

An Introduction to Awarua Satellite Ground Station

(Including site induction and safety notices)

Personnel Instruction PI 002

Documentation Control

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Figure 1. Awarua Satellite Ground Station, May 2018.

This Personnel Instruction provides a full site induction to personnel visiting Awarua Satellite Ground Station. It should be read by everyone visiting or working at the station, before travelling to the station.

This Personnel Instruction is to be read in conjunction with:
PI 005 Site Hazards Briefing

Site Safety

ACHTUNG! ALLES LOOKENSPEEPERS!

Das computermachine ist nicht fuer gefingerpoken und mittengrabben. Ist easy schnappen der springenwerk, blowenfusen und poppencorken mit spitzensparken. Ist nicht fuer gewerken bei das dumpkopfen. Das rubbernecken sichtseeren keepen das cotten-pickenen hans in das pockets muss; relaxen und watchen das blinkenlichten.

HAZARDS

Be aware that the antennas are all remotely controlled by computers and can move at any time without notice.

The antennas in the radomes weigh a couple of tons and could squash you if you get in the way of them. Do not enter any radome unless you are with someone who knows what they are doing.

Stay away from all the yagi antennas as you may get an RF burn when the transmitter is keyed, not to mention that the antenna element may poke your eye out should it suddenly move.

There is no ionising radiation emitted from any of the antennas, but you can get heating effects from the S-Band antennas. It would be unwise to put your head into a dish when it is transmitting as you would have a chance of cooking your eyeballs. You won't know if it is transmitting, unless your eyeball goes opaque, in which case it's a bit late. Fixing a cooked eyeball is as easy as boiling an egg backwards.

There are a number of Goodnature self-setting traps to control vertebrate pests (other than humans) around the station. Don't poke your head into them unless you want your ears pierced; likewise your fingers. There are also some rat bait stations. Don't eat the rat bait, either, even if you are hungry. Don't touch any of the other traps unless you don't need your fingers.

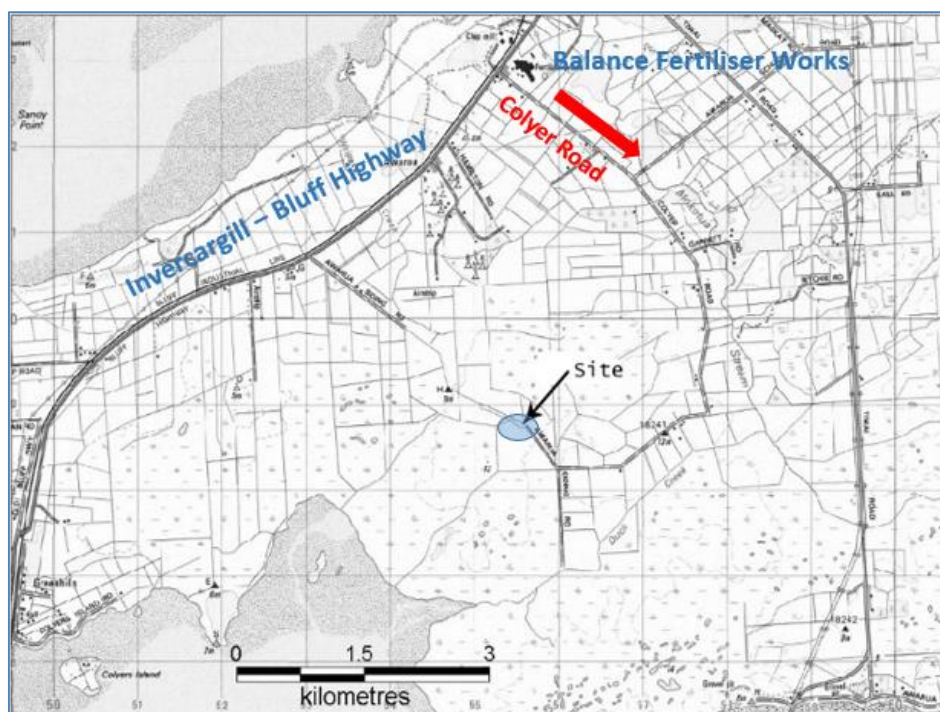
Awarua is pretty bleak on a wet, windy day. Quite a few days are like that, even in summer. You need to take warm, windproof clothes if you want to enjoy yourself.

Directions to the station

IMPORTANT: Do not use Google Maps: Google Maps will direct you to the station via Awarua Siding Road. You can only traverse that road if you are in a 4-WD and have a winch in case you get bogged in the mud—Awarua Siding Road is not formed for most of the way. Also note that Google Maps does not show the full length of road comprising Colyer Road, 7.3 kilometres on from where the 100 km/h zone starts (and Kew Road, where the hospital is). **DO NOT USE GOOGLE MAPS** to get to the station.

The station is at **781 Colyer Road**. When heading south from Invercargill, turn left just after the Balance fertiliser factory on the Bluff Highway (the factory with big blue-painted walls). It takes about 20 minutes to get to the station from Invercargill. Colyer Road is gravel, with one sharp bend and takes a long dog-leg.

A yappy little dog lives at the penultimate farm house, before the dog-leg. Don't panic about the dog, it hasn't caught a car yet, hasn't been hit by a car yet, and doesn't know what to do if it does catch a car—don't brake for it as you may well slide on the loose gravel.



In the milking season, watch out for two cow crossings, one near the start of Colyer Road and one towards the end. You can drive over the dropped fences slowly if they are laid on the ground.

If the grader hasn't been through recently, there can be quite a few lurking potholes to avoid. If the grader has been through recently, take the loose gravel carefully.

American and European visitors: remember to pull over to the LEFT on Colyer Road when another car approaches you so you don't get creamed; you may like to pull over and stop. We always give a wee wave to the other vehicle's driver on Colyer Road.

Take care when coming out of Colyer Road to make sure you drive on the LEFT side of the Bluff Highway.

Security

The site is monitored 24/7 by Everlert in Invercargill. Also, each satellite operator has their own remotely controlled cameras monitoring their equipment.

Press the '**Unlock**' key on the blue dongle before opening the gate to the station compound. A double blip on the alarm klaxon will tell you that you have disarmed the alarm.

Before entering the main accommodation, through the right, north-facing door, have the security code handy. Once you open the door you have about 8 seconds to press **OFF and then the 4 digit code** before the klaxon goes off and Everlert people ring other people to take action. Depending on your dongle, the internal alarm may have already been disarmed when you pressed the dongle at the gate.

When leaving the station, put the key in the door before pressing **ARM and the 4 digit code**. Make sure that the alarm is beeping as you shut the door, indicating that the alarm is set. Once the gate is locked, press the '**Lock**' button on the blue dongle and listen for a single honk on the klaxon to confirm the alarm is activated.

If you get it wrong and the alarm goes off, call **03 214 6224** immediately and tell the nice people monitoring the station who you are and what you have done.

Cellphones

Vodafone signal strength is poor at Awarua; a 3G signal booster inside the equipment room provides good service inside the equipment building. You may need to do a restart (either turn Flight Mode on and off, or if that doesn't work, power the cellphone off and on) to get your cellphone to lock onto the signal booster and bring up full signal strength.

Spark signal strength seems okay.

WiFi

The Wi-Fi service around the station is free to use and coverage extends out to all the antennas so you can Skype and suchlike on site.

Use the **AWA Customers** access and the password is **AWACustomers2008**. Speed is limited to about 50 Mbps bothways, but it may slow down when some of the automated stations upload data. To access the printer in the main equipment room, you will need to configure your printer options. The printer address is **192.168.25.2**.

If you don't want to bother logging in, just use the **Awarua Guests** access, which does not require a password. Speed is limited to 30 Mbps and there is no access to the printer.

Electricity

The station operates at 230 V 50 Hz. Australasian standard outlets are provided throughout the station, conforming to Australian/New Zealand Standard AS/NZS 3112, viz.



All wall outlets are protected by residual current devices. Outlets marked "NE" are on the non-essential supply, i.e. not connected to the UPS.

A three-phase 405 V 32 A power outlet is located on the outside of the north wall of the equipment building, at the eastern end. Do not use this without prior discussion.

Photography

It is okay to take photographs around the station, but not of anything inside an equipment cabinet, or radome unless it is yours.

Working at Awarua

Tools

There are a limited number of tools at the station owned by Venture Southland that you may use. The guiding principles are:

1. If you break it, you replace it.

2. Put it back when you have finished
3. Use the safety precautions that the tool requires. If you don't know what they are, you shouldn't be using that tool.
4. There is some electronics test equipment, soldering irons, power supplies, dummy load and suchlike. Check with station staff first.
5. Please feel free to donate to the collection for next time.

The tools are stored in the cupboard marked "Venture Southland" in the work room. There are also outside plant tools in the engine-alternator room.

Electrical work

Under New Zealand law, registration under the Electrical Workers Registration Board is required to undertake any electrical work which involves voltages over 100 volts. This includes making fixed electrical mains connections, wiring mains power plugs and installing permanent cabling. Venture Southland will arrange for a registered electrician to undertake this work.

Restricted work

Only personnel who have "Working at Heights" qualifications, or are under direct supervision of someone who has, may work in scissor lifts and booms.

Work rooms

The work room off the tea room should be used for working, where there is power and Ethernet access.

The south-east corner office may be used for paperwork, Internet access and suchlike if it is not being used by Venture Southland staff. The computer is connected to the Internet and has access to the printer. Check with the station manager.

The main equipment room may be used for assembling equipment.

Metal work should be undertaken in the Engine Alternator Shed where there is a work bench and vice.

There is an equipment trolley in the main equipment room. It comes complete with a screen, keyboard and mouse for plugging into your server. It is also useful for sitting laptops and test gear on when configuring equipment.

Packaging and wrapping

Unless you arrange otherwise, you are responsible to remove and dispose of any wrapping and packaging. There is a recycling centre at 28 Etrick Street, on the left and over the railway line as you come into Invercargill from Awarua.

Do not leave packaging, plywood sheets, or any other materials outside overnight unless they are well secured to the ground as strong winds can develop quickly and blow the material into antennas, or into adjacent fields.

Cultural matters

Maori are the New Zealand indigenous people and New Zealand is a bicultural nation with fundamental rights accorded to Maori on one hand and subsequent immigrants on the other hand under the 1840 *Treaty of Waitangi*. So-called Treaty of Waitangi settlements for the

local Maori tribe, Ngai Tahu, dealing with previous injustices under colonisation were concluded in 1998 through Act of Parliament. The effect of the *Treaty of Waitangi* means that consultation with local Maori may be required through well-established processes to establish major infrastructure, but this has been dealt with at Awarua.

New Zealanders have increasingly adopted Maori cultural norms that differentiates us from other parts of the world. For instance sitting on tables (because they are associated with food) is considered impolite, even to many non-Maori New Zealanders.

Accidents

A first-aid kit is located above the microwave oven in the kitchen.

For serious injuries, call an ambulance on “111” using your cellphone and ask for an ambulance. You are at **781 Colyer Road, Awarua, South of Invercargill**.

Accidents involving injury must be recorded in the station log and a Venture Southland Accident/Incident/Near Miss Report completed and submitted to the Venture Southland Health & Safety Officer.

If you identify a new hazard you should complete a Venture Southland Hazard/Discomfort Identification Report and submit it to the Awarua Station Manager.

Tea room

You are welcome to use the tea room and make yourself comfortable. Please note that we do not have cleaners, or rubbish collectors visiting the station, at least not regularly, so please:

1. Clean up after yourselves, including washing and drying the dishes and wiping down the table
2. Take all your rubbish home with you
3. Sweep out and/or vacuum clean the place when you finish for the day
4. Unless you are coming back the next day, empty the refrigerator and turn it off when you leave. The refrigerator door must be left ajar when the power is off
5. Do not use the table as a workbench
6. Leave dirty boots at the porch.

The water comes from the roof and is most likely safe to drink. We have a possum trap at the water tank stand to dissuade the possums from climbing onto the roof and add flavouring to the water, but you may like to boil the water before drinking it all the same.

Feel free to use the coffee, coffee grounds, tea and sugar under the sink.

Planet Lab, SpaceFlight and Space-X equipment restrictions

Only people who are citizens of the following countries and are not citizens or dual citizens of any other country may access cabinets and hardware owned by Planet Lab, SpaceFlight and Space-X: Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, or the United Kingdom.

This requirement arises from conditions in their US Strategic Trade Authorization for export-restricted technology and there are significant penalties for non-compliance.

More information

For more information about the station and environment, go to the website www.AwaruaSGS.com.