

Document Owner: Manager Customer Planning

Potable Water Reservoir Internal Inspections - Planned Maintenance

Planned maintenance procedure for internal inspection of potable water reservoirs.

Health & Safety and Operational Information

Hazard Indicators



Working at heights

Personal Protection



Health and Safety Information

- Risk Control Plan (RCP).
- Shutdown Plan.
- Working at Heights Plan.
- Generic Traffic Management Plans or site-specific Traffic Management Plan (TMP).
- Emergency Plan.
- Working at heights
- Confined space
- Gas detection

Operation's & Maintenance Documentation

- Corridor Access Requests (CAR) and WIP Permits (site specific or generic/global).
- Site plans.
- Reservoir design drawings (P&ID, internal layout & structure).
- Design drawings
- Notification Calling Cards

Customer Information (Confidential)

- Priority customers (WWL).
- Vulnerable customers (DHB supplied list)
- Priority customers (WWL)

Priority Customer Categories

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- Schools and Childcare
- Commercial premises
- Hospitals
- Retirement Homes/Villages
- Correction Facilities
- Military Installations
- Oil and Gas Refinery

Emergency Procedure / Escalation

Emergency

- Make "Site Safe" and isolate risks to people or property with resources at hand.

Escalate if extra resources required or problems occur!

- Escalate to Team Leader and inform of the issues faced and/or expected resources required if necessary.

Additional Documentation

- Reservoir Internal Inspection Report, including flight path plan.

Required Skills, Competencies (Qualifications and/or Certifications)

Trained Operator.

Standard Operating Procedure

Required Equipment

Equipment and Information	Details
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Fully Equipped Vehicle	Ensure vehicle, plant, equipment and materials appropriate to the day's work schedule are available.
Specialist Equipment	Ensure the following Deep Trekker equipment is available: <ul style="list-style-type: none"> - Deep Trekker x 1 - Remote Controller with micro SD card x 1 - Ballast adjustment kit x 1 - User manual x 1 - 1,000mg/L (0.1%) chlorine solution in spray bottle x 1
PPE	As required, refer to RCP.

Prepare to do the work

Action	Action Details
Prior to arriving at site	<ul style="list-style-type: none"> - Confirm Deep Trekker battery is charged. - Confirm micro SD card is cleared of prior files. - Arrange with operations to cease reservoir filling while maintenance activity is undertaken. - Where required, relevant H&S compliance documentation to be in place prior to work starting. Documentation to be accessible on site. Documents could include RCP, TMP, working at heights plan, etc.
On Site Pre Start Process	<ul style="list-style-type: none"> - Complete Pre-Start Tailgate Meeting, discuss relevant H&S documentation (RCP, TMP, working at heights plan, etc). - Notify operations that reservoir hatch alarm will be activated as part of inspection activity. - Disinfect Deep Trekker, tether cable and cable container by spraying 1000mg/L (0.1%) chlorine solution to ensure drone is disinfected prior to entering reservoir. Place disinfected tether cable in container of drinking water, ensuring cable can freely uncoil from container during inspection. - Check Deep Trekker tether connection is secure. - Liaise with operations to cease reservoir filling. - Lower Deep Trekker into reservoir and begin inspection.
Compliance	Traffic Management Plan - Where required, TMP to be in place prior to work starting. TMP to be accessible on site.

Perform Inspection

Action	Trade	Action Details
Sediment deposits	Trained Operator	Film and note approximate depth and area of sediment. Record all findings via video/photos and on inspection report.
Debris	Trained Operator	Film and note type of debris and approximation of how much debris is present (e.g. 1, 5, 10, 50, 100 pieces).
Sump	Trained Operator	Film and note how much sediment or debris is present in sump.
Pipework & Supports	Trained Operator	Film full length of internal pipework, including each joint and each support.
Access Structures	Trained Operator	Film reservoir access structures and their supports.
Walls	Trained Operator	Film a sample of the walls to inform an approximation of the condition of all walls, also capturing footage of joint seals
Structural Supports	Trained Operator	Film a sample of the structural supports (columns & beams) to inform an approximation of the condition of all supports.
Roof	Trained Operator	Film reservoir roof underside, capturing joints with wall and joints between roof sections.

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Post work

Action	Trade	Action Details
Complete site work	Trained Operator	<ul style="list-style-type: none">- Remove Deep Trekker from reservoir, stop recording video and turn off Deep Trekker- Pack down site- Notify operations that inspection is completed.- Hatch alarm to be considered live and standard reservoir filling operation to resume.
Store Deep Trekker	Trained Operator	Store Deep Trekker connected to charger.
Complete Inspection Report	Trained Operator	<ul style="list-style-type: none">- Transfer files from micro SD card to reservoir internal inspection folder and ensure card is cleared after transfer.- Complete inspection report from template and circulate to relevant parties.