

Version No: 10 Issue Date: 26/09/2024 Portfolio: Discrete Water Quality	Horizons Regional Council	Section No: 15.7 Appendix No: 1 Page: 1 of 15
	Hydrology Operations Manual	

Water Quality Monitoring Run Guide

Upper Rangitikei

POINT DISCHARGE Monthly 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 checked="" type="checkbox"/>	Suspended loads	<input type="checkbox"/>	Noise – plant and equipment	<input checked="" type="checkbox"/>
Difficult entry/exit	<input type="checkbox"/>	Falling objects	<input type="checkbox"/>	Communication – means of	<input type="checkbox"/>
Oxygen deficiency/excess	<input type="checkbox"/>	Working near cranes and crane runways	<input type="checkbox"/>	Remote area	<input 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 checked="" type="checkbox"/>
UV Radiation	<input checked="" type="checkbox"/>	Pressurized air/gas	<input type="checkbox"/>	Hazardous waste	<input type="checkbox"/>
Electrical – low /high voltage	<input 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 checked="" 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"/>	Difficult access/egress	<input checked="" type="checkbox"/>

Required PPE– 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	PROTECTIVE GLOVES	PERSONAL FLOATATION DEVICE (PFD)
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HI VIZ	SAFETY HARNESS	WADERS	HAND SANITISER	VEHICLE BEACON		
						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
Trip Hazards	✓			✓	✓		Prior to sampling staff must check area is clear of any items that pose a risk. If there is any these 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 – STP PONDS	✓			✓	✓		Pond edges and river banks can be slippery at any time. Sampling from the pond edge must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18 & 30]
Slippery Surfaces – RIVER ACCESS	✓			✓	✓		River banks can be slippery at any time. Care should be taken in all conditions. PFD's must be available to staff for use is deemed appropriate. [HMP18]
Drowning - STP PONDS	✓			✓		✓	The STP ponds can be deep, full of sediments, and have operating equipment on/within them. Typically, HRC staff do not need to sample from the STP pond/Pond edge. Sampling direct from the pond must always be done from stable level ground using a sample pole. PFD's must be worn by staff. Vehicles must be driven a sensible distance from any pond edges. [HMP18 & 30]
Drowning - FLOWING WATER	✓			✓		✓	Staff should be trained in alignment with HRCs training requirements. PFD's must be available to staff for use is deemed appropriate [HMP18]
Machinery – mobile plant	✓			✓		✓	Sample site is within an operating waste water treatment plant, plant and machinery may be on-site during sampling. Staff to wear appropriate PPE, obey on site signage and instruction, and give way to all operational traffic.
Traffic Vehicle movements – PLANT WWTP	✓			✓		✓	TAIHAPE and HUNTERVILLE STP sample sites are within an operating waste water treatment plant with council and contractor vehicles liable to be present at any time. Staff to obey on site signage and instruction. HRC Vehicle to be parked in a safe and appropriate location. [HMP 16] [HMP 20]
Noise – plant and equipment	✓			✓	✓		Plant operation can create high levels of noise. Ear protection to be carried in HRC vehicle at all times. Ear protection to be worn when machinery is running [HMP 4]

Known Hazard	Significant		Can it be Eliminated		Can it be Minimised		Method of control
	Yes	No	Yes	No	Yes	No	
Hazardous Waste – treated Effluent	✓			✓	✓		Sampling activities require the collection of a sample of treated effluent. Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample. Hepatitis B vaccinations are offered by HRC [HMP 30] [HMP 35]
General Waste		✓		✓	✓		General waste can be stored on site depending on operating activity. Sample staff have no need to interact with any waste. All waste created by HRC staff to be taken with them.
UV Radiation	✓			✓	✓		Horizons provide sunscreen and hats.
Manual Handling	✓			✓	✓		There should be no need for sample staff to move any equipment etc. in order to carry out sampling activities. Sampling activities require the collection of a sample of treated effluent. Staff must wear sampling gloves, eye protection and have access to anti-bacterial hand-gel to sample. Hepatitis B vaccinations are offered by HRC. [HMP 30] [HMP 35]
Electrical – low /high voltage	✓			✓	✓		Sampling activity does not require any interaction with live circuitry or equipment. Staff should check sample area is clear of any hazards (i.e. loose cables, live equipment etc.) before sampling. If access/safety is considered compromised sampling is aborted. [HMP 23]
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]
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 of additional and appropriate clothing.
Temperature Extremes - Hypothermia: following emersion	✓			✓		✓	Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP18] [HMP18]
Traffic Vehicle movements – ROADSIDE /GENERAL	✓			✓		✓	Sample site requires parking beside a main road. The vehicle must be parked as far off of the road surface as safe and practicable to do so. Use of hazards lights must be considered. Hi-vis clothing must be worn. [HMP 16] [HMP 20]

Site Information

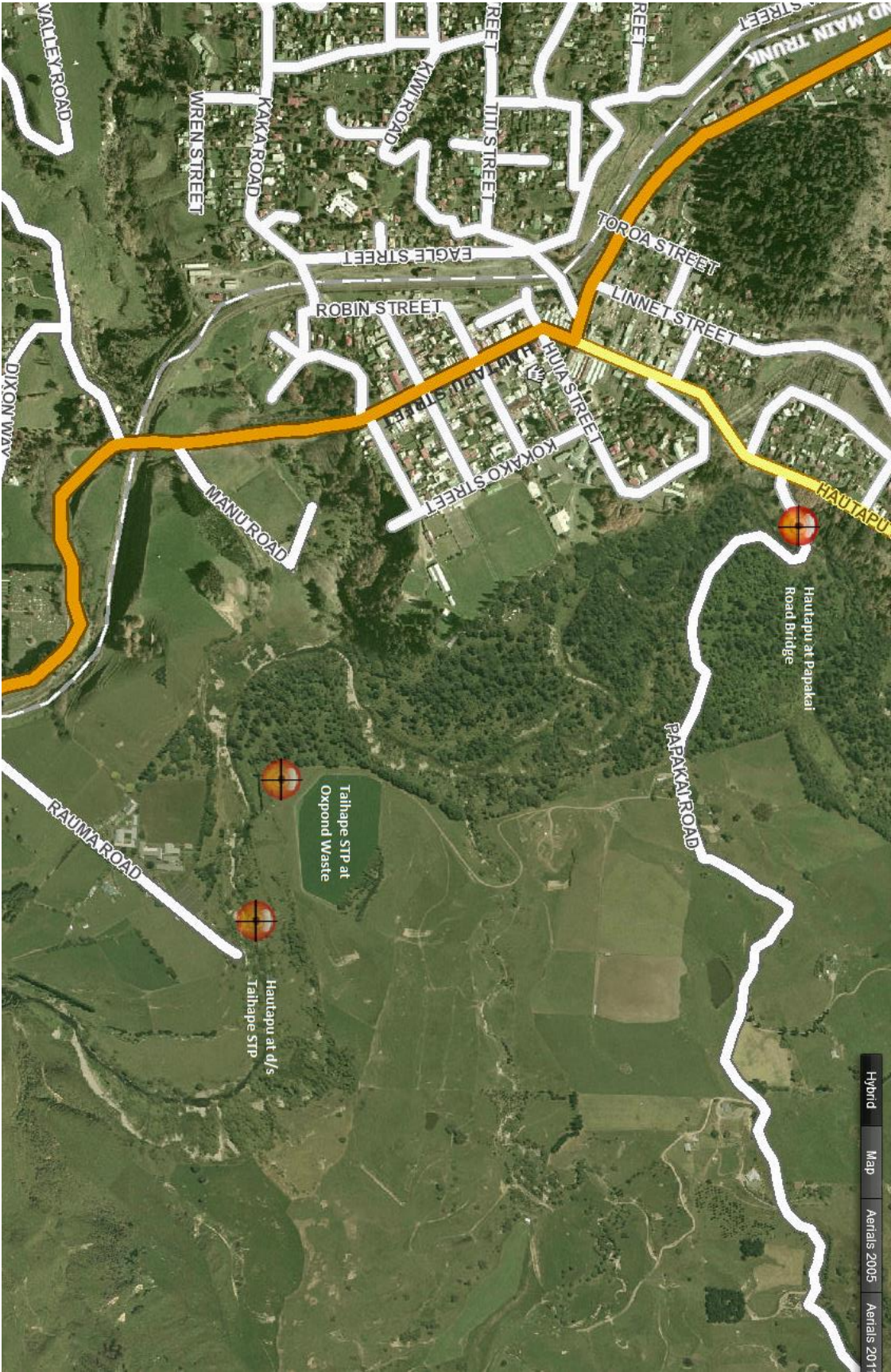
Sampling Order	Hilltop Site Name	Easting	Northing	Comments	
1	Hautapu at Papakai Road Bridge	2750410	6166560	Metals bottle needed (1x per site)	
2	Taihape STP at Oxpond Waste	2750918	6165523		
3	Hautapu at d/s Taihape STP	2751201	6165472		Clarity Tube (access/H&S)
5	Huntermville STP at Microfiltration Plant	2729555	6136755		636 key required for access
4	Porewa at u/s Huntermville STP site A	2729590	6136825		Gauge when possible
6	Porewa at d/s Huntermville STP Site A	2729595	6136702		

[Contact details can be found here.](#)

Equipment Required

Sample Bottles	See bottle guide.
Equipment	<ul style="list-style-type: none"> • Handheld multi-parameter instrument (calibrated) • Sample bottles (including spares) • Black disc, viewer, tape measure • Clarity Tube • Sampling pole • Chilly bins and ice-packs • Field sampling books • Sampling ID labels (created using Hilltop Sampler) • Use gloves for wastewater and effluent samples
Additional Comments/ Instructions	<ul style="list-style-type: none"> • '636' Key for Access to Huntermville STP compound • Access downstream Taihape can be steep and slippery in places – apply caution

SITE LOCATION MAP – Taihape Location Plan







SITE LOCATION MAP – Hautapu at Papakai Road Bridge



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): **These should link back to first page**

Drowning – River	Traffic / vehicle movements – Roadside parking	Slippery surfaces – mud, periphyton	Trip hazards – cobblestones, uneven ground
UV Radiation	Public Area		

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):

VEHICLE BEACON	HI VIZ	PFD	WADERS				
							

DIRECTIONS:

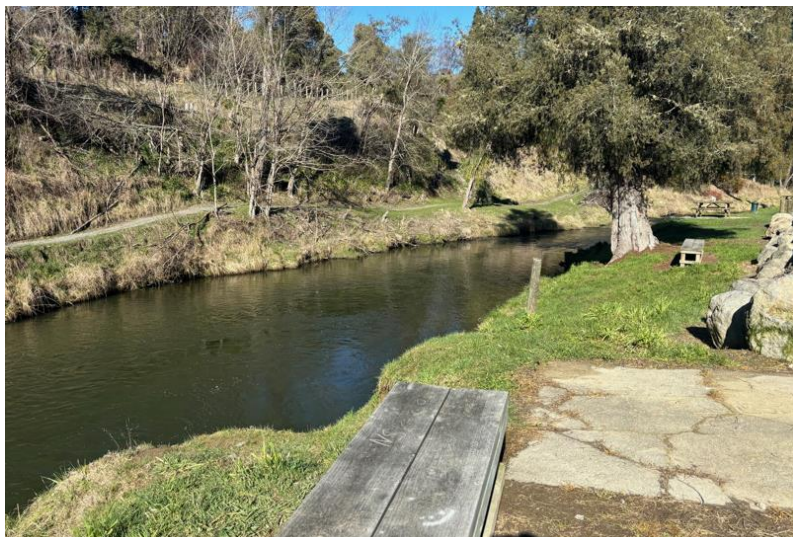
- Leave Palmerston North on SH1 to Taihape.
- Continue through town (i.e. toward Waiohuru) on SH1 – now called Hautapu Street.
- After travelling past the shops, SH1 turns to the left and Hautapu Street continues straight. To get to the sites travel straight over at this junction (giving way to SH1 traffic) to remain on Hautapu Street.
- After Approx. 500m turn right off of Hautapu Street onto Papakai Road.
- After Approx. 120m you should reach the Papakai Road Bridge.

ACCESS:

- Park in the picnic area to the right of the road.
- Wear appropriate PPE when working on the roadside.
- Access the Hautapu via the bank near the picnic area entrance downstream of the bridge.
- Take care as the bank can be steep in places.
- Sample Approx. 10m downstream of the bridge.
- THIS IS THE UPSTREAM TAIHAPE STP SAMPLE SITE

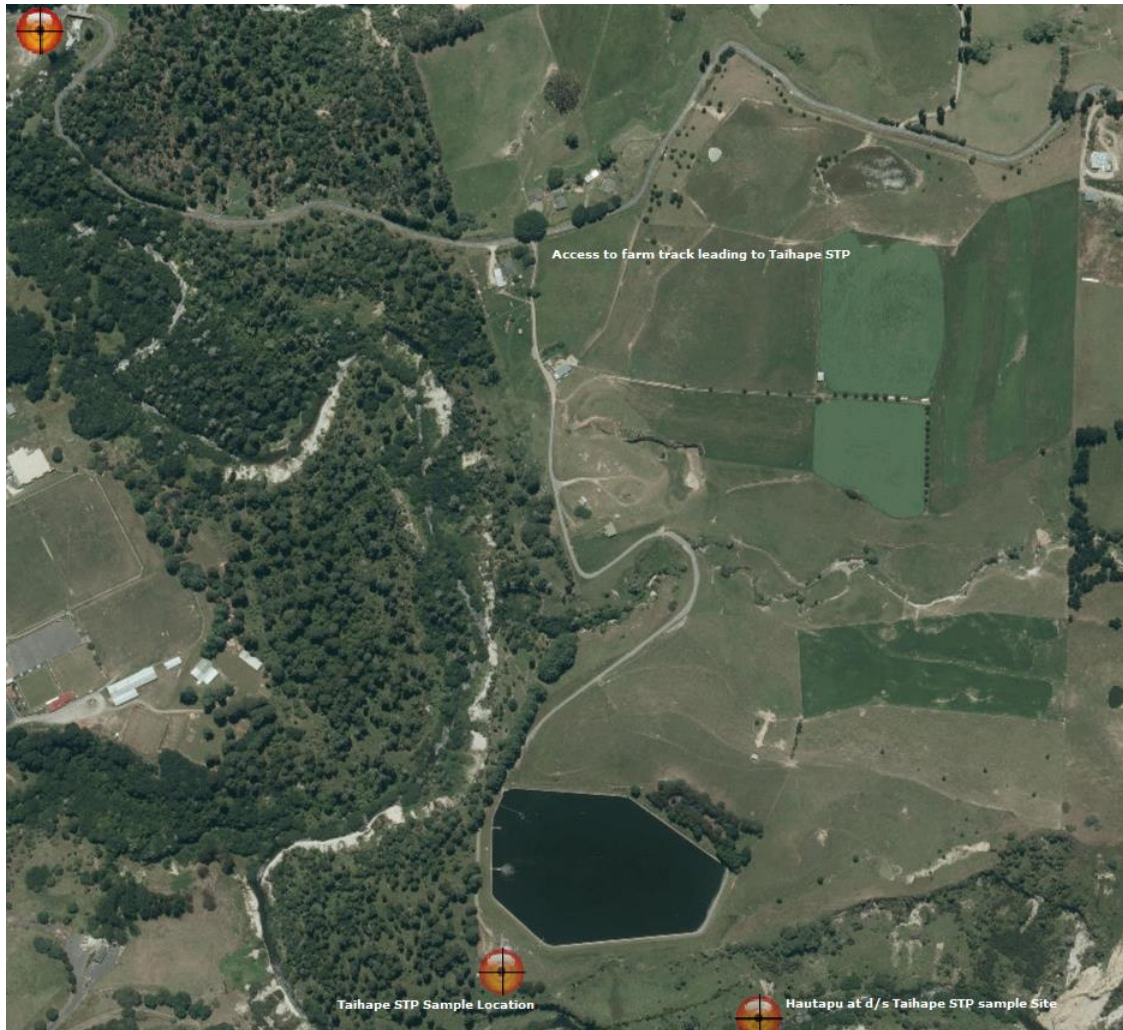


Hautapu at Papakai Road Bridge – view looking upstream toward Papakai Road Bridge



Hautapu at Papakai Road Bridge – view looking downstream from Papakai Road Bridge opposite parking area






SITE LOCATION MAP – Taihape STP



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): **These should link back to first page**

Drowning – River	Traffic / vehicle movements – Roadside parking	Electric Fences	
Trip hazards – cobbles ,uneven ground	UV Radiation	Hazardous Waste – treated Effluent	
Slippery surfaces – mud, periphyton	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):

VEHICLE BEACON	HI VIZ	PFD	WADERS	HAND SANITISER	SAFETY GLASSES / GOGGLES	SAMPLING GLOVES	
							

DIRECTIONS:

- From the *Hautapu at Papakai Road Bridge* site continue over the bridge (Papakai Road).
- After approx. 700m on your right there should be a double height cyclone gated entrance to a farm. This track leads to the Taihape STP and the downstream site.
- Turn in here.
- Wear appropriate PPE.

ACCESS:

- Limit your speed to less than 30km/h and give way to any farm traffic.
- Leave gates as you find them – there should be no locked gates.
- Follow the track all the way to the end – at this point you should be entering the STP compound (look out for the signage).
- Park just off the track – it is possible to loop around the plant buildings.

TAIHAPE STP at OXPOND WASTE:

- Facing the Hautapu River with your back to the ponds, the STP outfall is at approx. 2 o'clock.
- The site either discharges into an open inspection chamber from a concrete discharge channel (overflow) and/or a pipe (treated effluent) into the inspection channel itself.
- Sample at the inspection chamber using a sample pole.
- Be aware of the surrounding area at times being overgrown.
- Wear Gloves.



Taihape STP at Oxpond Waste – view looking from sample location to parking area.

SITE LOCATION MAP – Hautapu at d/s Taihape STP



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): **These should link back to first page**

Drowning – River	Traffic / vehicle movements – Roadside parking	Electric Fences	
Trip hazards – cobbles, uneven ground	UV Radiation		
Slippery surfaces – mud, periphyton	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):

VEHICLE BEACON	HI VIZ	PFD	WADERS	HAND SANITISER	SAFETY GLASSES / GOGGLES	SAMPLING GLOVES	
							

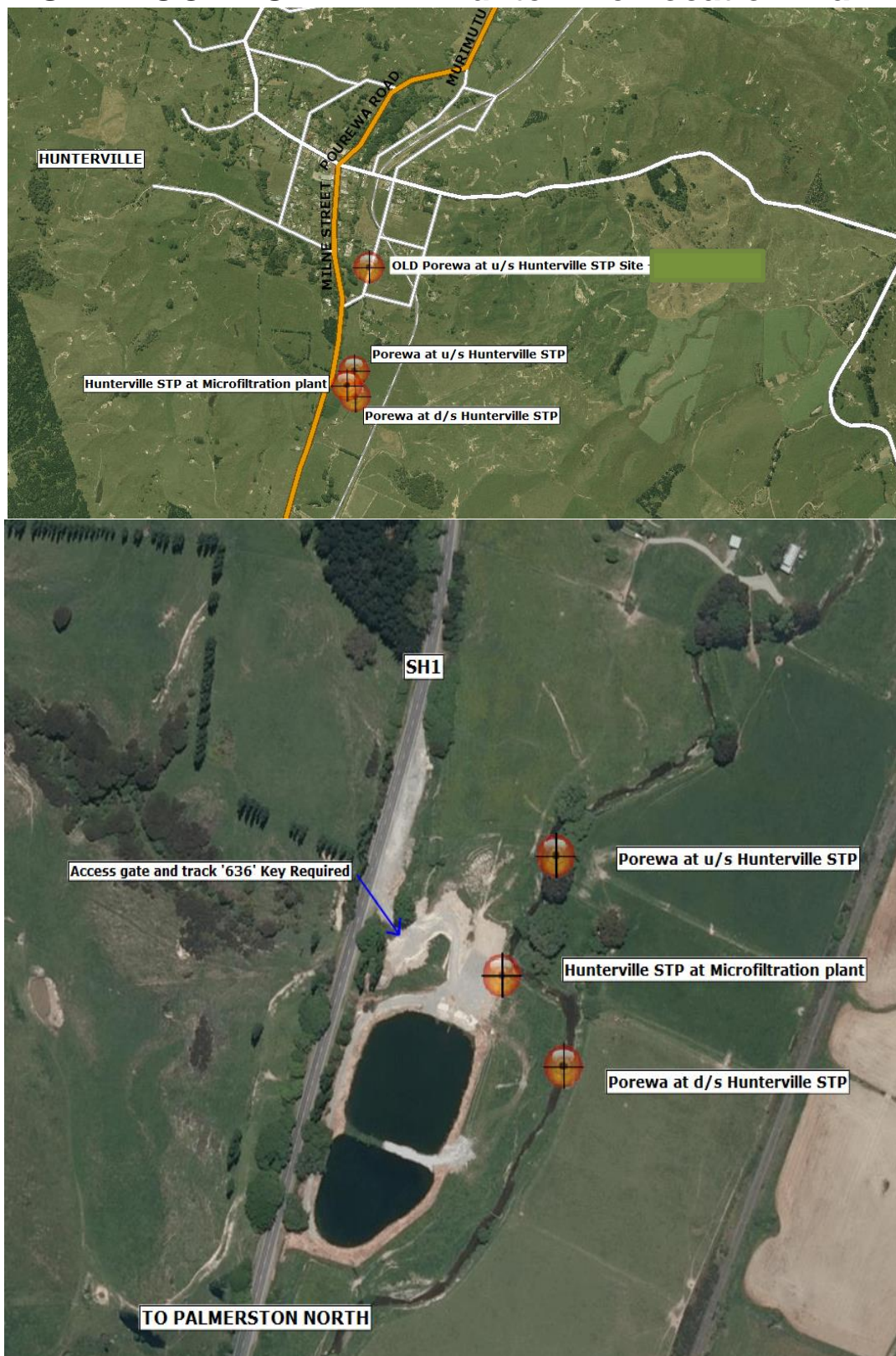
ACCESS:

- From the compound (where you have parked) gain access to the paddock running along the banks of the Hautapu downstream of the STP.
- To do this go through the gate between the pond and compound buildings (when facing the ponds - elevated in front of you), then turn right and through the gate for the paddock that runs along the Hautapu to access the downstream sample site.
- The track can be both steep and slippery so take your time – use a backpack for equipment if possible. You will pass over/through wet/spring fed areas.
- The easiest route is to keep to the top of the bank and follow the fence line.
- Follow the tracks until the slope down to the Hautapu becomes more gentle – taking care with your footing.
- Sample from a suitable point at about 300m downstream of the effluent discharge.



Hautapu at d/s Taihape STP – view looking upstream at sample location.

SITE LOCATION MAP – Hunterville Location Plan



POSSIBLE SITE HAZARDS (this does not negate undertaking a hazard review prior to sampling on the day): **These should link back to first page**

Drowning – River	Traffic / vehicle movements – Roadside parking	Electric Fences	
Trip hazards – cobbles, uneven ground	UV Radiation	Hazardous Waste – treated Effluent	
Slippery surfaces – mud, periphyton	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):

VEHICLE BEACON	HI VIZ	PFD	WADERS	HAND SANITISER	SAFETY GLASSES / GOGGLES	SAMPLING GLOVES	
							

DIRECTIONS:

- From the Taihape STP sites, drive back to & through Hunterville on SH1.
- Just after leaving Hunterville you will see a gravelled layby on the left of SH1 – pull in here.
- At the end of the layby to the left is a gravelled track leading to the STP.
- Access is via a '636' Key.
- Wear appropriate PPE.

ACCESS:

- Leave the gate behind you as you found it.
- Park up by the work shed(s).

Porewa at u/s Hunterville STP

- Access the paddock leading to upstream of the plant (use the cyclone gate alongside the STP compound perimeter).
- The STP discharges from a white perforated 'T' Pipe opposite the shed.
- The upstream site is 50m upstream of this discharge point.
- Gauge here too.
- On many visits the water level of the Porewa may be too low for the use of black disc – in these instances use a clarity tube to obtain a visual clarity reading.

Hunterville STP at Microfiltration Plant

- After sampling the upstream site head back to the white perforated 'T' Pipe opposite the shed.
- Sample from one of the discharge points along this pipe.
- Wear gloves.

Porewa at d/s Hunterville STP

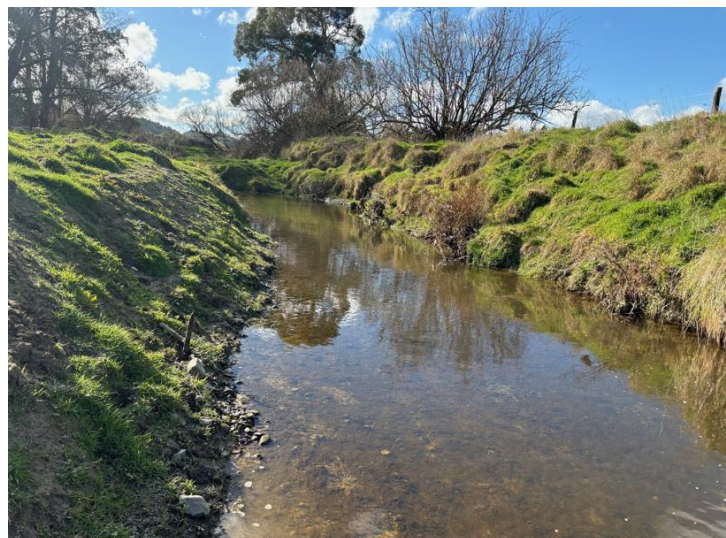
- From the white perforated 'T' Pipe, continue downstream (via the paddock) to sample the downstream site.
- The downstream site is 50m downstream of the white perforated 'T' Pipe.
- On many visits the water level of the Porewa may be too low for the use of black discs – in these instances use a clarity tube to obtain a visual clarity reading.



Porewa at u/s Hunterville STP – view looking upstream at sample and gauging location



Hunterville STP at Microfiltration Plant – view looking upstream toward sample location (White 'T' Pipe).



Porewa at d/s Hunterville STP – view looking upstream at sample location back toward STP compound (above the meander photographed).