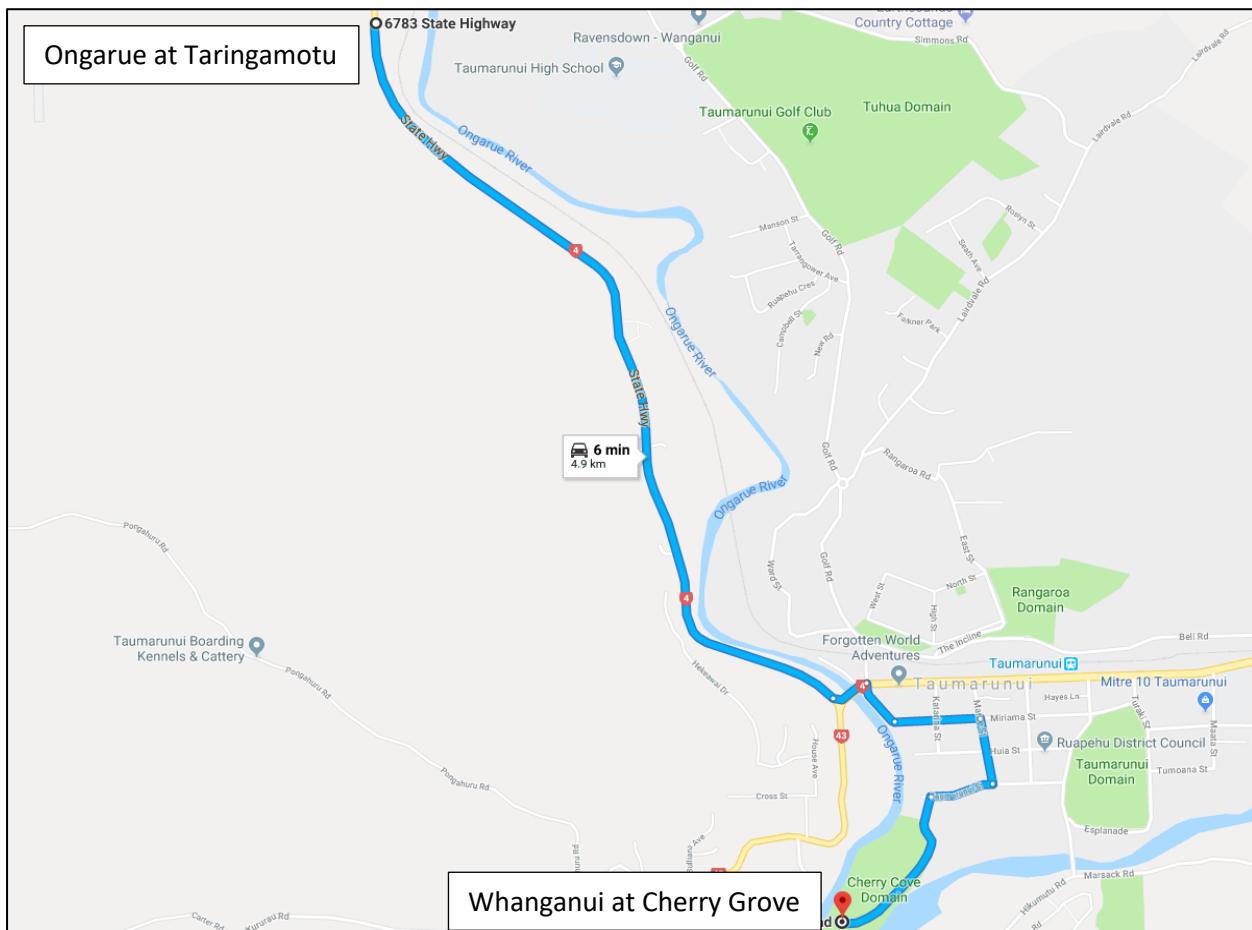


Ongarue at Taringamotu looking upstream.



Ongarue at Taringamotu looking downstream.

SITE LOCATION MAP – Whanganui at Cherry Grove



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

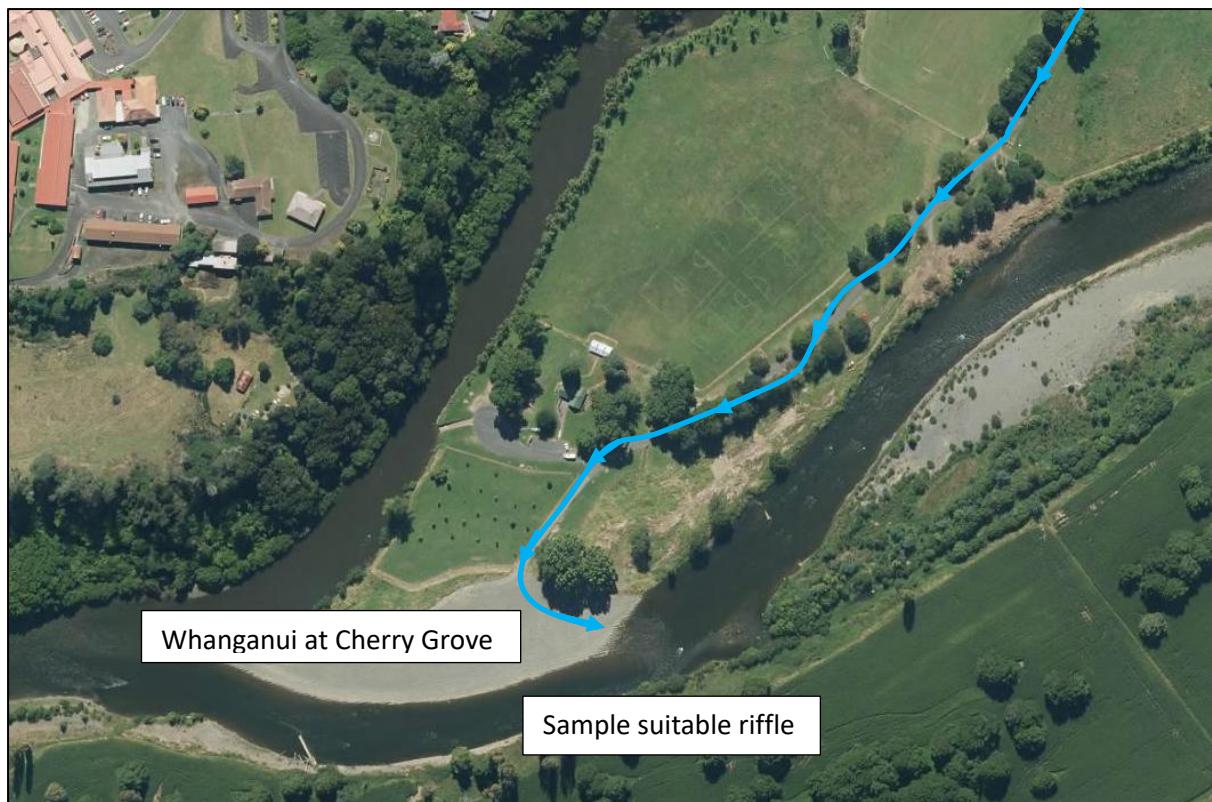
Drowning	UV Radiation	Slippery surfaces	Trip hazards
Difficult entry/exit	Potential for difficult rescue	Weather/Temperature Extremes	Traffic / Vehicle Movements

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	
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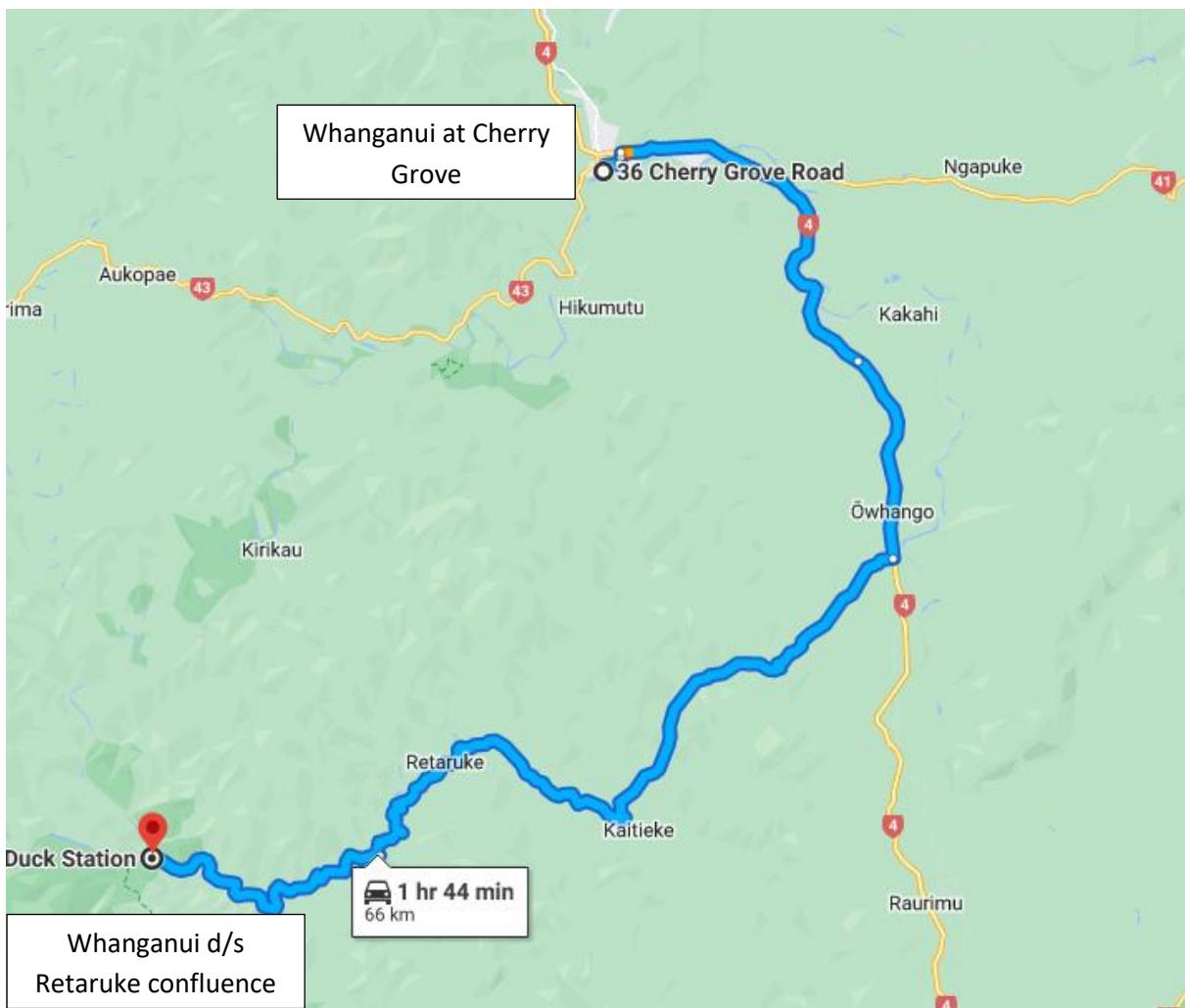
DIRECTIONS:

- From Ongarue at Taringamotu, head back the way you came down SH4 back into Taumarunui.
- When you come into Taumarunui turn left to stay on SH4 and drive over the Ongarue River. As soon as you drive over the Ongarue River turn right onto River Road.
- Follow River Road to the end as it turns into Miriama Street. Stay on Miriama Street until you reach Marae Street, turn right onto Marae Street.
- Follow Marae Street to the end and then turn right onto Taumarunui Street.
- Follow Taumarunui Street until you reach the turn off to Cherry Grove Road, turn left onto Cherry Grove Road.
- Follow Cherry Grove Road to the end, you will see a path which leads down to the River - follow this path and find a suitable riffle to sample.



Whanganui at Cherry Grove looking downstream.

SITE LOCATION MAP – Whanganui d/s Retaruke Confluence



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			

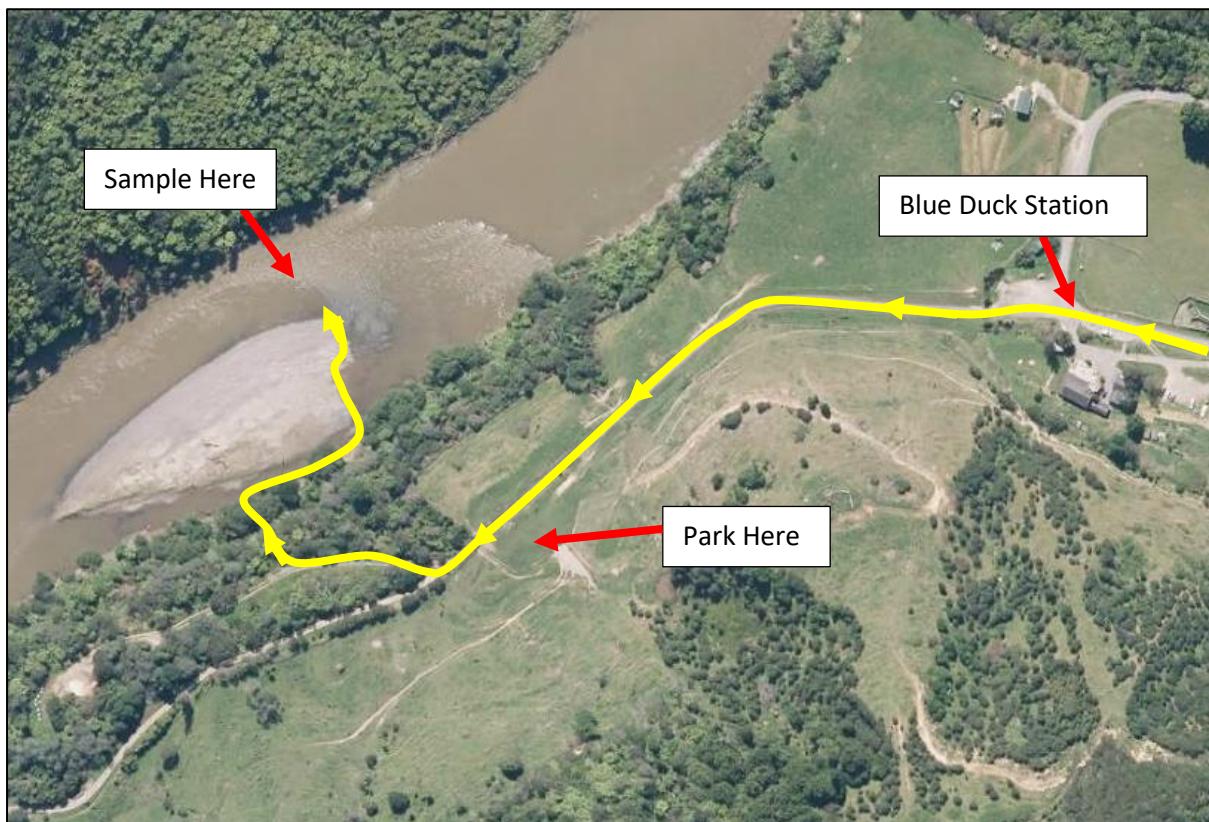
REQUIRED PPE (in accordance with above hazards – this does not negate undertaking a hazard review prior to sampling on the day and/or using additional PPE if deemed necessary):

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

DIRECTIONS:

- From Whanganui at Cherry Grove head back the way you came down Cherry Grove Road, then right back onto Taumarunui Street.
- Follow Taumarunui Street to the end and then turn left onto Morero Terrace. Follow Morero Terrace to the end, then turn left onto Turaki Street.

- Follow Turaki Street to the main road through Taumarunui, Hakiaha Street (SH4). Turn right onto Hakiaha Street (SH4).
- Follow SH4 towards Owhango for approximately 22km, drive through Owhango and after approximately 1.5km turn right onto Oio Rd, there is a green sign posted for Kaitieke.
- Follow Oio Rd for about 43km. It is a very long windy road.
- At Blue Duck Station Oio Rd will veer off to the right, stay straight and follow the brown sign for Kaiwhakauka Cycle Trail until you come farm gate with a sign for Whakahoro Farm and Kowhai Rd, we do not have permission to drive past this gate. Park up somewhere in the paddock and continue the rest of the journey on foot.
- Walk through the gate and you will come to a track on your right signposted for Wades Landing, follow this track.
- Find somewhere to bush bash down the hill to the Whanganui River. When you reach the bottom you will see a large gravel beach, head for this and find a suitable riffle to sample. You may need to wear chest waders to get to the gravel bed as there can be a large deep pool between the bank and the gravel bed.



Site directions from Blue Duck Station



Stop at this gate and park up in paddock.

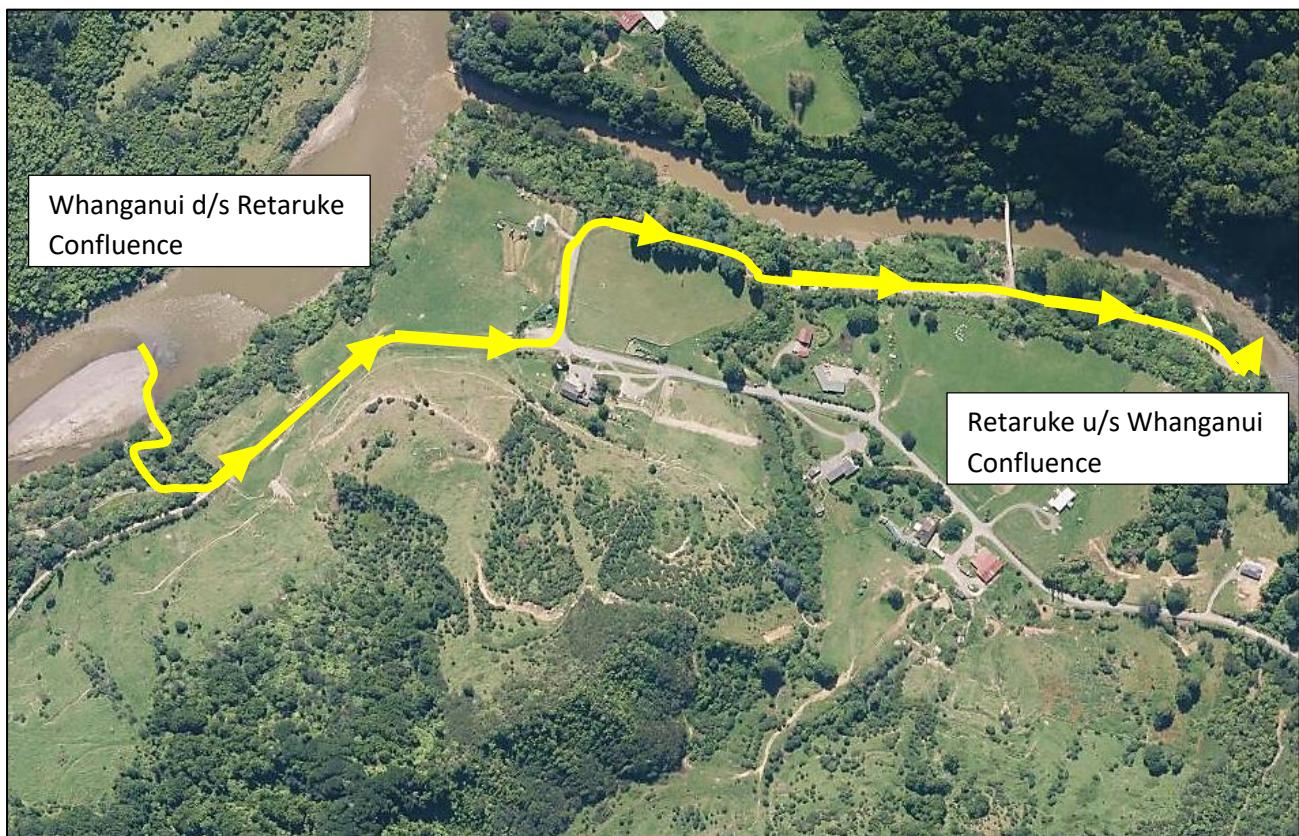


Follow the track signposted for Wades Landing.



Whanganui d/s Retaruke Confluence looking upstream.

SITE LOCATION MAP – Retaruke u/s Whanganui Confluence



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	Electrical- low / high voltage			

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	
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DIRECTIONS:

- From the Whanganui d/s Retaruke Confluence head back the way you came towards Blue Duck Station.
- Turn left down Oio Rd and follow to the end (about 600m). You will drive past a bridge on your left, keep following the road down until you reach a boat ramp.
- Find a suitable riffle to sample.

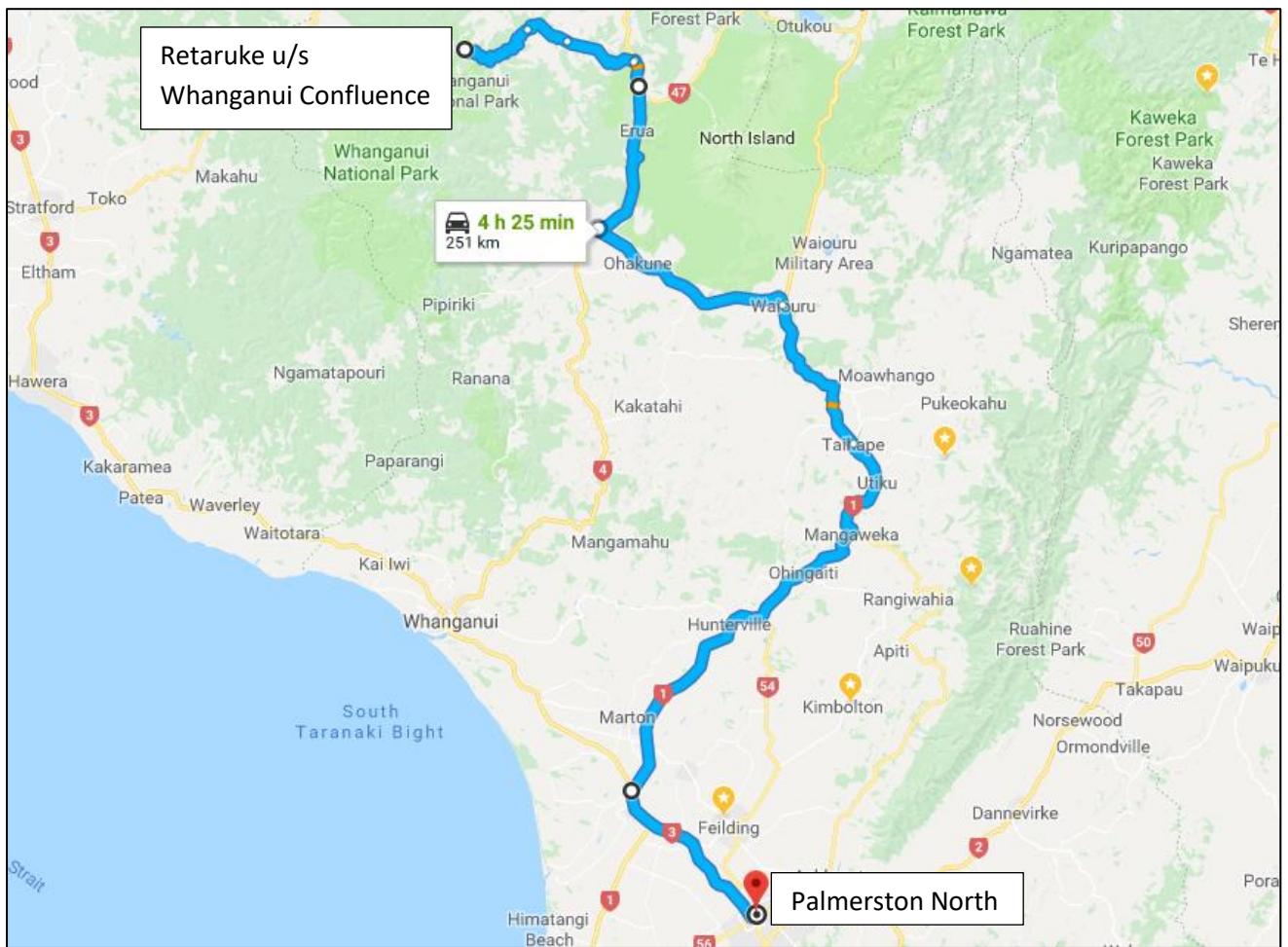


Drive straight down Oio Road until you reach the boat ramp, do not go over the bridge to the left.



Retaruke u/s Whanganui Confluence site looking upstream.

HEADING BACK TO THE OFFICE



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

Traffic / Vehicle Movements	UV Radiation	Slippery surfaces	Weather/Temperature Extremes
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DIRECTIONS:

- From the Retaruke u/s Whanganui Confluence Site head back the way you came down Oio Rd for 28km. You will come to an intersection with Raurimu Kaitieke Rd, stay straight onto Raurimu Kaitieke Rd rather than following Oio Rd to the left.
- Stay on Raurimu Kaitieke Rd for about 15km to the end, you will come to SH4. Turn right onto SH4.
- Follow SH4 for about 32km, then turn left onto SH49.
- Follow SH49 for about 37km until you reach Waiouru, when in Waiouru turn right onto SH1.
- Follow SH1 for about 139km until you reach Bulls, in Bulls turn left onto SH3.
- Follow SH3 for about 30km until you reach Palmerston North.