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## SoE and Periphyton Monitoring Run Guide

# Upper Manawatū Discharge/Run 3

(Monthly Sampling)

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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 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 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 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 checked="" 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 checked="" type="checkbox"/>
Electrical – low /high voltage	<input type="checkbox"/>	Traffic / vehicle movements	<input checked="" type="checkbox"/>	Hydrocarbon / chemical spill	<input checked="" type="checkbox"/>
Multiple electrical feeds	<input type="checkbox"/>	Machinery – mobile plant	<input checked="" type="checkbox"/>	Soil disturbance/erosion	<input checked="" 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 type="checkbox"/>	Stock/Farm Animals	<input checked="" type="checkbox"/>	Difficult site 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 checked="" 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	HUNTING/FIRE ARMS	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"/>	<input checked="" type="checkbox"/>

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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. Note that sampling from the pond edge is not required at Dannevirke WWTP. 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 Dannevirke or PPCS ORINGI STP Pond edges. [HMP18 & 30]
Drowning, Entrapment - CONFINED SPACES	✓			✓	✓		Both Dannevirke and PPCS ORINGI STP's are sampled from an inspection chamber. Staff should only sample using a sample pole and not enter an inspection chamber at any time. [HMP02]
Drowning - FLOWING WATER	✓			✓	✓		Staff should be trained in alignment with HRC's 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	✓			✓	✓		STP sample sites are typically 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]

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Known Hazard	Significant		Can it be Eliminated		Can it be Minimised	Method of control	
	Yes	No	Yes	No	Yes	No	
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]
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. [HMP
Manual Handling	✓			✓	✓		There should be no need for sample staff to move any equipment etc. in order to carry out sampling activities with the exception of moving manhole covers at both STP's. The moving of manhole covers must only be done with a manhole lifter.  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 -	✓			✓	✓		Staff must have access to suitable PPE and spare clothing within their vehicle. [HMP18] [HMP18]

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Known Hazard	Significant		Can it be Eliminated		Can it be Minimised	Method of control	
	Yes	No	Yes	No	Yes	No	
Hypothermia: following emersion							
Traffic Vehicle movements – ROADSIDE /GENERAL	✓			✓	✓		Some sample sites require 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]
Difficult access egress to sample site	✓			✓	✓		<b>MANGATERA at US MANAWATU CONFLUENCE:</b> Area is prone to slumping with a mobile river channel. Care is required at all times. In high flow conditions, bad weather (i.e. conditions under foot) access may not be safe and therefore sampling should be not undertaken.
Line of Fire – Hunting/Firearms	✓			✓	✓		<b>Oruakeretaki at Ruahine Foothills</b> –access to site is within Ruahine Reserve, used by Hunters and Trampers. Keep to either footpath or immediate area around sample/gauging location. Wear High vis at all times.
No cell phone network	✓			✓	✓		<b>Oruakeretaki at Ruahine Foothills</b> – no/extremely weak cellular network coverage at site – take EPIRB.
Difficult access egress to sample site	✓			✓		✓	<b>Oruakeretaki River Sites:</b> Access to the sample location is limited by bank conditions. Area is subject to a very mobile river channel. Care is required at all times. In high flow conditions, bad weather (i.e. conditions under foot) access may not be safe and therefore sampling should be not undertaken.

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## Site Information

Hilltop Site Name	Easting/Longitude		Northing/Latitude	Comments
Dannevirke STP at micro-filtered oxpond	NZMG:	2773643	6104224	Metals bottle needed
	NZTM:	1863644	5542526	
	WGS84:	176.098622	-40.226231	
Mangatera at Dannevirke	NZMG:	2773920	6104430	Chlorophyll a Sample and Visual assessment Sampled from inspection chamber – manhole lifter and sample pole required
	NZTM:	1863918	5542731	
	WGS84:	176.101761	-40.224302	
Mangatera at u/s T.D.C. Ox Ponds	NZMG:	2773909	6104380	Gauged Metals bottle needed
	NZTM:	1863911	5542683	
	WGS84:	176.101696	-40.224732	
Mangatera at d/s Dannevirke STP	NZMG:	2773906	6104189	Metals bottle needed Chlorophyll a Sample and Visual assessment
	NZTM:	1863908	5542494	
	WGS84:	176.101739	-40.226441	
Mangatera at u/s Manawatu Confluence (Timber Bay)	NZMG:	2773602	6102633	Access in high flow and bad weather conditions marginal
	NZTM:	1863606	5540937	
	WGS84:	176.098825	-40.240543	
Tamaki at Tamaki Reserve	NZTM:	1858299	5554509	Chlorophyll a Sample and Visual Assessment. Water Quality and Black Disk
Oruakeretaki at Ruahine Foothills	NZMG:	2760523	6106992	Access takes time. No cell coverage at sample site Sample site within Ruahine Reserve – hunters and Trampers Gauged – limited in higher flows
	NZTM:	1850545	5545284	
	WGS84:	175.943492	-40.205327	
PPCS Oringi STP at Oxpond Waste	NZMG:	2768293	6100578	Sampled from inspection chamber – manhole lifter and sample pole required
	NZTM:	1858294	5528881	
	WGS84:	176.037296	-40.260692	
Oruakeretaki at d/s PPCS Oringi STP	NZMG:	2768528	6100534	
	NZTM:	1858528	5538836	
	WGS84:	176.040063	-40.261019	

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

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## Equipment Required

Sample	<b>NINE (9) sample bottle sets – refer to</b> <a href="http://tqm.horizons.govt.nz/Hydrology/SOPs/cd_om_15.4_Appendix_4_ELS%20Bottle%20Guide.xlsx">http://tqm.horizons.govt.nz/Hydrology/SOPs/cd_om_15.4_Appendix_4_ELS%20Bottle%20Guide.xlsx</a>
Sample	<b>NINE (Water Quality) THREE (Periphyton)</b>
Equipment	<ul style="list-style-type: none"> <li>• Handheld multi-parameter instrument (calibrated) – including iPad/screen</li> <li>• Black disc, viewer, tape measure</li> <li>• Clarity Tube</li> <li>• Bathoscope / Viewer</li> <li>• Pottles (Approx 10)</li> <li>• Scrubbing brush, tooth brush and washer bottle</li> <li>• Yellow sample bottle lid</li> <li>• Ice cream container</li> <li>• Sampling pole</li> <li>• Chilly bins and ice-packs</li> <li>• Bags for isolating effluent samples</li> <li>• Disinfectant equipment for sampling equipment</li> <li>• Field sampling books</li> <li>• Sampling ID labels (created using Hilltop Sampler)</li> <li>• Gloves for wastewater and effluent samples</li> <li>• Alcohol gel</li> <li>• Personal Locator Beacon</li> <li>• 4WD Vehicle equipped with VHF Radio</li> <li>• Throw Bag</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>• <b>Dannevirke STP</b> : ‘TDC’ key for access required</li> <li>• <b>Oruakeretaki at Ruahine Foothills</b>: Out of cellular signal range – take EPIRB</li> <li>• <b>Oruakeretaki at Ruahine Foothills</b>: Hunters and trampers in vicinity of sample site</li> <li>• <b>Oruakeretaki at Ruahine Foothills</b>: Gauged site – viable x-sections limited as steep boulder channel, no safe way of gauging in higher flows.</li> <li>• <b>Mangatera at d/s Dannevirke STP</b>: Alternative route to sample site is possible from the Dannevirke STP compound.</li> <li>• <b>Mangatera at u/s Manawatū Confluence</b>: Access is limited due to slumped banks and a mobile channel. Care required at all times. Access may be unsafe in high flow conditions or in poor weather/conditions</li> <li>• <b>Dannevirke and PPCS WWTP’s</b>: Manhole lifter and sample pole required for sampling.</li> <li>• <b>PPCS Oringi STP at Oxpond Waste &amp; Oruakeretaki at d/s PPCS Oringi STP</b>: Sign/Induction is required with <b>JSA Form required for each sample round</b></li> <li>• <b>Oruakeretaki at d/s PPCS Oringi STP</b>: Access to site in high flows can be difficult.</li> </ul>



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### Mangatera Sample Sites:





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## Alternative access: Mangatera at u/s T.D.C. Ox Ponds and Mangatera at d/s Dannevirke STP



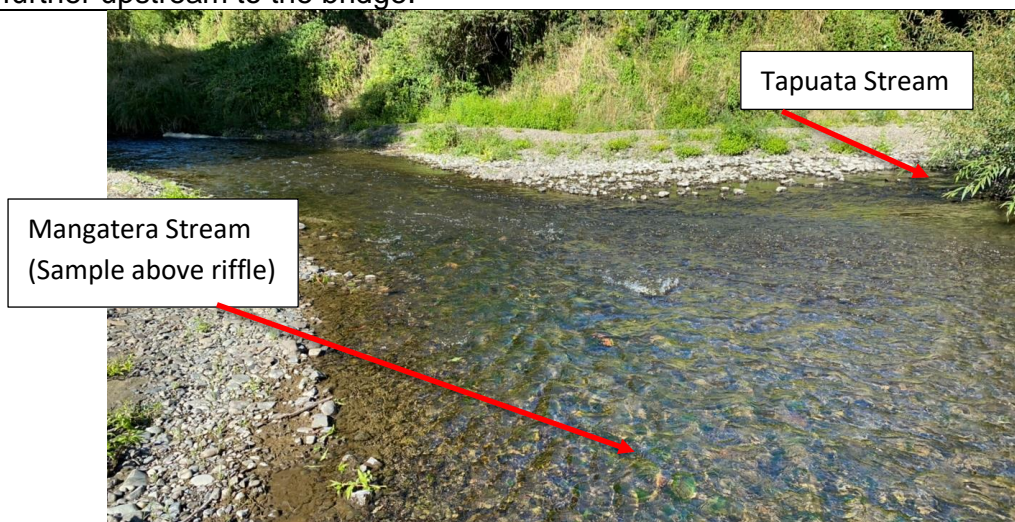
### Mangatera at Dannevirke (Sci – u/s STP site)

<b>POSSIBLE SITE HAZARDS</b> (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		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
<b>REQUIRED PPE</b> (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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITSER					

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#### DIRECTIONS:

- From the Palmerston North office travel north-east over Saddle Road to Dannevirke. As you enter the 70 km/hr area just before Dannevirke there is a bright green Farm Source building on the right. Immediately after this turn right on to Makirikiri Road.
- Follow this road around, past the sewage treatment ponds until it reaches the intersection with Weber road. Turn right onto Weber road.
- Follow Weber road down the hill and across the bridge. Immediately after the bridge turn into the driveway on the right. There is a large shed and an open area, find somewhere close to the river towards the bridge to park up. You should see a track leading down to the stream, follow this.
- Sample upstream of where the Tapuata stream converges with the Mangatera. This is a very obvious confluence on the true right of the Mangatera stream. When doing WQ walk further upstream to the bridge.





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### Mangatera at u/s TDC Ox Ponds (WQ Site)

<b>POSSIBLE SITE HAZARDS</b> (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		Machinery- mobile plant		Traffic / Vehicle Movements	
Weather/Temperature Extremes							
<b>REQUIRED PPE</b> (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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITSER					
<b>ACCESS:</b> <ul style="list-style-type: none"><li>From the Mangatera at Dannevirke site walk downstream from the Tapuata Confluence with the Mangatera to take water quality samples and complete a gauging.</li><li>Sample and Gauging must be above the STP inflow. Sampling must be at least 30m below the Tapuata confluence to ensure mixing.</li></ul>							



View looking upstream from sample point



View looking downstream from sample point

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## Mangatera at d/s Dannevirke STP

**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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

**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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITISER					

### LOW FLOW ACCESS:

- Continue walking downstream from the previous site(s).
- On the true right of the river is the discharge from the Dannevirke STP which takes the form as a small tributary coming into the Mangatera Stream.
- Continue down from the discharge for approximately another 100 meters. You will come to a sharp right hand corner. You may need to cross the stream a few times when making your way down.

### HIGHER FLOW ACCESS (refer to above map):

- Access the site from the WWTP compound.
- In the compound drive right at the double gates and down the hill past the tephra beds and toward the far right hand corner of the paddock.
- Park near this corner – beware of large debris in the grass.
- Walk to the corner and access the fence where the top wire has been cut.
- Follow the trackway to the sample site.



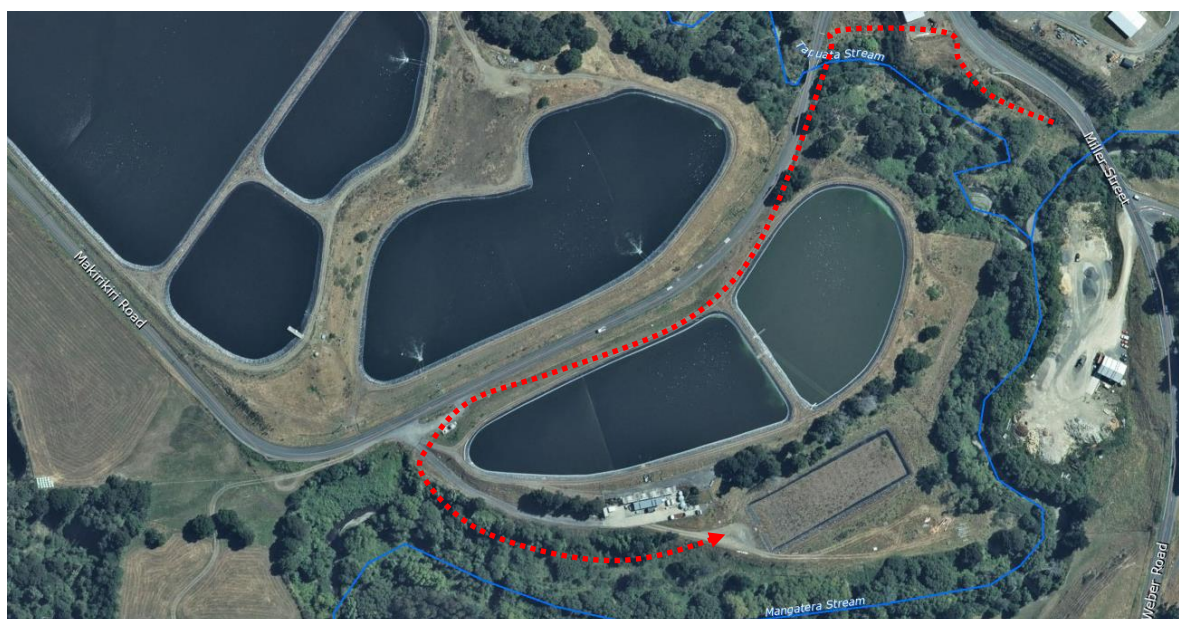
View looking upstream from sample point



View looking downstream from sample point

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## SITE LOCATION MAP – Dannevirke STP at Post Treatment (Formerly Dannevirke STP at Microfiltered Oxpond )



**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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

**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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITISER					

### DIRECTIONS:

- From the Mangatera sampling locations leave the yard and turn left onto Weber Road (towards Dannevirke)
- Drive over the bridge and up the hill, take the first left onto Makirikiri Road
- After approximately 500m on the left is a gravelled shoulder with two cyclone gates
- The first leads to the edge of the ponds – ignore this one
- The second takes you via a sealed roadway to the STP compound. You will need the TDC keys to access this roadway. Unlock this gate and go down the track until you reach the compound and park inside the fence.

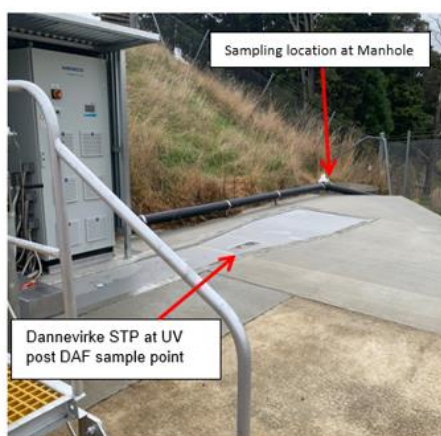


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- Wear appropriate PPE

#### ACCESS:

- Three sample locations exist at the WWTP. Horizons to sample from the Dannevirke STP at Post Treatment sample location. This is from the manhole at the edge of the compound, the blue circle, in the map below.
- **Manhole lifter and sample pole required for sample**

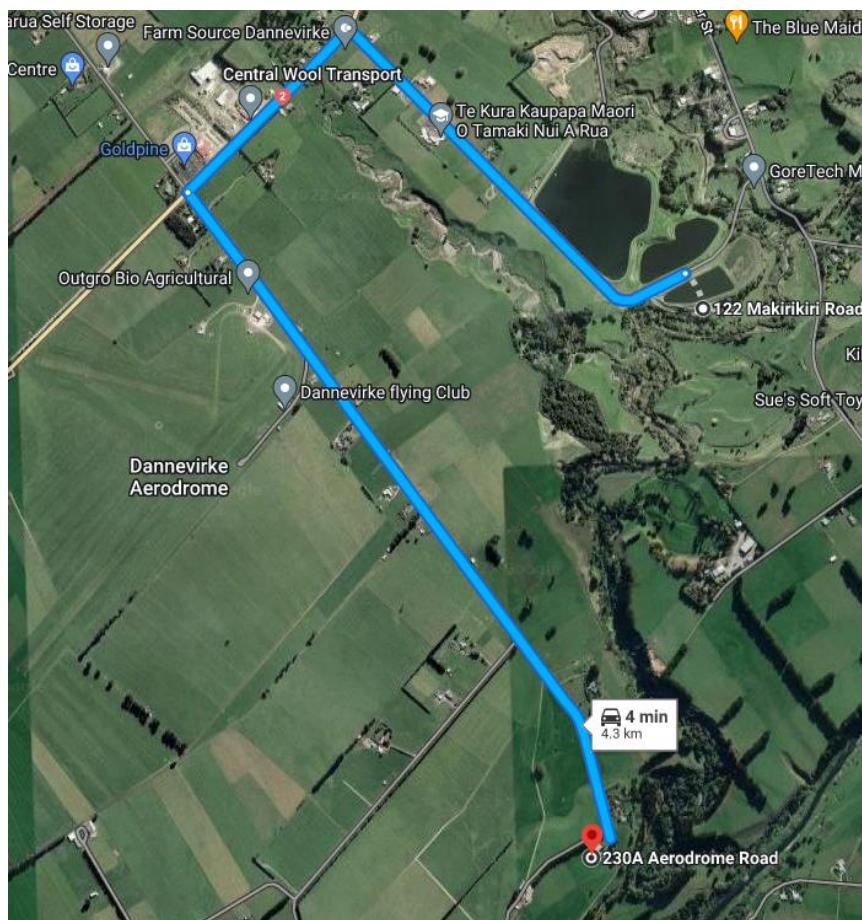


Dannevirke STP at Post Treatment – use manhole lifter and sample pole to sample. Sample from mixed water body in the inspection chamber (not direct from pipes)



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## SITE LOCATION MAP – Mangatera at u/s Manawatū confluence (Timber Bay)



**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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

**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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITISER					

### DIRECTIONS:

- Leave the STP compound and turn left onto Makirikiri Road (toward SH2)
- At the end of the road turn left onto SH2
- After approximately 650m turn left onto Aerodrome Road



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- Follow this to the end through the cyclone gate and stock grid
- Landowner contact details found [here](#)
- 

#### ACCESS:

- Continue straight on the track downhill (not to the right toward a private property). Drive slowly as the track is slippery at times.
- Park near the cyclone gate of the paddock to your left just before the slope down to the picnic area
- Watch out for electric fences! Safest route is over the cyclone gate, across the first paddock and down the sloping path to the lower paddock – access via bungee cords.
- Cut across the lower paddock and under/over the single wire fence on the other side
- Access the river via the wooded banks.
- The bank material is very mobile – always treat them as uneven. Safe access to the stream is pretty much limited to this access point.
- In high flow conditions or when it is slippery under foot access may not be viable – in such circumstances consider abandoning any sampling, documenting the situation with photos and contacting the Discrete Water Quality portfolio holder upon your return to the office.



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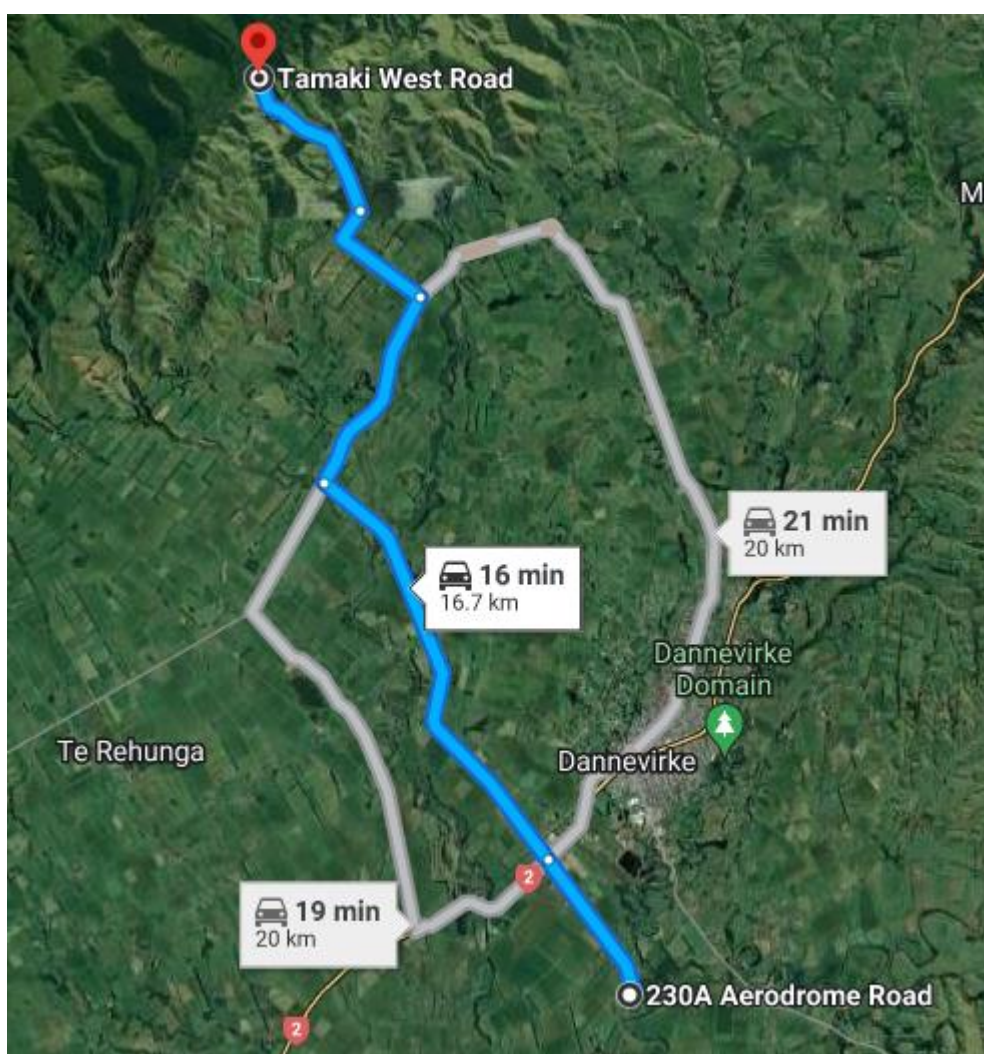


Sample location looking upstream



Sample location looking upstream

## SITE LOCATION MAP – Tamaki at Tamaki Reserve





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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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			

**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	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITISER					

**DIRECTIONS:**

- Turn around and go back the way you came out of Aerodrome Road heading back towards SH2
- At the intersection with SH2 continue straight onto Laws Road
- Follow Laws Road until you get to the intersection with Top Grass Road (which is at the Ruaroa town hall). Turn right into Top Grass Road
- Continue on this road until you get to the second left which should be Tamaki Road West, turn down here. Follow this road round a left hand bend/intersection with Tamaki Road East.
- Follow the road past some sheep yards to the end of the road. You will be able to park here, there will be a DOC sign visible.

**ACCESS:**

- Follow the walking track to the first small stream. When you reach the stream follow it downstream to the confluence with the Tamaki Stream.
- Walk about 50m downstream of this confluence and conduct sampling.





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Sample location looking upstream

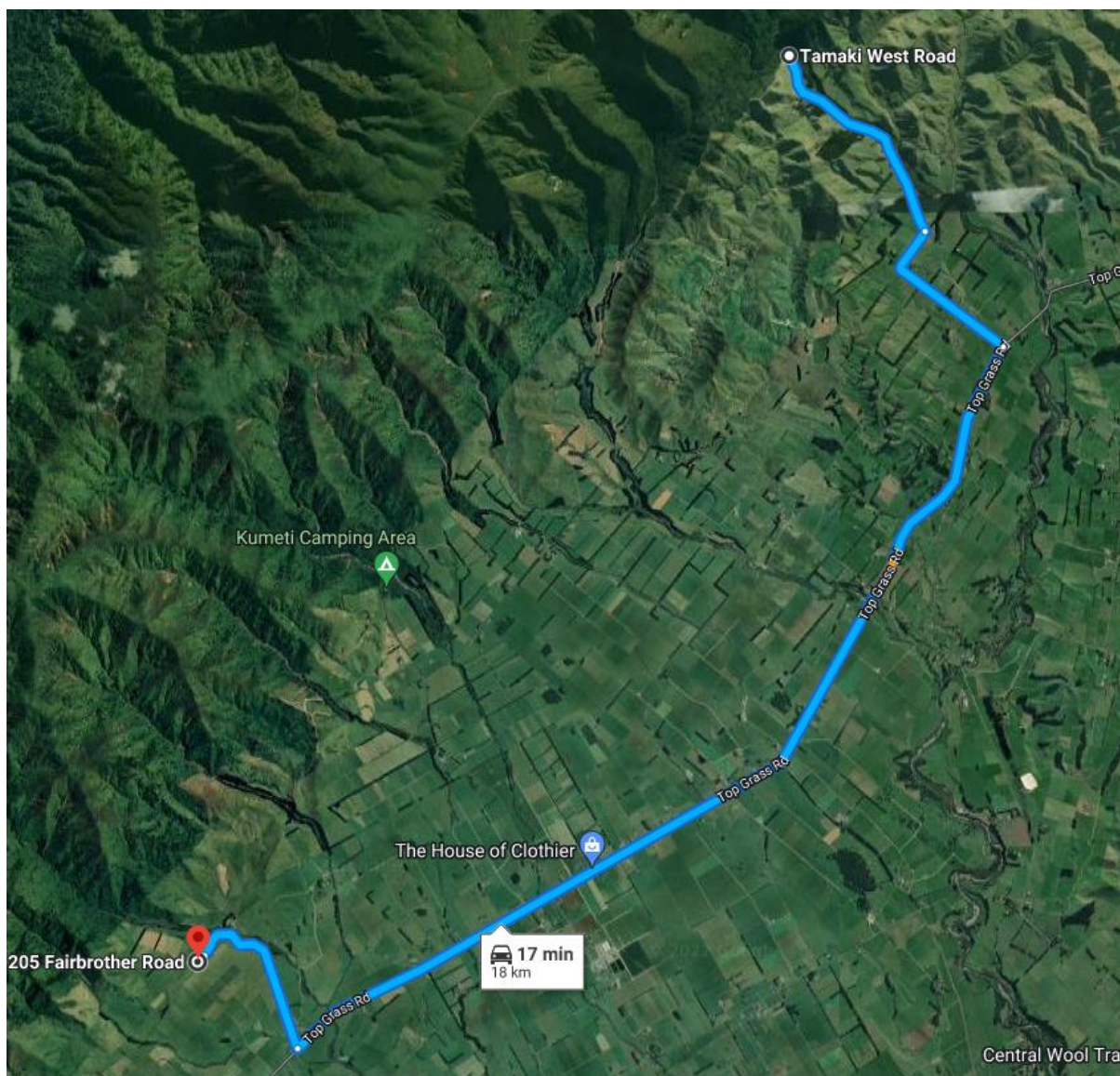


Sample location looking downstream



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## SITE LOCATION MAP – Oruakeretaki at Ruahine Foothills



<b>POSSIBLE SITE HAZARDS</b> (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	Machinery- mobile plant	Traffic / Vehicle Movements
Weather/Temperature Extremes			
<b>REQUIRED PPE</b> (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):			

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WORK BOOTS	PFD	SUN PROTECTION	PERSONAL LOCATOR BEACON	THROW BAG	VHF RADIO	HI-VIS	SAMPLING GLOVES
VEHICLE BEACON	WADERS	HAND SANITSER					

#### **DIRECTIONS:**

- After sampling turn around and head back the way you came on Tamaki West Road
- Turn right at the intersection with Top Grass Road and continue along this road for about 12km.
- Just after you cross the Kumeti Stream, Fairbrother Road will be on your be on your right. Take this turn
- Continue along Fairbrother Road as it turns into gravel.
- At the end of the road, continue along the race way towards the house and open the first gate on your right. Go through this paddock to get into the raceway, there is a relatively defined track that you should be able to follow to the next set of gates to get onto the race way.
- Once you are on the race, follow it along the paddocks as it goes up a small rise and curves to the left with a line of pine trees. At the end go through the gate to the left which has a small stream running through it, go through this gate.
- The track would have disappeared. There will be a hill which falls away to your right towards the river. The landowner has advised this is generally firm, even in winter, but take caution driving down this hill when wet. It may be sensible to park at the top of the hill and walk.
- Drive or walk down to the opposite corner of the paddock and park up on the side of the gateway

#### **ACCESS:**

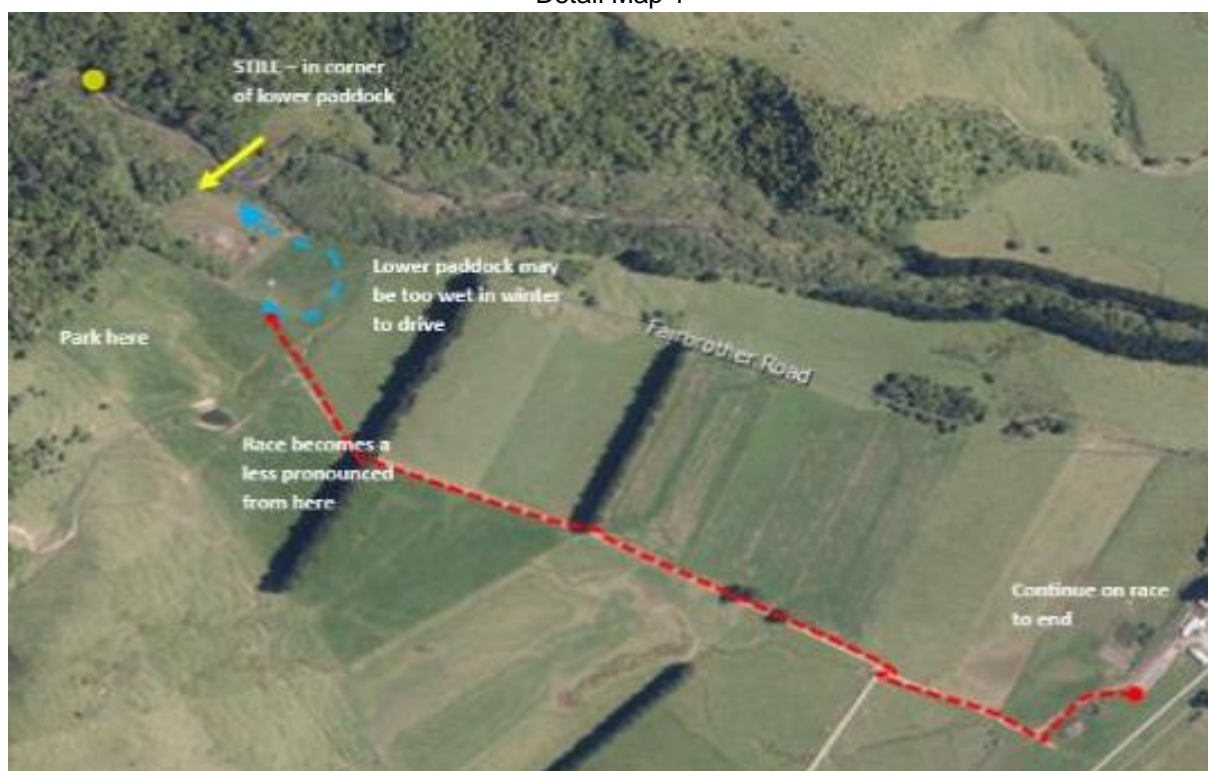
- Walk through the gateway and along the boundary fence, there should be a clearly marked style to climb over the fence. This leads to a track which can be followed a short distance to the river.
- Follow the track toward a sharp left hand turn (that is also uphill) and continue straight – the Oruakeretaki is just a few meters from the track here
- This is the general area for sampling and gauging. The gauging section will vary depending on flow (areas highlighted below); the chances of a high quality conventional gauging are low given the nature of the channel morphology. In higher flows access to a suitable x-section may not be possible



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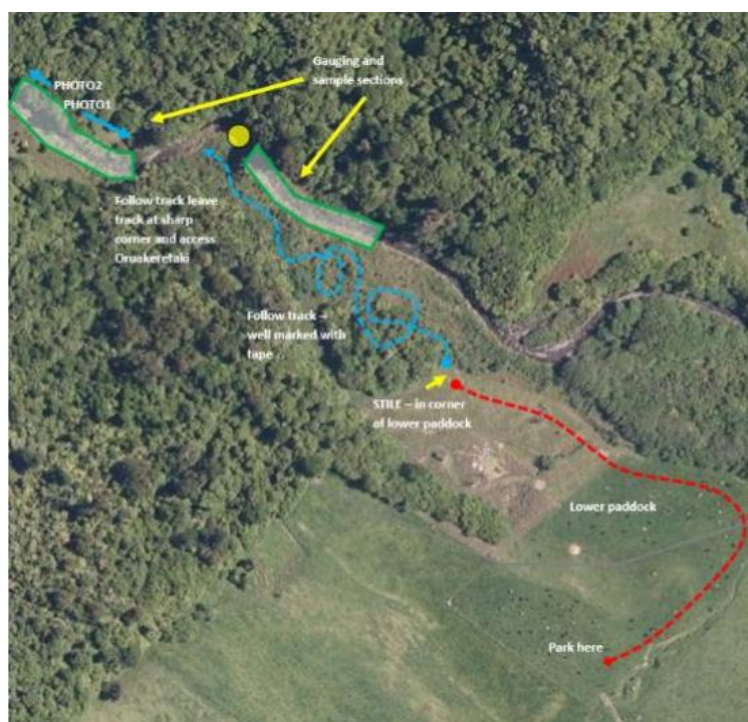


Detail Map 1



Detail Map 2

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Detail Map 3



Sample location looking upstream



Sample location looking downstream



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## PPCS ORINGI:

### PPCS Oringi STP at Oxpond Waste | Oruakeretaki at d/s PPCS Oringi STP



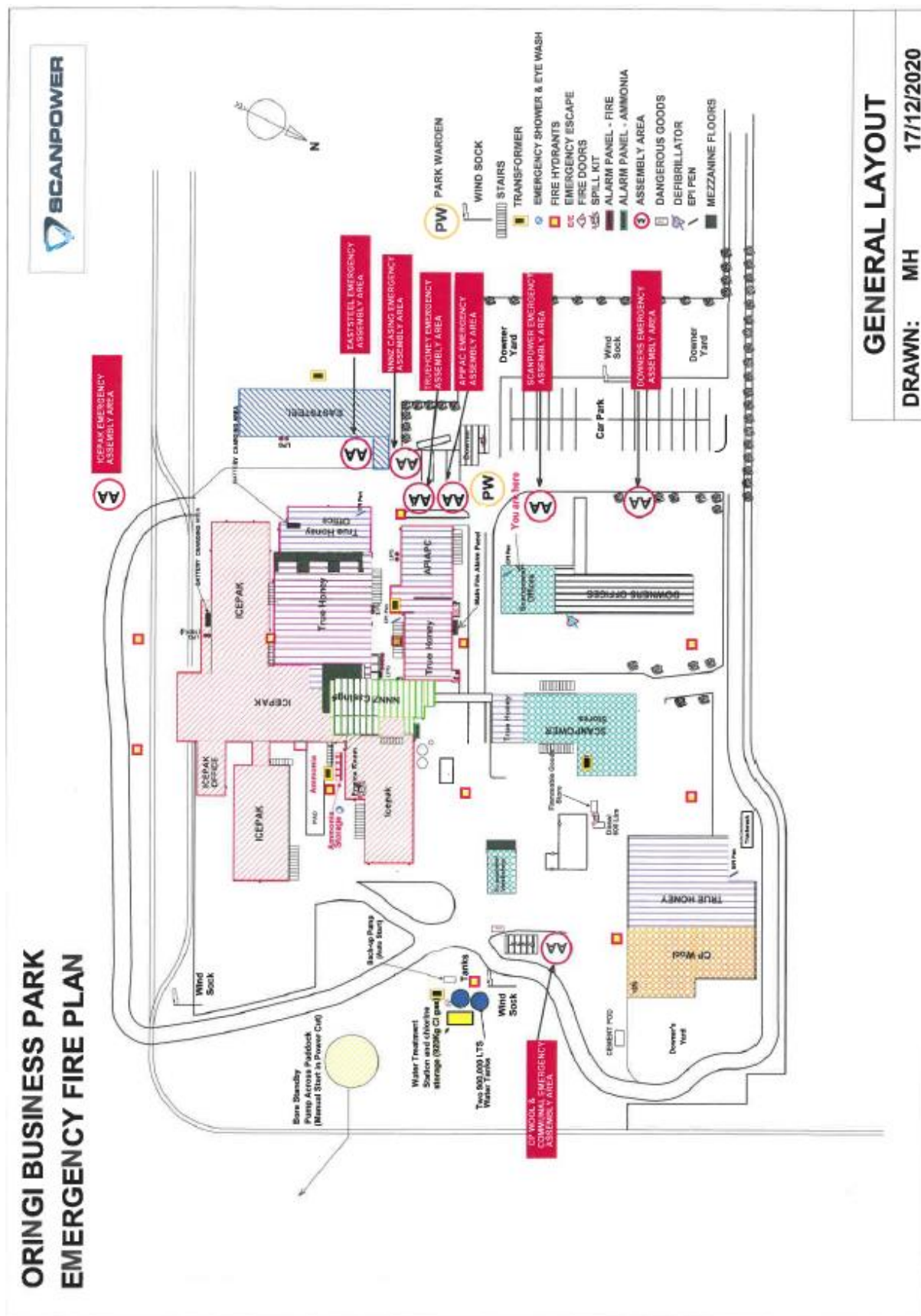
Site Location Map

#### DIRECTIONS:

- Retrace your steps toward SH2.
- Get back onto SH2 toward Palmerston North by turning left.
- Just before the passing lane after the rail bridge take the Left for Oringi Road and then the immediate left for the PPCS site.

#### ACCESS:

- Follow the driveway to the site.
- Sign in at office before driving to site(s).
- Sign out at office when sampling is complete.
- Staff to do a yearly induction with Scanpower staff organised by WQ Portfolio Holder, prior to signing in and sampling on site. Follow on site instruction/procedures.
- **JSA required each month – contact the WQ Portfolio Holder for more information**





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## PPCS Oringi STP at Oxpond Waste



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

Drowning – STP Pond	Traffic / vehicle movements – working yard and farm	Slippery surfaces – pond edge	Stock/Farm Animals – in paddocks
Trip hazards – cobbles, uneven ground	UV Radiation	Traffic / vehicle movements – access via crossing rail line	

### 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):

<b>VEHICLE BEACON</b> 	<b>HI VIZ</b> 	<b>PFD</b> 	<b>WADERS</b> 	<b>HAND SANITISER</b> 	<b>SAFETY GLASSES / GOGGLES</b> 	<b>SAMPLING GLOVES</b> 	<b>SAMPLE POLE</b> 
<b>MANHOLE LIFTER</b> 							

### ACCESS:

- After signing in the first site is the STP.
- Leave all gates as you find them!
- Head to the rear of the complex and cross the rail tracks – consider this an active line. Open and close both gates (on either side of track) at the same time so you do not park on the tracks!

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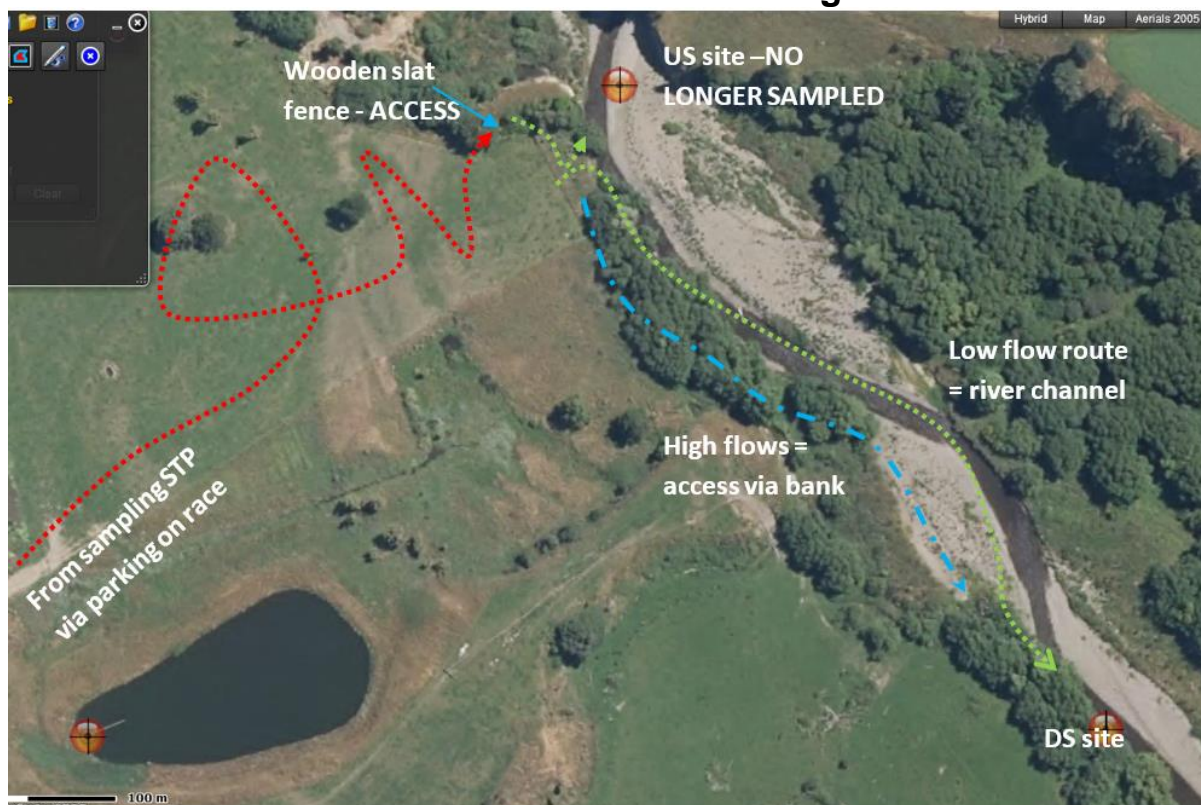
- Immediately after crossing the line turn left then take the immediate right – there is normally an electrified line across the race here.
- You should now be heading downhill – in the distance is the Oruakeretaki, the STP is on the right.
- Half way down the slope is a double electrified string line on the right-hand paddock.
- Park here and access the STP through this paddock.
- Entering the paddock is another gate to the STP ahead- access this paddock to get to the STP.
- Walk around the perimeter of the STP Paddock (away from the pond edge) toward the far left corner of the STP pond.
- Sample from inspection chamber.
- Only remove manhole cover with a manhole lifter.
- Use a sample pole when sampling.
- Do not enter the inspection chamber.
- Replace manhole cover after sampling and ensure it is seated correctly.
- **JSA required each month – contact the WQ Portfolio Holder for more information**

Sample Location Site



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### Oruakeretaki at d/s PPCS Oringi STP



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

Drowning - River	Traffic / vehicle movements – working yard and farm	Slippery surfaces – cobbles, periphyton, highly mobile bed	Stock/Farm Animals – in paddocks
Trip hazards – cobbles, uneven ground	UV Radiation	Traffic / vehicle movements – access via crossing rail line	

**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:

- The downstream sample is taken every month.
- D/S sampling point is approx. 150m downstream of the access point and 20m d/s of the discharge (via wetland). The actual discharge point is not obvious so if in doubt sample below the cliff (on true left hand-side).
- Sample from the true right hand side of the stream.**



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- Access in good, safe conditions is easiest via wading along the stream itself. In unsafe conditions access is made by carefully picking through the vegetation on the bank.
- **JSA required each month – contact the WQ Portfolio Holder for more information**



Oruakeretaki at d/s PPCS Oringi STP– Sample point looking downstream (downstream cliff/headland feature to the left)



Oruakeretaki at d/s PPCS Oringi STP– Sample point looking upstream Note cliff line/headland top centre of image