

Placer County Health and Human Services Department

Richard J. Burton, M.D., M.P.H.Health Officer and Director

Jill Pahl, R.E.H.S.Director, Environmental Health

Wastewater Advisory Committee Action Item for May 3 2011

Completion of review period for the Hoot Aerobic Treatment System

Request

Mr. Rick McCauley, representing Hoot Aerobic Systems, Inc has submitted a request to Placer County Environmental Health to consider changing the status of the Hoot Aerobic Treatment System from "experimental" to "alternative". To date Mr. McCauley has submitted the sample results of 23 systems of which 20 of them have been sampled for a period of two years. Mr. McCauley has completed the requirements of Placer County Environmental Health's Experimental Program for permitting and monitoring the Hoot Aerobic Treatment System (see handout A) and as such is requesting the change in status from "experimental" to "alternative".

The Experimental Program

The experimental program of Placer County provides a process in which new on-site sewage disposal technology can be brought into the County and after an agreed upon monitoring and review period, the applicant can then request the County to consider the change in status from "experimental" to "alternative". The experimental program flow chart as depicted in page 49 of the On-site Sewage Manual (see handout B) depicts this process. We are currently at stage 11 of the flow chart. The Wastewater Advisory Committee (WAC) was known as the Sewage Disposal Advisory Committee (SDAC) back in 2004 and hence the SDAC references in the flow chart.

Action

Environmental Health is requesting the WAC to review the summary of data as shown in handout C and make a recommendation to the Director of Environmental Health on whether to approve or disapprove the change in status of the Hoot Aerobic Treatment System from experimental to alternative (stage 11 of flow chart). Furthermore, Environmental Health is requesting the WAC to review the proposed conditions of approval as an alternative system for the Hoot Aerobic Treatment System and make a recommendation to the Director of Environmental Health (stage 13 of flow chart).

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County of Placer DEPARTMENT OF HEALTH AND HUMAN SERVICES



Richard J. Burton, M.D., M.P.H. Director and Health Officer



ANIMAL SERVICES AND ENVIRONMENTAL HEALTH DIVISION

Brad Banner, R.E.H.S. Environmental Health Director

Date:

November 15, 2005

To:

Interested Parties

From:

Brad Banner, Environmental Health Director

Re:

Hoot Aerobic Treatment Systems

I am pleased to announce the authorization for approval in Placer County of up to twenty (20) Hoot Aerobic Treatment Systems using the requirements attached to this memorandum.

This authorization is made in accordance with our experimental system review process. The Placer County Wastewater Advisory Committee reviewed the Hoot Aerobic Treatment System and recommended conditions for system approval that were incorporated into the approval process for the Hoot Aerobic Treatment System.

If you have any further questions regarding this matter, please contact Placer County Environmental Health Land Development staff at (530) 745-2300.

PLACER COUNTY Division of Environmental Health

REQUIREMENTS FOR PERMITTING AND MONITORING HOOT AEROBIC TREATMENT SYSTEMS

NOVEMBER 15, 2005

SCOPE OF APPROVAL

- 1. Up to 20 Hoot Aerobic Treatment Systems may be permitted in Placer County as experimental systems that must be installed and monitored for a minimum of 2 years prior to Environmental Health reconsideration of the Hoot Aerobic Treatment System for inclusion as an alternative system.
- 2. Hoot Aerobic Treatment Systems will be allowed on lots with demonstrated effective soil depths beneath trenches of 18"-36" with use of ultraviolet light; 36" or greater effective soil beneath trenches without use of ultraviolet light.
- 3. The Hoot Aerobic Treatment System can be approved for residential sewage treatment where:
 - a. Initial installation where repair area meets standards for standard or alternative technology, or
 - b. Repair in cases of system failure where repair does not meet ordinance requirements
- 4. Future expansion of residences or addition of residences utilizing Hoot Aerobic Treatment System will not be approved if the increased design flow resulting from the expansion exceeds the design capacity of the treatment system.
- 5. The installation and replacement areas will be maintained free of corrals, vehicular traffic and other uses that could damage the structure and integrity of the surface soil and/or Hoot Aerobic Treatment System.

CONDITIONS OF APPROVAL

- 1. The owner of the property will enter a License Agreement for Operation, Maintenance, and Monitoring (OM&M) with the County of Placer. The following general disclosure statements will be included in recorded license agreements to inform customers of potential risks involved in utilization of an experimental system:
 - a. Placer County has made every effort to assure its success by implementing an Experimental System Review Process. This system may or may not perform in the manner intended.
 - b. Placer County is not responsible for any damages you may incur as a result of a defective installation or operation of system.

- c. For your own protection, consult with an attorney before signing any contracts, agreements, warranties or guarantees related to the product and its installation.
- d. If you intend to transfer your property while the system is still EXPERIMENTAL, you are obligated to notify any potential owner of this system's designation as experimental and of all owner responsibilities.
- e. If the system is removed from the experimental system program, the property owner may be required to remove the system and replace it with one approved by Placer County.
- 2. The owner of the property will enter into a contractual agreement for provision of OM&M with a Hoot Aerobic Treatment System certified service provider.
- 3. For the period during which Hoot Aerobic Treatment System is evaluated as an experimental system, OM&M (including effluent sampling) will be required to begin within three months of installation and at 6-month intervals thereafter, for a minimum period of 2 years (a total of five monitoring events).
- 4. At the conclusion of the evaluation period, OM&M will continue for the life of the system in a manner to be described at that time by Environmental Health.
- 5. The owner of the property will record the requirement for ongoing OM&M on the property title.

DESIGN REVIEW

The design consultant may propose Hoot Aerobic Treatment Systems as part of the site evaluation approval process or for sites that meet the criteria and may have been approved for an Intermittent Sand Filter System or Mound System.

The design consultant must submit a proposal that:

- 1. Is sized appropriately for waste strength, design flow and soil percolation characteristics in accordance with Environmental Health requirements and Hoot Aerobic Treatment System design criteria.
- 2. Places the UV light installation between the Hoot Aerobic Treatment System unit and the drainfield where ultraviolet disinfection is required.

QUALITY ASSURANCE

- 1. A pre-construction meeting will be scheduled between Environmental Health Services staff, the design consultant, and the installer.
- 2. A "flow test" of the Hoot Aerobic Treatment System and the leachfield will take place during installation. At this flow test inspection all the floats and alarms will be checked, including the additional alarm for the UV light. The light bulb will have to be disconnected to verify that the alarm functions properly.

- 3. Final cover inspection will be similar to the Low Pressure Distribution leachfield inspections. There is no specific type soil cover over the Hoot Aerobic Treatment System.
- 4. Prior to final approval of the system, all necessary documents described in the approval process must be recorded at the recorder's office.
- 5. A treatment system may be considered to "fail" when Placer County Environmental Health determines it cannot reliably perform the conveyance, treatment and/or dispersal function for which it was designed and approved. Causative problems with the treatment system may include mechanical malfunction, structural problems, reliability issues, maintenance deficiencies, or noncompliance with the effluent specifications contained in the review package.
- 6. When, in the opinion of the Placer County Environmental Health Director, the nature, number, or frequency of product failure is such that reconsideration of treatment system by the advisory committee for continued inclusion in the Experimental System Program is warranted, the Director will request that the committee review the data and make recommendations. The recommendations could include modified or additional conditions for approval, extension of the monitoring period, expansion of the number of units to monitor under the program, and removal of the product from the Experimental Program.
- 7. Noncompliance with the conditions of Experimental System approval, including failure to repair or notify Environmental Health as stipulated within the conditions of approval, will be considered grounds for reconsideration of the treatment system for continued inclusion in the Experimental System Program.

MINIMUM SCOPE OF WORK FOR OM&M SERVICE AGREEMENTS

- 1. The OM&M Specialist must be a service provider certified by both the system manufacturer and Placer County Environmental Health Services.
- 2. OM&M services must begin within three months after installation and be maintained throughout the life of the system as specified in the conditions of the permit as described in this document in the section Conditions for Approval.
- 3. OM&M services must take place in accordance with the Hoot Aerobic Treatment System Service Guide. Placer County Environmental Health must be informed of and concur with future revisions of this document during the period of product review as an Experimental System.
- 4. Sampling and Analysis
 - a. Hoot Aerobic Treatment System influent and effluent must be analyzed for the following constituents:

Parameter
CBOD ₅
TSS
TKN
Fecal Coliform

- b. Sampling may be performed by Hoot Aerobic Treatment System, Placer County Environmental Health, or an entity approved by both Hoot Aerobic Treatment System and Environmental Health.
- c. Hoot Aerobic Treatment System must submit a written monitoring plan that addresses chain-of-custody and quality assurance.
- d. Analysis of samples must be performed by a state certified independent laboratory whose ceritification includes the parameters analyzed.
- e. Sampling of each Hoot Aerobic Treatment System must take place at six-month intervals for the first two years of use, but the required duration, frequency and number of test parameters may be modified by Placer County Environmental Health based on the performance of the unit.

5. Reporting

- a. A report to be submitted in writing to Placer County Environmental Health Services Division every 6 months within 30 days of each inspection, detailing results of each inspection.
- b. Placer County Environmental Health Services will be contacted within I business day of inspection, and provided a written report within 7 working days, should any problems be encountered during either routine or non-routine inspections.
- c. Property owner will be notified immediately of any and all system conditions that require service, repair, or replacement that are not covered under the scope of this agreement.

6. Maintenance and repair exclusions

Service provider will perform routine maintenance as previously described. It will be the responsibility of the property owner to contract with an appropriate contractor for repair of system components not associated with the Hoot Aerobic Treatment System.

TELEMETRY RECORDS/DATA MANAGEMENT

All the Hoot Aerobic Treatment Systems approved for use in Placer County will be required to have the telemetry, with system performance data made available to Placer County Environmental Health in a timely manner as determined appropriate by Placer County Environmental Health.

FEES

Environmental Health will charge an annual fee (at a minimum, one hour of technical assistance at the hourly rate established in the county fee ordinance) and conduct an annual review on status of compliance. For non-compliant systems, additional fees may be charged for administration and enforcement.

Requirements for Permitting and Monitoring Hoot Aerobic Systems November 15, 2005 Page 7 of 7

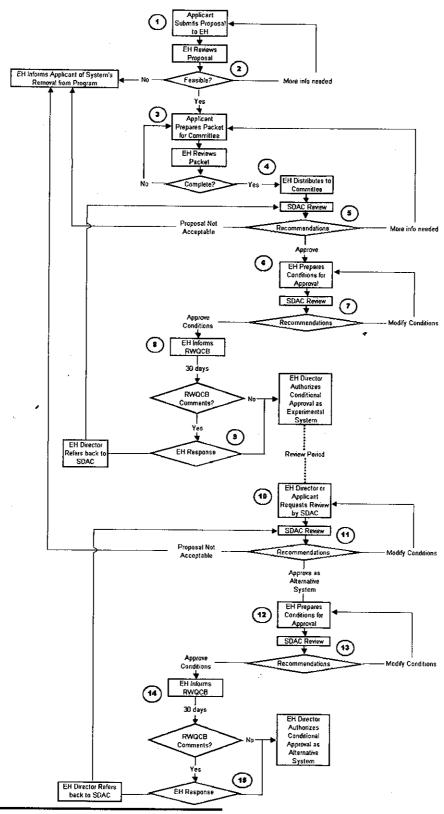
ENFORCEMENT

- 1. Failure to execute a contract with a certified service provider for these services or to maintain services is considered a violation of the intent of the recorded license agreement between the County of Placer and the property owner.
- 2. Contracts with OM&M Specialists may be cancelled and replaced with the services of a different certified service provider, so long as the services are continuously maintained, if the property owner feels it is in his/her interest to change service providers.
- Enforcement action and penalties for non-compliance will be applied consistent with the Placer County Onsite Sewage Disposal Ordinance and other remedies provided for by law.

Placer County does not recommend or endorse any particular certified provider, and the property owner is advised to use his/her best judgment in negotiating any agreement for services. Although services must be continuously maintained, the property owner is not required to have the original service provider maintain the system for the entire period, provided the service provider selected by the homeowner has been certified as competent by Hoot Aerobic Treatment Systems.



PLACER COUNTY EXPERIMENTAL SYSTEM PROGRAM



Page 8 of 8
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Placer County Health and Human Services Department

Richard J. Burton, M.D., M.P.H.Health Officer and Director

Jill Pahl, R.E.H.S.Director, Environmental Health

Completion of review period for the Hoot Aerobic Treatment System

To date, we have data from 23 systems. We have sampling data that totals 104 samples for BOD and TSS and 92 samples for fecal coliform bacteria.

Constituent	# of samples	# of samples >30mg/L	% of samples > 30mg/L
BOD	104	9	8.7%
TSS	104	13	12.5%
Fecal	92	13 (# of samples > 50	00cfu) 14.1%

The percentage of samples meeting the parameters set by Placer County:

Percentage of samples < 30 mg/L for BOD - 91.3%

Percentage of samples < 30 mg/L for TSS - 87.5%

Percentage of samples < 500 cfu/100ml - 85.9% (with disinfection)

Other studies with sampling results

Studies such as the one titled "Field Performance of Aerobic Treatment Units in the Mid-Michigan Health District" by Wallace and Loudon as presented in the Tenth National Symposium on Individual and Small Community Sewage Systems had the following results:

Type of ATU: Clearstream (21 sites sampled)

Percentage of samples < 30 mg/L for BOD - 71%

Percentage of samples < 30 mg/L for TSS - 76%

Fecal coliform counts were not taken into consideration as the units evaluated in this study did not have disinfection incorporated into them. See attachment 1 for a more detailed look at the study.

Another study conducted by Converse titled "Effluent Quality from ATUs and Packed Bed Filters Receiving Domestic Wastewater Under Field Conditions" evaluated a number of ATUs and sand filter systems. The results of that study are as follows:

Type of ATU: Multi-flo (24 sites sampled)

Percentage of samples < 25 mg/L for BOD – 92%

Percentage of samples < 30 mg/L for TSS - 71%

Type of ATU: Norweco (10 sites sampled)

Percentage of samples < 25 mg/L for BOD - 49%

Percentage of samples < 30 mg/L for TSS - 57%

Type of ATU: BioMicrobics (29 sites sampled)

Percentage of samples < 25 mg/L for BOD – 79%

Percentage of sample < 30 mg/L for TSS - 91%

Type of ATU: Delta Whitewater (3 sites sampled)

Percentage of samples < 25 mg/L for BOD – 83%

Percentage of sample < 30 mg/L for TSS - 75%

Type of ATU: NibblerJr (5 sites sampled)

Percentage of samples < 25 mg/L for BOD – 54%

Percentage of samples < 30 mg/L for TSS – 65%

Type of sand filter: Single pass (51 sites sampled)

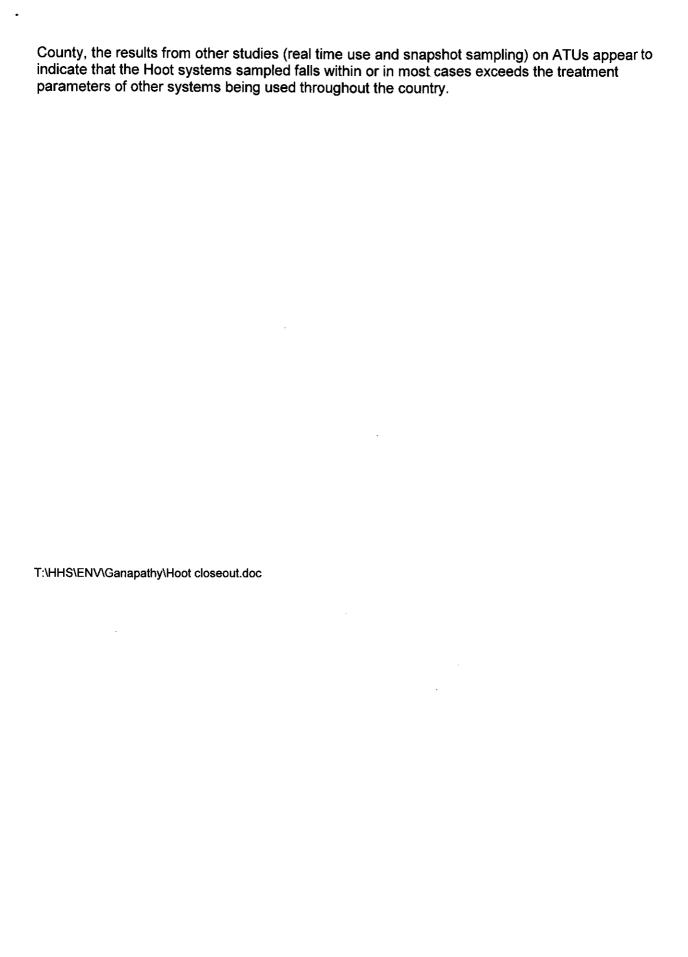
Percentage of samples < 25 mg/L for BOD – 99%

Percentage of samples < 30 mg/L for TSS – 94%

See attachment 2 for a more detailed look at the study

Discussion

While the County had not set a specific percentage criteria (for meeting the BOD and TSS parameters) for acceptance or denial of the product for use as an alternative system in Placer





Placer County Health and Human Services Department

Richard J. Burton, M.D., M.P.H. Health Officer and Director

Jill Pahl, R.E.H.S.Director, Environmental Health

DRAFT

Status change of Hoot Aerobic Treatment System from Experimental to Alternative and the conditions of approval as an alternative system

Scope of Approval

- 1. Hoot Aerobic Treatment Systems shall be allowed on lots with demonstrated effective soil depths beneath trenches of 18" 36" with use of approved disinfection system; 36" or greater effective soil beneath trenches without use of approved disinfection system.
- 2. Water supply for each approved site shall be from a public domestic water agency or a well that demonstrates a pH between 6 and 8.

Operation, Maintenance & Monitoring (OM&M) requirements for Hoot systems

- 1. Items to be inspected and maintained shall be as recommended and agreed upon jointly by the manufacturer and Placer County Environmental Health. Items that require repair or replacement shall be noted in a maintenance and monitoring report prepared by the service provider. The system will be considered noncompliant until the necessary repairs and/or replacements are done.
- 2. Full OM&M (Hoot Treatment System and ultraviolet light system) shall begin 6 months after initial startup of the system and then continue every 6 months for the life of the system.
- 3. Pursuant to NSF Standard 40 certification requirements, the cost of the initial 2 year service policy shall be included in the original purchase price of the system.
- 4. Placer County reserves the right to alter the inspection frequency based on the performance of the system.
- 5. The owner of the property shall enter into a License Agreement for Operation, Maintenance and Monitoring with the County of Placer.
- 6. Each installation shall require ongoing Operation, Maintenance and Monitoring for the life of the system and the property owner shall record this on the property title.

- 7. Reporting and Monitoring
- a. The maintenance and monitoring report shall be prepared by the OM&M service provider and submitted to Environmental Health within 14 working days of service rendered.
- b. A reliable web based telemetry system for continuous monitoring of the system shall be used to monitor the system.
- c. The OM&M service provider shall contact Environmental Health Services within one day and provide a written report within 7 working days of any problems encountered during routine or non-routine inspections.

Fees

An annual operating permit fee shall be paid to Placer County Environmental Health. For noncompliant systems, additional fees may be charged for administration and enforcement.

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