

**FOL16/426: PROVISION OF MAINTENANCE SERVICES FOR THE REGENT’S PARK IRRIGATION SYSTEM**

**SPECIFICATION OF REQUIREMENTS**

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1. Sports Turf
	1. TRP park management staff are responsible for planning and setting sports field irrigation programmes, assisted by the landscape maintenance contractor’s Head Groundsman. The Supplier must have a hands-on understanding of the system controller for sports turf irrigation so as to be able to, if called upon, programme the controller.
	2. A full and comprehensive description of the sports turf irrigation system components can be found at Appendix 1.
2. Horticultural Areas
	1. At both the Smokehouse and Boathouse Cafés there are hanging baskets to be irrigated using drip-feed systems from tap timers. These systems are installed each spring and removed each autumn in consultation with the Parks Management and Facility Provider.
3. The Borehole Control Panel
	1. TRP park management staff are responsible for planning and setting the borehole control panel, assisted by TRP wildlife officers. The irrigation Supplier must develop a hands-on understanding of the system controller for the borehole supply of water across the park in order that the irrigation Supplier could, if called upon, programme the controller.
	2. A full and comprehensive description of the components of the borehole system pertinent to this tender can be found in Appendix 1.
4. Management of Fountains
	1. There are a number of high quality fountains and water features within the park. Many of these run on closed systems and do not have any relationship with irrigation.
	2. Fountains in the Avenue Gardens are however considered integral to the Garden’s irrigation system as the irrigation water supply also feeds the water in the fountains.
	3. Although a contemporary addition to the Avenue Gardens the fountains create an experience and character which is fundamental to the enjoyment of this very formal landscape.
	4. The Supplier shall inspect and maintain water levels of the Avenue Gardens fountains and report on any matters concerning the fountains, when identified, and advise TRP when fountains require cleaning.
	5. TRP park management staff are assisted in the management of the fountains by staff from the landscape maintenance contractor and the facilities maintenance contractor.
	6. A full and comprehensive description of the components of the fountain system pertinent to this tender can be found in Appendix 1.

1. Irrigation Works to be Undertaken
	1. Irrigation - Spring Start-up (Commissioning) Works
	2. Spring commissioning works will take place at times agreed with park management but are likely to take place in March each year.

* 1. The bidder will need to visit each defined area and undertake a set of defined operations forming the start-up procedures. A list of these procedures for each area is located in Appendix 2.
	2. Irrigation - Winter Shutdown (decommissioning) Works
	3. Winter decommissioning works will take place at times agreed with park management but are likely to take place in November each year.
	4. The Supplier will need to visit each defined area and undertake a set of defined operations forming the shutdown procedures. A list of these procedures for each area is located in Appendix 3.
	5. Irrigation - Planned Preventative Maintenance
	6. Planned Preventative Maintenance visits will take place throughout the year in accordance with the Calendar of Irrigation Works shown in section 7 of this Specification.
	7. The Supplier will identify and suggest preventative maintenance required to maintain the irrigation systems in working order and shall undertake repairs as necessary at these visits.
	8. Additionally, the Supplier shall identify any issues that may need addressing in the near future. For example this may include, but not be confined to, corrosion on pipework, cable chafe, damaged valve box lids etc.
	9. The Supplier should carry enough spares to be able to undertake minor repairs and adjustments to sprinkler performance as part of each weekly rather than have to schedule additional return visits.
	10. It is likely that a considerable amount of preventative maintenance works will be required and TRP may request that emergency works are undertaken by the Supplier on days assigned to planned preventative maintenance. The Supplier shall therefore be flexible in their attendance of the weekly planned preventative maintenance visit.
	11. TRP will maintain the right to inform the Supplier of attendance on a particular day.
	12. TRP may also insist upon the Supplier using more than one day's planned preventative maintenance visits in a single week. For example it is likely that in some weeks the Supplier may need to attend site for two days, however the Client accepts that by doing so this will reduce the total number of remaining planned preventative maintenance days.
	13. A full list of the planned preventative maintenance procedures for each area is to be found in Appendix 4.

1. Reactive or Emergency Works
	1. Occasionally, the irrigation systems may require replacement or repair because of failure - TRP will first seek to judge whether an immediate response is required and may call the Supplier to discuss options available to resolve the particular issue.
	2. TRP, either in discussion with the Supplier, or not, may determine that the issue does require an immediate response and visit to site by the Supplier to review, address and rectify issues that may have occurred.
	3. Likewise TRP may determine that the incident can wait until the next planned preventative visit at which time the failure can be reviewed and rectified by the Supplier.
	4. Should TRP require an emergency site visit as stated in 6.2 above, TRP may insist upon a response by the Supplier to visit site within 4 or 24 hours.
	5. The Supplier shall be contactable by telephone to take and respond to emergency calls at any time day or night 365 days per year.
	6. Additional Routine visits
	7. Occasionally, the client may request additional visits to site by the Supplier. All additional visits not described under 6.4 shall be charged for at the Supplier’s standard hourly rate.
2. Calendar of Irrigation Works
	1. The Supplier shall fulfil the routine servicing of this contract and cover all areas of service on site in 40 man days as shown in Table 1 below based upon the following:
3. 5 days for re-commissioning all irrigation systems as necessary in the month of March;
4. 30 days of planned preventative maintenance for the months January to December, as indicated by Table 1, below; and
5. 5 days for decommissioning all irrigation systems as necessary in the month of November.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Jan** | **Feb** | **Mar** | **Apr** | **May** | **Jun** | **Jul** | **Aug** | **Sep** | **Oct** | **Nov** | **Dec** | **Total No Days per item** |
| Start-up (Recommissioning) | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Planned Preventative Maintenance  | 1 | 1 | 3 | 3 | 4 | 3 | 3 | 4 | 3 | 3 | 1 | 1 | 30 |
| Close-down(Decommissioning) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| **Total number of contract days on site (see also section 7.6 below)** | **40** |

**Table 1: Indicative Calendar of Annual Visits**

* 1. TRP and the Supplier will agree in principle the indicative dates for all visits prior to the commencement of the annual contract.
	2. TRP will be flexible should the Supplier wish to change any of the pre-planned dates agreed in 7.2 however TRP will not expect to change dates within 72 hours of a planned visit taking place.
	3. The Supplier shall deliver a flexible service that allows TRP to manage the visits throughout the year in order to optimise cost effective and efficient service delivery. For example as outlined in 6.3 and .
	4. The contracted day will last 8 hours not including any breaks that the Supplier may take for lunch.
	5. In addition to the contract days, the Supplier shall allow for 2 days per annum for the purposes of contract administration.
1. Testing, Reporting and Record Keeping
	1. The Supplier shall provide a formal written report on the condition of each irrigation system on two occasions per year using the reporting template defined in Appendix 5.
	2. The report will provide a formal record that the procedures undertaken at commissioning and de-commissioning have been undertaken and that the system has been adequately tested. These reports will provide TRP with key management information and will identify any items that may need addressing in the near future.
	3. Furthermore, the Supplier shall keep an accurate recording log detailing all works carried out under this contract. This shall be updated after each visit and forwarded to TRP on a monthly basis.
	4. The Supplier shall assist in further developing the reporting information gathered over the term of this contract.

1. Spares and Stock Items
	1. TRP will purchase a range of stock items such as sprinklers, solenoid valves, decoders and DBY connectors through the Supplier to be held **as its own stock on site** in The Regent’s Park. This will ensure that ensure that routine works can proceed without delay.
	2. A full list of stock that TRP will purchase is located in Appendix 6.
	3. The Supplier will identify when stock items ( above) have been used during repair and maintenance works. The Supplier will report on stock usage on a monthly basis in order to keep TRP updated on remaining stock levels held.
	4. Periodically, TRP will purchase more stock through the Supplier in order to maintain sufficient stock levels.
	5. The Supplier shall provide his own consumables e.g. nuts, bolts, tape, glue and fittings to repair pipe work.
2. Cooperation with TRP and other TRP Contractors
	1. TRP places great importance and emphasis on the effectiveness of working relationships between all contractors working within the parks.
	2. There are a number of key contractors working at The Regent’s Park that the irrigation Supplier shall work and engage with cooperatively. These include the landscape maintenance contractor and the facilities management contractor. Occasionally, the Supplier may be asked to assist TRP staff or other TRP contractors in problem solving matters other than irrigation related to the Park, making use of specialist knowledge, skills and experience that may be helpful in a particular circumstance.
	3. Additionally a number of key post-holders employed by the key contractors listed in 10.2 are fundamental to the operation and management of the irrigation systems and the Avenue Gardens fountains. The Supplier will need to liaise directly during visits with these key staff.
	4. All formal instruction and direction to the Supplier will come from TRP.
3. Additional Client Services and Expectations
	1. The Supplier shall monitor water usage from irrigation systems by reading all borehole meters and Thames Water meters on a weekly basis during the period between start-up and shutdown. The Supplier will provide this information to TRP upon request.
	2. The Supplier shall review these readings, using them to highlight to TRP any cause of concern related to levels of water usage and the balance of water usage from borehole or mains.
	3. The Supplier shall keep abreast of best practice and developments in the irrigation sector in order to assist in identifying new, innovative and more effective ways of working. The aim is to ensure that the irrigation systems on site deliver water efficiently.
	4. Occasionally, TRP may request that the Supplier makes purchases on TRP’s behalf. The Supplier’s mark-up fee in the pricing schedule will be applied for handling all such requests.
	5. Occasionally, TRP may ask the Supplier to assist in other projects around the park where the Supplier’s specialist expertise could be put to good use. For example, in 2010 the existing supplier installed a rainwater harvesting system in the Allotment Garden. This work is unlikely to be a frequent occurrence.
4. Remote Assistance
	1. The sports field irrigation is served by a Rainbird irrigation system. The Supplier shall purchase an appropriate Rainbird Global Service Plan (GSP) to ensure telephone support.
	2. The irrigation system in Queen Mary’s Gardens is controlled by an Aquarius Universal system. The Supplier shall purchase an appropriate service package from Aquarius to ensure telephone support.
	3. TRP has established good working relationships with representatives from Rainbird UK and Aquarius Universal and the Supplier shall develop these relations further.
	4. During the course of this contract, TRP expects to adopt the use of online support packages from both Rainbird and Aquarius. The Supplier shall work with TRP to assist in delivering this change.
5. Existing Information
	1. TRP has a large amount of information available to the Supplier including:

Borehole supply system

1. O&M Manual
2. As-built drawings including:
* Dwg. No. 290.10.AB: Borehole supply pipe work through QMG installed Spring 2007
* Dwg. No. 290.11.AB: Borehole supply pipe work through Marylebone installed Spring 2007
* Dwg. No. 290.12.AB.r1: Borehole supply pipe work through Northern Parkland installed Spring 2007
* Dwg. No. 290.13.AB: Borehole supply pipe work in and around Duck Breeding Compound installed Spring 2007
* Dwg. No. 290.14.AB.r1: Borehole supply pipe work through Northern Parkland to the Hub including potable connection installed Spring 2007
* Dwg. No. 290.15.AB: Well head chamber & borehole as-built
* Dwg. No. 290.16.AB: Indicative plan of as-built cabling associated with area around borehole

Sports Irrigation system:

As-built plan provided by Agripower Contractors.

Horticultural Irrigation Systems

As-built drawings copied from the original as-built plate supplied by Irriplan.

1. Monitoring of the contract and payment terms
	1. TRP will raise an annual purchase order at the start of each contract year for the sum equivalent to the total annual cost of the contract for the routine works i.e. start-up, shutdown and planned preventative maintenance. The purchase order will be divided into 12 equal instalments and at the end of each month the Supplier will need to raise an invoice for that month.
	2. Payment of emergency works shall by via purchase order and invoice. The Supplier will need to raise and submit a works order quotation after the event and the client will then raise a purchase order. Emergency rates will be paid dependent upon the level of call-out determined i.e. 4 hour or 24 hour response.
	3. Where it has been agreed that emergency works are being undertaken as part of a planned preventative maintenance visit no additional costs will be payable to the Supplier notwithstanding the need for the Supplier to purchase specialist non-stock parts if necessary.
	4. For other non-routine works i.e. items not held as spares not held as spares, additional purchases and standard hourly rates payable if additional visits are requested the Supplier shall raise a works order quotation and the client will raise a purchase order for the Supplier to invoice against.
	5. All Works Order Quotations raised by the Supplier must be set out such that each separate job should be easily identifiable and aligned to the recording log referenced in 8.2.
	6. When stock items held under 9.2 have been exhausted the Supplier shall be able to recharge further stock items to TRP following the process identified in 14.4.

Appendix 1 - Description of Systems by Areas on Site

Horticultural Irrigation Systems (ref 2.0)

1. QMG Irrigation:
2. 15’ x 7’6” nominal 37.5m³ galvanised steel tank and liner
3. 2-Pump permanently pressurised pumping plant
4. Borehole
5. Potable back-up
6. Aquarius Universal PC controller with Watermation TW2 backup, signal cabling decoders, solenoid valves
7. Pipe work (PVC) and sprinklers and other emitters
8. Avenue Garden Irrigation:
9. 12’ x 7’6” nominal 24m³ galvanised steel tank and liner
10. Variable speed permanently pressurised Pumping plant
11. Borehole
12. Potable back-up
13. Aquarius 2100 Controller, signal cabling decoders, solenoid valves
14. Pipe work (PVC) and sprinklers and other emitters
15. Avenue Garden Fountains to be operational all winter supplying (ref 5.0):
16. Eight decorative fountains integrated to the garden irrigation
17. Made up of fountain cascade nozzles
18. Each fountain fitted with isolation valves
19. St John’s Lodge including:
20. GRP modular tank (approx 24m³ - TBC)
21. 1-Pump permanently pressurised pumping plant
22. Hunter ICC decoder module controller, signal cabling decoders, solenoid valves
23. Pipe work (PVC) and sprinklers and other emitters
24. Waterside including:
25. 12’ x 7’6” nominal 24m³ galvanised steel tank and liner
26. 1-Pump pumping plant
27. Hunter ICC Multi-wire controller, solenoid valves
28. Pipe work (PVC) and sprinklers and other emitters

Sports Irrigation System (ref 3.0):

1. 250m3 nominal capacity water storage tank including:
2. Potable back up
3. Supply from borehole
4. All level controls
5. Twin CR45 pump set with VFD controls to Northern Parkland and Cumberland Green sports pitches.
6. Rain Bird Site Control PC Control System installed at the Hub and including the computer, interfaces, cabling and decoders and all other electrical and signalling components.
7. Distribution System from 180mm at the pump house to 63mm and 50mm at the sprinklers, all isolation valves etc.

The Borehole supply system (ref 4.0):

1. Borehole
2. Borehole structure
3. Isodaq monitoring system
4. Borehole pump, headworks, starter panel, priority panel
5. Borehole supply water meters
6. Unpressurised distribution pipework
7. 90mm to Lake & diversionary valve to boating lake hydrant
8. 90mm to Toilet Water Distribution System
9. 110mm to Sports Irrigation Tank
10. 90mm to Horticultural Irrigation Tanks
11. Toilet Water Distribution System including:
12. 19m3 Tank
13. Pump house with CR10-6 pressure set and
14. 63mm supply to the Hub
15. 63mm supply to OAT toilets and branch to Chester Road toilets
16. 32mm supply to Hanover Bridges toilets
17. 32mm supply (with separate meter) to Duck Pond and branch to Duck breeding pens
18. 63mm potable back-up supply to tank

Appendix 2 - Start-up Procedures

Annual spring re-commissioning/start-up for each area, made up of: Horticultural Irrigation systems (ref 2.0) and Sports Irrigation system (ref 3.0). The Borehole (ref 4.0) has its own requirements listed further down.

1. Tanks
2. Make visual and operational checks as appropriate to tank panels, roof, fixings, lining system paying attention to the inner liner
3. Make visual and operational checks as appropriate to suction and delivery pipe work, and valves
4. Make visual and operational checks as appropriate to filling system pipe work from borehole, including lagging where fitted
5. Make visual and operational checks as appropriate to filling system pipe work from potable back up including float switch operation and solenoid operation, plus lagging etc.
6. Ensure level operation via float switches
7. Pump stations
8. Refit all drain plugs and close cocks
9. Ensure integrity of pipe work with pump house and refill pipe work by gravity taking care to bleed system correctly
10. Ensure correct pressure setting of expansion vessel
11. Check pump electrics and starter panel electrics, re-setting pressure switch as required
12. Start pumping systems and check for leaks
13. Check pump start-stop operation, check pressure gauges
14. Check operation of pressure relief valve and note blow off pressure
15. Main line pipe work
16. Close sub-main isolation valves
17. Close drain cocks
18. Open discharge valve and open sub-main valves gradually and independently to check integrity of pipe work system in each submain
19. Expel air at system extremities operating pump at low pressure if required
20. Check pump set operation at range of flows including shut-off at noflow
21. Control valves, laterals and sprinklers
22. Check solenoid valve boxes for lid damage, any impeded access caused by soil intrusion or misshapen boxes, and solenoid valves for operation (where installed)
23. Check sprinklers for damage and for correct operation
24. Control System
25. Check control systems for individual areas including PC operation (where fitted e.g. Sports fields) Run dry system diagnostics where possible
26. Run selected stations at system extremities and run a test programme
27. Ensure date and time are set correctly

**The Borehole supply system (ref 4.0)**

The borehole shall be operational all winter supplying the Toilet Water Distribution System. Checks should be made as appropriate on its correct operation as required, but otherwise the following checks should be made.

1. Borehole
2. Check seal of borehole chamber
3. Check pump operation from starter panel including a meter reading
4. Check system operation and that the priorities are being signaled from the relevant distribution points and opening correctly the solenoid valves
5. Check pilots on pressure sustaining, pressure reducing, & slow closing 4” check valve notably operation of Pressure Sustaining Pilot and operation of Pressure Reducing Pilot
6. Check operation of isolation valves and drain cocks
7. Check operation of 33Q pressure relief valve to blow at closed valve bore-top pressure
8. Check operation of individual isolation valves to the four distribution points
9. Check operation of water meters to the four distribution points
10. Check operation of solenoid valves to the four distribution points
11. Pipe work
12. 90mm to lake
13. Open isolation valve at borehole
14. Close drain cocks at bridge
15. Check operation of 3-port valve
16. Check water flows to lake and hydrant
17. 90mm to Toilet Water Distribution Tank
18. Make visual check
19. Check flow and signalling from level switches at tank
20. 110mm to Sports Irrigation Tank
21. Open isolation valve at borehole
22. Close drain cock at tank
23. Make visual check
24. Check flow and signalling from level switches at tank
25. 90mm to QMG tank and Ave Gardens Tank
26. Open isolation valve at borehole
27. Close drain cocks at tanks
28. Make visual check
29. Check flow and signalling from level switches at tanks
30. Toilet Water Distribution Tank
31. Check potable back up supply
32. Check operation of all float switches
33. Check immersion element operating
34. Pump House
35. Make visual check for leaks and general security
36. Take pressure readings and monitor efficiency whereby curve can be checked against flow to Duck Pens (via meter)
37. Check pressure vessel and monitor start/stop timings against a closed valve
38. Check for hunting and signs of leaks
39. Duck pond and Pens
40. Check system flow to Pens
41. Check water meter
42. Toilet supply
43. Check for leaks at Hanover Bridges
44. Check for leaks at Chester Road
45. Check for leaks at OAT toilets
46. Check for leaks at the Hub
47. Isodaq monitoring system

Appendix 3 - Shutdown Procedures

Annual winter decommissioning/closing for each area, made up of: Horticultural Irrigation systems (ref 2.0) and Sports Irrigation system (ref 3.0).

The Borehole (ref 4.0) has its own requirements listed further down.

1. Tank
2. Isolate and drain the potable back up supply to the tank
3. Close the suction line valve between the tank and the pump set
4. Pump station
5. Close discharge valve
6. Drain down pump set
7. Remove all drain plugs and keep drain cocks cracked open
8. Put pump into sleep mode but retain power to solid state electrics and all anti-condensation elements
9. Pipe work
10. Open drain points and air venting points and leave partially open throughout winter
11. Open all manual watering points for sufficient time to allow drainage to occur and leave cracked open
12. Control System
13. Run a full system diagnostic test
14. Set up a winter run cycle to keep solenoids occasionally charged

**The Borehole supply system (ref 4.0)**

The borehole is not decommissioned in winter as it supplies water to the toilet distribution system permanently. However, the following may be advisable and is a modification of the Spring re-commissioning option:

1. Borehole
2. Check seal of borehole chamber
3. Check pump operation from starter panel including a meter reading
4. Check system operation and that the priorities are being signalled from the relevant distribution points and opening correctly the solenoid valves
5. Check pilots on pressure sustaining, pressure reducing, & slow closing 4” check valve notably operation of Pressure Sustaining Pilot and operation of Pressure Reducing Pilot (the settings may be altered in discussion with TRP’s designated Borehole Engineer)
6. Check operation of isolation valves and drain cocks
7. Check operation of 33Q pressure relief valve to blow at closed valve bore-top pressure
8. Check operation of individual isolation valves to the four distribution points and close all but the supply to the toilet water distribution tank
9. Check operation of water meters to the four distribution points
10. Check operation of solenoid valves to the four distribution points
11. Pipe work
12. 90mm to lake
13. Close isolation valve at borehole
14. Open drain cocks at bridge and leave cracked open
15. Check operation of 3-port valve
16. 90mm to Toilet Water Distribution Tank
17. Make visual check
18. Check flow and signalling from level switches at tank
19. 110mm to Sports Irrigation Tank
20. Close isolation valve at borehole
21. Open drain cock at tank
22. Make visual check
23. 90mm to QMG tank and Ave Gdns Tank
24. Close isolation valve at borehole
25. Open drain cocks at tanks
26. Make visual check
27. Toilet Water Distribution Tank
28. Check potable back up supply
29. Check operation of all float switches
30. Check immersion element operating
31. Pump House
32. Make visual check for leaks and general security
33. Take pressure readings and monitor efficiency whereby curve can be checked against flow to Duck Pens (via meter)
34. Check pressure vessel and monitor start/stop timings against a closed valve
35. Check for hunting and signs of leaks
36. Duck pond and Pens
37. Check system flow to pens
38. Check water meter
39. Toilet supply
40. Check for leaks at Hanover Bridges
41. Check for leaks at Chester Road
42. Check for leaks at OAT toilets
43. Check for leaks at the Hub

Appendix 4 - Planned Preventive Maintenance (PPM) (April through to - November)

The Supplier will need to routinely be on site ready to commence automatic sprinkler test runs from 06:00 before the park and gardens become too busy. All maintenance on the sports pitches must be performed before 13:00 to avoid sports pitch booking from the early afternoon.

Weekly visits over a 4 week rotation to cover all areas:

* Wk 1: Queen Marys Gardens and St John’s Lodge;
* Wk 2: Avenue Gardens and Waterside;
* Wk 3: Sports field (Areas 1 and 2);
* Wk 4: Sports field (Areas 3, 4 and 5);

with any non-emergency reactive maintenance performed as a priority.

Each area requires:

1. At least 2 automatic test runs
2. Inspect & carry out minor repairs (carried out as part of the weekly visit)
3. Replace damaged sprinklers
4. Replace faulty solenoid coils
5. Replace faulty decoders
6. Repairs to lateral pipelines
7. Repairs to damaged control cables
8. Adjustments to sprinkler arcs
9. Inspect & carry out major repairs (these works may need to be carried out in addition to the weekly allowance)
10. Replacement of solenoid valves
11. Repairs to pumping plant
12. Repairs to main pipelines
13. Borehole Supply – requires summer weekly inspections & winter monthly inspections
14. Check operation of control panels
15. Take meter readings
16. Test float switch operation to all storage tanks
17. Check for damage to valve chambers
18. Check for leaks on valves
19. Avenue Gardens 8’ Ornamental cascade Fountains
20. Inspection of water levels and topping up from irrigation mains as required
21. Checking and testing isolation valves
22. Checking fountain cascade nozzles are providing required flow
23. Advising of pump operation (maintenance of pumps by Vinci Facilities Ltd)
24. Checking and unblocking as required fountain display nozzles
25. Removing any obvious debris (emptying and thorough cleaning carried out by The Landscape Group Ltd)
26. Anticipated time taken to inspect fountains 1-1½ hours

Appendix 5 - Reporting Template

A simple report on the current condition of equipment is required of each area at the point of shutdown/decommissioning and at the point of start-up/re-commissioning. This allows for repairs and/or development to be highlighted and programmed in biannually in a calendar year. Below is a suggested reporting template for providing TRP with the information required.

|  |
| --- |
| **IRRIGATION SYSTEM INSPECTION REPORT** |
| **Winter Shutdown** | **Date: 1st December 2017** |
| **Area:** | ***Queen Mary's Gardens QMG*** |
| **Water Tank Check** |  |
| Liner Leaks  | *None* |
| Damage/corrosion to steel rings/roof | *Some loose lid sections (will obtain brackets to secure)*  |
| Inlet valve operation | *Closed (Pumpac controller plug removed)*  |
| Shut drain offs where applicable | *DONE*  |
| Ball valve and float operation  | *OK* |
| **Pumping Plant Check**  |  |
|  Drain pumps | *DONE*  |
| Pump seal leaks | *NONE*  |
| Damage/corrosion to pumps and pipe  | *NONE*  |
| Suction and delivery valve operation  | *OK*  |
| Pressure vessel operation (where applicable) | *OK*  |
| Pressure gauges and switches  | *Booster 4.8 cut in 8.0 out / Jockey 5.5 cut in 7.2 out*  |
| Starter panel  | *OK* |
| Contactors/Fuses  | *Removed*  |
| Switches  | *OK*  |
| Relays | *Removed*  |
| Low water float switch OK  | *OK*  |
| **Irrigation Mains Pipeline Check**  |  |
|  Open drain valves  | *DONE*  |
| **Control System Check**  |  |
|  Test control cable for continuity and resistance  | *400 OHMS OK*  |
| Run controller diagnostic tests  | *DONE*  |
| Run system automatically (when practical to do)  | *YES*  |
| Set programmes  | *Winter programme set (1 min/week)*  |
| **Irrigation Station/ Sprinkler Checks**  |  |
| **Note only exceptions/faults****(use additional sheet if required)** |  |
| Station no 1 | *Arch to second sprinkler needed adjustment* |
| Station no 20 | *Three out of six sprinklers faulty and needed replacing*  |
| Station no 2 | *Solenoid needs replacing – yet to be done*  |
| **Suggestions on improvements & efficiencies that can be made to existing systems** |
| *None to suggest for this year, review end of next season 2018* |
| **Inspection carried out by**  | ***Joe Bloggs, THE WATER COMPANY*** |

Appendix 6 - Spare and Stock Items

TRP will purchase a range of spare stock items such as sprinklers, solenoid valves, decoders and DBY connectors through the Supplier to be held in its own stock.

Please refer to the Pricing Schedule for a full list of required stock items.