

Tasmanian Plumbing Code 1994

PART C2 – INTERIM SYSTEM ACCREDITATION REPORT No. BSR0395 - 2005

TYPE OF SYSTEM:	Aerated Wastewater Treatment System (AWTS)
TITLE:	OZZI KLEEN™ Sewerage Treatment Plant (STP) - Models: RP20 and RP20A
APPLICANT:	Neatport Pty. Ltd. A.C.N. 063 770 534 Trading as: Suncoast Wastewater Management 6-40 Olsens Road ILKLEY Qld 4554 www.ozzikleen.com
MANUFACTURER:	Suncoast Wastewater Management 6-40 Olsens Road ILKLEY Qld 4554
SYSTEM DESCRIPTION:	The Sewage Treatment Plants consist of a two tank “Biological reactor” using a Cycled Extended Aeration Biological Treatment Process, designed to treat sewage and wastewater from toilets, bathrooms, kitchens and laundries. Treated effluent is drawn of the main tank, disinfected and stored in a separate collection well for distribution to an irrigation system. Excess sludge is drawn off at the beginning of each aeration cycle and stored in a separate holding tank. In addition to the RP20, the RP20A provides for Phosphate and Nitrogen removal through Nitrification/Denitrification with the addition of flocculating chemicals (Ferric Chloride (FeCl ₃) dosing).
SPECIFICATION:	The systems have been designed for a domestic and/or commercial wastewater flows up to 200 L/person/day with an organic loading not exceeding 70 g BOD/day/person. The above design parameters are based on a daily average of: <ul style="list-style-type: none"> • Total Suspended Solids: 70g/person; • Total Nitrogen: 15g/person; and • Total Phosphorous: 2.5 g/person
SUPPORTING DOCUMENTS:	Suncoast Waste Water Management: <ul style="list-style-type: none"> • Installation Manual – Ozzi Kleen Model RP20 – [Document No. RP20 INS Rev. B : 30/11/2004] • Operating & Maintenance Manual - Ozzi Kleen Model - RP20 – [Document No. RP20 O & M Rev. 2 : 29/12/2004] • RP20/20A Wastewater Treatment Plant HAZOP Study – [Rev. 0 : 07/12/2004] • Drawing: Ozzi Kleen STP - RP20 Rev. 0
CONDITIONS:	For conditions of accreditation refer to Schedule 1
NOTE:	Applicants and designers are to make themselves aware of their responsibilities under the <i>Building Act 2000</i> , the <i>Environmental Management and Pollution Control Act 1994</i> , the <i>State Policy on Water Quality Management 1997</i> and the <i>Emission Limit Guidelines for sewerage treatment plants that discharge pollutants into fresh and marine waters</i> .

SCHEDULE 1**CONDITIONS OF INTERIM ACCREDITATION FOR OZZI KLEEN WASTE WATER TREATMENT PLANT MODELS: RP20 and RP20A****1. Definitions**

AS/NZS 1547 means, the Joint Australian/New Zealand Standard "AS/NZS 1547:2000 On-site domestic-wastewater management";

BOD₅ means, "5-day Biochemical Oxygen Demand";

designer means, the designer who is responsible for the design, documentation or certification of the design or inspection of the installation;

DIER means, "the Department of Infrastructure, Energy and Resources";

DPIWE means, "the Department of Primary Industries, Water and Environment";

NATA means, "National Association of Testing Authorities";

permit means, "a Special Plumbing Permit issued by a permit authority pursuant to the *Building Act 2000*";

permit authority means, "a person or body authorised by the Municipal Council in which the system is to be located";

SS means, "Suspended Solids";

TPC means, the "Tasmanian Plumbing Code";

WWTP means, "Waste Water Treatment Plant".

2. General

2.1. The installation and operation of the RP20 or RP20A must satisfy the following conditions, the conditions of the permit and the manufacturer's operating, maintenance and installation instructions.

2.2. The RP20 and RP20A are granted interim accreditation to enable the installation and testing of a number of units to facilitate verification of their compliance, with the performance requirements of Part B2 of the TPC, Section 2.4 of AS/NZS 1547 and the conditions of interim accreditation, under normal operating conditions.

2.3. This accreditation permits the installation and testing of three units from the range of RP20 and RP20A models.

Notes:

1. This accounts for three individual installations that require testing. Accreditation does not apply to systems that form part of a council's infrastructure however performance monitoring of council owned systems may be included in the minimum number of systems to be installed and tested.

2. At least one of each model must be tested.

2.4. Each installation is to undergo a minimum of six months of testing and evaluation by an independent third party quality auditor or certifier authorised by DIER. The test period is to include a three-month full operational period during the winter months after commissioning. The testing and monitoring is to be arranged for and paid for by Suncoast Wastewater Management (the manufacturer).

2.5. The Certificate of Interim Accreditation will be without effect except where an independent third party quality auditor or certifier authorised by DIER has advised in writing its agreement to facilitate the testing and evaluation of the RP20 and RP20A

models at an identified site or sites and has also agreed to the prepare and submit an evaluation report to DIER in accordance with the conditions of interim accreditation.

- 2.6. Where an installation of an RP20 or RP20A has been found not to operate satisfactorily during its test period or serviceable life and as a result requires modification(s) to achieve the required water quality limits and operational performance, the installed system must be modified accordingly.
- 2.7. Any proposed modifications/alterations made to the wastewater treatment systems or manuals must be authorised by DIER.

Note: Modifications may be subject to additional verification and/or testing.

- 2.8. The anticipated life of any elements of a wastewater system that have a serviceable life of less than 15 years must be nominated in the manufacturer’s manual.

Note: Mechanical and electrical components are exempt from this requirement provided the design meets

- 2.9. The systems are accredited for use only where domestic or commercial wastewater flows do not exceed the parameters listed below:

PARAMETER	RAW WASTEWATER CHARACTERISTICS
Wastewater treatment capacity	20 Persons at 200 L/person/day
Maximum hydraulic loading	4,000 L/day
Biological Oxygen Demand (BOD ₅)	350 mg/L or 70 g/day/person
Total Suspended solids (SS) (mg/l)	350 mg/L or 70 g/day/person
Total Nitrogen	75 mg/L or 15 g/day/person
Total Phosphorous	12.5 mg/L or 2.5 g/day/person
Total grease and oils	75 mg/L
pH	6 < pH <8.5
Wastewater temperature range	10°C to 40°C

Note: For liquid trade waste activities such as restaurants and the like discharges to the RP20 or RP20A containing oil and grease greater than 75 mg/L an adequately designed grease interceptor trap must be fitted upstream of the treatment plant to remove grease and oils.

- 2.10. Each application to a permit authority to install an RP20 or RP20A must be accompanied by a site-and-soil evaluation report and design report in accordance with AS/NZS 1547.

Note: Refer to the ‘Permits – Reports’ section of this schedule.

- 2.11. The manufacturer must supply the owner and the occupier (if the occupier is not the owner) with all manuals, setting out the care, use, operation and maintenance requirements of each system to be installed. The manuals must also include procedures to be followed in the event of a system malfunction.
- 2.12. A risk management plan is to be developed, specific to each installation, to reduce the frequency of unforeseen overflows due to system malfunctions e.g. power supply problems, operator error, equipment failure and the like. Each plan is to contain contingencies to ensure that spills, which occur, are appropriately dealt with to minimise risks to the environment and public health. Copies of the plan are to be provided to the owner and occupier (if the occupier is not the owner), the operator and the permit authority.

- 2.13. The owner of the system must enter into and maintain a maintenance contract with the relevant council, the manufacturer of the system, or other council approved person in accordance with these conditions and the conditions of permit.
- 2.14. The owner must enter into an agreement with the permit authority to maintain a maintenance contract where that contract is with the manufacturer of the system or other approved person in accordance with these conditions and conditions of permit.
- 2.15. The owner must also enter into an agreement with the permit authority to the effect that the test system is to be removed and replaced with an accredited system should the test system fail to be granted accreditation on completion of testing.
- 2.16. Each unit must be provided with a permanent, clear indelible notice in a prominent position that is readily visible after installation. The notice must include the following information:
- (a) The manufacturer's name or registered mark;
 - (b) The model number or designation;
 - (c) The month and year of manufacture;
 - (d) The capacity in litres/week;
 - (e) The top load limitations; and
 - (f) The weight of the unit.
- 2.17. For the RP20A model (using Ferric Chloride dosing (FeCl_3)), the manufacturer is to provide detailed information in their manuals on the use of ferric chloric dosing process against potential process problems due to relatively low alkalinity water supplies in Tasmania.
- Note: Precipitant chemicals such as ferric chloride and alum typically lower pH and reduce alkalinity. In Tasmania where many potable water supplies exhibit relatively low alkalinity this can be an issue for treatment plants, which remove ammonia. Conversion of ammonia to nitrate reduces alkalinity, while subsequent conversion of nitrate to nitrogen gas only recovers half of that alkalinity. If the alkalinity in the effluent is, less than 50mg/L of CaCO_3 process problems are likely to occur.
- 2.18. At each anniversary of the accreditation date, the manufacturer is to provide a list of all their accredited systems installed in Tasmania by anniversary year of installation to DIER.
- 2.19. A copy of the following information is to be made available by the manufacturer to each permit authority where it is intended to install a RP20 or RP20A within their jurisdiction once full accreditation has been obtained:
- (a) Statement of warranty;
 - (b) Statement of service life;
 - (c) Quality Assurance Certification (w/a);
 - (d) Installation Manual;
 - (e) Service Manual;
 - (f) Operators Manual;
 - (g) Service Report Form;
 - (h) Engineering Drawings on A3 format;
 - (i) Detailed Specifications;
 - (j) A4 Plans; and
 - (k) Accreditation documentation from DIER.
- 2.20. This accreditation does not include the manufacturers supplied irrigation system.
Note: Refer to the 'Permits and Reports' section of Schedule 1.

- 2.21. The Certificate of Interim Accreditation may become void should the applicant fail to meet the conditions set out in this schedule.
- 2.22. The Certificate of Interim Accreditation is valid for five (5) years from the date of accreditation or until withdrawn by the authority having jurisdiction.

3. Permits and Reports

- 3.1. When issuing a permit the Permit Authority is to satisfy itself that, the designer's choice of the RP20 or RP20A configuration is optimal for the proposed site conditions.

Note: Refer to 'Design Report section of Schedule 1'.

- 3.2. Prior to the issue of a permit to install an RP20 or RP20A the following reports must be submitted with an application to the permit authority:

3.2.1. *Site-and-soil evaluation report*

This report is to detail results of an assessment of the individual lot(s) for the public health, environmental, legal and economic factors which are likely to impinge on the siting and design of a land-application system and an evaluation of the site and soil characteristics to determine feasible options for designing and sizing a land-application system. (Refer to AS/NZS 1547 Clause 4.1.5 and associated appendices to 4.1).

3.2.2. *Design report*

The Design Report is to include the following:

- (a) Relevant aspects of the Site-and-soil Evaluation Report.
 - (b) A report on the selection of the land-application system. (Refer to AS/NZS 1547, Clause 4.2.4 and associated appendices to Clause 4.2 for further information).
 - (c) A report on the selection of the wastewater-treatment unit. (Refer to AS/NZS 1547, Clause 4.3.6 and associated appendix to Clause 4.3 for further information).
 - (d) The Design Report is to provide sufficient information to show that the performance objectives of Part 2 of AS/NZS 1547 have been met.
- 3.3. The following reports must be submitted to the permit authority and made available to DIER upon request after commissioning of the system:

3.3.1. *Installation and commissioning report*

The Installation and Commissioning Report is to cover the 'as-constructed' records of the system together with the results of commissioning tests to demonstrate correct construction and installation and is to be provided to the permit authority on completion of the work. (Refer to and AS/NZS 1547 Clause 4.5.6.3 and associated appendices to Clause 4.5 for further information).

3.3.2. *Inspection and Maintenance Report*

Maintenance reports cover ongoing inspection and maintenance operations in order to monitor the operation of the wastewater system. (Refer to AS/NZS 1547 Clause 3.7.4 and associated Appendix 3A for further information).

4. Installation

- 4.1. The RP20 and RP20A models must not be installed in plumbing installations other than in accordance with the conditions of a permit issued by a permit authority.
- 4.2. The test sites for the RP20 and RP20A must be representative of the climatic, geological, or geographic variations expected to be encountered in the deployment of the systems within Tasmania.
- 4.3. The systems must not be installed in situations where the wastewater temperature in the biological reactor is likely to fall below 10⁰C.
- 4.4. The systems must be supplied, constructed and installed in accordance with the design and specifications submitted with Suncoast Waste Water Management's application to DIER for accreditation for the Ozzi Kleen RP20 and RP20A models.
- 4.5. Each test installation must be inspected and checked by the designer or the designer's agent. The designer, on completion, is to certify that the installation has been constructed, installed and commissioned in accordance with its design, the conditions of accreditation and conditions of permit.
- 4.6. All plumbing work installed in connection with the system must comply with the Tasmanian Plumbing Code and Tasmanian *Plumbing Regulations*.
- 4.7. The installation of the RP20 or RP20A WWTP must satisfy the installation requirements for 'flushing sanitary fixtures not connected to a sewer' as specified in the TPC.
- 4.8. All electrical work and connections must be carried out by an appropriately licensed electrician and in and accordance with relevant provisions of AS/NZS 3000: *Wiring rules*.
- 4.9. Where discharging treated effluent to a land application system by surface or shallow subsurface drip irrigation a lockable sampling tap or gate valve is to be provided on the outlet pipe leading to the irrigation area.
- 4.10. The designer is to certify the construction, installation and commissioning of each system prior to a permit authority issuing a completion certificate (plumbing work).
- 4.11. All installations must be provided with an alarm to indicate an electrical or mechanical malfunction. The alarm must comprise audible and visual components, with muting facilities for the audible component. The muting facility must reset to audible after no greater than 24 hours.
- 4.12. For multiple occupancies located on a single title, an indicator light and audible alarm, with muting facilities for the audible component, must be located in the kitchen or laundry of each residence, with an external flashing visual alarm in a readily visible location to signify a system malfunction.
- 4.13. For commercial premises, an indicator light and audible alarm, with muting facilities for the audible component, must be provided in a prominent location, with an external flashing visual alarm in a readily visible location to signify a system malfunction.
- 4.14. Where the transfer of influent or effluent to or within the treatment facility via collection wells is provided for by pumping, each collection well must be equipped with a permanently installed high-level alarm.

5. System testing and Performance and Evaluation

- 5.1. To obtain full accreditation of the RP20 and RP20A the manufacturer is to appoint an independent third party quality management certification body or person acceptable to DIER to test and evaluate the WWTP's *in-situ*.
- 5.2. Effluent testing and monitoring must be carried out on all trial systems in accordance with the provisions of Table 1 in Schedule 2 of this report.
- 5.3. The independent third party quality management certification body or person authorised to conduct the evaluation is to prepare an evaluation report based on the manufacturers design criteria, construction requirements and test criteria with particular reference to:
 - (a) Identification of the type and model being tested, compliance with drawings, rated capacity, loadings and testing methods;
 - (b) A log of tests, compliance calculations, maintenance, equipment or component failures and other factors pertinent to the test evaluation;
 - (c) Temperature regime;
 - (d) Address of premises,
 - (e) Date sampled,
 - (f) Analytical test methods and results;
 - (g) Sample identification number,
 - (h) Sample parameters specified in Table one of Schedule 2,
 - (i) Service history,
 - (j) Graphs of accumulative data for parameters specified in Table one of Schedule 2 results for each test system; and
 - (k) Reference to the relevant conditions of accreditation.
- 5.4. Intensive monitoring is required during and immediately following commissioning of each installation in order to assess the systems performance against the manufacturers design criteria and to establish optimum operating conditions. Intensive monitoring is to continue until the plants performance has been evaluated over a range of operating conditions, e.g. seasonal variations, in influent loading, climatic, geological, or geographic variations and the like.

Note: Initially more frequent monitoring may be required by the relevant council subject to local conditions. Intensive monitoring will also assist with the refining of plant maintenance schedules.

- 5.5. A sampling and analysis program satisfying the relevant requirements of AS/NZS 5667 must be developed and be accepted by DIER prior to commencing any trials.
- 5.6. All required testing and reporting of parameters must be carried out in a laboratory registered by NATA at the manufacturers expense

Note: Refer to Table one of Schedule 2.
- 5.7. In addition to the independent third party quality management certification body or persons' evaluation report, copies of the installation and commissioning and inspection and maintenance reports referred to in the 'Permits – Reports' section of this schedule must be provided to DIER.

6. Commissioning, Performance Monitoring and Reporting (Serviceable life)

- 6.1. All installations of the RP20 and RP20A models must be used, operated, maintained and monitored to ensure they perform continuously and without intervention between inspections carried out by approved person(s).

- 6.2. Intensive monitoring is required during and immediately following commissioning of each installation in order to assess the systems performance against the manufacturers design criteria and to establish optimum operating conditions. Intensive monitoring is to continue until the plants performance has been evaluated over a range of operating conditions, e.g. seasonal variations in influent loading, climatic, geological, or geographic variations and the like

Note: Permit authorities subject to local conditions may require more frequent monitoring. Intensive monitoring will assist with the refining of plant maintenance schedules.

- 6.3. Effluent monitoring must be carried out for all discharge methods in accordance with Table 2 of Schedule 2, for the operational life of the system.
- 6.4. Performance monitoring of each installation is to commence after commissioning and must be carried out at not less than three (3) monthly intervals in accordance with the conditions of accreditation, the conditions of permit and the manufacturers requirements, by an approved person(s).
- 6.5. For all systems, the following effluent monitoring must be carried out:
- (a) For discharges by way of surface irrigation using UV disinfection **only**, the permit is to require the owner to cause a sample of the effluent to be taken and analysed by an appropriately qualified person for BOD₅, SS and Thermotolerant Coliforms on a quarterly basis;
 - (b) For discharges by way of surface irrigation incorporating Chlorine as a disinfectant, the permit is to require the owner to cause a sample of the effluent to be taken and analysed by an appropriately qualified person for BOD₅, SS and Thermotolerant Coliforms annually and for Residual Chlorine, quarterly;
 - (c) For discharges to land by way of subsurface absorption/transpiration trenches, the permit is to require the owner to cause a sample of the effluent to be taken and analysed by an appropriately qualified person for BOD₅ and SS annually;
 - (d) For discharges to fresh and marine waters, the permit is to require sampling and monitoring in accordance with the ELG's; and
 - (e) Any other tests for the parameters set out in Table 1 of Schedule 2 required by a permit authority, to establish the ongoing proper performance of the system and the protection of public and environmental health, at no less than quarterly intervals.
 - (f) For other disinfection processes, alternative testing methods and frequencies must be authorised by DIER.
- 6.6. Copies of the following reports and certificates must be submitted to the permit authority and the owner as soon as practicable after the commissioning of the system and after each scheduled or unscheduled service for the period specified in the permit:
- (a) the initial plant installation and commissioning report and certification;
 - (b) all laboratory analytical test reports; and
 - (c) all inspection and maintenance and monitoring reports.
- 6.7. In addition to the criteria set out in the manufacturer's quarterly servicing report sheets the following matters are to be reported on:
- (a) Weather conditions;
 - (b) Ambient temperature and Effluent temperature;

- (c) Odour;
- (d) Water meter reading (where applicable);
- (e) Trench operation (where applicable);
- (f) Irrigation area operation and performance (where applicable);
- (g) Alarm system operation;
- (h) Air pump operation and filter;
- (i) Irrigation pump operation;
- (j) Irrigation filters; and
- (k) Contain a statement warning the user of the system of which items and products must not be used in the system.

6.8. *Ultra Violet lamps and ballasts*

Where UV disinfection is permitted and effluent is distributed above ground, all Ultra Violet lamps and ballasts must:

- (a) Be accessible;
- (b) Be monitored daily;
- (c) Be cleaned at least every two (2) months; and
- (d) Have records kept of the lamps use, lamp life and replacement cycles for both lamps and ballasts.

6.9. All samples are to be determined by a NATA registered laboratory and samples for disinfectant concentration, pH, DO, flow rates, may be determined on-site.

6.10. Effluent from the RP20 or RP20A taken in any random grab sample must comply with the parameters set out in Table 2 of Schedule 2.

6.11. Copies of any report or certificate are to be made available to DIER upon request.

7. **Wastewater Discharges**

7.1. All wastewater discharges must satisfy the relevant parameters set in Table 2 of Schedule 2.

7.2. Where discharging treated effluent from a system to land by subsurface absorption trenches the length of those trenches used must not be less than 50% of that required for septic tank effluent, sized accordance with AS/NZS 1547.

7.3. Other applications of effluent to the land must be in accordance with AS/NZS 1547 so far as reasonably practicable.

7.4. Where it is not practicable for effluent from the system to be applied in accordance with AS/NZS 1547 the method of discharge must satisfy contemporary relevant regulatory requirements to the satisfaction of the permit authority.

7.5. Application by surface or shallow subsurface irrigation may be permitted where the permit authority is satisfied that the applicant has demonstrated that:

- (a) The effluent can be retained on-site;
- (b) The location of the disposal field(s) satisfies the requirements of the State Policy on Water Quality Management 1997 and AS/NZS 1547 as appropriate;
- (c) The land application area restricts casual access by unauthorised persons and animals and be appropriately signed;
- (d) The discharge quality will satisfy the relevant requirements set in Table 2 of Schedule 2.

8. Desludging

- 8.1. The system is to be desludged strictly in accordance with the manufacturer's recommendations and the sludge is to be disposed of in accordance with the DPIWE's Tasmanian Biosolids Reuse Guidelines and the conditions of permit.
- 8.2. Only persons with a waste transport business Environment Protection Notice issued by DPIWE are to be engaged for the removal, transporting and disposal of accumulated sludge removed from the system.
- 8.3. Any waste material removed from the RP20 and RP20A during monitoring or servicing must be collected and disposed of or utilised by an approved facility or agency.
- 8.4. Measures are to be put in place during servicing that will protect the environment, personnel and any other persons who could be affected by the activity.

SCHEDULE 2**EFFLUENT AND SAMPLING PARAMETERS**

TABLE 1: PARAMETER & SAMPLING POINTS	FREQUENCY
Flow	Monthly
*BOD ₅ (mg/l) (Raw and treated wastewater samples prior to disinfection)	Monthly
Suspended solids (SS) (mg/l) (Raw and treated wastewater samples prior to disinfection)	Monthly
Thermotolerant Coliforms (orgs/100mL) (Samples to be taken at outlet)	Monthly
Total Nitrogen (mg/l) (Raw and treated wastewater samples prior to disinfection)	Monthly
Total Phosphorous (mg/l) (Raw and treated wastewater samples prior to disinfection)	Monthly
Oil and Grease (Raw and treated wastewater samples prior to disinfection)	Monthly
pH (Raw and treated wastewater samples prior to disinfection)	Monthly
Ambient and raw and wastewater temperatures	Monthly
Dissolved Oxygen (DO) (To be taken at aeration chamber)	Monthly
Disinfectant levels (To be taken from pumpout chamber)	Monthly

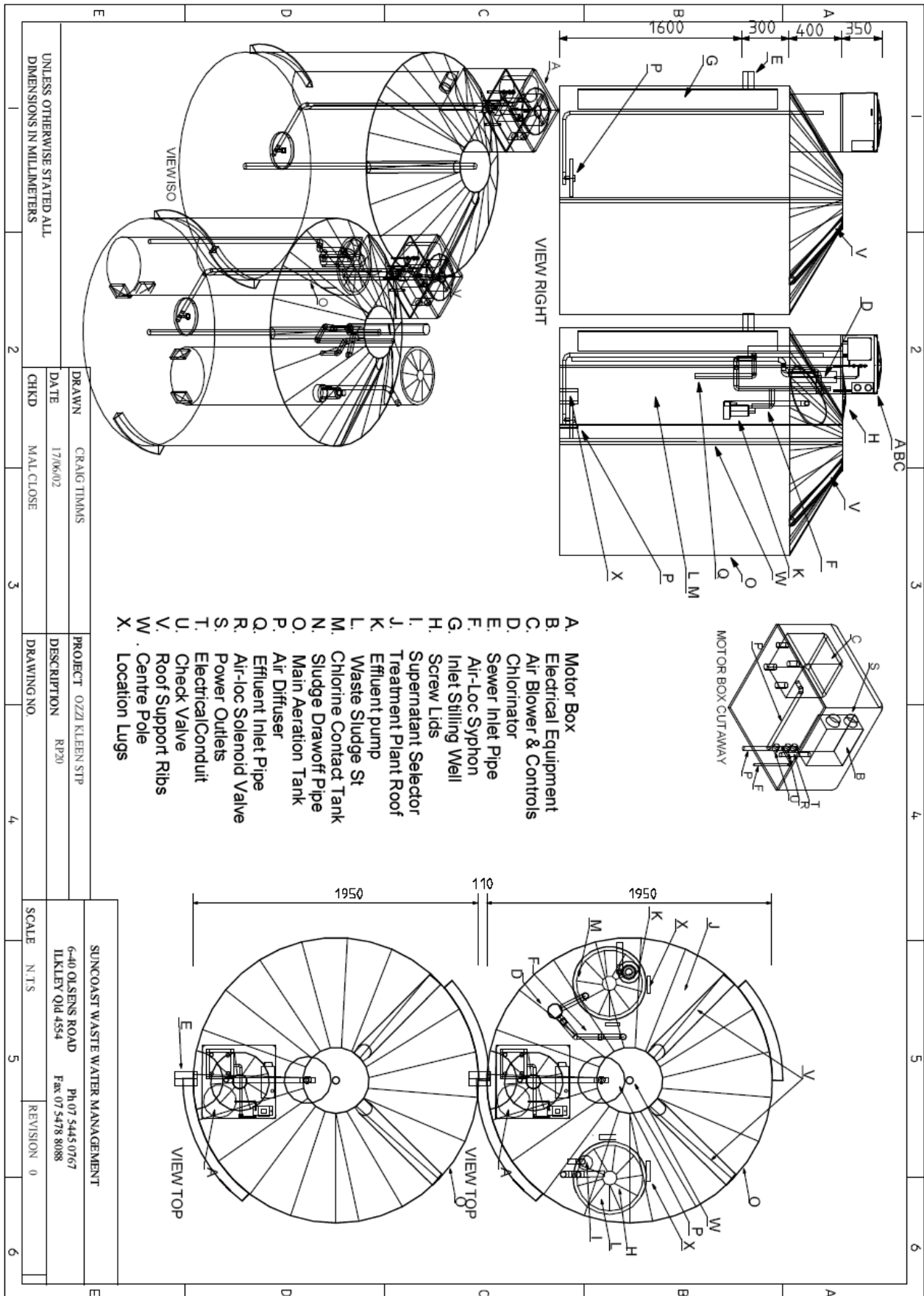
Notes:

1. All sampling of effluent is to be carried out in accordance with AS/NZS 5667.
2. Recording of ambient and raw wastewater temperatures is to verify the minimum temperature range of the systems successful operation.
3. Samples of raw and wastewater are taken to identify the plants ability to perform as designed.
4. *COD can be used where the relationship between COD and BOD has previously been established. This would involve a more intensive monitoring period involving both parameters.
5. The influent only requires testing during commissioning phase.
6. On each testing occasion, two samples are to be collected over a minimum interval of 30 minutes for BOD₅ and SS.
7. Once the plant has been fully commissioned and shown to produce the required effluent parameters the frequencies may be extended to quarterly.
8. In the case of plant malfunctions, more frequent sampling may be necessary (i.e. weekly initially and then monthly until optimal performance objectives are achieved.

TABLE 2: EFFLUENT PARAMETERS
For discharges to other than piped irrigation systems:
Biochemical Oxygen Demand (BOD ₅) 20 mg/L
Suspended Solids (SS) 30 mg/L
For surface irrigation:
Thermotolerant Coliform count 10 organisms/100 mL
Free Residual Chlorine 0.5 mg/L (min.) and 2.0 mg/L (max.)
Biochemical Oxygen Demand (BOD ₅) 20 mg/L
Suspended Solids (SS) 30 mg/L
For shallow subsurface irrigation:
Biochemical Oxygen Demand (BOD ₅) 15 mg/L
Suspended Solids (SS) 15 mg/L
For discharge to fresh and marine waters:
Where permitted, all discharges must satisfy the Department of Primary Industries Water and Environment, <i>Emission Limit Guidelines for sewerage treatment plants that discharge to fresh and marine waters.</i>

SCHEDULE 3

OZZI KLEEN STP – RP20 DIAGRAM



Date of issue: 2nd March 2005

Robert L Pearce – Director of Building Control
 delegate of
Minister for Infrastructure, Energy and Resources