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Our reference: 2013-08522/1

06 September 2013

Mr Phil Castles
HDS Australia Pty Ltd
Level 1, 176 Fullarton Road
Dulwich
SA 5065

Dear Sir,

RE: COMMUNITY WASTEWATER MANAGEMENT SYSTEM FOR MALLALA INCLUDING WASTEWATER COLLECTION, TREATMENT AND IRRIGATION

I refer to your application on behalf of the District Council of Mallala seeking approval to install a wastewater collection, treatment and irrigation system at Mallala.

I advise that, pursuant to the South Australian Public Health (Wastewater) Regulations 2013, your application for wastewater system has been approved subject to the following conditions:

1. The approved system consists of the following:

1.1 Wastewater Collection System:

- 1.1.1 322 gravity property connections
- 1.1.2 7 pressure property connections with each property having a Mono PSS-EMS 160 sump fitted with a suitable pump
- 1.1.3 5773 m of DN150 PVC gravity pipe
- 1.1.4 242 m of DN75 HDPE PN10 common main
- 1.1.5 5 Flygt pump stations with four having a diameter of 1.8 m and one (PS-3) having a diameter of 2.2 m and all fitted with suitable duty and standby pumps
- 1.1.6 3275 m of rising mains which are DN125 HDPE PN10, DN110 HDPE PN10, DN90 HDPE PN10 and DN75 HDPE PN10

1.2 Wastewater Treatment Plant:

- 1.2.1 A maximum hydraulic flow of 179 kL/day
- 1.2.2 Three 46.4 kL 1st stage primary tanks
- 1.2.3 Two 46.4 kL 2nd stage primary tanks
- 1.2.4 One 20 kL Anoxic MBBR tank fitted with 6 m^3 of media
- 1.2.5 Two 38 kL aerobic MBBR tanks with each fitted with 9 m^3 of media
- 1.2.6 Three Greenco 4RB 620 air blowers (two duty and one spare) rated at 125 m^3/hr
- 1.2.7 One 38 kL clarifier tank
- 1.2.8 One 38 kL chlorine contact tank
- 1.2.9 One 5000 L pump sump
- 1.2.10 A suitable liquid chlorine disinfection system as per the information provided

1.2.11 An AECNET communications network system
1.2.12 A 10 ML recycled water storage lagoon with 1.5 mm thick HDPE liner

1.3 Recycled Water Irrigation:

1.3.1 A 705 m long DN125 PN12.5 HDPE irrigation main from the wastewater treatment plant to the town oval
1.3.2 Three 46.4 kL recycled water storage tanks at the town oval
1.3.3 An irrigation system for the town oval and the two woodlots as per the information provided including the Irrigation Management Plan
1.3.4 A standpipe at the waste water treatment plant site for filling tankers for the cartage of recycled water. ***The cartage of recycled water will require separate application and approval from the Department for Health and Ageing (DHA)***

2. The system is to be installed, commissioned, operated and maintained in accordance with:

2.1. The plans and specifications as submitted and approved by the DHA
2.2. Manufacturers, installers and equipment suppliers' instructions and recommendations.
2.3. WSAA Sewer Code of Australia (WSA 02-2002)
2.4. Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1)
2.5. AS 3500 for backflow prevention requirements
2.6. All other relevant standards and codes.
2.7. Conditions of this approval.

3. In regards to the inspection and commissioning;

3.1. The DHA must be advised of the completion of installation, prior to commissioning the system.
3.2. The DHA is to be notified in writing of the commissioning date of the system.
3.3. The DHA reserves the right to inspect during construction, or upon completion, or not to inspect the installation.

4. A telemetry alarm system to warn of failure of critical components of the system must be installed.

5. The pumps and other components used in the system must be suitable for their intended loads and operating environment.

6. Spare parts are to be kept on site to enable prompt repair of the critical components of the system.

7. Operation and maintenance manuals for the wastewater treatment plant and associated equipment are to be provided and maintained onsite for use by the system operator and maintenance personnel. The personnel are to be adequately trained to ensure the system is operated as required by the manufacturer and installation contractor as well as in compliance with this approval, including the reclaimed water quality monitoring and reporting requirements. Training shall also include Occupation Health and Safety aspects of system operation and maintenance. Appropriate signage advising of the use of chlorine is to be affixed to the building housing the chlorine containers and any ventilation requirements must also be adhered to.

8. The wastewater treatment plant is to produce recycled water complying with the following criteria:

8.1. A mean value BOD_5 not greater than 20 mg/L
8.2. A mean value of suspended solids not greater than 30 mg/L
8.3. A median thermotolerant coliform (*E coli*) count not greater than 100/100 mL
8.4. A mean total chlorine level of not less than 1 mg/L

Monitoring is to be carried out weekly for 4 weeks, fortnightly for 8 weeks and monthly for 9 months, then pending successful completion of this regime, on a **quarterly** basis thereafter. Sampling and analysis of samples are to be carried out by a NATA registered laboratory and the results are to be submitted to the DHA as soon as they become available).

After satisfactory completion of the initial 12 months, the results are to be submitted to the DHA in the form of an annual report due on the 30th September each year (for the period of 1st July to 30th June of each year).

However, the DHA reserves the right to request for the monitoring results at anytime. The owner and operator of the system are also responsible for **reporting** the results to the DHA immediately when there is a malfunction of the wastewater system or its components and/or the reclaimed water quality criteria above is not achieved, together with the measures taken to operate the system as per the requirements of this approval.

All such malfunctions and/or reclaimed water quality variations and the measures taken to rectify the problem(s) are also to be detailed in the annual report.

9. The recycled water irrigation system is to comply with Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) and the irrigation areas are to be appropriately signposted, indicating that recycled water is in use and not suitable for human consumption. All irrigation water and aerosols must be contained within the approved irrigation area. The sprinklers near the edge of oval must be inwards throwing and part circle ones.

10. **Where required, backflow prevention devices must be fitted to the system as per AS/NZS 3500 by personnel holding appropriate qualifications to ensure that all water supplies are protected from cross contamination. Backflow Prevention Device Inspection and Maintenance Report sheets for backflow prevention work carried out are to be submitted to the DHA and the Office of the Technical Regulator within 14 days. A full backflow prevention audit must be carried out by a certified backflow prevention tester in conjunction with the certifying engineer and comply with all requirements prior to the use of recycled water. All backflow prevention devices must be tested and a report submitted to the Office of the Technical Regulator annually.**

11. Within **eight weeks** of the completion of the installation, engineering certification by an independent chartered professional engineer experienced in wastewater system design, construction and operation, considering all the conditions of this approval, is to be submitted to the DHA including:

11.1. Structural soundness of the installation for all aspects of the scheme including the collection system, treatment plant, and recycled water irrigation system
11.2. Water tightness testing of the wastewater tanks
11.3. Water tightness testing of the pipes as per the tests described in the WSAA Sewer Code of Australia (WSA 02-2002)

11.4. Compliance of the irrigation system with the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1)

11.5. Compliance of all components of the installation (considering materials used, construction/installation methodology, trenching, bedding, jointing, required clearances etc.) with the standards referred to and with the conditions of this approval

The applicant is responsible to ensure that auditing of the wastewater system during installation is undertaken as per the standards, guidelines and specifications referred to by this approval, and that compliance is maintained with installation methods, correctness of materials used, and the testing of the system.

The engineering certification is to clearly state the compliance or otherwise with the approval, of both system components and the system as a whole. The certification is to be based on the assessment results including tests carried out during construction of the wastewater system.

12. Within **eight weeks** of the completion of the installation, "as constructed drawings" must be provided to the DHA indicating the "as constructed" information. Drawings must be of an acceptable quality utilising standard notation, legends and legible detail and include cross sectional details, longitudinal details, layout plans and details of the specific treatment plant and irrigation system components.

13. Pursuant to the South Australian Public Health (Wastewater) Regulations 2013, the DHA reserves the right to vary any or all of the approval conditions, and require the repair, replacement, rectification, or alteration of the system or any part thereof should at any time:

13.1. The system or a component thereof not be manufactured, installed and/or operated in accordance with the approval conditions; or

13.2. The system is defective and not able to perform the function for which the approval was issued; or

13.3. The system is operated in a manner that is prejudicial to public and environmental health, or causes environmental nuisance.

13.4. The operator or the person or agency holding the approval for the system fails to undertake necessary monitoring of the system or provide the results as required in the DHA approval conditions.

Approved by:  (Mr Tony Farror) Date: 06 September 2013

Manager, Wastewater Management Section
Delegate of the Minister for Health

CC: District Council of Mallala

References:

- Information provided by HDS Australia Pty Ltd
- Information provided by Environmental Water Services
- Information provided by the District Council of Mallala

Note 1: The approval does not abrogate responsibilities under other Acts or Regulations to obtain the necessary approvals, permits or licences from other agencies, including but not limited to:

- Environmental Protection Agency (EPA)
- Department of Environment, Water and Natural Resources
- Natural Resource Management Boards
- Department of Primary Industries and Regions SA
- Development Assessment Commission (DAC) and/or the local council

Note 2: This approval is issued on the basis of information provided by the applicant, wastewater treatment plant manufacturer and the District Council of Mallala and that operation and maintenance of the scheme once constructed will be carried out by the Council or their agents.

Note 3: Sludge from the system is to be taken away by an EPA licensed operator to an approved site and in accordance with the SA Biosolids Guidelines.

Note 4: No connection to the system is permitted until "engineering certification" and "as constructed drawings" have been provided to the DHA in accordance with this approval.

Note 5: All extensions/upgrades/modifications to the scheme will be subject to separate application (s) and approval from the DHA

Note 6: Before any premises are connected to the wastewater collection system the property owner must submit a waste control application to the District Council of Mallala with the required fee and receive approval. This application and approval by the Council is to cover the sanitary plumbing and drainage work within each property and its connection to the sewer drains in this approval. Connections to the scheme are to be installed in accordance with the SA Health's On-site Wastewater Systems Code and must be provided with inspection openings or flushing points shafted to the surface level and finished with a precast concrete cover and surround