

General Advice for Farmers on Irrigation, Pumps and Associated Equipment

HEALTH AND SAFETY MUST BE YOUR FIRST PRIORITY

The combination of electricity and large moving machinery require farmers and repair personnel to approach pump sites / sheds with caution. Submersible pumps, irrigators, pivots and associated equipment are likely to have sustained damage. Land movement, change in artesian water levels and silt in water have the potential to cause major damage to pumps, shafts and screens.

As power is restored there is potential damage in irrigation electrical systems. Extreme care need to be taken with electrical systems where any obvious damage has occurred and a qualified technician should be consulted for advice before any attempt to start the pump.

Electricity

1. Electricity is dangerous so assume that all power supplies, lines and appliances are live at all times.
2. Beware of surface water around electrical hardware and fallen lines or any other unusual observations.
3. Until a proper inspection can be carried out and if it is safe to do so, turn off all power at the mains point - especially if there has been a power cut.
4. Call an electrician to check out properly before turning power back on.
5. Check for obvious damage, cut or obstructed lines, misaligned motors, switch boards, transformers and poles.
6. If looks unsafe or you're not sure do not touch anything.

Fuel

1. Be aware of the presence of fumes. Petrol fumes in an enclosed space are extremely dangerous and can result in an explosion.
2. Look for obvious damage like leaks, broken fuel lines, damaged fittings and/or damaged motor or tanks.
3. Consider the possibility of the fuel being contaminated by water.

Motors

1. Check for any obvious misalignment or breakage between the pump and motor and/or pump and pipe work. Ensure that all elements of the pump and surrounding above ground pipe work are safe and secure. Make sure that any above ground components cannot "fly off" on start up.

2. Starting pumps – start against closed head or as slowly as possible. Listen for unusual noises and stop if any are detected. Check for leaks on suction and delivery.
3. Check performance of pump for any obvious loss of performance in terms of the pressure and flow delivered.

Water Bore Castings

1. Consider using a test rod to check each bore on your property. This method may require the pump to be moved and if the bore is of any depth the test rod could be very heavy. If the pump is not moved then there may also a risk of the test rod catching the rising column joints.
2. The use of a flexible CCTV (camera) is also an option for checking water bore's but your may encounter murky water which will limit the effectiveness of this method.
3. If water can be pumped then the bore casing may be satisfactory until such time as a well driller can be brought on site. Monitor the water quality at the headworks and if there is any increase in sand from regular samples then pumping should stop.

Boreholes

1. If possible discharge the output from the pump to waste at head-works rather than into your pipes directly.
2. Regularly check the quality of water being produced from each bore. To do this, fill a glass with water and let it stand. If it is air entrainment (micro bubbles) the water should slowly clear from the bottom up with no sediment at all. Fine particulates can also induce milky coloured water but these will generally settle downwards. If this is the case it is probably preferable to run the output from the bore to waste until it clears. If the sample is sandy then the bore will need to be redeveloped.
3. Check all above ground pipe, valves and filters for obvious misalignment and damage.

River Areas

1. Check ground area around pump station and intake. Check all intake structures including any suction pipes and/or river channels.

Storage Dam Areas

1. Carefully check all suction pipes, particularly if they run through a dam wall, look for signs of seepage.
2. Check integrity of dam as a whole, look for signs of seepage.

Pipe Work

1. Run pump against closed valves to a test pressure of at least normal operating pressure and check for loss of pressure after the pump is stopped.
 - Big leaks – the system will be unlikely to reach cut-off pressure and somewhere in the system there will be evidence of surface leaking.



- Small leaks – the system will reach cut-off pressure but over a quite short period of time the pressure will reduce.
- No leaks – the system will hold its pressure.

Irrigators and Pivots

1. Check irrigators and pivots for signs of stress damage, misalignment or damage to electrical wiring. Have a service technician make any necessary repairs.
2. Check control system wiring and irrigator automation equipment operation for faults.
3. fixed sprinklers and drip line – run system and identify and fix faults.

Other Systems

1. For other systems like fixed sprinklers and drip lines, run the system to identify and fix faults if it is safe to do so.

This is not an exhaustive list of things that you should consider in relation to Pumps and Associated Equipment. Your needs will depend on the type and configuration of your equipment and the impact that the earthquake has had on your farm. You should at all times seek proper advice from the relevant Local Authorities and suitably qualified people. Don't risk your or your employee's safety or wellbeing.

Aon can provide you with experienced advisors who can help you plan your response to and recovery from the Canterbury Earthquake.

Contact Us:

0800 800 398
quake@aon.co.nz
www.aon.co.nz

The content of this briefing note has been reproduced with the permission of Vero. Aon has not made and does not make any warranty of any kind whatever, express or implied, with respect to the contents of this briefing note; and all implied warranties of merchantability, title, non-infringement and fitness for a particular purpose are hereby disclaimed by Aon. Aon will not be liable to anyone with respect to any damages, loss or claim whatsoever, no matter how occasioned, in connection with access to or use of the contents of this briefing note. In no event shall Aon be liable for any special, indirect, exemplary or consequential damages or any damages whatsoever, including but not limited to loss of use, data or profits, without regard to the form of any action including but not limited to contract or negligence or other tortious actions, arising out of or in connection with the use, copying or display of the content.

Visit the Aon Canterbury Earthquake Resource Site on aon.co.nz for more information