



STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
DIVISION OF HEALTH ENGINEERING
11 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0010

ANGUS S. KING, JR.
GOVERNOR

KEVIN W. CONCANNON
COMMISSIONER

June 12, 2002

Knight Treatment Systems
Attn.: Jay Knight
281 Country Route 51A
Oswego, NY 13126

Subject: Revised Product Registration, Knight Treatment Systems *White Knight*

Dear Mr. Knight:

Thank you for your information submitted June 3, 2002 regarding the Knight Treatment Systems *White Knight* for registration under provisions of Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules).

You have pointed out minor inaccuracies of the May 13, 200 approval letter and propose a change in the design of the *White Knight* for consideration by the Division. It has also come to the attention of this office that *White Knight* is being promoted for use in malfunctioning onsite sewage disposal systems.

Product Description

The Knight Treatment Systems *White Knight* consists of a 12 inch diameter hexagonal plastic tube within which is a four inch diameter plastic tube. The space between the tubes is filled with loose fill plastic media, rather than the previously approved plates of cusped plastic sheeting. A remote air pump feeds air to a proprietary diffuser beneath the cusped plates. A biological film is generated, which adheres to the plastic media and provides treatment of the water-borne contaminants. An outlet filter prevents solids carryover. The Knight Treatment Systems *White Knight* is inserted into conventional septic tanks, and a proprietary innoculant is introduced at regular intervals.

Claim

According to the information in our files, the Knight Treatment Systems *White Knight* significantly reduces nitrate and CBOD₅ levels; reduces suspended solids in the effluent; and rejuvenates biologically clogged disposal areas by application of low-nutrient, high dissolved oxygen effluent.

Determination

On the basis of the foregoing, the Division has determined that the Knight Treatment Systems *White Knight* is acceptable for use in the State of Maine on a Provisional Approval basis, provided that it is installed, operated, and maintained in conformance with the manufacturer's directions and Purchase/Installation Agreement.

No more than 50 installations of the Knight Treatment Systems *White Knight* may be installed under Provisional Approval, including those installed pursuant to the approval letter dated September 25, 2001. Pilot Approval installations shall be limited to sites which do not otherwise require any variance or waiver to the Rules.



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On no less than a monthly basis for a period of not less than 12 months, the applicant shall test the effluent of each installed Knight Treatment Systems *White Knight* for the following parameters: five day Biochemical Oxygen Demand, Total Suspended Solids, Total Nitrogen, and coliform bacteria. The results of these tests shall be submitted to the Division on no less than a quarterly basis. Historic data from other jurisdictions may be submitted, if available.

Upon successful operation under Provisional Approval, the applicant may apply for General Use Approval, which allows use with no testing or reporting requirements by the Department.

In the event that the product fails to perform as claimed, use of the product in Maine, including all installations approved pursuant to Chapter 18 of the Rules, shall cease. Use of the product shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

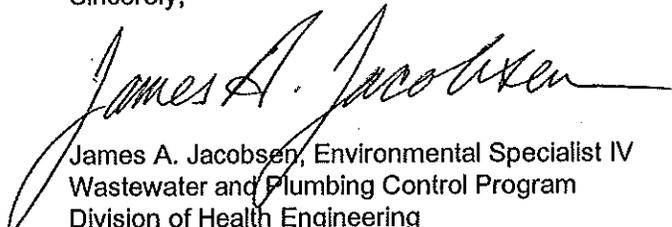
Please note that this approval does not authorize use of the product in an onsite sewage disposal system which has experienced a hydraulic malfunction, i.e., a "break-out". Such malfunctions are imminent public health hazards and must be replaced in an expeditious manner under provisions of the Rules.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Knight Treatment Systems *White Knight*. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

This letter supersedes the letter dated May 13, 2002.

You may distribute copies of this letter as appropriate. If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,



James A. Jacobsen, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

/jaj

xc: Product File
EnviroCheck Inc.



STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
DIVISION OF HEALTH ENGINEERING
10 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0010

ANGUS S. KING, JR.
GOVERNOR

KEVIN W. CONCANNON
COMMISSIONER

May 13, 2002

Knight Treatment Systems
Attn.: Jay Knight
281 Country Route 51A
Oswego, NY 13126

Subject: Product Registration, Knight Treatment Systems *White Knight*

Dear Mr. Knight:

Thank you for your information submitted April 5, 2002 regarding the Knight Treatment Systems *White Knight* for registration under provisions of Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules).

At a meeting held May 10, 2002 at the Division's office, you provided documentation which demonstrates to the satisfaction of this office that Knight Treatment Systems has appropriate rights to the technology used in the *White Knight*.

Product Description

The Knight Treatment Systems *White Knight* consists of a 12 inch diameter plastic tube within which is a four inch diameter plastic tube. The space between the tubes is filled with plates of cuspated plastic sheeting. A remote air pump feeds air to a proprietary diffuser beneath the cuspated plates. A biological film is generated, which adheres to the cuspated plates and provides treatment of the water-borne contaminants. An outlet filter prevents solids carryover. The Knight Treatment Systems *White Knight* is inserted into conventional septic tanks, and a proprietary innoculant is introduced at regular intervals.

Claim

According to the information in our files, the Knight Treatment Systems *White Knight* reduces nitrate and BOD₅ levels to single digits, measured in Mg/l; reduces suspended solids in the effluent; and rejuvenates biologically clogged disposal areas by application of low-nutrient, high dissolved oxygen effluent.

Determination

On the basis of the foregoing, the Division has determined that the Knight Treatment Systems *White Knight* is acceptable for use in the State of Maine on a Provisional Approval basis, provided that it is installed, operated, and maintained in conformance with the manufacturer's directions and Purchase/Installation Agreement.

No more than 50 installations of the Knight Treatment Systems *White Knight* may be installed under Provisional Approval, including those installed pursuant to the approval letter dated September 25, 2001. Pilot Approval installations shall be limited to sites which do not otherwise require any variance or waiver to the Rules.



PRINTED ON RECYCLED PAPER

On no less than a monthly basis for a period of not less than 12 months, the applicant shall test the influent and effluent of each installed Knight Treatment Systems *White Knight* for the following parameters: five day Biochemical Oxygen Demand, Total Suspended Solids, Total Nitrogen, and coliform bacteria. The results of these tests shall be submitted to the Division on no less than a quarterly basis. Historic data from other jurisdictions may be submitted, if available.

Upon successful operation under Provisional Approval, the applicant may apply for General Use Approval, which allows use with no testing or reporting requirements by the Department.

In the event that the product fails to perform as claimed, use of the product in Maine, including all installations approved pursuant to Chapter 18 of the Rules, shall cease. Use of the product shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Knight Treatment Systems *White Knight*. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

This letter supersedes the letters dated September 25, 2001 and April 22, 2002 to EnviroCheck Inc.

You may distribute copies of this letter as appropriate. If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,



James A. Jacobsen, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

/ja]

xc: Product File
EnviroCheck Inc.
Piranaco
Russell Martin, Program Director, WW & PC



"Guardians of Water Quality".

281 Co. Rt. 51A, Oswego, NY. 13126
1-800-560-2454 / 315-343-2454 / Fax 315-343-6114
website: www.knighttreatmentsystems.com

James J. Jacobsen, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
State of Maine
10 State House Station
Augusta, Maine 04333-0010



Subject: White Knight™ provisional approval claims

Dear Mr. Jacobsen,

First and foremost, I would like to thank you for Mr. Martin's and your prompt attention to the matter of provisional approval for the White Knight™. The speed, efficiency, and aptitude demonstrated during the process were exemplary and I commend you for that.

I would like to point out and have you correct some inaccuracies in the approval letter dated May 13, 2002. The items that we feel need to be corrected are as follows:

1. The claims listed in our application of May 10th, 2002 do not agree with the claims listed in the approval letter. Specifically, we do not claim that the unit reduces nitrate and BOD-5 in the effluent of the unit to single digit levels. These claims were made by Septech and have never been supported by us. The design of the unit enhances soil treatment and will lower CBOD-5 and nitrate to low levels in the soil profile.
2. The cusped plastic media has been replaced with a loose-fill plastic media, which provides more surface area than the cusped plastic and is more self-cleaning. The data for the new media is included in the application packet.
3. In a phone conversation with Steve O'Connor shortly after the original provisional approval letter was written you indicated to him that it was not necessary to test the influent on each unit and that it was nitrate nitrogen that you wanted tested in the effluent. The current approval letter should reflect this fact.
4. The outer housing has been changed to a six-sided column. This change was made purely for manufacturing reasons and does not effect the operation of the unit. The height and effective diameter of the unit are unchanged. A method to add weight to the base of the unit has also been added.

Please let me know if you need any further information on any of these items. I look forward to your response. I appreciate your dedication and attention to these matters.

Sincerely,

Jay Knight, President

cc: Steve O'Connor, Envirocheck, Inc.
Paul Gauvreau, Assistant Attorney General
Mark Noga, Knight Treatment Systems
Doug Nelson, Knight Treatment Systems

One Lincoln Center
Syracuse, NY 13202-1355
Phone: 315-422-0121
Voice Mail: 315-423-0104
Fax: 315-422-3598
www.bsk.com

Albany, NY
Buffalo, NY
Sewago, NY
Overland Park, KS

London, Schoeneck & King, P.A.
Orlando Springs, FL
Naples, FL

May 8, 2002

ELECTRONIC MAIL

Mr. Jay Knight
President
Knight Treatment Systems
281 Country Route 51A
Oswego, NY 13126

Re: *Maine Department of Human Services*

Dear Jay:

It was a pleasure to speak with you the other day. I would like to clarify some of the federal patent law issues involved in your meeting with the Maine Department of Human Services based on my understanding of the facts.

A U.S. Patent confers the right to the owner to prevent others from making, using, selling or offering to sell the invention claimed in the patent. The rights conferred by a patent do not vest until the patent issues. Therefore, during the pendency period of a patent application, the applicant cannot enforce any rights against third parties. In this case, Pirananco has a patent application pending before the U.S. Patent and Trademark Office. Pirananco is not currently the owner of an issued U.S. Patent that would read on the White Knight device.

Further, the patent application that Pirananco claims to own is under a cloud of inventorship issues. A U.S. Patent issues to the inventor or inventors. In this case, the two principals of Pirananco are claiming to be the sole inventors of the subject matter of the pending application. However, it is my understanding the Robert Rawson, a former partner in Septech, was named as a co-inventor of the provisional patent application from which the current patent application claims priority. Further, Mr. Rawson contends that he is a co-inventor and can present evidence of such. It is my opinion based on these facts, that Mr. Rawson is co-inventor of the pending patent application.

Mr. Rawson has licensed his rights to his invention to Knight Treatment Systems. Therefore, it is my opinion that Knight Treatment Systems cannot be prevented under the U.S. Patent Laws to practice the invention that is embodied in the White Knight Microbial Inoculator/Generator.

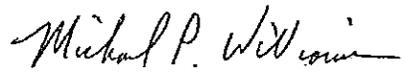


Mr. Jay Knight
May 8, 2002
Page 2

If you have any further questions or comments, please feel free to contact me.

Best regards,

BOND, SCHOENECK & KING, LLP

A handwritten signature in cursive script that reads "Michael P. Williams".

Michael P. Williams

MPW

Mar. 21. 2002 1:54PM

LANAHAN & REILLEY LLP

No. 4221 P. 10/14



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS
UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. 20231
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
60/243,852	10/30/2000		75		3		

Jerry Fife
7535 Healdsburg Avenue
Sebastopol, CA 95472

FILING RECEIPT



OC00000005741975

Date Mailed: 02/07/2001

Receipt is acknowledged of this provisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTQ processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Jerome J. Fife, Occidental, CA ;
Daniel E. Wickham, Duncans Mills, CA ;
Robert W. Rawson, Sebastopol, CA ;

Continuing Data as Claimed by Applicant

Foreign Applications

If Required, Foreign Filing License Granted 02/06/2001

** SMALL ENTITY **

Title

Air driven bacterial generator/inoculator/aerator

Preliminary Class



Data entry by : JONES, KIMBERLY

Team : OIPE

Date: 02/07/2001



Jay Knight

From: "Mark C Noga" <marknoga@accucom.net>
To: "Jay Knight" <jayknight@accucom.net>
Sent: Monday, May 06, 2002 4:12 PM
Subject: Fw: Knight Treatment Systems



----- Original Message -----

From: Jerry Fife
To: Simtech ; Steve O'Connor ; Stan Kincannon ; Hank Huber ; MarkAlanBram@aol.com ; Mark Noga
Sent: Tuesday, June 12, 2001 1:53 PM
Subject: Knight Treatment Systems

Please be aware that Knight Treatment Systems, hereafter called KTS, phone number (800) 560-2454 will be contacting you, or you may contact them, to explain the various requirements needed to register our installations. There will be future communications from KTS concerning additional services that Dan and I want instituted. KTS has the capability to bring these services to the distributors and we have signed an informal agreement with KTS to provide them. These services will add additional fees to the cost of installations. Any installation contracted for as of today's date, will be processed without any cost. From this point forward, you will need to add these few additional fees in the total cost of installation. We hope this will cause little inconvenience to your business. We recognize the potential for confusion. Just work with KTS and us and the confusion will disappear.

Contact us at your pleasure for additional information. I apologize for any problems this may cause you in the short term.

Jerry

5/6/02



"Guardians of Water Quality".

81 Co. Rt. 51A, Oswego, NY. 13126
10-2454 / 315-343-2454 / Fax 315-343-6114
* knighttreatmentsystems.com



Re: National Piranha Technology Licensing & Distribution Agreement

To Whom it May Concern:

Knight Treatment Systems, Inc. of 281 County Rt. 51a. Oswego, New York, 13126 and the SepTech Company of 1875 Joy Rd. Occidental, California, have agreed to enter into a formal business arrangement with each other. This agreement is with regard to the rights of national licensing and distribution of a wastewater treatment technology known as the "Piranha", owned by SepTech Company and as illustrated by exhibit "A". This agreement is separate from previous agreements presently held between the parties. It is the will and intent of both parties that this document functionally serve as the legal binding contract pending future issuance of a formal contract to be developed in tandem by legal counsel from both parties over the next 12 months. Counsel for either party shall not modify the essence or intent of this agreement outside of complying with applicable law. To wit the following is agreed upon:

1. Knight Treatment Systems shall purchase from SepTech the exclusive rights to license distribute, service and sell the "Piranha" technology throughout the United States for use in the on-site, near-site and agricultural wastewater treatment markets. In turn Knight Treatment Systems shall exclusively acquire the Piranha units to be distributed by them from SepTech.
2. The term for the final agreement is open ended and based upon meeting the criteria set forth within.
3. Knight Treatment Systems agrees pay SepTech a total of \$300,000.00 for these rights as follows: an initial payment of \$50,000.00 within 30 days of signing with the balance due, held without interest and spread over 11 installments, paid one installment each month over the following twelve months. The first installment shall be due 30 days following the date of the initial payment with subsequent installments due 30 days from the previous payment made until \$300,000.00 has been paid to SepTech.
4. SepTech and Knight Treatment Systems shall agree upon a 5-year sales plan that targets an overall goal each year during the term of this agreement. Both parties acknowledge that achieving sales are an essential part of this relationship and are crucial to the continuation of this agreement. This is a performance-based agreement. However, failure to substantially achieve targeted sales goals with diligent effort put forth shall not by itself become cause for termination of this agreement but shall allow SepTech to establish additional points of distribution.

EXHIBIT A

5. The first year's sales target following the signing of this agreement is from 700 to 1200 "Piranha" units. SepTech and Knight Treatment Systems shall work together in achieving target sales. Sales targets are subject to periodic revision by agreement of both parties.
6. SepTech retains all product research and development, manufacturing and patent acquisition responsibilities along with their associated expenses for the "Piranha" technology.
7. SepTech and Knight Treatment Systems may work together to achieve third party certification/verification for the "Piranha" technology. Each party shall inform the other party of its in house activities in order to avoid duplication of effort.
8. SepTech shall complete the process of acquiring patents for the "Piranha" technology at its own expense.
9. SepTech and Knight Treatment Systems to equally share in the defense of all patents issued for the "Piranha" during the term of this agreement unless there has been a lack of due diligence or neglect has occurred on the part of SepTech in seeking patent protection for the "Piranha" technology.
10. SepTech shall share updated status of patents pending for the "Piranha" with Knight Treatment Systems.
11. Knight Treatment Systems shall be the sole authorized distribution source for all inoculant used for the installation, service and maintenance of "Piranha" systems. SepTech shall assure this by securing an agreement with the IOS Corporation (inoculant source) that honors this provision of the overall agreement.
12. SepTech guarantees Knight Treatment Systems that sufficient quantities of inoculant will be provided to Knight Treatment Systems to meet Knight Treatment's present and future obligations under this agreement.
13. Knight Treatment Systems acquires the exclusive right to establish Licensed Distributors and Dealers of the "Piranha" by means of separate and independent agreement and program between Knight Treatment Systems and the Licensed Piranha Distributor and/or Dealer. All current agreements held by SepTech with other entities of distribution shall be transferred to Knight Treatment Systems.
14. Knight Treatment Systems is granted first option to purchase the rights to future markets that are recognized and developed for the Piranha technology within the United States.
15. Knight Treatment Systems shall provide SepTech with a business plan and/or marketing strategy no later than 30 days following the signing of this agreement.
16. Knight Treatment Systems shall acquire all rights to develop, change, institute, and register all product logo, trade marks, etc. for the "Piranha" technology as part of this agreement. This will be done in consultation with SepTech.

17. Knight Treatment Systems shall hold and maintain product liability insurance with regard to performance and miss-application of the "Piranha" technology that has been distributed by Knight Treatment System's network of Distributors and Dealers.
18. SepTech guarantees to provide Knight Treatment Systems "Piranha" for the term of this agreement. Current cost to Knight Treatment Systems per "Piranha" unit is \$1200.00, F.O.B. manufacturer and shall not be increased without a 6-month advance written notice.
19. All other issues that are not addressed but are brought forward as a part of this relationship shall be resolved to the mutual satisfaction of both parties and then added to this agreement as an addendum.
20. Termination:
 - a.) Either party may terminate this Agreement for good cause, following not less than Ninety (90) days advance written notice of such termination that provides all pertinent fact and specific detail as to the good cause for termination.
 - b.) Either party may terminate this Agreement upon Thirty- (30) day's advance written notice if:
 - (1) Either party provides any document, report or other information which is known to be fraudulent ; or
 - (2) Either party fails to perform any of its material obligations under this Agreement.
 - c.) Either party may terminate this Agreement immediately upon written notice if:
 - (1) Either party is insolvent, files a bankruptcy petition, or assigns its assets to creditors; or
 - (2) Either party fails to maintain any license or permit required by law or regulation; or
 - (3) There is a significant change in the ownership and/or management of either party including but not limited to, a change in business form, identity or effective ownership by way of merger, sale consolidation, or share transfer. Either party shall give written notice to the other of any such event no less than thirty (30) days prior to the effective date of such change. In a case of unforeseen or unanticipated circumstance, written notice shall be given as soon as reasonably possible; or
 - (4) SepTech ceases to provide Product and/or support for whatever reason to Knight Treatment Systems.
 - d.) After delivery of any notice of termination authorized under this Agreement, either party will not take any action to impair or diminish the goodwill or business of the other.
 - 1.) Knight Treatment Systems will not compete with SepTech for a period of 3-years with regard to the Piranha technology.

21. Notices and Correspondence:

- a.) All notices and correspondence required under the Agreement shall be in writing.
- b.) All notices required under this Agreement shall be deemed effective on the date hand-delivered by either certified mail or by private carrier to the addresses set forth in the preamble. Postal or carrier receipt shall determine date of delivery.
- c.) Regular correspondence required under this Agreement may be sent via regular mail, telefacsimile, and email or by private carrier.
- d.) Notice of change in address, telephone or other information necessary to maintain direct, normal communication shall be provided no less than three (3) days prior to the effective date of such change.

22. Severability:

- a.) In the event any of the terms of this Agreement are in violation of or are prohibited by any applicable law or regulation, such terms and provisions shall be deemed as amended or deleted to conform to such law or regulation without invalidating, amending or deleting any of the other terms or conditions of this Agreement, and the Agreement shall not fail for lack of consideration.
- b.) The failure or omission by any party to insist upon or enforce any of the terms of this Agreement shall not be deemed a waiver of such terms unless the same shall be in writing and signed by the waiving party.

23. Governing Law:

- a.) This Agreement is to be governed and construed in accordance with the laws of the States of California and New York.
- b.) Any disputes or controversies arising under this Agreement shall be resolved in a court of competent jurisdiction located in the County of the defendant, or with the agreement of both parties, a dispute may be presented to the local office of the American Arbitration Association for resolution, to which jurisdiction the parties submit.

EXHIBIT "A" Page 1 of 3PRIMER ON **PIRANHA**

Septic problems are biological. Solutions are biological. The following primer on the biology of septic system failure describes how the **PIRANHA**, a bacterial inoculator / generator, can solve your septic problems.

Septic / Leach Field Theory

1. Septic Tank Function - Standard septic tanks are anaerobic (without air) and designed to allow settling of organic solids, (food for bacteria). These organic solids liquefy at the bottom of the tank so any organic material that goes to the leach field is in dissolved form.
2. Leach Field Function - Leach fields are designed to move the septic liquid into the aerobic portion of the soil where abundant natural bacteria, fungi, protozoans, worms, insects, etc. can digest the organic material, leaving clean water to pass into the aquifer.

The Real World

1. Septic Tank -

We continuously inoculate our septic tanks with Intestinal bacteria when we flush our toilets. Natural selection has insured that these are the weakest bacteria in nature. If they weren't weak, they would literally eat us from inside. To survive in our intestines, these bacteria protect themselves by secreting a heavy mucous coating. Because septic tanks are anaerobic, the organic load is never fully digested. The undigested organic materials, (food for bacteria), pass out to the leach field in dissolved form. Solids build up in the tank; odors form, scum and sludge are created. Because of this build up, tanks need frequent pumping.

2. Leach Field -

These Intestinal bacteria continue to secrete mucous, or slime, as they collect on the soil surfaces of a leach trench. This process plugs the soil pores with slime, commonly referred to as "Biomat". Liquid from the septic tank cannot pass into the aerated soil where it can be purified. The trenches fill with effluent and the leach field fails. Septic waste surfaces over the leach field or it backs up into the house. The homeowner has a crisis. The EPA estimates that 95% of septic system failures, (over a million homes a year), are caused by "Biomat" clogging.

The PIRANHA Solution

1. Septic Tank -

By installing the **PIRANHA** into any single volume tank, or either chamber of a two-compartment septic tank, a blend of natural, powerful IOS-500 soil bacteria is continuously inoculated into the septic liquid. These powerful soil bacteria flow out of the tank with the septic liquid and inoculate the soil of the disposal field. The **PIRANHA** aerates, circulates and inoculates the entire contents of the single volume tank or septic tank chamber through the **PIRANHA** at a rate of over 25,000 gallons a

EXHIBIT "A" Page 2 of 3

day. This circulating liquid passes over 150 ft² of surface area within the *PIRANHA*, where a dense colony of these powerful soil bacteria becomes attached. As the septic liquid passes over the attached bacteria, the organic material is rapidly digested. In single volume tanks, cesspools and inlet chambers of septic tanks, the digestion is so complete that frequency of pumping is greatly reduced.

2. Leach Field -

The *PIRANHA* treated septic liquid is now very low in organic food material, starving the resident slime producing anaerobic bacteria that caused the "Biomat" clogging. The slime becomes food for the powerful soil bacteria generated by the *PIRANHA*. The *PIRANHA* process quickly opens the soil surfaces of the leach trench so septic liquid can pass into the aerobic soil. The powerful soil bacteria in the septic liquid pass into the soil pores, their natural environment. They colonize the soil of the leach field and keep it open. "Biomat" clogging is guaranteed to not reoccur as long as a licensed service provider maintains the *PIRANHA*.

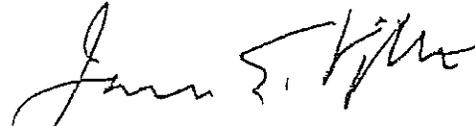
SUMMARY:

- *PIRANHA restores failed septic disposal systems*
- *PIRANHA minimizes septic tank and grease trap pumping*
- *PIRANHA eliminates nitrate loading to the groundwater*
- *PIRANHA uses only 50 watts of power, literally pennies a day to operate*
- *PIRANHA is quickly installed with no damage to landscaping*
- *PIRANHA is the lowest cost of any treatment option available today*

A signed copy of this document shall serve as the legal and binding contract document for the purpose of this agreement until such a time as legal counsel develops the formal agreement and it is replaced or another document is created by mutual agreement to replace it.

Knight Treatment Systems, Inc.

Date: 7/31/2001



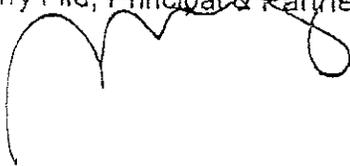
James E. Knight, President

AND

SepTech Company

Date: 8/3/01

Jerry Fifa, Principal & Partner

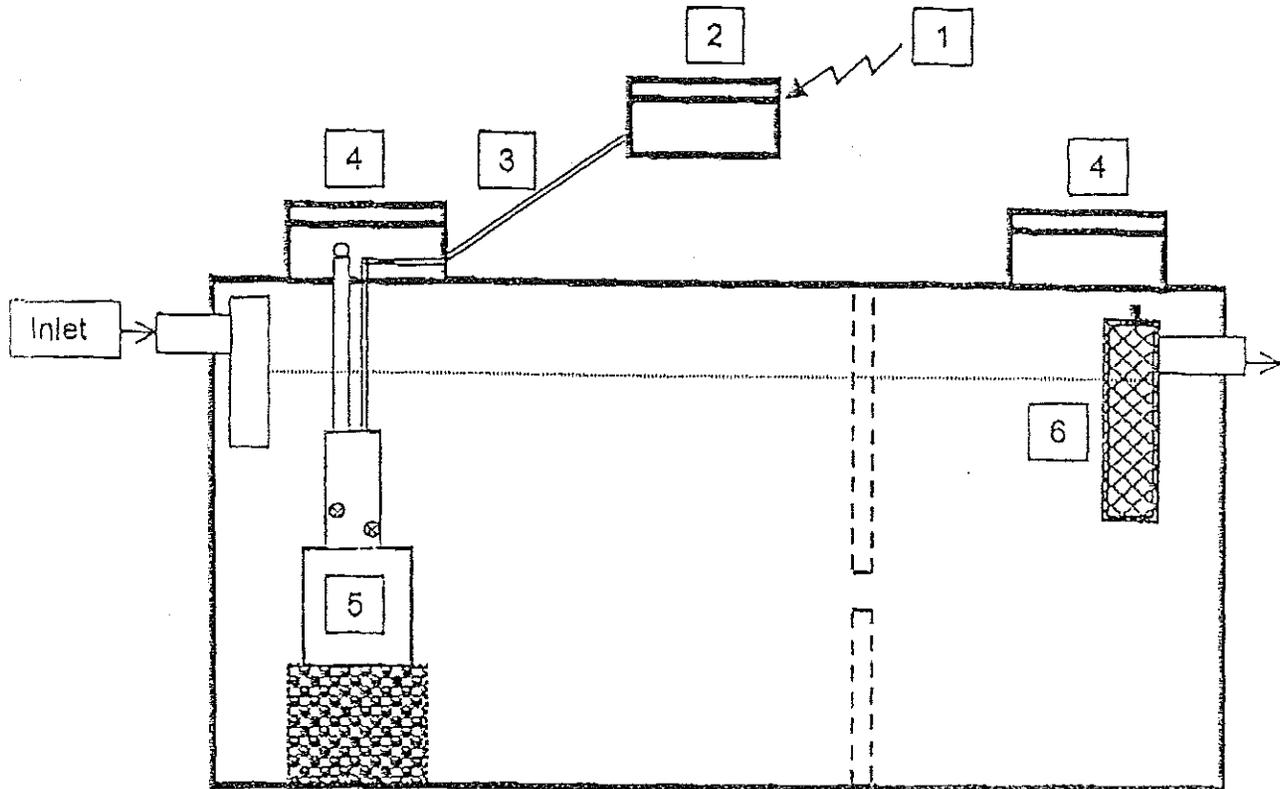


Daniel Wickham, Principal & Partner



PIRANHA

TYPICAL SEPTIC TANK INSTALLATION



1. 110 volt Power Source.
2. Air Pump Basin, 20" Round x 14" Tall, HDPE watertight construction.
3. ½" ID, Sch40, PVC air supply line.
4. Service riser, gas tight, minimum 20" ID, to grade.
5. Piranha Inoculator/Generator installed in first compartment of two-compartment septic tank or in single compartment septic tank.
6. Effluent outlet filter to retain non-biodegradable materials.

WDK

Wayne D. Kant P.E. Consulting Engineer
133 Mohawk Avenue, Scotia, New York, 12302
(518) 381-6888, ShermanSpanner@albany.net
N.Y.S. License # 070962

**Remediation of failed Raised Engineered On-site System
Woodridge Manor Trailer Park
Broadalbin, N.Y.**



Background:

Woodridge trailer park is located in a rural area of up-state N.Y. in the Town of Broadalbin. During the 1980's failing standard absorption systems lead to the installation of several large raised bed systems each serving a cluster of trailers. The native soil is a mixture of medium sand, silt and some gravel. Extensive percolation tests have yielded stabilized rates of between 5:00 and 30:00 min/inch within the same formation. Seasonal high groundwater levels range from 6" to more than 60" in an area of approximately 30 acres.

Failed System Description:

The system referenced in this report is located near the main entrance to Woodridge Manor and services 5 single-width trailer homes. Sewage is collected through a 4" pipe and is conveyed to a single compartment 1000-gallon concrete septic tank. The total daily flow to this system is estimated a 700 gpd, extrapolated from the metered park average of 140 gpd/trailer. From the septic tank the clarified effluent flows through an abandoned d-box and then into a 750-gallon dual siphon-dosing tank. At one time the siphons would have alternated dosing two parallel disposal areas consisting of 6 x 80' conventional laterals each. The laterals were installed in a large raised bed of medium sand measuring 140' x 100' x 4' depth. Total lateral length is 960 linear feet. The calculated soil application rate, based on a basal area of 6205 sq.ft. And a flow of 700 gpd is .3 gallons/sq.ft. /day.

The condition of the system when this engineer first observed it this spring (2001) was that it was in gross failure with surfacing and ponding of raw effluent. The owner frequently had problems mowing the grass on the raised area and had to fence off a 15' diameter area where dark effluent surfaced. The dosing siphons had long since failed and effluent was flowing by gravity out of the dosing tank through two overflow channels.

Proposed Remediation:

The conventional solution to this failure would have been to dig out the old system, dispose of the old material and create a new-engineered system. Based on my

experience this would have cost \$15,000.00 to \$20,000.00. Representatives of Knight Treatment Systems (KTS) instead proposed to remediate the existing raised bed through the use of a microbial inoculator/generator called the "Piranha".

The Piranha system is a proprietary device; composed of a reactor module, oil less compressor and an inoculant that is inserted into the reactor module. The reactor is lowered into an existing septic tank, hooked up to the compressor and inoculated. The piranha unit generates beneficial bacteria using the waste stream as a food source. After a period of time the beneficial bacteria flow into the clogged laterals and gradually unclog the system by consuming the biofilm. KTS claims that if within 60 days there is not a measurable increase in system function that a full refund will be given for equipment purchased and the site will be restored to the pre-piranha condition. The total cost to install the piranha unit at Woodridge was under \$4000.00.

Installation and Monitoring:

On June 27,2001 KTS technicians arrive at 9:00 A.M. to install a Piranha in the failed system. By 12:00 noon the piranha was installed in the tank and running.

In order to determine the precise failure mode we the excavated several test holes in the disposal area. We first dug between the laterals and found clean sand to below the bottom of the adjacent lateral. As we dug closer to the lateral we encounter blackened sand, which is indicative of bio fouling. Bio-fouling occurs when slime forming bacteria multiply in the interstitial spaces between sand particles and render the sand layer impervious to water flow.

Upon breaching the bio-fouled sand layer a dramatic sidewall collapse ensued as the hydrostatic pressure in the trenches blew out the trench wall, filling our hole with effluent.

We next installed several monitoring wells in the raised bed to determine static water levels both between and inside the absorption trenches. At days end the static water level was at surface level in the trench monitoring well and non-detectable between trenches (laterals).

Results:

Over the next three weeks, the site was regularly monitored for mechanical function, condition of the raised bed, effluent characteristics and levels.

The first dramatic observation (after 4days) was formation of thick flocks of white bacterial colonies in the dosing tank. This was concurrent with a disappearance of all black sludge and slime in the tank. Water levels in the monitoring well stayed constant for the first 18 days. There was however a marked change in the color and quantity of the effluent at the surfacing point with a gradual change from black and green to gray. It also became noticeably less damp over the entire surface of the raised area.

Between the 18th and 21st days of operation the water level in the trench area dropped from grade to 12" below grade and the surfacing halted. This system now is considered "not failing" as defined by the NYS Department of Health.

As of 7-30-01 the water levels in the trench area have dropped to 15" below grade and the fence surrounding the area previously surfacing effluent has been removed. The area is dry and has been reseeded. It is my professional opinion that the failure has been remediated. I will continue to monitor the system for at least one year to assess the long term operation of the Piranha and to determine if the biofilm (clogging) can be completely removed through non-invasive biological methods.

Please Note:

1. Knight Treatment Systems originally marketed the technology presented in this report under the name Piranha. Since the issuance of this report to Knight Treatment Systems Inc. we have been advised to seek out another name to market this technology under. Knight Treatment Systems has selected "White Knight™" as the trade name for the technology presented in this report.
2. Although not identified within this report by the author, the (patented) inoculating culture component utilized by Knight Treatment Systems is "IOS-500™".
3. This report was commissioned by and is the property of Knight Treatment Systems, Inc. All rights are reserved. The duplication, use and/or distribution of this report are protected by law and shall not be conducted without the expressed written consent of Knight Treatment Systems, Inc.

January 14, 2002

Mark C. Noga VP.

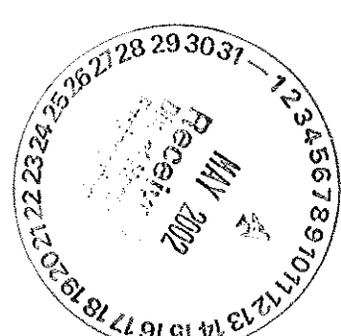
Mark C. Noga, Vice President



"Guardians of Water Quality".

281 County Rt. 51a
Oswego, NY, 13136
1-800-560-2454

ENV Serial Number	Date	Sample Point	O2	PH	Temp	Alkal	NH3	PO4	NO3	BOD5d	Fecal Coli	TSS	Field Level	System Notes
			ppm		C	ppm	mg/l	mg/l	mg/l	mg/l	CFU/ml	mg/l		
ENV 01051401	4/24/02	Center of Tank	9.9	5.9	6.1	20	9	10	<0.5	14	2,000	57	17 17" below grade	even w/OTT
ENV 01051602	4/22/02	Center of Tank	4.8	7.5	16.6	180	>30	10	<0.5	57	260,000	57		
ENV 01061101	4/25/02	Center of Tank	10.4	7.2	14	100	16	15	4.5	20	3,400	4		4" above OTT
ENV 01062501	4/30/02	Center of Tank	6.1	7.9	10	180	>30	12	<0.5	130	103,000	57		Seasonal start-up
ENV 01103001	4/25/02	Center of Tank	11.2	8.5	12.4	>30	>30	15	0.67	60	133,000	17		
ENV 01111501	4/25/02	Center of Tank	9.1	7.5	15.6	120	24	15	<0.5	57	225	12		
ENV 01111901	4/24/02	Center of Tank	7.5	7.7	17.5	180	>30	10	<0.5	>82 (?)	375	74		
ENV 011212801	4/22/02	Center of Tank	14	6.7	8.2	0	5	nd	29(?)	4	<20	12		unoccupied
ENV 01051101	4/25/02	Discharge Chimney	5.6	7.9	13.3	240	>30	>45	2.3	250	300,000	230		7" above discharge invert
ENV 01051601	4/22/02	Discharge Chimney	12	8.3	11.1	150	>30	15	<0.5	31	1,400	13		
ENV 01102401	4/30/02	Discharge Chimney	5.1	7.8	13.5	>240	>30	14	<0.5	83	144,000	38		
ENV 01110201	4/24/02	Discharge Chimney	8.1	7.8	16.3	240	>30	15	0.51	79	410,000	38		
ENV 01121101	4/24/02	Discharge Chimney	na	8	15.5	180	>30	20	<0.5	82 (?)	550,000	47		
ENV 01122001	4/23/02	Discharge Chimney	7.4	8	14.6	>240	>30	28	<0.5	140	12,100	39		1" below ITT
ENV 02031901	4/24/02	Discharge Chimney	5.1	7.8	19.9	240	28	11	<0.5	58	5,500	12		6" below ITT
ENV 02022501	4/24/02	Discharge Chimney	7.1	7.6	15.6	120	29	8	1.5	52	3,400	22		1" above discharge invert
ENV 02032001	4/29/02	Discharge Chimney	8.7	8.1	10	150	14	nd						
ENV 01050701	4/25/02	DST	8.2	7.2	16.2	80	12	25	6	42	4,700	20		
ENV 01050901	4/25/02	Filter (NP)	7.4	7.7	13.1	220	>30	20	4.3	66	6,400	24		Biofilm on filter
ENV 01061301	4/22/02	Filter (NP)	7.3	7.4	11.4	120	20	10	<0.5 (?)	46	225	19		
ENV 01111301	4/18/02	Filter (NP)	6.6	7.9	13	180	>30	10	<0.5	38	16,000	25		
ENV 02032901	4/29/02	Filter (O)	6	8.5	10.8	>240	>30	20	<0.5	500	7,800,000	180		Installation sample before operation
ENV 02041001	4/12/02	Filter (O)	2.3	7	17.2	150	30	15	<0.5	330	75,000	59		Installation sample before operation
ENV 02041201	4/12/02	Filter (O)	2.8	6.3	18.8	120	>30	na	<0.5	510	0	95	at grade	
ENV 02041701	4/17/02	Filter (O)	3.3	7.3	17.4	>240	>30	25	<0.5	500	1,300,000	100	5" below grade	Installation sample before operation
ENV 02041801	4/18/02	Filter (O)	3.2	7	13	200	>30	20	<0.5	610	1,800,000	94	8" below grade	Installation sample before operation
ENV 01101101	4/17/02	Filter (P)	8.3	7.6	14.6	180	22	nd	<0.5	48	31,000	88		
ENV 01050401	4/18/02	Filter (Z)	8	7.4	12.9	100	6	20	18	25	60	11		
ENV 01060401	4/29/02	Filter (Z)	5	7.5	12	150	16	12		210	650,000	69		
ENV 01073001	4/24/02	Filter (Z)	na	7.5	17.9	180	>30	11	<0.5	330	9,300	31		even w/ITT
ENV 01100901	4/24/02	Filter (Z)	7.9	7.8	9.7	180	>30	25	0.72	130	4,300	11		
ENV 01110801	4/19/02	Filter (Z)	5.7	7.6	11	180	22	15	<0.5	33	1,600	11		
ENV 01121401	4/24/02	Filter (Z)	na	7.4	15.2	120	16	5	2.7	49	137,000	82	Break-out	
ENV 01122401	4/30/02	Filter (Z)	6	7.5	14.6	180	>30	10	<0.5	170	250,000	110		1" below ITT
ENV 01100901 TWI	4/24/02	Test Well	7.8	8	14.6	240	>30	15	<0.5	63	1,600	18		
ENV 01100901 TWC	4/24/02	Test Well	8.8	6.4	6.1	150	>30	5	<0.5	50	<5	33		Sediment in sample, air in field off
ENV 01121401 TWI	4/30/02	Test Well	3.9	6.8	8.5	120	>30	nd	<0.5	42	380	91	13" below grade	
ENV 01121401 TWC	4/30/02	Test Well	3.7	7.2	8.3	240	>30	nd	3.2	64	400	60	13" below grade	
ENV 01052601	Seasonal													
ENV 01072601	Seasonal													
ENV 01081501	Out of State													
ENV 01100501	Seasonal													



December-01 Data - All Systems-Dist

ENV Serial Number	Date	NO3	BOD5d	Fecal Col	TSS
ENV 01050401	12/10/01	18	38	420	35
ENV 01050701	12/19/01	4.3	56	30,000	48
ENV 01050901	12/28/01	6.4	88	4,000	130
ENV 01051101	12/28/01	<0.5	460	14,000,000	210
ENV 01051401					
ENV 01051601	12/28/01	<0.5	34	8900	17
ENV 01051602	12/28/01	<0.5	8	11,000	5
ENV 01052601					
ENV 01060401	12/17/01	3.3	72	690,000	3.3
ENV 01061101	12/26/01	16	50	6,800,000	25
ENV 01061301	12/21/01	0.56	29	12	25
ENV 01062501	12/28/01	<0.5	120	2100	61
ENV 01072601					
ENV 01073001	12/26/01	<0.5	370	1,700,000	170
ENV 01081501					
ENV 01100501					
ENV 01100801	12/21/01	0.96	29	1000	16
ENV 01100901					
ENV 01101101	12/17/01	<0.5	54	6,700	130
ENV 01102401	12/19/01	<0.5	82	37,000	66
ENV 01103001					
ENV 01110201	12/13/01	<0.5	46	530	76
ENV 01111301	12/10/01	<0.5	190	420,000	600
ENV 01111401	12/26/01	0.82	56	24,000	44
ENV 01111501	12/26/01	<0.5	78	1,080	34
ENV 01111901	12/26/01	<0.5	100	6,400	38
ENV 01112801					
ENV 01121101					
ENV 01121401	12/14/01	<0.5	460	490,000	110
ENV 01122001					
ENV 01122401					
Romoco	12/10/01		48	12,000	33

INTERNATIONAL ORGANIC SOLUTIONS CORP.
IOS CORP

"WE RECYCLE THE EARTH"
CENTRAL ACCOUNTING AND FINANCE OFFICES
137 VISTA GRANDE
GREENBRAE, CA 94904-1135
PHONE 415-461-3993
FAX 415-464-0350

May 8, 2002

Jay Knight, President
Knight Treatment Systems, Inc.
281 county Route 51A
Oswego, NY 13126



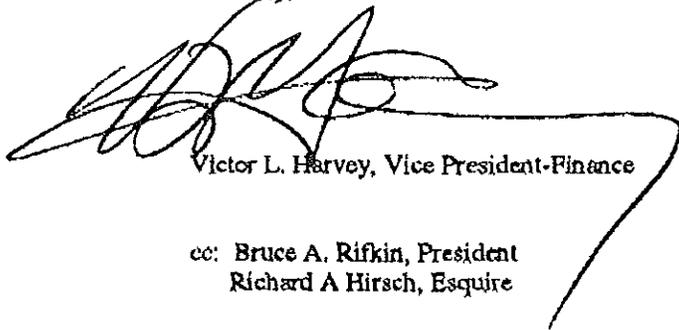
Dear Jay:

Regarding the current situation in the State of Maine, please be advised that the following is true:

Although you initially worked with a company known as SepTech, they received their "exclusive" to use our patented application technology and freeze dried bacterial/enzyme blend, IOS-500, through an unauthorized and fraudulent document created by our then corporate secretary, Mr. Daniel Wickham, who signed incorrectly and knowingly as Executive Vice President. That document violated a prior Exclusive Distributors Agreement issued to Robert Rawson in May of 1999. Upon the discovery that the Wickham document existed, Wickham was terminated for cause and is currently forbidden to use the product, IOS-500, or the name "IOS" in any form. All prior testing for the State of Maine was done using the IOS-500 product.

Currently, Knight Treatment Systems, Inc. is the only company in the United States that maintains the exclusive rights to use IOS-500 for the on site septic industry.

Sincerely,



Victor L. Harvey, Vice President-Finance

cc: Bruce A. Rifkin, President
Richard A Hirsch, Esquire

SepTech P. 1
IOS

IOS Corporation

International Organic Solutions

911 Irwin Lane
Santa Rosa, CA 95401
(707) 865-1305 FAX 865-2515
email: ios@interx.net

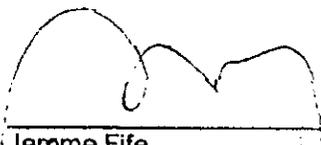
Exclusive Marketing Contract

IOS Corporation (hereinafter IOS), a Nevada corporation doing business at 911 Irwin Lane, Santa Rosa, CA agrees this day of 20 July, 2001 to enter into a marketing contract with SepTech Co. of 1875 Joy Road, Occidental, CA (hereinafter **SepTech**).

1. IOS grants an exclusive right to SepTech to market and sell the proprietary IOS-500 bacterial formula in sales in the On-Site septic market and associated with the sale of the SepTech proprietary device know as the "Piranha". For the purpose of this contract the On-Site septic market is defined as self-contained wastewater treatment systems capable of effecting significant bacterial treatment of household or food preparation wastes within a vessel on or near the property discharging to such vessel and disposing of such treated wastewater to local soil based disposal systems, sewer systems, or other disposal systems.
2. IOS grants a non-exclusive right to SepTech to sell the IOS-500 product to the municipal sewer industry, to industrial waste processors, to agricultural treatment systems, and to the bioremediation industry.
3. These rights are for the United States only. Any sales outside of the US shall have to be approved individually by IOS Corporation.
4. SepTech shall use all due diligence in developing the On-Site market for IOS-500 and agrees to use the IOS-500 blend as the sole carbon degrading bacterial formula in sales of it's proprietary technology. SepTech shall meet a market goal of sales of 1,000 lbs. of the IOS-500 blend per year by the year 2002, and all subsequent years.
5. This contract shall remain in force for an initial period of 5 years and shall be continued by mutual agreement for subsequent 5 year terms as long as SepTech can meet agreed upon performance goals to be negotiated for such new terms.
6. The price of the IOS-500 blend to SepTech shall be \$. This price shall remain in force, except that increases in the cost of production based on inflation of materials cost for IOS-500 shall be included as they occur.

For:
SepTech Co.
1875 Joy Road
Occidental, CA 94985

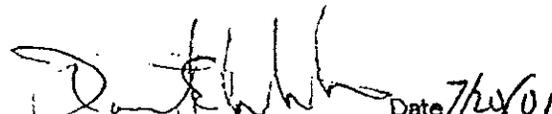
For:
IOS Corporation
911 Irwin Lane
Santa Rosa, CA 95401



Jerome Fife
Partner

Date

7/20/01



Daniel Wickham
Executive Vice President

Date

7/20/01



**Application for Registration of Experimental
System/Innovative Technology
or Onsite Sewage Disposal System Product**

**Submitted to:
Maine Department of Human Services
Bureau of Health
Division of Health Engineering
Wastewater & Plumbing Control Program**

on

May 10, 2002

**By:
Knight Treatment Systems, Inc.
281 County Route 51A
Oswego, NY 13126
1-800-560-2454**



"Guardians of Water Quality"

White Knight™ Application
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1 of 18

Information provided on form HHE 221

Applicant

Company Name: Knight Treatment Systems, Inc.

Contact Person: James Knight

Address: 281 County Route 51A

City: Oswego

State: New York

Zip: 13126

Telephone: 1-800-560-2454

Email: jayknight@accucom.net

Product Information

Product Name: White Knight Microbial Inoculator/Generator

Model: WK-40, WK-80

Product Classification

Primary or Secondary Treatment Unit: Other: Microbial Inoculator/Generator

Claims

The claims for this product are as follows:

- The system will unclog biologically failed leach systems and reopen and maintain drainage patterns in existing onsite wastewater treatment systems previously demonstrating biomat clogging.
- The technology acts as a means of introducing and maintaining viable cultures of specific bacterial strains; known to be effective in wastewater digestion, into hostile environments such as septic tanks, grease traps or other treatment vessels.
- The design of the device allows efficient transfer of oxygen into wastewater, highly effective circulation of wastewater within and through the device, a refugia for placement of specific introduced bacterial cultures, and an abundant surface area for establishment of a fixed-film bacterial culture.
- The device, when placed in a standard household septic tank, performs well beyond the accepted wastewater treatment standards defined in the

White Knight™ Application

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conventional literature. Oxygen is supplied with an efficiency of approximately 33 lbs. O₂/ Horsepower/ Hour. A standard unit, operated with a 40-watt air pump capable of delivering 1.5 CFM, delivers almost 40 lbs. of O₂ to septic tanks that typically receive biological loads of about 1 lb. BOD per day.

- This same air current drives water circulation through the column at a rate of approximately 25-30 gpm, resulting in a daily circulation of approximately 30,000-40,000 gallons over a contained fixed-film bacterial colony of approximately 150 square feet. The unit is thus sized to provide a treatment level well beyond any known treatment system or device, when measured on a per unit energy basis.
- The device maintains active growing colonies of specific aerobic and facultative anaerobic bacterial species. Species within the genera *Bacillus* and *Pseudomonas* are known to be among the most powerful digesters of organic wastes. Natural populations of these bacterial species are introduced into the device using the IOS-500 patented bacterial/enzyme formula produced by the IOS Corporation.

Product Performance

The performance of the White Knight™ system has been, and is being, proven in several different field applications, including:

- An independent engineer's study of a raised system that serves a 5 manufactured homes in a community. The system was failed and is now recovered utilizing the existing, undersized septic tank and the existing leach field. A complete report of the engineer is attached.
- A pilot test at a poultry processing facility where the alternative to repair incorporating the White Knight™ technology was a wastewater treatment facility estimated to cost in excess of \$150,000. A summary of the test results is included.
- Ongoing sampling that is taking place in the State of Maine by Envirocheck, Inc. under the provisional approval granted September 25, 2001. The Wastewater & Plumbing Control Program office has access to this testing and it is not reproduced in this application.
- The primary claim made is that the system reopens natural drainage patterns in the soil thereby preventing contamination of surface waters and preserving public health. There are approximately 150 (some units were installed prior to Knight Treatment System's involvement and are not being tracked by us) systems that have been installed to date and there have been two claims and refunds against the lifetime warranty. Both systems that were removed were installed in systems in which problems other than biological clogging existed, but could not be observed with the thorough site evaluation done by the technicians.

This unit does not have NSF certification.

White Knight™ Application

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Material Safety Data Sheet
Administration

Complies with OSHA's Hazard Communication Standard,
29 CFR 1910.1200.
Material Safety Data Sheet -OSHA 174

U.S. Department of Labor
Occupational Safety and Health

(Non-Mandatory Form) Approved by:
OMB No.1218-0072

IDENTITY (*As Used on Label and List*)
item is not **IOS-500** (Organic chemical matrix)
information is available, the

Note: Blank spaces are not permitted. If any
applicable, or no
space must be marked to indicate that.

IOS-500 is non-hazardous nonpathogenic material with the following properties.

Section I

Manufacturer's Name

International Organic Solutions Corp.

Address (*Number, Street, City, State, and ZIP Code*)

3454 Lakeside Dr. Reno, Nevada 89509

Emergency Telephone Number

(707) 824-1282

Telephone Number for Information

(707)-824-1282

Date Prepared: 10-16-99

Signature of Preparer (*optional*) _____

Section II- Hazard Ingredients/Identity Information

No hazard is associated with dry, sealed and properly stored bags of IOS-500 in normal usage.

Hazardous Components (Specific Chemical Identity;
Common Name(s))
Dust and non-pathogenic Pseudomonas
bags"
and Bacillus.

OSHA PEL Permissible exposure limits
(PELs) of 15 mg/m³ for total dust and,
5 mg/m³ for respirable dust. "From open

Section III- Physical/Chemical Characteristics

Boiling Point: N/A
water.

Vapor density: N/A

Specific Gravity: Variable, less dense than

Melting Point: N/A

Vapor Density (AIR =1) N/A

Evaporation Rate: N/A

Solubility in Water: Very slight solubility in water. May float until it becomes saturated.

Appearance and Odor: Light brown granular texture with slight humic odor.

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) N/A Flammable Limits LEL 40grams/ cubic meter of air UEL:

Unknown

Extinguishing Media:

WATER, CO2, SAND

Special Fire Fighting Procedures:

Self contained breathing apparatus is recommended.

Unusual Fire and Explosion Hazards

Depending on moisture content, and particulate diameter, open dispersed containers of IOS-500 have properties similar to any cellulosic dust, such as grain or barley flour.

Section V - Reactivity Data

Stability:

Very stable, keep dry until used.

Conditions to Avoid:

Avoid Open Flame. Product may ignite at temperatures in excess of 450. F.

Incompatibility (*Materials to Avoid*)

Strong oxidizers

Hazardous Decomposition or Byproducts:

Thermal-oxidative degradation produces irritating gases primarily CO2. CO2, and NH4 may evolve in the presence of excess moisture from decomposition.

Conditions to Avoid:

Avoid conditions of excessive moisture during storage until product is in use.

Hazardous Polymerization:

Will not occur.

White Knight™ Application

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Section VI - Health Hazard Data

Dust from open containers can cause eye irritation from drying effect. Inhalation of dust may cause nasal dryness if dust is not properly controlled per OSHA Regulation 29 CFR Part 1910 for Cellulose and Particulates.

Routes of entry:

Eyes: Yes
Inhalation: Yes
Skin: Yes.
Ingestion: Yes.

Health Hazards (*Acute and Chronic*)

Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
N/A	NA	NA	NA

Signs and Symptoms of Exposure

IRRITATION

Medical Conditions

Exposure to dust may cause eye irritation, nasal dryness and obstructions similar to wood or grain dusts. Asthma and bronchial conditions may be aggravated by exposure:

Emergency and First Aid Procedures:

If skin contact occurs, wash affected area with soap and water. If dust gets in the eyes treat the contact as if it were any foreign object. If a rash occurs get medical advice. If inhalation occurs, remove to fresh air: If persistent coughing or difficult breathing occur, get medical advice. If ingestion occurs get medical advice.

Section VII- Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

When handling the product wear gloves. When handling opened containers and spills, use respirator, gloves and eye protection while sweeping to avoid breathing dust. Wet mopping prevents dust.

Waste Disposal Method:

Dispose of in accordance with local, county, state, and federal regulations. Generally, spilled material may be recycled and reused, flushed into septic tank or sanitary sewer systems, placed in compost pile, buried, or placed in land fill.

Precautions to Be taken in Handling and Storing

Avoid tearing bags and containers. Wear gloves while handling packages and spilled product.

Store product in a dry location.

Section VIII- Control Measures

Respiratory Protection (Specify Type)

Use a respirator approved by NIOSH if dust conditions occur that exceed OSHA rules and regulations.

Ventilation:

Local Exhaust is not necessary unless dust accumulates from large quantities of free product.

Mechanical (*General*) is not necessary unless product is being reformulated with other materials creating dust. manufacturing large quantities of product.

Other:

See sections VI & VII in regards to dust.

Protective Gloves: Recommended
open

Eye Protection: Recommended when handling
container.

Other Protective Clothing or Equipment: N/A

Work/ Hygienic Practices:

No special practices are required. Follow normal work/ hygienic practices. Use soap and water for hands.

April 12, 2002

Mr. Robert W. Rawson
International Organic Solutions
P.O. Box 157
Sebastopol, CA 95473

Dear Mr. Rawson:

This letter is to acknowledge receipt of the information concerning the product "IOS-500" for statewide use in Florida. No product sold in the state for use in onsite sewage treatment and disposal systems may contain any substance in concentrations or amounts that would interfere with or prevent the successful operation of such system, or that would cause discharges from such systems to violate applicable water quality standards, section 381.0065(4)(m), Florida Statutes.

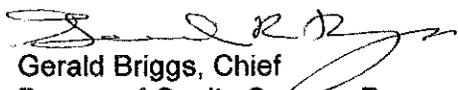
The staff has reviewed the information provided in the MSDS, 96-hr LC₅₀ toxicity test results, and laboratory results on volatile organic compounds for the product. The department has determined that the product, **IOS-500**, to be in compliance with s. 381.0065(4)(m), F.S. and has no objection to the use of the product in accordance with manufacturer's specifications. Please be advised that all rules pertaining to the use of the products shall be observed and that there shall be no advertising of the products as state approved.

Be advised that the department is not a testing agency and that this determination reflects only a review of the information submitted by you for compliance with Florida Statutes and Florida Administrative Code. The product evaluation does not investigate the validity of performance claims by manufacturers. For this reason, departmental acceptance must not be interpreted as certifying effectiveness, endorsing or recommending use of an additive. The Florida Department of Health also does not assume liability for any promise, guarantee or expectation from purchasing or using an additive. The department reserves the right to withdraw acceptance if product formulation or ingredients are modified after product evaluation by the department or subsequently found not to be in compliance with rule.

This letter of product compliance is limited to Department of Health jurisdictional circumstances as defined in Chapter 64E-6, Florida Administrative Code and Chapter 381.0065, Florida Statutes.

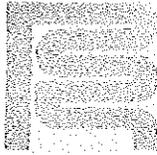
If we may be of further assistance or should you have any additional questions regarding this letter, please call Dr. Sonia Cruz at (407) 317-7325.

Sincerely,



Gerald Briggs, Chief
Bureau of Onsite Sewage Programs





STATIC FISH BIOASSAY

96 Hour LC₅₀

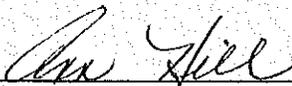
LABORATORIES, INC. 425 SOUTH E STREET SANTA ROSA, CALIFORNIA 95404 (707) 544-8807

CLIENT: IOS		Log Number: 202-3178	
Sample Description: IOS-500		Date Received:	
Collected by: client		Receiving Temp.(°C): n/a	
Date Collected: NS	Time Collected: NS	Receiving D.O.(mg/L): n/a	
Comments: See Page 2		Date Started: 2-14-02	
LC₅₀ (Concentration which produced a 50% mortality among exposed fish): See Page 2			

Fish Species: Fathead Minnows (<i>Pimephales promelas</i>)
Source: Aquatic Bio Systems Fort Collins, CO
Hatch Date: 2-4-02
Method: EPA/600/4-90/027F

Volume Of Test Solution: 500mL	Depth of Test Solution: 6.5cm
Acclimatization Tank Water Source: Moderately Hard Synthetic Water	
Control Water Source: Moderately Hard Synthetic Water	

		Residual Chlorine : <0.1 Ammonia: <0.25												
		Control			100 mL		200 mL		300 mL		400 mL		500 mL	
Initial	Alkalinity CaCO ₃ mg/L	70												
	Hardness CaCO ₃ mg/L	80												
	EC µmhos/cm	340												
	pH	8.0	8.0	8.0	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.7	7.6	7.6
	Dissolved Oxygen mg/L	7.9	8.0	8.3	8.3	8.4	8.4	8.4	8.3	8.5	8.4	8.4	8.4	
24Hr	Temperature (°C)	20	20	20	20	20	20	20	20	20	20	20	20	
	PH	8.0	8.0	8.0	7.9	7.9	7.9	7.9	7.9	7.8	7.7	7.6	7.6	
	Dissolved Oxygen mg/L	8.0	8.1	8.3	8.3	8.4	8.4	8.4	8.4	8.5	8.5	8.4	8.4	
	Temperature (°C)	20	20	20	20	20	20	20	20	20	20	20	20	
48Hr	Survival	10	10	10	10	10	10	10	10	10	10	10	10	
	PH	7.9	7.9	7.9	7.9	8.0	8.0	7.9	7.9	8.0	7.9	7.8	7.7	
	Dissolved Oxygen mg/L	8.4	8.4	8.6	8.6	8.5	8.6	8.7	8.7	8.7	8.7	8.7	8.6	
	Temperature (°C)	20	20	20	20	20	20	20	20	20	20	20	20	
72Hr	Survival	10	10	10	10	10	10	10	10	10	10	10	10	
	PH	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.0	7.9	7.9	7.8	
	Dissolved Oxygen mg/L	8.1	8.1	8.4	8.5	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.5	
	Temperature (°C)	20	20	20	20	20	20	20	20	20	20	20	20	
96Hr	Survival	10	10	8	10	9	10	10	10	10	10	6	5	
	PH	7.9	7.9	8.0	8.0	7.9	7.9	8.0	8.0	7.9	7.9	8.0	8.0	
	Dissolved Oxygen mg/L	8.1	8.2	8.4	8.4	8.4	8.4	8.6	8.5	8.6	8.6	8.4	8.5	
	Temperature (°C)	20	20	20	20	20	20	20	20	20	20	20	20	


BRELJE AND RACE LABORATORIES INC.

BRELJE AND RACE



LABORATORIES, INC.

425 SOUTH E STREET SANTA ROSA, CALIFORNIA 95404 (707) 544-8807

PAGE 2

Test Solution Preparation

Test solution prepared by weighing and mixing a fractional portion of contents of "sample pouch" (designed to treat 750 gallons) into 1 gallon of deionized water.

Weight of pouch w/ contents	353.5 g
Weight of pouch	10.0 g
Total weight of contents	343.5 g

$343.5 \text{ g} / 750 \text{ gal} = 0.46 \text{ g/gal}$

Final Solution mix: .4624 g → 1 gallon

Results (LC50/% Survival)

At full strength the mixture failed to cause a 50% mortality among exposed organisms, making an LC50 calculation impossible. The result is therefore best expressed as a percentage of survival of 55 percent.

WDK
Wayne D. Kant P.E. Consulting Engineer
133 Mohawk Avenue, Scotia, New York, 12302
(518) 381-6888, ShermanSpanner@albany.net
N.Y.S. License # 070962

**Remediation of failed Raised Engineered On-site System
Woodridge Manor Trailer Park
Broadalbin, N.Y.**

Background:

Woodridge trailer park is located in a rural area of up-state N.Y. in the Town of Broadalbin. During the 1980's failing standard absorption systems lead to the installation of several large raised bed systems each serving a cluster of trailers. The native soil is a mixture of medium sand, silt and some gravel. Extensive percolation tests have yielded stabilized rates of between 5:00 and 30:00 min/inch within the same formation. Seasonal high groundwater levels range from 6" to more than 60" in an area of approximately 30 acres.

Failed System Description:

The system referenced in this report is located near the main entrance to Woodridge Manor and services 5 single-width trailer homes. Sewage is collected through a 4" pipe and is conveyed to a single compartment 1000-gallon concrete septic tank. The total daily flow to this system is estimated a 700 gpd, extrapolated from the metered park average of 140 gpd/trailer. From the septic tank the clarified effluent flows through an abandoned d-box and then into a 750-gallon dual siphon-dosing tank. At one time the siphons would have alternated dosing two parallel disposal areas consisting of 6 x 80' conventional laterals each. The laterals were installed in a large raised bed of medium sand measuring 140' x 100' x 4' depth. Total lateral length is 960 linear feet. The calculated soil application rate, based on a basal area of 6205 sq.ft. And a flow of 700 gpd is .3 gallons/sq.ft. /day.

The condition of the system when this engineer first observed it this spring (2001) was that it was in gross failure with surfacing and ponding of raw effluent. The owner frequently had problems mowing the grass on the raised area and had to fence off a 15' diameter area where dark effluent surfaced. The dosing siphons had long since failed and effluent was flowing by gravity out of the dosing tank through two overflow channels.

Proposed Remediation:

The conventional solution to this failure would have been to dig out the old system, dispose of the old material and create a new-engineered system. Based on my

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experience this would have cost \$15,000.00 to \$20,000.00. Representatives of Knight Treatment Systems (KTS) instead proposed to remediate the existing raised bed through the use of a microbial inoculator/generator called the "Piranha".

The Piranha system is a proprietary device; composed of a reactor module, oil less compressor and an inoculant that is inserted into the reactor module. The reactor is lowered into an existing septic tank, hooked up to the compressor and inoculated. The piranha unit generates beneficial bacteria using the waste stream as a food source. After a period of time the beneficial bacteria flow into the clogged laterals and gradually unclog the system by consuming the biofilm. KTS claims that if within 60 days there is not a measurable increase in system function that a full refund will be given for equipment purchased and the site will be restored to the pre-piranha condition. The total cost to install the piranha unit at Woodridge was under \$4000.00.

Installation and Monitoring:

On June 27,2001 KTS technicians arrive at 9:00 A.M. to install a Piranha in the failed system. By 12:00 noon the piranha was installed in the tank and running.

In order to determine the precise failure mode we the excavated several test holes in the disposal area. We first dug between the laterals and found clean sand to below the bottom of the adjacent lateral. As we dug closer to the lateral we encounter blackened sand, which is indicative of bio fouling. Bio-fouling occurs when slime forming bacteria multiply in the interstitial spaces between sand particles and render the sand layer impervious to water flow.

Upon breaching the bio-fouled sand layer a dramatic sidewall collapse ensued as the hydrostatic pressure in the trenches blew out the trench wall, filling our hole with effluent.

We next installed several monitoring wells in the raised bed to determine static water levels both between and inside the absorption trenches. At days end the static water level was at surface level in the trench monitoring well and non-detectable between trenches (laterals).

Results:

Over the next three weeks, the site was regularly monitored for mechanical function, condition of the raised bed, effluent characteristics and levels.

The first dramatic observation (after 4days) was formation of thick flocks of white bacterial colonies in the dosing tank. This was concurrent with a disappearance of all black sludge and slime in the tank. Water levels in the monitoring well stayed constant for the first 18 days. There was however a marked change in the color and quantity of the effluent at the surfacing point with a gradual change from black and green to gray. It also became noticeably less damp over the entire surface of the raised area.

Between the 18th and 21st days of operation the water level in the trench area dropped from grade to 12" below grade and the surfacing halted. This system now is considered "not failing" as defined by the NYS Department of Health.

As of 7-30-01 the water levels in the trench area have dropped to 15" below grade and the fence surrounding the area previously surfacing effluent has been removed. The area is dry and has been reseeded. It is my professional opinion that the failure has been remediated. I will continue to monitor the system for at least one year to assess the long term operation of the Piranha and to determine if the biofilm (clogging) can be completely removed through non-invasive biological methods.

Please Note:

1. Knight Treatment Systems originally marketed the technology presented in this report under the name Piranha. Since the issuance of this report to Knight Treatment Systems Inc. we have been advised to seek out another name to market this technology under. Knight Treatment Systems has selected "White Knight™" as the trade name for the technology presented in this report.
2. Although not identified within this report by the author, the (patented) inoculating culture component being utilized is "IOS-500™".
3. This report was commissioned by and is the property of Knight Treatment Systems, Inc. All rights are reserved. The duplication, use and/or distribution of this report are protected by law and shall not be conducted without the expressed written consent of Knight Treatment Systems, Inc.

January 14, 2002

Mark C Noga VP.

Mark C. Noga, Vice President



"Guardians of Water Quality".

281 County Rt. 51a
Oswego, NY, 13136
1-800-560-2454

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**Poultry Processor Test results
September-December, 2001**

Rows are various test dates.
Parameters changed during pilot study.

	Influent (mg/l)	1st Tank Effluent (mg/l)	% Removal (Influent basis)	2nd Tank Effluent (mg/l)	% Removal (Influent basis)
Ammonia	16.1			46.9	
	3.4			67.7	
	70.3			10.7	
	1.6			6.8	
	10.7			84.6	
	9.62	72		88.5	
Average	18.62	72	-286.68	50.87	-173.18
BOD5	1,540			404	
	267			440	
	1,310			310	
	93			759	
	3,330			742	
	968	135		358	
Average	1,251.33	135.00	89.21	502.17	59.87
COD	1,660			568	
	59			533	
	629			1,440	
	160			771	
	2,300			824	
	2,030	504		802	
Average	1,139.67	504.00	55.78	823.00	27.79
Oil & Grease	20.3			24.9	
	27.1			13	
	298			14.5	
	14.4			21.2	
	4,600			18.2	
	154	5		21.2	
Average	852.3	5	99.41	18.83	97.79
TSS	604			365	
	158			292	
	538			370	
	78			592	
	5,300			209	
	497	396		550	
Average	1,195.83	396	66.89	396.33	66.86
pH	6.89		N/A	7.25	N/A
	7.4		N/A	6.4	N/A
	6.69		N/A	7.02	N/A
	7.42		N/A	6.84	N/A
	6.63		N/A	7.0	N/A
	7.14	7.56	N/A	7.6	N/A
Nitrate	2.11	0.5	76.30	0.5	76.30
TKN	142	110	22.54	135	4.93



"Guardians of Water Quality".

281 Co. Rt. 51A, Oswego, NY. 13126
1-800-560-2454 / 315-343-2454 / Fax 315-343-6114

"WHITE KNIGHT™" Microbial Inoculator/Generator Methodology

A Patent Pending technology marketed by Knight Treatment Systems as the "White Knight™" was developed in California. The technology acts as a means of introducing and maintaining viable cultures of specific bacterial strains, known to be effective in wastewater digestion, into hostile environments such as septic tanks, grease traps or other treatment vessels.

The design of the device allows efficient transfer of oxygen into wastewater, highly effective circulation of wastewater within and through the device, a refugia for placement of specific introduced bacterial cultures, and an abundant surface area for establishment of a fixed-film bacterial culture.

The device, when placed in a standard household septic tank, performs well beyond the accepted wastewater treatment standards defined in the conventional literature. Oxygen is supplied with an efficiency of approximately 33 lbs. O₂/Horsepower/ Hour. A standard unit, operated with a small air pump capable of delivering 1.5 CFM, delivers almost 40 lbs. of O₂ to septic tanks that typically receive biological loads of about 1 lb. BOD per day.

This same air current drives water circulation through the column at a rate exceeding 20 gpm, resulting in a daily circulation in excess of 25,000 gallons over a contained fixed-film bacterial colony. The unit is thus sized to provide a treatment level well beyond any known treatment system or device, when measured on a per unit energy basis.

Beyond the physical design parameters is the use of the device to maintain active growing colonies of specific aerobic and facultative anaerobic bacterial species. Species within the genera *Bacillus* and *Pseudomonas* are known to be among the most powerful digesters of organic wastes. Natural populations of these bacterial species are introduced into the device using the IOS-500 patented bacterial/enzyme formula produced by the IOS Corporation. The species in the IOS-500 blend are endemic to the leaf litter zone of soils in forest floors where they are responsible for a large fraction of the natural organic digestive process. Because of their environment they possess characteristics that suit them well to wastewater digestion including large appetite for organic carbon and nitrogen in nitrate form, rapid reproductive rate typical of organisms

White Knight™ Application

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dominating seasonal environments, tolerance to a wide range of temperatures, and the ability to function anaerobically when necessary.

Experience to Date

The two components of this patent pending technology are the IOS-500 bacterial culture and the mechanical device. Experience with use of the IOS-500 culture in wastewater treatment goes back over 15 years and includes use in bioremediation of contaminated soil, algae control in ponds, restoration of DO in polluted natural water bodies, treatment of manure ponds, and extensive experience in municipal treatment plants.

Experience with the combined technologies is more recent; during the initial year of development (2000) over 40 such devices had been installed by the inventors in homes with a wide array of septic-based treatment systems and situated in a wide variety of soil types. The technology was designed specifically to reduce the organic loads in effluents being released to soils clogged by slime forming anaerobic waste from standard septic tanks. The effluent stream is enriched with bacteria from the IOS-500 culture known for their propensity to consume the muco-polysaccharide "slime" compounds. They are carried to the leach field where soil porosity is enhanced by bacterial degradation of these clogging compounds.

Virtually all installations to date have been for the purpose of remediation of systems that were completely clogged and unable to accept discharged water. In all instances these systems have responded to the treatment and soil acceptance of discharged effluent has been restored to a degree sufficient that the systems can be used again. The rate of restoration of function has ranged depending on soil type, seasonal rainfall, and other specific factors. One system in Booneville, California, of two 2,500 gal. Septic tanks serving four apartment units and discharging to a leach trench buried 14 feet deep under an asphalt parking lot have showed the slowest clearance rate so far. However, water level in this system has steadily declined by about 1" per week. This system had been being pumped every two weeks prior to treatment. Pumping has not been needed for over 4 months while full loading to the system has been resumed.

Monitoring of system performance has focused primarily on soil clearance behavior, as that is the parameter of interest in use of the system for restoration of leach function. Measurements of standard parameters such a BOD and TSS show that levels range from 20-30 mg/L in typical household tanks, up to about 100 mg/L in certain institutional homes with very heavy loading. The highest BOD's are found at the Victor Treatment Center in Santa Rosa. This home houses 9 teenage boys with a full-time staff of 4. It is served by a Wisconsin Mound that had failed prior to treatment by completely filling with organic sludge.

Function of this mound was restored in approximately 2 weeks and it has remained stable for the last full year. A BOD measurement taken from the monitoring well in the sand portion of the mound showed a concentration of 4.0 mg/L, underscoring the fact that performance in the tank is irrelevant in assessment of system function.

Data on nitrogen dynamics in White Knight™ systems further suggests that monitoring of treatment function of any device should focus on the final effluent in the soil as opposed to measurements in the treatment tank. Effluent from both the septic pump station and the sand monitoring well in the mound were analyzed with the following results expressed as mg/l :

	<u>NH3,</u>	<u>NO2,</u>	<u>NO3,</u>	<u>TKN</u>
Septic Pump Station	83	<2	<2	89
Mound Sand Well	0.9	<2	<2	5

The Laboratory of the Santa Rosa Subregional Wastewater Treatment system analyzed these samples. The inventors began a sampling series for nitrogen at several other installations using a Hach Field colorimeter tester that had a much higher level of resolution (0.1 mg/l).

Typical sampling consisted of one sample from the effluent portion of the septic tank and a sample obtained from a well dug approximately 6" from the sidewall of the leach trench serving the system. These wells were dug to the depth necessary to allow seepage of effluent into the well, typically about 3-4 feet.

The following results were seen:

<u>Site</u>	<u>Sample</u>	<u>NH3</u>	<u>NO3</u>
De Wolfe	D-Box	41	ND
	Soil	ND	0.6
Horowinski	Tank	23	0.2
	Soil	ND	<0.1
Madden	Tank	25	ND
	Soil	ND	ND
Treatment Center	Tank	90	ND
	Mound	ND	ND* (system was Positive at 3.0 Mg/l NO ₂)

Doherty	3/12	Tank	30	0.75
(No IOS-500)		Soil	<0.1	ND
	4/16	Tank	3.0	4.5
		Soil	27	ND

The Doherty results are of interest because this system was installed and operated for a time period without introduction of the IOS-500 culture. The system improved the water quality markedly and brought the level in the septic tank down to the desired level, indicating improved soil acceptance. As can be seen by the nitrogen levels this system appears to become a nitrifier, as is typical with most ATU's on the market. Since the aerator is within a tank capable of maintaining anaerobic pockets standard denitrification appears to be higher than in typical ATU's, which usually need recirculation for this purpose.

While TKN was not measured in the Doherty system denitrification in the tank was evident. The sum of the nitrate and the ammonia reduced significantly over the sampling period. What is unusual is the result in the soil. There, the nitrate was re-ammoniated when it reached the soil. This sampling hole showed much evidence of old bio-mat from the period prior to treatment when the system had failed and this is the likely source of the ammonia. This differs empirically from observations at the other systems where the IOS-500 culture had been added. Soils around the leach trench showed little evidence of organic bio-mat. The inventors attribute that to the fact that use of the device with inoculation sends excess bacteria of a facultative nature into the leach field. Being facultative anaerobes they are able to survive the journey through the anaerobic leach trench to the aerobic soils where they can rapidly consume the aged bio-mat organic carbon. The system without bacterial inoculation is colonized by randomly introduced spores entering with the air stream. These appear to be dominated by strict aerobes incapable of surviving passage into the soil from within the trench. Improvement in soil porosity is therefore a function of starvation of existing bio-mat anaerobes, as opposed to active bioremediation by introduced facultative organisms.

At this time it appears that addition of the IOS-500 bacterial culture plays an important role in allowing an almost total denitrification of treated effluent when it reaches the soil. Nitrifying bacteria in the tank appear to be totally excluded by the IOS-500 culture, so denitrification appears to be via the alternate direct aerobic pathway instead of the more typical anaerobic pathway. Most of the work on Aerobic Denitrification has been done by researchers outside the U.S. but they have identified members of the *Pseudomonas* genera, included in the IOS-500 culture, to be among the prominent denitrifiers, both aerobic and anaerobic.

White Knight™ components

There are two issues that appear to be of concern in the application and use of the *White Knight™* technology for use in the recovery of biologically failed onsite leach field systems—1) whether the system does, in fact, recover failed system and restore the system to original operating conditions, and 2) the longevity of the system for this recovery. The former, that is the science behind the technology, is well documented in several other papers and will not be addressed in this paper. The major components of the *White Knight™* are as follows:

- **THOMAS Linear Air Pump**, Model 5040A or 5078A (improved model of 5080A). Thomas air pumps are UL listed and are utilized in many NSF Standard 40 class 1 approved Aerobic Treatment Units. The technical information for these pumps is attached.
- **US Filter FlexDisc Fine Bubble Diffuser**. The following information is taken from the US Filter materials:
 - The FlexDisc fine bubble membrane diffuser is a 0.2m or 9in. disc diffuser with a 0.02m (0.75in.) NPT connection. FlexDisc diffusers are an ideal, low cost, energy efficient retrofit of existing coarse bubble diffusers that mount on the crown of a pipe. FlexDisc diffusers use the same proven EPDM membrane as DualAir diffusers.

FlexDisc diffusers can be used in municipal and industrial applications. The membrane holder incorporates an integral flow control orifice for balanced air distribution throughout the system. The diffuser is designed for airflow rates of 14.2L/s to 85.0L/s (0.5 to 3.0SCFM).

These diffusers are commonplace in all types of aeration systems for municipal and industrial wastewater treatment systems throughout the country. Many in the industry consider these membrane diffusers revolutionary.

- **Century Plastics Bio-Ring material**. This material is manufactured by Century for use in fixed film reactors for wastewater treatment. These random pack materials are well proven to be effective and long lasting.
- **Pipes**. All piping material used in the *White Knight™* system is ASTM certified and meets or exceeds the following standards:
 - 4"—ASTM F810
 - ½" PVC—ASTM D1785-96B
 - ½" CPVC—ASTM D2846 NSF-pw
- **IOS 500 Inoculant**. The bacteria utilized in the *White Knight™* are patented and well proven for use in wastewater systems. They are non-toxic and an MSDS and toxicity test results is included for your review.
- **System Housing**. The outer housing of the unit is roto-molded by Fralo Plastics, Inc., a manufacturer of several products for other wastewater systems.

The above components are utilized on a regular basis in other onsite wastewater treatment systems and have been proven in the field to be durable.

Warranty/Guarantee

It is important to note that the *White Knight*TM will be covered by a combined guarantee, warranty, and service contract system that are unprecedented in the industry. All *White Knights*TM are sold with one year of service included in the sales price. Service contracts are encouraged in subsequent years at the current suggested price of \$150/year. All components listed above are covered by the service contract and will be replaced without additional charge to the system owner. In addition, the system is warranted to reclaim a biologically clogged dispersal system or the system cost will be refunded to the system owner and the *White Knight*TM will be removed and the system returned to its original condition. Again, this warranty is tied to the homeowner maintaining the service contract.

Given this level of Warranty/Guarantee there is a high level of assurance that the future environmental and public health impacts of the onsite wastewater treatment/dispersal system will be minimized. In all cases, Knight Treatment Systems and the local service provider will maintain all service reports for systems. These records will be available for regulators' inspection upon request. In addition, any local regulator who requests regular reporting will receive that reporting.

Other Leach Field Recovery Systems

It is important at this juncture to establish the *White Knight*TM's peer group. The *White Knight*TM does not fit well into any current category of wastewater treatment system. It is not designed to treat wastewater within its structure, as most aerobic treatment systems do. It is not a septic tank additive, since it adjusts the environment within the unit so as to assure continued growth and development of the facultative, heterotrophic bacteria needed for the continued clearing and maintenance of the soil pores.

Interestingly, the most similar systems on the market are other leach field recovery systems. Systems such as Hydrogen Peroxide treatment and leach line jetting attempt to perform the same effect as the *White Knight*TM. Unfortunately, these types of systems are treating a symptom of the problem and not the underlying problem for the onsite wastewater treatment/dispersal system. The other systems are attempting to repair a biological problem with a mechanical solution.

In reviewing all of the products registered for use with onsite systems in the State of Maine, these products are, notably, not registered. The other commonly utilized system for failed systems is frequent tank pumping. Pumpers also are not required to be registered for their "work" at a homeowner's site. (They do have to be registered and/or licensed to transport and dispose of their waste, but not for what they do at the home.) It is not our intent to force these technologies into registration, but we feel that our system's goal is much more in line with these systems than those listed in the registration database for the State.

The information contained in this document is partly taken from the patent information and must be treated as confidential.

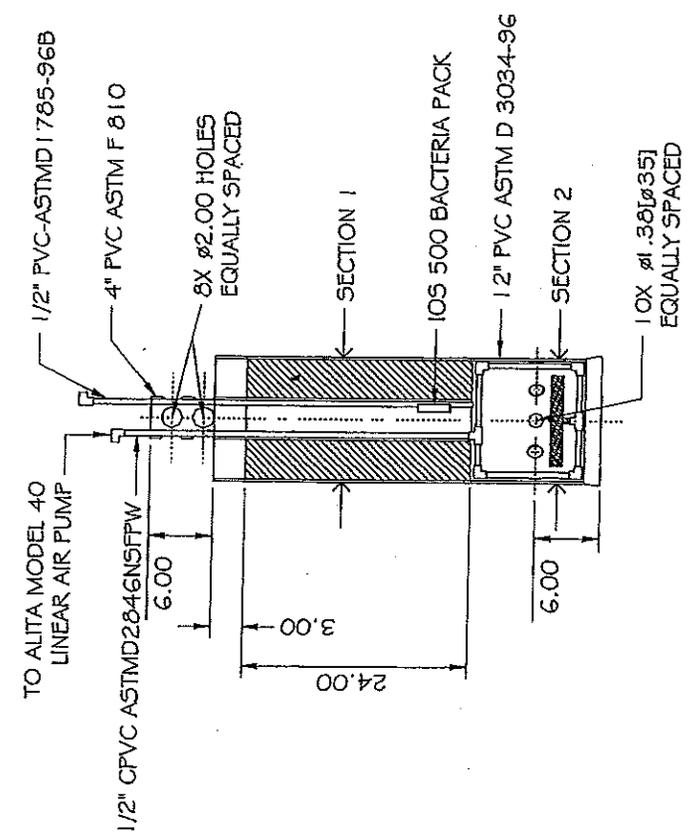
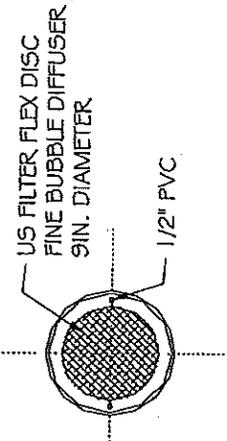
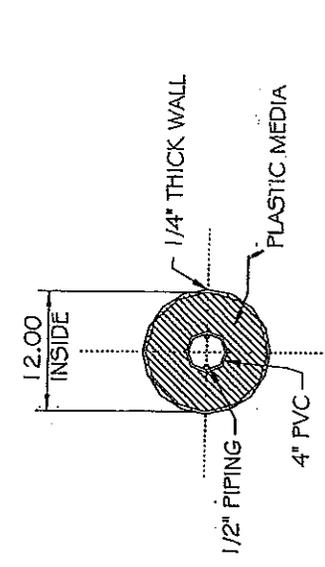
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REV	DESCRIPTION	DATE	APPROVED
8/5/01			



KNIGHT TREATMENT SYSTEMS	
White Knight™	
PROJECT NO.	20R6-1A
DATE	8/01
SCALE	
K NELSON	

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USER

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White Knight™ Consumer Warranty

System Performance

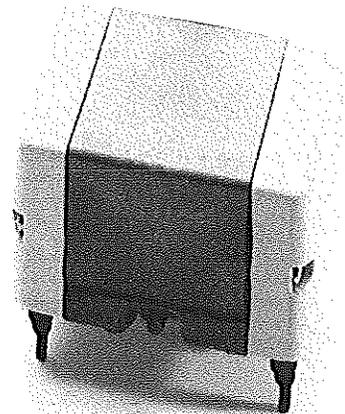
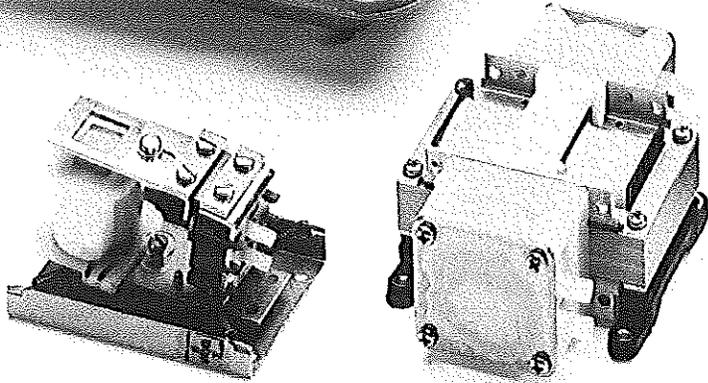
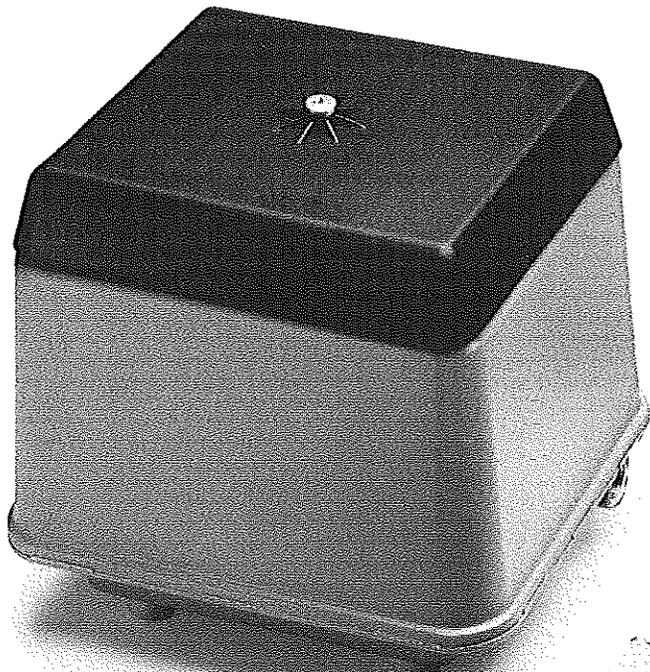
White Knight™ Dealer warrants that following proper installation of the WHITE KNIGHT™ Microbial Inoculator/Generator (patent pending) into a sound septic tank, which is followed by a biologically/organically clogged absorption system and operated under normal residential conditions, the WHITE KNIGHT™ will recover the soil's natural drainage abilities within 6 months of installation. The recovery period is directly dependent upon the degree of clogging present and may be impacted by seasonal conditions such as soil saturation (high ground water or flooding). Should recovery fail to occur within a 6-month time period beginning on date of installation, or clogging reoccurs after the initial recovery, the purchaser shall be entitled to request a 100% refund of the original purchase price from the Dealer. Upon the receipt of the valid request Dealer shall remove all WHITE KNIGHT™ components from the property, leaving minimal disturbance of the landscape, and then issue the refund. The property owner agrees to adhere to the guidelines provided at time of installation with regard to the use of household, chemical and other products. Upon absorption system recovery Dealer warrants that biological/organic clogging will not reoccur as long as a continuous service agreement remains in place with an authorized provider and the system is operated in adherence with the established guidelines as defined within Dealer's service agreement.

Component Coverage

Knight Treatment Systems, Inc. warrants all hard components of the WHITE KNIGHT™ that are installed at time of purchase for residential application and are operated under a continuous service agreement with an authorized provider. Knight Treatment Systems, Inc. shall cover the replacement cost of defective or worn out WHITE KNIGHT™ components due to normal operation and usage. Damage caused by misuse, abuse or acts of God, ie; lightning strike, etc. are not covered under this warranty and become the responsibility of the property owner. All other components of the onsite wastewater treatment system are not covered by this warranty and are the responsibility of the property owner.

OEM CATALOG

Vibrating/Linear Air Compressors & Vacuum Pumps



THOMAS[®]
COMPRESSORS
& VACUUM PUMPS

First Name in Innovation

Vibrating/Linear Air Compressors & Vacuum Pumps

● Classical Vibrating Armature

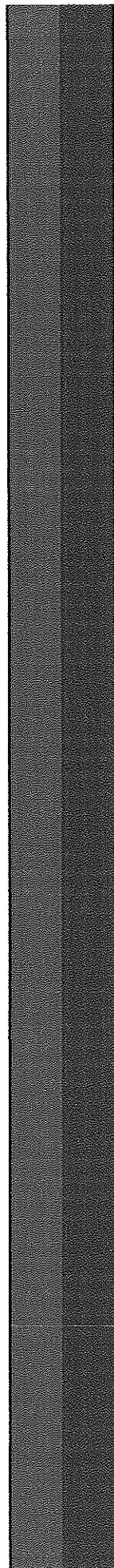
- Air Compressors ● Vacuum Pumps ● Specifications

● Linear

- Air Compressors ● Vacuum Pumps ● Specifications

● More Information

● Catalog Directory



THOMAS VIBRATING/LINEAR AIR COMPRESSORS & VACUUM PUMPS

Specially Designed for OEM Applications

Oil-less Linear Air Compressors and Vacuum Pumps

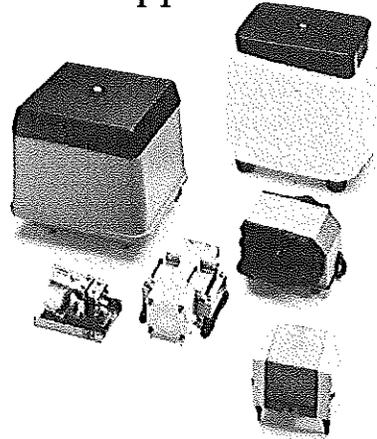
Reusable air filter that can be removed, cleaned and replaced on pressure models.

Energy source has low power consumption and low starting current amp draw.

Long-life diaphragm for dependable performance.

Cast aluminum housing for quiet operation.

Chamber designed for low pulsation.



For more information on Vibrating/Linear Air Compressors and Vacuum Pumps, or on the products listed below, contact your Thomas representative, or call or write Thomas Industries.

Piston Air Compressors and Vacuum Pumps

Liquid/Peristaltic Pumps

Rotary Air Compressors and Vacuum Pumps

Air Powered Vacuum Pumps

Diaphragm Air Compressors and Vacuum Pumps

The information presented in this material is based on technical data and test results of nominal units. It is believed to be accurate and reliable and is offered as an aid to help in the selection of Thomas products. It is the responsibility of the user to determine the suitability of the product for the intended use and the user assumes all risk and liability whatsoever in connection therewith. Thomas Industries does not warrant, guarantee or assume any obligation or liability in connection with this information.

NOTE: Models presented in this catalog are only a small sampling of those available. Models shown can be equipped with a choice of optional motors, heads, strokes, diaphragm materials, corrosion protections and other accessories. To obtain further information, contact your local Thomas distributor or Thomas' main office. Photos of models pictured in this catalog are representative of the series and do not represent a specific model number. Consult factory for detailed physical description.

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THOMAS[®]
COMPRESSORS
& VACUUM PUMPS

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920-457-4891
FAX 920-451-4276
Internet: <http://www.thomaspumps.com>



Maine Department of Human Services
Bureau of Health
Division of Health Engineering
Wastewater & Plumbing Control Program

APPLICATION FOR REGISTRATION OF
EXPERIMENTAL SYSTEM/INNOVATIVE TECHNOLOGY
OR ONSITE SEWAGE DISPOSAL SYSTEM PRODUCT

Please complete the following Sections. Please print or type.

Applicant

Company Name: Knight Treatment Systems, Inc.
 Contact Person: James C. Knight
 Address: 281 Co. Rt. 51A
 Town/City: Oswego State/Province: NY Zip Code: 13126
 Country: United States
 Telephone: 1-800-560-2454 e-mail: jayknight@aceve.com.net

Product

Product Name: White Knight
 Model: WK40 + WK78

Product Classification (choose one)

Primary or Secondary Treatment Unit

Septic Tank Extended Aerobic Treatment Unit Recirculating Aerobic Unit

Acrobic Fixed Film Unit Other (specify) Microbial Inoculator Generators

Effluent Filter

Septic Tank Outlet Filter Post-Tank Filter Other (specify) _____

Disposal Device

Gravel-less Disposal Pipe Gravel-less Disposal Bed Chamber, Plastic

Chamber, Other Other (specify) _____

Miscellaneous

Pipe Effluent Flow Distribution Device Other (specify) _____

Claim

Describe the product's features (attach additional sheets if necessary).

see attached sheets

Describe the product's performance (attach additional sheets if necessary).

see attached sheets

Has the product received National Sanitation Foundation or Canadian Standards Authority approval?

No Yes (If "yes", enclose a copy of the certification.)

IMPORTANT NOTE!

Don't forget to enclose relevant product literature, engineering specifications, studies, and third party certifications with this application.

I, James C. Knight, am the applicant agent for the applicant of the subject product.
(print name)

I state that the information submitted is correct to the best of my knowledge and understand that any falsification is reason for the Department to deny registration for use of the product in Maine.

[Signature]
 Signature of Applicant
 Signature of Agent for Applicant

5/9/02
Date

Jay Knight

From: "Mark C Noga" <marknoga@accucom.net>
To: "Jay Knight" <jayknight@accucom.net>
Sent: Monday, May 06, 2002 4:08 PM
Subject: Fw: Reply: Termination of Licensing Agmt

----- Original Message -----

From: Dan Wickham
To: Mark C Noga
Sent: Saturday, September 29, 2001 1:09 AM
Subject: Fw: Reply: Termination of Licensing Agmt

Jay and Mark,

I have had a chance to communicate with Steve O'Connor and he seems quite willing to continue to work within your program. In fact he had real appreciation for your efforts. After much discussion with Jerry we realize that much of the problem is an East Coast - West Coast difference of approaches. Having lived on both sides and been brought up in the middle (Michigan) I continue to marvel at the intensity of the cultural differences. We in the west simply cannot abide the rigidity of control that Easterners seem to need. (Remember that our ancestors all left the East because they were misfits).

We propose then to reconsider your exclusivity, but limit it to the Northeast. I need to look at a map but Jerry and I discussed a Line to include Pennsylvania, New York and North. This, in fact, represents about 10% of the septics in the country, making the \$30,000 invested so far (at 10% of the original \$300,000) a reasonable amount for such a territory.

This would not, necessarily, preclude you from working outside that territory (within the US), but would mean that any dealers outside the area of exclusivity would be open to competition from any other distributors we might work with in those areas.

To work toward this we would move directly to a binding contract, to be quickly developed by Bill Daniels, our attorney. He was open to the above and felt that it represented a workable solution. Such a contract would include certain provisos on our part:

1. You would be free to structure your program in your area any way you saw fit, including mandating the accessories that you specified in the contract you forwarded to us previously.
2. Steve O'Connor would obviously still be within your program. Any other dealers brought to you by us, all of whom are outside your area, would return to us.
3. I would still provide you with the IOS-500 bacteria for distribution to your network at the original terms of \$15 per unit.
4. The contract would be performance based at a level to be negotiated.
5. All R&D would be our exclusive domain. No further R&D work will be allowed without our

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specific written permission.

6. All national marketing, advertising, and representation would be our domain. Regional and local tradeshows and advertising would be available to you, but national shows such as the Pumper show, (at least this year's show), would not. We do not yet wish to participate in the pumper show and want you to withdraw your application for this years show.

7. The market sectors will be exclusively on-site (septic, grease-traps, agriculture, etc.). We are currently setting up our own program for Municipal waste in association with IOS Corporation which will encompass all dischargers to municipal systems.

I am very sorry that we careened off into such a divergent path. Rest assured that your shock at our abrupt termination of the national exclusivity was only equalled by our shock at finally seeing how far you had gotten along a path that we could not abide. We have both seen sides of each other that we may not like. Nevertheless, we still have great respect for your abilities and suitability for the north-eastern region. It is my fervent hope that time and financial success on both our parts will eventually restore a measure of comaraderie. You may, in fact, look back and see that freeing you from an onerous financial burden to us is the move that unleashed your real potential.

Dan

----- Original Message -----

From: Mark C Noga

To: Dan Wickham ; Jerry Fife

Cc: Jay Knight

Sent: Tuesday, September 25, 2001 12:05 PM

Subject: Reply: Termination of Licensing Agmt

Dan & Jerry,

Jay has been called to tend to a unexpected family medical situation this morning and has asked me to communicate with you on his behalf with regard to this pressing issue. Thus, the reason I am sending this email to you.

In the past both parties have held many long discussions with regard to the agreement its self, the principals behind it and the roles each party would hold. During the most recent conversation held between Jerry and myself this past Wednesday it was clear that a great deal of misinterpretation and lack of understanding had taken place on your end with regard to the distribution structure we had begun to put into place. At the conclusion of our

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conversation I felt confident, based on Jerry's responses, that the concerns he raised were appropriately addressed and that some suggested minor grammatical changes of the language within the "Distributor's" agreement would be forth coming from your end.

What we have received, your decision to dissolve the Licensing Agreement that we hold, and to which both parties worked diligently together on to arrive at, is totally unexpected following only 6 weeks of activity on our part. This has left us stunned and without a defined path to follow. At this juncture we need to clarify the current position you have placed us in. A response to the following is requested and expected:

- 1) Is our ability to order and purchase Piranha discontinued?
- 2) If not, what is the mechanism for ordering Piranha to fill pending sales orders we have generated?
- 3) Is it also your intent to break the other arrangement we hold together for the national tracking of the Piranha?
- 4) Which specific concepts of the Licensing Agreement, and the subsequent mutually agreed upon amendments yet to be included into the text, have we not met the intent of and how so?
- 5) Please provide us with the name, address and phone number of the attorney that you are consulting with.

Thank you for your direct and immediate response.

Mark C. Noga, VP

----- Original Message -----

From: [Dan Wickham](#)

To: [Mark C Noga](#)

Cc: WBD2nd@aol.com

Sent: Monday, September 24, 2001 9:26 PM

Subject: Exclusive distribution agreement

Jay and Mark,

I may have left the conversation this morning with a sense of equivocation over our intent to terminate the agreement, as it is currently constructed. I want to make it clear that is not the case. After much discussion Jerry and I have concluded that your company is simply not set up financially or strategically to serve the broader marketing goals we desire for our technology. Clearly the ability to communicate and agree on mutual marketing and distribution concepts is not there, either from us to you or from you to us.

It was critical to us to insure that we did not go more deeply along this path, given the essential role of timely market penetration. Once again, the agreement, as it stands, is no longer in force. It might make sense for your attorney to contact our attorney to discuss this particular action. Once we clarify the current status we can go forward to a more workable relation that will serve both our interests.

Dan Wickham



In the beginning

In the 1980's, scientists isolated and then patented a blend of naturally occurring soil microbes and have used them for the last several years to successfully remediate soils contaminated from oil spills. It has since been shown that these same patented microbes can be used to eliminate "biomat" clogging in septic systems as an environmentally safe alternative to leach field replacement.

WHITE KNIGHT™, a patent pending microbial/inoculator generator used for the delivery of these microbes into septic systems, is the result of this work. EnviroCheck can install the WHITE KNIGHT™ as an environmentally and economically sound alternative to leach field replacement for your home or business.

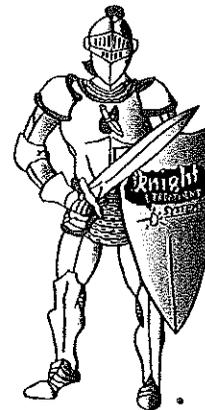


What the WHITE KNIGHT™ does for you.

- ✓ Restores failing septic systems
- ✓ Minimizes septic tank pumping
- ✓ Uses about 40 watts of power, literally pennies a day to operate
- ✓ Is quickly installed
- ✓ Minimal disturbance to landscaping
- ✓ Is the lowest cost treatment option
- ✓ Requires no permits to install in most states
- ✓ Includes money back guarantee
- ✓ With an annual low cost maintenance agreement

Call us at EnviroCheck for more info.

For more information about this environmentally sound leach field recovery through bioremediation, check out our web site, or call us at EnviroCheck. We'll be happy to answer any questions about the WHITE KNIGHT™ as well as cost and installation procedures.

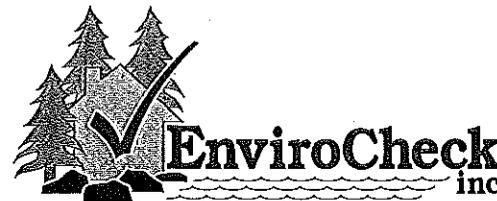


WHITE KNIGHT™

Microbial Inoculator Generator

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An alternative to leach field replacement.

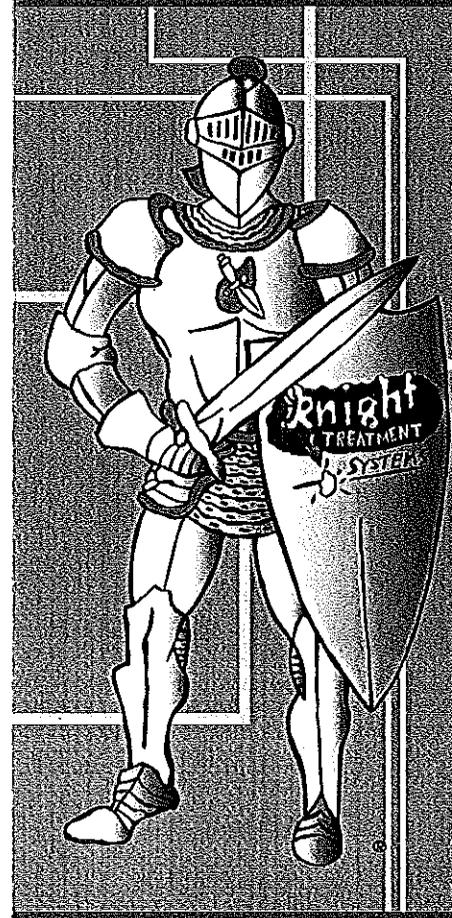


(207) 885-0851

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1-800-675-0851

An environmentally and economically sound alternative to leach field replacement.



WHITE KNIGHT™
Microbial Inoculator Generator



EnviroCheck



Septic/Leach Field Theory

Septic Tank Function - Standard traditional septic tanks are anaerobic (without air), and are designed to allow the separation and settling of organic solids materials (food for bacteria). A portion of these organic solid materials liquefy. Heavy solids settle to the bottom of the tank and form sludge. Buoyant materials such as fats, oil and greases float to the top creating scum. The accumulated sludge and scum will require frequent removal accomplished through a pump out of the tank. Any organic material that goes to the leach field is in a dissolved form.

Leach Field Function - Leach fields are designed to move the septic liquid into the aerobic (with air) portion of the soil where, under proper conditions, abundant natural bacteria, fungi, protozoa, worms, insects, etc. can digest the organic material contents, leaving clean water to pass into the soil.



The Real World

Septic Tank - We continuously introduce bacteria into our septic tanks when we flush our toilets. Natural selection has insured that these are weak bacteria. If they weren't weak, they would literally eat us from inside. To survive in our intestines, these bacteria protect themselves by secreting a heavy mucous coating. Because septic tanks are anaerobic, the organic load is only partially digested. These undigested organic materials, which are food for bacteria, pass out to the leach field in dissolved form. Solids Scum and sludge build up in the tank. Unpleasant odors occur. This build up results in the need for frequent pumping of the septic tank to prevent the separated materials from carrying over into the leach field.

Leach Field - Intestinal bacteria continue to secrete mucous as they collect on the soil surfaces in the leach field. The process plugs the soil pores with slime, commonly referred to as "biomat." Liquid from the septic tank cannot pass into the aerated soil to be purified. The leach field fails. Septic waste surfaces over the leach field or backs up into the house. The homeowner has a crisis. The EPA estimates that 95% of septic system failures, over a million a year, are caused by biomat

The WHITE KNIGHT™ Solution

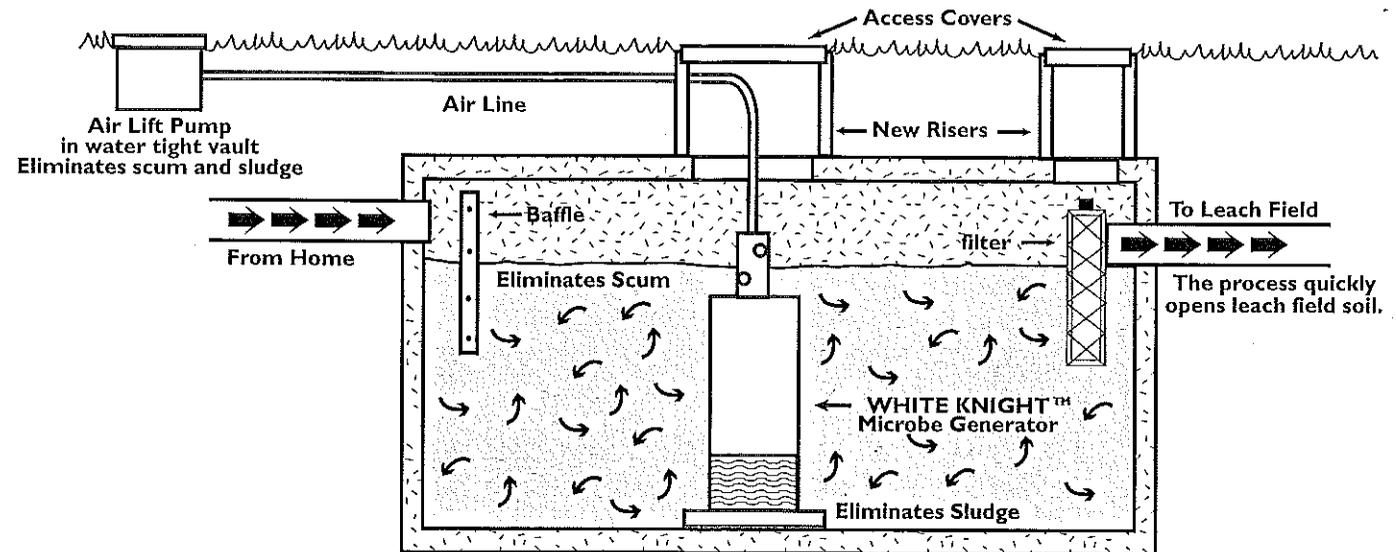


Illustration shows typical 1000 gallon concrete septic tank with WHITE KNIGHT™ Microbial/Inoculator Generator installed.

Septic Tank - By installing the WHITE KNIGHT™ Microbe Microbial Inoculator/Generator in the septic tank, a patented blend of natural, powerful soil bacteria are continuously introduced into the septic liquid. The airlift pump action of the WHITE KNIGHT™ aerates and circulates the entire contents of the septic tank through the WHITE KNIGHT™ a minimum of 20 times a day. The circulating liquid passes over the surface area within the WHITE KNIGHT™, where a dense colony of these powerful soil bacteria are introduced. This process allows organic material to be rapidly digested, which eliminates solids, scum and the need for frequent pumping.

Leach Field - WHITE KNIGHT™ treated septic liquid is now very low in organic food material, starving the resident slime-producing bacteria that cause the biomat clogging. The slime becomes food for the powerful soil bacteria generated by the WHITE KNIGHT™. The WHITE KNIGHT™ process quickly opens the soil pores of the leach field so that septic liquid can pass into the aerobic soil environment. Thus the WHITE KNIGHT™ will keep the soil open. Biomat clogging cannot

