

PRE-COMMISSIONING CHECKLIST FOR NEW ASSETS
SEWERAGE PUMP STATIONS^{CRC}

REQUIREMENTS BY CONTRACTOR

The following checklist is required to be fully completed, signed and returned to Council before a joint commissioning is considered. Please note: in the event of a commissioning being abandoned due to works not completed or operational, Council will recover costs incurred.

STATION NAME: _____ **STATION NO:** _____

- Ergon Power available Yes No
- Provision of sufficient water for all testing purposes Yes No
- Fresh water discharge flushing system operating as per design Yes No
- Ancillaries (GPO's, lighting etc) tested and working correctly Yes No
- Pre commission switchboard test completed Yes No
- Station telemetry points list supplied Yes No
- Established telemetry communications and verified inputs locally Yes No

VERIFICATION OF AS CONSTRUCTED LEVELS AND OPERATION.

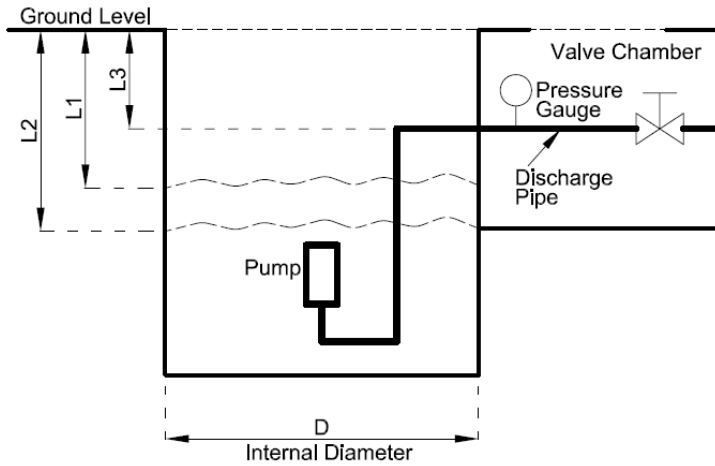
Note: Levels taken from top of well cover down

Setting/Alarm	Measurement	Operational function (contractor to verify correct operation)	
Spill alarm	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
H/L back up pump 2 start	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
H/L back up pump 1 start	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Probe high level alarm	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
H/L pump cut out/ Transfer	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duty pump cut-in	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duty pump cut out	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Probe low level alarm (indication only)	m	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Level settings according to design		Yes <input type="checkbox"/>	No <input type="checkbox"/>

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PROCEDURE FOR PERFORMANCE TESTING OF PUMPS

Contractor to complete for all pumps :-



General Sewerage Pump Station Well

Date _____
 Pump No _____
 Pump make/model: _____
 Electric motor kw _____ SPEED _____ RPM
 Serial no:= _____

Measure inside diameter of well:- $D =$ _____ m

Measure $L3 =$ _____ m

Pump duty head $H =$ _____ m

Pump duty flowrate $Q =$ _____ L / S

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(A) QUICK CHECK OF PUMP GENERAL CONDITION - HEAD TH1 (AT VALVE CLOSED)

L1 , L2 - operating levels
Run pump for one minute with the delivery valve open.
Close the valve.
Read L1 in meters at the beginning of one minute.
Read L2 in meters at the end of this minute.
Read AMP meter.
Read pressure gauge (HD) in meters at the end of one minute.
Record :

L1	L1 =	m
L2	L2 =	m
Delivery Gauge reading HD	HD =	m
Height Correction HC = L2 – L3	HC =	m
Total head TH1 = HD + HC	TH1 =	m

Check TH1 against the pump curve at no flow condition
Check AMPs on pump curve

(B) QUICK CHECK OF INFLOW Q1 (IF INFLOW BLOCKED OFF - GO TO (C))

L1 , L2 - operating levels
Switch off the pump and keep the delivery valve closed.
Read L1 in meters at the beginning of one minute.
Read L2 in meters at the end of this minute.

L1	L1 =	m
L2	L2 =	m

Calculate flowrate Q1 during this minute

Q1 = l/s

(C) NORMAL FLOWRATE Q2 TEST (VALVE OPEN)

L1 , L2 - operating levels
Run pump for one minute with the delivery valve open.
Read L1 in meters at the beginning of one minute.
Read L2 in meters at the end of this minute.
Read AMP meter.
Read HD in meters at the end of one minute.
Record :

L1	L1 =	m
L2	L2 =	m
Delivery Gauge reading HD	HD =	m
Height Correction HC = L2 – L3	HC =	m
Total head TH2 = HD + HC	TH2 =	m

Calculate flowrate Q2 during this minute

Q2 = l/s

Check AMPs on pump curve

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All information has been supplied and verified ready for commissioning.

Signed (Contractor)

Date

Print name

Note: The telemetry is to be fully ready for commissioning

COUNCIL use only

Level information and Operational function satisfactory

Pump performance results as compared to tender offer satisfactory

Pump motor information readings satisfactory

Telemetry commissioned satisfactorily

General Council Comments:

All information has been supplied and verified at Contractor Pre-commissioning

/ /

Signed (Council)

Date

Print name

Commissioning of Civil Works

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Item	Complete	Date / Initials	Council Audit
Management			
1.	Verify that consultant has provided all documentation. (as constructed details, operating manuals, test results etc)		
	If NO then close audit.		
Concrete			
1.	Verify that the concrete slab is 150mm above the finished surface level.		
2.	Verify that the pump station concrete works is as designed e.g. Cast in-situ.		
3.	Verify that there is no damage to any exposed concrete surface.		
4.	Verify that drainage of the site is away from the Pump Station.		
5.	Verify that the surface dimensions of the top slab are in accordance with the design drawings.		
6.	Verify that the below ground concrete structures are dimensionally correct and in accordance with the design drawings.		
7.	Verify no seepage through the concrete structure.		
8.	Verify the verticality of the structure is within tolerance in accordance with sewer specifications.		
9.	Verify that all chamfers are provided in accordance with the design drawings.		
10.	Verify that the pump well benching has been provided in accordance with design drawings.		
11.	Verify that the specified coating to the internal walls has been applied in accordance with the FNQROC Development Manual.		
12.	Thickness of internal coating tested (µm)		
OH&S			
1.	Verify that ladder access to dry wells only, meets OH&S requirements.		
2.	Verify that ladder access to valve chamber meets OH&S requirements.		
3.	Verify that all ladders are provided with the extension above the FSL.		
4.	Verify that the ladders have non-slip treads.		
5.	Have safety cages been specified in accordance with Australian Standards.		
6.	Verify that safety cages have been installed in accordance with the design drawings.		
7.	Verify that adequate distance between wet well opening and switchboard is in accordance with OH&S requirements and the FNQROC Development Manual.		

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8. Verify that adequate set down areas for the covers has been provided in accordance with OH&S requirements.			
9. Verify that no overhead cables restrict access via crane trucks.			
10. Verify Full Risk Assessment has been performed and permanent operational/ maintenance risks identified			
11. Verify that all signage pertaining to those risks is in place			
12. Facility Name and contacts signage			
13. Standby Emergency Generator – cover, refueling, manuals			
14. Adequate access, maneuver and parking for maintenance vehicles			
Products & Materials			
1. Verify that all products incorporated on the project are included on the list of approved products for Council.			
2. Verify that all markings as required by Council specification are visible on the covers.			
3. Verify that the covers and frames are greased in accordance with the manufacturer's requirements.			
4. Verify that the covers are gas tight			
5. Verify that the interchangeable multi part covers have lifting lugs on the beams for removal and covers have clockwise lifting key holes.			
6. Verify that council approved penstock stuffing box is installed.			
7. Wet well covers are to be in accordance with the FNQROC Development Manual			
8. Wet well covers are to be lockable			
Pipes and Fittings			
1. Verify that the valves are anticlockwise closing.			
2. Verify that there is only one inlet pipe to the pump station.			
3. Verify that pumps are clear of all inlet pipework.			
4. Verify that adequate supports have been provided for the valves.			
5. Are valve extension spindles required.(includes penstock).	N/A		
6. Verify that there is sufficient clearance for maintenance.			

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7.	Are adequate supports provided in accordance with Council standard drawings.	N/A	
8.	Verify that DICL pipe work has been provided to correct nominal diameter DN.		
9.	Verify that adequate supports for vertical pipe work has been provided in accordance with FNQROC Development Manual (i.e. vibration not noticeable when pumps operating).		
10.	Verify that all gate valves operate through the full range and are left in the open position.		
11.	Verify that a flap valve has been installed on the valve chamber drain if required by the design e.g. when overflow levels higher than valve pit base.		
12.	Verify that bleeders have been installed on the NRV's and NRV's have counterweights.		
13.	Verify that probe stilling tube has been installed as per Council standard		
14.	Verify that the Council specified coating for all valves has been applied.		
15.	Verify that the Council specified coating for the pipe work has been applied.		
16.	Verify that the pipe work for the in coming sewer is in accordance with the design drawings including dropper pipe.		
17.	Verify that the specified bolting system on the flanges has been used.		
18.	Verify that all valves can be removed through the available cover opening.		
19.	Verify that a flanged dismantling joint has been provided to allow ease of removal of valves in accordance with standard drawings.		
20.	Has the consultant submitted completed project ITP containing all signatures.		
21.	Verify all steel metalwork has been Hot Dipped Galvanized.		
22.	Verify all bolts are 316 stainless steel with 308 nuts.		
23.	Verify that the emergency pump out pipework has been installed.		
24.	Verify that either rising main air releases or scours are provided at the pump station.		
Other Services			
1.	Verify that the water service has been fitted with an approved back flow prevention device.		
2.	Verify that a 25mm water service has been provided.		
3.	Verify that all conduits through the walls have been sealed to prevent odour escaping.		
4.	Verify that electricity is below ground, not above.		

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5. Verify that the sealed access track is in accordance with the design drawings and the FNQROC Development Manual.			
6. Verify that adequate site drainage has been provided.			
7. Verify that wet well washers have gate valves and regulators fitted if fitted.			
Restoration.			
Verify that the site restoration has been completed.			
Testing.			
1. Verify that pump well infiltration test passed.			
2. Verify that pump draw down tests passed.			
3. Verify rising main has been tested.			
4. If pump station has been constructed as open cut, verify compaction standard under pipes.			
Mechanical Equipment.			
1. Verify that the guide rails comply with the standard drawings.			
2. Verify that the lifting chain complies with Council specification.			
3. Verify that the Pump footstool has been secured to wet well floor with appropriate chemical anchors & have 316 S/S bolts.			
4. Are wet well washers specified on design drawings.			
5. Verify that they meet the Council specified requirement.			
6. Verify that pumps can be fully removed from pump station without disconnecting the guide rails.			
Electrical Equipment.			
1. Verify that the Station Identification plate has been fitted to the electrical cabinet.			
2. Verify that the telemetry antenna has adequate protection in accordance with Council specification.			
3. Verify that lighting within the switchboard has been provided.			
4. Verify that the Council locks fitted to switchboard and operational.			
5. Verify that quick link generator connectors provided.			

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Security.

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1. Verify that the security fencing has been installed in accordance with the design drawings.			
2. Verify that Council keyed locks installed.			
3. Verify that the switchboard meter cabinet has been fitted with Ergon Locks.			
Have all NCR items been resolved (including any raised as a result of this audit)?			
If YES Issue Acceptance of Works., and close audit.			
Would outstanding NCR items impact on the ability to operate the pump?			
If YES then close audit (wait for NCRs to be resolved).			
Has Operations authorized the pumps to remain on?			
If YES record the name of the person who authorized this. NAME.....			
Lift Station			
1. Has discharge pit been lined in accordance with the FNQROC Development Manual			
2. Has benching been completed			
Overflow			
1. Verify overflow has been constructed to design drawings and FNQROC Development Manuals including levels.			
2. Verify flap valves are in place and operational.			
3. Verify covers are in place and are to class specified.			
4. Verify Overflow can be accessed for maintenance.			