TERMS OF REFERENCE

FOR THE OUTSOURCING OF THE OPERATION AND MAINTENANCE OF CALAMBA WATER DISTRICT'S SEPTAGE TREATMENT FACILITY AND TWO (2) SEPTAGE VACUUM TRUCKS

1.1. SEPTAGE TREATMENT PLANT OPERATION AND MAINTENANCE

1.1.1. DESCRIPTION. The Contractor shall operate and maintain Septage Treatment Plant (SpTP), in accordance with the Service Contract. The Contractor shall also provide third party testing laboratory accredited by DENR-EMB for necessary effluent analysis as specified in "ANNEX A", Table 3.

1.1.2. OPERATION. The Contractor shall:

a. Administer the partial operations of the Septage Treatment Plant (SpTP) limited to 8 hours a day, and two days a week.

b. Schedule vacuum truck receiving operations from 8AM to 5PM, Monday to Friday, constituting a 22-day operation per month.

c. Provide at least two (2) VTU/plant operator, two (2) VTU/plant helper, and one (1) Technical Support personnel who can be expected to be available at any emergency time and must monitor the plant operation at least once every two (2) weeks.

d. Include Septage Treatment Plant operations, but not limited to:

1. Maintain sufficient inventory levels such as PPE and safety devices, housekeeping tools and materials, chemicals, disinfection materials and cleaning agents at all times.
2. Assure that the effluent is in compliance with the parameters required by DENR-EMB through monitoring of chemical analysis results.
3. Maintain all equipment of the treatment facility in good running conditions.
4. Record all activities, parameter results and chemical dosages for review by the employer's Pollution Control Officer and/or Plant Engineer/Supervisor.
5. Perform sludge bagging in the absence of truck for direct dumping.
6. Assure one empty holding tank every morning from Mondays to Fridays for the unloading of the vacuum trucks for the day.
7. Perform scheduled preventive maintenance and immediate repairs as necessary.

8. Perform daily routine system inspection.
9. Cleaning of treatment plant premises.
10. Cleaning of potable water tank regularly to remove sediment accumulation.
11. Cleaning of process tanks for accumulated scum.
12. Maintain sufficient levels of recycled water for use in operation.
13. Dispose of accumulated sludge cake to the dumping area designated.
14. Ensure the operability of Potable Water and Recycled Water supply pumping system.
15. Perform jar testing prior to start of dewatering process to verify the polymer dosage.
16. Generate monthly report for submittal to the employer.
17. Reporting to the employer for any issues that could affect the plant operation.
18. Provide STP maintenance tools and equipment to ensure the operations and maintenance in the plant.

1.1.3. MONITORING. The Contractor shall ensure that the effluent quality parameters will comply with the effluent quality standards of DENR and in conformance to RA 9275: Philippine Clean Water Act of 2004. The Contractor shall monitor effluent parameters as specified in "ANNEX A", Table 3. Monthly testing of wastewater effluent by an accredited DENR-EMB third party laboratory testing center shall be shouldered by the Contractor. A monthly summary report shall be submitted on the first week of the ensuing month of service rendered to the Pollution Control Officer and/or Plant Engineer/Supervisor for performance evaluation and discussion. The Contractor shall be liable for any fines, damages and penalties that may be imposed by DENR-EMB for violation or non-compliance with the aforementioned environmental law.

1.1.4. PERSONNEL. The Contractor shall ensure that all personnel are properly trained and maintained qualifications as specified in "ANNEX B" throughout the duration of the Service Contract, as required to operate the Septage Treatment Plant. All personnel are required to be at their respective work destination during operational days. Personnel leave of absence or official trips shall be properly coordinated with the CWD and be filed in advance for at least five (5) days in compliance with the CWD's internal policy. However, there are situations in which leave cannot be requested in advance, e.g. unexpected illness or any emergency cases or untoward incidents, a leave maybe granted but a reliever should always be provided so as not to affect the

normal operation. To keep the good quality of workmanship, the Contractor shall provide suitable tools and equipment necessary for SpTP operations.

1.1.5. SAFETY AND HEALTH. The Contractor shall ensure a safe and healthy working condition by providing facilities, devices and personal protective equipment for the personnel against all hazards in their work environment and is required to comply with occupational safety and health standards in the workplace.

a. The Contractor shall provide Personal Protective Equipment to technical personnel assigned in compliance with the safety regulations inside the plant premises.

b. The Contractor shall identify potential risks that may arise during the operation of SpTP including, but not limited to, treatment operation, maintenance, and use of recycled water. The Contractor shall also provide necessary measures addressing risks, safety and health of all personnel.

c. The Contractor shall provide necessary vaccines such as, but not limited to, Anti-tetanus, Hepatitis A and Hepatitis B to all personnel with exposure to the operation and maintenance of SpTP, and other minimum health requirements that may be required by DOLE. Such vaccines shall be administered to all personnel involved in SpTP operation prior to the date of assuming the SpTP operation and maintenance services. Copy of vaccination certificates shall be submitted through the Plant Engineer/Supervisor.

d. The Contractor shall provide safety trainings/seminars such as, but not limited to, training/seminar on health, safety, hygiene, confined space entry, hazardous materials, accidental spillage control and clean-up procedures to respective personnel directly involved in SpTP operation. Copies of trainings/certificates shall be submitted within the 1st month of operations.

e. Any safety devices/equipment deficiency, safety incidents and near-misses must be recorded and reported through Plant Engineer/Supervisor.

1.1.6. CORRECTIVE MAINTENANCE/REPAIR LIMITATION. The below statements shall only be applicable upon expiration of warranty coverage of all Septage Treatment Plant equipment. Otherwise, all SpTP equipment/parts breakdown shall be of the Supplier's liability.

"All kinds of SpTP equipment breakdown that only needs repairment shall be repaired by the Contractor at no cost to the employer. On the other hand, for all kinds of SpTP equipment breakdown that needs unit/parts replacement (disposables not included), the employer shall shoulder the cost of replacement upon evaluation and approval of

the latter. Once approved, the Contractor shall procure the equipment/parts and the employer shall be billed by the Contractor for the supply of such SpTP equipment/parts but the labor services/installation shall be at the expense of the Contractor. The billing shall be supported by an itemized list of all equipment/parts replaced, showing the item description, quantity, unit cost, total cost and the end use of the item. All parts replaced shall be turned-over to the employer. The Contractor shall provide a maintenance report."

1.1.7. SEPTAGE TREATMENT PLANT OPERATION AND MAINTENANCE COSTS. The Contractor shall be responsible for the whole SpTP operation expenses of the following:

a. Personnel salary, vaccines, and trainings
b. Personal protective equipment (PPE)
c. Power and water utility bills
d. Generator set fuel and consumable costs
e. Third party laboratory analysis
f. In-house laboratory chemicals, reagents, and miscellaneous
g. SpTP preventive maintenance costs
h. Overhead and incidental expenses

1.1.8. EQUIPMENT EVALUATION AND INSPECTION. All equipment in the Septage Treatment Plant shall be audited by the Contractor and counterchecked by the employer representative before assuming Operation and Maintenance services. All faulty equipment inspected during the audit shall be of the employer's liability.

1.1.9. EMERGENCY AND TEMPORARY REMEDIAL CAPABILITIES. The Contractor shall have any necessary emergency pumps and accessories in place. Such emergency and temporary services shall be coordinated with the employer through the Client's Safety Officer, Pollution Control Officer, and Plant Engineer/Supervisor and shall be accomplished using acceptable methods to avoid operational interruptions, accidental spillage, discharge, and to minimize system downtime.

1.1.10. CALIBRATION. Measuring/monitoring equipment shall be recommended for calibration by the Contractor as necessary to ensure accurate results of wastewater effluent parameter analyses. Flowmeters shall be calibrated within one (1) year from the previous calibration date. Certificate of Calibration of equipment must always be updated and available. Copy of such must be provided to the Employer's Pollution

Control Officer and/or Plant Engineer/Supervisor. Necessary equipment calibration to be conducted by third party laboratory will be made billable to the employer.

1.1.11. HAZARDOUS MATERIALS. The Contractor shall provide the personnel adequate training such as, but not limited to, Hazmat handling training. Safety Data Sheets (SDS) must be available with the necessary chemicals to be used in SpTP operations. Copies of trainings/seminar certificates shall be submitted to the employer within one month of operations.

1.1.12. SLUDGE DISPOSAL. The employer shall be responsible for the disposal of the accumulated dewatered sludge at their designated dumping area.

1.1.13. RECORDING AND REPORTING. The requirements for record keeping are applicable to all stages of septage management: desludging, transportation, treatment and disposal. Septage treatment information for recordkeeping may include, but not limited to the following:

a. Volume of septage accepted in treatment facility;
b. Volume of sludge generated and disposed;
c. Volume of treated wastewater and effluent discharged;
d. Maintenance activities;
e. Inventory of tools, devices, chemicals, and spares;
f. Laboratory analysis results;
g. Electricity, fuel and water consumption; and
h. Safety incidents, if any.

Copies of properly filled out and completed documents should be given and reported to the employer's Pollution Control Officer and/or Plant Engineer/Supervisor every first week of the ensuing month of service rendered for recordkeeping. The records should be retained for a minimum of five (5) years.

1.2. WASTEWATER CHARACTERISTICS

1.2.1. DESCRIPTION. Septage Treatment Plant should run at an average volume capacity of 20 cubic meters per day. Septage sludge sources comes only from households, government institutions, commercial establishments (subject to inspection), industrial sources (subject to inspection), and should always comply with the designed influent parameters of the facility.

1.2.2. INFLUENT AND EFFLUENT. Attached herewith as "ANNEX A" are the parameters which shall be the basis for the Service Contract.

1.3. DESLUDGING OPERATION AND MAINTENANCE

1.3.1. DESCRIPTION. The Contractor shall perform the Septage Desludging and Hauling Operation, in accordance with the Service Contract. The Contractor shall also provide Preventive Maintenance and/or Corrective Maintenance services related to these operations.

1.3.2. OPERATION. The Contractor shall:

a. Target a maximum collection of **5,280 cu.m. of raw septage** in a year. Actual volume to be collected will depend on the schedules provided by the employer, but will not surpass the target maximum collection under this Service Contract.

b. Regular schedule of vacuum truck hauling operations, 8AM to 5PM, Monday to Friday.

c. Provide minimum manpower of two (2) VT operators/drivers, two (2) VT helpers.

d. Include the septage desludging and hauling operation, but not limited to:

1. Maintain the vacuum truck in good condition at all times.
2. Maintain sufficient inventory levels such as PPE and safety devices, disinfection materials, cleaning agents and VT maintenance tools and equipment at all times.
3. Perform vacuum operation in accordance with the employer schedule.
4. Monitor the vacuum pump condition during vacuuming operation.
5. Perform routine inspection of the vacuum truck before going out for a trip.
6. Assure that all the necessary PPE, tools, and safety equipment are available for use in the truck.
7. Perform lime application to deodorize the septage during vacuuming whenever necessary.
8. Perform weekly cleaning or as needed in order to maintain the cleanliness of the vehicle.
9. Perform scheduled preventive maintenance and immediate repairs as necessary.
10. Perform daily routine vacuum pump system inspection.
11. Cleaning of VT tank every week or as needed.

12. Maintain sufficient amount of water for use in cleaning after vacuum operation.
13. Generate monthly report for submittal to the employer.
14. Reporting to Pollution Control Officer and/or Plant Engineer/Supervisor for any issues that could affect the septage desludging and hauling operation.

1.3.3. MONITORING. The Contractor shall monitor the truck condition including the fuel consumption, maintenance schedules, and efficiency of desludging using in-between distances collection method. A monthly summary report shall be submitted on the first week of the ensuing month of service rendered to the Pollution Control Officer and/or Plant Engineer/Supervisor for performance evaluation and discussion.

1.3.4. PERSONNEL. The Contractor shall ensure that all technical personnel are properly trained and maintain qualifications as specified in "ANNEX B" throughout the duration of the Service Contract, as required to sludge vacuuming operation. All personnel are required to be at their respective work destination during operational days (Mondays to Fridays). Personnel leave of absence or official trips shall be properly coordinated with the employer and filed in advance for at least five (5) days in compliance with the employer internal policy. However, there are situations in which leave cannot reasonably be requested in advance, e.g. unexpected illness or any emergency cases or untoward incidents, a leave maybe granted but a reliever should always be provided so as not to affect the normal operation. To keep the quality of workmanship, the Contractor shall provide suitable tools and equipment necessary for desludging operations.

1.3.5. SAFETY AND HEALTH. The Contractor shall ensure a safe and healthy working condition by providing facilities, devices and personal protective equipment for the personnel against all hazards in their work environment and is required to comply with occupational safety and health standards in the workplace.

a. The Contractor shall provide proper Personal Protective Equipment to personnel assigned in desludging and disposal activities.
b. The Contractor shall identify potential risks that may arise during the desludging, transport of sludge, sludge disposal and vacuum truck operation and maintenance activities. The Contractor shall also provide necessary measures addressing risks, safety, and health of all personnel.

c. The Contractor shall provide necessary vaccines such as, but not limited to, Anti-tetanus, Hepatitis A and Hepatitis B to all personnel involved in desludging, transport of sludge, sludge disposal and vacuum truck operation and maintenance activities, and other minimum health requirements that may be required by DOLE. Such vaccines shall be administered to all personnel involved in septage desludging, transport, and disposal activities prior to the date of assuming the desludging operation and maintenance services. Copy of vaccination certificates shall be submitted to the employer through Plant Engineer/Supervisor.

d. The Contractor shall provide safety trainings/seminars such as, but not limited to, safety, health, hygiene, hazardous materials, accidental spillage control and clean-up procedures to respective personnel directly involved in desludging, transport of sludge, sludge disposal and vacuum truck operation and maintenance activities. Copies of trainings/certificates shall be submitted to the employer within the first month of operation.

e. Any safety devices/equipment deficiency, safety incidents and near misses must be recorded and reported to the employer through Pollution Control Officer and/or Plant Engineer/Supervisor.

1.3.6. CORRECTIVE MAINTEANANCE/REPAIR LIMITATION. The below statements shall only be applicable upon expiration of warranty coverage of Vacuum Trucks. Otherwise, all vacuum trucks equipment/parts breakdown shall be of the Supplier's liability.

"All kinds of vacuum truck breakdown that only needs repairment shall be repaired by the Contractor at no cost to the employer. On the other hand, for all kinds of vacuum truck breakdown that needs equipment/parts replacement (consumables such as vacuum truck hoses not included), the employer shall shoulder the cost of replacement upon evaluation and approval of the latter. Once approved, the Contractor shall procure the equipment/parts and the employer shall be billed by the Contractor for the supply of the Vacuum Truck equipment/parts only but the labor services/installation shall be at the expense of the Contractor. The billing shall be supported by an itemized list of all equipment/parts replaced, showing the item description, quantity, unit cost, total cost, and the end of the item. All parts replaced shall be turned over to the employer. The Contractor shall provide maintenance report."

1.3.7. DESLUDGING OPERATION AND MAINTENANCE COSTS. The Contractor shall be responsible for the whole desludging operation expenses of the following:

a. Personnel salary, vaccines, and trainings
b. Personnel Protective Equipment (PPE)
c. Fuel costs
d. Vacuum trucks preventive maintenance costs
e. Overhead and incidental expenses

1.3.8. VACUUM TRUCK EVALUATION AND INSPECTION. All Vacuum truck units shall be audited by the Contractor and counterchecked by employer representative before assuming operation and maintenance services. All faulty equipment/parts inspected during the audit shall be of the employer's liability.

1.3.9. EMERGENCY AND TEMPORARY REMEDIAL CAPABILITIES. The Contractor shall perform extended desludging and hauling operations including on holidays and weekends to complement any delay on desludging schedules in the event a vacuum truck is inoperable due to repair, inclement weather, holidays, and fortuitous events. This will be at no additional cost to the employer. Such emergency and temporary services shall normally be coordinated with the employer through Pollution Control Officer and/or Plant Engineer/Supervisor and shall be accomplished using necessary methods to avoid vacuum operational interruptions.

1.3.10. HAZARDOUS MATERIALS. The Contractor shall provide the personnel adequate training such as, but not limited to, Hazmat handling training. Safety data sheets (SDS) must be available with the necessary chemicals to be used in desludging operations. Copies of training/seminar certificates shall be submitted to the employer within the first month of operations.

1.3.11. RECORDING AND REPORTING. The requirements for record keeping are applicable to all stages of septage management: desludging, transportation, treatment and disposal. Desludging information for recordkeeping may include, but not limited to the following:

a. Desludging schedule;
b. Pumping activity and volume of septage desludged;
c. Filled out manifest forms with notes about deficiencies of the septic tank, i.e., wall cracks, "bottomless", improper manholes or access ports, etc. as the homeowner will need this information for making any required upgrades;

d. Inventory of tools, devices, and consumables;
e. Fuel consumption;
f. Vacuum truck maintenance;
g. Safety incidents such as accidental spillage, if any; and
h. Volume of septage delivered at treatment facility.

Copies of properly filled-out and completed documents should be given and reported to the Pollution Control Officer and/or Plant Engineer/Supervisor every first week of the ensuing month of service rendered for recordkeeping. The records should be retained for a minimum of five (5) years.

2. ECONOMICS

For and in consideration of the faithful performance by the Contractor (based on Articles "1.0", Annex "A", and Annex "B"), the employer agrees to pay the monthly billing in accordance to the amount stated in the Service Contract executed by and between the employer and the contractor, payable through monthly billing and shall commence on the month ensuing the month of actual delivery of the services until the month ensuing the month of end of contract.

3. PAYMENT TERMS

3.1. The basis for billing shall be the fixed monthly rate regardless of the current volume of septage registered from the flowmeter of the Septage Acceptance Unit.

3.2. The Contractor shall issue an invoice every first week of the following month of rendered. The employer shall render corresponding payment to the Contractor within fifteen (15) working days upon receipt thereof. Approved Monthly Report and other supporting documents, if any, of the related month shall be attached to the invoice upon submission.

3.3. Monthly regular meeting is required to be attended by the Contractor's Plant Supervisor and/or Project Manager and employer's Plant Engineer/Supervisor to be held every first week of the following month of service rendered as requirement for the approval of the monthly billing.

4. STANDARD OF PERFORMANCE

The Contractor shall perform the services and carry out its obligations under the Agreement with due diligence, competence, skill, efficiency and economy and shall observe sound management and practices; employ appropriate and advanced technology; safe and effective equipment. The Contractor, as part of its contractual services, shall always act in respect of any matter relating to the Service Contract.

5. REPRESENTATION AND WARRANTIES

5.1. Each of the parties represents and warrants that they have respective legal personality and is duly authorized to enter into the Agreement.

5.2. Each of the parties certifies that there is no court order prohibiting them from entering into or performing the obligations under the Agreement.

5.3. Each of the parties certifies that they have not entered into and will not enter into any side agreements or confidential agreements with any individual or company which is or will be prejudicial to or in conflict with the obligations under the Agreement.

6. COMMON PROVISIONS

6.1. PRETERMINATION. Either party may pre-terminate the Service Contract for any violation by the other of the terms and conditions herein set forth without need of court action, provided that a written notice of said pre-termination shall be given to the other party at least thirty (30) days before the effective date thereof.

6.2. EXTENSION. The Service Contract may be extended after end of existing contract, subject to the parties' agreeing terms and conditions thereof.

7. OTHER TERMS AND CONDITIONS

7.1. PETTY CASH. The Contractor shall provide ready cash amounting to TEN THOUSAND PESOS (Php 10,000.00) per week as emergency fund for any possible expenditures that might be incurred due to:

7.1.1. Purchase of item or material for minor corrective maintenance and emergency repair.

7.1.2. Purchase of office supply and other materials that will be used for recording and filing of documents for the desludging and treatment plant operations.

7.1.3. Purchase of materials for operation to anticipate any foreseeable delay in the operation that might cause by running out of stock.

8. CONTRACT PERFORMANCE EVALUATION

Overall performance based on contract deliverables shall be evaluated which will include the equipment performance, process performance, staff performance, and safety performance based on the criteria set forth by both parties. The performance evaluation shall be evaluated by the employer personnel in-charge every quarter and shall be properly communicated to each concerned party.

9. PERSONNEL ASSIGNMENT

9.1. The Contractor shall provide manpower requirements.

9.2. The Contractor shall provide personnel who possess the required qualifications and experience suitable to the positions as specified in "Annex B", having correct discipline for the function or duty to be performed, physically and mentally fit, and of good moral character.

9.3. Assignment of Personnel – The Contractor shall assign its personnel as employer deem proper under the Service Contract. The Contractor maintains administrative control and supervision over its personnel; however, the Contractor hereby authorizes the employer to give direct instructions to the personnel assigned during their term

of duty and such exercise of power by the employer shall not be deemed as relinquish of power by the Contractor as the employer of the said personnel.

9.4. Shuffling of Personnel – The Contractor shall initiate the shuffling of manpower as deemed necessary based on their experience, capability, and knowledge.

9.5. Removal or Replacement of Personnel – The Contractor hereby reserves the right to conduct immediate replacement of any of the assigned personnel of the Contractor who, in its opinion, are found wanting in competency, honesty, and integrity or whose continues stay or service would be prejudicial to the best interest of the employer. This shall be properly reported to the employer through the Plant Engineer/Supervisor.

9.6. Leave and Absences – In case of absence, through illness or any reason, the Contractor must notify the employer as soon as possible in all cases where a member of the staff is unable to attend at the place of work. A reliever must fill in his position to prevent disruption in the plant's operation. For planned leave, personnel must notify and submit leave form, and the Contractor must fill in temporarily the vacant position. This shall be properly communicated to the employer through the Plant Engineer/Supervisor.

9.7. Duty not to Accept Payments – The Contractor shall ensure that all the assigned personnel shall not collect or accept payment from the customers and instead advise them to make the payment to the employer's designated payment centers. The Contractor shall immediately replace any of the assigned personnel found to have received/accepted payment from customers and found to have committed offenses that are similar thereof or offenses classified as just causes for termination under the Labor Code of the Philippines. Arising of this kind of activity shall be properly reported to the employer through the Plant Engineer/Supervisor.

9.8. Liability of the Contractor – All liabilities arising out of the utilization by the Contractor of any and all personnel in fulfillment of its obligations under the Agreement shall be the sole responsibility of the Contractor and shall hold the employer free and harmless from any such liabilities.

10. LIABILITY OF THE CONTRACTOR.

10.1. The Contractor shall be liable to the employer for the performance of the service and the prescribed rules in accordance with the provisions set forth in the Service Contract, subject to the following limitations:

10.1.1. The Contractor shall not be liable for any damage or injury caused by or arising out of the act, negligence, default or omission of any persons other than the Contractor or its Personnel; and

10.1.2. The Contractor shall not be liable for any loss or damage caused by or arising out of fortuitous events.

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"ANNEX A"

Table 1: Design Flow

Design Flow	Design Capacity
Average Flow	**20 m^3/day**
Maximum Flow	**60 m^3/day**

Table 2: Septage Influent Characteristics

Parameter	Unit	Concentration Range
BOD	mg/l	5,000 (maximum)
COD	mg/l	15,000 to 20,000
Oil and Grease	mg/l	1,000 to 1,500
Moisture Content	%	95 to 98
TSS	mg/l	10,000 to 40,000
Ammonia-N	mg/l	500 to 700

***Note:** Estimated characteristics of septage from employer service area.*

Required Treatment Plant Performance Requirements/Efficiencies

1. The SpTP plant shall produce dewatered sludge (cake) within an average DS content range of 15 to 20%.

2. The SpTP shall produce an effluent conforming to ALL national government standards (i.e., for Class C Inland Water). Some effluent limits in the DENR Administrative Order no.2016- 08 are shown in Table 3 below.

Table 3 - Effluent Quality (Employer Target)

Parameter	Units	Effluent Limits
5-day 20ºC BOD	mg/L	50
COD	Mg/L	100
Color	TCU	150
Surfactants (MBAS)	mg/L	15
Oil and Grease	mg/L	5
Ph	-	6.0 – 9.5
TSS	mg/L	100
Fecal Coliform	MPN/100 ml	400
Total Coliform	MPN/100 ml	10,000
Ammonia	mg/L	0.5
Phosphate	mg/L	1.0
Nitrate	mg/L	14

"ANNEX B"

PERSONNEL REQUIREMENTS

Position	No. of Personnel
VTU/Plant Operator	2
VTU/Plant Helper	2
Technical Support / Plant Mechanic	1
TOTAL	5

***Note:** *Copies of resume, NBI clearance, certificates of employment, vaccination, and trainings/seminars should be provided within the first month of operations.*