The establishment and use of Containerised Wash Units for oiled wildlife response in New Zealand

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Where we are

New Zealand

- New Zealand has a coastline of over 15,000 kms.
- Choosing a facility location is difficult.
- A containerised mobile washing unit has been developed.

History

- In 1998 New Zealand’s oiled bird washing equipment was minimal.
- This equipment was inherited from a previous service provider.
- In February 2002 the Jody F Millennium ran aground in Gisborne harbour.
- A wildlife cleaning response was set up in the local community centre.
The Original Equipment

- Consisted of seven self-supporting frames.
- Power and water connections.
- Water heaters.
- Wash tubs.

The Limitations

- The frames were difficult to move.
- The gas califonts were dangerous.
- The piping system was inadequate.

Design

- A containerised washing unit was designed.
- An ISO 20 foot-shipping container was converted in 2002.
- The final design proved to be cost-effective and workable.
Functionality

• The container can have three cleaning stations.
• It has the capacity to run four extra wash stations in an adjacent building.
• The container is a distribution for:
  – Power
  – Lighting
  – Water
  – Air extraction

Plant Room

• Separate from the main area.
• Houses equipment and plant.
• Minimises noise.
• Protects equipment from water when hosing.
• Limits unauthorised access.
Extraction System
• Fresh air grill and ducting.
• Adjustable dampers.
• Extracts fumes, heat and steam.
• Offset duct to reduce noise.
• Discharge at rear of container.

Power Supply
• Single phase.
• Powered by generator.
• Powered from a buildings switchboard.
• Powered from a caravan park outlet.

Power Switching
• All switches, power outlets and the lighting systems are water resistant.
• Separately switched bulkhead lights.

Water Heating
• The hot water is supplied by three Rinnai Infinity 24 califonts.
• Water heaters are electronically controlled.
• Each have pressure regulators.
Maintenance
- On going maintenance costs have been minimal.
- Recent modifications to the water pipe system have allowed more flexibility.
- Three new water valves have been installed and an additional outlet has been welded on the outside of the container.

Versatility
- Water system.
- Wash stands and hot water supply.
- Optional duel water supply.

Water System
- Staging the water heater output reduces pressure and temperature fluctuations.
- A pump is installed inline to boost the water pressure if there is a low-pressure supply or if the water has to be drawn from a water storage container or frame tank.

Water Pipes
- Choosing the right piping system.
- Shipping containers flex significantly during loading and transportation.
- The fixation system has to be able to take flexing.
- The finished product has to operate to high standards.
- Fusiotherm.
Gas Supply

- Gas is supplied from large LPG.
- Bottles have an auto-change regulator.
- Gas versus electric.

Water Softening

- An automatic water softener is installed in the plant room.
- Hard water can extend the time for birds to regain water proofing.

Flooring

Waste Water

- The channel drain runs through the container and exits through the rear wall.
- A water proof power outlet is fitted to the rear of the container.
- Nura tank and pump.
- Frame tank.

Frame Tank
Container Deployment

• The container can be anywhere in New Zealand within 12 to 36 hours, this includes some of the outlying islands.

Setup On Site

• Before the container arrives, the water and power supplies are ready to connect. The frame tank is erected and gas bottles hired.
• The container is leveled to allow the drainage system to work correctly.
• The pipes, cables and waste water systems are connected.
• Set up time.

Current Use of the Wash Container

• The container is set up outside the NZWHC Annex at Massey University.
• The Annex is used for training purposes and this also keeps the mobile facilities ready for deployment, constantly under test.

Conclusion

• Evolution of the mobile washing system for oiled wildlife response in New Zealand has improved significantly since 1998.
• The containerised unit is comparable with other similar models around the world.
• This unit cost around $40,000 NZD, (approximately 20,000 Euros).

Final Statement

• The ease of transportation and set-up of this system allows for a very versatile, efficient and cost effective way to mobilise an Oiled Wildlife Response (appropriate for the New Zealand setting).

References

• NZWHC (2009), New Zealand Wildlife Health Centre; Oiled wildlife response, standard operating procedure. Unpublished