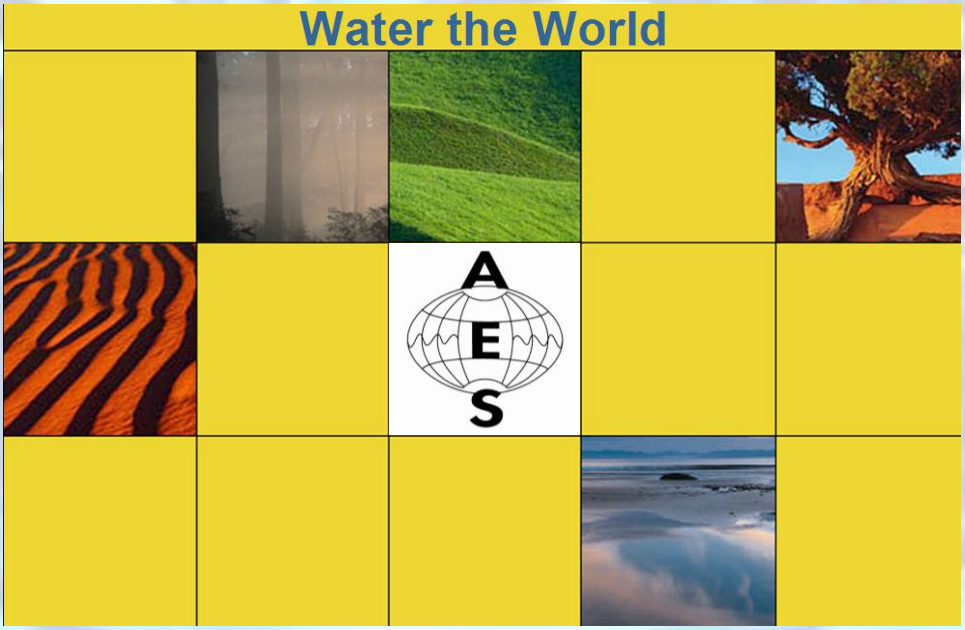
Advanced Environmental Systems, Inc.



Business Plan
2007

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1.0 EXECUTIVE SUMMARY

AES is the first and only company to cost-effectively turn wastewater (sewage) into "drinkable" water scaled down to serve a single family home. The "space shuttle" has been doing it for years. The latest AES technology (the "Reclamator") reclaims (repurifies) residential wastewater that meets the "USEPA Maximum Contaminant Level Goals" (MCLG), the national standard for drinking water. This "innovative alternative" technology has been verified by the National Sanitation Foundation (NSF/ANSI). The scaled up version to serve industrial, commercial and municipal is the MBR Alternative. These technologies incorporate the latest and most advanced biological process technology in the industry exclusive only to AES who holds the patent rights and has so far generated about **$10 million in revenue from clients such as Wal-Mart, Fluor Daniel, McDonalds and Costco.**

Advanced Environmental Systems (AES)
Equity Financing $2.5
Industry: Wastewater Reclamation Technologies
Model: Sales and Utility. Retain ownership and charge monthly service fee.
Historical aggregate revenue $10 million
Clients: Wal-Mart, Costco, Fluor Daniel.
Prospects: $1 billion across seven prospects

The defined goal of the Federal Water Pollution Control Act (1948), the Federal Law of the United States commonly known and referred to as the Clean Water Act (the1972 amendment herein additionally referred to as the "CWA"), is to restore and maintain the chemical, physical and biological integrity of the nation's waters and to accomplish this goal by requiring exclusive application of only the "best available technology" (BAT) which is the most economical and cost effective advanced alternative currently available, which eliminates the discharge of pollutants, to serve every new pollution abatement application throughout the entire United States (US Code, Title 33, Chapter 26). Until now, no company has clearly possessed a discernable "best" technology. Now, AES, exclusively having the BAT, wishes to enjoy taking advantage of the **"safe drinking water driven" multi-trillion dollar global market opportunity, $1 trillion of which is in the US alone.** AES has developed, proven and refined this "scalable to all industry-wide application" technology in over 100 worldwide installations during the past 20 years, successfully bringing it to this *unprecedented, hybrid, above state-of–the-art best available technology level*. The BAT will enable AES to benefit as the solution for "water reclamation/ repurification" and/or "groundwater remediation/ protection/ recharge" projects such as shown below:

Targets	Installation	Gross Profit at 40% Margin	Years	Annual Installation	Annuity at Full Installation
Los Osos	$75,000,000	$30,000,000	5	$15,000,000	$2,000,000
Hawaii	$150,000,000	$60,000,000	10	$15,000,000	$3,600,000
Alaska	$390,000,000	$156,000,000	10	$39,000,000	$7,800,000
Lake Havasu	$375,000,000	$150,000,000	10	$37,500,000	$7,500,000
Needles	$7,000,000	$2,800,000	5	$1,400,000	n/a
El Salvador (GHT)	$12,250,000	$4,900,000	4	$3,062,500	n/a
Alabama	$60,000,000	$24,000,000	15	$4,000,000	$5,040,000
Total	$1,069,250,000	$427,700,000		$114,962,500	$25,940,000
5% Closing Ratio	$53,462,500	$21,385,000			$1,297,000
Additional Markets					
Chesapeake Bay	$8,500,000,000	$3,400,000,000	20	$170,000,000	n/a
Retrofit all US storm drains	$130,000,000,000	$52,000,000,000	35	$3,714,285,714	n/a

AES currently has a relationship with the **IFC World Bank Group** in association with the $188M project in El Salvador. A $95,000 contract for a feasibility study is being paid by IFC via KPMG. IFC representatives suggest the first 15% of the $12.25M cost for wastewater infrastructure using the AES technology to serve the project could be forthcoming this year.

This advanced AES "water repurification" technology is the only full range technology capable of feasibly repurifing wastewater streams associated with a "small" single family dwelling (an "onsite" or "decentralized" application), up to a "large" municipal type (a "big pipe" or "centralized" application) system serving an entire municipality.

In March 2003, the EPA, citing US Census data, stated that 33 percent of new residential development has onsite individual or clustered wastewater treatment systems, and these currently serve approximately 25% of US households (about 26 million). Data suggests that 10%-20% of septic systems are malfunctioning to some degree. In recent years it has determined that septic systems, whether functioning properly or not, discharge toxic (nitrate) pollutants which threaten the integrity of our Nation's waters. The CWA requires if technology that will eliminate this discharge of pollutants is cost effective and available; it is to be specified by "brand name or equal." This advanced technology of AES is such technology and there is no equal.

Developing nations need the AES technology to provide a new water source supply of drinking water. Six thousand lives are lost daily (4,000 of which are children) as a result of unsanitary drinking water conditions worldwide. Modular units can be established along rivers or other polluted water sources in developing countries to reclaim and repurify these drinking water sources to a "safe drinking water" quality. Although in the US, this reclaimed water is not allowed for direct drinking water reuse, it still meets "treated drinking water quality" standards and actually produces a better quality water than many US public drinking water sources.

Water is not distributed uniformly around the world, and it is not necessarily concentrated where the largest numbers of people reside. Demand for water outstrips supply in a growing number of countries -- and the quality of that supply is rapidly declining.

At The Nature Conservancy on May 11, 2006, the Coca-Cola Company Chairman and CEO E. Neville Isdell, agreed "there is a water crisis." Conservation, filtering and recycling help abate this crisis, and now with AES, the technology can economically and cost-effectively serve residents from Las Vegas to Libya.

This advanced "innovative and alternative" technology accomplishes in a single basin what all other systems require multiple basins to accomplish. This translates to lower capital costs and operating costs.

"Water promises to be for the 21st century what oil was to the 20th century: the precious commodity that determines the wealth of nations."

- Quote from a 2000 issue of Fortune magazine

The Company seeks to have a strategic relationship with a strong financial entity that can provide $2.5 million bridge funds. Individual equity investors will be accepted on a limited basis. Terms are negotiable.

1.1 OBJECTIVES

1) Secure necessary capital resources for marketing and a fast ramp up
2) Acquire the Frost & Sullivan Report and two (2) written CWA Legal Opinions
3) Present the F&S Report and LOs to the EPA Administrator
4) Re-establish business model with recurring revenue streams
5) Undercut competitor prices by 20% while maximizing profits
6) Promote market awareness of the AES BAT, required by the CWA, availability
7) Initiate the "Beta vs. VHS" concept program establishing an AES "family of companies" through initiating OEM Partnership Licensing Agreements
8) Implement Globally, saving lives through providing "safe drinking water" solutions
9) Provide a lucrative exit strategy to equity investors via a public offering

1.2 MISSION

The AES mission, having the "best available technology," is to meet the objectives of the Clean Water Act, achieving its goal to restore and maintain the chemical, physical and biological integrity of the nation's waters; to distribute this technology to all countries to restore, maintain and preserve the integrity of global waters; and, as a good steward of this God given technology, reduce the number of lives lost daily by making available safe drinking water in all areas of the World. More than one billion people lack access to a safe supply of drinking water (One life is lost every 15 seconds due to unsanitary drinking water conditions, over 6,000 lives per day).

1.3 VISION

"The most pathetic person in the world is someone who has sight, but has no vision" --Helen Keller.

We envision the day when everyone in the world can take a safe drink of water.

This innovative **"sewage to drinking water"** technology, as the new "National Standard of Performance" (CWA 33§1316) will "standardize" and "monopolize" the United States wastewater management market as a new industry paradigm and standard and be sought after globally. AES will enter into strategic partnership arrangements with representatives and governments globally to establish safe drinking water sources throughout the world. Current competitors, having outdated technologies, will join the AES "family of companies" through OEM Partnership Licensing Agreements, unifying the currently fragmented industry and meet market demand. This new innovative water repurification technology will become the next new major household appliance required for all new construction. The 26 million existing septic systems will be required to be upgraded upon sale of property to the Reclamator technology. Sewer collection systems will become a "thing of the past".

> "Filthy drinking water, mosquitoes and other avoidable menaces kill 13 million people a year, the World Health Organization (WHO) reported via the Associated Press. Children account for 94 percent of deaths from diarrhea, one of the biggest childhood killers, resulting largely from unsafe water, it said.

1.4 KEYS TO SUCCESS

- Having the “best available technology” required by federal law that reclaimes / repurifies water from waste (polluted) water
- Having a strong ongoin research and development program to keep the “best” the “best” and maintaining control of the market
- Having a strong global patent portfolio
- Having the CWA requiring exclusive application of best available technology
- Having superior knowledge of the CWA, industry and market
- Having a comprehensive knowledge of competors and their products
- Having an already established marketing base of competitors in need of advanced technology meeting “best available technology” requirements
- Having a 17 year track record with over 100 systems operating internationally
- Having multiple third party validations (technology and federal requirements)
- Having an over abundance of human resources to initiate plan
- Having past projects providing industrywide applications from 1.5 mgd down
- Having future projects currently in the pipeline worth over $1 billion
- Having innovative marketing apporaches that can include local public utilities in the revenue stream, creating a win-win for public and private
- Having exclusive technology that will enable AES to overcome existing competitive interests in centralized projects which produces repurified water meeting the EPA non-enforcable “treated drinking water” standards

Measures of Performance

- ❖ Exceed annual revenue projections herein by a large multiple
- ❖ Record all historical revenue, or $10 million, within 24 months of financing
- ❖ Steady gross margins of 47% after 2008
- ❖ The Company will reach EBIT margins of 10% in 2009
- ❖ Close 5% of revenue expected from current proposals outstanding by 2010, or $53 million, a small fraction of actual potential
- ❖ The Company will grow shareholder equity to at least $13 million by 2011

2.0 COMPANY SUMMARY

Advanced Environmental Systems, Inc. (herein referred to as “AES” or the “Company”) was started in 1987. The Company began in Hawaii where several prototypes of the current technology were installed throughout the island state. In the last few years, the demand for this technology has increased drastically. In the continental United States, drought and water conservation pressures in the Southwest and pollution issues throughout the rest of the nation are in great need for an efficient and economical alternative wastewater reclamation and repurification solution, irrespective of the Clean Water Act requirements.

AES has proven its advanced innovative and alternative technology is the “Best Available Technology” per criteria provided in the CWA. It is the most economical and cost-effective advanced wastewater treatment alternative, consisting of new and improved treatment process and reclamation techniques. It provides for a new method of waste management that will allow for the confinement of pollutants at the source, preventing them from being able to migrate via a sewer collection system, causing water and other environmental pollution. Reclaiming the water for reuse at the source provides for the maximum conservation of the water resource and greatest degree of effluent reduction. The AES advanced alternative technology’s waste treatment techniques prevent the “waste” of water, eliminates the need for a sewer service, i.e. a community sewer collection system, and makes 100% of all water used (in a household for example) available to recycle for a beneficial reuse. The CWA defines such a technology meeting these criteria and which will serve industrywide applications as the “National Standard of Performance” and requires such technology, if available, to serve every new pollution abatement application throughout the nation. The AES advanced alternative technology is the first and only technology to achieve this standard and is available to serve the entire global market.

This advanced technology of AES in conjunction with the requirements of the CWA has created a unique opportunity for this Company to enjoy taking advantage of a “federally mandated monopoly” in a $1 trillion plus US marketplace.

The technology is currently protected by six issued US patents and three provisional patents (patents pending) filed in 2006. Over 100 systems, of the biological aspect of this advanced technology, ranging in sizes from 1.5 million gallons per day down to a single family home system, were installed from 1991 through 2002. Over the past four years, the Company has invested its resources to bring the technology up to an advanced “unprecedented” level to set a new standard in all the categories of criteria defined within the CWA. AES now has the technology that the regulatory community is required to specify by brand name or equal, and as that exclusive “best available demonstrated control technology” (BADCT), is required to be the specified technology to serve all pollution abatement applications throughout the nation. In preparation for this accomplishment, AES developed the marketing strategy and product resources to support the supply of the technology to meet this forthcoming demand. The research and development necessary to provide an advanced

innovative and alternative technology capable of consistently and reliably accomplishing this level of performance has been a success. However, during this four year period, revenue has not been earned and sales and marketing momentum has been lost. The loss of momentum was primarily due to the discovery that a new marketing approach was necessary. The old methods of marketing that were previously utilized by the Company (also commonly used by industry) for the previous version of the technology will no longer be sufficient. The new approach will enable market domination while retaining product control and exclusive rights to the new water resource produced by the technology.

The Company seeks $2,500,000.00 in capital. Terms are subject to negotiation. Management's most desirable and ideal situation would be to find that "financial" partner who sees and can share this vision to enable the "unrestricted" business development of this organization allowing it to excel as expediently as possible. Such financial partner could additionally provide financing as needed for all future projects.

Available Financial Resources for this Clean Water Act Compliant Technology
Upon implementation of marketing and project undertaking, Federal grants can provide a significant portion of funding for projects. For example, the AES technology produces a "new water source" and qualifies for application as an "alternative water source project" as defined in the CWA. Alternative water source projects using best available technology qualify for federal grant assistance of up to 50% of project costs. This will further reduce AES's lifecycle costs below the competition. Management is aligned with grant writers, such as Wanda Pozz based in New York, NY, who will assist in obtaining funds from the following:

Clean Water State Revolving Fund[1]
(CWSRF) is a low-interest or no-interest source of funding for the installation, repair, and upgrading of "decentralized" wastewater systems in small-town, rural, and suburban areas, which can cause damage to the environment if not properly maintained. Nationally, the CWSRF has in excess of $42 billion in assets and has issued nearly $39 billion in loans since 1988. The CWSRF currently is funding over $4 billion worth of water quality projects annually.

The EPA State Revolving Funds provided close to $7 billion in assistance for 2006. The Clean Water and Drinking Water State Revolving Fund (SRF) programs have posted updated financial and programmatic information to the EPA web site. The SRFs are the EPA's premier financing programs for wastewater and drinking water infrastructure. The EPA provides federal funding to states for important public health and environmental projects. In 2006, the CWSRF provided more than $5 billion for wastewater infrastructure, nonpoint source pollution control, and watershed and estuary management water quality projects. Cumulatively the program has provided close to $58 billion since 1988. The Drinking Water State Revolving Fund (DWSRF) provided $1.7 billion in 2006, and has cumulatively provided more than $11 billion for drinking water infrastructure projects since 1997. States have also spent more than $800 million for other types of activities that support their drinking water programs. The CWSRF data is available at

[1] http://www.ocwagis.org/website/downloads/WastewaterMonth/Publications/srf_for_decentralized_systems.pdf

http://www.epa.gov/owm/cwfinance/cwsrf/cwnims/index.htm. The DWSRF data is available at http://www.epa.gov/safewater/dwsrf/dwnims.html.

SWRCB[2]

The State Water Resources Control Board, through the Division of Financial Assistance, provides financial assistance for water recycling projects. Every project that the AES technology is involved with will be a "water recycling project." The re-purified water the technology produces is suited for above or below ground uses. Water is suited for "indirect potable reuse," which replenishes public drinking water resources.

2.1 COMPANY OWNERSHIP & PERSONNEL

Tom Murphy – President
Michael Robbins – Director of Finance
Cathy Santa Cruz – Patent Portfolio Manager
Douglas Hwang – Company Equipment and Process Director
Fidel Eviota P.E. – Project Manager, Hawaii
Bob McCown – Project Development, Alaska

Mr. Murphy began his career in Alaska in 1972 and has been in the wastewater management industry for 35 years. His extensive background within the industry ranges from owning one of the largest septic pumping service businesses in Alaska, owning and operating his own commercial septage waste receiving and treatment facility, to owning and operating an excavation and construction business and personally holding a State Certification to design, install and repair all types of onsite residential and commercial wastewater treatment facilities since the early 1980s. Prior to the development of the AES technology, Murphy had associations with many treatment technology manufactures and process technology gurus. Murphy, as a biological process technology specialist, is sole inventor of the largest technology breakthrough since 1903. Murphy owns all associated patents, which are exclusively licensed by the Company. He has deep knowledge of the competition and all other available technologies. He is an industry recognized expert on the Clean Water Act and is currently writing a publication for distribution.

Ms. Murphy has provided management, administration and executive assistant responsibilities relating to sales, ordering, shipping, installations of all the AES systems and office administration since 1992, heading up the development of marketing videos, technology and product bulletins, brochures, and engineering manuals. She also coordinates national trade show displays. Ms. Murphy currently holds all shares of issued stock. She has an agreement with Mr. Murphy to surrender all shares. Ownership is subject to change upon closing of this offering.

[2] http://www.swrcb.ca.gov/recycling/index.html

Mr. Robbins has 17 years experience, including investor relations and money management. Robbins is a relatively new team member. He has the relationships and financial experience to elevate the Company into a publicly traded entity.

Ms. Santa Cruz has assisted Murphy in all patent related issues since his first patent application approximately 15 years ago. Santa Cruz originally assisted her father, Harold (Hal) Hull who had over 90 patents to his name, and was Murphy's mentor since 1991. Since Hal's passing away in 1997, Santa Cruz continues to manage all national and international patent issues for Murphy, conducts searches and participates in all new applications.

Mr. Hwang is President of Pro Equipment as well as a licensed engineer who has been in the wastewater industry since 1985. Hwang holds a BS and MS in environmental engineering. Hwang assisted Murphy on the development of the MBR Alternative Module as a co-inventor. Hwang specializes in industrial wastewater treatment processes and technologies with multifaceted levels of experience in all aspects of strategic planning of daily business operations including sales, marketing, finance, accounting, engineering, manufacturing, innovation & improvements and customer services. Pro Equipment offers over 35 different products and equipment to serve the wastewater industry. His offices in Waukesha, WI will serve as a distribution center in the Midwest for the AES technology.

Mr. Eviota is a professional engineer and specialized project manager. Eviota has been associated with the Company as a license representative since 1998. Eviota spearheaded an AES $150 million dollar project development in the Philippines for Cebu City that has been approved, and he is now participating in the development of the Hawaii cesspool closure project for AES. The EPA has mandated the closure of over 3,000 large capacity cesspools, mostly commercial, estimated to cost $100 - $200 million. Following this, there are 180,000 residential cesspools which will additionally be required to be closed at a project value of $2 - $3 billion.

Mr. McCown was originally employed by Murphy in Alaska in the early 1980s. McCown, a private pilot with his own plane, has a direct relationship with the Alaska Department of Health and is very well politically connected with the Alaska Native Association. McCown is prepared to spearhead the marketing program to provide the AES technology to all 130 Alaska native villages, which have been mandated by the EPA to have wastewater treatment systems installed at each village. Federal grant funds have been appropriated to fund the estimated $1.5 billion plus endeavor.

The Company currently has two advisors in the academic community and engineering community, Dr. Paul Trotta and Justin Ramsey at Northern Arizona State University. There are also advisors who are major industry authors. Additional employees will be hired subject to financing, and they will increase with revenue. Murphy has developed many outside management resources to draw from as needed.

Revenue per employee will increase as license and ongoing service revenue becomes a more significant component of the business.

2.2 COMPANY HEADQUARTERS

Currently, the Company has an office and shop in Sparks, Nevada. A new office will be established upon financing, with a location sensitive to human capital. Customers are too diverse geographically to influence the headquarters location. The Company will establish headquarters in an office with ample adjacent space for expansion, possibly in an area with high demand, such as Central California or Arizona. There will also be a eventual need to establish "District" headquarters in different market areas of the US such as in Hawaii and Alaska. Most global markets will be served through licensing relationships.

2.3 REGIONAL BRANCH OFFICES

Branch offices with a shop and storage yard will be established at each decentralized project. Projects such as Los Osos, California, where there is a need for 5,000 plus systems, will be done under a separate private organization that will be established for that specific project. These will be formed as their own seperate "regional" entity. These regional entities, whether "C" corporations or LLCs, will retain ownership of the the AES alternative technologies as possible, and trained service personel will provide installation and ongoing operation and maintenance services for these projects. These entities will operate much like a private "water utility." They will provide a service of eliminating the discharge of pollutants to the customers, and charge a monthly service fee. The business model is parallel to that of the largest public garbage service company known as Waste Management. They provide solid waste collection and service of their garbage containers. AES will provide liquid waste collection, treatment services utilizing its "containers" or "Reclamators". Traditional waste management companies enter into a franchise agreement with the public utility for a percentage of the monthly fees, typically 5%, to collect their monthly service charges and to police the collection of those monthly charges. AES has developed the same franchise agreement to accomplish the same.

The Company will also own wastewater treatment or rather "water reclamation" facilities for decentralized cluster projects such as new housing developments. It will provide for the ongoing monthly service or in some cases, contract with the local utility service providers to provide the operating and maintenance service. Branch offices will be established as need for AES service providers at each of these ongoing projects.

3.0 PRODUCTS & SERVICES

Advanced Environmental Systems, Inc. (AES) has been the exclusive provider of the most advanced "biological nutrient removal" (BNR) wastewater treatment process technology available within the wastewater industry since 1990. Recently, "physical" filtration has become an available addition to this superior biological treatment process. The AES process technology is referred to as the Intermittent Decant Extended Aeration (IDEA) activated sludge process, which occurs within a Continuous Feed Cyclic Reactor (CFCR). It is the most flexible "biological" process technology available and as such meets industrywide application requirements. The systems are available in sizes to treat virtually any domestic wastewater stream or sewage flow, which can be biologically treated, to "repurified" water quality. The AES technology may be applied in virtually any geometric configuration of tankage or containment. This exclusive advanced process technology consistently produces an unprecedented quality of reclaimed and repurified water in only a single tank (basin or reactor) and is available for application in all areas of the market.

The Company has over 100 installations worldwide with clients such as Wall Mart, Costco, McDonald's, and Flour Daniel. Over the past four years, the Company has perfected the technology to the point of being classified as the 'best available demonstrated controlled technology' (BADCT), and accomplishes the goal of the Clean Water Act which is to, where possible, "eliminate the discharge of pollutants" (33US Code, Chapter 26, Sec. 1316).

Compared to all other available wastewater treatment systems and technologies, AES systems incorporate the "best" technology available, which provides the "greatest degree of effluent reduction achievable." The AES process technology is the most significant development in biological process technology since 1903, and is exclusive to AES for the world market. In all applications to date, it has provided the most "cost-effective" solution available. It is the most "economical" solution by more than 15% as compared to any other available alternative. The CWA classifies such technology as the "best available demonstrated control technology" (BADCT).

Products

Decentralized (onsite):

BESTEP™ 10 - Reclaimed water for below ground use. Up to 1,500 gpd.

BESTEP UF-900 – Reclaimed water potable with physical filtration. Up to 1,500 gpd.

Decentralized (cluster):

Super IDEA – Commercial & clusters from 1500-350k gpd.

Centralized (big pipe collection):

Grand IDEA – Large Super IDEA version up to 5 million gpd

MECAIR – Simple, less sensitive prepackaged vertical cylindrical version for developing nations. 50k-2.5 million gpd.

AIROMIX – Lined pond/mechanical aeration, low cost and simple operation requirements. 50k-5 + million gpd.

ENVIROPro - Lined pond/diffused aeration, low energy requirements but high technical labor. 50k-1 million gpd.

gpd: gallons per day

The wastewater industry is driven by law, and the Federal Water Pollution Control Act enacted in 1948. It was amended by Congress in 1972 and is commonly known as the Clean Water Act. This CWA of the United States requires the implementation of the "best practicable control technology currently available" to be specified by "brand name or equal" to be applied in every pollution abatement application nationally. This includes new projects and the repair of failing systems. There currently is no "equal" to the advanced innovative IDEA-CFCR biological process technology alternative.

3.1 PRODUCT LINE

Domestic/Residential Strength Wastewater Applications
Municipalities, cities, towns, apartment buildings, townhouses, condominium complexes, subdivisions, mobile home parks, individual residences, campgrounds, retreats, parks, churches and schools.

Commercial Strength Wastewater Applications
Motels, hotels, inns, resorts, restaurants, shopping centers, malls, golf and country clubs, rest areas, truck stops, airports, hospitals, business and industrial parks and office buildings to name a few.

Industrial Strength Wastewater Applications
Food processing and rendering, textile mills, landfill leachate, meat and poultry processing, septage and pretreatment requirements prior to discharge.

- Systems for flows from 250 gpd to 25 million gallons per day
- Ability to retrofit failing systems with the advanced IDEA-CFCR technology
- Treatment of Domestic / Commercial / Industrial waste streams
- Single basin and/or expandable configurations in parallel
- Flexibility of the advanced IDEA-CFCR technology allows for the process to be provided in below ground, in ground or above ground reactor basins
- Depending on plant size, reactor options and geometric configurations may consist of fiberglass, rectangular or vertical cylindrical steel, precast or poured in place concrete, or poly-lined earthen basins.
- Complete design, submittal, manufacture, assembly, installation, start-up, & operator training for project specific turn-key systems
- Small footprint compared to conventional systems

Effluent Discharge Options
Due to the high treatment capabilities of the process systems, the discharged water can be used in a number of ways:

Stream discharge, subsurface discharge into underground excavations such as a drainfield for indirect potable water reuse and public water supply remediation and recharge, any type of irrigation and with the latest technological improvements, 100% beneficial household reuse such as toilet flushing, clothes washing, showers, and any other beneficial household water uses except for actual drinking.

Tankage and Configuration Options
Precast concrete [typically less than 1 million gallons per day (mgd)] built to accept the advanced IDEA-CFCR process technology; pre-engineered and pre-designed equipment package; poured in place concrete (virtually any volumetric capacity); horizontal cylindrical fiberglass; prefabricated packaged systems [up to 75,000 gallon per day (gpd) each]; rectangular steel prefabricated packaged systems (up to 350,000 gpd); vertical cylindrical bolt together or welded steel packaged systems (up to 2.5 mgd); poly-lined earthen basins (up to several mgd).

The AES flagship product is its BESTEP onsite single family residential system that can be provided in virtually any locally manufactured “septic” type tank, regardless of the material of construction, i.e. poly, concrete or fiberglass. However, the tankage

AES provides with the unit is prefabricated injection molded fiberglass. This particular tankage is designed to be nested enabling shipping of 36 tanks per truck load and assembled at the project site.

The Company already has established Original Equipment Manufacture (OEM) relationships with all tankage and/or material suppliers utilized in each configuration.

Basic Models of Systems

The BESTEP 10, and now the BESTEP UF-900 is for individual residential applications; the Super-IDEA is for commercial size applications; the Grand-IDEA is for large concrete tankage applications such as municipal or industrial; the MECAIR is for large vertical cylindrical applications utilizing mechanical aeration equipment; the AIROMIX is typically a poly or concrete lined in-ground earthen basin designed to utilize mechanical aeration and mixing equipment; and the ENVIROPro, which is also a poly or concrete lined in-ground earthen basin, is designed to utilize floating diffused aeration equipment. Other models have been designed and are available, but are not yet being marketed.

Engineering Design Manuals Completed

The Engineering Manual includes the Company's brochures, an introduction to the Company, documents on applications and adaptability of the products, a section that discusses the technology, and comparisons of the AES technology to the other available technologies. AES also provides IDEA-CFCR process design calculations for all basin configurations, specifications and drawings for AES Super-IDEA, Grand-IDEA, AES MECAIR, AES AIROMIX and AES ENVIROPRO. The last section, which is MISCELLANEOUS, has a reference list, installation list, an information request form and a glossary of terms. The Engineering Manual will be updated to incorporate the latest technology and product developments. The Engineering Manual only pertains to commercial, industrial, and municipal size systems. The residential units have a manual of their own.

Owner's Manuals Completed

The Owner's Manual for the BESTEP 10 has been completed. Minor changes are necessary to complete the Owner's Manual for the BESTEP UF-900. It is a standard industry practice that Engineering Design Manuals are not needed for onsite systems, as they are already pre-engineered and pre-designed. AES is going to offer the same pre-engineered and pre-designed benefit for all of its systems up to 2.5 million gallons per day in size. This could save the customer from 15%-35% of total project cost by eliminating engineering and design fees which are currently incurred as a part of the overall wastewater management process.

Currently, each Owner's Manual for commercial, industrial and municipal systems are generated on a system-by-system basis. However, the majority of the manual is the same information, which is incorporated from the Design Manual plus the individual equipment manufactures cut sheets, warrantees, and O&M recommendations for each piece of equipment provided in each particular installed system. AES has provided Owner's Manuals for over 100 systems that it has sold.

Computer Design Programs
The Company already has computer design programs developed for every geometric configuration of tankage available. AES has hundreds of specific and generic AutoCAD drawings. The Company can provide a complete engineering and design proposal to a project of any size that can be generated in only a few hours, regardless of the size or type of tankage required.

OEM Relationships Established
The Company already has OEM relationships with equipment suppliers necessary for any and all equipment needed to provide all models of their systems.

3.2 COMPLETED PROJECTS

Below please find a partial list of projects where AES has installed new facilities or retrofitted existing brands of wastewater treatment systems which were failing without the advanced AES technology.

Failing Systems Retrofitted with AES's Advanced IDEA-CFCR Technology

- Calipjo Residence, Kauai, HI
- Carson Family Hotel, Saipan
- Dehay Rental Home Unit, Haleiwa, HI
- Germaine's Luau, Oahu, HI
- Hanalei Shopping Plaza - Phase One, Hanalei, HI
- Hickory Valley Golf Club, Gilbertsville, PA
- Hudson Foods, Inc., Hope, AR
- Laurelville Mennonite Church Camp, Mt. Pleasant, PA
- Malibu Escrow Corporation, Malibu, CA
- Matson Navigation, Kahului, HI
- McDonald's Restaurant – Haleiwa, HI
- Midway Center, Kahului, HI
- Semonsen Residence, Los Osos, CA
- Shaddox Residence, Lake Havasu City, AZ
- Valley View Mobile Home Park, State Line, PA
- Vons Supermarkets, Los Osos, CA

International Projects
- Acumex, Monterrey, Mexico
- Fluor Daniel Engineers & Constructors, Ltd., Sumbawa, Indonesia (5 projects)
- Gardenhome Shopping Plaza, Bangkok, Thailand
- McDonalds Restaurants, Saipan
- Price Club Mexico, Acapulco, Mexico
- Price Club Mexico, Mexicali, Mexico
- Price Club Mexico, Hermosillo, Mexico
- PT Newmont Nusa Tenggara, Sumbawa, Indonesia (2 Projects)
- Vibul Thani Tower Co., Bangkok, Thailand

Domestic Projects

- Aervo Pacific Industrial Park, Gardnerville, NV
- Alii Lani Condominiums, Kauai, HI
- Alii Lani Townhomes, Kailua Kona, HI
- Apuhihi Condominiums, Oahu, HI
- B.U.M. Equipment - Malibu Mansion, Malibu, CA
- Barclay Square, Sisters, OR
- Christian Riese Lassen Residence, Oahu, HI
- Dave and Jane's Crabhouse, PA
- Grand Waikapu Resort, Wailuku, HI
- Grand Waikapu Resort Comfort Stations, Waliuku, HI
- Grand Waikapu Resort Maintenance Facility, Wailuku, HI
- Hanalei Shopping Plaza - Phase Two, Kauai, HI
- Kohala Hospital, Kohala, HI
- Lane Community College, Eugene, OR
- McNair Residence, Vancouver, WA
- Monaco Coach Corporation, Coburg, OR
- National Sanitation Foundation (NSF) International, Ann Arbor, MI
- North Shore Marketplace & Kentucky Fried Chicken - Phase One, Haleiwa, HI

3.3 LATEST PRODUCT DEVELOPMENTS

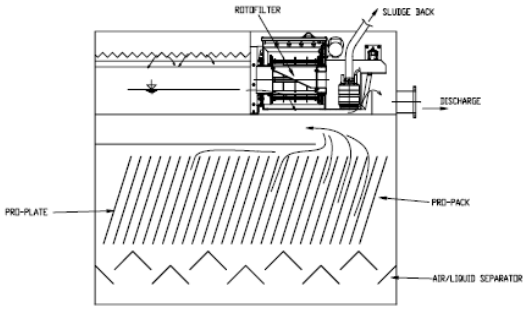
MBR Alternative Decant Module

This product is mostly directed to the commercial, industrial and municipal markets and systems larger than 10,000 gallons per day (gpd). The development of this module was driven by a need to provide a completive, more cost-effective, viable alternative to membranes to serve the wastewater treatment market place. The primary financial advantages are capital cost, maintenance requirements and replacement cost that are associated with membrane applications.

The purpose of incorporating membrane filtration into wastewater treatment processes was to eliminate the secondary clarifier associated with conventional system processes, and to initiate “liquid/solids separation” via physical filtration measures. Even though membrane competitors have been fairly successful in accomplishing this, there is process related down sides as well. Two (2) primary issues were their inability to handle unexpected increased levels of hydraulic diurnal flows, which are common for systems, and the other is solids accumulation in the membrane zone, which require pumping and recirculation equipment. This need also drives up the energy requirements for membrane usage.

AES has the advantage of inherent denitrification without circulation, and also operates in a “complete mix” operation mode vs. a “plug flow” mode, These options available to AES were not possible for the other companies. As a result, and with the assistance of another process technology guru, Mr. Douglas Hwang, President of Pro Equipment (www.proequipment.com), Murphy and Hwang developed what is referred to as the MBR (Membrane Biological Reactor) Alternative Decant Module. It first consists of an advanced liquid/solids clarification technology, which consists of PRO-PLATE PPC-20 lamella plate clarifier modules. These modules resemble a

"honeycomb" in appearance. They initiate an accelerated liquid/solids separation process which is approximately eight times (8Xs) faster than that provided by a conventional clarifier. These modules are placed in the bottom of a removable, rectangular configured module, which stands in the reactor basin and is typically the same height as the basin. In the upper portion of the MBR Alternative Decant Module, a self-cleaning 20 micron micro-filtration screen is located followed by an Ultra Violet (UV) water purification and disinfection unit. The disinfected and repurified water, which leaves this MBR Alternative Decant Module, meets the same limit requirements that are imposed upon the conventional MBR systems, but at as much half (50%) the associated capital cost and never needs replaced. Additionally, the unit is elevated above the basin floor so as to allow the clarified solids to drop out of the unit and become entrained back into the mixed liquor within the main react zone without use of pumping equipment. Furthermore, the unit's ability to be forgiving of large hydraulic diurnal flow fluctuations is a huge advantage over membranes options.



This product also opens up another exclusive market opportunity to AES. This unit can be sized to be retrofitted into municipal systems which are subject to combined sewer overflow (CSO) problems during storms. After these storms, raw untreated sewage continues to discharge into the nation's waters causing major pollution issues, thus the subject and purpose of the Clean Water Act. This is a very large problem nationally and the EPA has provided $130 billion in funding for solutions to these problem systems. The MBR Alternative Decant Module is the only process equipment solution short of just bypassing the sewage flows during the storm flow periods. The MBR Alternative Decant Module would capture the process solids, preventing them from being washed out of the system during these CSO occurrences, while still providing minimal treatment to the wastewater stream. Upon the storm subsiding, all the process solids are still in the reactor and effective treatment is immediately resumed rather than days or even weeks later.

The wastewater industry is driven by law. Fortunately for AES, the law requires the "best available technology" (BAT) to be implemented in every pollution abatement application throughout the nation. The CWA also requires that the most cost-effective and economical alternative be selected if the cost to provide the BAT is more than a 15 per centum (15%) the cost of providing such alternative. In every case, the AES technology will meet the requirement(s) established by the CWA to be that "selected" technology for application.

Clean Energy Recovery Technology – Hydro-Electric Turbines

AES's latest product development is referred to as the Reclamator. It is designed to receive wastewater and produces two sustainable resources: 1) repurified water and 2) electricity. The Reclamator is the same advanced IDEA-CFCR process with hydro-electric turbines incorporated into the aeration basin. AES has developed an 80,000 gpd prototype unit. It has dual hydro-electric turbines and engineer calculations suggest it should reclaim a minimum of 80% of the electric power used to operate the system. This is one of the Company's most exciting accomplishments.

The Reclamator also incorporates AES's new MBR Alternative Decant Module, which allows the Reclamator to produce repurified water. Patents are pending on all aspects of this new product and process.

Our patent examiner confirmed that never before has anyone considered capturing the free available energy created from the aeration process occurring within a reactor basin with a "paddle wheel" concept. The theory takes into account the known fact that more energy is required to move water than is required to move air, and consequently, more energy is created from moving water than is from moving air. Wastewater treatment processes require air to be pumped into the aeration basins at the bottom to both mix its contents and provide oxygen to the naturally occurring microorganisms in the process. The hydro-turbines are designed to capture the energy created by the hydraulic turbulence caused by this necessary aeration and additionally take advantage of the benefits that can be derived from the air through an anti-buoyancy energy factor. Some have said that AES may realize more return than expected as a result of the free benefit realized from the natural occurring floatation dynamics.

Aeration emits diffused air at the lower portion of the reactor, and billions of tiny air bubbles rise. As they rise, they cause a "pumping" action of the water or "mixed liquor" to occur. The mixed liquor also is put in motion, moving toward the surface along with the air bubbles while oxygen is transferred into the mixed liquor to the microorganisms. During the aeration period, the entire liquid volume within the reactor is put into motion much like the flow of a river, except in a "vertical" motion rather than a horizontal. This upward "flow" velocity is at a rate of approximately one foot per second (1ft/sec). As one can imagine, the power created from this hydraulic velocity is enormous. The hydro-turbines are lined with many specially designed paddles to take maximum advantage of this free energy. The hydro turbines also are designed to capture and utilize the air bubbles as they travel up toward the surface. The unique paddle design causes the bubbles to coalesce out toward the end of the hydro turbine paddles. The anti-buoyancy factor greatly contributes to the great amount of torque which is conveyed to the ends of the hydro-electric turbine shafts. The shafts will be connected to an electric generator. Efforts are already under way to develop the hydro-turbine technology for the onsite BESTEP system.

The Prototype

AES has invested over $300,000 into the design and manufacturing of an 80,000 gpd Reclamator (left), which currently is located in Jeffersonville, Indiana. It incorporates both the MBR Alternative Decant Module and hydro-electric turbines. The unit will serve a development of 400 - 450 homes and has a market value of approximately $1.2 million (based on a $3,000 assessment per home.

3.4 SEPTAGE WASTE RECEIVING/TREATMENT FACILITIES

Revenue forecasts have not included the Company's septage receiving facility development, although it may become a high revenue producing component of the business. Septage sludge treatment has been an on going issue in the waste management industry. There is no real viable economical process solution to date.

Shortly after Murphy began his career in the waste management industry, he began to realize the need that existed was not managing liquid wastes but the treating of the liquid wastes to an acceptable level, that level being one that presents no threat to public health or the environment. However, no political subdivision, such as county or municipality, wanted to accept responsibility to provide facilities for handling and treatment of this septage sludge, mainly because there has not been an effective method of providing such a service until now.

Murphy established his first commercial Septage Sludge Receiving Facility in south central Alaska in the mid 1970s. This is the point that he began to do extensive investigation and research into processes, techniques and technologies available to "treat" liquid waste streams, mainly to provide effective treatment measures that apply to septage sludge. Consequently, his path led to the development of the latest advancement in biological process technology that will revolutionize the industry.

Currently, there are several entities who are attempting to providing such services in this area such as Big Fish (http://www.bigfishenvironmental.com) These are typically unsophisticated "mom and pop" operations established to minimize their own trucking and disposal costs. They would have to incur hauling disposal fees of $100 to $150 per 1000 gallons delivered. These small operations consist of large holding tanks that allow the solids to settle out as much as possible, and then the still highly polluted effluent is often pumped to a municipal sewer collection lateral. The solids are then dewatered and transferred to containers, which then have to be hauled away for another methods of disposal. These sludge solids still contain toxic pollutants that are not stabilized and will continue to cause a threat to nation's waters and the environment.

This is a very big problem in the industry today. Conventional thinking and mindsets have been a barrier to development of innovative and alternative processes. It has been an inviting area to venture into as a result of the few competitors and the magnitude of problem. The nature of this waste stream is completely different from that of a municipal waste stream; however, the same equipment and treatment methods are continuously applied to manage septage sludge expecting to achieve different results. Until now, there has been very little innovation in this area.

Municipalities will be motivated to adopt this service. Septage sludge is toxic to a municipal sewer treatment process and, if not metered very closely when introduced into that process, will upset the whole plant, thus justification to implement the facilities at their plant. The facilities offer an additional benefit to the municipal plants. AES will provide a method for handling of their "waste sludge" generated by their municipal sewer plant, besides providing a method for intercepting septage sludge. The AES technology will be integrated into their current sludge handling program, providing a stabilization process for this highly regulated industry while minimizing related liabilities, permitting and disposal issues.

The market for an efficient, automated, packaged facility with a small footprint is significant as well. Over one-third of the nation's population is currently served by onsite septic systems. A typical septic tank is pumped out every 3-5 years. The typical volume per tank is 1,000 plus gallons. The industry trend is moving toward "at source" treatment for all new sources (homes), which will cause this market need to greatly accelerate.

Murphy has developed a patentable process that utilizes a small mixture of two very inexpensive chemicals: 1) hydrogen peroxide and 2) polymer. This mixture is injected into the sludge contents utilizing a unique proprietary method. After approximately 30 minutes, the solids have flocked together and risen to the surface of the supernatant. The supernatant is then drained out from underneath the solids through a 40 micron filter. The water can be used for any above ground beneficial uses such as irrigation, as it has been disinfected by the hydrogen peroxide. The solids, which have also been disinfected and stabilized by the hydrogen peroxide, are then transferred over into a specially designed container http://www.flotrend.com/loaders.html which allows them to be dry within only hours.

The stabilized solids then are suited for use as a soil enhancer and could be bagged and sold as such, or, once a week the local solid waste or "garbage" truck will come by to dump the container and haul it to the landfill like any other garbage container.

Furthermore, the same process can be mobile and provided on a service truck.

3.5 THE AES "ADVANCED BIOLOGICAL PROCESS" TECHNOLOGY SETS "NEW STANDARD" FOR WASTEWATER INDUSTRY

There are three (3) basic treatment methods utilized to remove pollutants from water. They are physical, chemical and biological. There are also three (3) basic, extended aeration activated sludge "biological" processes. Even though current wastewater treatment techniques may incorporate two or three of the three basic treatment methods, all systems for treatment of sewage flows must utilize one (1) of the three basic biological process methods as the foundational component of their wastewater treatment system.

In the late 1800s the **first** extended aeration activated sludge "biological" process technology was developed. This process is called a "sequential batch reactor" (SBR), or as referred to in the CWA as "batch." This process requires two separate reactor basins in which the different treatment functions of process sequentially occurred, alternately between each reactor basin. Even though energy and equipment intensive, this technology provided good treatment level efficiencies. However, its intensive control requirements were a huge drawback causing it to be unreliable. To overcome this issue in 1903, the **second** extended aeration activated sludge biological process technology was developed. This process is called the "conventional activated sludge" (CAS) process. In the CWA the CAS process is referred to as "continuous." This process also consisted of two basins, but connected in series, an aeration basin followed by the second, which is referred to as a secondary clarifier.

The non-batch continuous flow of the CAS process eliminated the need for intensive controls, however, there were other problems associated with the CAS. It required regular operator attention. Its treatment efficiency was inconsistent as a result of non-controllable organic loads and hydraulic flow conditions. High organic loads would cause a biological upset, allowing untreated wastewater and pollutants to be discharged. It was sometimes days or weeks before the process could be stabilized

again. Frequent excess flow velocities through the system do not allow enough time for the treatment organisms or biomass to settle out of the treatment stream in the secondary clarifier before leaving the system. This condition is referred to as a "washout."

Nevertheless, the "Advanced" is the "Best"

These previous two (2) activated sludge biological processes were the only process technology options within the wastewater industry worldwide for 85 years until the development of the **third** "advanced" extended aeration activated sludge process technology in 1988 by Murphy. This is the "intermittent decant extended aeration" (IDEA) process, a "continuous feed cyclic reactor" (CFCR), where all treatment process functions occur within a single reactor basin. This advanced IDEA-CFCR process technology (www.aeswastewater.com) overcomes all the process deficiencies and inefficiencies associated with the other two (2) previous process standards while maintaining both of their combined advantages and further providing additional advantages of its own. The advanced has unquestionably antiquated both the continuous and batch processes.

The CWA, US Code, Title 33, Chapter 26, Sec. 1311 (b)(2)(E), requires "as expeditiously as practicable… shall require application of the best conventional pollutant control technology." The patented "advanced" IDEA-CFCR biological process technology is this "best conventional pollutant control technology" compared to the other two biological processes, producing more consistent and better results. See the comparison chart provided.

The "advanced" process is exclusive to AES and is employed in every product offered by the Company. As such, this "best practicable waste treatment technology," as the industry's most "advanced waste treatment technique," is required to be implemented into every pollution abatement application in association with all "areawide waste treatment management plans and practices" per requirements in the Clean Water Act (US Code, Title 33, Chapter 26, Sec. 1281. Congressional Declaration of Purpose (a)(b)).

Barriers to Entry

The advanced IDEA-CFCR is the NEW "National Standard of Performance" as defined in the CWA (U.S. Code, Title 33, Chapter 26 and most specifically under Sec. 1316). The intellectual property pertaining to this "advanced" process technology which is required by the CWA to be implemented in every pollution abatement application throughout the Nation, if available, is held and controlled solely by Murphy and marketed exclusively by AES. As the holder of these BARRIER-TO-ENTRY patents and patent pendings, the Company has the luxury of possessing a monopolistic and advantageous unfair competitive advantage within the U.S. market that will survive for the extent of the patent protection which, based on the recent filled patents, will be for the next twenty (20) years at least, pending more filings in the future.

One of the significant process advantages of the patented advanced IDEA-CFCR technology, not possessed by either of the previous standards, is its inherent natural occurring denitrification. **Denitrification is a biological function** that removes the pollutant called "nitrate" from a wastewater stream. Nitrate is a toxic pollutant in drinking water in amounts greater than 9.9 parts per million (ppm). Most treated

wastewater discharged will eventually end up in a “drinking water source.” Nitrate is virtually the only pollutant not removed as water filters through the ground. Additionally, nitrate isn’t removed by membrane filtration. The IDEA-CFCR technology has been demonstrated by NSF International (NSF/ANSI) to remove nitrates to a consistent average level of 1.6 milligrams per liter (mg/l) and never exceeding 4 mg/l, well below the 9.9 mg/l maximum contaminant level goal limit. These measurements were taken during a six month plus performance evaluation period. No other technology has been demonstrated by NSF/ANSI to accomplish this level of treatment.

The Company’s advanced IDEA-CFCR “biological” process establishes a new national standard of performance. As that new standard, it is currently the “best available technology economically achievable” (US Code 33§1311(b)(2)(A)) available in the industry today. As such, it is required to be specified by the state regulatory authorities to serve every new source of discharge throughout the nation.

3.6 SOMETIMES “MORE” IS NOT “BEST”

Within the last decade, “physical” treatment membrane filtration technologies have been incorporated by companies marketing different versions of the two (2) century-old process standards in an effort to stay in the race to achieve the “best available technology” (BAT) rating required per the CWA in effort to stay a “player” in this market. The century-old standards with their membrane modifications are referred to as a membrane biological reactor (MBR) or “conventional MBR.” The CWA provides specific criteria by which technology is to be measured in order to identify which technology qualifies as the BAT. The best public interest criterion defined in the CWA requires the most economical technology available to be the one used, provided the best available technology isn’t available within a 15 per centum of its cost. In other words, the primary requirement of the CWA is to achieve the national goal of eliminating the discharge of pollutants. Its secondary requirement is to accomplish this goal in the most cost efficient and effective way using the most economical technological solution and even the best technological solution only provided that it doesn’t exceed the cost of the most economical solution by more than a 15 per centum. The advanced IDEA-CFCR technology achieves both criteria as the BAT and most economical. The Frost and Sullivan Report will verify this.

Pricing Advantages of the AES MBR Alternative

For larger flow applications, the advanced IDEA-CFCR’s patented biological process, applied in conjunction with its most recent patent pending MBR Alternative Decant Module, represents an unbeatable competitive alternative to the conventional MBR for all commercial to municipal applications. The AES MBR Alternative Decant Module is another “disruptive innovation” exclusive to AES.

It becomes a balancing act as the conventional MBR establishes the “market value.” The Company’s challenge is to be as close to that market value as possible to maximize profit margins, even though AES could bid at half (50%) of the conventional MBR cost. Unless a conventional MBR can fall within 15% of the AES pricing, the CWA requires the best available and most economical to be selected. These conventional MBRs are neither the “best” available, nor are they expected to

ever be less than twice the cost of AES and they will always exceed the installed cost of the AES MBR Alternative by at least twice. Note: No other company currently offers a membrane based onsite system as does AES.

The AES MBR Alternative offers a "membrane free" alternative option that in most cases achieves the same required effluent limitations without the membrane disadvantages. The AES MBR Alternative will provide for a substantial savings in capital cost (as much as 50%), lower cost associated with operation (energy cost reduced to as much a 50%), lower O&M requirements (no chemical cleanings and membrane replacements) and many other advantages qualifies AES as the **"best."** See the AES TECHNOLOGY INTRODUCTION in section 9.0 APPENDIX for more information.

3.7 THE ONLY "INDUSTRYWIDE APPLICATION" TECHNOLOGY

Besides the cost effectiveness and economical requirements, another primary criterion to be met in the CWA to qualify as the "best available technology" is a technology's ability to accommodate "industrywide application". Industrywide application means the "same" technology will serve "all" flow requirements within any communities areawide wastewater management master plan.

These flows range from a single home ("inplace source") up to an entire municipality ("accumulated sources"). The advanced IDEA-CFCR is the only technology scalable to meet all wastewater flow requirements, regardless of size, and still rate best in all other criteria required in the CWA to qualify as "best available technology".

Accumulated sources have typically been served by a wastewater management method referred to as "centralized." Centralized utilizes costly sewer collection systems to transport sewage to a central location for treatment. The CWA does not support waste treatment methods which utilize centralized waste management methods. In fact, the CWA was enacted due to these "centralized" methods being identified as the nation's leading source of water pollution. An unintended result was that instead of the industry investing in innovation, it passed along the unsubsidized costs of sewer construction to the consumers. The CWA is written to promote methods that will "eliminate the discharge of pollutants" at each source and allow for the recycle and reuse of the water. Such a method is referred to as "decentralized." There are two (2) basic types of decentralized treatment methods, "onsite" and "cluster."

The defining difference between a centralized and a decentralized waste treatment method is: the ability to meet the requirements of the CWA, to confine pollutants at the source and providing the reclaimed water back to the original consumer for beneficial uses, reducing sewage flows, sewer service fees and conserving public drinking water resources. Only a decentralized method utilizing advanced innovative and alternative technology that eliminates the discharge of pollutants and repurifies the water for 100% beneficial reuse at the source, can achieve these federal goals.

Even though a conventional MBR is capable of serving flows associated with cluster decentralized methods, the companies that provide conventional MBR systems do not provide any onsite system options. Their conventional MBR system technologies

are too maintenance intensive and require frequenting attention that isn't feasible for an onsite decentralized market application. Typically, their technologies require daily operator maintenance. The onsite systems must operate without any attention for a period of six (6) months between visits to receive an NSF Technology Verification and certification. Because their technologies can't meet this requirement, these competitors haven't pursued the onsite decentralized market, and have mostly specialized in providing systems that serve the municipal and industrial markets.

The Only "Cross Over" Technology

The wastewater industry is divided into two distinct parts. **The one part** is the "big pipe" centralized mainstream municipal markets, which have always been the large accounts for major equipment providers and engineering firms. **The other part**, the "onsite" decentralized market, has consisted of mainly small "mom and pop" companies that have existed by installing and servicing septic systems, selling small onsite treatment units and providing individual service contracts. These onsite systems generally only provide "treatment" of household wastewater "for disposal" via a drainfield. These onsite technologies have not advanced enough to "eliminate the discharge of pollutants" per the requirements of the CWA, and were never a threat to big pipe market participants. As long as these onsite systems continued to NOT eliminate the discharge of pollutants at the source, their market was secure.

Murphy's background is onsite. His primary passion has been to develop an onsite system to eliminate "sewage" and therefore the need for sewer connections. He had several involvements with many onsite system technologies during the first 20 years of his career in the wastewater industry. Even though there were at least a dozen different products offered, they all shared the same problems handling excessive hydraulic and organic flow variations. These common problems shared by these onsite systems are what drove Murphy to initiate the research, followed by the development of the advanced IDEA-CFCR biological process technology in 1988.

There are unique issues which must be overcome to efficiently treat a wastewater stream of a single home as compared to that of a larger flow. Contrary to what would be logically assumed, the single home flow is the most challenging of all flows to manage and treat. For example, a larger municipal wastewater stream will have peaking flow variations of 3x – 5x the average flow when the flow from a single home commonly has peaking flow variations of 20x – 30x the average flow. Our big pipe competitor's technologies aren't capable of handling such a high peak flow variation. The AES IDEA-CFCR technology was demonstrated at NSF International to successfully handle excess hydraulic flows of 40x an average flow that lasted a period of over 13 hours. In other words, the 500 gpd BESTEP 10 was hydraulically overloaded with an excess flow rate equal to 20,000 gpd and had no process (biomass) washout. This was unheard-of in the wastewater industry and as of today, no other technology available in the industry can even come close to, much less equal, this accomplishment. For an onsite application, this capability is an absolute must; otherwise, all the downstream water reuse methods could be damaged.

This advanced technology was originally developed and intended for application as an onsite system mainly due to this inherent ability to control the washout of solids. This has been the leading problem with all other onsite technologies. When the source (or home) has a situation where there is a substantial increase in sewage flow, such as a family reunion, party, or even a stuck toilet float, the competitive

systems are susceptible to their solids being washed out to the drainfield. Many times this causes major damage to the drainfield and then causing system failure and consequently a sewage backup situation. The AES BESTEP overcame this issue and is the only onsite system available today that has demonstrated such a critical characteristic mandatory to be a viable onsite alternative technology.

Upon development of the technology, the demand from commercial markets caused AES to merge into the industrial and municipal market arenas. As a result, the Company quickly became familiar with those market participants and available technologies.

To the Company's knowledge, the advanced IDEA-CFCR biological process technology is the "first and only" technology to "cross over." It wasn't long until it became obvious that the advanced IDEA-CFCR was the "best available technology" in both the onsite decentralized and centralized big pipe markets, offering the first and only industrywide application option, meeting yet another criteria of the CWA.

3.8 AES BESTEP ALTERNATIVE – "DISRUPTIVE INNOVATION"

The Company's advanced IDEA-CFCR technology, applied to serve onsite applications, is its product named "BESTEP", "let your next step be your BESTEP." The advanced and innovative alternative technology has a twenty (20) year proven performance record and was specifically designed to serve individual homes (also Dwelling Unit Equivelent "DUE") or, as refered to in the CWA, "any source of discharge" or "new source." It is a device which the Company has developed to become the next "household appliance." When a home on a failing septic system risks fines, the BESTEP will be a mandatory home improvement. The BESTEP can reclaim 100% of all household water used for a beneficial reuse aplication. This appliance is be suited for application where water is a premium, reuse at site is needed, aquafers need remediation or sewer fees are too high. It eliminates sewer flows and consequently the need for a sewer connection. The Company will set up regional corporations and implement the original equipment manufacture (OEM) license program and create a "family of companies" and a network of technology/system service providers/operators.

The BESTEP 10's advanced IDEA-CFCR inherent "biological nutrient removal" (BNR) process technology has already undergone testing under provisions of NSF Standard No. 40 (see below). Results are provided in NSF/ANSI Technology Performance Evaluation Report No. 94/01/2015/060. AES contracted with NSF/ANSI at the time to additionally perform a "Total Nitrogen Series Analysis" on the technology. BESTEP was demonstrated to provide unprecedented total nitrogen (TN) reduction levels that met drinking water quality standards. This third party evaluation is important as NSF is an internationally recognized institution throughout the wastewater industry. This report validates the BESTEP as the industry's "best available technology" (BAT).

NITROGEN SERIES TEST RESULTS

(All results reported as mg/L as N)

Plant: Advanced Environmental Systems Model BESTEP 10

Sample Date	Effluent Ammonia - N	Effluent Nitrate - N	Influent TKN	Effluent TKN
2/2/94	1.6	4.0	32	3.1
2/17/94	0.8	0.3	37	2.7
3/2/94	0.8	0.8	32	3.3
3/16/94	0.7	2.8	24	1.9
3/30/94	0.6	2.3	21	1.4
4/13/94	0.5	2.0	23	1.4
4/27/94	1.0	1.2	22	1.6
5/11/94	1.0	1.6	25	2.1
5/25/94	1.1	1.1	30	2.1
6/15/94	1.3	1.3	31	3.8
6/29/94	1.1	1.0	23	1.4
7/13/94	1.6	1.3	24	2.7
Average	1.0	1.6	27	2.3

WASTEWATER TECHNOLOGY

Report on Evaluation of
Advanced Environmental Systems Inc.
Mini I.D.E.A. Model BESTEP 10
94/01/2015/060

under the provisions of
NSF Standard 40
on Individual Aerobic
WastewaterTreatment Plants

NSF

NSF *International*
3475 Plymouth Road
PO Box 130140
Ann Arbor, Michigan 48113-0140 USA

The BESTEP onsite system, consisting of the advanced IDEA-CFCR process technology, provides for “nutrient (pollutant) removal” to a level that is considered to be “non-pollutant” as defined in the Maximum Contaminant Level Goals (MCLG)[3] .

[3] http://www.epa.gov/safewater/mcl.html#listmcl

Less than 10 TN Makes for a Disruptive Innovation

The primary pollutant nutrient of concern is "nitrate nitrogen" or rather "Total Nitrogen" (TN) is all forms of nitrogen added together which will at some point convert to "nitrate" (NO_3), which is a toxic pollutant in drinking water when present in concentrations greater than 9.9 milligrams per liter (mg/l). See the MCLGs. For this reason, it is important to add nitrate-N and TKN (includes ammonia-N) together in order to determine what the ultimate "nitrate-N" level would be. In the case of the NSF Report, the average TN would be 3.9 mg/l.

"Maximum Contaminant Level Goal (MCLG) – *The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals."*

In onsite applications, the primary pollutant of concern associated with a treated wastewater stream is nitrate. Most all other pollutants, such as total phosphorus, viruses, pathogens and even pharmaceuticals, can be sufficiently removed through the natural filtration provided by the soils after discharged into a drainfield. Furthermore, ultra filtration (UF) membranes are also incapable of removing the soluble toxic nitrate constituent. Nitrate must be removed biologically prior to filtration. This biological process is an inherent distinguishing characteristic of the advanced IDEA-CFCR technology.

The significance of this is that unless an onsite system can be demonstrated to efficiently remove this toxic pollutant to less than 10 mg/l consistently, it has no future. Even though an onsite system provides "treatment of wastewater" or "reduction of nutrients," but not to a Total Nitrogen (TN) level less than 10mg/l, it still discharges "pollutants". Consequently, all such onsite wastewater treatment systems will eventually be removed and replaced at some point in the future, as they pose a potential threat to public drinking water supplies, i.e. surface and groundwater contamination with nitrates. The BESTEP "eliminates the discharge of pollutants".

The CWA requires the discharge of pollutants to be eliminated at the source ("source" means any building which may produce a discharge of pollutants or flow of sewage) utilizing the best available technology (BAT). The BESTEP is the ONLY onsite technology that has been successfully demonstrated to meet this challenge. There are currently six (6) systems listed in the EPA's Environmental Technology Verification (ETV) Program[4] for "residential nutrient reduction." The lowest Total Nitrogen (TN) reduction achieved by any available technology is in the mid teens (14 mg/l). The BESTEP is consistently <10.

BESTEP – Not Only the BEST One, but the ONLY One

The BESTEP is the ONLY onsite system available within the entire industry that has met the challenge of consistent TN reduction to less than 10 mg/l. During the NSF

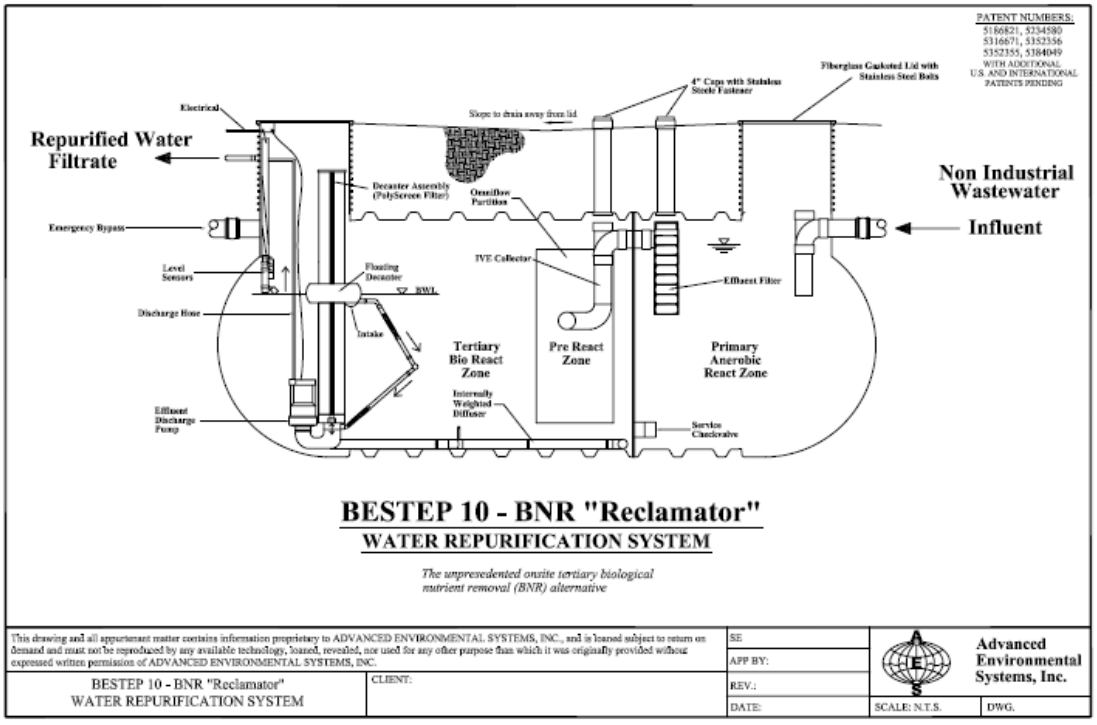
[4] http://www.epa.gov/etv/verifications/vcenter9-3.html

Technology Evaluation in 1994, the BESTEP achieved an average TN level of 3.9 mg/l. Furthermore, the highest recorded throughout the entire test period was only 7.1 mg/l. It never exceeded the MCLG maximum allowable level for treated drinking water quality of 9.9 mg/l.

To penetrate the US municipal waste treatment market, the Company will use a well known and accepted franchising model, such as the garbage companies, and offer a percentage of the service fees to the municipality for collection and enforcement, or offer a maintenance contract to the municipality under a Public Private Partnership (PPP) Agreement, which would allow the municipality to be responsible for providing the ongoing maintenance services. The AES decentralized solution would save the average citizen of Lake Havasu for instance, over $150 per month from not having to subsidize a city bond to build a centralized system. A savings of as much as ten times (10xs) can be realized in some instances.

3.9 TWO AES BESTEP MODELS

BESTEP 10-BNR (Biological Nutrient Removal)
The BESTEP 10 eliminates the discharge of nitrate pollutants "biologically" and reclaims water for all below ground beneficial reuse applications. This system is well suited for applications where the reclaimed water is used for subsurface irrigation or is allowed to return back to a water table for "indirect potable reuse". Indirect potable reuse is an EPA term which identifies reclaimed water that is suitable, after nutrient removal efficiency, for recharge of drinking water aquifers.



The BESTEP 10 was tested, evaluated and certified by NSF (National Sanitation Foundation) in 1994. AES opted not to retain certification as the Nitrogen Series

Results overrode the benefit that could be derived from a certification, which could be reinstated if needed. Unlike any other system tested, it was demonstrated to produce water that met the US EPA Maximum Contaminant Level Goal (MCLG), treated drinking water standards, in regard to reduction of nitrates (total nitrogen) reduction throughout the entire test. Since 1994, no other technology has demonstrated this ability to eliminate the discharge of nitrate pollutants.

AES also removes phosphorus. Solids (carbon) are metabolized by naturally occurring microorganisms leaving a small amount of ash (waste sludge). The ash is periodically removed, typically every 5-10 years in the onsite systems. The ash byproduct is safe and can be used as a soil enhancer.

BESTEP UF-900 – The Onsite Reclamator

The latest model is the BESTEP UF-900. The BESTEP UF-900 incorporates an ultra filtration membrane technology which eliminates the discharge of all pollutants to produce "treated drinking water" quality water. The repurified water is suited for all above ground beneficial reuse applications and completely safe for human contact. It provides an alternative water source, which is a "resource of value."

This "advanced" version of the BESTEP incorporates the TriSep SpiraSep UF membrane physical filtration technology as an added feature to its already superior biological process technology. The little known SpiraSep ultra filtration (UF) membrane filter was developed by TriSep™ in 1997. A patent filed by Murphy and now pending, pertains to this SpiraSep 900 membrane being incorporated into the AES technology. The SpiraSep 900 consists of Advanced Composite Membrane (ACM™) technology.[5] There may be an opportunity for AES to obtain exclusivity, or remanufacturing the filter into an improved and proprietary version.

SPIRASEP
Ultrafiltration Membrane Technology

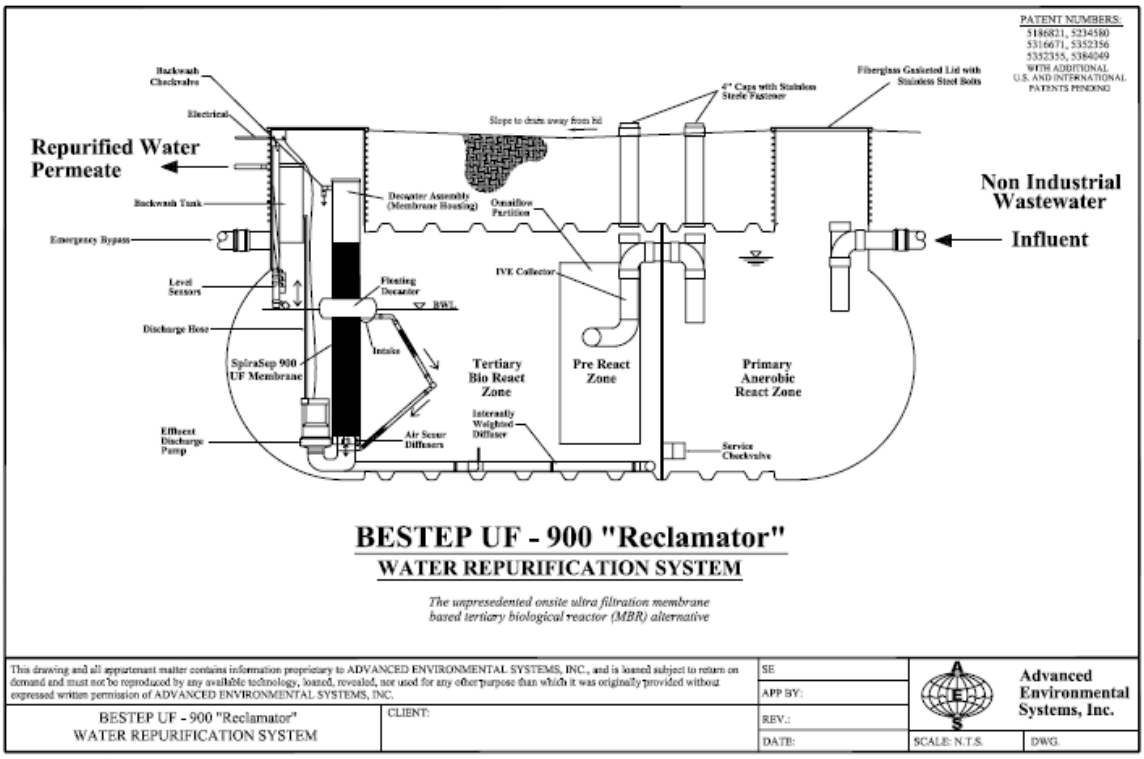
The Company also refers to the BESTEP UF-900 as the "Reclamator." The vision for the intended future of the Reclamator is for it to be ultimately marketed as a water repurification "household appliance" to reclaim all water used by a household. As it is already required by the CWA, it is inevitable that every home will be required to have double plumbing to enable maximum water conservation.

The Reclamator will change the industry because **it drastically improves the level of treatment derived from an onsite wastewater treatment system**. Rather than merely treat wastewater for "disposal" like a septic system, the Reclamator repurifies the reclaimed water to treated drinking quality standards as defined in the US EPA MCLGs. Centralized sanitary sewer collection systems will gradually cease to be used, just as the CWA intended.

- NOTE: Water which does not meet this EPA MCLG standard is "waste" and subject to enforcement. Water which DOES meet the MCLG standard is the "future." As a resource of value, water is the consumer's "personal property." The EPA MCLG is a "non-enforceable standard." AES customers will need no special "permit" to install the Reclamator appliance at a source or home beyond any permit necessary to have a trash can or install an air-conditioning

[5] http://www.trisep.com/about.htm

or heat pump unit. Discharge permits are for application of systems which "discharge pollutants," not systems which "produce repurified water." There is no grey area; the line is literally drawn at "10 mg/l."



The quality of water the Reclamator (BESTEP UF-900) produces from residential wastewater or domestic strength sewage flows is the following:

- Biological nitrogen reduction average < 4 mg/l Total Nitrogen (nitrate) and never to exceed 7.1 mg/l as demonstrated by NSF/ANSI Technology Performance Evaluation Report No. 94/01/2015/060 (See attached drawing). Less than 10 mg/l is the allowable for drinking water quality. See EPA MCLG[6]
- Physical treatment from inherent ultra filtration (UF) membrane technology (provided by TriSep Corporation www.trisep.com) guarantees 100% removal of colloids and particulates larger than 10 nano meters, turbidity less than 0.1 NTU, over log 6 removal of bacteria (99.9999% removal), over log 4 removal of viruses (99.99% removal), removal of large molecular weight organic compounds (above 100,000 Daltons). Water suited for reverse osmosis (RO) application for all drinking water uses.
- Minimum service visits: bi-annually (the local authorities may urge more frequent visits until thousands of units have been installed for years)
- Monthly Service Charges start at $25 per month and average $40 per dwelling unit equivalent (DUE)

[6] http://www.epa.gov/safewater/mcl.html#listmcl

Reclaiming a Resource of Value

The Reclamator can reduce the total amount of water purchased by a household, by a national average of 250 gallons per day or 7,625 gallons per month. The Reclamator reliably produces 99.99% purified water by eliminating bacteria, E-coli, and even viruses and pathogens without the use of chemicals. Although potable (drinkable) water is able to be obtained for all household uses, drinking reclaimed wastewater is against United States EPA regulation. While most foreign customers are not restricted from fully utilizing reclaimed water, areas running out of water in the United States, such as Las Vegas with 350,000 homes, can start incorporating the Reclamator to conserve water and reduce the demand on its fresh water supply. The EPA Water Efficiency Factoid states: Replacing a pre-1994 toilet with a new high-efficiency model can reduce water used for toilets by at least 60 percent and save about 14 percent of total indoor water use. AES achieves 100% reclamation of indoor water used. In Las Vegas, the Reclamator could conserve approximately 90,000,000 gallons of water each day (32,850,000,000 per year).

The space shuttle has been recycling its wastewater to drinking water for decades. The Reclamator additionally meets the Homeland Security requirements, enabling certain homes to retain all their water and eliminate the need for a “sewer service hookup.”

Centralized sewer collection systems generate revenue from sewer user fees charged for receiving sewage or wastewater requiring treatment from a home. “Wastewater” as such, is waste and not a resource of value, but “reclaimed water” is a resource of value. Reclaimed water is the homeowner’s property of which they have rights to reuse it for their own beneficial uses. Installation of the Reclamator ends the sewer service charges, as it ends the need for sewer service. It eliminates the need for sewer service connections as it eliminates all “waste.” This quality of water is a resource of value and as such, a public utility can not take it without “paying” for it. There will be no more justification for a public sewer utility to force a source to “hookup” to its system and pay sewer service charges. Customers being served by the Reclamator will pay a monthly service fee (which should be less than a monthly fee for a new, unsubsidized sewer) and gain all of their water back for reuse, thereby reducing their water consumption and total cost for water.

As stated, the CWA will require AES technology (or equal which there is currently no equal) to be selected as the “best available technology” for all applications. The CWA promotes application of “any method reducing the total flow of sewage, including, but not limited to, unnecessary water consumption in order to reduce the requirements for, and the costs of, sewage and waste treatment services” [33 § 1254 (o)].

As deregulation of the power industry allowed consumers and businesses to sell excess power, municipalities would be required to “pay” for the reclaimed water. Once it is reclaimed, it becomes a resource of value and the property of the one who reclaimed it. Municipalities not being able to or not wanting to pay for the water will be forced to initiate the only other option - to allow the homeowner to disconnect from the “grid,” or the sewer lateral and have 100% reuse rights of their own water. The value of water is going to increasingly grow as the need or demand for water grows. The entity that owns this technology will control the water. AES will become

in control of an extremely large volume of a sustainable, reliable and valuable resource - **WATER**.

This advanced onsite technology is a **"disruptive innovation"** as it will force change of current wastewater management practices. Universities will become involved with the new national standard setting technology through the Company's board of advisors. Associates have connections to Northern Arizona University, MIT, West Virginia University, Cornel University, and others that will have educational programs referencing the Reclamator Technology. In addition to the universities, the Company attracts renowned experts in the fields of wastewater, water reclamation, water reuse, groundwater, water sheds, and others that will additionally verify and classify the Reclamator as the "Best Available Demonstrated Control Technology Currently Available" as defined by the CWA.

Frost and Sullivan is being retained to publish a comprehensive report on the Reclamator and the CWA. The report will be distributed to all federal and state regulatory authorities making them aware of the BAT's existence and availability.

3.10 DECENTRALIZED VS. CENTRALIZED

EPA – Decentralized is Best

The high cost of sewers and centralized wastewater treatment plants have greatly limited communities in their efforts to address their water issues. State and local governments are now looking to renovate existing treatment systems and management options to help reduce, prevent or eliminate sources of pollution.

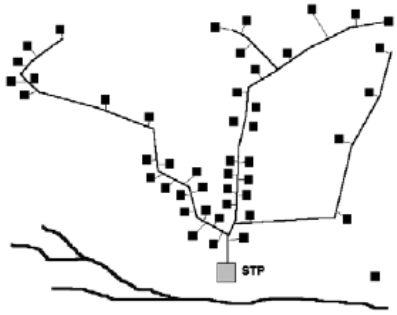
An estimated 60 million people in the United States rely on decentralized systems to treat their wastewater. These systems will play an even greater role in the future because they are often more affordable than conventional centralized sewage treatment plants on a per gallon basis. Furthermore, the Clean Water Act requires that all new sources (all new construction) in the United States are to be served by a standard that eliminates the discharge of pollutants.

Decentralized wastewater management is not embraced by everyone, but it is clearly the intent of the CWA. Wastewater management planning is about how much a community will grow, what it will look like and how clean the local stream or estuary will be.

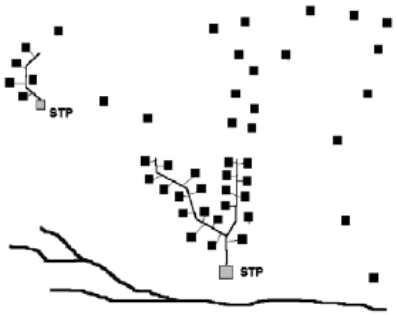
- EPA concluded that decentralized systems can protect public health and the environment, typically have lower capital and maintenance costs for rural communities, are appropriate for varying site conditions, and are suitable for ecologically sensitive areas when adequately managed.

- Decentralized wastewater treatment systems when appropriately managed, perform effectively, protect human health and the environment, and are a key component of our nation's wastewater infrastructure.
  (USEPA Office of Water – A Program Strategy #EPA 832-R-05-002)

The Rocky Mountain Institute's 215-page November 2004 report speaks directly to the economic issue relating to the two application methods:[7]



Centralized wastewater treatment



Decentralized approach

What is a Decentralized Wastewater System?

A decentralized system is a miniature municipal sewage treatment plant which accomplishes the same or better levels of treatment as a municipal plant but allows the source, such as a homeowner, to benefit from the reuse of his reclaimed or repurified water. An additional advantage is it eliminates the need for costly collection systems to transfer raw sewage to a centralized plant and additionally eliminates the chance of pollution enabled by the use of such a collection system. The Clean Water Act encourages use of decentralized systems through grant assistance programs. There are two (2) basic types of decentralized systems, 1) an onsite system which serves a single source such as a house or commercial building, and 2) a cluster system which serves a group of sources within a community.

[7] http://www.rmi.org/sitepages/pid15.php

Decentralized wastewater systems include a wide range of onsite and cluster treatment systems that process household and commercial sewage. Onsite and clustered wastewater systems (septic systems) serve nearly 25 percent of U.S. households and up to 33 percent of new developments. An estimated 60 million people in the United States rely on decentralized systems to treat their wastewater. Well-managed, properly designed onsite or cluster systems can provide sewage treatment equivalent to a centralized plant, often at a lower cost, which can impact property values. (Statements from EPA Handbook for Managing Onsite and Clustered Decentralized Wastewater Treatment Systems, 12/05) .

All septic systems are discharging pollutants that cause pollution of the nation's waters. As per the Clean Water Act requirements, septic system are not suppose to be allowed for that very reason, provided technology is available which will eliminate that discharge of pollutants. The AES technology is just that technology. As seen in the picture above, the BESTEP can be added on behind the septic tank to remove the pollutants.

In the community of Los Osos, California there are 5,000 septic systems already installed but are now causing a major problem to the ground water resource and the Morrow Bay estuary with nitrates. The BESTEP can be installed in between the septic tank and existing drainfield as there is usually a minimum of 10' of separation between the current tank and field. The BESTEP can be retrofitted into this arrangement at a reasonable price, saving the community a cost of at least 10x to implement the installation of a sewer collection system. This doesn't include the social costs of a polluted estuary or the fines homeowners will incur from non-compliance.

AES has the only demonstrated technology that meets the reduction of pollutant requirements regarding nitrates, the primary pollutant of issue. As stated, nitrates are only able to be removed biologically. AES is the only Company that has this exclusive biological process to meet the less than 10 mg/l requirement. As such, it is the best available technology and as the BAT, is required to be implemented into every pollution abatement application throughout the nation.

3.11 STRATEGIES FOR GENERATING REVENUE

There are three (3) basic produce/services that will generate earnings: 1) System Sales, 2) Retrofit and 3) Service Utilities.

1. **System Sales.** In the **onsite decentralized market**, the advantage AES has over competitors is the quality of water obtained, in addition to being the most competitive in price. The technology remains the same in the onsite home unit as well as the 10 million gallon municipal system. Upon the implementation of the marketing plan, the Company will rapidly begin to dominate the onsite market through association with representatives and dealers it has identified.

   In the **cluster, commercial, industrial and municipal markets**, the AES system has a smaller footprint than the competition, is priced lower, is less costly to operate, consumes half the energy, and is more readily scalable up

to 2.5 million gallons per day (MGD). This eliminates the engineering and design requirements associated with many large systems. The AES technology is adaptable to virtually any type of tank, from an in-ground lined basin to above ground concrete tank, and from horizontal cylindrical to vertical cylindrical. The technology can be made available in equipment packages to be applied to locally fabricated tankage, or in completely pre-engineered, pre-designed and pre-fabricated packaged plants (up to 2.5 MGD) delivered to and erected on location.

Additionally, most all other systems now have to incorporate membranes into their processes to meet the stringent discharge standards. The patented AES biological technology with the Post Omni Flow Decant Module, which incorporates a micron screen, produces a quality of water that meets strict regulations without the need for membranes. This is more desirable as traditional membrane systems are extremely costly, and are typically 150% – 300% more than this AES MBR alternative.

However, if a membrane based technology is required for a particular application, AES has the advantage of being able to provide an AES MBR in conjunction with its advanced IDEA-CFCR biological process technology in two (2) optional configurations, 1) Submerged or 2) Out-of-Basin. There are advantages and disadvantages to consider as follows:

a) **Submerged membranes** are where the membranes are actually submerged into the aeration tank (reactor) within the dirty water (mixed liquor), which has a very high concentration of solids, as much as **15,000 parts per million**. This is the typical conventional MBR configuration. As expected, this “submerged” application has high membrane maintenance requirements. Additionally, the “submerged” configuration requires a large amount of energy due to a higher aeration and additional process equipment requirements.

b) **Out of Basin** membranes are where the membranes are located outside of the aeration basin. This option has a substantial number of advantages and can be provided in conjunction with the AES MBR Alternative.

    i. The **first advantage** is serviceability and maintenance accessibility. The out of basin membranes are easily serviced.

    ii. The **second advantage** is the membrane modules can be located indoors out of the weather where service can be accomplished as needed in a controlled environment.

    iii. The **third advantage** is clear odorless tertiary quality water that already meets drinking water quality standards and has less than **5 parts per million** of solids. Service to the membranes isn’t “dirty work” in relation to servicing in-basin membranes in a tank of sewage. Additionally, fewer membranes are required due to the reduction in the

concentration of “dirty water” of up to 3,000 times, and a solids reduction of more than 99.9%, thereby allowing for less initial capital cost, less maintenance frequency and costs, longer life expectancy, and lower ultimate replacement costs.

iv. The **fourth advantage** is the Out of Basin Membrane Module may be added to the AES MBR Alternative at any time. The Out of Basin Membrane Module does not need to be installed as a part of the primary installation as with conventional MBRs, which provide unnecessary treatment levels because they have no other option.

v. The **fifth advantage** is “multi-barrier” protection against the discharge of contaminants. The AES MBR provides three (3) physical barriers of protection to prevent the discharge of pollutants from the system. The first (1^{st}) is the proprietary Pro-pack liquid/solids filter media, followed by the second (2^{nd}) proprietary micro-screen filter, both of which are incorporated into the MBR Decant Module within the system. The third (3^{rd}) is the out-of-basin ultra filtration membrane modules. A UV disinfection option can be provided either after the micro-screen filter or after the UF membrane.

The conventional MBR only offers a single (1) barrier of physical protection, the membrane itself. Most conventional MBRs use hollow fiber membrane technology. When fibers break, pathogens, viruses and other disease carrying organisms pass through the broken fibers.

Besides its flexibility, the “state of the art” AES MBR Alternative offers many advantages not available from competing technologies. In addition to its superior patented biological treatment process, it has less process equipment, operational and energy requirements and therefore less cost.

Much like the onsite market, the Company has identified market representatives that specialize in representing such technology for offsite applications. The Company will offer its existing “’Rep Agreements” to those who are selected to represent AES technology in their areas.

NOTE: It is the nature of the industry that those reps in this market do not generally participate in the onsite market. The Company will have separate divisions to serve both rep organizations.

2. **Retrofits.** Retrofit means to come in after a system is installed and operating to upgrade it to meet current requirements. In most cases, the technology first used is inferior and has proven not to be capable of consistently meeting the discharge limitations of its permit. In many other cases today, retrofits are needed because of population increase is creating a greater sewage flow to

the facility, which it can no longer handle. At any rate, the systems are failing and are in need of replacement or upgrading. The AES technology has successfully retrofitted systems increased their treatment capability by 50% more without changing the volumetric capacity of the existing tankage. A very large percentage of the 100 AES technology installations have been retrofits. Many opportunities exist for retrofit, such as the Chesapeake Bay area. Over $100 billion has been appropriated to stop the discharging of pollutants into the Chesapeake Bay by old failing sewage treatment plants. The AES technology is the best option to economically and feasibly retrofit these failing plants back into compliance. This retrofit market is larger than the new system market. Additionally, retrofit projects have proven to be very profitable in the past. Generally, the only alternative has been to replace the failing system. The retrofit ability of the AES technology enables a much more economical option. Generally, cost is the driving factor that determines the option selected. Most existing municipal systems in operation today are in need of retrofit due to lack of performance as a result of century old technology and/or increased population growth. The retrofit market is significant and may be one of the largest revenue generating areas of the Company, although forecasts do not represent municipal retrofitting.

3. **Service Utility.** A primary goal of the Company is to initiate all projects possible under a Design Build Finance and Operate (DBFO) concept. This DBFO project will do business as a separate LLC company ("LLC"), which will be established for each project in each region. AES will provide the technology to the LLC. The LLC will provide total project management to facilitate all installations and additionally provide the ongoing operation and maintenance services. The LLC will contract with the local water service utilities to collect the monthly service fees as part of the water bill. The LLC Service Program will be in conformance with the EPA Model No. 5, which is based on the LLC maintaining ownership of all facilities and providing service. NSF International has recently introduced a new program providing third party 24/7 monitoring of each system via internet. NSF/ANSI is a recognized third party institution accepted by the State Regulatory Communities to provide such service. The LLC will contract with NSF to provide monitoring services at a cost of $25 per year per system.

   The LLC shall provide total installation services of each unit at each home or Dwelling Unit Equivalent ("DUE") for a Service Establishment Fee of $10,000 to $15,000 (variable) per DUE. The LLC shall contract with local licensed septic system installers who can assist as needed to provide all permit acquisitions and installation services of the systems throughout the community. This Service Establishment Fee will be the first revenue stream from a DBFO project. A community of 5,000 homes such as Los Osos would generate up to $75 million for Service Establishment. For most projects, the majority of this amount qualifies to be paid back by federal grant assistance.

   The LLC will then charge a Monthly Service Charge of $40.00 (variable) per DUE. This revenue stream would be approximately $200,000 per month from a community of 5,000 homes such as Los Osos. The monthly service fees shall be adjusted by the Consumer Price Index ("CPI") annually.

The LLC will contract with the current water service providers to collect the monthly payments and provide policing of the fee collection through their power to turn off the DUE water, just as any other non-payment of utility fees justify. AES will receive the industry standard of margin of 6% for this collection service.

This Service Utility model is much like the Waste Management model of providing waste containers (which they retain ownership of) to collect garbage for which a "required" monthly service fee is charged to each user. This service revenue stream would continue indefinitely.

Some public entities would like to license the technology and provide service to generate revenue, while others would prefer that the Company establish a service entity in the area to manage the systems. In either case, AES is flexible to the arrangement what best serves the public authority's and the community's best interest.

A driving factor for a portion of sales is the Clean Water Act. The CWA requires that a) the discharge of pollutants be eliminated at the source. It additionally requires b) that it be done in the more cost efficient and most economical method c) utilizing the best available technology.

a. This "at source" treatment requirement can only be met through implementation of a "decentralized" program.
b. No other method will be priced within 15% of the AES technology solution. The CWA, in the interest of the public, requires the most cost efficient solution to be installed. AES's solution is believed to be the "best" technology and most economical. The BESTEP technology was specifically designed to retrofit existing septic systems. The cost to implement this waste management solution will start at 50% the cost of a centralize sewer. Additionally, the decentralized solution utilizing the BESTEP qualifies for grant assistance, which could in most cases cover the majority of the construction cost associated with installation, if not all of it. Grants are not included in projections, and would encourage more rapid adoption than current forecasts.

U.S. Prospects

- Lake Havasu City, Arizona 25,000 septic tanks are currently being used to process their wastewater.
- Los Osos, California has 5000 septic tanks that need to be replaced and AES is submitting a proposal to replace all current systems with the Reclamator.
- Marin County, California has 9,000 septic tanks that need to stop polluting.
- Santa Cruz Mountains, California several thousand homes need the AES service program to eliminate pollutants.
- California has within the last year of an enacted law referred to as the "885," which requires all septic tank systems to be upgraded to eliminate the discharge of nitrate pollutants. There are tens of thousands of septic systems in California, and all new construction of homes in rural areas will require denitrification technology. AES has the only NSF demonstrated denitrification technology proven to eliminate nitrates to a treated drinking water quality.

c. The AES technology is the best available demonstrated control technology. The NSF report demonstrates it. The Frost and Sullivan Report will additionally provide a third party accreditation to that fact. However, per the requirements of the CWA, economics are the primary driving factor and there is no other solution which can come within 50% of this solution.

NSF International 24/7 Nationwide Monitoring Services
The Company has the option to use a certified third party such as NSF International to provide for monitoring of its systems over the internet 24/7. Service providers and regulators are able to be notified immediately upon a maintenance requirement. Through this service, the Company will be able to monitor all of its systems.

3.12 PATENT STATUS

Current Issued Utility Patents

#5,374,353 "Aeration Train and Aeration Apparatus for Biological Purification of Wastewater" let go, as it was obsolete when compared to my new systems

#5,234,580 "Decanting Apparatus with Float Supported Submerged Pump" let go, as it was obsolete when compared to my new systems

#5,384,049 "Wastewater Treatment Process"

#5,352,356 "Stovepipe Decanter Apparatus"

#5,316,671 "Submersible Aeration Train and Aeration Apparatus for Biological Purification of Sewage" (Expired)

#5,186,821 "Wastewater Treatment Process with Cooperating Velocity Equalization, Aeration and Decanting Means"

Current Provisional/Utility Applications

#11/441,373 "Biological Filtration Module for Use Within a Wastewater Treatment System" Filed 05/25/05

#11/488,500 "Process/Method and Apparatus for Recovering Energy from Turbulence Created Within an Aerobic-Biological-Reactor" (MBR Unit) Filed 07/18/05

#11/510,935 "Purified Water reclamation Process"
Filed 08/26/05
Converted to Utility on 08/26/06.

Currently, there are about 30 international patents issued.

NOTE:
Two of the existing patents will be abandoned as they will be replaced by the new applications.

4.0 MARKET ANALYSIS

In the United States and abroad, many of the larger cities are faced with infrastructure failure that will require billions of dollars for replacement and updating Residential customers with failing septic systems will be the early adopters. Storm water overflows are also releasing million of gallons of wastewater from many of the existing treatment plants throughout the major cities of the United States.

All new office buildings should be equipped with AES technology and reclaim all the water these buildings use right at the source.

Links
www.greenBiz.com
www.cbo.gov/ftpdoc.cfm?index=3983&type=1
www.cfpub.epa.gov/owm/septic/home.cfm
www.epa.gov/innovation/strategy.htm
www.onsitewater.com/ow_0507_high.html
www.onsitewater.com/ow.html

Residential
The U.S. residential market is growing by 1.4 million new houses per year, and up to 1/3 of these homes require their own onsite system. With growing regulatory knowledge of the availability of the AES BESTEP technology, these homes will be required to incorporate it instead of septic tanks. Furthermore, all homes that are currently on septic systems discharging pollutants will be required to be retrofitted with the BESTEP, which can be added on behind the existing septic tank.

Stormwater Pollution and Combined Sewer Overflows (CSO)
Stormwater pollution from point sources and nonpoint sources is a challenging water quality problem. Unlike pollution from industry or sewage treatment facilities, which is caused by a discrete number of sources, stormwater pollution is caused by the daily activities of people everywhere. Rainwater and snowmelt run off streets, lawns, farms, construction and industrial sites and pick up fertilizers, dirt, pesticides, oil and grease, and many other pollutants on the way to rivers, lakes and coastal waters. Stormwater runoff is America's most common cause of water pollution.

Links
www.owp.csus.edu/research/npdes/costsurvey.pdf
http://cfpub.epa.gov/npdes/home.cfm?program_id=6

The Village Safe Water Program for Native American Villages for Alaska
Rural Alaska is characterized by over 220 isolated villages across an area more than twice the size of Texas. Populations in these communities are predominately native and range between 25 and 6,000 residents, averaging about 300 residents per

village. Most villages are accessible by air and water only. The “Village Safe Water Program” (VSW) is working to develop sustainable sanitation facilities such as the AES onsite solution.

Sanitation conditions in most Alaska villages have vastly improved, yet one family in three still does not have access to sanitary means of sewage disposal or an adequate supply of safe drinking water in their homes.

Every year, an assessment of the sanitation needs of Native Americans across the state is completed for the Indian Health Service. The assessment by the Alaska Department of Environmental Conservation has estimated a total sanitation need of $565 million for Alaska’s 220 Native Villages.

Links

www.gov.state.ak.us/omb/2001site/2001EnvironmentalConservation.html
www.gov.state.ak.us/omb/07_OMB/budget/DEC/index.htm
www.gov.state.ak.us/omb/2001site/2001EnvironmentalConservation.html
www.dec.state.ak.us/water/vsw/pdfs/vswbrief.pdf
www.bnc-alaska.com/
www.epa.gov/owm/mab/indian/index.htm
www.epa.gov/owm/mab/indian/anvrs.htm

Nitrite Removal Process: Chesapeake Bay

The main causes of the Bay's poor water quality are elevated levels of two nutrients: nitrogen and phosphorous. These nutrients occur naturally in soil, animal waste, plant material and even the atmosphere. In addition to these natural sources, sewage treatment plants, industries, vehicle exhaust, acid rain, and runoff from agricultural, residential and urban areas contribute nutrients to the Chesapeake Bay and its rivers.

Virtually all individuals and industries in the watershed, contribute the nutrients that ultimately reach the Bay. In the Bay region, excess nutrients are supplied to the system through two sources: point and nonpoint sources.

- Point Source - A source of pollution that can be attributed to a specific physical location: an identifiable, end of pipe "point." The vast majority of point source discharges of nutrients are from wastewater treatment plants. The Clean Water Act was established in 1972 to establish pretreatment at each new source to eliminate discharges of pollutants into sanitary sewer collection systems.

- Nonpoint Source - A diffuse source of pollution that cannot be attributed to a clearly identifiable, specific physical location or a defined discharge channel. This includes the nutrients that runoff the ground from any land use - croplands, feedlots, lawns, parking lots, streets, forests, etc. - and enter waterways. It also includes nutrients that enter through air pollution, through the groundwater or from septic systems.

Recent Observations

- Nutrients from septic systems are increasing throughout the watershed as development spreads farther into the countryside, beyond the reach of sewer systems.

- Stormwater runoff from urban and suburban areas is increasing as more land is developed for residential, commercial and public uses.

- Nitrogen from wastewater treatment plants is declining in rivers where biological nutrient removal (BNR) technology is being used. It is increasing in most other rivers.

- Phosphorus from sewage treatment plants has declined sharply, in large part because of the phosphate detergent ban.

Links
www.cbf.org/site/PageServer?pagename=homev3&printer_friendly=1
www.pafarmnews.com/Articles/070112_KeystoneShow_ChesBay.htm
www.chesapeakebay.net/
www.water.usgs.gov/wid/html/chesbay.html
www.epa.gov/ebtpages/watewastewnationalpollutantdischargee.html
www.epa.gov/ebtpages/watewaterpollutionwastewatertreatment.html

- Among the major land use categories, urban and suburban lands contribute, per acre, the largest amount of nutrients to the Bay when septic and wastewater treatment plant discharges are factored in.

- Runoff from farms in the United States is generally declining as farmers adopt nutrient management and runoff control techniques, and because the overall amount of farmland is declining.

Cesspools – Hawaii

AES products address the cesspools problem in Hawaii, and the Company has an Engineer, Mr. Fidel Eviota P.E. on staff working on a program to retrofit the 180,000 plus residential cesspools and 3,000 commercial cesspools, which have already been mandated for closure by the EPA. Murphy already has a 10 year working relationship with the Department of Health in Hawaii.

Cesspools, which are also defined as “treatment works” within the Clean Water Act, are underground holes used throughout Hawaii for the disposal of human waste. Raw, untreated sewage is discharged directly into the ground, where it can contaminate oceans, streams and ground water by releasing disease-causing pathogens and nitrates.

EPA regulations required all existing large capacity cesspools to be closed and replaced with an alternative wastewater system by April 5, 2005. Since 2000, EPA has prohibited the construction of new large capacity cesspools nationwide (UIC) regulations do not allow an extension of the deadline.

EPA Region 9 has entered into Consent Agreements with a number of public agencies and private entities to address violations of the large capacity cesspool requirements. Consent Agreements are issued under the Safe Drinking Water Act Sections 1423(c) and 1445 (a). Agreements[8] have been reached with Costco[9] and the Department of Education.[10]

Dubai, UAE is rapidly becoming a major economic center, and there are at least 10 potential business partners identified through a search engine:

[8] www.epa.gov/safewater/uic/cl5oper/cesspools.html
[9] www.epa.gov/region9/water/groundwater/uic-docs/CostcoCAFO-PubNotice.pdf
[10] www.epa.gov/region9/water/groundwater/uic-docs/hi-doe-consent-agreement.pdf

1 Corodex
2 Metito
3 United Technical Services
4 Aqua Engineering
5 Dulsco
6 Modern Building Maintenance (MBM)
7 Mohammed Tayyeb Khoory & Sons
8 Nasser bin Abdullatif Al Serkal Est
9 REDAWATER
10 Septech Emirates LLC

Other prospective business partners include Waste Management Building Materials, Eagle Electromechanical Co LLC and WorldWater & Power based in New Jersey. The Company will approach these leads when capital permits the Company to service the business created.

Grants
Grants.gov was established a few years ago to make it easy to find and apply for grants. Grants.gov allows organizations to electronically find and apply for more than $400 billion in Federal grants.

4.0.1 CLEAN WATER ACT

The Federal Water Pollution Control Act of 1948 has had several amendments. The most notable amendment was the 1972 amendment known as the Clean Water Act (CWA). The CWA requires alternative methods of wastewater management, as an alternative to developing large centralized sanitary sewer collection systems. The centralized systems are the leading source of pollution to the Nation's waters. Since 1988, there have been no federal grants available to construct new centralized systems. However, there are grants available now for the implementation of decentralized systems utilizing advanced waste treatment techniques, an alternative such as the AES technology.

The AES technology qualifies as the "best practicable control technology currently available" (BPT), which "produces the greatest degree of effluent reduction attainable" as required by the CWA. The CWA requires engineers and state regulators specify the BPT for all waste management applications. Until the AES advanced technology evolved, it has been undeterminable what brand(s) satisfied this requirement.

The CWA states "it is unlawful for any person to discharge any pollutant." A septic tank discharges toxic nitrate pollutants (50 mg/l) at a level of five times greater than the allowable MCLG of less than ten (<10 mg/l). The CWA requires the BAT that "eliminates the discharge of pollutants if it is available." The AES BESTEP, with its demonstrated nitrate level of 1.6 (per the NSF International third party report) is that technology that eliminates the discharge of pollutants and it is available.

With the new residential development that is occurring outside of cities, the waste management market is moving toward treatment onsite, at the home, so as to eliminate the discharge of pollutants into the water tables, eliminate the cost of

transport, and in many areas reclaim the water for a beneficial reuse to conserve water resources.

The first key was for a technology to offer this level of treatment and reclamation to be developed and demonstrated. The second key is to make it known that it is available and is able to meet the market demand.

Murphy is currently working on a publication entitled "The Clean Water Act, Illustrated for Dummies and Violators." Murphy is recognized as an industry expert regarding the CWA and its intent and requirements. His interest in the CWA started around 2003, when he lost a very large project to another bidder who proposed an inferior technology that was more expensive and did not provide for the reuse of the water at the site as AES did. Murphy believes that "the CWA could not be better written to enable the AES technology to monopolize the wastewater market."

Murphy is an active member of the EPA Decentralized Listserver, where the stake holders of the wastewater industry commonly communicate through postings. Members consist of Federal EPA, State and local regulatory community members. Members also consist of active designers, engineers, manufactures, competitors and other interested parties. The server has thousands of members, many of which are waiting for the publication to be finished by Murphy and have requested copies upon completion. This additionally will be just another method used to make the regulatory community aware of the requirements of the CWA and their obligation under the CWA according to those requirements.

4.0.2 WATER IS LIFE

If Water is Life….

Conservation and Reuse must be our way of Life….

- Southwest United States is in the 6th year of a 50 year drought cycle.
- Northwest has water, but due to pollution of nitrates, and in some places radioactive waste, their water ways is getting polluted.
- California has set a goal to reclaim 1 million acre foot[11] per year to go back into the aquifer to be reused.
- The 435 wastewater treatment plants surrounding the Chesapeake Bay are polluting it with nitrates.
- Three thousand commercial and 165,000 residential cesspools in Hawaii need to be retrofitted to stop discharging pollutants.
- About 130 Native Villages in Alaska will be implementing an EPA grant funded wastewater treatment program.
- Two different cities with a total of 30,000 septic tanks have been ordered to stop polluting and find a solution. AES is the solution.
- UN World Water Development reported about 20 percent of the world's population, or 1.1 billion people, lacked access to safe drinking water and 40 percent, or 2.6 billion, lacked access to basic sanitation. Each year, more than 2.2 million people in developing countries die from diseases associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene.

[11] It is defined by the volume of water necessary to cover one acre of surface area to a depth of one foot.

- Frost & Sullivan estimates that in 2005, the total revenues in the Russian water and wastewater treatment market (including networks and treatment plants) were $960 million.
- US$704 million in loans and grants are available to support the implementation of 90 environmental infrastructure projects in communities on both sides of the U.S.-Mexico border. The total estimated cost of these projects is US$2.3 billion.
- The Inter-American Development Bank approved a $45 million loan for a project to expand the sewer system and improve sanitation and environmental conditions in Panama City. The project constitutes the first of three phases in a $360 million program to build a system to collect, treat and dispose of sewage in the Panamanian capital.

A Trillion Dollar Opportunity

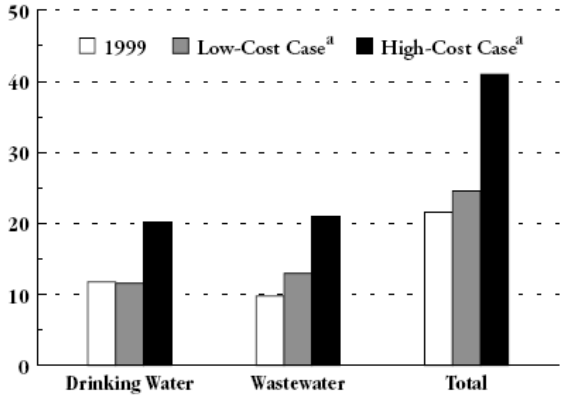
- East Asia needs $1 trillion for infrastructure over next five years
- Water/Wastewater/Filtration world market is expected to reach $484 billion by 2010
- The Chesapeake Bay Restoration Fund of the Maryland Department of the Environment will provide the revenue stream needed to pay State revenue bonds, which provide the estimated $750 million to $1 billon needed to complete the necessary upgrades.

Waste management is a mature, consolidated industry, and management is familiar nearly every system available. Most industry participants are members of the same trade associations and attend the same shows trying to sell their goods.

A PFI Market Intelligence Report evaluates the capital spending needs for water and sewerage capital spending for 59 leading markets through 2025. In so doing, PFI estimates the total capital spending needs to be US$2.3 trillion, of which $1.77 trillion will need to be financed by private funds from banks, bonds and specialist instruments, unless there is a dramatic change in utility tariff structures. This refers to spending over a couple decades, not annual spending, which would be an average of $115 billion per year. Infrastructure estimates in the US investment costs are shown to the right, as reported by the Congressional Budget Office.

Investment Costs for Water Infrastructure

(Billions of 2001 dollars)



Source: Congressional Budget Office.

a. Average annual costs for the 2000 to 2019 period.

As of 1996, 16,000 publicly owned US treatment entities collected and processed the wastewater from about 190 million people. There are an estimated 25-60 million U.S. households that use decentralized wastewater systems. "Decentralized" wastewater

systems include: on-site disposal systems such as septic systems with drain fields and alternative systems such as mounds and cluster systems.[12]

Onsite and clustered wastewater systems (septic systems) serve nearly 25 percent of U.S. households and up to 33 percent of new development. This is (±7.5%), below the revised June estimate of 2,038,000, but 2.3 percent (±9.8%)* above the July 2005 rate of 1,883,000.[13]

The US market for advanced drinking water technologies, estimated at $1.3 billion in 2006, could climb to more than $2.1 billion by 2011, according to an industry report released October 31, 2006.

Advanced Technologies for Municipal Water Treatment by BCC Research says the advanced drinking water treatment market is growing at an average of 10.7 percent annually. Technologies include membrane filtration, ozone disinfection, ultraviolet (UV) irradiation, and novel oxidation processes.

Combined, the five membrane treatments for municipal drinking water are valued at $1 billion in 2006, with a predicted combined annual growth rate of 10.3 percent. UV disinfection, a market valued at $29.2 million, should experience considerable growth in the forecast period, according to the report. A 38.6 percent average annual growth rate is predicted to 2011, when the market will reach more than $149 million.

According to the US Environmental Protection Agency (EPA), all 50 states and Puerto Rico invested nearly $9.5 billion in drinking water improvements from 1996 to 2005. In their 2005 annual report, the US-based Water and Wastewater Equipment Manufacturers Association (WWEMA) reported market growth in the industry of at least 5 percent, with 78 percent of WWEMA manufacturers seeing and projecting greater than 10 percent growth. The increases are primarily in the domestic market with international sales, as a whole, remaining fairly flat. For more information or to order the full report, visit www.bccresearch.com.

Groundwater is the major source of America's drinking water. With US residents consuming approximately 110 million gallons of water a day, it has become increasingly important to protect the limited groundwater resources.[14]

A CBO Study reported the water industry authorities and analysts believe that maintaining America’s high-quality drinking water and wastewater services will require a substantial increase in spending over the next two decades. They point to many types of problems with existing water infrastructure, including the collapsed storm sewers in various cities, the 1.2 trillion gallons of water that overflows every year from sewer systems that commingle stormwater and wastewater, and the estimated 20 percent loss from leakage in many drinking water systems.

With approximately one-fourth of the homes in the United States utilizing a septic tank system for on-site wastewater treatment, finding better ways to protect the surrounding environment and, ultimately, residents' drinking water is essential. A July

[12] http://www.ocwagis.org/website/downloads/WastewaterMonth/Publications/srf_for_decentralized_systems.pdf
[13] http://www.census.gov/indicator/www/newresconst.pdf
[14] http://www.millerenvironmentalinc.com/

2006 article about Baylor University's Wastewater Research Program describes the affect of effluent on soil quality:[15]

> Once effluent, which is treated wastewater, leaves a residential septic tank, it flows into what's called a drain field, which is an arrangement of perforated pipes that carry the effluent into the soil. In theory, the soil will further decompose the effluent, making it safer for the environment. However in many areas, the water table is either too high, which means the effluent does not have a chance to fully decompose, or the type of soil can not adequately absorb the effluent, which is the case around much of central Texas. The end result is contaminants like phosphorous and nitrate entering the groundwater. "There are a lot of places where it would be nice to build a home, but if you can't put in a septic tank because the soil can't handle a drain field, you can't build a home there."

Competitor Failure Rate

The Northeast Ohio Areawide Coordinating Agency (NOACA) physically surveyed 427 Household Sewage Treatment Systems (out of approximately 46,400 systems constructed since 1979, and an estimated 155,800 in northeast Ohio) in seven counties near Cleveland in 2000. Failure was defined as surfacing of effluent. The survey found that at least 12.7% and as many as 19.7% have surfacing effluent (95% confidence interval). The report includes multiple statistical comparisons with type of system, age etc. The most significant correlating variable was with soils rated as having "severe limitations" for sewage disposal in the county soil survey.

[15] http://www.baylor.edu/pr/news.php?action=story&story=38696

4.1 MARKET TRENDS

Private ownership of water utilities is not a new idea. The authors of "The New Economy of Water" point out: "Private entrepreneurs, investor-owned utilities, or other market tools have long provided water or water services in different parts of the world."

What is new, they contend, is today's extent of privatization efforts underway, and the growing public awareness of, and attention to, problems associated with these efforts. The private sector has growing responsibilities that often are poorly understood. Privatization of wastewater treatment can consist of various arrangements from partnerships between private and public entities, to the total elimination of public ownership.

EPA Model 5

In March 2003, the EPA published a description of five models in "Voluntary National Guidelines for Management of Onsite and Clustered (decentralized) Wastewater Treatment Systems." The following accentuates the trend toward privatization.

Model 5- The Responsible Management Entity (RME) Ownership Model is a variation of the RME operations and maintenance concept in the RME Operation and Maintenance Model, with the exception that ownership of the system is no longer with the property owner. The designated management entity owns, operates and manages the decentralized wastewater treatment systems in a manner analogous to central sewerage. Under this approach, the RME maintains control of planning and management, as well as operation and maintenance. This management model is appropriate for environmental o public health conditions similar to those for the RME Operation and Maintenance Model, but Model 5 provides a higher level of control of system performance. It also reduces the likelihood of disputes that can occur between the RME and the property owner in the REME Operation and Maintenance Model when the property owner fails to fully cooperate with the RME. The RME can also more readily replace existing systems with higher-performance units or clusters systems when necessary. EPA recommends implementation of the management practices details in the RME Ownership model in cases such as where new high-density development is proposed in the vicinity of sensitive receiving waters. States might need to establish a regulatory structure to oversee the rate structures that RMEs establish and any other measures that a public services commission would normally undertake to manage entities in noncompetitive situations.

"When properly sited, designed and maintained, septic systems are capable of producing high quality wastewater" is a quote from the EPA Onsite Wastewater Management Manual. However, decentralized systems are the second greatest threat to groundwater quality, second to centralized sewer collection systems. It is estimated that nationwide, 10 to 20 percent of decentralized systems are not adequately treating wastewater due to inadequate site location, design and maintenance.[16] This is another misleading statement as is a fact that no onsite system is "adequately treating wastewater" due to inadequate onsite technologies.

Only within the last three decades has it become known that septic systems and most other systems, though provide treatment, do not remove a particular nutrient which is toxic in drinking water. That nutrient is called "nitrate" (NO3). Nitrate in drinking water resources (ground water) in amounts greater than 10 milligrams per liter (MG/l) are toxic to human health. The EPA Maximum Contaminant Level Goals (MCLG), which is the standard for treated drinking water quality states: Infants below the age of six months who drink water containing nitrate in excess of the MCL (which is 10 mg/l) could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. It further states that the sources of this toxic pollutant are: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

[16] http://epa.gov/owm/septic

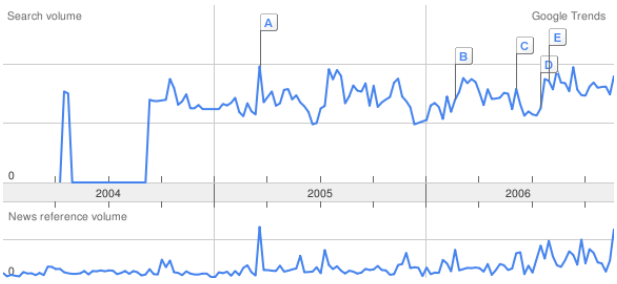
The average nitrate level produced from a septic tank is 50 mg/l, 5x the maximum allowable. Nitrate from onsite wastewater treatment systems are polluting our ground water and drinking water resources. The AES technology eliminates this toxic pollutant. It is the only onsite technology which is economically feasible to retrofit existing onsite systems to stop the discharge of this toxic pollutant. Furthermore, it is the only onsite system that has been demonstrated to produce nitrate levels which are consistently within the MCLG range for safe drinking water.

The CWA states: **"the discharge of any pollutant by any person shall be unlawful"..**

Additionally, raw sewage from collection systems is leaking through old pipe, leaking joints, broken pipes from ground shifts and sewage spills caused by failing equipment in the collection systems. Onsite technology will be the solution for these problems as well. Onsite water repurification will stop the discharge of pollutant into these sewage collection systems which will minimize the pollution and maximize water conservation through reclamation and reuse at the source.

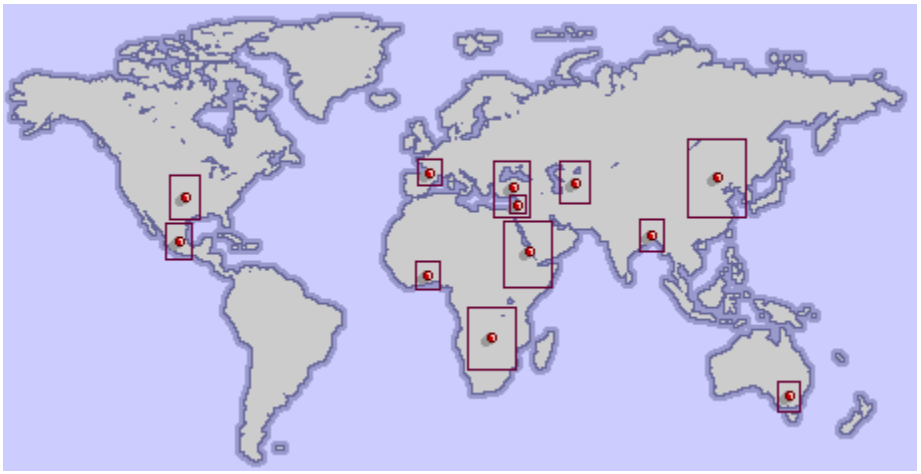
On January 12, 2005, Assistant Administrator for Water Ben Grumbles, along with officers from several organizations that focus on septic systems, formalized an agreement to improve wastewater treatment for 25 million homes nationwide.

Concentration factor is a physical phenomenon - as one removes purified water from an aqueous solution, the solute remaining becomes more concentrated. If, for example, one removes 50% of the water, the remaining solids are concentrated by a factor of two. AES contains solids and does not release them into the environment prior to decomposition.



Global Trends

British Broadcasting Corporation (BBC) reports that the world's supply of fresh water is running out. Already 1 in 5 has no access to safe drinking water. The greatest areas of concern on each continent (excluding S. America) are shown below:



According to the World Health Organization's (WHO) Global Water Supply and Sanitation Assessment 2000 Report, the percentage of people served with some form of improved water supply rose from 79% (4.1 billion) in 1990 to 82% (4.9 billion) in 2000. Over the same period the proportion of the world's population with access to excreta disposal facilities increased from 55% (2.9 billion people served) to 60% (3.6 billion). Not all data is so optimistic. A growing population in many areas equates to growing water shortages.

Growing Water Shortages

Population Size and Growth and Renewable Freshwater Availability in Water-Short Countries, 1995 and 2025

Country	*Population 1995 (millions)*	*Water Per Capita 1995*[a]	*Population 2025 (millions)*	*Water Per Capita 2025*[a]	*TFR 1998*	*% Growth Rate 1998*
Water Scarcity in 1995 and/or 2025						
Algeria	28.1	**527**	47.3	**313**	4.4	2.4
Bahrain	0.6	**161**	0.9	**104**	3.2	2.0
Barbados	0.3	**192**	0.3	**169**	1.7	0.5
Burundi	6.1	**594**	12.3	**292**	6.6	2.5
Cape Verde	0.4	**777**	0.7	**442**	5.3	2.9
Comoros	0.6	*1,667*	1.3	**760**	5.1	2.7
Cyprus	0.7	*1,208*	1.0	**947**	2.1	0.7
Egypt	62.1	**936**	95.8	**607**	3.6	2.2
Ethiopia	56.4	1,950	136.3	**807**	7.0	2.5
Haiti	7.1	*1,544*	12.5	**879**	4.8	2.1
Iran	68.4	1,719	128.3	**916**	3.0	1.8

Israel	5.5	**389**	8.0	**270**	2.9	1.5
Jordan	5.4	**318**	11.9	**144**	4.4	2.5
Kenya	27.2	*1,112*	50.2	**602**	4.5	2.0
Kuwait	1.7	**95**	2.9	**55**	3.2	2.3
Libya	5.4	**111**	12.9	**47**	6.3	3.7
Malawi	9.7	1,933	20.4	**917**	5.9	1.7
Malta	0.4	**82**	0.4	**71**	2.1	0.6
Morocco	26.5	*1,131*	39.9	**751**	3.3	1.8
Oman	2.2	**874**	6.5	**295**	7.1	3.9
Qatar	0.5	**91**	0.8	**64**	4.1	1.7
Rwanda	5.2	*1,215*	13.0	**485**	6.0	2.1
Saudi Arabia	18.3	**249**	42.4	**107**	6.4	3.1
Singapore	3.3	**180**	4.2	**142**	1.7	1.1
Somalia	9.5	*1,422*	23.7	**570**	7.0	3.2
South Africa	41.5	*1,206*	71.6	**698**	3.3	1.6
Tunisia	9.0	**434**	13.5	**288**	3.2	1.9
United Arab Emirates	2.2	**902**	3.3	**604**	4.9	2.2
Yemen	15.0	**346**	39.6	**131**	7.3	3.3

Water-stressed countries are those with annual water resources of between 1,000 and 1,700 cubic meters per person, shown in italic. Countries suffering from water scarcity are those with annual supplies of less than 1,000 cubic meters per person, shown in ***dark type.***
TFR = Total Fertility Rate
[a]In cubic meters per year
Source: Gardner-Outlaw & Engelman, Sustaining water, easing scarcity: A second update, Washington, D.C., Population Action International, 1997 (69). Gardner-Outlaw and Engelman base their calculations on UN Population Division population estimates. The growth rate and TFR data come from: Population Reference Bureau, World Population Data Sheet, 1998, Washington, D.C., 1998.

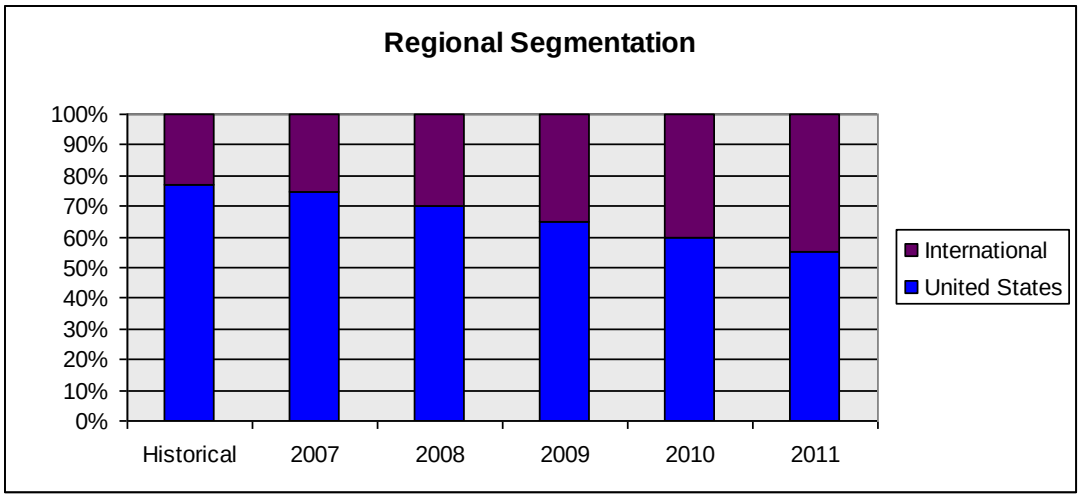
To achieve the 2015 target in Africa, Asia and Latin America and the Caribbean alone, an additional 2.2 billion people will need access to sanitation, and 1.5 billion will need access to water supply by that date. In effect, this means providing water supply services to 280,000 people and sanitation facilities to 384,000 people every day for the next 15 years.

The Asian Development Bank (ADB) plans to double its investments in the regional water sector for the next five years to over $2 billion annually, the Water & Wastewater Equipment Manufacturers Association, (WWEMA) Inc. reported May 8, 2006. The ADB said its new water financing program would help Asian governments improve sanitation and provide safe drinking water about 200 million more people and would improve irrigation and drainage services for an additional 40 million, as well as introduce management plans for 25 major river basins in the region.

4.2 MARKET SEGMENTATION

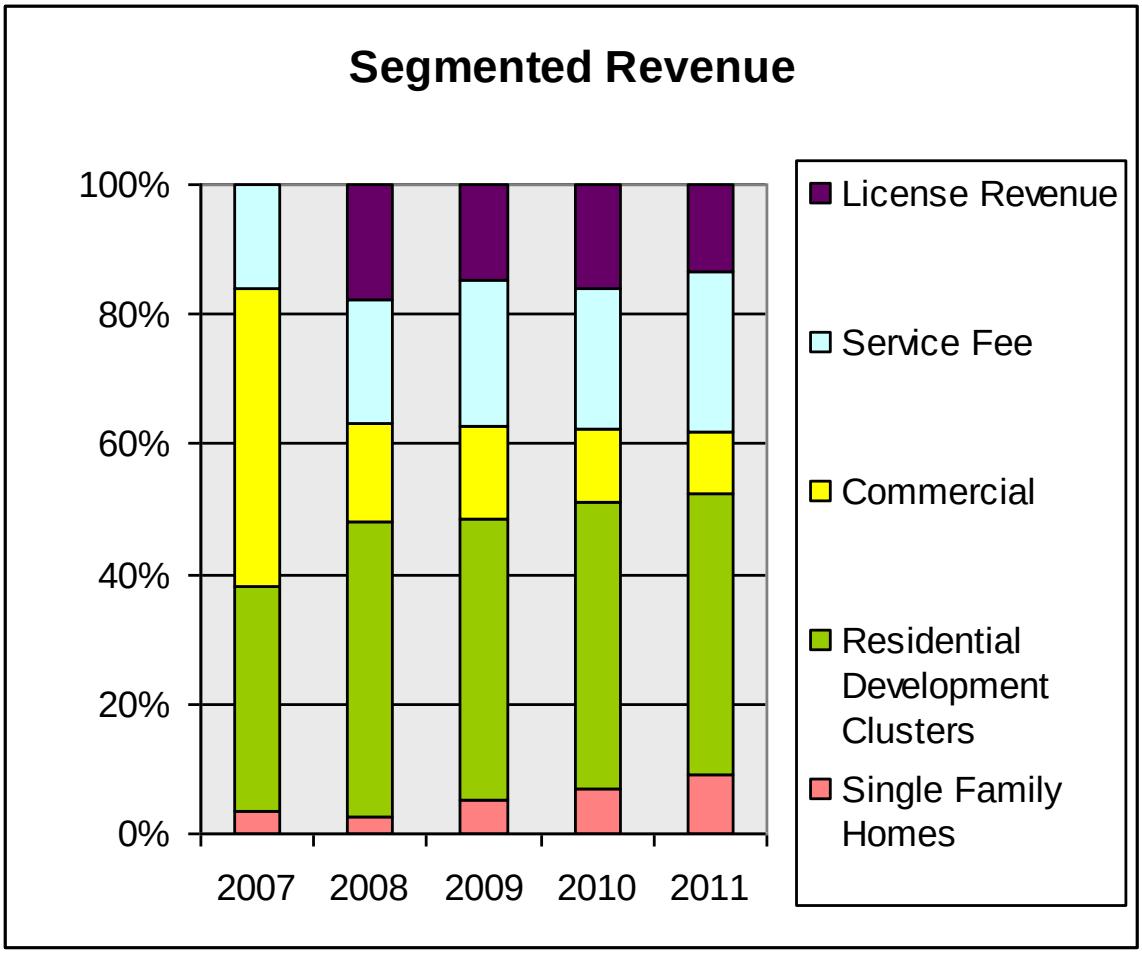
The uses of water recycled through AES vary. In some instances, the water is returned to the soil, without pollutants, and replenishes the aquifer. Water can be used for irrigation, washing and many other beneficial uses.

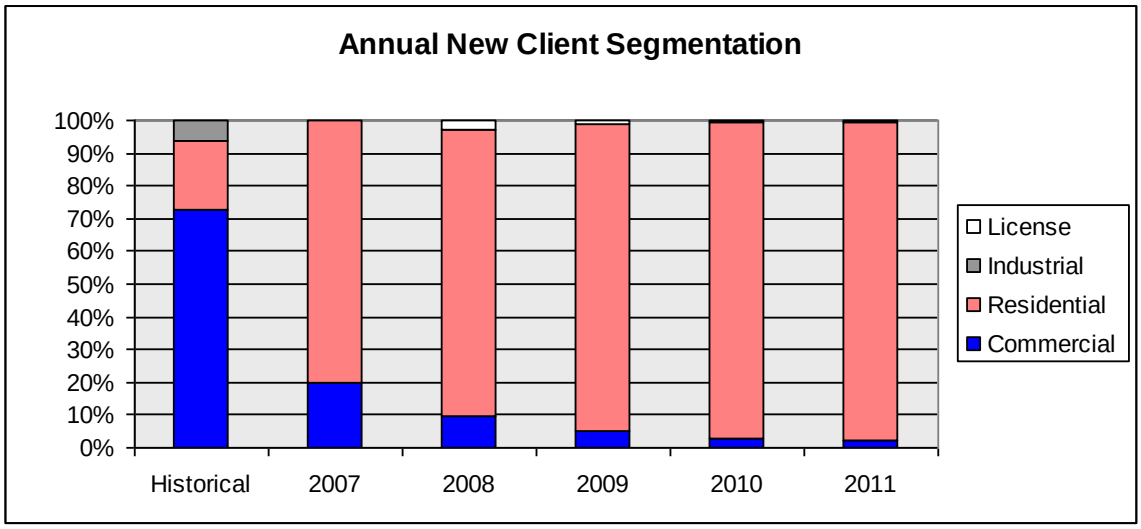
In other cases, recycled water is returned to a well. Some configurations will call for reuse in toilets only, or subsurface irrigation in new construction projects. In any case, appropriate permits must be acquired through regional authorities. In California, the Regional Water Quality Control Boards have adopted National Pollutant Discharge Elimination System (NPDES) storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. By meeting strict California standards, AES is positioned for acceptance in any market. Below is projected market segmentation globally:



Projected revenue is segmented by license income, monthly service fees and service establishment fees. Licensing revenue will be driven by firms adopting AES technology. Monthly service fees will primarily be used to pay for the operator and monitoring system. Installation at single family homes, residential clusters or commercial sites encompasses service establishment revenue.

Following the graph below on revenue segmentation, is a chart on annual new clients. Because the initial and annuity fees are so high per license client, there are relatively few licensed clients necessary to drive this revenue segment. Meanwhile, there are many single family home clients necessary to equal the same revenue from a residential cluster. Whereas historical business has been primarily commercial, future revenue is expected to be primarily residential, with some commercial, industrial and municipal.


Segmented Revenue
100%
80%
60%
40%
20%
0%
2007
2008
2009
2010
2011
License Revenue
Service Fee
Commercial
Residential Development Clusters
Single Family Homes


Annual New Client Segmentation
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Historical
2007
2008
2009
2010
2011
License
Industrial
Residential
Commercial

4.3 TARGET MARKETS

The East Coast of the United States is more concerned with pollution than conservation, which is a greater issue on the West Coast. Markets for pollution credits, as there are for air pollution, would enhance demand on the East Coast. A global need for drinking water has a different type of need.

Nevada
Las Vegas has 250,000 homes using 250 gallons per day. No amount of building will change the fact Las Vegas is in the desert and has a major lack of water availability. Its growth is legendary and conservation pressures are following.

Chesapeake Bay
The Chesapeake Bay is the largest estuary in the United States and a water resource of tremendous ecological and economic importance. The following are the stated goals for Chesapeake Bay:

1) **Prevent water pollution and protect aquatic systems so that overall aquatic system health of the Chesapeake Bay is improved and acres of submerged aquatic vegetation increase.**

2002 Baseline: 85,252 acres **By 2005: 91,000** **By 2008: 120,000**

2) **Reduction in number of pounds of nitrogen entering the Bay each year from 1985 levels:**

2002 Baseline: 51 million lb. **By 2005: 74** **By 2008: 94**

The Chesapeake Bay Restoration Fund managed by the Maryland Department of the Environment, will provide the cash flow needed for state revenue bonds that provide the estimated $750 million to $1 billon required to complete the immediate upgrades. About $11.5 billion is required over ten years. Funding via existing revenues sources add up to only $2.1 billion, leaving a $9.4 billion funding gap. The Bay Program states are getting hundreds of millions of dollars from the U.S. Department of Agriculture's Conservation Reserve Enhancement Program to help farmers install runoff control devices and other conservation practices.

Midwest

North America's largest aquifer, the Ogallala, is being depleted at a rate of 12 billion cubic meters (bcm) a year, according to the BBC. In Lake Havasu City, Arizona, 25,000 septic tanks are currently being used to process their wastewater. Marin County, California has 9,000 septic tanks that need to stop polluting. In Santa Cruz Mountains, California, several thousand homes need the AES technology to eliminate pollutants. AES knows where the customer base is and how it can accomplish its goals.

Texas
Ninety-five percent of the United States' fresh water is underground. As farmers in the Texan High Plains pump groundwater faster than rain replenishes it, the water

tables are dropping. AES has also been approached for mega-flora applications to water trees.

Southeast US
Pollution from septic systems on the East Coast spawned Personal Responsibility In a Desirable Environment (PRIDE), which serves southern and eastern Kentucky. Approximately 36,000 homes in the PRIDE area rely on failed septic systems or straight pipes for wastewater disposal.

Hawaii
Hawaii has 3000 commercial cesspools it must close, and there are 180,000 residences discharging into cesspools. Hawaii's Clean Water State Revolving Fund (CWSRF), with over $260 million in assets, provides below-market interest rate loans to assist local governments expand and improve their water pollution control infrastructure. Loans up to 100% of costs can be awarded.

AES has had a substantial number of installations in Hawaii, but the demand is still material. The Kailua Palms is among the apartment buildings that will be torn down in a couple of years. The company redeveloping the area says the units must be vacated by September 2007, to comply with a federal prohibition on large-capacity cesspools. A large-capacity cesspool is one that discharges untreated sewage from a multiple dwelling or a nonresidential location that serves 20 or more people on any given day, according to the EPA.

The Environmental Protection Agency and state Department of Health have identified more than 2,400 such cesspools in Hawaii and believe there may be as many as 4,000 in all. About 800 large-capacity cesspools are owned by government.

Owners whose cesspools are in violation of federal regulations face fines of up to $32,500 a day until they comply by either closing the facilities or replacing them.

China
The 1.3 billion people of China, the world's most populous country, have at their disposal only a quarter of the water per person that is available on average around the world, according to World Water Congress.

However, China's water problems go far beyond the scarcity of water resources. Pollution has left nearly half of the water in China's rivers suitable only for agricultural and industrial use, making fresh drinking water a luxury for many of China's 800 million peasants.

It would cost China about 136 billion US dollars, close to 7 percent of its GDP, to clean up all the pollution pumped into the country's environment just in 2004, according to the Inter Press Service News Agency (IPS).

Africa
The world is in danger of missing targets for providing clean water and sanitation unless governments increase the pace over the next nine years, a new UN report warned in September 2006, according to AFP.

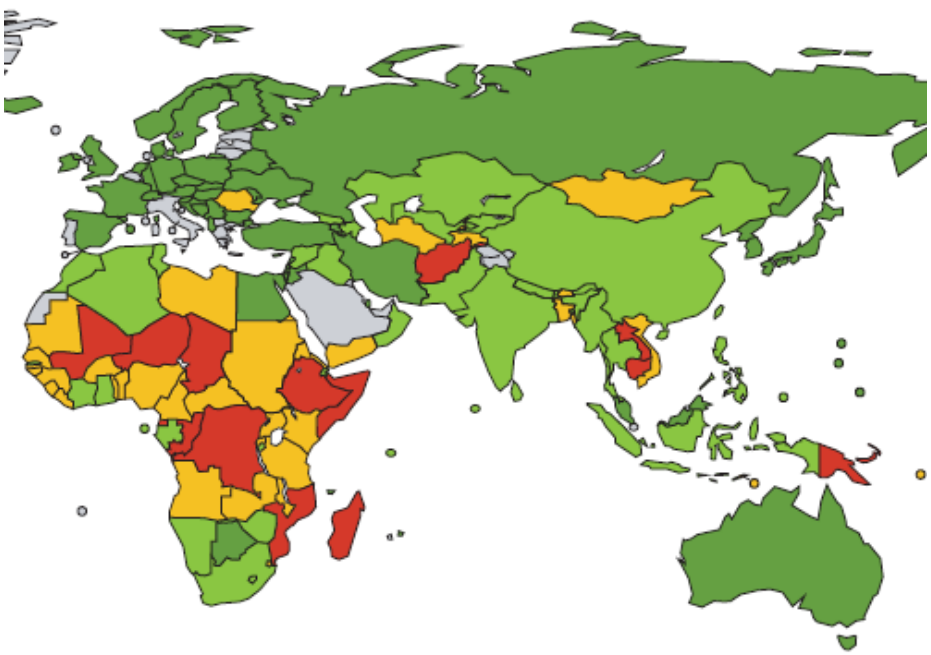
In a joint study, the World Health Organization and the UN children's agency UNICEF said that the situation was particularly severe in urban areas, where snowballing population growth is piling up the pressure on water and sanitation systems -- if they exist at all. The report said that a doubling of current efforts would be required to hit the sanitation target, and a one-third increase is necessary to meet the drinking water goal.

More than 1.1 billion people in both urban and rural areas currently lack access to drinking water from an improved source, and 2.6 billion people do not have access to even basic sanitation, said the WHO and UNICEF. The impact is particularly stark on children: the WHO estimates that in 2005, an average of 4,500 children under the age of five died every day from the consequences of unsafe water and inadequate hygiene. Sub-Saharan Africa remains the main focus of concern, said the report. Currently, just 56 percent of the region's population has access to a decent water supply. Just 37 percent of people in sub-Saharan Africa had access to basic sanitation in 2004, compared to a global average of 59 percent.

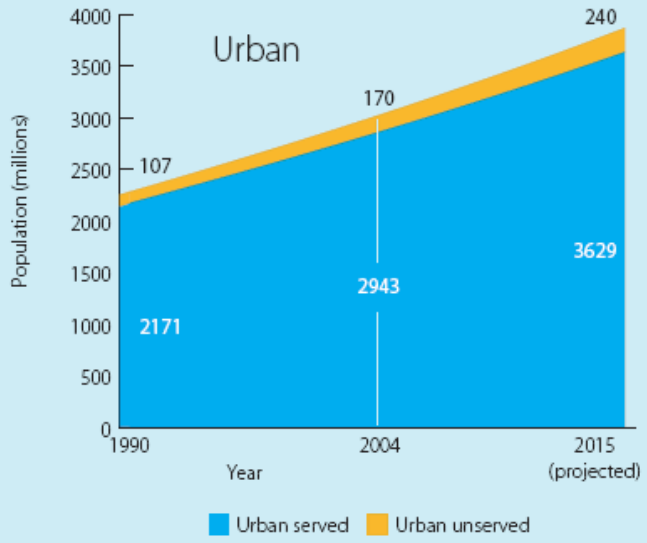
> **Whisky is for drinking.**
>
> **Water is for fighting over.**
>
> *Attributed to Mark Twain*

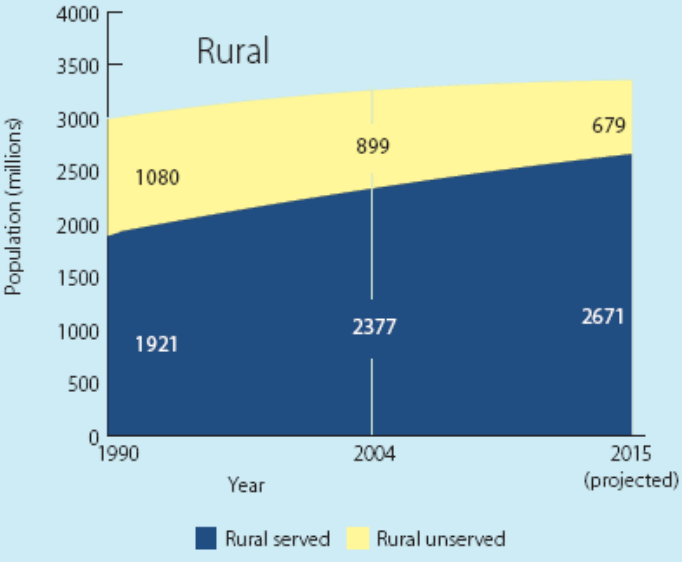
4.4 GLOBAL DATA

About 2.6 billion people – half the developing world – are without improved sanitation facilities. One person in six – more than 1 billion fellow human beings – has little choice but to use potentially harmful sources of water. Nearly two thirds live in Asia.



Trends in coverage: urban and rural population with and without access to an improved drinking water source in 1990, 2004 and 2015 (projected)





Urbanization and Water Stress

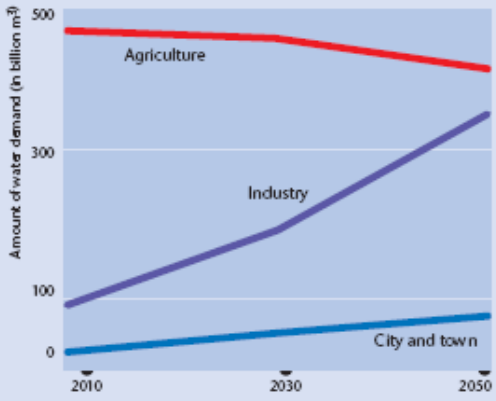
Water stress in regions around mega-cities as a ratio of total withdrawals divided by estimated total availability

0 - 0.2 Low water stress 0.2 - 0.4 Medium water stress More than 0.4 Severe water stress

Source: Adapted from UN-Habitat, WHO, and UNDESA, "Cities: Competing Needs," 2003.[3]

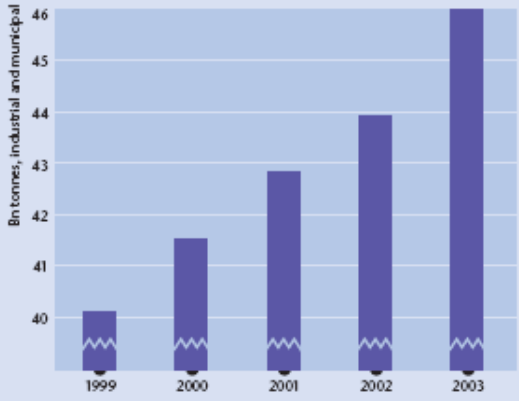
China Water Facts

Future Water Demand Trends in China



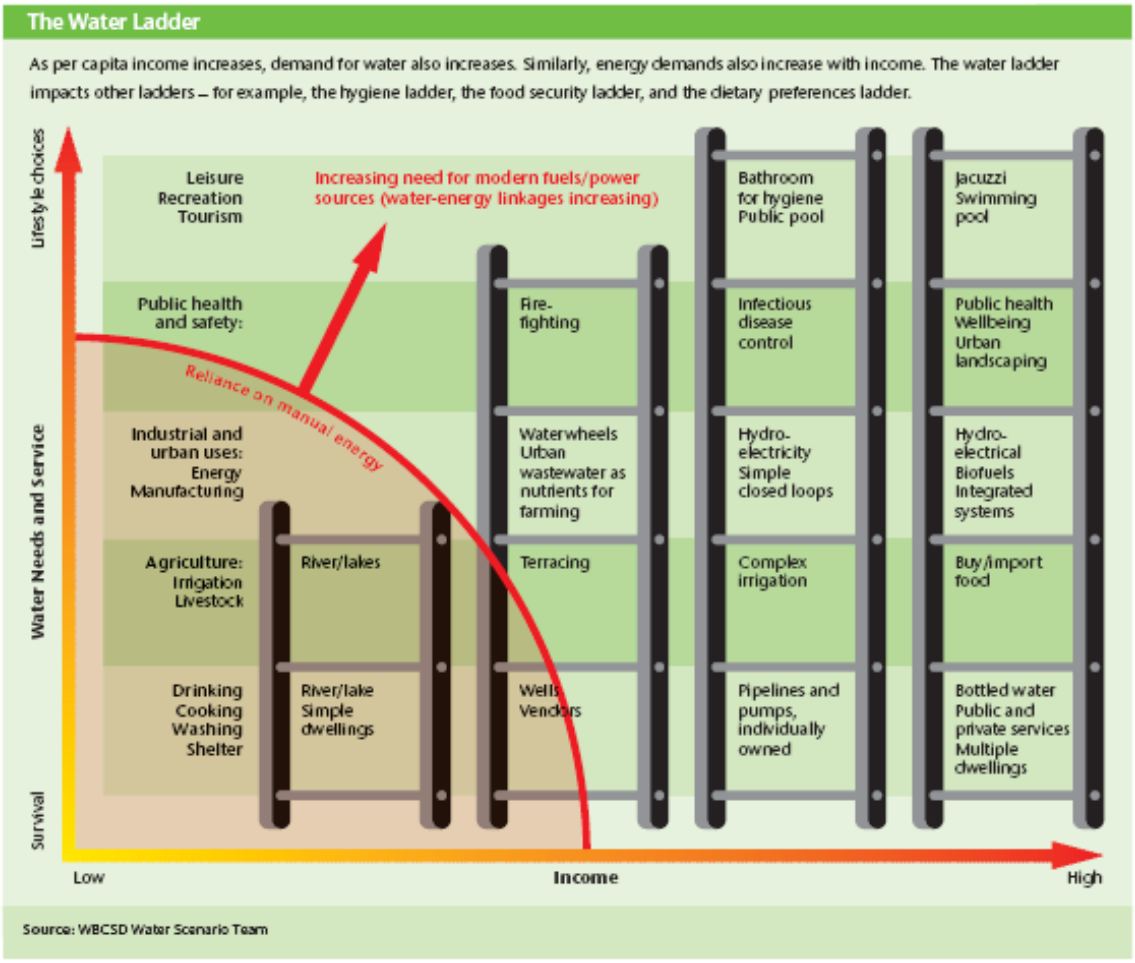
Source: Adapted from Chinese Academy of Science, 2000.[11]

A Rising Tide — China's Wastewater Discharge



Source: Adapted from "A Great Wall of Waste," *The Economist*, 2004.[12]

China ranks fourth in the world for renewable water resources, but because of its large population, it has only 1/4 of the global average of water per capita.[13]



The World Business Council for Sustainable Development (WBCSD) is a coalition of 180 international companies that share a commitment to the principles of sustainable development via the three pillars of economic growth, ecological balance and social progress. The WBCSD benefits from a global network of national and regional business councils and partner organizations representing a large and diversified group of business leaders.

4.5 NOVEMBER 2006 UN REPORT

AFP reported in November 2006, that the UN stated a lack of access to clean water kills nearly two million children per year and is stunting the prospects of economic growth in the world's poorest countries, a new United Nations report said Thursday. The UN's annual Human Development Report by Kevin Watkins said that 1.8 million children die each year from diarrhea brought on by dirty water. "This is five times the number of children dying from HIV/AIDS," Watkins told reporters.

"What is clear is that clean water and sanitation is just about the most important vaccine for improving public health and economic growth," he added.

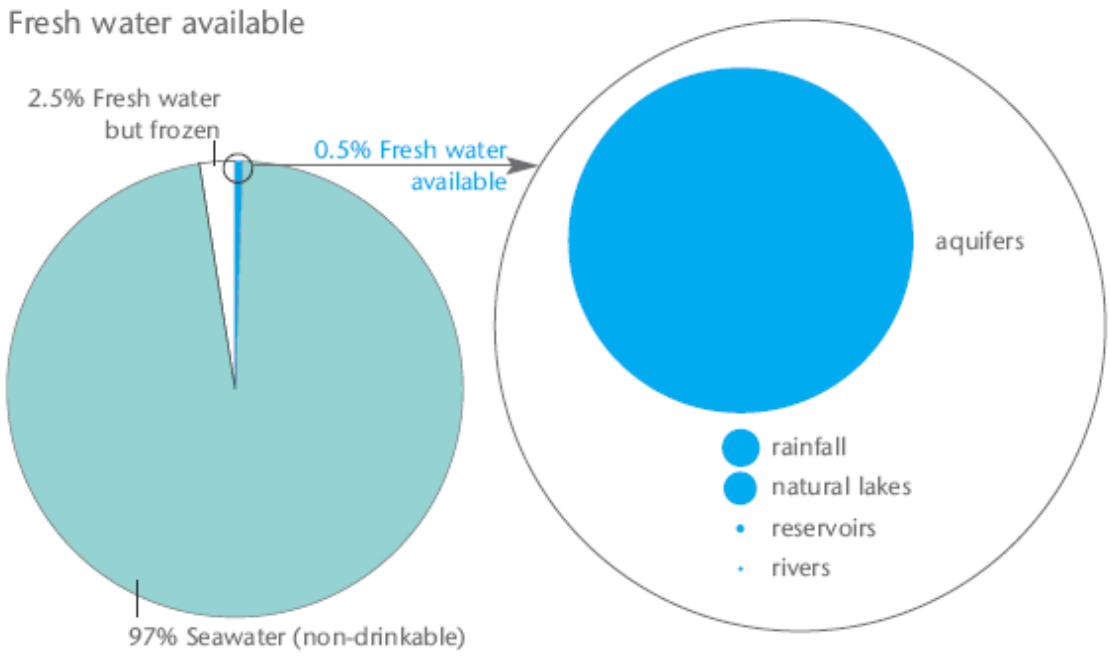
The lack of water and sanitation keeps children out of school, either from water-related diseases or because they are forced to walk long distances to help collect water for their families.

Aside from the human costs, and the loss of productivity, economic growth is stunted to the extent that it outweighs international aid.

In a foreword to the report, the United Nations Development Programme (UNDP) administrator Kermal Dervis said "flawed water management policies that exacerbate scarcity" rather than lack of supply lay at the root of the crisis. "Access to water for life is a basic human need and a fundamental human right," he said.

"The ill health associated with deficits in water and sanitation undermines productivity and economic growth, reinforcing the deep inequalities that characterize current patterns of globalization and trapping vulnerable households in cycles of poverty."

The report also warned that access to water would likely become ever more problematic as a result of global warming. "In sub-Saharan Africa the combination of rising temperatures and declining rainfall leads to extended drought episodes and limited surface water," it said.



5.0 STRATEGY AND IMPLEMENTATION SUMMARY

Establish the Third Party Credibility with the Frost and Sullivan Report
The contract shall be immediately entered into with Frost & Sullivan and other entities to provide credible third party opinions. The contract shall require Frost and Sullivan as well as the other entities to: 1) align the advanced IDEA-CFCR process technology with the specified criteria defined in the CWA which a best practicable control technology currently available is to be measured by, thereby establishing the advanced IDEA-CFCR process technology as the new national standard of performance, and 2) clarify the requirements defined within the CWA which require the EPA Administrator, the State and political subdivision regulatory authorities to "require and assist" the implementation of such best practicable control technology currently available, requiring it to be specified by "brand name or equal".

Upon completion, the reports will be distributed to all EPA, State and political subdivision regulatory authorities. The CWA requires that upon receiving this new information, those authorities must promulgate such information so as to notify all specifying engineers and designers who are actively specifying technology for pollution abatement applications within their jurisdiction.

Advertising Campaign
Parallel with this, the Company will launch an advertising campaign through distribution of news letters and running promo adds in the major industry publications, publications related to the building industry to inform developers, publications in the engineering trade journals and publications which are distributed to municipalities and public works organizations. Additionally, the associated Reps and Dealers will notify their clients of the "new national standard", its environmental and economical advantages that they will realize by being served by this technology besides the fact that it is required to be used for all their projects as per the requirements of the CWA.

Monitoring and Control of Projects Nationally
As the majority of market will accept the new standard as law abiding citizens, there is a small segment of the market which will resist due to different agendas or political reasons or some other self serving justification. These "nonconformists" will easily be identified as they occur through the permit application monitoring procedures which will be done on a monthly basis state by state. In each area or jurisdiction, there is a designated authority to which all applications for permits are submitted. One of the responsibilities of our Reps and Dealers will be to monitor on a monthly basis, all permit applications submitted within each of their areas and report to the Company any applications which do not specify the new standard, the AES technology. The information is public knowledge and readily available to the public. This function serves the best interest of the Reps and Dealers as they operate on a commission basis of product marketed in their areas and don't wish to lose projects. Murphy developed and has implemented this program previously with great success.

Upon the Company becoming aware of a nonconformist, it will initiate every effort to turn the situation around. The process is regulated and is easily identified and, if approached in the correct way, will generally turn around. This is how it works:

- First, there is a need for the pollution abatement solution by a “source.” That source can be many things such as residential, commercial or municipal, but in most cases today is a private entity. The owner or operator of the source generally has little interest in the actual type of “sewer system” he will have serve his project, but rather more concern regarding the “time and money” it is going to cost him. He is only getting the sewer system because the law requires it for his project. The whole industry is totally driven by legal and regulatory requirements, otherwise, a cesspool or septic tank for most folks would be just fine. The fact is, time and money in relationship to the success of the project in general are the owner’s greatest concerns.

- Secondly, the owner has generally hired a local engineering firm to handle the sewer system aspect of the project, i.e. design, permit application, etc. This engineer is a registered professional engineering licensed to conduct business within the boundaries of the laws of the land. However, it is a common mindset with P.E.’s that their “engineering stamp” IS the law of the land, sad but true. So the engineer submits his proposed design specifications which includes the system he is proposing for use on the project to the proper authority, typically a state or county, for approval.

- Now finally, the regulatory authority receives the submittal, stamped by the engineer, stating that it falls within all the legal guidelines which pertain to such proposed system, however, the system the engineer has proposed is not the new standard. This regulatory authority, who is obligated to notify all engineers within their jurisdiction, has already notified this engineer of the new standard which is required. However, because the engineer’s “stamp” overrides the regulatory authority, the authority is caught between a “rock and a hard place”. The engineer’s stamp is powerful as it basically states that the engineer assumes all liability and legal responsibility and that the proposed sewer system, as per his design, is within the guidelines of the law. So, as one can see, the engineers have a lot of power in their relationship with the regulatory authorities. It becomes a very difficult decision on the part of the regulatory authority to “deny” the engineers submittal, unless of course, the regulatory authority is subject to “damages” as the result of their failure to deny the engineer’s submittal and require the engineer to specify the required new standard, which ultimately, this will be the case. However, in this case, the regulatory authority approves the engineer’s submittal having an inferior sewer system proposed for use on the owner’s project.

Value Proposition

The first step is to go to the engineer and attempt to work with him to convert his specification in the best interest of all. This doesn’t involve his client, the project owner, who could care less at this point what technology his engineer specifies, or the regulatory authority. AES would provide to the engineer the third party reports which support their position that the engineer is required by the CWA to specify the best available technology, which is the advanced AES technology. Generally, this approach would work and AES would gain a new ally, the engineer.

However, in a case where the engineer isn’t persuaded, the next step is for the Company is to approach the engineer’s client. The “Achilles heel” is the client’s concern about his “money and time”. The Company will meet with the client and also

provide him with copies of the third party reports to substantiate his obligations under the CWA as the owner and or operator of the source (project). The client is advised of the disservice he is receiving from his engineer as the technology which his engineer is proposing for his project is 1) inferior technology, and 2) does not conform to federal law, the CWA. This generally is enough to cause the owner to either 1) advise his engineer to correct his submittal by specifying the new standard, or 2) fire his engineer and hire one that the Company recommends which would look out for the owner's best interest.

Keep in mind, the new standard will not cost the owner more money and generally, would save him time as has been Murphy's experience, approvals and permits for advanced technology which is required by law and which the regulatory authorities have become familiar with, generate expedient approvals.

The "Achilles Heel" – Our Key to Market Monopolization

As a last resort, if all else failed, the Company's legal department targets the "Achilles heel" and files a federal injunction under the Federal Water Pollution Control Act, US Code, Title 33, Chapter 26, Sec. 1251 et. seq. against the project. Such action would cause a delay of the client's project for at least 18-24 months before the client could have his opportunity to explain to the federal court judge why he didn't want to abide by the CWA requirements. He could explain why he didn't want to implement the required new standard of performance technology in the best interest of the public, the environment and the ground and surface water resources which was no more costly than the inferior technology proposed for his project by his engineer.

As can be easily surmised, such a challenge, if embarked upon, would cost the prospective client a substantial amount of "time and money", resulting in delay of the client's project while incurring legal expenses. Additionally, the client's project funding would be effected as a result of the injunction. The prospective client would have nothing to gain from such a decision to challenge and a lot to lose, more than likely, the total project.

It is logical that no project owner would pursue such a challenge. Once he received the notice of injunction, the client will respond to negotiate the change of technology for his project to avoid any threat that could delay of his project. Additionally, to incur additional expense in legal fees would not be in his best interest.

This industry is very small. Once this procedure happened once or twice, the industry, realizing that violation of the CWA wasn't going to be tolerated and the best available technology was going to be applied in every pollution abatement application throughout the nation, would willingly begin to conform.

This "strong armed" approach will take the "assumed power" which a portion of the engineering community thinks they have, and divert it to "law abiding" actions on behalf of their "clients" best interest. When this "old paradigm barrier" is realized by the engineering community, the new paradigm will be born. The engineers would not want relationships they have with their clients threatened due to their inappropriate specifications that they will have learned will not be tolerated.

Engineers, specifiers and regulators will then begin to abide by the requirements of the CWA which requires “implementation of waste treatment management plans and practices” that “shall provide for the application of the best practicable waste treatment technology.” And that technology “shall provide for consideration of advanced waste treatment techniques”. As such that “best available technology” shall be specified by “brand name or equal.” There is no equal to the “advanced” IDEA-CFCR waste treatment technology of AES.

Politics that have dictated what “technology” got the job will no longer be strong enough to overcome the ““Achilles heel.” State regulatory authorities who are responsible for enforcing the CWA under the Administrative authority of the USEPA will began to do their job, under the requirements of the CWA, and promulgate to the specifying engineers of their obligation to specify the best available technology by brand name or equal per requirements of the CWA.

While the Company may use the CWA to its advantage initially in a few selected instances, the AES legal offense will taper and focus on patent protection. Prospects will be encouraged through marketing and advertising to engage in the Company’s services. Enforcement of regulations will be done at the state levels that are empowered by the USEPA Administrator to regulate all waters of the United States under the CWA. Failure to do so would constitute “knowing negligence”.

Operational Metrics

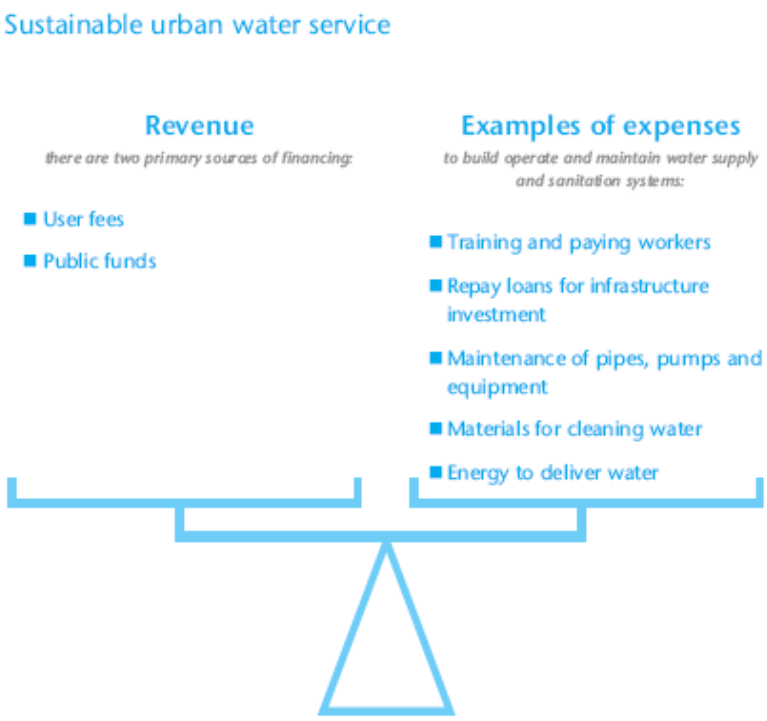
Providing wastewater management services for communities or cluster project will represent very large profit revenue. It can be seen below how profitable it can be to initiate the Company’s “discharge elimination services” for a community. The Company will not only enter into contractual relationships with communities, but also with states to provide such services on a state-wide basis, such as Hawaii, California, Alaska, etc. Below are examples of the revenue that would be generated by providing onsite systems at individual homes. Los Osos, California, for example, has 5,000 homes on septic systems, and received Cease and Desist Orders served by the State regulatory authority regarding nitrate discharge into the ground water. There are many such communities which are searching for an economical solution as compared to installing an expensive sewer collection system. The Company has a data base which can identify the areas that are in need of these services.

- **Gross Profit Revenue from ‘AES Reclamator’ as an appliance in each home.**

Number of homes	*Gross Profit per Home*	*Gross Profit*
100	$10,000	$1-million
1000	10,000	10-million
5000	10,000	50-million
250,000	10,000	2.5 billion

- **Monthly Revenue from ‘AES Reclamator’ located as an appliance in each home.**

Number of homes	*monthly payment*	*monthly income*	*yearly income*	*20-year income*
100	$60.00	$6000	$72,000	$1.44-million
1000	60.00	60,000	720,000	14.4-millio
5000	60.00	300,000	3,600,000	72-million
250,000	60.00	15-million	180-million	3.6-billion



Discharge Elimination Services Implementation Strategy
An organization is established such as an LLC or Corporation for each project. The Company refers to this as a "regional" corporation.

An effort is then made to enter into a strategic relationship with the proper authority responsible for providing the solution, such as the community public works, the county or state to assist in the program through providing their support. This makes the project occur much more quickly and enables state and federal funds in the form of grants and/or loans to be made available quite expediently. Otherwise, we will start providing the service as a private organization until such time as the support comes, which will eventually happen as soon as they realize that if they don't support and get involved with us, they will miss out on the revenue stream altogether.

Maintenance
As AES begins to establish the service, much like a cable company, it will begin its service program.

In a decentralized system application, service personnel will make regular scheduled site visits at least once every six months. Each system will be monitored 24/7 via internet to notify the service personnel if there is ever a problem which needs unscheduled attention.

Suppliers
The Company, being in business for 17 years, has already established it's suppliers of every component necessary for any system it offers to meet the need of any volume or strength waste stream that may be generated. A few of those are:

- Horizontal fiberglass is provided by XERXES (and two others)
- Vertical Cylindrical tankage is Superior Tank (and three others)

- REEF Industries supply all liner materials for application for in ground basins
- Pro Equipment[17] provides most all mechanical equipment necessary for any system except for membrane technology and disinfection systems
- TriSep Corporation - Membrane
- UV filtration from Sun Systems
- ABS Pumps have been an AES supplier for 20 years.
- Thomas Industries have supplied the compressors for the BESTEP systems
- Orenco provides the preferred tankage for the BESTEP along with risers, lids, floats and several other components used in the onsite system.
- Electrical control panels are sourced out between several panel builders

5.0.1 FROST AND SULLIVAN

To enable the industry to become aware of BESTEP, AES is contracting with Frost & Sullivan, a third party firm that can validate the AES technology as the "best available demonstrated control technology" (BADCT). AES will invest the first $32,770 into the Frost & Sullivan report, which will help substantiate the claims herein regarding the CWA, and provide AES a marketing tool.

Unlike the NSF nitrate study, Frost & Sullivan will do a comprehensive report on the qualifications and technology advantages of the AES technology in align with the criteria in the CWA that define the BADCT. The Frost & Sullivan report additionally will:

- Interpret the laws in the CWA, which require the regulatory authorities to require the BADCT and specify it by "brand name or equal."
- Provide a numeric BADCT chart that will provide the criteria (approximately 15 total) specified within the Clean Water Act. This scoring chart is required when evaluating a technology in order to determine if it qualifies as BADCT or equal. Each criterion will have a numeric value in accordance with importance, i.e. cost effectiveness would hold the highest value of "5" out of "1", "3" and "5." The AES technology will establish the BADCT standard with a total numeric value. In order for any other technology to qualify as "equal," it will have to carry the same or higher numeric value.

The CWA requires that all engineers specify and all state regulators approve only the BADCT or "equal" for new pollution abatement applications within the nation. Frost and Sullivan has already provided AES a 15 page proposal to provide their evaluation on technology, market scope, licensee program and financial matrix. Upon completion of this report, it will be delivered to all ten (10) EPA Districts and distributed to all regulatory authorities of every state within the US, thereby notifying them AES technology is the BADCT. Each state regulatory authority is required to notify the registered engineers within their state and distribute the information on the available BADCT technology. Additionally, AES will advertise in selected trade magazines, plus make presentations to the top engineers who perform the majority of the specification within each state.

[17] Pro Equipment proprietor is a co-owner of a patent, and has requested non-exclusive distribution rights of AES

Upon this awareness, it would be unlawful to permit an inferior technology other than an “equal” to the AES BADCT. There is no known “equal,” other than companies that will be licensed to provide the AES BADCT. The CWA requires that the regulatory authorities “require and assist in the implementation” of the waste treatment management plans and practices, which utilize the best practicable control technology currently available.

To help evaluate the potential for AES’s MBR technology in the global market for water reuse & recycling, assess its true market potential and its competitive edge compared to other suppliers in this market, Frost & Sullivan recommends the following information requirements:

AES’s Competitive Edge Analysis

- AES’s, “Green” MBR technology for wastewater treatment with flexibility in size of unit, level of treatment that could be used for domestic secondary applications, or as drinking water in foreign locations. The added possibility of also generating electricity in the process enhances the economics of each unit.
- Nevertheless, with many large competitors with MBR technologies in the market place, it will be important to compare and assess the unique technology and market applicability of AES’s technology.

Global Prospect & Market Potential

- The market potential for AES’s technology based on the numerous end-user applications, currently identified and others unexplored by AES, will be assessed by Frost & Sullivan.
- To assess AES’s market potential at a global level, criteria such as lack of water resources, accessibility to drinking water, economic conditions, lack of proper water & wastewater treatment plant infrastructure etc. will be taken into consideration.
- The global market assessments will be covered under the following regions – North America, Latin America, Europe and Asia, with particular emphasis on regions and countries most applicable to this project scope.

End-user Testimonials

- Apart from technology review publications, the next key element of marketing is the end-user testimonial on cost savings, ease of implementation and operation, reliability and overall economic benefit.
- AES has 100 installations worldwide and Frost & Sullivan will contact select end-users that currently utilize the technology to conduct an

independent review of its application capabilities.

Project Approach and Methodology
To accomplish the objectives of the proposed engagement, the analysis will be based on a combination of primary and secondary research techniques. Through triangulation and cross-verification of information obtained through a variety of sources, Frost & Sullivan will be able to provide a comprehensive third-party review of AES's technology and global market prospect.

Besides Frost and Sullivan, the Company is negotiating with the Rocky Mountain Institute to provide a second report. Additionally, two law firms will be selected and retained to write a legal opinion which will provide additional supporting third party legal documentation.

5.1 COMPETITIVE EDGE

AES Technology is Required by Federal Law Because the AES Technology is the "Best"
Having the "best available technology" is not just a competitive advantage; it can lead to a having a monopoly as a result of being the only technology which meets the requirements stipulated in the Federal Law of the United States which is the Federal Water Pollution Control Act (Act), US Code, Title 33, Chapter 26 which is commonly referred to as the Clean Water Act after it's 1972 amendment. The CWA enables a federally mandated monopoly as it requires the "best practicable control technology currently available, which is economically achievable" to be "required" by all regulatory authorities to serve all pollution abatement applications throughout the Nation. AES has that "best available technology" which meets the requirements defined within the CWA.

- Reduced costs of repairs, operation, maintenance and replacement
- Longer system life
- Improved system performance
- Increased reliability and overall satisfaction
- Higher property values

Third Party Credibility
To further substantiate the AES technology as 1) the best which is required by law, and 2) as such, all regulatory authorities are required by the federal law to require and assist in the implementation of it, the Company is engaging four (4) third party entities, two (2) credible institutions who specialize in providing such reports and two (2) law firms who specialize in federal law of the United States. Such reports will be undisputable. A contract has already been generated by one party, another has been selected and the two law firms have not yet been finalized. The Company's lawyer will assist in the final selection of the two firms.

Technology Performance Demonstrated
The Company has already acquired an NSF/ANSI Technology Evaluation on its wastewater treatment process. The NSF is an industry recognized third party

technology verification institution who specializes in verification of water and wastewater treatment technologies. The NSF report verifies the performance of the AES technology which has been demonstrated to meet, through such performance evaluation, the claimed levels of performance. Additionally, the Company has substantial data which it has accumulated over the past seventeen years which also confirms actual in application technology performance. This water quality of the AES advanced IDEA-CFCR biological process technology coupled with the performance data of TriSep Corporation on their SpiraSep ultra filtration (UF) membrane is undisputable.

Micro and UF filtration technologies have been around in the water treatment industry now for several decades and have extensive track records which verify their performance capabilities. The Company has options as to what suppliers it chooses to use for larger system applications which would require such additional physical treatment technology.

Wastewater Industry is Divided into Two Segments

The industry is divided into two (2) separate segments, "decentralized" (onsite), which is generally private sector, and the "centralized" (big pipe), which is generally municipal. Even though the federal law requires decentralized solutions, the large engineering firms have politically keep the market in a centralized arena due to big money benefits to all parties and the fact that all parties are part of the same sorority, the sorority of "engineers." The municipal decision makers, the state regulators and of course the engineering firm specifying the solution are all "engineers," consequently, that segment drives the market to centralized methods regardless of what the federal law requires. The EPA has just turned their head as, until now, there has been no viable onsite technology which would eliminate the discharge of pollutants as the federal law requires.

Decentralized Market Competition

No onsite system technology has been able to demonstrate its ability to produce a quality of water which eliminates the discharge of nitrate pollution. The best any competitive system has been able to achieve is 14 mg/l Total Nitrogen which is 4 mg/l over the maximum allowable. When anything over 10mg/l is considered "pollutant", there is no competition for the Company's BESTEP onsite system which was demonstrated by NSF to produce 3.9 mg/l Total Nitrogen and never, throughout the entire test, even reached the maximum allowable of 10 mg/l. Again, this is an undisputable fact. The CWA requires, "where practicable, a standard permitting no discharge of pollutants" be met. The AES BESTEP is the only technology which is proven to meet that requirement.

Other than that, the onsite market is extremely fragmented, however immense. These "mom and pop" companies are ripe for the picking. They have a passion to be in the industry, but don't have a viable technology to qualify them as a player. The AES "Value Proposition" Program will bring all onsite businesses onto the "bandwagon" in order to stay in business.

Centralized Market Competition

This market has several large participants that claim to have the "best available technology". These are such companies as General Electric, Siemens, Parkson Corporation, Smith & Loveless, Aqua Aerobic and several more. Until now, there

has never been a “measure” by which to specifically compare technologies in order to identify which is the “real” best available technology. The Company’s third party reports will provide that measure.

Until now, all the municipal market wastewater treatment technology companies have had their systems which were all of a similar technology base which may have arguably been “best”, depending on what political opinion was drawn and by what influence. This market has survived under the absolute influence of relationships and political connections which existed in that particular area that a system was proposed for application. Most of those relationships involved the local representatives who had relationships with the local engineers who had relationships with the local state and municipal decision makers. Thus is the reason that today the nation’s waters are so polluted and getting worse, due to those inferior technologies being applied regardless of the requirements of the law.

Technology, Performance and Economy Based Federal Law Requirements

The federal requirements established under the Federal Water Pollution Control Act are based on three (3) specific primary criteria, technology, performance, and economics. One of the primary purposes for the Company acquiring the four third party credibility reports is to establish a measure that will be based on the specific criteria defined within the CWA which is supposed to be considered when a regulatory authority is evaluating a particular technology. The measure will consist of a comparison chart having approximately fifteen (15) criteria which will carry a numeric value of “1”,”3” and “5” depending on the level of importance given each criteria. The AES IDEA-CFCR advanced technology, as the “best available technology” (BAT) will establish the “National Standard of Performance” standard which will have to be equaled or surpassed by direct comparison in order for any other technology to be selected as BAT. The competing technology will have to compare to the AES IDEA-CFCR advanced technology, performance and costs in relationship to engineering aspects, capital, and ongoing maintenance and energy requirements. There is no other technology which will equal the AES IDEA-CFCR advanced process technology in either of these areas, much less in all. Any technology which does not have an “equal” numeric value totaled at the bottom of the chart does not qualify as an equal and as such, is not a BAT which is required by federal law.

Our Competition Today – Our Marketing Infrastructure Tomorrow

The introduction of this National Standard of Performance measure will soon cause a licensing frenzy by the large companies who have already established large marketing infrastructures that will begin to miss out on their share of the market. Consequently, this will serve as the major part of the Company’s marketing plan to monopolize the national market. The Company will initiate a strategic program of entering into OEM Partnership License Agreements, which is already mostly prepared, with completive companies who wish to continue marketing wastewater treatment solutions in the US market. The Company already has relationships with most of those companies which will eventually desire a licensing arrangement as there have already been licensing discussions between them.

AES Marketing Plan Mirrors That of JVC in Their Pursuit to Establish the Market Standard

The advantages that the Company shall benefit from that JVC did not have the luxury of are 1) the AES technology, as the "best available technology", has federal law requiring it to be selected as the specified solution by "brand name or equal" for all pollution abatement applications throughout the Nation, and 2) currently, no other Company has "equal" technology to offer and the Company has established barrier-to-entry through established intellectual property rights with additional patents to come, which will secure this position for as much as 20 plus years.

Advanced Environmental Systems, Inc.

TECHNOLOGY COMPARISON

I.D.E.A. *CFCR*™ Process vs. Other Systems

ITEM	AES I.D.E.A. *CFCR*™ Process	ABJ ICEAS™ Process	SBR Sequencing Batch Reactor	Conventional Extended Aeration
Mitigates Influent Energy in Pre-React Zone	**Yes**	No	No	No
Minimizes volume (gal) in Pre-React Zone to total area (sq ft) of Partition Underflow	**Yes**	No	N/A	N/A
Utilizes Sludge Blanket in Pre-React Zone	**Yes**	No	No	No
Controls Upset during Peak Influent Flows between Pre-React and Main React Zones	**Yes**	No	N/A	N/A
Minimizes Overflow Velocity to decanter during Decant	**Yes**	No	Yes	N/A
Minimizes mechanical decanter maintenance	**Yes**	No	No	N/A
Process is suited to any single Tank Geometry	**Yes**	No	No	No
Single Reactor Basins acceptable	**Yes**	Yes	No	Yes
Mode of operation	**Cyclic**	Cyclic	Sequencing	Continuous
Can continuously accommodate Influent Flows	**Yes**	Yes	No	Yes
Balances Peak Organic loads between Reactor Basins	**Yes**	Yes	No	Yes
Minimizes land use	**Yes**	Yes	No	No
Minimizes capital costs	**Yes**	No	No	No
Minimizes Upset, Process Wash Out and Effluent Degradation during Peak Flows	**Yes**	No	Yes	No
Operates without Secondary Clarifier	**Yes**	Yes	Yes	No
Sludge/Sewage Transfer Piping	**None**	None	Yes	Yes
Minimizes daily maintenance	**Yes**	Yes	Yes	No
Mixing efficient at 20-70 day Sludge Age	**Yes**	No	No	No
Minimizes Tankage required	**Yes**	Yes	No	No
Minimizes Energy requirements	**Yes**	Yes	No	No

WASTEWATER TREATMENT SYSTEMS
ENGINEERING / MANUFACTURING / INSTALLATION
Post Office Box 50356 • Sparks, Nevada 89435 • Phone (775) 425-0911 • Fax (775) 425-0212 • aeswastewater.com

5.1.1 THE BATTLE BETWEEN BETA AND VHS

Overview

After its first appearance in the early 70s the VCR surpassed even color TV to become the largest consumer electronics product by the early 1980s. In 1975 Sony introduced its Betamax system and JVC introduced its own VHS system the following year. The two systems were immediately in competition because they used different tape-handling mechanisms and cassette sizes as well as coding systems that varied just enough so that the tapes were not interchangeable. At first Beta was the industry leader with its compact, inexpensive, and reliable VCR. It accounted for most of the sales from 1975-77 and increased in sales until 1985. However in 1975 it fell behind VHS in market share and continued to loose its share every year thereafter. By the end of the 1980s Sony had stopped producing Beta models and switched to a smaller 8mm tape used primarily for home movies. So the question is why did this happen? Sony had entered the market first and had a product that was generally considered to be technically superior to its VHS counterpart. There were several reasons for Sony's defeat.

Bandwagon Effect

Many experts on the subject blame the "bandwagon" effect as one of the major problems facing Sony. It refers to a situation where customers perceive value in owning the standard that is most commonly available in the industry. Due to the massive demand of a global market Sony was unable to produce enough Beta systems to supply all its potential customers. This resulted in the opportunity for a competing system, like VHS, to enter the market and meet the demand. The demand for complementary products, like prerecorded tapes, started a second bandwagon in the 1980s. As retail outlets began to stock tapes in the most popular format, Sony continued to enjoy significant acceptance. Although engineers and managers recognized that a standard format would benefit both customers and producers an agreement could not be reached. This was due to Sony's experience with an earlier product the U-Matic. As early as 1970, Sony was ready to release a smaller more sophisticated recording system which may have proved popular with customers. However, since its competitors like JVC were not ready to mass produce such a machine, the U-Matic ended up as a compromise design. By compromising to support what became the industry standard for institutional machines, Sony had missed the potential opportunity to enter the home market.

The “Bandwagon” Effect Opportunity For AES

AES has the opportunity to create a “bandwagon effect” in the wastewater industry with an initial advantage that JVC didn’t even have the luxury of, a federal law which defines the technology that is to be selected for use, which is the technology which AES offers. Another advantage which AES has is that its technology, upon application, will eliminate the market for the major competition, the “big pipe” municipal companies. This will begin to cause their market to crumble as their source of revenue will have the choice to implement the “onsite” water repurification technology and cease contributing to the big pipe revenue stream. And yet another advantage is that there are currently many small companies with various onsite systems and technologies that will become “licensed OEM partners” of AES. The AES technology will, as the “standard” and the one required by law, start to be applied in every pollution abatement application throughout the Nation.

Technological Advantages
Using their experience with the U-Matic design both Sony and JVC proceeded to develop a VCR with a .5 inch wide tape for home video use and introduced them to the public in '75 and '76. Sony's product was basically a miniaturization of the U-Matic but with a more advanced recording system. The VHS was also very similar to the U-Matic design with different recording formats, tape sizes, and tape-handling mechanisms. The similarity of the products proved to be a problem for both formats. Neither could differentiate themselves through basic features so neither could gain a technological advantage. As a result the domination of the huge global market required cooperation with other companies to mass produce, license, and distribute both hardware and software.

AES Technology HAS Technological Advantages
AES enjoys patented technological advantages over all other technologies in the industry. The federal law requires the technology which has the "best" technological advantages. AES is going to provide the measure to the industry which will enable the regulatory authorities to do actual comparisons of technologies in order to determine which the "best available technology" is. The AES patented technology establishes that National Standard of Performance having lower prices and better performance that will have to be equaled.

Cooperation was Necessary
The vast size and worldwide structure of the new demand made it impossible for any one firm to accommodate it. Accordingly an early mover, like Sony, had no guarantee to hold market share simply by being first. This created a need for Sony to capitalize on it market position. This was especially true because other companies like Matsushita had the option of moving in with a comparable product with lower prices, better features, and superior distribution. Matsushita's which marketed products under brand names that included Panasonic, Technics, National, and Quasar possesses the mass production capability and the broad distribution necessary to meet the global demand. In addition Matsushita could schedule large production runs because they were willing to sell finished products to original equipment manufacturers (or OEMs) for sale under their labels. Sony on the other-hand was reluctant to build VCRs for sale under other companies' labels, preferring to build up the Sony name and reputation and avoid sharing innovations with other firms.

AES Will Meet Market Demand Thru Strategic Partnering With OEMs
Many manufactures and suppliers of onsite system technologies who have had a very large market share in the past are now floundering as the result of their product/technology not being capable of "denitrifying". These companies have large manufacturing facilities already established and could expediently pick up manufacturing and distribution of the AES technology. AES will have a legal team develop "licensing partnership agreements" with these companies which will provide a win/win opportunity for both entities.

Continued….
As the battle between rival formats played out the primary players were Sony and JVC (although Philips continued to produce a different format in Europe for a decade). The primary argument is that the early lead and the final outcome of the

battle reflect the deliberate actions of the main players. Strategic maneuvering by JVC in 1975-77 led to the alignment of producers to exploit the mass production and distribution capabilities necessary to account for the early dominance of VHS. In the 1980s the strategic alignment of producers of the complementary products further accelerated Beta's eventual demise.

The Primary Players are Onsite vs. Big Pipe

The two players in this battle are the onsite part of the industry vs. the big pipe part. Even though the CWA *requires onsite to be implemented to eliminate the discharge of pollutants at the source and allow for water reuse and conservation, the big pipe industry, driven by big money and enabled by politics have not been held to the law. The onsite industry consists of small companies all struggling for a little segment of the onsite market. Bringing these companies all together into one family will give the onsite part the financial and technological strength to counter the big pipe attack through establishing an onsite standard that is in compliance with federal law which will result in taking the available market from the big pipe player. AES will initiate a program which will led to the alignment of onsite manufactures to exploit their mass production and distribution capabilities necessary to quickly dominate the market place at the onsite level.*

Continued….

Sony's management made some crucial mistakes which would be recognized years afterward. They should have worked harder to bring more companies into a "family" to support the Beta format. This was due to Sony's belief that their product was better and they knew that they were ahead of their rivals in VCR development. JVC, on the other-hand, launched a much more effective campaign to form an alliance behind the VHS format. JVC's parent company (Matsushita) moved aggressively to bring leading consumer electronics firms in Europe into the VHS family.

AES Management Delivers Proof, Forms an Alliance and Goes Global

AES is backing up their "belief" with third party documentation which 1) will prove the AES technology is better and 2) will clarify that it, as the "best" is required by federal law to be specified by the engineering and regulatory communities. Additionally, the AES "family" will grow very quickly due to two main reasons, 1) opportunity to "get on the bandwagon" and 2) the barrier-to-entry if they don't get on the bandwagon. We will present our "family" program opportunity to all competitors in the onsite and big pipe industry. At this point, many will get on the bandwagon, mostly the onsite players, as most of the onsite members are in need of an advanced technology to offer their market. Most of the big pipe members will initially reject the opportunity.. Those that don't will soon discover the barrier-to-entry. The AES Family will selectively file injunctions against projects of the outside competition that choose to continue marketing inferior technologies. Their clients will quickly convert upon being presented the "value proposition" which would enable them to avoid the time and expense that would be associated with going through the process. Soon, the outside members will also join the family out of necessity so that they may also continue doing business with their market share.

Continued….

In the fall of1974 Sony began preparations for manufacturing without approaching other firms to entice them to adopt the Beta format. They did this to establish themselves as the early leader in the market (which they did successfully).

Unfortunately this also made Sony less flexible, because altering their design would prove very costly to their manufacturing process. It was later that year that Sony first recognized Beta's major design flaw, its limited playing time. This issue became a problem during discussions with RCA, who had already test marketed its own product and found that a minimum two-hour playing time was necessary for commercial success. RCA recognized the Beta formats inadequacy of a one-hour playing time. They decided to join with JVC and Matsushita in declining to adopt the Beta format. Now it seemed time for Sony to modify the Betamax for two-hour recordings which resulted in the loss of valuable time and opportunities to continue their attempts at licensing their format. Of particular interest was when Hitachi approached them in 1975 but were turned away because Sony managers insisted that the Betamax was not yet perfected and thus not available for licensing.

AES Also Made The Mistake of Early Introduction of Leading Technology

In 1991, AES introduced the advanced IDEA-CFCR biological process technology to the wastewater industry at the Water Environment Federation Convention (WEFTEC). Following the show, many of the industry's leading companies approached AES to purchase a license of its advanced technology. Fortunately, no deals were made as no company desired to pay what AES knew the value of the technology was. Now the technology has matured in its development and the previous idea of market domination thru one company in the big pipe market is now recognized as the wrong approach to accomplish this goal. This would have been a mistake much like Sony made. Unlike with Sony, it was fortunate that our deals didn't happen as we had not yet realized the TRUE way to dominate the market. We have since realized the way to dominate the market is through 1) providing the technological solution which the federal law requires to be selected for all pollution abatement applications, 2) build strength and industry recognition by "gathering" the fragmented onsite part of the industry onto the "new industry standard bandwagon", 3) utilize this strength and the federal law to leverage the initiation and the industry's acceptance of the "New Industry Paradigm..

Continued…

Unlike Sony, who wanted to limit its partners to licensing agreements, JVC pursued a strategy aimed at establishing as many partners as possible. They did so by establishing licensing and OEM agreements. JVC began this process shortly after seeing the Betamax demonstrated in the spring of 1975 and had lined up Hitachi, Mitsubishi, and Sharp by the end of 1976. They agreed to supply Hitachi with VCRs when Sony would not and it was Hitachi who helped recruit Mitsubishi and Sharp.

Many Partners Are Waiting and Willing

Since the membrane bioreactor technology revolution, virtually every onsite system supplier/manufacture has been left behind, many not even knowing it as of yet, but soon to find out. The onsite part of the wastewater industry, even though very large, is also extremely fragmented. The opportunity to get onto the bandwagon by becoming a partner of AES and gaining a technology which will be the industry standard will offer them several advantages. Currently, they are all trying to gain approvals of their individual "magic black boxes" facing a lot of resistance, for generally good reason, they don't work. However, they have a passion to do business, they just don't have viable technology. Our OEM Partnership Licensing Program will, for the first time in the history of the onsite industry, offer an opportunity to these companies to acquire an advanced technology which is the industry

standard of performance backed by the organization that will pave the way in all regulatory jurisdictions enabling industrywide acceptance of the technology. As a Licensed Partner, they will only have to market the product that is already accepted by the regulatory community as the industry standard.

Features and Pricing

Another nail in the coffin for Sony was that JVC was willing to let other companies refine the VHS. This included creating longer recording times and adding new features. As all these companies began producing VHS models they flooded the market. Together these companies gained a market advantage of 49% with the VHS system (compared to 41% by Sony and its partners) and increased the "bandwagon effect" by 1976. The VHS standard was worldwide by the end of 1978.

When contrasting the various features and prices offered by both Sony and JVC it becomes pretty clear that the strategic alliances formed by JVC and Matsushita may have put them at a competitive advantage. While Sony offered more low priced models until 1980, Matsushita was able to use its greater manufacturing capabilities to counter their efforts. They were able to introduce both cheaper and more expensive models in 1981, and manufactured about twice the number of units Sony produced during the same period. Another advantage Sony had over their competition was their reputation for quality and reliability. JVC and its partners were able to overcome this obstacle by offering extended warranties on their machines. Sony tried again and again to differentiate itself from their competition by offering basic features at a lower price. Unfortunately they were unable to maintain this for any length of time because of the vast and varying technical skills and initiatives made by JVC and its partners. Sony offered most of the new features, even as they were losing market share to VHS, but JVC was usually able to match them within a few months. Some of these features included the first wireless remote, half-speed and one-third machines, hi-fi sound, and the camcorder. While Sony made great advances in all these areas, JVC with its overwhelming market share and stronger family of companies were able to match them at every step.

The AES Family of Companies

The AES family of companies will additionally enjoy similar advantages. The Partnership Agreement will require all innovations discovered/developed by any member of the family will be available to the entire family. The innovation will be the result of a research and development agreement the family member will have entered into as a part of the Partnership License Agreement which entitles the rights of the innovation to the inventor of the licensed technology. The family member will have a right to share in revenue benefits as a co-inventor and the innovation will be available to all companies of the family.

Even if outside companies wanted to, which they will, develop a competitive product, they would first have to overcome the patented biological foundation of the advanced IDEA-CFCR process of the AES product technology. The chances of that happening are slim, as it is the first new biological advancement to come along in almost 100 years. Assuming though that anything is possible, an aggressive campaign will be implemented in order to bring as many companies into the family as possible as quickly as possible so that any new development which would threaten the AES technology would occur from within the family of companies, therefore, AES would have ultimate control of that new "disruptive innovation."

The growth of the family will feed the power the family of companies and the power will feed the growth of the family of companies. The ultimate feature of the AES product is that it produces "WATER". This is the ultimate achievement and accomplishment. All other onsite companies only treat wastewater but still produce "polluted wastewater", not "repurified water". Repurified water is pure water as defined in the EPA Maximum Contaminant Level Goal water quality standards which define treated drinking water quality. AES is the first to develop an onsite technology which meets the requirements of the federal law and can be provided at a cost equal to that of a typical septic system installation.

Conclusion

In conclusion it is obvious that the battle between Beta and VHS was won and lost in the strategic positioning of the two formats creators. Neither could establish a competitive advantage based on features or price. Sony took a much laid back approach to forming partnerships with other companies, in part because they felt their product was better and also because they overestimated their lead in the market. JVC and Matsushita on the other hand took a very aggressive posture and brought as many partners into the VHS family as possible. This was an easier task for them to accomplish because they possessed the necessary manufacturing and distribution capabilities to both license the design, and establish OEM agreements with smaller companies. Sony's early lead made them less flexible to design flaws, like the limited playing time, which caused them to loose valuable time and opportunities to their competition. As VHS brought more and more electronics manufacturers into their "family" and flooded the market, the bandwagon effect took its toll. Sony was unable to rebound and by the mid-to-late 80s Beta had all but disappeared. In hindsight Sony's failure is easy to explain. However anyone studying this subject would understand that these decisions were not made in a vacuum. The global marketplace is a dynamic entity subject to trends and attitudes of consumers. Sony based their decisions on the management strategies which had made them successful for decades.

And Now It Begins….

Unlike the Beta and VHS battle, AES does not have to compete with a rival with equal technology. AES currently has the grand advantage of having exclusive rights to the technology which is to become the new industry standard which offers the "best technology" (feature) at the "most economical" (price) cost as compared to any other technology or method as defined by federal law. AES begins its program HAVING and EXCLUSIVE competitive advantage, unlike either Sony or JVC enjoyed the luxury of having. So, AES figures that it should learn from this bit of history and advance its program with a logical assumption that it won't be long until there will be a viable player which will compete for its market share also. The market is much too lucrative for this not to happen in the very near future.

By AES taking an extremely aggressive posture to bring as many companies into its family of companies as early as possible, it will have several advantages over the future competitor when it appears. Many more options would then be available to counter the competitive threat. The Company will already have established the family of companies having an established manufacturing and distribution infrastructures along with nationwide engineering and regulatory acceptance. Currently, recruiting these companies into the family will be easy as they are suffering from the "technology invasion". These many small companies have

manufacturing and distribution networks already established but their technologies aren't qualified anymore to meet the latest stringent nutrient removal requirements that are now being imposed. AES will be giving them a "helping hand" by throwing out the technology life line to them. AES will benefit from their in place infrastructures which will enable an extremely rapid command of a major market share. As with JVC, the "bandwagon effect" will take its toll, not only on the onsite market, but also on the municipal market. It will be very much like having control of the "oil field", the AES family will have control of the "water field."

Generally, as stated above, the marketplace is a dynamic entity subject to trends and attitudes of consumers, however, the marketplace of the wastewater industry is not one subject so much to dynamics of trends and attitudes of consumers. It posses a uniqueness of its very own as it is subject to law which establishes regulations that require application of the best technology at the most affordable costs in the name of public best interest and health with the ultimate goal of protecting the environment and its resources.

The big pipe segment of the wastewater industry has been successful for years as there hasn't been any viable onsite technology that could meet the federal law requirements and "eliminate the discharge of pollutants at the source". Therefore the paradigm didn't change even after the establishment of the Federal Water Pollution Control Act in 1948. They continued the old methods of waste management that have been successfully practiced for decades and have become very comfortable with proceeding in violation of the federal law requirements. Consequently, they are completely out of touch with the onsite segment of the market and will be completely "broadsided" by the implementation of the new federal standard establishing the new industrywide paradigm for wastewater management. They will find themselves in a vanishing marketplace as the focus of wastewater management will be brought down to treatment at the source through implementation of onsite technology enabling water reuse and conservation rather than transported miles and miles through expensive collection systems to a centralized treatment plant for treatment and disposal that now is no longer feasible. Thus…The New Paradigm Begins.

5.2 COMPETITION (PROSPECTIVE PARTNERS)

Most competitors are listed on the EPA Innovative Technology List.[18] Competition is monitored through their marketing material and regulatory applications in each state. At trade shows, the Company also learns about the advancements of competitors. Organizations such as the National Onsite Wastewater Recycling Association ("NOWRA" http://www.nowra.org/) retain current lists of virtually all companies active in the onsite wastewater segment of the industry. The Company will use this resource along with others to maximize contact with all the companies in the industry to offer opportunity to get on the bandwagon early. An aggressive campaign will be waged with visits and demonstrations in order to win them over to become a part of the new "family of companies." Murphy already has relationships with most of the companies of some sort that has evolved over the many years of his involvement in the industry. Most of these companies are already aware of the advanced technology of AES.

[18] http://www.epa.gov/ne/assistance/ceit_iti/list.html

Orenco
Orenco is a leading onsite technology company. They, as most companies which are active in providing systems for the onsite segment of the wastewater industry, don't have a technology or system that would compete in the big pipe segment of the industry. Management has been in discussions with Orenco since the 1970s, and offered Orenco a license on the BESTEP technology in 1991. Like so many other companies and entities that seek to replicate the AES technology with a "technology of their own", Orenco opted to develop its own system. The Orenco system is overly complex, inefficient, energy costs are 5x more, it is anaerobic, has multiple pumps and performance varies with flows. The Orenco AdvanTec even lost its approval in Nevada due to its poor performance. This AdvanTec system of Orenco is typical of what is going on in the industry. These small companies continue to create and compete in the marketplace with inferior "Rube Goldberg" contraptions which cost more and are inefficient in all other areas of performance. They develop political based relationships in order to get approvals by regulators area-by-area to treat and discharge treated wastewater.

The AES BESTEP UF-900 produces a quality of "water," which meets the Maximum Contaminant Level Goals (MCLG). This EPA treated drinking water standard is a non-enforceable standard. All regulatory authorities will automatically have to accept and approve the new standard of this technology in their jurisdictions as it is not subject to enforcement and therefore requires *no permit* to install. Permits are only required for a discharge of pollutants. This is called a "discharge permit." If there are no pollutants associated with a "discharge," there is technically no "discharge," as "discharge" means the addition of pollutants to the environment. AES does not discharge therefore requires no discharge permit. The quality of water the AES BESTEP UF-900 produces is equal to the quality of tap water.

ZENON
ZENON is one of the leading big pipe or municipal technology companies and claims to be the "best available technology." ZENON currently doesn't offer an onsite technology system. This is typical of most companies who offer technology for big pipe and municipal application. ZENON was acquired by GE for $700 million. ZENON developed the first MBR technology. Even though it broke the trail for MBR technology, it exemplifies all the disadvantages of a typical "in basin" conventional MBR technology. ZENON has an energy requirement of approximately twice, no flow equalization, and must recirculate at a rate of 2.5x the average daily design capacity to prevent biomass buildup under the membranes and also to initiate denitrification in a separate anoxic sewage compartment. It incorporates hollow fiber membrane technology. The advanced IDEA-CFCR process technology antiquates the ZENON technology in several key areas. The patented advanced IDEA-CFCR process technology first of all much less expensive. It requires no recirculation or associated equipment, it has a patented inherent denitrification technique, an inherent hydraulic flow equalization capability and a substantial less energy requirement, about half. Additionally, the advanced IDEA-CFCR MBR Alternative offers several beneficial alternative advantages to the "in basin" membrane design of ZENON. The latest development of its new "clean energy" producing hydro-electric turbine technology will enable the advanced IDEA-CFCR technology to establish a whole new standard by reclaiming virtually all power required to operate its water repurification process.

Major Stakeholders in the Wastewater Marketplace

These are the majority of the companies in the wastewater industry and have been compiled from the largest industry organization, the Water Environment Federation, now known as WEFTEC. The majority of the companies below are involved at some level or another in the municipal segment of the industry. These companies represent manufactures of tankage, equipment, processes, engineering and about every company in the industry that is involved in municipal wastewater treatment plants or sewer collection systems. Only a small part of this list consists of the manufacturers of a onsite wastewater treatment systems. None of the below players have an equal to the AES technology for either onsite or big pipe applications. AES will contact each of these companies which are viable to become part of the AES "family of companies."

Company Name	State/Province
AAA New Buoyancy/Gravity Mixer Co.	California
Abanaki Corp., Oil Skimmer Division	Ohio
ABJ Sanitaire Corporation	Wisconsin
Acrison, Inc.	New Jersey
ADI Systems Inc.	New Brunswick
Advanced Environmental Systems, Inc.	Nevada
Aeration Industries International Inc.	Minnesota
Aeration Products Inc.	Ohio
Aero-Mod Inc.	Kansas
AEROMIX Systems, Inc.	Minnesota
AEROSTRIP Corporation	Connecticut
Air Liquide Industrial U.S. L.P.	Texas
Airmaster Aerator, L.L.C.	Louisiana
AirSep Corporation--Commercial Products Division	New York
E. Roberts Alley & Associates, Inc.	Tennessee
AnoxKaldnes, Inc.	Rhode Island
Aqua-Aerobic Systems, Inc.	Illinois
Aquaturbo Systems, Inc.	Arkansas
Aqueous Recovery Resources, Inc.	New York
Aquionics Inc.	Kentucky
Ashbrook Simon-Hartley	Texas
BacTee Systems, Inc.	North Dakota
Big Dipper--Thermaco	North Carolina
Biothane Corporation	New Jersey
BioWeb Company	Georgia
Brentwood Industries	Pennsylvania
BYO-GON	Texas
Cartwright Consulting Company	Minnesota
Cass Water Engineering, Inc.	California
CDM	Massachusetts
Cemen Tech, Inc.	Iowa
CETCO	Illinois
CMS Group Inc.	Ontario
Conor Pacific	Ontario
Custom Biologicals Inc.	Florida
Cyclus Envirosystems	Washington
DDI-Heat Exchangers Inc	Quebec
Durr Environmental, Inc.	Michigan
Dynaphore Inc.	Virginia
Eco Purification Systems USA	Maryland
Ecoloquip Inc.	Texas
EIMCO Water Technologies	Utah
Ekokan LLC	North Carolina
Ekster and Associates	California
Ellis Corporation	Illinois
EMA, Inc.	Minnesota
Enprotec	Kentucky
ENSR	Massachusetts
Entex Technologies Inc.	North Carolina
Envirodyne Systems Inc.	Pennsylvania
Envirogen, Inc.	New Jersey
Environmental Dynamics Inc.	Missouri
Environmental Resources Management (ERM)	Pennsylvania
EnviroPure Solutions	Illinois
Enviroquip, Inc.	Texas
Eutek Systems, Inc.	Oregon
Filtros, LTD	New York
Fluidyne Corporation	Iowa
Company Name	State/Province
FRC Environmental Inc.	Georgia
Global Water Technologies	Texas

Great Lakes Bio Systems, Inc.	Wisconsin
Hi-Tech Environmental, Inc.	Alabama
Highland Tank	Pennsylvania
Hoffland Environmental	Texas
Hyder North America, Inc.	Pennsylvania
Hydro International	Maine
Hydrocal Inc.	California
HydroFlo Technologies	Illinois
Hydromantis	Ontario
Hydromantis	Ontario
Hydroxyl Systems Inc.	British Columbia
In-Pipe Technology	Illinois
INFINITEX	New York
Ingersoll-Rand	North Carolina
Interon Engineered Products	Oklahoma
Jet Inc.	Ohio
John Meunier Inc.	Quebec
Kinetico Engineered Systems Division	Ohio
Koch Membrane Systems, Inc.	Massachusetts
Kruger Inc., I.	North Carolina
KWH Pipe LTD	Ontario
Landa Water Cleaning Systems	Washington
Landia, Inc.	North Carolina
Lemna Technologies, Inc.	Minnesota
LOTEPRO Corp.	New York
LuminUltra Technologies Ltd.	New Brunswick
Maguire Group Inc.	Connecticut
Marley Cooling Tower	Kansas
Martin Marietta Magnesia Specialties	Maryland
Met-Pro Corp., Systems Division	Pennsylvania
Micro-Bac International, Inc.	Texas
Micronair	Florida
Mixing Systems Inc.	Ohio
Mother Environmental Systems, Inc.	Georgia
Napco	Connecticut
National Small Flows Clearing House	West Virginia
Noram Engineering and Constructors, LTD.	British Columbia
Or-Tec Inc.	Ohio

Company Name	State/Province
Orenco Systems, Inc.	Oregon
Ozonology Inc.	Illinois
P.J. Hannah Equipment	British Columbia
Pall Corporation	New York
Parsons Engineering Science	California
Pro-Equipment, Inc.	Wisconsin
ProChemTech	Pennsylvania
Purestream Inc.	Kentucky
R-V Industries Inc.	Pennsylvania
RGF Environmental Systems Inc.	Florida
Rochem Environmental, Inc.	Texas
Rotork Controls, Inc.	New York
Sanitaire - Div. of ITT Ind.	Wisconsin
Santec Corp.	Colorado
Schreiber LLC	Alabama
Seghers Keppel Technology, Inc.	Georgia
Shaw Environmental	New Jersey
Smith & Loveless Inc.	Kansas
SolarBee--Pump Systems, Inc.	North Dakota
SRE Inc.	New Jersey

Company Name	State/Province
Stamford Scientific International, Inc. (SSI)	New York
Star Filters	South Carolina
Tanks-A-Lot Ltd.	Alberta
TASKEM OMEGA Water Treatment Group	Ohio
Thermodyne Corp.	Pennsylvania
Unisol	Arizona
United Industries Inc.	Louisiana
Universal Process Equipment	New Jersey
USFilter, A Siemens Business	Pennsylvania
USFilter, Zimpro Products	Wisconsin
USFilter, Davis Products	Georgia
USFilter, Envirex Products	Wisconsin
UV Systems Technology Inc.	British Columbia
Valve and Filter Corp.	Colorado
VIBRA Screw Inc.	New Jersey
Viking Chains Inc./VC Chains Corporation	Georgia
Vulcan Performance Chemicals	Alabama
Walden Inc.	Maine
Waterlink/Biological Wastewater Systems	Massachusetts
Waterlink/Great Lakes Environmental	Illinois

Company Name	State/Province
Waterloo Biofilter Systems Inc.	Ontario
WEDECO/ITT	North Carolina
ZENON Environmental Inc.	Ontario
Zoeller Engineered Products	Kentucky

Other Wastewater Treatment Companies[19]

Environment One Corporation
Manufactures gravity-independent sewage collection systems and electric power generator monitoring equipment. Merged with Precision Castparts Corp.
www.eone.com

American Manufacturing Company, Inc.
Manufacturer of residential, commercial and industrial on-site wastewater processing equipment.
www.americanonsite.com

Aqua Aerobic Systems, Inc.
Manufacturer of wastewater aeration, mixing, filtration and cooling products and systems for industrial and municipal applications.
www.aqua-aerobic.com

Wastewater Engineers, Inc.
Turn-key wastewater treatment systems for small industrial companies.
www.wastewatereng.com

ECO Process and Equipment, Inc.
Designing sequencing batch reactor technologies for wastewater treatment.
www.sequencertech.com

Wastewater Resources Inc.
Designs, manufactures, and installs turnkey water and wastewater treatment systems and components.
www.h2oreuse.com

Roebic Laboratories, Inc.
Developing specialized products for wastewater treatment, agriculture, and bio-pesticide applications.
www.roebic.com

Plasti-Fab
Products for the water and wastewater industry.
www.plasti-fab.com

Hoffland Environmental
Manufactures turn-key wastewater treatment systems, clarifiers, filter presses, sand filters, sludge dryers, metal, oil, toxic, and animal wastes.
www.hofflandenv.com

American Engineering Services, Inc.
AES manufactures water treatment equipment.
www.aesh2o.com

Tanks-A-Lot, Ltd.
A precast concrete tank manufacturer whose products include waste water treatment systems.
www.tanks-a-lot.com

Jim Myers & Sons, Inc.
Manufacturers of water and wastewater treatment equipment. Including horizontal, vertical, and walking beam flocculators.
www.myersequipment.com

Aero-Mod, Inc.
Designs and manufactures wastewater treatment equipment and turnkey facilities for industries and municipalities.
www.aeromod.com

CMS Group Inc.
Specializes in the design and manufacture of wastewater and air pollution equipment using a biological contactor processes.
www.rotordisk.com

Tipton Environmental Intl., Inc
Manufacturer of wastewater treatment systems and ancillary equipment.
www.tiptonenv.com

Tri Synergy, Inc.
Enzymatic and bacterial products designed to reduce odors in carpets, disposals and septic systems; as well as products to improve septic system function.
www.trisyn.com

HACH LANGE
Provides waste water samplers, analytical measuring statins, flowmeters, and sewer survey instrumentation.
www.buhlermontec.co.uk

T2 Environmental Inc.
Manufactures oily wastewater treatment systems designed for bilge systems.
www.t2einc.com

Compliance Systems
Designs, manufactures, installs and services wastewater recycling products.
www.compliance-systems.com

Sheaffer International, Ltd.
Small and large waste treatment systems for golf courses, confined animal waste, towns, and even individual systems.
.sheafferinternational.com

Ecochem, Inc.
Provides wastewater and potable water treatment products, antifoams, cleaning, sanitizing, and speciality chemicals.
www.ecocheminc.com

NRG Co., Inc.
Manufactures non-metallic equipment for use in corrosion prone wastewater clarifiers & other water treatment processes.
www.nrgco.com

SMI Evaporative Solutions
Produces energy efficient wastewater management products with a specialty in fracturing and fan atomization evaporators.
www.evapor.com

Southern Water Treatment Company
Focusing on the removal and recovery of metals from wastewater, as well as developing better application control technologies and

[19] http://dir.yahoo.com/Business_and_Economy/Business_to_Business/Environment/Water_Supply_and_Treatment/Municipal_and_Drinking_Water/Wastewater/Supplies_and_Equipment/

chemical control equipment.
www.sowatreco.com

Norchem Corporation
Supplier of commercial laundry chemicals, dispensing equipment, and wastewater treatment.
www.norchemcorp.com

Engineering Solutions
Engineers and manufacturers of wastewater recycling and treatment systems.
www.lstindustries.com

Slogan Engineering
Provides bulk storage, transfer and reagent feeding systems for wastewater and acid mine drainage treatment systems.
www.sloganengineering.com/index.htm

Vladix Corporation
Manufacturers of wastewater treatment systems and related equipment.
www.home.att.net/~vladix

AFL Industries, Inc.
Manufacturing a line of wastewater treatment equipment that can be applied to free oils, emulsified oils, colloidal suspensions, suspended solids, sludges and more.
www.afl.thomasregister.com/olc/afl

Major Stakeholders in the Onsite Marketplace

The following are the leading manufactures of onsite systems in the onsite industry:

Bio-Microbics, Inc.
Clearstream Wastewater Systems
Consolidated Treatment Systems
Delta Environmental Products, Inc.
Ecological Tanks, Inc.
Hoot Aerobic Systems, Inc.
Hydro-Action Industries
Jet, Inc.
H.E. McGrew, Inc.
Norweco, Inc.
Quanics, Inc.
Southern Manufacturing
AquaKlear
Mo-Dad-1, Inc.

Onsite System Manufactures of Systems and Related Components

Al McDermott Co.	Hydro-Action Industries
American Manufacturing Co.	Orenco Systems Inc.
Bord Na Mona	Ring Industrial Group
BS Design Corp.	Tuf-Tite Inc.
Concrete Products Inc.	Waterloo Biofilter Systems Inc.
Eljen Corporation	Zoeller Pump Company
Fralo Plastech LLC	Zabel Environmental Technology

Competitive Comparison (onsite technology only)

Company	Complete System	Meets CA 885	Total nitrate reduction to <10 parts per million	Cost Vs. AES	NSF Nitrogen Series Test Report[20]	Potable Water Quality Produced
PO Lombardo Nitrex	No	Yes	yes	More	No	No
Smith & Loveless Fast	Yes	Yes	No	More	No	No
Orenco Advantec	Yes	Yes	No	More	No	No
Orenco Step	Yes	No	No	Similar	No	No
Knight Treatment Systems'	No	No	No	Similar	No	No
Hoot	Yes	No	No	N/A	yes	No
AES	Yes	Yes	Yes	Equivalent	Yes	Yes

[20] $100,000 in 1994, plus $50,000 for nitrogen series test report. 1.6 avg. vs. 10=drinking water standard

Publicly Traded Water Utilities

Publicly traded water utilities are very common and have proven to be quite lucrative. In the future, publicly traded "new water source" utilities will also become popular. As this marketing plan evolves, the Company will have many service utilities. The future to take these public is a given and will be a natural.

Symbol	Company	Industry	Market Cap	Sales	P / E	Price/Book	Price/Sales
BIW	BIW LIMITED	Water Utilities	28.50M	$8.97M	78.31	2.5	3.2
ARTNA	ARTESIAN RES CP A	Water Utilities	120.96M	$46.38M	23.70	2.0	2.6
CTWS	CONN WATER SVCS IN	Water Utilities	190.40M	$47.43M	27.41	2.0	4.0
YORW	YORK WATER CO (THE	Water Utilities	203.08M	$27.51M	34.60	3.9	7.4
MSEX	MIDDLESEX WATER CO	Water Utilities	233.94M	$78.71M	24.21	2.3	3.0
SWWC	SOUTHWEST WATER CO	Water Utilities	296.44M	$212.83 M	42.29	1.9	1.4
SJW	S J W CP	Water Utilities	554.73M	$183.61 M	23.32	2.8	3.0
AWR	AMER ST WATER	Water Utilities	657.88M	$248.60 M	22.59	2.4	2.6
CWT	CALIFORNIA WATER SVC	Water Utilities	702.41M	$325.29 M	27.73	2.4	2.2
WTR	AQUA AMERICA INC	Water Utilities	3.06B	$509.39 M	33.96	3.5	6.0

5.3 MARKETING

AES is backed with economic, availability and philanthropic advantages. The Company's shareholders stand to make a massive impact with a relatively little investment, and also receive financial profits in return.

Trade Publications

Water & Waste Digest

Pollution com

AES will advertise its systems for sale in the major trade publications. It has already identified the media that will reach the desired markets, regulators, engineers, specifiers and developers, for both onsite system projects and cluster, commercial, industrial and municipal system projects. The Frost and Sullivan Report will be circulated to generate awareness of the AES technology being the BAT and that it, as the BAT to Equipment News WEF (www.wateronline.com) be the technology specified in pollution abatement applications. This along with the lowest cost for such technology will create demand for the AES technology throughout the markets.

The EPA has a website[21] where 200+ companies which offer products for sale in the water and wastewater industry are listed. Currently, AES is not listed on the site. When AES completes the Frost & Sullivan report, the Company will list on the site and offer licenses for sale to all of the other "black box" providers so that they can continue their business offering the "best available technology." This is a primary marketing strategy which the Company has developed.

From the National Small Flows Clearinghouse (NSFC),[22] AES obtained a list of current contact information for every regulator in each state.

Licensing to the Competitors

The Company had a licensing contract in Korea that was partially fulfilled. Royalties were based on pounds of organic matter, but decreased as volume increased. This precedence suggests the Company will earn a 5% to 25% royalty on revenue from licensees, depending on their financial participation; however license revenue is challenging to predict. The Company already has Licensing Agreements that have been drawn up by an attorney.

To move forward with the Company's new program, these agreements are being modified to serve the Companies latest strategy of developing partnerships through licensing OEMs to become a part of the AES advanced technology "family of companies". None of the onsite companies above have an onsite system technology which will eliminate the discharge of pollutants or even come close.

An extensive search will provide expertise on this strategy from experts and entities that have been successful in this marketing approach.

Marketing Elements

- ✓ Frost & Sullivan Report
- ✓ Legal Opinions
- ✓ Engineer Certified Reports
- ✓ Public Relations
- ✓ Licensing OEM Partners
- ✓ Business Image
- ✓ Website Enhancements
- ✓ Customer Relations
- ✓ Trade Media Advertising
- ✓ Direct Mail
- ✓ DVD
- ✓ Reference Accounts
- ✓ Telemarketing
- ✓ Premiums & Incentives
- ✓ Tradeshows
- ✓ Educational Programs
- ✓ Special Events
- ✓ Print Materials
- ✓ Special Reports

[21] www.epa.gov/ne/assistance/ceit_iti/list.html
[22] http://www.nesc.wvu.edu

- ✓ Animated & 3D X-ray Graphics
- ✓ Case Studies
- ✓ Press Releases
- ✓ National Television Exposure

- The Engineering Firm ENSR, a highly respected third party, will be preparing the Engineering Manual for $20,000 to $30,000, along with calculations and the format that engineers are accustom to viewing for proof of performance. An AECOM company, ENSR is a global provider of environmental and energy development services to industry and government.

- AES will produce a visual presentation that will show what the engineering firm has described in the Engineering Manual; Metcalf & Eddy has a department that specializes in CAD drawings and visual models of how a technology works.

5.4 SALES LITERATURE

The samples below are also available in high resolution on glossy paper.

The AES BESTEP is the superior solution in areas of low water cost and high availability. In these cases, to eliminate the discharge of pollutants so as to prevent them from getting back into the water aquifers is all that is required. Nitrates are the only pollutant that cannot be removed by passing through the soil on the way back to the water aquifer, therefore, the treatment technology must accomplish this removal of nitrate pollutants. The denitrified reclaimed water from the AES BESTEP passes through the soil via a soil absorption field and re-enters the water aquifer as non polluting water thereby preserving the integrity of the future drinking water source aquifer. The soil serves to provide natural physical filtration serving the same purpose that an ultra filtration (UF) membrane

would serve further purifying the water on its way to the water aquifer. The EPA term for this is “indirect potable reuse”.

BESTEP Advantages

RELIABLE . . . Less equipment to break down, corrode, plug up and maintain. The ***BESTEP*** has no submerged sludge pumps, electric submerged aerators or high maintenance filters and related equipment used in other systems. It produces no corrosive hydrogen sulfide gas.

LOW PURCHASE PRICE . . . The ***BESTEP***'s high-tech design eliminates the need for costly multiple tanks and expensive equipment.

LOW INSTALLATION COST . . . Contractors are familiar with the low-profile design of the common septic tank used in ***BESTEP*** systems, making its installation economical.

LOW OPERATING COST . . . The ***BESTEP*** system has low power requirements. Other systems* cost as much as 500% more, every month. Although periodic inspections are recommended, yearly pumping and routine maintenance are only required as needed.

SPECIFICATIONS

ITEM	BESTEP 10	BESTEP 15
Treatment gal/day	500	750
Volume gal	1000	1500
BOD load/day	up to 1.0	up to 1.5
Length	10'	13'2"
Width	72"	72"
Total Height	78"	78"
Grade to Inlet Invert*	25 ½"	25 ½"
Effluent Discharge	Intermittent / Pressure	Intermittent / Pressure
Excavation Depth*	76"	76"
No. of Compressors	1	2
No. of Diffusers	3	4
Shipping Weight**	450 lbs.	650 lbs.
Inlet Invert	52 ½"	52 ½"
Outlet Invert	optional	optional

* Standard risers are 18" in height. However, they are available upon request from 6" to 8' in height. The grade to invert and excavation depth will change accordingly.

** Based on a package plant including tank, equipment packages are also available upon request for retrofit of existing tank to the Bestep process.

NO ODOR . . . The advanced treatment process **prevents the offensive odors** commonly associated with other septic tank effluent pumping (STEP) systems using dated technology.

NOISE-FREE . . . The specially designed, manway-mounted aerator provides noise-free operation.

MINIMAL LAND USE REQUIREMENTS . . . The low-profile tank can be placed underground or above-ground, to fit your specifications, with minimal disruption to its surroundings. Its "Single Tank Process" eliminates the need for multiple tanks and land intensive sand filters and mound systems.

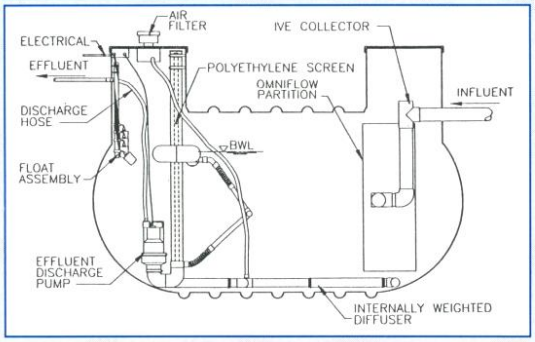
EASY ACCESS FOR PERIODIC INSPECTIONS . . . The tamper-proof access lid is locked into place to prevent accidental opening. All inspections and maintenance (if required) can be done easily.

PREVENTS DRAINFIELD FAILURE . . . The effluent produced by ***BESTEP*** is over 95% contaminant-free, preventing 'progressive failure' of the drainfield, a common problem with other systems.*

BESTEP **is Simply The Best for Less**

2 YEAR WARRANTY

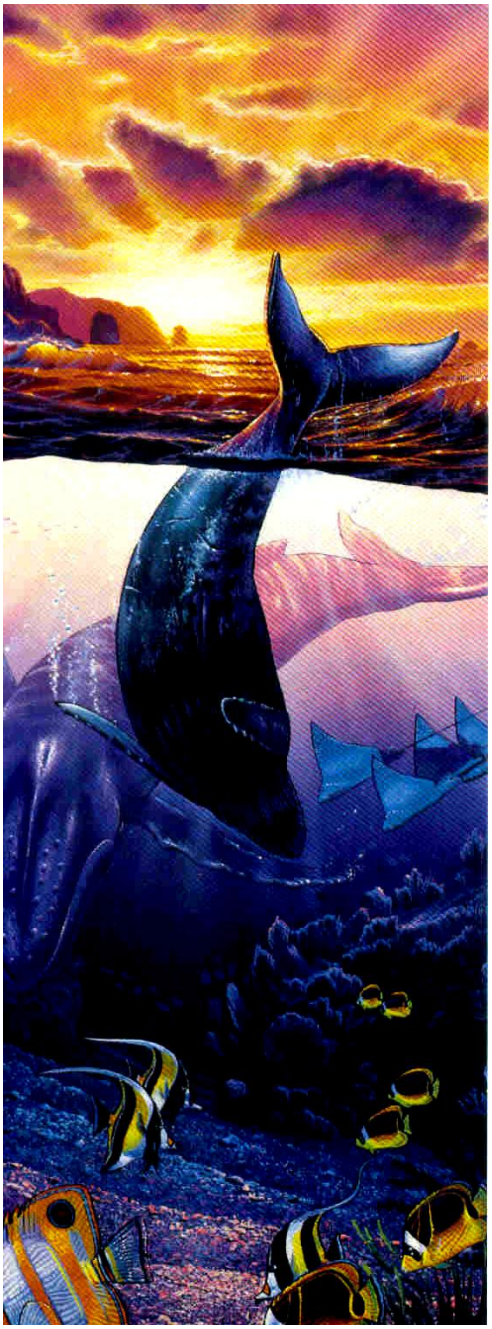
AES Inc. warrants each treatment plant to be free of defects in workmanship for a period of two years from the date of installation.



Represented by

Advanced Environmental Systems, Inc.
Post Office Box 2019, Kihei, Maui, Hawaii 96753
Phone (808) 874-0425 • FAX (808) 874-8312

This process is available in sizes up to 25 million gallons per day.



A New Generation of Wastewater Treatment . . .

AES TECHNOLOGY

AES technology evolved out of two decades of research and development with innovative designs for wastewater treatment including recognition of the latest developments in extended aeration and SBR (sequencing batch reactor) processes.

AES scrutinized all aspects of wastewater treatment methods and developed improvements in many areas. Result: A series of new concepts that simplified and enhanced the process performance and reliability. This technology is the basis of the AES IDEA (Intermittent Decant Extended Aeration) System diagrammed on the right. It employs the familiar extended aeration process, accommodates influent flows continuously and accomplishes nitrification, denitrification and clarification all in a single basin. The IDEA features allow for design flexibiity that contributes to substantial market advantages.

Today, AES offers the most advanced total system technology for wastewater treatment. For information on systems or technology licenses, contact AES today.

BENEFITS TO ENGINEERING CONSULTANTS AND USERS:

- Wastewater treatment that exceeds all EPA discharge standards at a lower cost compared to SBR's and other conventional systems.
- Operating costs and energy usage that are significantly lower than competitive systems
- Trouble-free operation, especially the decanter, a troublesome part of other cyclic systems and SBR systems
- Crystal clear, tertiary effluent without chemicals, tertiary filters or clarifiers, and with no odor
- Easy adaptability to any size or multiple basin system, any configuration pond, and for new or retrofit systems

AES replaced a failed, existing system with an IDEA System that removes 99% BOD.

IDEA technology scales up to any size basin or pond configuration.

IDEA System showing versatility in this concrete block system.

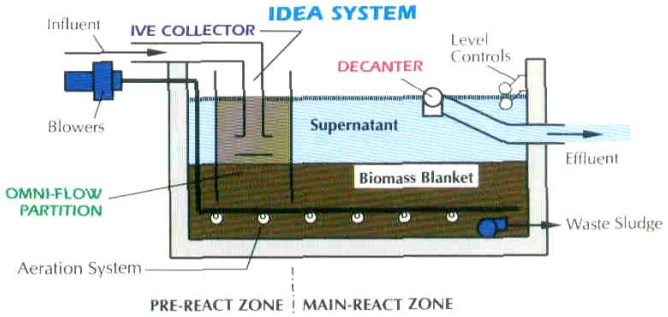
This in-ground IDEA System shows how it can blend into the environment.

AES REDEFINES WASTEWATER TREATMENT STANDARDS

The three patented components unique to the **IDEA** technology are the **Influent Velocity Equalization (IVE) Collector,** the **Omni-Flow Partition,** and the maintenance free **Decanter.** The efficiency of the **IDEA** process during the air-off phases of the operation cycle is a result of these components.

1. The **IVE COLLECTOR** accommodates influent flow continuously into the reactor basin, diffuses splash energy, reduces input velocity, and allows a biomass blanket to form.
2. The **OMNI-FLOW PARTITION** surrounds the IVE Collector and is positioned a specified distance above the floor of the reactor basin, providing up to a 360° opening below its skirt. Its purpose is to further reduce flow velocity and direct the influent into the blanket of biomass, a natural biological filter. The configuration of the Omni-Flow Partition creates a process that prevents short circuiting and washouts. Additionally, an extraordinary biological benefit results from the Omni-Flow Partition: natural denitrification without mixers or chemical addition.
3. The **DECANTER** with its proprietary, maintenance-free design sets a new standard in reliability and efficiency.

These fundamental process and device innovations can be scaled and adapted to any basin configuration from small tanks to multi-million gallon constructed tanks and ponds.



"Going back to basic principles rewarded us with several advances. We think this technology can benefit the wastewater treatment industry on a global scale, and we are eager to share it with knowledgeable and competent partners."
– Tom Murphy, President

D. Thomas Murphy, President & CEO answers questions about IDEA™ technology:

Q: "New Generation"? Isn't this just another SBR?
A: No. SBRs use a fixed-volume, batch process requiring multiple basins. We require only one basin and are more flexible, using adjustable timed cycles. Further, SBRs require periodic halting of inflow while we receive continuously. We use less tankage, cost less and produce better effluent.

Q: Well then, you're another activated sludge plant?
A: Yes, but at a much more sophisticated and advanced level. We enhance and make use of the biomass differently, resulting in superior effluent with smaller tanks and without need for a separate clarifier. Superior sludge also results.

Q: Your technology sounds good but what about support for us design engineers?
A: You'll be happily surprised. You fax us answers to our simple form, we provide you with all of the calculated results and drawings. We provide AutoCAD files and general specifications on a diskette so you can transport them directly into your project.

Advanced Environmental Systems, Inc.

SAMPLE INSTALLATIONS

McDonald's Corporation
8,800 GPD
Haleiwa, Hawaii
35,000 GPD
Saipan

Kentucky Fried Chicken
15,000 GPD
Haleiwa, Hawaii

Price Club (Costco)
22,000 GPD
Mexico

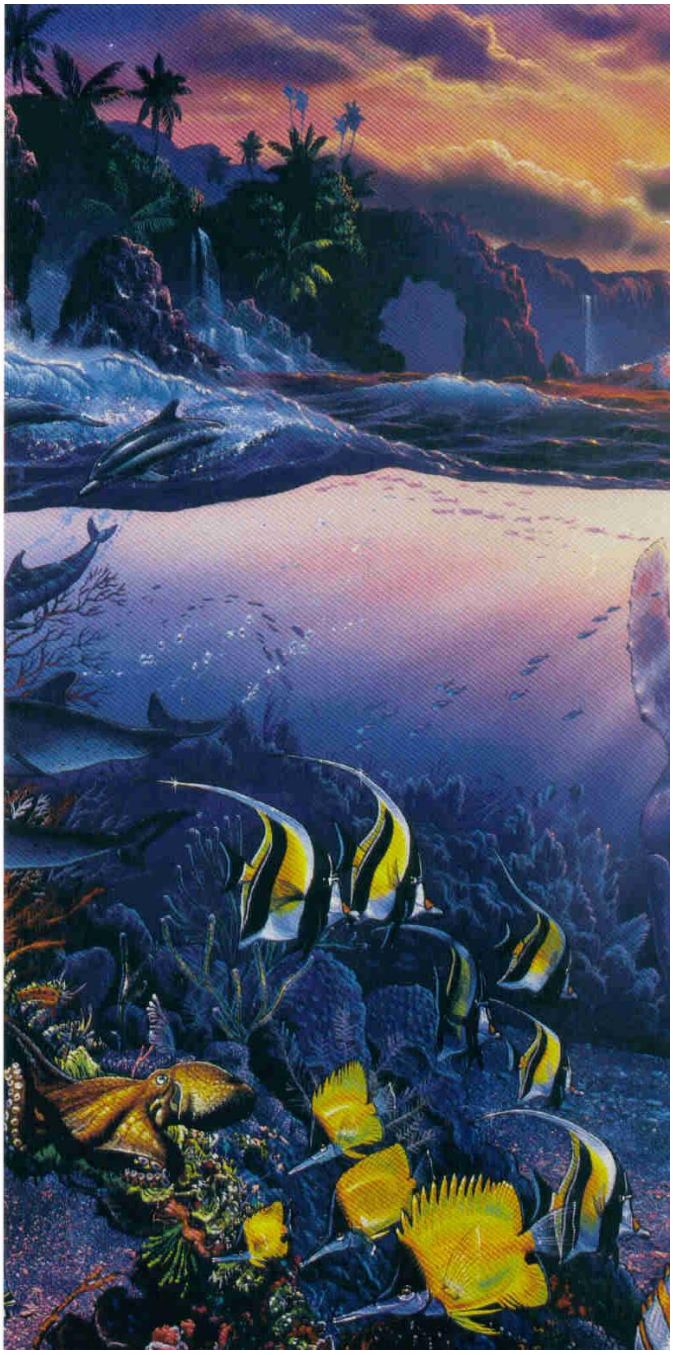
National Sanitation Foundation
500-1,000 GPD
Ann Arbor, Michigan

Hudson Foods
1.5 MGD
Hope, Arkansas

Grand Waikapu Resort, Golf & Spa, Inc.
(Multiple)
1,200-50,000 GPD
Wailuku, Hawaii

Advanced Environmental Systems, Inc.
P.O.Box 2019
Kihei, Maui, HI 96753

Phone: (808) 874-0425
Fax: (808) 874-8312



Christian Riese Lassen

Advanced Environmental Systems, Inc.

TECHNICAL OVERVIEW

I.D.E.A. *CFCR™* PROCESS
INTERMITTENT DECANT EXTENDED AERATION *CONTINUOUS FEED CYCLIC REACTOR*

A TECHNOLOGICAL BREAKTHROUGH...AN ADVANCED SECONDARY PROCESS WITH TERTIARY RESULTS.

Advanced Environmental Systems, Inc. (AES) offers the patented Wastewater Treatment System referred to as the I.D.E.A. *CFCR™*, an acronym for the Intermittent Decant Extended Aeration *Continuous Feed Cyclic Reactor.*

The I.D.E.A. *CFCR™* Process was developed to incorporate the benefits and advantages of current technologies without the drawbacks. The result is an exciting new technology — an innovative advanced process that produces consistent high quality effluent within a single tank.

New Technology Prevents Short Circuiting The IVE (Influent Velocity Equalization) Collector and Omni Flow Partition mitigate influent flow velocities.

The Main React Zone Handles Shock Loads Shock loads have little effect on this process because the MLSS (Mixed Liquor Suspended Solids) population may range in concentration up to 10,000 mg/l. They are literally an unsteady state biomass acclimated to alternating anoxic and aerobic conditions.

Activated Sludge Blanket Guarantees High Quality Effluent Without Filtration The quality of effluent from the I.D.E.A. *CFCR™* Process is generally superior to that obtained from conventional secondary treatment facilities. Effluent quality will typically result in a 97%-99% reduction of BOD5 and suspended solids (less than 10 mg/l), and a 95% reduction (less than 1 mg/l) of ammonia nitrogen (NH_3) and nitrate nitrogen (NO_3).

The I.D.E.A. *CFCR™* and Current Technologies The *State of the Art* process technology of the I.D.E.A. *CFCR™* is a refinement of the Intermittent Cycle Extended Aeration System (ICEAS), and the Sequential Batch Reactor (SBR) technologies. The I.D.E.A. *CFCR™* is being successfully applied where normal and high strength domestic and industrial waste with high peak flow variations require a flexible, low-cost, dependable system that produces a high-quality effluent. They have emerged to provide superior alternatives to the conventional flow-thru versions of the extended aeration activated sludge process.

I.D.E.A. *CFCR™* FACILITY

The Process utilizes continuous feed extended aeration activated sludge technology with intermittent or cyclic system operation.

Aeration, Clarification and Decantation...The Operation Phases The activated sludge is aerated over a number of predetermined cycles (typically 4-8 per day). For example, a four hour cycle would incorporate aeration for the first 2 hours and air-off the following 2 hours. Solids/liquid separation occurs during the air-off part of the cycle. During the latter part of the air-off cycle supernatant is decanted or withdrawn from directly below the liquid surface. Influent inflow is continuously accommodated at all times. The duration of a cycle is specific to each design application and variable in the field as required.

ALL IN A SINGLE TANK

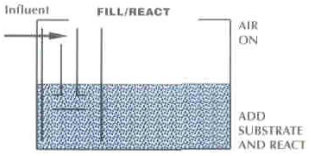
All of the operations are performed in a single basin reactor. This feature has many advantages:

No Need For Sludge Transfer

Less Tankage, Less Equipment, Less Access Required The functions of flow equalization, biological oxidation, nitrification, denitrification, secondary sedimentation and aerobic sludge digestion are all carried out in a single vessel.

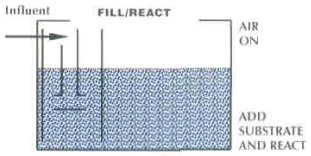
A TYPICAL FOUR HOUR CYCLE:

AERATION PHASE



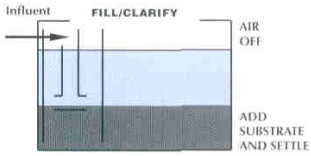
First Hour Begin aeration BOD_5 Oxidation and Nitrification occurs.

AERATION PHASE



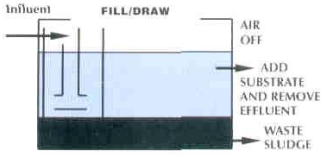
Second Hour Continued aeration BOD_5 Oxidation and Nitrification.

SETTLE PHASE



Third Hour Further BOD_5 Oxidation (Anoxically), Settle/Clarification, and Dentrification occurs.

DECANT PHASE

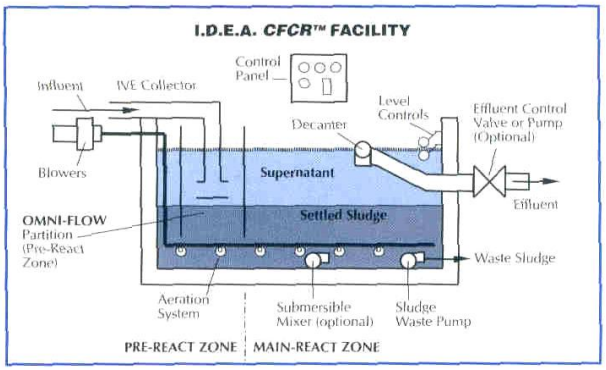


Fourth Hour Continued BOD_5 Oxidation Clarification, Dentrification, and highly-treated clear effluent automatically Decants/Discharges.

Heat Conservaton In cold climates, the single basin allows for heat retention. It takes less power to operate the system and it is less likely to freeze.

Less Land Use Requirements Single tank uses less land because no primary or secondary clarifiers are required.

No Odor Foul odors are associated with primary and secondary clarifiers. The process has no clarifiers and no odors.



THE PROCESS SYSTEM — HYDRAULIC DYNAMICS PREVENT SHORT CIRCUITING

Two patented process components unique to the I.D.E.A. *CFCR*™ system are the IVE Collector and the Omni-Flow Partition which facilitate the control of hydraulic flow. The system accommodates influent flows continuously regardless of its current phase of cyclic operation. The unique configuration of the Collector and Partition allows the natural, high-density biological filter (sludge blanket) to prevent short circuiting of the influent.

The IVE Collector The patented IVE Collector completely diffuses hydraulic influent flow velocities and turbulence created from splash energy. Furthermore, the IVE Collector diverts downward hydraulic velocities created by influent flows thereby preventing upset of the biomass in the Omni-Flow Partition during the settle phases of the operation cycle.

The Omni-Flow Partition The patented Omni-Flow Partition (Pre-React Zone) has a vertical cylindrical/rectangular shape and is elevated from the bottom of the basin allowing up to a 360 degree opening between the bottom skirt of the Omni-Flow partition and the basin floor. These design features (shape and elevation) create a very low hydraulic volume (gallon) to transfer port area (square feet) ratio, typically 60/1. A low transfer rate between the Pre-React and Main-Rreact Zones is desirable because influent can flow through the biomass preventing wash out and short circuiting during the single and decant phases of the process.

Flow-Thru Biological Contactor As a result of the diffusing and diverting of influent flows by the IVE Collector, an undisturbed blanket of biomass (MLSS) is created in the lower portion of the Omni-Flow partition during the air-off phases of the operation cycle. The sludge blanket becomes a natural high density biological contactor that filters any untreated influent and prevents it from entering into the main react zone, thereby guaranteeing that the effluent quality is maintained.

The heart of the process lies in the activated sludge blanket which reduces the BOD_5 (Biological Oxygen Demand) and TSS (Total Suspended Solids). The activated sludge blanket also removes nitrogen and phosphorous in the absence of polymers, filters, or mixers.

The Main React Zone Other systems experience a high flow transfer velocity from the Pre-React Zone to the Main React Zone creating upset and short circuiting. The I.D.E.A. *CFCR*™ Omni-Flow design reduces the hydraulic transfer velocities created by the inherent flow equalization between the pre-react and main react zones while leaving the sludge blanket intact.

The Main React Zone develops an MLSS population that may range in concentration from 1000 mg/l to over 10,000 mg/l. It is an unsteady-state acclimated population that adapts to alternative anoxic and aerobic conditions which consistently and repeatedly range in DO (Dissolved Oxygen) concentration from 0-3 mg/l. Consequently, shock organic loads have little effect on the process. As a result the system achieves nitrogen and/or phosphorus removal and maximizes aeration efficiency.

Multiple React Basins When Dual Reactor Basins are used to treat standard strength waste, the sequence of the pre-set cycle of operation for one basin is always 50% out of phase with the cycle of the other basin. While one basin is in the aeration phase, the other basin will go through the settle and decant phases and vice versa. This allows the blower(s) to be used for both basins by simply alternating the air flow to each. Multiple discharges reduce flow characteristics and size requirements of the disinfection system. In a four basin system, effluent discharge is essentially continuous.

The Pre-React Zone The Pre-React Zone created inside the unique Omni-Flow Partition with its high F/M (Food to Microorganism) ratio over comes problems of transient peak flows of both hydraulic and organic loading and accomplishes initial BOD_5 absorption into the biomass of 70% to 80%. This zone also discourages the growth of filamentous organisms thereby mitigating sludge bulking conditions, while providing an environment where the more desirable rapid-setting zoogleal facultative organisms proliferate. This results in a superior sludge which settles rapidly.

NUTRIENT REMOVAL — NITRIFICATION/DENITRIFICATION

PROCESS ADVANTAGES

Nitrification/Denitrification and BOD_5 and Solids Removal This is accomplished without the addition of methanol as an organic carbon source. The influent serves as a natural internal organic carbon source. In addition, denitrification enhances alkalinity recovery. This prevents a pH drop which could contribute to filamentous growth and bulked sludge. Alkalinity recovery is particularly advantageous in areas with low natural alkalinity.

The Nitrification and Denitrification Cycle During nitrification (aeration), excess oxygen is present, and Nitrosomonas oxidize the Ammonium (NH_4) to Nitrite (NO_2).

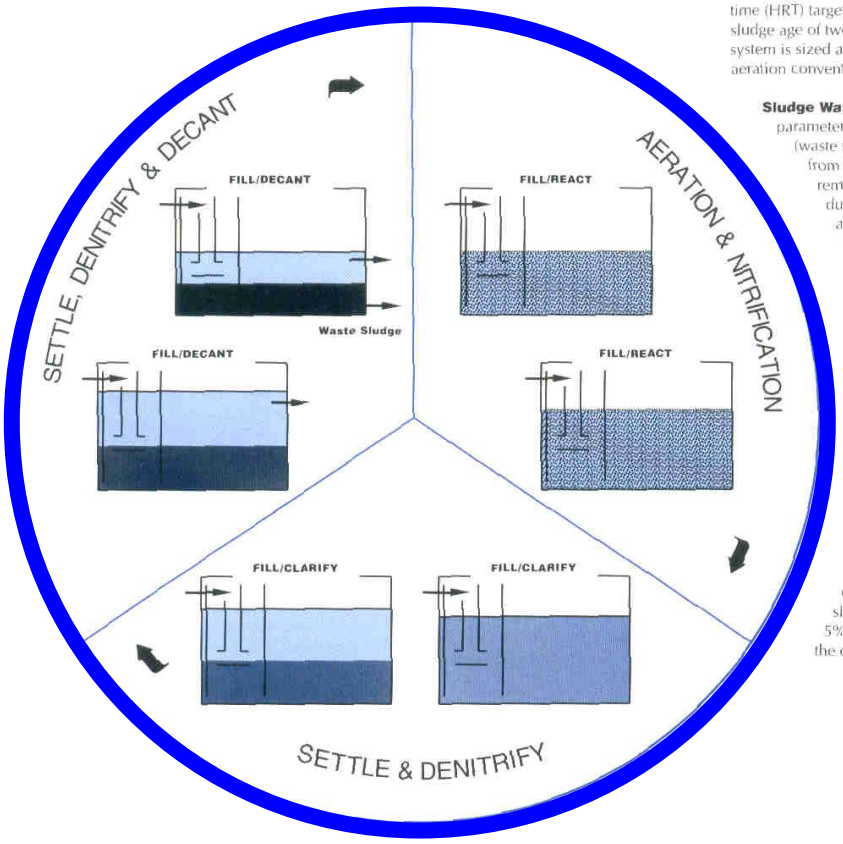
Nitrobacter further oxidize the Nitrite (NO_2) to Nitrate (NO_3).

During denitrifcation (non-aerated periods, sedimentation and decantation), the dissolved oxygen level in the sludge blanket approaches zero. Nitrate dissimilation takes place in two steps. First, Nitrate is reduced to Nitrite. Nitrite is then reduced by the bacterial dissimilation process to form Nitric Oxide (NO), Nitrous Oxide (N_2O) or Nitrogen Gas (N_2). The lack of molecular oxygen encourages Pseudomonas and other dentrifying bacteria to attack the oxygen bound up in the Nitrate (NO_3) molecules. The bacteria reduce the nitrate molecules to N_2 and O_2. The molecule nitrogen (N_2, a gas) is released to the atmosphere, while the bacteria utilize the liberated O_2. The Omni-Flow Partition, exclusive to the I.D.E.A. *CFCR*™ process, directs a natural organic carbon source (Continuous Feed Influent) into the sludge blanket during the air-off phases promoting nitrogen removal (NH_3 and NO_3 removal of 95% or better) without the need for mechanical mixers and/or anoxic mix cycles.

F/M Ratios Food to microorganism ratios (F/M) may vary from 0.03 to 0.3 lb. of BOD_5/lb. of MLSS/day. Mixed liquor suspended solids (MLSS) design concentrations range from 1,000 to 15,000 mg/l. Actual practice has shown MLSS concentrations in the 2,000 to 6,000 mg/l range to most effective. With a hydraulic retention time (HRT) targeted for 18-48 hours and a sludge age of twenty to seventy days, the system is sized according to extended aeration conventional standards.

Sludge Wasting With such design parameters, typical excess solids (waste sludge) production ranges from 0.5 to 1.0 lb/lb of BOD_5 removed. The sludge produced is very stable with an O_2 uptake rate of less than 10 mg/l of O_2/gm of MLSS/hr. The Enviro-Pro offers sludge production of .2 to .5 lb/lb of BOD_5 removed with an even higher degree of stability.

When excess sludge is wasted from the I.D.E.A. *CFCR*™ basin, additional nitrogen removal is accomplished through assimilation of nitrogen into bacterial cell mass in satisfaction of metabolic needs. Actual operating data have shown the concentration of nitrogen in the sludge mass to be between 5% and 8% by weight of the dry solids.



FEATURES AND ADVANTAGES

I.D.E.A. *CFCR™ PROCESS*

No Primary or Secondary Clarifiers The I.D.E.A. *CFCR™ Process* dispenses with clarifiers, associated pumping facilities, skimmers, sludge return lines and weirs. The reactor basin serves as a clarifier, so clarifiers are not required. Odors related to conventional clarifiers or clarifier modules are eliminated.

No Sludge Recycle System The entire reactor basin serves as a clarifier so no sludge recycle system is needed.

Reactor Basin The reactor basin can efficiently maintain a MLSS concentration in excess of three times that of a conventional aeration basin without effluent degradation.

Tank Geometry Virtually Unlimited The single tank process is suited to square, rectangular, vertical cylindrical, horizontal cylindrical, and earthen basins. For this reason, retrofit of failing conventional systems to the I.D.E.A. *CFCR™* system is straight-forward.

No Sludge Holding Tank Required The process eliminates associated capital costs and energy requirements for this equipment.

No Energy Wasted During periods of low flow, shorter aeration phases and longer idle periods result in reduced power consumption.

No Odor Since the process develops an "unsteady state" biomass that is acclimated to D.O. concentrations from zero to near saturation and population washout is impossible, odors resulting from peak hydraulic and organic flows in conventional systems are non-existent.

Nitrification and Dentrification Easily Achieved Because of the Omni-Flow Partition, nitrogen removal of 95% or better is inherent in the system without mixers. The resultant oxygen credit offers a substantial energy savings. Alkalinity recovery is a by-product of the dentrification process.

Biological Phosphorous Removal By altering the operating schedule at the programmable controller, removal of biological phosphorus can easily be accomplished.

Low Oxygen Requirement Saves Power During the air-off phase of the cycle, the bacteria utilize the liberated oxygen (O_2) released during the denitrifying process, consequently, the oxygen uptake rate of the "unsteady state" acclimated biomass is increased, reducing the standard oxygen requirement.

Improved Settling Settling occurs under perfect quiescent conditions because there is no "flow through" in the reactor basin to create current velocities. Should additional settling be required, the settle period can easily be increased as needed. The effect is the same as increasing the size of a final clarifier.

No Short Circuiting The design of the IVE — Influent Velocity Equalization — Collector and the Omni-Flow Partition, incorporated with the sludge blanket and the no "flow through" feature guarantees no short circuiting.

Wide Range of Operation The process is so flexible and stable that effluent quality can be maintained in most cases at up to five times its daily design flow.

Reactor Basin Ensures No Wash Out At peak storm flows in excess of five times of the design flow, the reactor basin performs as "flow-through biological contactor," preventing biomass wash-out. The process returns to optimum removal efficiency within hours, compared to weeks, after a major storm. Conventional systems without flow balancing during peak flows experience substantial sludge wash out. This leads to significant process control problems which could result in non-compliance with discharge permits.

Less Waste Activated Sludge *Generated* - *Lower* Waste Sludge Disposal Cost The process is highly efficient at MLSS (mixed liquor suspended solids) concentration ranges of 2,000 to in excess of 10,000 mg/l and offers sludge ages of 70 day plus. Consequently sludge wasting is infrequent and easily accommodated. The sludge is also more stable than that generated by conventional systems.

Minimum Operator Attention The process is totally automated.

Energy Conservation Because the total process is confined to a single basin using a submerged jet or diffused aeration system, cooling of the mixed liquor in even the coldest climates is minimized. The low surface area of the reactor — as much as 50% less than a conventional system — and the absence of splash and spray with a submerged aeration system help maintain mixed liquor temperatures ideal for carbonaceous removal and nitrification.

Stable to Shock Loads Since the "unsteady state" biomass is acclimated to the full range of dissolved oxygen and organic substrate tension, shock organic loads do not lead to drastic population shifts. The bulking and process upset typical of conventional continuous flow systems is non-existent.

ADVANCED ENVIRONMENTAL SYSTEMS, INC.

FINANCIAL BENEFITS

Purchase Price The initial capital investment is less because much of the related equipment and tankage required for conventional and multiple tank SBR systems is eliminated. (i.e. clarifiers, return sludge pumps, Influent Control mechanisms, expensive decanters and control mechanisms, trickling or sand filters, sprayers and related recirculating pumps and systems, extensive yard piping, etc.)

The Enviro-Pro offers the highest quality secondary wastewater treatment process for the lowest capital investment in the wastewater industry.

Lower Construction Cost The system's modular, simplified and flexible design results in a substantial reduction of construction and installation cost. Additionally, the elimination of the related equipment and tankage required for other conventional and multiple tank SBR systems reduces cost.

The Enviro-Pro requires only an earthen basin and does not require expensive integral secondary clarifiers like other earthen basin or lagoon systems. For this reason the tankage cost is substantially reduced.

Less Installation Time The system can be provided as a prefabricated package or as a process/equipment package for installation into on-site constructed tankage — greatly reducing the total installation time. In the case of installation, the reduced tankage and equipment required reduces on-site preparation time.

The Enviro-Pro greatly reduces installation time because the aeration equipment, partition, and decanter all float on the basin surface and require nominal internal basin connections.

Less Mechanical Wear and Tear The cyclic operation typically reduces equipment operating cost by 50%. There is also less mechanical equipment to repair or replace.

Lower Operating Cost The reduced overall operating time and maintenance requirements of the system offers as much as 60% operational cost reduction compared to conventional technologies. Also, because the system's process is fully automated and forgiving of load variations, operator attention is nominal.

The Enviro-Pro reduces operational costs associated with mixing by over 80% compared to conventional extended aeration activated sludge process systems. Additionally, with all of the AES systems, maintenance intensive mechanical decanters and influent control valves are eliminated.

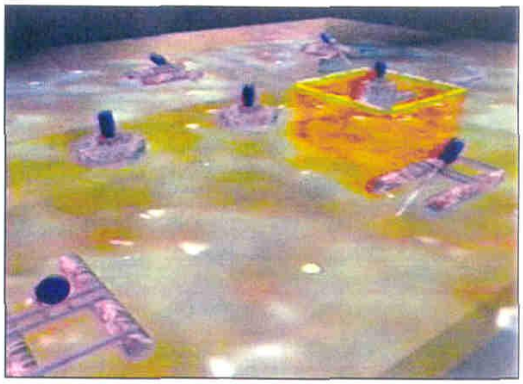
*The **I.D.E.A. CFCR™** Process offers the designing engineer more design flexibility than any other process available.*

Advanced Environmental Systems, Inc.

AN EARTHEN BASIN, ADVANCED WASTEWATER TREATMENT SYSTEM WITH A 48 HOUR RETENTION TIME

The solution for failing lagoons with denitrification requirements

AIROMIX™ IDEA



The AIROMIX-IDEA system process cycle is totally automated and offers in-the-field cycle phase flexibility. This allows each system to be "dialed in" to maximize performance per application as flow profiles change.

The AIROMIX-IDEA system is designed to provide extremely reliable operation with minimal maintenance in the most demanding of applications.

The AIROMIX-IDEA Design

The AIROMIX-IDEA Design incorporates the patented IVE Collector (Influent Velocity Equalization) and Omni-flow Partition technologies proprietary to Advanced Environmental Systems, Inc. Proven in over 60 systems, the components allow influent to be accommodated on a continuous basis while preventing short circuiting and washouts and enhancing the denitrification capabilities of the AIROMIX system ensuring advanced wastewater treatment system performance.

Combined Aeration/Mixing Technologies

The horizontal aerator is the key element in the AIROMIX-IDEA systems. The horizontal aerators provide for complete mixing of the basin while surface aerators make up the the additional oxygen requirements for synergistic system performance. These AIROMIX-IDEA systems provide predictable mixing patterns and oxygen transfer efficiencies, reducing horsepower mixing requirements by up to 75% while operating at established retention times in excess of 70 days.

Augmentation Flexibility

The AIROMIX-IDEA system may be designed to handle a given low flow allowing for additional surface aeration to be added as flows increase with growth. For this reason the AIROMIX-IDEA system is the most suited system for growing communities and industries. This power turn-up capability allows for significant reduction in upfront capital and operating costs.

Retrofit Existing Lagoons

Existing lagoons can be easily retrofitted to the AIROMIX-IDEA system, greatly reducing the system size while enhancing system performance. In most cases the existing system can be retrofitted without taking it off line.

THE FOUR PHASE OPERATING CYCLE

1
MIXING
Aspirators are operated as mixers, maximizing anoxic denitrification.

2
AERATION
Air is applied to the aspirators and high speed surface aerators are activated, providing aeration and nitrification.

3
SETTLE
Aeration equipment is deactivated allowing the entire reactor to become a clarifier.

4
DECANT
Treated effluent is drawn off from just below the surface, completing the operation cycle.

BOD	5 mg/l	TKN	3 mg/l
TSS	5 mg/l	NO_3	2 mg/l
Total Nitrogen	5 mg/l	NH_4	1 mg/l

DESIGN PARAMETERS	RANGE
F/M	.02 to .1
MLSS	1000 to 10000 mg/l
Sludge age	50 - 150 days
Retention time (domestic)	20-60 hrs.
Basin depth	4 to 20 ft.
Aeration requirements	Based on demand
Mixing requirements	10-13 hp/million gals. of basin volume

Advanced Environmental Systems, Inc.

WASTEWATER TREATMENT SYSTEMS
ENGINEERING / MANUFACTURING / INSTALLATION
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Patent Numbers: 5186821, 5234580, 5316671, 5352356, 5374353, 5384049

Advanced Environmental Systems, Inc.

• Earthen Basin • Lagoon Retrofits

ENVIROPro Wastewater Treatment System I.D.E.A.CFCR™

(Intermittent Decant Extended Aeration Continuous Feed Cyclic Reactor)

The ENVIROPro I.D.E.A.CFCR™ uniformly and efficiently mixes aeration basin volumes associated with 20-85 day sludge age. All other conventional and batch or cyclic process extended aeration system are "mixing limited" at sludge ages at approximately 15-25 days.

The oxic/anoxic feature of the ENVIROPro I.D.E.A.CFCR™ process offers a substantial energy savings as compared to conventional extended aeration processes. Furthermore, the natural occurring movement of the diffusers across the aeration basin floor during the aeration phase of the operation cycle allows an additional aeration system turndown during times of low loading of up to 75%, further reducing energy consumption.

Design Parameters	Range
F/M	0.03 to 0.3
MLSS	1000 to 15000 mg/l
Sludge age	20–85 days
Aeration time (domestic)	18–48 hours
Aeration basin volume	5–25 lbs. BOD/1000 ft.^{3}/day
Basin depth	4–20 ft.
Aeration requirements	Based on oxygen demand of wastewater
Mixing requirements	12–15 hp/million gallons of basin volume

Municipal	Industrial
Under 10.0 MGD average flow	Over 5,000 GPD
95–99% BOD removal	95–99% BOD removal
95–99% NH_3, NO_3 and TKN removal	95–99% NH_3, NO_3 and TKN removal
Domestic	Pulp and paper, food and poultry processing
Combined domestic and industrial	Landfill leachate, brewery and distillery
Landfill leachate	Textiles, chemicals

***ENVIRO*Pro Features**	***ENVIRO*Pro Benefits**
The ENVIROPro I.D.E.A.*CFCR*™	Lower capital investment, lower, basin construction and equipment installation cost, faster installation, lower cost of operation.
Guaranteed 10/10/1 (BOD/TSS/NH_3) effluent	Meets strict discharge requirements without filters.
No clarifiers or RAS/WAS pumping equipment and piping	Less land required than for any other activated sludge process system offering the same sludge age design parameters.
The ENVIROPro I.D.E.A.*CFCR*™ single basin	A simple and economical lined or earthen basin system may be used. Existing basins or lagoons may be easily or quickly retrofitted.
Fine bubble diffusers	High aeration efficiency at low energy cost.
Floating Disk Aeration Train	Drifting aeration provides mixing efficiency with fine bubble diffusers. During settle and decant they eliminate sludge stirring. Enables aeration system to be turned down for horsepower savings.
Submerged aeration	No splashing, freezing or icing over. Heat from blower energy introduced in sub-surface increases aeration basin temperature for continuous cold climate operation.
No submerged attachments or connections	Installation, maintenance and service made easy. Basin equipment readily accessible. No basin dewatering required.
Multiple blower design	Turn down and turn up flexibility of aeration system during low or high flow periods.
Controlled effluent discharge	Inherent flow equalization. Guarantees consistently high effluent quality, not affected by variable hydraulic/organic flow rates.
Extended sludge age	Requires no separate digester. Minimal excess sludge and maximum process stability.
Single basin operation	No integral secondary clarifiers, overflow weirs, sludge return pumping facilities or yard piping. Minimizes land usage. Simple to operate.

Advanced Environmental Systems, Inc.

WASTEWATER TREATMENT SYSTEMS

ENGINEERING / MANUFACTURING / INSTALLATION

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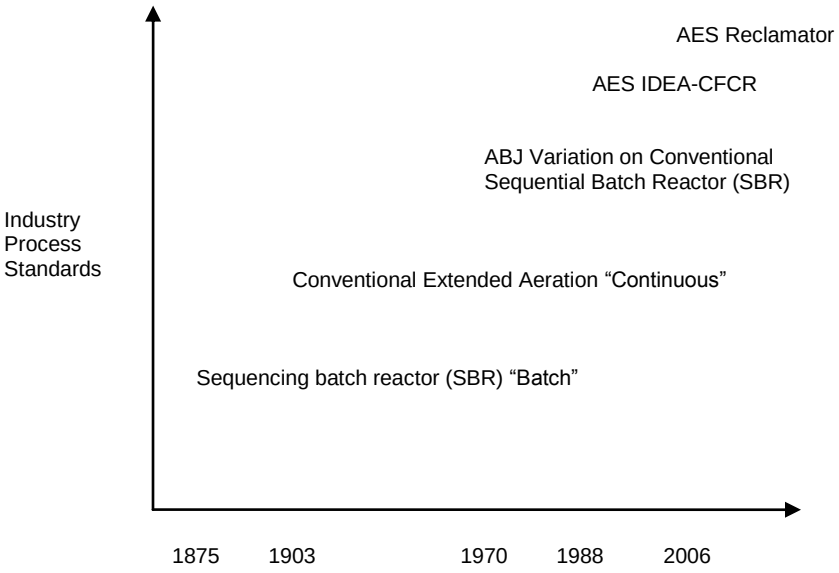
TIMELINE

There are three primary biological processes that have been used over the past 130 years. The sequencing batch reactor (SBR) was first developed in the late 1800s. In 1903, conventional extended aeration was invented. The ABJ variation on the conventional method was designed in the 1970s, and the next major evolution of wastewater treatment came in 1988 with AES. Some conventional and SBR systems have added SpiraSep, but do not remove nitrogen as well as AES, which has biological technology to complement physical filtration.



5.6 SALES STRATEGY

Advertising in trade publications that AES as the only company that economically brings wastewater to treated drinking water quality with an onsite system will complement trade show attendance. The Water Environment Federation Convention is the largest trade show globally, occurs once per year and costs about $30,000 to exhibit. Of approximately 800 exhibitors, 790 are based on centralized systems, with 10 being non-centralized. While AES has an onsite decentralized solution as apposed to using centralized systems, the resistance from cities and engineering firms is substantial.

Engineering firms typically earn 5%, 10% and 15% for the study, design and construction management of a project respectively. Providing the best technology, pre-packaged and ready for implementation will seriously constrict revenue to engineering firms. Cities earn about 60% of their revenue from water; 25% of which is incoming and 75% of which is outgoing wastewater. The threat

of decentralization not only cuts revenue to cities processing wastewater, but also reduces the amount of water they sell as the AES decentralized system enables all water purchased from the cities to be reused.

A Public Private Partnership (PPP) agreement entered into between AES and a community such as Los Osos will define parameters such as ownership and maintenance. AECOM assists companies in establishing PPP agreements.

The Company has a strong prospect in Needles, CA, where temperatures reach 120° F. Over five years, the project will generate about $6 million in revenue.

The first Leadership in Energy and Environmental Design (LEEDs)-certified high-rise building in New York has flush toilets using reclaimed wastewater. Water conservation and engineering are practical and economical concepts – not speculation over future trends. AES's goal is create mutually beneficial partnerships, before resorting to legal action. Public relations have also made an impact. AES was given a weekly television show, which explained to the residents of Lake Havasu that their tax dollars were being wasted unnecessarily on a centralized sewer system. This project is currently very ripe for the technology.

One of the basic ethical standards that a professional engineer must agree on, in order to be licensed in any jurisdiction, is to only practice in an area that he or she is technically competent in. This competence is developed with a mixture of academic training, practical experience and continuing education. Although many engineers tend to be technically conservative, they try to provide clients the most cost-effective solution. AES serves this need and gives engineering firms a contemporary image by recommending the latest solution.

Legal compulsion should be a last resort, but it will be more prevalent in the first couple years as AES emerges from R&D, and accelerates revenue growth. The Company has a list of septic tank assemblers in over 20 states.[23]

Federal and State Funding Sources

There are many funding sources that can help clients adopt AES technology:

- Appalachian Regional Commission
- Catalog of Federal Funding Sources for Water Protection

EPA Nonpoint Source Section 319 Grant Program

- EPA Water Quality Cooperative Agreements
- Economic Development Administration

National Decentralized Water Resources Capacity Development Project

- National Fish and Wildlife Foundation's Coral Reef Conservation Fund

National Onsite Demonstration Project
State Revolving Fund
U.S. Department of Agriculture, Rural Development
U.S. Department of Agriculture, Rural Utilities Service, Water and Waste Programs
U.S. Department of Housing and Urban Development

Tribal Sources

- Clean Water Indian Set-Aside Grant Program
- EPA American Indian Environmental Office tribal grants
- HUD (Resources for Native Americans)
- Indian Health Service (Sanitation Facilitation Construction Program)

[23] http://www.orenco.com/ft/ft_assemblers.asp

- U.S. Department of Health and Human Services: Administration for Native Americans Environmental Regulatory Enhancement

State Sources

- Catskill Watershed Corporation Septic System Rehabilitation and Replacement Program
- Kentucky PRIDE Homeowner Septic System Grant Program
- Massachusetts Community Septic Management Program
- Pennsylvania PENNVEST: Community Septic Management Program
- Texas Supplemental Environmental Project

SWOT ANALYSIS

STRENGTHS

AES headed by Murphy with 35 years experience and a deep comprehensive knowledge of industry, competition, available technologies, the Clean Water Act, and the market. Murphy has longtime relationships with industry professional, knowledgeable and experienced human resources who are standing by to come into the Company to do their part in taking this Company to the level of its destiny.

The Company has established itself in the industry over the past 17 years with over 100 system installations for customers including Fortune 500 clients.

National and international patents which establish “barrier-to-entry” to all competition for the next 20 years have been obtained and more are pending.

The technology is flexible in application. It can be applied in virtually any type of containment to serve any volume or strength of wastewater stream.

Technology which qualifies as “best available technology” that is required to be implemented in every pollution abatement application throughout the nation by federal law.

The technology meets all industrywide applications regardless of size requirements. Technology which produces repurified water from sewage and can be applied at the source, a home. Additionally, the Company has the knowledge and ability to do complete comprehensive designs for any industrial flow as well. The Company literally can provide total system designs to repurify any waste stream which will flow.

Federal Law drives the $1 trillion plus market. AES is the Company who has that “best available technology” as defined in that law, the Clean Water Act. The Company will enjoy a federally mandated monopoly making their exclusive technology available to that market.

Major current prospect possibilities which represent initial revenue gross potential of over $1 billion.

An opportunity to establish a legal precedent which will allow any homeowner in the nation the choice to disconnect from a municipal sewer to reclaim their own water for their own beneficial reuse has been established.

WEAKNESSES

Capital is the Company's "ONLY" lacking element needed to dominate this market with its technology and services. With an unlimited financial resource behind it, it will be unstoppable. It has the potential, with its water repurification technology in conjunction with the grand Global scramble for sanitary drinking water resources, to become the next Microsoft.

OPPORTUNITIES

The Global need to reduce pollution to aquifers, oceans, rivers and all drinking water resources currently occurring has established urgency to implement technologies which will reclaim and repurify water so that it can be reused to conserve water and reduce the demand on water resources.

The Clean Water Act requires the best available technology to be implemented in every pollution abatement application throughout the nation. Until now, there has not been that clearly identified "best". Now that it is, a $1 trillion market awaits the application of this technology upon making it known and available.

Ultimately take advantage of a public market that is water wise and understands the future in investment into water resource technologies. It has been said, "Water will be the 'oil' of the 21st century". It also has been said, "Whiskey's for drinking, water's for fighting over". Water, if not now, will soon become the most valuable commodity in our near future.

Owning the technology which reclaims water establishes the ownership of the reclaimed water. As demands get greater, this new water resource will be a resource of value which represents a very large secondary opportunity for establishing additional ongoing revenue streams from resale of that new water resource.

The entire onsite wastewater industry is floundering due to their technologies not meeting new stringent effluent discharge regulatory requirements. They are "ripe for the picking" to bring into the AES "family of companies", gaining AES a rapid major market share while establishing a controlling presence in the waste management industry.

THREATS

With sufficient capitalization, there are no real threats only hurdles. The Company possesses exclusive technology which repurifies water, the Global demand for such a technology is enormous and the federal law requires the implementation of it nationally provided it is available.

The only real threat the Company believes it may encounter is the possible development of a competitive technology coming into the market place in the

near future to take advantage of the huge market opportunity for onsite water repurification which has just evolved within the last few years. This threat is very real with each passing day that the Company isn't sufficiently capitalized enabling it to take advantage of the opportunity having the technology it has and move to dominate the marketplace while absorbing the competitors who would be a possible threat if not brought into the AES "family of companies". If AES doesn't do it……someone else will. The time is NOW. The only threat will occur by lack of action on the part of AES.

5.7 PRICING

BESTEP AND ONSITE RESIDENTIAL APPLICATIONS

The Company's **service establishment fee**, which includes the product and installation, will vary based on what the market will bear. An average would be around $10,000 for a single family home. The monthly service fee will start at $25 per month and will range up to $60 per month, depending on the local market; the average will be $40 per month, which would be slightly less than a required "sewer fee" to pay for new collection system.

It is quite common for out-of-town customers (with water and sewer service) to have monthly bills much higher than $71.73 minimum monthly bill (for 3,000 gallons or less).[24] In rural areas, water rates vary dramatically by community, based on…quality of source water, treatment needed, distance from the users, the age of the pipe lines and treatment works.[25] An RCAP study indirectly suggests if one paid 0.885% of a median household income of $43,318, monthly fees are $30.

An additional economic benefit to the home owner is the savings from the water conservation and reuse which reduces their public water supply demand by approximately 50%, depending on their outside water use requirements.

For an example, take the Los Osos, California project. The competing Tri-W project was estimated at $134 million, over 75% higher the AES $75 million based on providing the system at $15,000 per DUE. The HUGE benefit to the community from the AES proposal is that the majority of the total $75 million (construction/installation) qualifies for federal grant assistance, if not ALL of it, for meeting the Clean Water Act compliant best available technology requirements while the other option does not qualify as they aren't offering the best available technology at the most economical cost. The funds would be borrowed from the state out of the state revolving funds and have to be paid back plus interest.

There are sufficient margins that if necessary, AES could drop its total cost down to $10,000 and still maintain a respectable profit margin of 30-50%.

The **monthly service fee** has already been accepted by the public at $60 per month which would represent an ongoing gross monthly revenue stream of $300,000.00 per month. Actual overhead per unit per month is about $13.00 per

[24] http://www.ci.hillsborough.nc.us/vertical/Sites/%7BD029A55F-4C18-4300-8FE2-8AE51577DE8C%7D/uploads/%7BA7B6D5FA-8D86-4114-8565-6AC08A848EEA%7D.PDF

[25] http://www.rcap.org/assets/docs/what_we_do/water.pdf

month to cover service visits ($120.00 per system per year) and monthly collection fees (5% of monthly charges) which will be paid under contract to the local water utilities.

Lifecycle Costs
Lifecycle costs below do not inflation, removal or residual value. The figures below are from the first three years of a 20-year cost schedule.

Lifecycle Cost

Total Lifecycle Cost	$	20,320
Annual Lifecycle Cost	$	1,016
NPV 10%	$	13,484
NPV Cost per Gallon	$	0.004

		2007		2008		2009
Single Family Home Unit + Inst.	$	10,000				
Annual Service Fees	$	480	$	480	$	480
Electricity (1kWh/day @ $0.0986)	$	36	$	36	$	36
Annual Cost	$	10,516	$	516	$	516
Annual Gallons Processed (Max)		182,500		182,500		182,500
Aggregate Gallons		182,500		365,000		547,500
Total Cost Amortized (20 yrs)	$	1,016	$	1,016	$	1,016
Monthly Bill from Amoritzed	$	85	$	85	$	85
Aggregate Cost	$	10,516	$	11,032	$	11,548
Aggregate Cost per Gallon (20 yrs)	$	0.006				

Commercial, Industrial and Municipal Applications
The larger system can be either sold outright or provided as a part of a service program similar to the individual systems. For new developments, it is generally more cost effective to provide a system to serve the entire development. This concept is referred to as a “cluster” system. The way a cluster system would work is when the project is being developed, infrastructures for both collection and reuse water to be delivered back to the individual lots for toilet flushing, landscape irrigation, etc., will be installed. AES would charge a service connection fee per lot. For example, we would charge a $2,500 connection fee for a 600 unit development. The total build out connection fee revenue would be about $1.5 million. It would require a 150,000 gallon per day (GPD) water reclamation facility. For a development project with only 150 units, the connection fee would be around $3,000 and would require a 37,500 gallon per day (GPD) water reclamation facility. The monthly service fee averages $40 per month.

System List Prices
Typical profit margins of systems and packages range from 40% to 60%.

Starting List Prices for **Pre-Packaged Systems** are:

Gallons per Day in 1,000s Times (Xs) Price per Gallon in Dollars

50 - 100k	=	$6.00 - $5.00	$ 300,000 - $ 500,000
100 - 250k	=	$5.00 - $4.50	$ 500,000 - $1,125,000
250 - 500k	=	$4.50 - $3.50	$1,125,000 - $1,750,000
500 - 1,000k	=	$3.50 - $2.50	$1,750,000 - $2,500,000

We have designs ready to offer pre-engineered, pre-designed and pre-packaged systems up to 2.5 million gallon per day (MGD). This will be revolutionary as the industry thrives on engineer designed systems for most all projects over 100,000 GPD in size. It is not unusual for engineer design projects to 1) use the most antiquated process technology and methods in their designs and 2) which are construction and land intensive, and 3) are extremely over priced. One example was a 95,000 GPD facility in Idaho was estimated to cost the community $4.2 million dollars. This is common. The pre-packaged options will offer a viable solution which meets the requirements of the CWA, reduces the economic burden on the citizens and provides the best available demonstrated control technology currently available.

For projects which will provide their own tankage, such as cast-in-place concrete basins or even in ground excavated basins, AES also offers a complete equipment package less tankage which includes all ancillary equipment to provide a complete facility utilizing the locally provided tankage or basin. This works well in many applications where shipping in impractical or rejection of particular tankage would require more expertise than is locally available such as a project in some developing countries. AES provides the construction criteria for the tankage to be constructed by to accommodate the equipment package.

Starting List Prices for **Equipment Packages only** are:

Gallons per Day in 1,000s Times (Xs) Price per Gallon in Dollars

100k	=	$2.70	$ 270,000
200k	=	$1.80	$ 360,000
300k	=	$1.43	$ 429,000
400k	=	$1.17	$ 468,000
500k	=	$1.05	$ 525,000
1,000k	=	$ .90	$ 900,000
1,500k	=	$ .84	$1,260,000
2,000k	=	$ .75	$1,500,000
2,500k	=	$ .69	$1,725,000

These prices may vary depending on specific site constraints and/or requirements.

These prices don't include headworks, sludge holding or disinfection facilities.
These prices are based on the IDEA-CFCR MBR Alternative only.
These prices do not include the additional cost of Ultra Filtration Membrane application if required (The UF membrane treatment module may be added to the IDEA-CFCR MBR Alternative at any time after completion of installation).

6.0 SALES FORECAST

The financial forecast presents, to the best of management's knowledge and belief, the Company's expected financial position, results of operations, and cash flows for the forecast period. Accordingly, the forecasts reflect management's judgment as of February 18, 2007, and conditions may change. The assumptions disclosed herein are those that management believes are significant to the forecast. There will usually be differences between the forecasted and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

	FIVE-YEAR REVENUE PROJECTION				
	2007	**2008**	**2009**	**2010**	**2011**
Service Establishment Revenue	7	35	105	263	525
Avg. wholesale price / project	670,000	670,000	670,000	670,000	670,000
Service Establishment Revenue	$1,277,500	$7,280,000	$11,445,000	$22,128,750	$33,862,500
Single Family Homes (SFH)	5	28	95	244	499
Avg. sale price / project	$10,000	$10,000	$10,000	$10,000	$10,000
Single Family Homes (SFH)	$52,500	$280,000	$945,000	$2,441,250	$4,987,500
Residential Development Clusters	0	4	5	11	16
Avg. sale price / project	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000
Residential Development Clusters	$525,000	$5,250,000	$7,875,000	$15,750,000	$23,625,000
Commercial	1	4	5	8	11
Avg. sale price / project	$500,000	$500,000	$500,000	$500,000	$500,000
Commercial	$700,000	$1,750,000	$2,625,000	$3,937,500	$5,250,000
Units Sold (SFH Equivalent)					
Single Family Homes (SFH)	5	28	95	244	499
Residential Development Clusters	210	2,100	3,150	6,300	9,450
Commercial	225	131	197	295	394
Units Sold (SFH Equivalent)	440	2,259	3,441	6,839	10,343
Installed Base					
Single Family Homes (SFH)	5	33	128	372	871
Residential Development Clusters	218	2,318	5,468	11,768	21,218
Commercial	225	356	553	848	1,242
Installed Base	448	2,707	6,148	12,988	23,330
Service Fee	$61,860	$1,299,360	$2,951,220	$6,234,150	$11,198,550
License Revenue	$0	$2,050,000	$2,710,000	$5,662,000	$7,392,300
US Market Share (Sewer Construction)	0.00%	0.01%	0.01%	0.03%	0.05%
Total Revenue	$1,339,360	$10,629,360	$17,106,220	$34,024,900	$52,453,350

6.1 PROJECTED PROFIT & LOSS

Profit and Loss Projection

REVENUE	2007	2008	2009	2010	2011
Total Revenue	$1,339,360	$10,629,360	$17,106,220	$34,024,900	$52,453,350
Cost of Sales					
Single Family Homes (SFH)	$21,000	$112,000	$378,000	$976,500	$1,995,000
Residential Development Clusters	$262,500	$2,625,000	$3,937,500	$7,875,000	$11,812,500
Commercial	$420,000	$1,050,000	$1,575,000	$2,362,500	$3,150,000
Continuous NSF Monitoring	$44,025	$225,925	$344,138	$683,944	$1,034,250
Service Fee Fulfillment	$58,148	$1,221,398	$2,774,147	$5,860,101	$10,526,637
Total Cost of Sales	$303,077	$5,234,323	$9,008,784	$17,758,045	$28,518,387
Gross Profit	$1,036,283	$5,395,037	$8,097,436	$16,266,855	$23,934,963
	77.37%	50.76%	47.34%	47.81%	45.63%
EXPENSES					
Employee Expenses					
Salaries & Wages	$668,000	$1,528,172	$1,601,641	$2,064,501	$2,106,134
Personnel Burden	$167,000	$382,043	$400,410	$516,125	$526,533
Commissions	$13,394	$106,294	$171,062	$340,249	$524,534
Employee Bonuses	$6,697	$53,147	$85,531	$170,125	$262,267
General & Administrative Expenses					
Office Supplies	$14,940	$340,140	$547,399	$1,088,797	$1,678,507
Automobile Expenses	$57,600	$10,629	$17,106	$34,025	$52,453
Bank Fees & Charges	$2,124	$1,063	$1,711	$3,402	$5,245
Professional (Outsourced) Services	$20,340	$191,328	$307,912	$612,448	$944,160
Accounting and Legal	$150,000	$1,000,000	$750,000	$500,000	$500,000
Dues & Subscriptions	$2,940	$1,063	$1,711	$3,402	$5,245
Rent	$84,480	$510,209	$821,099	$1,633,195	$2,517,761
Computer/IT/Software	$1,980	$63,776	$102,637	$204,149	$314,720
Utilities	$28,160	$180,699	$290,806	$578,423	$891,707
Insurance	$8,000	$31,888	$51,319	$102,075	$157,360
Depreciation	$11,852	$48,698	$78,023	$136,351	$226,271
Bad Transactions	$1,339	$10,629	$17,106	$34,025	$52,453
Meals & Entertainment	$3,060	$21,259	$34,212	$68,050	$104,907
Postage & Delivery	$3,720	$42,517	$68,425	$136,100	$209,813
Training	$13,994	$53,165	$55,721	$71,824	$73,273
Shipping	$12,300	$5,315	$8,553	$17,012	$26,227
Travel	$16,072	$127,552	$205,275	$408,299	$629,440
Marketing Expenses					
Marketing & Advertising	$199,884	$318,881	$513,187	$1,020,747	$1,573,601
Trade Show Expenses	$30,000	$31,200	$50,211	$99,872	$105,864
Prototypes	$50,000	$52,000	$83,686	$166,454	$176,441
Sample Production	$6,000	$6,240	$10,042	$19,974	$21,173
Public Relations	$33,540	$34,882	$36,626	$38,457	$40,380
Web Expense	$11,220	$11,669	$18,779	$37,352	$39,593
Marketing Material	$4,560	$4,742	$7,632	$15,181	$16,091
Promotional Items	$41,850	$43,524	$70,045	$139,322	$147,681
Total Expenses	$1,678,072	$5,212,724	$6,407,867	$10,259,937	$13,929,836
EBIT	($641,789)	$182,312	$1,689,569	$6,006,918	$10,005,127
Taxes	$0	$0	$591,349	$2,102,421	$3,501,795
Interest Income	$0	$0	$0	$0	$0
Interest Expense	$ 9,376	$78,614	$157,449	$274,426	$451,162
NET PROFIT	($651,165)	$103,698	$940,771	$3,630,070	$6,052,171
Net Profit/Sales	*-48.62%*	*0.98%*	*5.50%*	*10.67%*	*11.54%*

6.2 CASH FLOW FORECAST

Cash Flow

	2007	2008	2009	2010	2011
CASH ON HAND (beginning of period)					
	$0	$2,354,035	$2,627,137	$2,689,279	$5,678,475
CASH FLOWS FROM OPERATING ACTIVITIES					
Net Income from P&L	($651,165)	$103,698	$940,771	$3,630,070	$6,052,171
Net Change in Inventory	$62,229	$888,747	$972,140	$1,195,594	$1,716,226
Change in Accounts Receivable	$406,182	$1,042,204	$1,313,905	$1,949,628	$2,945,594
Change in Accounts Payable	$799,095	$1,185,703	$298,786	$963,018	$917,475
CASH PROVIDED (USED) BY OPERATING ACTIVITIES	($320,481)	($641,549)	($1,046,488)	$1,447,866	$2,307,826
CASH FLOWS FROM INVESTING ACTIVITIES					
Sale of Capital Assets	$0	$0	$0	$0	$0
Capital Investment (CD)	$0	$0	$0	$0	$0
R&D	$66,667	$95,664	$153,956	$306,224	$472,080
Other Assets Acquired	$40,000	$31,888	$51,319	$102,075	$157,360
CASH PROVIDED (USED) BY INVESTING ACTIVITIES	($106,667)	($127,552)	($205,275)	($408,299)	($629,440)
CASH FLOWS FROM FINANCING ACTIVITIES					
Loan principal payment					
Current Borrowing Principal Repayment	$0	$0	$0	$0	$0
Cash from Equity Financing	$2,500,000				
Net Cash from Receivable Financing	$406,182	$1,042,204	$1,313,905	$1,949,628	$2,945,594
Dividends					
Financing Transaction Fees	$125,000				
CASH FLOWS PROVIDED (USED) IN FINANCING ACTIVITIES	$2,781,182	$1,042,204	$1,313,905	$1,949,628	$2,945,594
Net cash flow	$2,354,035	$273,102	$62,142	$2,989,196	$4,623,979
Cash Position (end of period)	$2,354,035	$2,627,137	$2,689,279	$5,678,475	$10,302,454

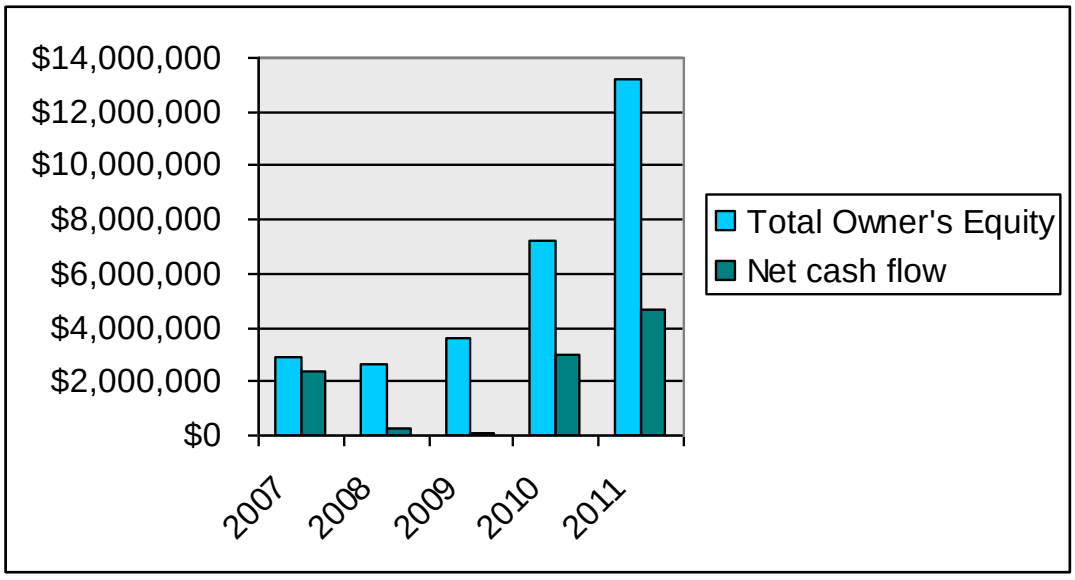
ESSENTIAL OPERATING DATA (non cash flow information)					
Sales Volume (dollars)	$ 1,339,360	$ 10,629,360	$ 17,106,220	$ 34,024,900	$ 52,453,350
Growth		694%	61%	99%	54%
Marketing Expense / Sales	28%	5%	5%	5%	4%
General & Administrative / Revenue	32%	25%	20%	17%	16%
Period Ending Cash Balance/Revenue	176%	25%	16%	17%	20%
Senior Debt/EBIT	0%	0%	0%	0%	0%
Accounts Receivable	$ 268,037	$ 1,042,204	$ 1,581,942	$ 2,991,832	$ 4,527,536
Bad Debt (end of month)					
Inventory on hand (eom)	$ 112,229	$ 1,000,976	$ 1,973,116	$ 3,168,710	$ 4,884,935
Accounts Payable (eom)	$ 117,478	$ 1,303,181	$ 1,601,967	$ 2,564,984	$ 3,482,459
Depreciation	$ 11,852	$ 11,852	$ 11,852	$ 11,852	$ 11,852

6.3 PROJECTED BALANCE SHEET

Projected Balance Sheet

Assets					
Current Assets	**2007**	**2008**	**2009**	**2010**	**2011**
Cash	$2,338,237	$2,627,137	$2,689,279	$5,678,475	$10,302,454
Accounts Receivable	$268,037	$1,042,204	$1,581,942	$2,991,832	$4,527,536
Inventory	$112,229	$1,000,976	$1,973,116	$3,168,710	$4,884,935
Other Current Assets	$0	$0	$0	$0	$0
Total Current Assets	**$2,718,503**	**$4,670,317**	**$6,244,337**	**$11,839,016**	**$19,714,926**
Long-term Assets					
Equipment	$146,667	$178,555	$229,873	$331,948	$489,308
CD	$0	$0	$0	$0	$0
R&D	$66,667	$162,331	$316,287	$622,511	$1,094,591
Accumulated Depreciation	$11,852	$23,704	$35,556	$47,407	$59,259
Total Long-term Assets	**$201,481**	**$317,182**	**$510,605**	**$907,052**	**$1,524,640**
Total Assets	**$2,919,985**	**$4,987,499**	**$6,754,942**	**$12,746,068**	**$21,239,566**

Liabilities and Capital					
Current Liabilities	**2006**	**2007**	**2008**	**2009**	**2010**
Accounts Payable	$0	$1,303,181	$1,601,967	$2,564,984	$3,482,459
Current Borrowing	$268,037	$1,042,204	$1,581,942	$2,991,832	$4,527,536
Other Current Liabilities	$0	$0	$0	$0	$0
Subtotal Current Liabilities	**$0**	**$2,345,385**	**$3,183,909**	**$5,556,816**	**$8,009,995**
Long-term Liabilities	$0	$0	$0	$0	$0
Total Liabilities	**$0**	**$2,345,385**	**$3,183,909**	**$5,556,816**	**$8,009,995**
Total Owner's Equity	$2,919,985	$2,642,114	$3,571,033	$7,189,252	$13,229,571
Total Liabilities and Capital	**$2,919,985**	**$4,987,499**	**$6,754,942**	**$12,746,068**	**$21,239,566**



6.4 MONTHLY FORECASTS

Cash Flow

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
CASH ON HAND (beginning of period)												
	$0	$2,216,365	$2,186,467	$2,125,015	$2,061,419	$1,995,014	$1,904,265	$1,980,330	$2,043,496	$2,104,627	$2,165,448	$2,224,149
CASH FLOWS FROM OPERATING ACTIVITIES												
Net Income from P&L	($222,106)	($105,825)	($109,137)	($113,099)	($118,166)	($152,312)	$11,529	$8,296	$3,218	($210)	($4,803)	$87,654
Net Change in Inventory	($48,000)	$0	$0	$0	$0	$0	($432)	$4,404	$4,404	$4,404	$4,404	$45,047
Change in Accounts Receivable	$0	$0	$0	$0	$0	$0	$129,661	$131,782	$4,242	$4,242	$4,242	$132,013
Change in Accounts Payable	$55,527	$81,983	$53,741	$55,559	$57,816	$67,620	$70,159	$65,328	$68,372	$71,491	$73,963	$77,537
CASH PROVIDED (USED) BY OPERATING ACTIVITIES	($118,580)	($23,842)	($55,397)	($57,540)	($60,350)	($84,693)	($47,541)	($62,561)	$62,945	$62,635	$60,514	($11,870)
CASH FLOWS FROM INVESTING ACTIVITIES												
Sale of Capital Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Investment (CD)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&D	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556	$5,556
Other Assets Acquired	$34,500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
CASH PROVIDED (USED) BY INVESTING ACTIVITIES	($40,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)	($6,056)
CASH FLOWS FROM FINANCING ACTIVITIES												
Loan principal payment												
Current Borrowing Principal Repayment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cash from Equity Financing	$2,500,000											
Net Cash from Receivable Financing	$0	$0	$0	$0	$0	$0	$129,661	$131,782	$4,242	$4,242	$4,242	$132,013
Dividends							$0					$0
Financing Transaction Fees	$125,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CASH FLOWS PROVIDED (USED) IN FINANCING ACTIVITIES	$2,375,000	$0	$0	$0	$0	$0	$129,661	$131,782	$4,242	$4,242	$4,242	$132,013
Net cash flow	$2,216,365	($29,898)	($61,452)	($63,595)	($66,406)	($90,748)	$76,065	$63,166	$61,131	$60,822	$58,701	$114,088
Cash Position (end of period)	$2,216,365	$2,186,467	$2,125,015	$2,061,419	$1,995,014	$1,904,265	$1,980,330	$2,043,496	$2,104,627	$2,165,448	$2,224,149	$2,338,237

Twelve-month Profit and Loss Projection

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
REVENUE												
Total Revenue	$0	$0	$0	$0	$0	$0	$185,230	$188,260	$191,290	$194,320	$197,350	$382,910
Cost of Sales												
Single Family Homes (SFH)	$0	$0	$0	$0	$0	$0	$18,523	$18,826	$19,129	$19,432	$19,735	$38,291
Residential Development Clusters	$0	$0	$0	$0	$0	$0	$6,483	$6,589	$6,695	$6,801	$6,907	$13,402
Commercial	$0	$0	$0	$0	$0	$0	$2,778	$2,824	$2,869	$2,915	$2,960	$5,744
Continuous NSF Monitoring							$6,825	$6,825	$6,825	$6,825	$6,825	$9,900
Service Fee Fulfillment							$2,566	$5,414	$8,263	$11,111	$13,959	$16,835
Total Cost of Sales	$0	$0	$0	$0	$0	$0	$37,176	$40,478	$43,781	$47,084	$50,387	$84,172
Gross Profit	$0	$0	$0	$0	$0	$0	$148,054	$147,782	$147,509	$147,236	$146,964	$298,738
EXPENSES												
Employee Expenses												
Salaries & Wages	$52,667	$52,667	$52,667	$52,667	$55,667	$55,667	$55,667	$55,667	$58,667	$58,667	$58,667	$58,667
Personnel Burden	$13,167	$13,167	$13,167	$13,167	$13,917	$13,917	$13,917	$13,917	$14,667	$14,667	$14,667	$14,667
Commissions							$1,852	$1,883	$1,913	$1,943	$1,974	$3,829
Employee Bonuses	$0	$0	$0	$0	$0	$0	$926	$941	$956	$972	$987	$1,915
General & Administrative Expenses												
Office Supplies	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245	$1,245
Automobile Expenses	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800	$4,800
Bank Fees & Charges	$177	$177	$177	$177	$177	$177	$177	$177	$177	$177	$177	$177
Professional (Outsourced) Services	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695
Accounting and Legal	$40,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
Dues & Subscriptions	$245	$245	$245	$245	$245	$245	$245	$245	$245	$245	$245	$245
Rent	$3,040	$4,540	$4,540	$6,040	$6,040	$7,540	$7,540	$9,040	$9,040	$9,040	$9,040	$9,040
Computer/IT/Software	$165	$165	$165	$165	$165	$165	$165	$165	$165	$165	$165	$165
Utilities	$1,013	$1,513	$1,513	$2,013	$2,013	$2,513	$2,513	$3,013	$3,013	$3,013	$3,013	$3,013
Insurance	$8,000											
Depreciation	$988	$988	$988	$988	$988	$988	$988	$988	$988	$988	$988	$988
Bad Transactions	$0	$0	$0	$0	$0	$0	$185	$188	$191	$194	$197	$383
Meals & Entertainment	$255	$255	$255	$255	$255	$255	$255	$255	$255	$255	$255	$255
Postage & Delivery	$310	$310	$310	$310	$310	$310	$310	$310	$310	$310	$310	$310
Training	$500	$29	$29	$500	$29	$29	$500	$29	$29	$500	$29	$29
Shipping	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025	$1,025
Travel	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405	$3,405
Marketing Expenses												
Marketing & Advertising	$2,300	$4,140	$7,452	$8,942	$10,731	$12,877	$15,452	$18,543	$22,252	$26,702	$32,042	$38,451
Trade Show Expenses						$30,000						
Prototypes	$50,000											
Sample Production	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500
Public Relations	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795	$2,795
Web Expense	$935	$935	$935	$935	$935	$935	$935	$935	$935	$935	$935	$935
Marketing Material	$380	$380	$380	$380	$380	$380	$380	$380	$380	$380	$380	$380
Promotional Items	$32,500	$850	$850	$850	$850	$850	$850	$850	$850	$850	$850	$850
Total Expenses	$222,106	$105,825	$109,137	$113,099	$118,166	$152,312	$128,322	$132,990	$140,498	$145,467	$150,385	$159,763
EBIT	($222,106)	($105,825)	($109,137)	($113,099)	($118,166)	($152,312)	$19,732	$14,791	$7,011	$1,769	($3,422)	$138,976
Taxes	$0	$0	$0	$0	$0	$0	$6,906	$5,177	$2,454	$619	$0	$48,641
Interest Income	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,297	$ 1,318	$ 1,339	$ 1,360	$ 1,381	$ 2,680
NET PROFIT	($222,106)	($105,825)	($109,137)	($113,099)	($118,166)	($152,312)	$11,529	$8,296	$3,218	($210)	($4,803)	$87,654
Net Profit/Sales							*6.22%*	*4.41%*	*1.68%*	*-0.11%*	*-2.43%*	*22.89%*

Projected Balance Sheet

Assets												
Current Assets	**Month 1**	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**	**Month 10**	**Month 11**	**Month 12**
Cash	$2,216,365	$2,186,467	$2,125,015	$2,061,419	$1,995,014	$1,904,265	$1,980,330	$2,043,496	$2,104,627	$2,165,448	$2,224,149	$2,338,237
Accounts Receivable	$0	$0	$0	$0	$0	$0	$129,661	$131,782	$133,903	$136,024	$138,145	$268,037
Inventory	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$49,568	$53,971	$58,375	$62,778	$67,182	$112,229
Other Current Assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Current Assets	**$2,266,365**	**$2,236,467**	**$2,175,015**	**$2,111,419**	**$2,045,014**	**$1,954,265**	**$2,159,559**	**$2,229,249**	**$2,296,905**	**$2,364,251**	**$2,429,476**	**$2,718,503**
Long-term Assets												
Equipment	$141,167	$141,667	$142,167	$142,667	$143,167	$143,667	$144,167	$144,667	$145,167	$145,667	$146,167	$146,667
CD	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
R&D	$5,556	$11,111	$16,667	$22,222	$27,778	$33,333	$38,889	$44,444	$50,000	$55,556	$61,111	$66,667
Accumulated Depreciation	$988	$1,975	$2,963	$3,951	$4,938	$5,926	$6,914	$7,901	$8,889	$9,877	$10,864	$11,852
Total Long-term Assets	**$145,735**	**$150,802**	**$155,870**	**$160,938**	**$166,006**	**$171,074**	**$176,142**	**$181,210**	**$186,278**	**$191,346**	**$196,414**	**$201,481**
Total Assets	**$2,412,099**	**$2,387,269**	**$2,330,885**	**$2,272,358**	**$2,211,020**	**$2,125,340**	**$2,335,701**	**$2,410,459**	**$2,483,182**	**$2,555,596**	**$2,625,890**	**$2,919,985**
Liabilities and Capital												
Current Liabilities	**Month 1**	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**	**Month 10**	**Month 11**	**Month 12**
Accounts Payable	$55,527	$26,456	$27,284	$28,275	$29,542	$38,078	$32,081	$33,248	$35,124	$36,367	$37,596	$39,941
Current Borrowing	$0	$0	$0	$0	$0	$0	$129,661	$131,782	$133,903	$136,024	$138,145	$268,037
Other Current Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal Current Liabilities	**$55,527**	$55,527	**$27,284**	**$28,275**	**$29,542**	**$38,078**	**$161,742**	**$165,030**	**$169,027**	**$172,391**	**$175,741**	**$307,978**
Long-term Liabilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Liabilities	**$55,527**	**$55,527**	**$27,284**	**$28,275**	**$29,542**	**$38,078**	**$161,742**	**$165,030**	**$169,027**	**$172,391**	**$175,741**	**$307,978**
Total Owner's Equity	$2,356,573	$2,331,743	$2,303,601	$2,244,083	$2,181,478	$2,087,261	$2,173,959	$2,245,429	$2,314,155	$2,383,206	$2,450,149	$2,612,007
Total Liabilities and Capital	**$2,412,099**	**$2,387,269**	**$2,330,885**	**$2,272,358**	**$2,211,020**	**$2,125,340**	**$2,335,701**	**$2,410,459**	**$2,483,182**	**$2,555,596**	**$2,625,890**	**$2,919,985**

6.5 ASSUMPTIONS

GENERAL ASSUMPTIONS

Tax Rate	35.00%
Payroll Tax - Personnel Burden	25.00%
Merchant Account Costs (Credit Cards)	2.79%
% of Sales Paid by Credit Card	0.00%
Percentage of Sale Subject to Sales Commission	10%
Commission	10%
Bad Transactions %	0.10%
Prime	8.25%
Short-Term Loan Interest Rate over Prime	3.75%
Short-Term Loan Interest Rate	12.00%
Other Liability Interest Rate	0.00%
Permits & Licenses (as % Monthly Svs.)	
CSB Fees	5.00%
State Fees	3.00%
EPA Fees	1.00%
US Market Size (Sewer)	$ 115,000,000,000

ACCOUNTS PAYABLE

% of Vendors Paid Within	
Immediately	50%
30 days	50%
60 days	0%

ACCOUNTS RECEIVABLE

% of Customers Paying Within	
Immediately	0%
30 days	100%
60 days	0%

REVENUE SOURCES

% of Units From	2007	2008	2009	2010	2011
Single Family Homes (SFH)	75%	80%	90%	93%	95%
Residential Development Clusters	5%	10%	5%	4%	3%
Commercial	20%	10%	5%	3%	2%
Total	100%	100%	100%	100%	100%
Connection Fee per Single Family Home	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Connection Fee per Cluster Development Unit	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Connection Fee per Commercial Unit	$ 3,111	$ 13,333	$ 13,333	$ 13,333	$ 13,333
Monthly Service Fee per Unit	$ 40	$ 40	$ 40	$ 40	$ 40
Monthly Service Fee Margin	6%	6%	6%	6%	6%

COGS (as % Revenue)

	2007	2008	2009	2010	2011
Single Family Homes (SFH)	40%	40%	40%	40%	40%
Residential Development Clusters	50%	50%	50%	50%	50%
Commercial	60%	60%	60%	60%	60%
Units per Project:					
Units per Single Family Home	1	1	1	1	1
Units per Residential Development Cluster	600	600	600	600	600
Units per Commercial Client	38	38	38	38	38
Total Cost of Sales	$ 303,077	$ 5,234,323	$ 9,008,784	$ 17,758,045	$ 28,518,387
Continuous NSF Monitoring					
Annual Monitoring Fee per Unit	$ 25				
Monitoring Installation Cost per Unit	$ 100				
Desired Inventory Turnover	9				

PERSONNEL PLAN

		2007	2008	2009	2010	2011
Employee Costs						
Executives		1	1	1	1	1
Vice President		1	2	2	3	3
Managers		2	3	3	4	4
Engineers		2	5	6	7	7
Customer Service		1	3	3	4	4
Marketing		4	8	8	11	11
Sales Reps		1	21	22	29	29
Administration/Tech Support		2	11	11	14	15
Total Headcount		14	53	56	72	74
Executives	$ 100,000	$100,000	$53,433	$56,001	$72,185	$73,641
Vice President	$ 80,000	$80,000	$170,984	$179,205	$230,993	$235,651
Managers	$ 60,000	$120,000	$160,298	$168,004	$216,556	$220,923
Engineers	$ 75,000	$150,000	$400,744	$420,011	$541,390	$552,308
Customer Service	$ 50,000	$50,000	$133,581	$140,004	$180,463	$184,103
Marketing	$ 36,000	$108,000	$288,536	$302,408	$389,801	$397,662
Sales Reps	$ -	$0	$0	$0	$0	$0
Administration/Tech Support	$ 30,000	$60,000	$320,595	$336,009	$433,112	$441,846
Total		$668,000	$1,528,172	$1,601,641	$2,064,501	$2,106,134
Benefits	25%	$ 167,000	$ 382,043	$ 400,410	$ 516,125	$ 526,533
Projected Expenses		**$ 835,000**	**$ 1,910,214**	**$ 2,002,052**	**$ 2,580,626**	**$ 2,632,667**
Labor Costs/Sales		*62%*	*18%*	*12%*	*8%*	*5%*
Revenue/Employee		**$ 90,831**	**$ 136,246**	**$ 204,370**	**$ 306,555**	**$ 459,832**

TOTALS

Non-Sales Personnel Cost	***$560,000***	***$1,239,636***	***$1,299,234***	***$1,674,700***	***$1,708,472***
Operating Cost Less Sales & Mktg.	***$741,018***	***$3,469,951***	***$4,318,426***	***$7,047,878***	***$10,100,539***
Non-Sales Personnel Cost/Svs. Rev.	***1198%***	***267%***	***146%***	***113%***	***90%***

6.6 START-UP

SOURCES OF CAPITAL		
Owners' Investment		
Owner Contribution	$	-
New Investment	$	2,500,000
Other investor	$	-
Other investor	$	-
Total Investment	$	2,500,000

Bank Loans		
Primary Lender	$	-
Bank 2	$	-
Bank 3	$	-
Bank 4	$	-
Total Bank Loans	$	-

Other Loans		
Source 1	$	-
Source 2	$	-
Total Other Loans	$	-

STARTUP EXPENSES

Buildings/Real Estate		
Purchase	$	-
Construction	$	-
Remodeling	$	-
Other	$	-
Total Buildings/Real Estate	$	-

Leasehold Improvements		
Tenant Improvements	$	-
Item 2	$	-
Item 3	$	-
Item 4	$	-
Total Leasehold Improvements	$	-

Capital Equipment List		
Furniture	$	-
Equipment	$	-
Fixtures	$	-
Signage	$	-
R&D (product design, flavors)	$	66,667
Total Capital Equipment	$	66,667

Location and Admin Expenses

Revenue per Employee (Y1)	$	115,458
Revenue per Employee (Y2)	$	136,246
Revenue per Employee (Y3-5)	$	204,370
Loan to Job Ratio (Y1)	$	-
Rental Deposits	$	-
Utility deposits	$	-
Legal and accounting fees	$	150,000
Prepaid insurance	$	8,000
Prepaid advertising	$	-
Consultants	$	7,500
Supplies	$	2,000
Architectural Design Fees	$	15,000
Web Design & Development	$	10,000
Total Location and Admin Expenses	$	192,500

Opening Inventory

Starting Inventory	$	50,000
Inventory Acquired Month 1	$	-
Category 3	$	-
Category 4	$	-
Category 5	$	-
Total Inventory	$	50,000

Advertising and Promotional Expenses

Marketing & Advertising	$	199,884
Trade Show Expenses	$	30,000
Prototypes	$	50,000
Sample Production	$	6,000
Public Relations	$	33,540
Web Expense	$	11,220
Marketing Material	$	4,560
Promotional Items	$	41,850
Travel/entertainment	$	16,072
Other		
Total Advertising/Promotional Expenses	$	393,126

Other Expenses

Equity Financing Costs	$	125,000
Debt Repayment	$	-
Loan Fees	$	-
Total Other Expenses	$	125,000

Reserve for Contingencies	$	50,000

Working Capital (financing less above)	$	1,622,707

SUMMARY STATEMENT

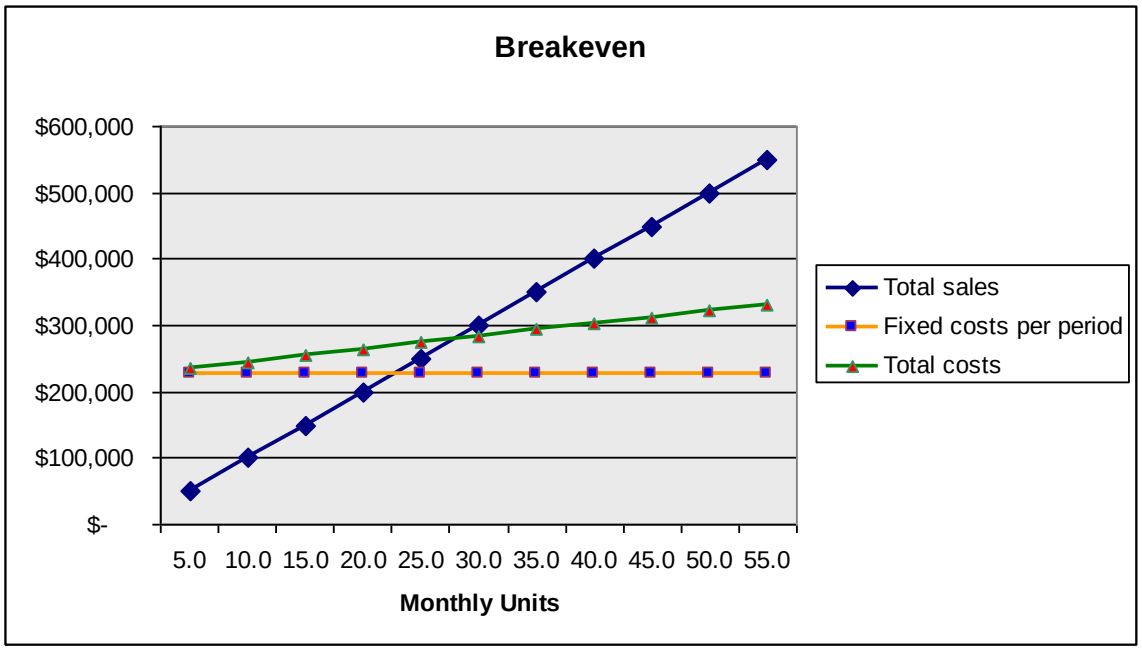
Sources of Capital

Owners' and other investments	$	2,500,000
Bank loans	$	-
Other loans	$	-
Total Source of Funds	$	2,500,000

Startup Expenses

Buildings/real estate	$	-
Leasehold improvements	$	-
Capital equipment	$	66,667
Location/administration expenses	$	192,500
Opening inventory	$	50,000
Advertising/promotional expenses	$	393,126
Other expenses	$	125,000
Contingency fund	$	50,000
Working capital	$	1,622,707
Total Startup Expenses	$	2,500,000

6.7 BREAKEVEN ANALYSIS



7.0 MANAGEMENT SUMMARY

Thomas Murphy – President

Dee Thomas Murphy began a career in the Alaskan oil industry in the late 1960s. Over the next four years, he continued on to receive managerial training with a retailer, managing a store in Kenai, Alaska, breaking many company and store records in sales. Being successful in retail was challenging and enjoyable, however when offered an opportunity to work for Atlantic Richfield Corporation (ARCO) in its production operation, he accepted the opportunity.

Working for ARCO one week on and one week off, allowed him time to rent and service portable chemical toilets to the parks in Alaska and to the oilfield land rigs. When this business began paying more than ARCO, he decided to go full time in his business. In response to city advertising seeking a waste management provider, he purchased a pumping truck and began pumping cesspools in 1972.

In a short time, after discovering that the owner had retired from the business, Mr. Murphy acquired an established pumping company that had been providing the services in the area. His chemical toilet rental business grew quickly over the next five years, serving oilfield managed by Union, Standard and ARCO, among others.

He designed, built, owned and operated his own septage receiving facility, the first of its kind, and serviced all the competitors' dumping needs, being paid $.06 for every gallon of septage.

In 1975, Tom started his own construction company, specializing in design and repair of new and failing septic systems. Mr. Murphy was certified by the State of Alaska and qualified on the same level as a civil engineer to design residential and light commercial on-site wastewater treatment systems. The majority of all local repairs were done by his company, Town & Country Pumping. His reputation for quality service grew and he dominated with over an 80% market share. Mr. Murphy's firm provided a turnkey onsite wastewater treatment program from the conception up to completion. His service company then provided an ongoing automatic service program to the customers to maintain their investment.

With a strong interest in technology, he was looking for a solution for his overloaded septage receiving facility. After ten years of research and experience with other technology suppliers, dealers, manufactures and engineers who were known to be gurus in the wastewater industry regarding technology, he invented a new process. Mr. Murphy developed the first revolution in biological process technology since 1903 when the conventional extended biological process technology was developed to overcome problems associated with controlling a "batch" process.

When the Alaska oil boom crashed in Alaska, causing Mr. Murphy to file bankruptcy in 1986, he decided to pursue his dream and passion in the direction of technology. Mr. Murphy moved to Hawaii and in 1988 installed the first prototype of this biological process technology of what is now referred to as the AES Technology, or the Intermittent Decant Extended Aeration (IDEA) process. He began filing patents to protect the intellectual property. Today, he has three Provisionals pending on his latest developments with more on the drawing board.

By the year 2000, the corporation was over 10 years old, and AES, run by Mr. Murphy and his wife, had installed over 100 systems worldwide with the largest being 1.5 million GPD for clients such as McDonalds and Wal-Mart to the largest engineering and construction company in the world, Flour Daniel Corporation in conjunction with Newmont Gold Corporation.

AES has a Technology Evaluation by NSF in 1994 (report available), which demonstrated the technology was able to produce non-pollutant water, particularly a reduction in nitrates. No other technology has yet to demonstrate such capability. Even though, his passion for excellence is not driven by his completion, but his desire to achieve development of a technology that will enable every home to reclaim and repurify their own wastewater stream thereby maximizing the concept of water conservation to the greatest degree. He has now accomplished that goal.

Mr. Murphy began to study the Federal law of the United States which is known as United States Code (U.S.C.). His primary interest was Title 33, Chapter 26 which refers to what is known as the Clean Water Act (CWA). Currently, he is now recognized as a CWA specialist within the wastewater industry. He is regularly answering questions and is currently engaged in development of a National Standard of Performance Comparison chart, where the AES Technology will be the technology to set that national standard that must to be equaled or surpassed in order to be recognized as a Best Available Technology (BAT). Per the requirements of the CWA (Act), only systems which are BAT are allowed to be installed to provide treatment of any wastewater stream within the Nation.

Murphy's latest technology development is the "Reclamator". It is designed to receive a sewage flow and to reliably and economically repurify the water associated with the sewage (or any waste stream), eliminate the pollutants, and produce two sustainable resources, pure water and electricity. The Reclamator technology meets the requirements of a federally mandated monopoly within a trillion dollar market. World renowned references are available upon request.

Jeanie Murphy – Vice President
When activity subsided, responsibilities were reduced to part-time. Jeanie Murphy was full time with AES from 1992-2003 providing management, administration and executive assistant responsibilities relating to sales and installations of the proprietary wastewater treatment process. Her background in art and BFA from Carnegie-Mellon University enabled her to design and coordinate promotional materials including brochures and videos. She also coordinates national trade show displays. Her educational background, which included an emphasis in businesses, allowed her to manage purchasing, finances, bookkeeping and client services.

Her client service skills were refined while working for various art galleries. From 1987-1992 she was the Executive Assistant of Lahaina Galleries in Maui, HI. While there, she assisted the general manager and owner with all levels of administration including promotional events, art galas and weekly art show openings. She was also the liaison with the advertising agency for national magazine and local print ads. From 1982 – 1987 she was a Business Coordinator for ABC News in Washington, DC. She was responsible for the preparation of weekly budget-to-estimate financial

reports for "World News This Morning" and "Good Morning America." Ms. Murphy assisted the controller with monthly closings and annual budgets, assisted in the preparation of annual fact books and interfaced with all levels of producers and news staff. Previously she was a Director of Gallery Beyond Walls, an art consultant business for designers and architects. Before that she was at Greenwood Gallery and Forbes Street Gallery.

Richard Stone – General Manager
Mr. Stone has been the General Manager of Advanced Environmental Systems, Inc. for the past five years, and has performed extensive research in global fields such as: wastewater, water, EPA, trade newsletters, UN, and has created a resource encyclopedia. Mr. Stone has spearheaded the development of the World Bank sponsored GlobalHome Township (GHT) Project. The GHT is a preplanned sustainable development project consisting of 2,500 homes, commercial, schools, recreational facilities, light industrial park and will be served by AES water systems infrastructures providing the wastewater treatment and reclaiming, repurifying and delivering the water back throughout the project for 100% reuse. The first prototype will be built in El Salvador. The World Bank has already selected six other countries in which to also provide GHT projects. The El Salvador GHT is a $188M project, $12M of which is budgeted for AES infrastructures.

Mr. Stone worked for 13 years as a consultant in the disaster relief business and was the team leader for building temporary shelters after a major disaster for such companies as; World Vision, Wheaton College, Food for the Hungry, World Relief, USAID/OFDA, UN and others. He has international experience in disaster relief and has traveled to over 36 countries. Stone Received distinction of classification as a World Authority on disaster shelters by the Office of Foreign Disaster Assistance, (OFDA) of the State Department. Richard is a lead developer of the GlobalHome Township Project with the IFC-World Bank Group, which is currently starting with the feasibility study for the country of El Salvador.

Project Director in the Dominican Republic on two occasions after major hurricanes destroyed thousands of homes. Supervised building more than 1000 shelters on these two trips and was in Guatemala a built Day Care Centers. Field Director along the Somalia and Ethiopia border to introduce technology to cook food without using wood, solar with thermos.

Mr. Stone's 15 year business background is in the areas of advertising, promotion and commercial photography. He produced the 1976 Mack truck calendar and promotional materials for Fritz Companies (purchased by UPS), plus scores of other projects in the San Francisco Bay Area.

Michael Robbins – Director of Finance
Mr. Robbins recently joined AES after 17 years working in financial services. He began in the 1980s with the Investment Reporter, culling data from analyst research reports, selling stock broker productivity packages and laying out the newspaper. In the 1999s, he began working in investor relations (IR). At two different IR agencies, he represented dozens of publicly traded companies. In New York, he began to specialize in environmental companies, networking with many socially responsible investors across the country. He introduced investors to environmental companies, and those investors today hold over $20 million in those securities.

Subsequent to investor relations, Mr. Robbins started and managed a hedge fund. He has since written the business plan for several hedge funds and about 200 other companies. About 20% of the plans written were for real estate companies, and these relationships are leading to potential AES prospects. For instance, he recommended AES to a $250 million casino project in Mississippi. In Australia, Mr. Robbins was CFO of UniTel Pty Ltd, and he was CEO of ZeroKlix Pty Ltd, which streamed about half the online radio on the continent. He received a bachelor's in economics from the University of Colorado, with an emphasis in journalism. This education was later complemented with accounting courses at New York University.

8.0 HEADQUARTERS AND CORPORATE DIRECTORY

Advanced Environmental Systems, Inc. (AES)
5610 Grasswood Drive.
Sparks, NV 89436
(775) 425-0911

The Company has an outside group of advisors, which include a CPA and a corporate attorney.

The Company monitors the following trade resources:

- National Onsite Wastewater Recycling Association
- California Onsite Wastewater Association
- World Water Congress
- Wastewater Equipment Manufacturers Association
- Safe Water for Africa Community Initiative (SWACI)
- Water & Wastes Digest
- Water Quality Products magazines
- Pollution Equipment News
- The Pumper magazine
- Engineering and Science magazine
- WaterWorld magazine
- Industrial WaterWorld magazine
- Water & Wastewater International

9.0 APPENDIX

9.1 THE AES TECHNOLOGY

1.0 THE "AES TECHNOLOGY" INTRODUCTION

ADVANCED ENVIRONMENTAL SYSTEMS, INC. (AES) introduces a patented and patent pending Advanced Membrane Bioreactor (MBR) Technology eliminates all pollutants associated with incoming wastewater streams. The **"AES Technology"** represents the latest technological achievement and advancement in the process technology for the treatment of wastewater utilizing innovative processes, methods, and devices. The Clean Water Act categorizes the technology which meets these criteria as:

- BAT – The best available technology economically achievable, under Section 304(b)(2)(B) of the Clean Water Act;
- BADCT – The best available demonstrated control technology, for new sources under Section 306 of the Clean Water Act;
- BCT – The best conventional control technology, under Section 301(b)(2)(E) of the Clean Water Act;
- BPT – The best practicable control technology currently available, under Section 304(b)(1) of the Clean Water Act, and which additionally provides for the;
- BMP – Best Management Practices under Section 304(e) of the Clean Water Act.

AES is a private organization established in 1990, having provided near 1000 designs to provide pollution abatement solutions, and to date has had its equipment and technology installed in over 100 projects internationally. AES specializes in providing the Best Available Demonstrated Control Technology (BADCT) which meets **"a standard permitting no discharge of pollutants"** as required by the **Clean Water Act** (CWA), specifically defined in the **U.S. Code, Title 33, Chapter 26, Subchapter III, Sec. 1316.** – **National standard of performance., (a) (1),** ***The term "standard of performance" means a standard for the control of the discharge of pollutants which reflect the greatest degree of effluent reduction which the Administrator (EPA) determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants*****.**

1.1 THE AES "ADVANCED MBR" COMPARED TO "CONVENTIONAL MBR" SYSTEMS

The "State of the Art" advanced MBR technology of AES is a "hybrid" of the current conventional MBR technologies in the wastewater industry such as offered by ZENON, Kubota, and others. These conventional membrane biological reactor (MBR) technologies, are no more than a conventional flow sewer plant (CFS) process or a sequential batch reactor (SBR) that has incorporated an "in-basin" or "out of basin" micro filtration or ultra filtration membrane in order to eliminate the use of a secondary clarifier. Each of these conventional MBR processes are only modified versions of the two (2) one hundred (100) year old technologies, the SBR and the CFS. These conventional MBR systems still have many disadvantages associated with these antiquated process technologies, even though they have incorporated the membrane advantage. Although they all produce the "membrane quality water," all of these conventional industry standard MBR technologies have increased the overall equipment, associated energy,

associated maintenance requirements and costs, and total overall complexity of these systems. They have provided no fundamental or technological process advantages.

In most cases, the conventional MBR is used because customers have no other option. The conventional MBR is a very unforgiving system that requires close technical attention when in most cases, a more forgiving flexible system would be much more suitable for the application.

The **"AES Technology"** incorporates patented and patent pending advanced process techniques which sets it apart from all conventional MBR wastewater treatment technologies. The principal features and advantages of the "AES Technology" are the following:

Industry-Wide Range. The AES Technology is the only process technology which can accommodate a flow range from a single home up to a municipality. No other conventional MBR in the industry is full range.

A True Single Basin Complete Mix Process. The AES Technology operates as a single basin complete mix process providing for biological nutrient removal. No sludge return pumping equipment is required. As a result of our Micro/Membrane Bioreactor Module (MMBR), all settled sludge is returned via gravity back into the main react zone of the reactor, requiring no sludge return pumping equipment.

Conventional MBRs require multiple tanks and/or chambers to facilitate their process. Consequently, they must have return flow pumping facilities which are constantly pumping sludge and mixed liquor from the membrane chamber back to the front of the system at a rate of typically 2.5 times the average daily flow. This necessary requirement requires more equipment, energy, and maintenance. It also poses a liability as when it fails, the system doesn't work.

Inherent Flow Equalization. The AES Technology, due to its unique single basin complete mix nature, also can allow for hydraulic flow equalization which can be designed for up to 30% of the reactor volume. This unique feature eliminates the need for pre equalization or post equalization tanks to manage the diurnal hydraulic flow variations associated with most wastewater streams.

Conventional MBRs require some method of flow equalization. As they cannot operate in a complete mix single basin configuration, it is impossible to have inherent flow equalization, thus requiring additional tanks and associated operating equipment and maintenance.

Inherent Biological Denitrification. The AES Technology, exclusively, has the patented Influent Velocity Equalization (IVE) Collector and Omni Flow Partition, which causes inherent denitrification to naturally occur within its complete mix bioreactor. The AES Technology denitrification capabilities were tested under a formal technology evaluation program, which was conducted by the National Sanitation Foundation (now NSF International). The results demonstrated the AES Technology to produce an average Total Nitrogen (TN) of less than 5 mg/l; nitrates (NO3) were 1.6 mg/l. This unique denitrification process requires no mechanical equipment or extra tankage. Additionally, it does not reduce the reactor volume.

Conventional MBRs (including all other systems) cannot accomplish denitrification without the use of mixers, other anoxic zones and/or tanks.

Process and Technology Flexibility.

- **Tankage.** The AES Technology is able to be provided in virtually any configuration of tankage from in ground lined earthen basins, packaged steel or cast concrete rectangular or vertically cylindrical. The AES Technology has been pre designed and pre engineered up to 2.5 million gallon per day single basin pre packaged plant. The technology components can be retrofitted into virtually any existing wastewater system.

  Most all conventional MBRs have a specific tankage design which must be provided to accommodate the configuration of their equipment.

- **Pre Filtration Clarification Module.** AES Technology has exclusive rights to the patent pending MMBR Clarification Module, which incorporates the PRO PLATE Lamella Clarification technology. This offers substantial advantages to the selection of filtration which can be used, depending on the quality of water needed to be delivered. The MMBR Clarification Module ensures that the water quality, which interfaces with the filtration technology, is less than 5/5/5 BOD/TSS/TN, which in many cases, is sufficient on its own for most discharge applications. As the mixed liquor flows into the Module, the biomass flocks and falls back into the main aeration basin. This Module achieves clarification over conventional rates of as much as eight times (8Xs). This Module, located within the reactor, typically requires 5% of the reactor volume, less room than membrane compartments of conventional MBRs.

  Conventional MBRs submerge their membranes into mixed liquor concentrations of 10,000 to 15,000 mg/l, thereby stressing them with a tremendous “dirty water” exposure, increasing the cleaning and maintenance requirements, and reducing the life expectancy.

  Conventional MBRs must use a large amount of energy in aeration to keep their mixed liquor suspended solids suspended. As the Lamella Clarification Module operates on “enhanced” gravity liquid solids separation so as not to interface with the filtration, the energy requirement associated with conventional MBRs having to keep their mixed liquor suspended is virtually eliminated

- **Filtration.** Now, because of the Pre Filtration MMBR Clarification Module, the AES Technology can be provided with two types of filtration technology options, 1) a Micro Screen or, 2) Ultra Filtration Membranes.

  1) **20-40 Micron Micro Screen.** In most applications, the Micro Screen option with UV disinfection will generally meet all discharge limitations and requirements. This option offers a simple and non technical high quality water reclamation solution without the complexity, costs, maintenance, and more high-tech operational requirements that are associated with membrane applications. Treatment levels are typically reduced by another 50%, thereby providing for a very high quality and reliable tertiary quality reclaimed water. The cost savings of this option, as opposed to conventional membrane technologies, could be as much as 30% to 40%. The operation costs are substantially less, and the operational and maintenance requirements are only a fraction of conventional membrane systems.

Conventional MBRs do not have the Micro Screen option, as they do not have the ability to provide the advanced treatment and clarification associated with the AES Technology prior to interfacing with their filtration treatment step.

2) **Submerged Spiral Wound UF Membrane.** For membrane specified applications, the AES Technology utilizes a submerged spiral wound ultra filtration membrane technology, SpiraSep, which is manufactured by TriSep Corporation. The advantages of the SpiraSep are: back flushable, immersed, negative pressure, has high specific flux and simple manifold connection. Its revolutionary performance is due to the fact that it resolves fiber integrity issues common with hollow fiber membrane technologies. They are of a modular design and are easily interchangeable.

Conventional MBRs utilizing hollow fiber membrane do not have the integrity of the spiral wound SpiraSep membrane used by AES. Hollow fiber membranes have fiber breakage which allows disease causing pathogens to pass.

Foot Print. The foot print of the AES Technology is smaller to conventional MBR systems due to its inherent single basin hydraulic flow equalization and biological nutrient removal advantages.

The conventional MBR requirements for external hydraulic flow equalization and external anoxic denitrification chambers cause the conventional MBR to require more of a foot print than the AES Advanced MBR technology.

Energy Requirements. The AES Technology requires less energy as it requires no sludge return pumping facilities and equipment associated with the conventional MBRs.

Furthermore, the AES has recently developed and patented a hydro electric turbine technology which generates energy created from capturing the turbulence caused by the aeration, in conjunction with the spent aeration created within the reactor basin. These two forces turn the turbines, which in turn operate a generator. The turbines are expected to facilitate energy recovery of up to 80% of the electricity used to operate the AES Advanced MBR technology system.

The **"AES Technology,"** a flexible, low-cost, dependable, appliance, consistently produces a "sustainable water supply", permits no discharge of pollutants, while achieving several economic, environmental and resource objectives.

Currently, the **"AES Technology"** processes and systems are protected by six U.S. Patents, 5,186,821, 5,234,580, 5,316,671, 5,352,356, 5,374,353 5,384,049, and over 30 International Patents with three more U.S. Patents currently pending.

The quality of the water produced consistently meets a "0" pollutant, "0" discharge water quality standard, which meets the US Environmental Protection Agency's "Maximum Contaminant Level Goals" (MCLG) which are "un-enforceable standards." The **"AES Technology" Process Performance Guarantee** is: 100% removal of colloids and particulates larger than 10 nano meters, turbidity less than 0.1 NTU, over log 6 removal of bacteria (99.9999% removal), over log 4 removal of viruses (99.99% removal), removal of large molecular weight organic compounds (above 100,000 Daltons) before disinfection.

9.2 PURIFIED WATER RECLAMATION PROCESS PATENT APPLICATION

A PURIFIED WATER RECLAMATION PROCESS

FIELD OF THE INVENTION

The present invention relates in general to a hybrid alternative wastewater treatment processes but more particularly pertains to water reclamation processes that are used for purifying and completely recycling wastewater for re-use in a new simplified improved environmentally friendly manner and is more economically achievable than other inferior options currently available. The process eliminates numerous components currently associated with such systems and this proves to be most advantageous and very cost effective. The process includes use of my previously patented technology and when combined in combination with UF/RO "ULTRA FILTRATION/REVERSE OSMOSIS" type of physical filtration technology provides most unusual results heretofore not attained. Namely, the present process provides as an end result double barrier treated drinking water that complies with NSF International certified water standards #61 and #58 and thus accomplishing new unusual results not attained within the known prior art.

BACKGROUND OF THE INVENTION

As previously noted, the present system/process incorporates technologies including my prior art patents. Namely, U.S. Patents #5,186,821, #5,234,580, #5,316,671, #5,352,356, #5,374,353 and #5,384,049.

Within the known prior art there have been numerous attempts to provide improved wastewater management systems and/or processes. For example some prior art patents include U.S. Patent #6,159,380 entitled "WATER TREATMENT PROCESS", #6,103,125 entitled "ZERO WASTE EFFLUENT WATER DESALINATION SYSTEM" and #6,641,721 entitled "PROCESS AND APPARATUS FOR TREATING WASTEWATER". However, each system has inherent disadvantages and drawbacks that the present invention recognizes, addresses and resolves in a novel manner heretofore not taught. Most all of the prior art is very complicated and each are only functional with highly expensive problematical components all of which the present invention completely eliminates. Also, the prior art only produces treated wastewater effluent for disposal, not purified water having no pollutants, suitable for all uses of water including drinking. It is known to purify (eliminate all pollutants known to be harmful to human health) water through a variety of commercially available water reclamation devices designed for point-of-use applications in the commercial/residential/industrial water treatment market. The most popular methods are based on the following technologies: activated carbon for organic removal: ultraviolet light disinfection: ion exchange for hardness removal (water softening), micro filtration and membrane desalination such as (UF) ultra filtration or reverse osmosis (RO) or nanofiltration (NF).

Membrane filtration has been used for over two decades now. Generally speaking, membrane filtration used for residential and commercial water treatment applications can remove all dissolved solids by approximately 98%. This type of filtration has proven to be very beneficial but has certain limitations, namely due to the fact that such systems are intermittent and this does not permit for continuous on-demand water supply. As a result there has not been a functional satisfactory efficient and cost effective process available until now that would be functional for wastewater treatment, now known as purified water reclamation (PWR), using prior art with (UF/RO) technology and as a result provides reclaimed purified drinking

water that complies with NSF certified water standards. This quality of water consistently meets the maximum contaminate level goals (MCLG's) determined by the United States Environmental Protection Agency (USEPA). These levels of water quality are unenforceable by law, therefore no 'discharge' permit is required as there is 'no addition of a pollutant' associated with the reclaimed pure water which is produced.

The most pertinent prior art is taught within my U.S. Patent #5,186,821 which accomplishes new and unusual results due to the novel "IVEC" (Influent Velocity Equalization Collector) AND "OMNI FLOW PARTITION" as taught within my U.S. Patents #5,384,049, #5,374,353 and #5,316,671 each of which are utilized within the present invention.

OBJECTS AND ADVANTAGES

It is therefore a primary object of the present invention to provide the most highly advanced purified water reclamation process possible with today's technologies and thus overcome the disadvantages and costly drawbacks associated within all of the known prior art.

It is another object of the present invention to provide a purified water reclamation process that is not limited in use, as it is functional for residential, commercial, industrial and municipal use.

Still a further object is to provide the best purified water reclamation process (as described in the Clean Water Act (CWA), the Federal Law, defined in the United States Code, Title 33, Chapter 26, Section 1251 et. Seq. and more specifically as defined in Section 1316 which references the Best Available Demonstrated Control Technology (BADCT)) that eliminates waste of water (zero wastewater) and this heretofore has not been efficiently or cost effectively achieved until now with this present technology taught.

Yet another very important object of the present invention is to provide a purified water reclamation process that complies with all current federal and state codes. Namely, the present process achieves a "Standard of Performance" as required by the U.S. Code, Title 33, Chapter 26, Subchapter III, Sec. 1316. – National standard of performance, (a)(1), the term "standard of performance" means a standard for the control of the discharge of pollutants which reflect the greatest degree of effluent reduction which the Administrator (EPA) determines to be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants. The standard of performance established by this process is purified drinking water permitting no discharge of pollutants, the standard required by Federal Law (CWA) if available to the entire industry, this technology is as it is suited for a single family dwelling up to a multi-million gallon per day municipal plant including commercial and industrial.

Still another object of the present invention is to provide a purified water reclamation process that is an advanced hybrid alternative of the Conventional Extended Aeration System, Intermittent Cycle Extended Aeration System (ICEAS), the Sequential Batch Reactor (SBR) technologies, and the Membrane Biological Reactor (MBR) and additionally incorporates advanced alternative techniques which sets it apart from all other available innovative technologies when compared as defined and required in the Federal Clean Water Act, 33 U.S.C § 1251 et seq.. The process is to be applied where pollution abatement or purified water reclamation from a waste stream or any other water stream having a pollutant or pollutants is required by the best available technology where high strength domestic and industrial waste with high peak flow variations require a flexible, low-cost,

dependable, system that unquestionably and reliably produces a consistent high-quality “effluent” which in this case is qualified as NSF International/ANSI certified treated drinking water quality that meets the NSF International standards #61 and #58..

The quality of water (reclaimed purified treated drinking water) produced from this process is superior to that obtained from conventional wastewater treatment facilities. The quality of the water produced with this process meets the maximum containment level goals (MCLGS) established by the EPA which have no pollutant levels that are known to be harmful to public health. Thus “The Best Practicable Waste Treatment Technology” [U.S.C. 33, Sec. § 1281 (g) (A)] description references the present process and this heretofore has not been attainable.

Also, a further object of the present invention is to provide a purified water reclamation process that incorporates continuous feed activated sludge technology with intermittent cyclic system operation requiring only a single reactor basin. The process uses a single tank (multiple reactor basins are also an option) in which the activated sludge is aerated over a number of pre-determined cycles. Solids/liquid separation occurs during the air-off part of the cycle allowing for denitrification to naturally occur via the patented IVE Collector (optional) that works in conjunction with my patented Omni-Flow partition and a second modified Post Omni-Flow partition. Denitrification occurs during the air-off phase of the aeration cycle selected continuing during the initial period of the aeration phase following aeration phase startup. During the air-off phases of the aeration cycle, the biomass settles in the lower portion of the reactor basin where it becomes a natural biological filter. As the raw influent enters into the reactor, controlled by the IVE Collector, first splash energy is mitigated, then, the raw influent is directed downward through the settled biomass blanket via the Omni Flow partition where denitrification occurs naturally without the use of mixers, or separate anoxic chamber as required in all other systems. The UF/RO membrane component in conjunction with my patented IVE Collector, my patented Omni-Flow partition and a second modified Post Omni-Flow partition which as taught herein, allows for disinfection, liquid/solids separation (clarification), resulting in producing a reliable reclaimed purified treated drinking water, the guaranteed quality of which is; 100% removal of colloids and particulates larger than 10 nano meters, turbidity less than 0.1 NTU, over log 6 removal of bacteria (99.9999% removal), over log 4 removal of viruses (99.99% removal) and removal of large molecular weight organic compounds (above 100,000 Daltons).

Because of the unique patented influent hydraulic control features of the process, influent inflow is continuously accommodated through all phases of the single pole operation cycle. In this way, the functions of flow equalization, biological oxidation, nitrification, denitrification, secondary sedimentation, clarification, (micro filtration, UV disinfection and ozone disinfection are optional) and aerobic sludge digestion are all carried out in a single vessel. The duration of a process cycle is specific to each design application and variable in the field as required.

Yet another object of the present invention is to provide a purified water reclamation process that is “The Best Practicable Control Technology Currently Available” (BPT), the present invention, is the best available “possible to practice or perform” (“practicable” means possible) waste treatment technology as it consistently produces the greatest degree of reduction of pollutants (conventional and toxic) when compared to all other available waste treatment and/or water reclamation process technologies.

It is to be understood, “The Most Cost Effective Alternative”; is to be determined by comparing three (3) different areas of cost, capital costs associated with the initial purchase and installation of the treatment works, the ongoing operating costs related to energy requirements, and the ongoing cost associated with the operating and maintenance of the treatment works. Title 33 U.S.C § 1298. – “Cost effectiveness” (a) Congressional statement of policy, states “It is the policy of Congress that a project for waste treatment and management undertaken with Federal financial assistance under this chapter by any State, municipality, or intermunicipality, or intermunicipal or interstate agency shall be considered as an overall waste treatment system for waste treatment and management, and shall be that system which constitutes the most economical and cost-effective combination of devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, sewage collection systems, pumping power, and other equipment, and their appurtenances; extension, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land use for the storage of treated wastewater in land treatment systems prior to land application) or which is used for ultimate disposal of residues resulting from such treatment; water efficiency measures and devices; and any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and sanitary sewer systems; to meet the requirements of this chapter.” The present invention/process is the least costly pollution abatement solution in regard to capital costs, energy consumption, and ongoing operation and maintenance requirements as compared to all other comparable alternatives, in many cases, by more than 50%. The energy requirements of the single basin process having only a single pole control requires no additional equipment for mixing or recirculation of the mixed liquor, along with eliminating the need for external tertiary filters or clarifiers to purchase, operate and maintain, makes this invention/process the most energy efficient “0”pollutant”0”discharge alternative available. The “value engineering” premise of the present invention/process eliminates the unnecessary high costs of each project in order to arrive at a cost savings without sacrificing the reliability or efficiency of the project. [33 U.S.C. § 1292 (2) (B) & 33 U.S.C. § 1298]

Yet a very important object of the present invention is to provide a purified water reclamation process that prevents exposure to any pollutant that is known to be harmful to human health or the environment and is therefore a homeland security protection solution which is most advantageous, resulting in reclaiming purified treated water at its source.

Other objects and advantages will be seen when taken into consideration with the following specification and drawings.

DETAILED DESCRIPTION OF THE DRAWING

Referring now in general to the drawing wherein like characters refer to like elements therein. The general process of the present invention accomplishes the most unusual new end results namely due the use of my prior art patented omni-flow partition as disclosed in U.S. Patent #5,384,049 when combined with a second post omni-flow partition and also the process may include as an option my patented I.V.E. Collector as disclosed in U.S. Patent #5,186,821 and thus the actual working of each are not

taught herein, as the present invention is, in part, the process and not the apparatus respectively as follows:

The present reclamator process substantially including use of a typical purified water reclamation system (10) having a biological reactor basin (12) that is not compartmented, has inherent complete mix, nitrifies, denitrifies, clarifies, provides suspended growth biological treatment followed by at a minimum, one physical treatment step resulting in producing purified water suitable for drinking, and having no pollutants which exceed the MCLGs, and which meets the quality criteria as defined in the International Treated Drinking Water established Standards known industry wide as NSF Standard 61 and 58.

. The biological reactor basin (12) includes the IVE collector (14) (which is optional) and the typical omni-flow partition (16) as taught within the prior art and a second post omni-flow partition (18) that is herein considered new. The main modification to the second post omni-flow partition is that the inlet for effluent is located on the bottom of the partition as opposed to the inlet on the typical omni-flow partition (16) that is located on the top of the partition respectively. Whereby the second post omni-flow partition (18) provides novel results as this embodiment allows for liquid/solids separation during the aeration of the biological reactor basin contents. Therefore, the clarified effluent can be easily drawn from the top of the second post omni-flow partition (18) via outlet (22) and then delivered to the ultra filtration reverse osmosis type membrane (20) for final reclamation. It is to be noted the ultra filtration reverse osmosis type membrane (20) is typical including a feed pump (24), a compressor or blower (26), an optional deionizer (25), an optional flash incinerator (27), a diffuser (28), a back pulse pump (30), a chemical feed means (32), and a filtrate flow control means (34). Thus, the purified water reclamation system (10) following the known physical treatment level of the ultra filtration reverse osmosis type membrane, (20) provides purified drinking water, as defined by international standards, in a new and improved manner heretofore not taught within the known prior art.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made there from within the scope and spirit of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and apparatuses.

9.3 ENERGY PATENT APPLICATION

"A METHOD AND APPARATUS FOR RECOVERING ENERGY FROM TURBULENCE CREATED WITHIN AN AEROBIC

BIOLOGICAL REACTOR"

RELATED PRIOR ART

This application is derived from my provisional application #60/700,270, which was filed on 07/18/05 in the name of the current inventor. It is to be noted no new material has been entered.

FIELD OF THE INVENTION

This method/apparatus relates in general to any means of capturing energy that is created from the motivation of liquid, more commonly referred to in

the wastewater industry as mixed liquor, and converting it back into electricity. During the aeration of a wastewater treatment and/or a water reclamation process, mixing and aeration is initiated by a mechanical means. This mechanical mixing and aeration forces the movement of the contents within the basin and/or reactor in either a general vertical direction or a general horizontal direction. A substantial amount of electrical energy is utilized to initiate the biological action that results in the treatment of the wastewater and/or reclamation of the water. Until now, the hydraulic forces and velocities naturally created by this aeration and mixing heretofore have not been harnessed in an effort to recover the energy consumed during the treatment process. The present invention is a method and apparatus that harnesses the hydraulic forces within the aeration basins by the rising bubbles created from the diffusers located at the bottom of the aeration basin. In vertical aeration/mixing aeration basins, air is introduced into the aeration basins from the bottom through aeration methods, such as diffusers by electric air blowers and the like. The electric air blowers move the air to the diffusers where the air is released into the bottom of the tank. Upon leaving the diffuser, the air is divided into numerous bubbles that rise to the top of the liquid within the basin. In the process of rising to the top, they force the liquid contents within the basin in the same vertical direction that the bubbles are traveling as a result of their floatation dynamics. As the bubbles rise, they in turn move the liquid contents within the aeration basin in the same direction as the bubbles are traveling and at almost the same velocity that the bubbles are rising at. This floatation dynamic of the air bubble causes the movement of the hydraulic contents. It is a common known fact that it requires more energy to move liquid as compared to the moving of air. Therefore, the free flotation dynamics of the rising bubbles convert to hydropower. Thus, creating more energy that can be utilized and harnessed resulting from the vertical movement of the liquid that creates hydraulic velocity resulting from the vertical rise of the bubbles. The present invention is a method, energy conveyance process including an apparatus that converts that hydraulic velocity into the generation of electricity.

The same applies to the horizontal movement of the liquid contents in a basin that uses horizontal mixing and aeration techniques. The present invention is also adaptable to all aeration basins where aeration is used to biologically degrade organics in a treatment process. Thus the present invention capitalizes on the pre-existing hydraulic velocity created as well as utilizes the floatation forces inherent therein to renew the energy resource used to aerate and mix the aeration basin.

BACKGROUND OF THE INVENTION

Until now, there has only been one common method practiced for recovering energy from the treatment of organics associated with a waste stream. This commonly practiced method utilizes the anaerobic conversion process commonly known throughout the industry as a “primary” biological treatment process. This process recovers the methane gas generated from the decomposition of organic matter that takes place within the anaerobic reactor and uses it for fuel to power a motor that in turn runs a generator to generate electricity.

There are many drawbacks and disadvantages to the above noted method and the present invention addresses and resolves these drawbacks and disadvantages in a manner heretofore not taught. Some of the disadvantages of the anaerobic reactor biogas generation process is it is very operator intensive, it

is extremely odorous, the process is very volatile and non forgiving as it is a direct result of deriving a benefit from the biological process which has many fluctuating factors which aren't consistent and there fore must be monitored very closely by trained and qualified operating engineers. The process is explosive thereby representing a danger. It is very corrosive which causes high maintenance requirements and associated costs. And the recovery benefit is generally less than a third of the required energy to operate the process.

Another recent approach is the development of the microbial fuel cell. However, this is also a method of utilizing anaerobic digestion. In this hybrid of the anaerobic reactor process, wastewater is treated anaerobically using a bacterial biofilm growing on one electrode of the fuel cell. As can be seen, the microbial fuel cell may have promise, but for now is just a hybrid of the conventional anaerobic biogas generator sharing many of the disadvantages of the same.

As of now, large amounts of energy in the form of electricity are being used in the name of sanitation and protection of the public health and the environment. However, until now, there have not been methods or processes that efficiently recover that electricity used in a conventional secondary treatment process. This is a substantial amount of non-recovered energy consumed per day.

In 2001, PG&E conducted a study on twelve (12) treatment processes. The plant flow ranged from 1.7 MGD to 60.4 MGD. The electricity use ranged from 978 kWh/MG/day to 4,630 kWh/MG/day. The energy used for aeration represented 27% to 82% of the total plant operation electricity requirement.

In 1999, a Multi-Agency Study was conducted by seven (7) participating agencies. That study found that treatment costs of facilities studied ranged from $530/MG/day to $976/MG/day, averaging out at $729/MG/day. The objective of this present invention is to recover as much electricity as possible to offset the cost of providing the treatment.

As the turbulence within the aeration basins are a result of a necessity to provide aeration and mixing in every waste treatment plant that exists, we must capitalize on this requirement and establish the way to have the renewable resource as a result.

OBJECTS AND ADVANTAGES OF THE INVENTION

A primary object of the present invention is to provide a method and apparatus that utilizes pre-existing energy sources naturally occurring within an aerobic biological reactor to renew the primary resource consumed, namely electricity.

A further object of the present invention is to provide a method and apparatus that incorporates use of known proven prior art typically associated with wastewater treatment systems. For example, the most effective system to date is taught within my U.S. Patent #5,186,821 which accomplishes new and unusual results due to the novel "IVEC" (Influent Velocity Equalization Collector) AND "OMNI FLOW PARTITION" as taught within my U.S. Patents #5,384,049, #5,374,353 and #5,316,671 both of which are utilized within the present invention. A further improvement and advantage of the present invention is use of a "MBR module" also taught within my current pending application that further provides unusual new results not previously incorporated in combination within such systems.

A primary object of the present invention is to further include novel use of at least one paddle wheel that is automatically rotated by bubbles created from

the air diffusers. Thus the paddle wheel due to free energy rotation can be used for energy transfer to a generator and/or backup batteries, respectively. This is extremely important as no back-up generator or the like is necessary and as a result greatly reduces cost's with other similar systems.

Another object of the present invention is to provide a method and apparatus that is reliable, economical to establish, operate and maintain. Most importantly the present invention eliminates the need for expensive equipment, continuous maintenance and numerous components associated with all of the known prior art. For example, the need for clarifiers, filters, decanters, a back-up generator, etc have all been eliminated.

A further object of the present invention is to provide a method and apparatus that takes advantage of both the aeration dynamics provided along with the free resulting hydro energy created by the flotation dynamics of the air bubbles and most importantly recover more energy than is required to operate the aeration basin as a result of the bonus hydro energy realized.

1. Other objects and advantages will be seen when taken into consideration with the following specification and drawings.

9.4 Letters of Recommendation

The Company has letters from Valley Isle Pumping, Inc., Bergdahl Associates, Inc., Rowe Environmental, Matson Navigation Company, Hawaiian Pro Line, Hida, Okamoto & Associates, Inc. to name a few and below is one from McDonalds.

McDonald's® Restaurants of Hawaii, Inc.
711 Kapiolani Boulevard • Suite 1600
Honolulu, Hawaii 96813-5281 U.S.A.
Phone (808) 523-2494 • Fax (808) 523-8937

24 July 1991

Bernard J. Gradel, Jr., P.E., R.P.S.
Hugo Reed and Associates, Inc.
1210 Avenue O
Lubbock, Texas 79401

RE: ADVANCED ENVIRONMENTAL SYSTEMS, I.D.E.A. - LETTER OF RECOMMENDATION

Dear Mr. Gradel:

This letter represents our satisfaction with Advanced Environmental Systems and the I.D.E.A. System. We have installed the system in the McDonald's of Haleiwa, and have been very happy with the results.

The McDonald's of Haleiwa restaurant was unable to hook into the county sewer lines, therefore we installed an independent system when the restaurant was built in 1988. The system which was installed did not perform to the standards required, and after attempts to improve the system; which failed, the decision was made to replace it. Initially we attempted to find a suitable system elsewhere in the McDonald's system which had been tried and proven to work. Unfortunately there was not a system which had proven to work, and others were attempting to solve the same problems we were facing. As a result we began requesting information from various sewage treatment companies, and found Advanced Environmental Systems.

We have an extremely high hydraulic and organic flow variation. The BODs are as high as 1,500 mg/l, the grease values are approximately the same, the suspended solids range 600-800 mg/l and the hourly peak flows are as high as 8-10 times the average daily flow. The I.D.E.A. system, despite the highloading is treating the wastewater to a level of 98% reduction. The I.D.E.A. systems has proven itself, via testing, to be a superior technology for high strength wastewater treatment.

Having discovered a system which works, we are sharing the information with McDonald's Corporation. We are also working with A.E.S. to design a system to serve a new 200 seat McDonald's Restaurant in an area were there is no water or sewage system available.

Bernard J. Gradel, Jr. P.E., R.P.S.
A.E.S. Letter of Recommendation
24 July 1991

We have found Tom Murphy and A.E.S. to be efficient, professional and timely. The installation and start-up went smoothly and on schedule. A.E.S.'s Oahu representative supervised the installation and start-up conscientiously and to our satisfaction. All personnel were willing to work with McDonald's to reach the desired results.

Based on our experience, I recommend you consider Advanced Environmental System's I.D.E.A. systems as a solution for our wastewater treatment needs. If you have any questions please call me, the number is (808) 523-2494.

Sincerely,

Thomas L. Swana
Regional Construction
Manager

9.5 Letters of Intent

Letter of Intent - Needles

WERT-BERATER |COMMERCIAL
Commercial Real Estate Advisors
3753 Howard Hughes Parkway, Ste. 200, Las Vegas Colorado 89109
702.427.9763 Telephone, 928.404.4136 Telecopy
<http://www.wert-berater.com/> www.wert-berater.com

Advanced Environmental Systems, Inc.
5610 Grasswood Drive
Sparks, NV 89436

Attn: Tom Murphy

Reference: Letter of Intent

Our firm is currently working on three different projects; two in Needles, California and one in Sonora, Mexico and they all involve building houses, RV Park and some commercial.

I have reviewed the technology from Advanced Environmental Systems, Inc. and have shown this technology to my clients and they would like to use your systems for these three projects.

1. 300-house project in Needles on the Colorado River.

2. 700-house and RV Park also in Needles and close to the Colorado River.

3. 500-800 house project in Sonora, Mexico.

I have been working with your General Manager Richard Stone on the different presentations to the local city authorities and have had good response to move ahead and the Engineer I have selected has also approved your technology.

Around the first quarter of 2007 I would like to move ahead and do the final Preliminary Engineering designs that you will submit to our Engineering firm.

Proposed Value of Contracts: $7- million Dollars.

Sincerely,

James L. Stevens, CEO

Letter of Intent – Inland Lake, Alabama

Reference: Letter of Intent

Date: November 7, 2006

Company: Advanced Environmental Systems, Inc.
5610 Grasswood Drive
Sparks, Nevada 89436

Contact Person: Mr. Tom Murphy
775-848-8800

Project Value: $60 million dollars

Development Description:

Alabama's newest lakeside golf community is located alongside 5000 acre Inland Lake, one of Alabama's best kept secrets, in Blount County. With 5000 acres of crystal clear water and spectacular views, The Retreat at Inland Lake will offer exceptional community amenities, including championship golf and first class equestrian center. The town center will be a convenient shopping area for the entire community.

Facts and Features

- 3,500 acre gated community
- alongside 5000 acre crystal clear Inland Lake
- 2 hours from Atlanta
- 30 minutes from Birmingham
- up to72 holes of championship golf
- retail, restaurants and movie theaters
- equestrian center
- endless walking trails
- boating, fishing and swimming
- sports complex
- lake front, lake view and mountain view home sites available
- signature homes by Stephen Fuller

Project Description:

Advanced Environmental Systems, Inc. (AES) will provide a Water Reclamation System at each home capable of eliminating 100% of the pollutants from the homes wastewater and allowing the water to be reused for irrigating the golf course and other green features in the development.

Also AES will provide Cluster treatment where necessary and larger treatment facilities in the retail, restaurants and movie theaters. All technologies will eliminate pollutants and will be within the goals of the Clean Water Act.

AES looks forward in working with you and your design staff and providing the Best Available Technology on the Market and totally eliminating your wastewater pollutants and producing pure water for **The Retreat at Inland Lake.**

Letter of Intent – GHT (El Salvador)

World Construction Systems

Builder of the GlobalHome Township

November 7, 2006

Mr. Tom Murphy
CEO
Advanced Environmental Systems, Inc.
5610 Grasswood Drive
Sparks, Nevada, USA

Reference: Letter of Intent to purchase Water Reclamation System for GHT – El Salvador

Dear Mr. Murphy,

I would like to inform you that we have selected your technology and firm to supply our GlobalHome Township Project (GHT) in El Salvador.

- 2500 houses, Commercial Center, schools, professional offices and restaurant center with water reclamation system and the specifications from our environmental and infrastructure engineer. $11,250,000.00
- Light Industrial Park. $1,000,000.00

Total contract is for $12,250,000.00 and will be put in a Trust account with Banco Multisectorial de Inversiones after funding from several sources under negotiations.

A Workshop on the GHT Project will be held on December 5, 2006 with many interested El Salvadorian Banks will be in attendance to provide mortgage financing with funds supplied by the IFC-World Bank Group which is hosting the event.

We look forward in working with you on this pilot project and moving on to the other 5-10 projects in the next 10 years.

Sincerely,

Jerry W. Love

CEO

Block B Senda A #106 Jardines de Miramonte, San Salvador, El Salvador

Phone/Fax: 011-(503-2) 260-9160