

MFIC CORP  
Form 10-K  
March 29, 2007

**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, D.C. 20549

**FORM 10-K**

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2006

OR

TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number: 0-11625

**MFIC CORPORATION**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)  
**30 Ossipee Road, Newton, Massachusetts**  
(Address of principal executive offices)

**04-2793022**  
(I.R.S. Employer Identification No.)

**02464**  
(Zip Code)

**(617) 969-5452**

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: **None**

Securities registered pursuant to Section 12(g) of the Act: **Common Stock, \$.01 par value**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes  No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act.

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Indicate by check mark whether the registrant (1) filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the past 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer (as defined in Rule 12b-2 of the Exchange Act):

Large Accelerated Filer     Accelerated Filer     Non-Accelerated Filer

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act) Yes  No

As of March 23, 2007 and June 30, 2006, 10,124,769 and 9,984,845 shares, respectively, of the registrant's Common Stock were outstanding, and the aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant (without admitting that such person whose shares are not included in such calculation is an affiliate) was approximately \$19,048,000 and \$10,868,000, respectively, based on the last sale price as reported by the Over-the-Counter Bulletin Board on each such date.

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**PART I**

**Item 1. BUSINESS**

*Company Overview*

MFIC Corporation (MFIC or the Company) has, for over 20 years, specialized in manufacturing and marketing a broad line of high shear fluid processing systems used in numerous applications in the chemical, pharmaceutical, biotech, food and cosmetics industries.

MFIC's line of high shear fluid processor equipment, marketed under the Company's Microfluidizer® trademark and trade name, process premixed formulations to produce small, uniform structures, usually of the submicron and nanoscale size (commonly defined as particles having dimensions less than 100 nanometers) including nanostructures, microemulsions and nanosuspensions. The equipment produces commercial quantities of such materials important to producers of pharmaceuticals, coatings and other products.

Additionally, the Company commercializes its proprietary equipment, processes and technology for the continuous production of precipitated submicron or nanoscale particles by interaction of discrete streams of reacting materials. The Company has undertaken commercialization efforts for its patented Microfluidizer Mixer/Reactor (MMR), which is a high pressure multiple stream mixer/reactor.

The Company's technology embodied within its Microfluidizer® high shear fluid processor is used for formulation of products that are normally very difficult to mix and stabilize. Microfluidizer processors through process intensification allow manufacturers in the chemical, pharmaceutical, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Additionally, the equipment is used for cell disruption to harvest the cultivated contents of bacterial, yeast, mammalian and/or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

The Company's management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of the Company's materials processor and MMR equipment. Further, the Company guarantees scaleup of formulations and results on its processor equipment from 10 milliliters per minute on its laboratory and bench top models to more than 15 gallons per minute on its pilot and production models.

The Company was incorporated in Delaware in 1983. The Company, formerly named Biotechnology Development Corporation, changed its name effective June 8, 1993 to Microfluidics International Corporation, and again changed its name effective July 12, 1999 to MFIC Corporation. From August, 1998 until its sale on February 9, 2004, the Company also operated another division, known as the Morehouse-COWLES Division, which manufactured and sold a broad line of mechanical fluid materials processing systems used for a variety of dispersing, milling, and mixing applications across a variety of industries. The Company's principal executive offices are located at 30 Ossipee Road, in Newton, Massachusetts 02464-9101 and its telephone number is (617) 969-5452.

*Technologies*

*Fluid Processing Equipment.* The Company's Microfluidizer high shear fluid processing equipment is based on patents and related technology that were licensed by the Company from Arthur D. Little & Co. in 1983 and subsequently purchased by the Company in 1985.

Microfluidizer high shear fluid processors differ from conventional mechanical mixing and processing technologies in that the Company's equipment utilizes highly pressurized product streams that travel at high velocities in precisely defined microchannels producing high shear forces and then collide at ultra-high velocities in a small, confined space producing high forces of impact. There are no moving parts

in this mixing and collision zone ( fixed geometry ). Combined forces of shear and impact in the fixed geometry design act upon products to cause deagglomeration and particle size reduction. These forces result in what the Company believes are smaller, more uniform, highly stable, and reproducible dispersions and emulsions than can be produced by any other means. Microfluidizer processors also differ from conventional mixing and homogenization equipment in that Microfluidizer processors permit a linear scaleup from milliliters per minute to gallons per minute with no basic change in product formulation or equipment design and engineering. The formulations processed may be liquid/liquid or liquid/solid combinations.

*MMR.* The Company has introduced its patented Microfluidizer Mixer-Reactor (MMR) system as a continuous chemical reactor, which the Company believes may become a standard device for conducting chemical reactions, many of which can be configured to produce nanoparticles. This system produces uniform nanoparticles with phase purity previously unachievable with conventional batch reaction technology. This degree of reaction chemistry control can lead to cost-effective product improvements and the development and manufacture of new nanomaterials in scalable quantities. Recent advances have enabled simpler MMR variants, utilizing modified Microfluidizer processors , which the Company plans to market.

#### *Commercial Applications*

Microfluidizer processor technology allows manufacturers in the chemical, pharmaceutical, biotechnology, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Further, the proprietary equipment enables manufacture of unique products which cannot otherwise be produced. Microfluidizer processor equipment is generally used in the processing of high value-added end-products that require extremely small and uniform particle sizes. Newer applications include deagglomeration of carbon nanotubes for subsequent formatting or alignment for specific uses.

Microfluidizer processor equipment can be used to mix and formulate stable emulsions, dispersions and liposomes, and for cell disruption.

Emulsions are homogenous mixtures of oil and water components (or other normally immiscible components), which, if mixed properly, do not readily separate. Emulsions comprise many products, such as food additives, medicines (including injectable drugs), photographic films, and polymers. The Company believes that, generally, an emulsion processed with Microfluidizer processor equipment will exhibit improved stability and require reduced concentrations of costly emulsifying agents that are otherwise needed to create and/or maintain product stability.

Dispersions are mixtures of fine solids suspended in liquid so that the two do not separate readily after processing. Similar to emulsions, dispersions are used in a variety of consumer and industrial products, including pharmaceutical products (including injectable drugs), coatings, pigment dispersions for inkjet inks and toners, phosphorescent coatings for TV screens and fluorescent lamps, and barium titanate for capacitors and toners.

Liposomes are biodegradable cell-like structures, formed from materials such as cholesterol and lecithin, which can be used to encapsulate medications or nutrients. Pharmaceutical and cosmetic manufacturers use liposomes as a delivery system to target active ingredients for specific anatomical sites and to prolong their efficacy. To date, liposomes have been used commercially in two predominant applications: medical diagnostic agents and cosmetics. Applications include the encapsulation of dye to be used as a marker in medical diagnostic tests and the encapsulation of ingredients for deeper skin penetration, or time-release control, as well as pharmaceutical, food and specialized agricultural applications.

In the biotechnology industry, Microfluidizer processor equipment is currently used to harvest, by cell rupture, protein grown in bacteria, plant or mammalian cells. The controlled forces of shear and impact produced by Microfluidizer processor equipment allow the cell wall to be ruptured without damage to, or contamination of, the cell contents. The Microfluidizer processor equipment eliminates grinding media contamination, thus minimizing downstream processing requirements.

Microfluidizer processor equipment is generally used in commercial applications where a scientist, formulator or chemist is trying to develop or improve a product formulation for a high value-added end product. The Company believes that its laboratory equipment uniquely facilitates modern formulation development and production capability. Microfluidizer processor equipment is initially employed in a research laboratory, with the equipment subsequently being used in scale-up to pilot scale production of new or improved products, and ultimately, for production scale volumes as the improved product comes to market. From laboratory to production, the Company guarantees scale-up of formulations and results on its equipment from 10 milliliters per minute on its laboratory and bench top models up to more than 15 gallons per minute on its pilot and production models.

The Company currently manufactures and markets the following lines of equipment:

*The HC Series.* The HC Series, also known as Homogenizers, is a laboratory-scale series of equipment that is intended to impart moderate levels of energy into a customer's product with greater flow rates than the more energy intensive Microfluidizer processor devices. Operating pressures of products in the Company's HC Series can range from 250 psi to as high as 8,000 psi, and will process as much as two liters of fluid per minute.

*The M-110 Series.* The M-110 Series is a laboratory product line that is designed primarily for research and development applications. Standard pneumatic (air-driven) models can generate pressures as high as 23,000 psi and have a product flow rate on the order of one-half liter per minute. The M-110EH includes an on-board hydraulic pump system for high performance lab scale micro-mixing at processing pressures up to 30,000 psi and flow rates up to 320 ml/min. It has numerous standard features including ceramic plungers, diamond interaction chambers, and options including explosion-proof motors, and steam sterilization.

*The M-140 Series.* The M-140K Series is a laboratory-scale unit developed for customers in the chemical, biotechnology, pharmaceutical, cosmetic and food processing industries that require elevated operating pressures and higher shear forces to achieve better performance. The M-140K can achieve operating pressures up to 40,000 psi. The M-140K has a built-in hydraulic system and utilizes a bi-directional intensifier pump that provides a highly uniform pressure profile. It has been designed with many accessories and options including an explosion proof motor, control package and solvent seal quench. The M-140K has flow rates up to 500 ml/min.

*The M-210 Series.* The M-210 Series is a pilot production unit and is primarily marketed to pharmaceutical, cosmetic and food product manufacturers who have successfully created a new or improved formulation on the M-110 Series unit and would like to increase their production capacity. The M-210 Series unit is typically used for testing formulations at greater volume levels before initiating full-scale production. For some customers (such as biotechnology and pharmaceutical product manufacturers), the M-210 Series may have the capacity to function as a production unit.

*The M-700 Series.* The M-700 Series was introduced at the end of fiscal 1998 and was initially designed, engineered, and constructed for use in rugged industrial environments such as coatings, paints and pigments research and manufacturing. This product line was especially designed to withstand such hazards as dust, grease, and water spray. Through use of our own proprietary design of an intensifier pump and other components, the system has also proven to be more cost-effective in many user applications.

Because of the market demands from the pharmaceutical, biotech and cosmetic industries, the M-700 product line was upgraded to all stainless steel construction to conform to the U.S. Food and Drug Administration's current Good Manufacturing Practices (cGMP) requirements. (See discussion under heading "Government Regulation"). It also offers steam in place (SIP) and ultra clean in place (UCIP) options. In addition, the Company recently completed the design of six standardized configurations to our M-700 Series equipment to meet the additional market demands from the pharmaceutical and biotech industries.

The M-700 Series equipment is available in a variety of configurations and flow rates depending upon motor size and the number of intensifier pumps. The M-700 series equipment can achieve operating pressures up to 40,000 psi. On the low end of the spectrum is the 15 HP, single intensifier pump M-7115 machine with flow rates ranging from 0.9 gpm at 10,000 psi to 0.4 gpm at 30,000 psi. The next size up is the 25 HP, single intensifier pump, M-7125 machine with flow rates ranging from 2.3 gallons per minute ( gpm ) at 10,000 psi to 0.6 gpm at 30,000 psi. The largest offering of the M-700 series product line is the 50 HP, dual intensifier pump M-7250 machine with flow rates ranging from 4.0 gpm at 10,000 psi to 1.2 gpm at 30,000 psi. The M-7250 machine is available with a recently introduced "constant pressure" option in which operating pressure is maintained to within 5% of peak operating pressure resulting in lengthened component life, reduced operating costs, and quieter operation.

In September 2003, Microfluidics introduced a new addition to the M-700 series product line the Model M-710. The Model M-710 machine is equipped with a 100 HP, dual intensifier pump, with flow rates ranging from 15 gpm at 5,000 psi to 3.0 gpm at 30,000 psi. The Model M-710 has the equivalent throughput of the larger and more expensive M-610-100 HP model.

Additionally, during 2003 the Company introduced several new options and equipment features to the M-700 series product offerings including:

- (i.) The M-700 Microfluidizer Containment System, which provides a hermetically sealed stainless steel containment isolator that fully encloses the Microfluidizer processor's high-pressure processing area and is utilized for the safety protection of personnel engaged in the processing of highly toxic cancer therapeutic drugs and other hazardous and potent materials.
- (ii.) The M-700 Microfluidizer Split System configuration (separating the power source from the mixing/processing apparatus) accommodates demands of limited space within clean rooms and for noise abatement within pharmaceutical production facilities.
- (iii.) Level II Steam Sterility Option for all pilot and production systems used for production of injectable and other pharmaceuticals. This option enables steam-in-place (SIP) capability without need for disassembly and allows compliance with stringent regulatory production requirements.
- (iv.) Ultra Clean in Place (UCIP) option, which provides the ability to clean in place (CIP) Microfluidizer processor systems between product batch runs or before storage. This capability differentiates our Microfluidizer materials processor systems from all other competitive products. Several pilot and production systems incorporating this option have already been delivered.
- (v.) Constant Pressure control option is now an available feature that eliminates virtually all process pressure variations which dramatically improves the overall reliability of all M-7250 machines.

*The M-610 Series.* The M-610 Series are legacy systems that consist of custom-built models used for large-scale production. These units have flow rates of up to 18 gallons per minute and generate operating pressures up to 40,000 psi. Generally, these models are available in 100 HP and 200 HP.

*Microfluidizer Mixer/Reactor (MMR).* The Company has introduced its patented Microfluidizer Mixer/Reactor (MMR) system as a continuous chemical reactor, which the Company believes may become a standard device for conducting chemical reactions, many of which can be configured to produce nanoparticles. This system produces uniform nanoparticles on a continuous (versus batch) basis with phase purity previously unachievable with conventional batch reaction technology. This degree of reaction chemistry control can lead to cost-effective product improvements and the development and manufacture of new nanomaterials in scalable quantities. Applications for the new technology include improving the performance of catalysts, planarization polishing media, superconductors, abrasive silica, recording media, photographic media and pigments. It also may be used in the development and production of unique pharmaceutical products as well as the conversion of existing insoluble drugs to nanosuspension forms which are then deliverable by conventional means and with high bioavailability. The Company is proceeding with projects involving other companies seeking to optimize or enable drug delivery, catalysts and coatings products, as well as an internal program on nanopolymer creation for drug delivery and other applications. The Company believes that it cannot accurately assess or anticipate either the timing of receipt of an order or the delivery of its first MMR laboratory development systems. However, management believes that such event will occur in the foreseeable future. The Company believes that the MMR systems and technology will make it a leader in the provision of systems for continuous production of uniform, reproducible, microparticles, nanoparticles and nanodroplets involving fast chemical reactions. A recent breakthrough has allowed design of a modified Microfluidizer with capabilities to handle most continuous reaction applications. This simpler equipment design is expected to result in a lower cost system which should accelerate interest in MMR systems.

*Former Company Business Division*

*Morehouse-COWLES Division.* On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation, a California corporation (NuSil), MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

Prior to February 9, 2004, the Company-operated Morehouse-COWLES Division manufactured grinding and dispersing equipment used in a broad number of industries including the coatings and ink industries. The products included high-speed single and multi-shaft dissolvers and dispersers, stone mills, and vertical and horizontal media mills. As one of the early inventors of dispersers, dissolvers, stone mills, and media mills, the one hundred-year-old COWLES name is an industry-accepted symbol of quality, reliable products. Morehouse-COWLES manufactures products that are generally used for blending, mixing, deagglomeration and dispersion of paints and coatings, inks, adhesives, sealants, and pigment dispersions. These applications are more conventional whereby the formulations are less expensive to produce and the volumes of product produced are large. The Morehouse-COWLES product lines are used in broader, high volume, lower value-added applications requiring less stringent particle size reduction.

*Marketing and Sales*

The Company's marketing and sales activities are conducted through a corporate marketing and sales group that is responsible for the worldwide marketing and sales of all products.

Marketing programs include media advertising, a website, direct mail, seminars, trade shows and telemarketing. In addition, the Company has an active program of field demonstrations. As an aid to the marketing and sales activity for the equipment, the Company provides prospective customers with access to its applications laboratories. These laboratories, located in Newton, Massachusetts, Irvine, California, and Lampertheim, Germany, provide free processing and particle size and distribution analysis of a prospective



customer's sample formulation. Additionally, a prospective customer may pay for subsequent laboratory time and services on a fee for services basis. Typically, about one third of such laboratory trials result in equipment orders within twelve months. Finally, the Company has an active domestic and foreign equipment rental program designed to allow customers to use Microfluidizer processor equipment at their own locations to experiment with and develop product formulations and processes. A rental period may last from weeks to several months. The Company has a rental pool of equipment to service the needs of customers, including laboratory and pilot production machines. A significant percentage of customers who rent the Company's equipment elect to purchase the rental equipment or to purchase new equipment. For the Company's policy on product warranties, see Critical Accounting Policies Product Warranties under Item 7.

Distributors and sales agents worldwide are supported with trade advertising, collateral literature and trade show materials. The distributors and sales agents also advertise directly on their own behalf and attend regional and international trade shows.

The Company sells its equipment in the United States through a network of independent manufacturers' representative firms that are managed by the Company's regional sales managers. In a portion of Canada, the Company has an exclusive distributor for the Company's product line. In Europe, the Company sells its equipment through a network of independent regional sales agents who are managed by the Company's European Sales organization. In Asia and the Pacific Rim, the Company sells through a network consisting of a distributor and independent manufacturer's representative firms. Customers in other geographical regions are assisted directly by Company sales staff. In November 2005, the Company appointed a vice-president of sales and marketing, who oversees all regional sales managers, independent manufacturers' representatives, and distributors.

#### *Customers*

The users of the Company's systems are in various industries, including the chemical, pharmaceuticals, food, cosmetic and biotechnology industries. One company accounted for 10% of 2006 revenues. Two companies each accounted for more than 10% of 2005 revenues and 2004 revenues. Mizuho Industrial Co. Ltd. (Mizuho), a distributor for the Company, and one customer, Teva Pharmaceuticals Industries Ltd. (Teva) and its wholly owned subsidiary, accounted for 9.2% and 15.23%, respectively, of the Company's revenues in 2006; 19.5% and 18.9%, respectively, in 2005; and 20.5% and 12.8%, respectively, in 2004. Mizuho, the Company's Japanese distributor of Microfluidizer processor equipment and spare parts, resells the Company's equipment to numerous end-users in Japan, none of which individually represents 10% or more of the Company's revenues.

As of December 31, 2006, two customers accounted for 14.4% and 13.6% of the trade accounts receivable, respectively. As of December 31, 2005, two customers accounted for 10.8% and 10.7% of the trade accounts receivable, respectively. As of December 31, 2004, three customers accounted for 15.1%, 14.7%, and 13.4% of the trade accounts receivable, respectively. A reduction or delay in orders from any of the Company's significant customers could have a material adverse effect on the Company's results of operations.

The Company sells its products in various countries. The Company's sales in North America, including the United States, Canada, and Mexico, accounted for approximately 55.2% of the Company's revenues in 2006; 51.8% of the Company's revenues in 2005; and approximately 51.1% of the Company's revenues in 2004, with almost all of those sales coming from United States and Canada. Sales to the rest of the world accounted for approximately 44.8% of the Company's revenues in 2006; 48.2% of the Company's revenues in 2005; and approximately 48.9% of the revenues in 2004. Sales through the Company's exclusive distributors in Japan accounted for approximately 9.2% of the Company's revenues in 2006; 19.5% of the Company's revenues in 2005; and 20.5% of the Company's revenues in 2004. Sales through the Company's

representative in Korea accounted for approximately 9.5% of the Company's revenues in 2006; 12.1% of the Company's revenues in 2005; and 4.8% of the Company's revenues in 2004.

#### *Competition*

The Microfluidizer processor equipment product line of high shear fluid processors has direct competition in its major markets, including pharmaceutical and coatings/chemical applications, but management believes that the Company's products have a larger installed base and performance advantages over products of our competitors. The Company also believes that its fixed-geometry systems which permit a linear scale up for drops per minute to gallons per minute offer a unique equipment advantage. The Company further believes that the Microfluidizer processor equipment product line offers the highest shear forces available in the process equipment market today. It has been proven in many instances that for critical formulations, Microfluidizer processors have produced better quality products for our customers.

The M-700 Series of fluid processors, together with the M-210 and M-610 product lines, provide high shear fluid processing capabilities for sanitary, sterile, and industrial applications. The Company believes that the Microfluidizer processor product line provides a distinct advantage over the product lines of our competitors with respect to the processing of abrasive slurries or solids dispersed in liquids in large part because of the Company's unique, wear-resistant, diamond interaction chamber and the special design of the intensifier pumping system. Further, recent incorporation of Company developed components in the M-700 series equipment has reduced the cost of these units, and they are priced competitively with lesser capability processing equipment.

The MMR systems may encounter significant competition and there are other companies that possess patents and claims to equipment or processes that claim to make production quantities of nanoparticles. Although the Company believes that its MMR system is superior in design and function, there can be no assurance that other companies will not pose a competitive impediment to sales of the Company's MMR system.

The Company faces, and will continue to face, intense competition from other companies who manufacture and sell materials processing systems. The Company is subject to significant competition from organizations that are pursuing technologies and products that are similar to the Company's technology and products. The Company's future success will depend in large part on maintaining its current technologically superior product line and competitive position in the fluid processing systems field. Rapid technological development by the Company or others may result in the Company's products or technologies becoming obsolete before the Company recovers the expenses it incurs in connection with their development. Products offered by the Company could be made obsolete by less expensive or more effective technologies. There can be no assurance that the Company will be able to make the enhancements to its technology necessary to compete successfully with newly emerging technologies. The Company expects competition to intensify in the materials processing systems field as technical advances are made and become more widely known.

#### *Research and Development*

It is the Company's position that a greater proportion of its sales in the future will be for more advanced processor production systems that will incorporate features not currently included in many of the current production machines. In order to meet such a challenge going forward, it became necessary to hire additional research and development personnel. It also became necessary, as a result of this decision, to increase spending in research and development. Additional resources in both personnel and spending may be required in the future.

The Company's research and development efforts are focused on: (i) developing new processing applications for the process industries; (ii) further enhancements to the functionality, reliability and

performance of existing products, and (iii) development of the Microfluidizer Mixer/Reactor (MMR) by: (a) working with customers who assist in the development of the system with both application knowledge and financial support, and (b) an internal development program relating to reaction chamber design and creation of a variety of nanomaterials. There can be no assurance that the Company will be able to meet the enhancement challenges posed by applications of its core Microfluidizer processor business. Likewise, there can be no assurance that the Company will be able to design and manufacture systems for its MMR applications that will deliver the desired result for specific applications. For the years ended December 31, 2006, 2005 and 2004, research and development costs for continuing operations were \$1,763,000, \$1,702,000, and \$1,034,000, respectively. Patent coverage for the MMR has been obtained both in the United States and in Europe (with national entry in process) and the Company is prosecuting the patent application in Canada.

#### *Cooperative Research Arrangements*

The Company subsidizes research and development activities centered around Microfluidizer processor technology at a number of research centers and universities. The Company's subsidy of these activities takes the form of substantial reduction or elimination of the customary rental charges for Microfluidizer processor equipment provided for use. The Company has, in past years, subsidized research and development in the following fields at the following universities:

<b>University</b>	<b>Field of Research/Development</b>
University of Massachusetts, Lowell	Biotechnology and nanotechnology
Massachusetts Institute of Technology	Nanoemulsions for biomedical applications
Marine Biological Laboratory	Cell disruption
Lehigh University	Polymer chemistry
Université Laval (Quebec)	Food science
Worcester Polytechnic Institute	Catalytic chemistry
Purdue University	Pharmaceuticals
University of Toronto	Genomic research and expression
Northeastern University	Pharmaceutical nanotechnology particles
The Hebrew University of Jerusalem	Colloid chemistry emulsion technology

In addition to their research activities, these universities provide the Company with contacts at industrial companies that may utilize Microfluidizer processor technology. Most recently, the Company entered into a Research Collaboration Agreement with the University of Massachusetts, Lowell (UML) in September 2005 to develop new applications, processes and products in the area of nanomaterials utilizing MFIC's leading-edge materials processing and MMR equipment. Additionally, on occasion, research reports, technical papers, and doctoral theses may be published, which document the use of Microfluidizer processor technology. Finally, the Company engages in many informal co-operative development efforts with its customers.

#### *Patents and Proprietary Rights Protection*

To protect its proprietary rights, the Company relies on a combination of U.S. patent and trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of patent infringement or breach of confidentiality, there can be no assurance that these measures will be adequate or that the Company will have sufficient resources to prosecute or prevail in an action against a third party. In addition, the Company neither applied for nor obtained patent or trademark protection for its Microfluidizer processor equipment's interaction chamber in any country other than the United States and, as a result, its proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where the Company's equipment is sold. The Company's Microfluidizer processor equipment method patent expired on March 13, 2007 and its device patent expired on August 6, 2002. The Company does not believe that the expiration of its device or method patents resulted in any material detriment to the Company since the Company has made many alterations, improvements and advances to its equipment over the years with such modification and innovations having been treated by the Company as trade secrets.

In 1997 the Company completed development of a novel adaptation of its Microfluidizer processor equipment a Multiple Stream High Pressure Mixer/Reactor, commercially designated as the Microfluidizer Mixer/Reactor (MMR). In August 1997, the Company filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998. In July and November, 2000, the USPTO issued to the Company notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised the Company it would grant its MMR patent substantially as applied for, including its device and process claims. The Company is in the process of pursuing national entry in France, Germany, Italy, The Netherlands, and the United Kingdom. The Company is currently prosecuting its MMR patent in Canada.

In order to afford additional protection to its intellectual property, in November 2006 the Company adopted a provision as part of its standard terms and conditions of purchase. Such provision is an acknowledgement and agreement by a purchaser of the Company's merchandise and equipment (the Equipment) that certain proprietary intellectual property of the Company, including the design, operation and use of the Equipment's interaction chamber or reaction chamber constitutes the Company's trade secret information (the Trade Secret Information). Such purchaser agrees that it will not (and will not aid, assist or permit any other person to): (i) tamper with the Equipment, (ii) utilize imaging equipment or other means to reveal the inner structures and/or designs of the Equipment, (iii) attempt to disassemble or reverse engineer the Equipment, including specifically the interaction or reaction chamber, or (iv) otherwise attempt to discover and/or utilize any of the Trade Secret Information. A purchaser is further prohibited from disclosing (or aiding, assisting or permitting third parties to disclose) any information which the purchaser may learn or discover about the materials and methods of construction, design, assembly, functioning, geometries, measurements and tolerances of the internal components of the Equipment. In the event of a violation of any of the above prohibitions, the purchaser has stipulated that it is liable to the Company and/or its subsidiary, Microfluidics Corporation, for any and all actual and potential, direct and indirect, incidental and consequential damages, including, without limitation, resulting lost profits, and all available equitable relief. The Company has made such provision applicable to purchasers, renters and subsidized users of the Equipment (Users). Despite the protection afforded by such provision, there can be no assurance that the Company will be able to monitor compliance by all Users or that if the Company becomes aware of a violation that it will be able to enforce its rights regarding such violation.

The Company maintains confidentiality agreements with its employees and also maintains confidentiality agreements and non-competition agreements with those third parties to whom it discloses non-public technical information relating to its equipment. The Company believes that enforcement of the provisions of such agreements should adequately protect the Company's proprietary information. However, in the event of a material breach of such agreements certain of the Company's valuable intellectual property may be disclosed to third parties (including competitors). In such event, despite provisions for equitable relief and damages, the Company may suffer competitively and be materially and negatively impacted as a result of any unauthorized disclosure.

#### *Manufacturing*

At present, the Company subcontracts the manufacture and/or machining and finishing of many of the components of its equipment to third parties, with the Company undertaking the remaining fabrication, assembly and performance testing. The Company has selected certain primary suppliers based upon pricing terms, quality of their products, and the vendor's performance record.

The loss of any primary supplier could have a material, adverse effect on the Company's business, financial condition, or results of operations. Therefore, the Company has identified alternative suppliers for its most critical components (Alternative Sources). There can be no assurance that a transition to

such Alternative Sources will not entail transitional delays, quality assurance and quality control difficulties, or delivery problems, any or all of which would likely have an impact on the Company's production of equipment and could have a material adverse effect on the Company's business, financial condition, or results of operations.

#### *Key Management/Personnel*

The Company's continued operation, innovation and growth are to some significant degree reliant on the continued services of its key executive officers and leading technical personnel. The Company does not maintain employment contracts with its key management or leading technical personnel. Though the Company believes that it can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of key management or leading technical personnel could, therefore, have a material adverse effect on the Company's business, financial condition, or results of operations.

#### *Government Regulation*

Certain of the Company's customers utilize the Company's products in processes and production that are subject to governmental regulation. For example, the manufacturing and marketing of pharmaceutical products may require the approval of the U.S. Food and Drug Administration (FDA) within the United States and of comparable agencies in foreign countries. The FDA has established mandatory procedures, safety standards and protocols that apply to the manufacture, clinical testing and marketing of new pharmaceutical products in the United States. The process of seeking and obtaining FDA approval of a new product often takes a number of years and often involves the expenditure of substantial resources by the Company's customers. The FDA approval process can result in long lead times that are attendant to manufacturing equipment orders for these applications.

Further, in addition to product approvals, the FDA imposes requirements as to manufacturing practices, record keeping and reporting (current Good Manufacturing Practices or cGMP). cGMP-regulated companies are subject to inspections by the FDA (inclusive of Microfluidizer processor equipment) and product approvals may be withdrawn if cGMP are not met.

At present, the Company's customers include companies who are making FDA approved drugs, preparations, and products, including sunscreens and cosmetic lotions for external use and companies who utilize Microfluidizer processor equipment for the formulation or production of FDA approved parenteral (injectable) drugs or compounds including vaccines, and anesthesia.

For the Company's equipment entering Europe, CE compliance (Regulatory Compliance with European Safety Standards) is required. All products manufactured for European customers (and for any others who may request it) by the Company are CE compliant.

Various laws, regulations and recommendations relating to safe working conditions, laboratory practices and the purchase, storage, movement, import and export, use and disposal of harmful or potentially harmful substances that may be used in connection with the Company's research work are, or may be, applicable to its activities. These laws include, among others, the United States Atomic Energy Act, the Clean Air Act, the Clean Water Act, the Occupational Safety and Health Act, the National Environmental Policy Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act, national restrictions on technology transfer, import, export and customs regulations and other present and possible future local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. Certain

agreements that may be entered into by the Company involving exclusive license rights may also be subject to antitrust regulatory control, the effect of which cannot be predicted.

To date the Company has not been affected by any United States governmental restrictions on technology transfer, import, export and customs regulations and other present local, state or Federal regulation. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act of 2001 and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of the Company's equipment will not be impacted by such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on the Company's business, financial condition, or results of operations.

#### *Backlog*

The Company's sales order backlog related to continuing operations of accepted and unfilled orders at March 23, 2007 and March 28, 2006, was approximately \$3,567,000 and \$3,646,000, respectively. Backlog as of any particular date should not be relied upon as indicative of the Company's net revenues for any future period.

#### *Employees*

The Company has approximately 53 full-time employees as of March 23, 2007. None of the Company's employees are covered by a collective bargaining agreement, and the Company considers its relations with its employees to be satisfactory. The Company believes that its future success will depend in large part on its ability to attract and retain highly skilled employees.

### **Item 1A. Risk Factors**

You should carefully consider the risks and uncertainties described below and the other information in this filing before deciding to purchase our common stock. If any of these risks or uncertainties occurs, our business, financial condition or operating results could be materially harmed. In that case the trading price of our common stock could decline and you could lose all or part of your investment. The risks and uncertainties described below are not the only ones we may face. We believe that this filing contains forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to regulatory risks and clinical uncertainties. Such statements are based on management's current expectations and are subject to facts that could cause results to differ materially from the forward-looking statements. For further information you are encouraged to review MFIC Corporation's filings with the Securities and Exchange Commission, including its Quarterly Reports on Form 10-Q for the periods ended March 31, 2006, June 30, 2006 and September 30, 2006. The Company assumes no continuing obligation to update the information contained in this filing.

#### **We face intense competition in many of our markets.**

Our Microfluidizer product line of high-shear fluid processors has direct competition in its major markets, including its most important markets in the pharmaceutical, biotechnology and coatings/chemical industries.

In addition, the Company faces, and will continue to face, intense competition from other companies who manufacture and sell fluid processing systems used in particle size reduction, mixing, milling, dispersing, homogenizing, cell disruption and liposomal encapsulation applications. The Company expects competition to intensify in the fluid processing systems field as technical advances are made and become more widely known, and such increased competition may have a material adverse effect upon our business.

**We are subject to significant competition from companies that are pursuing technologies and products that are similar to our technology and products.**

Our future success will depend in large part on the Company's ability to maintain a technologically superior product line. Rapid technological development by the Company or others may result in our products or technologies becoming obsolete before the Company recovers the expenses the Company incurs in connection with their development. Products offered by the Company could be made obsolete by less expensive or more effective technologies. There can be no assurance that the Company will be able to make the enhancements to our technology necessary to compete successfully with newly emerging technologies.

**We rely on suppliers, vendors and subcontractors.**

The Company does not manufacture most of the components contained in its Microfluidizer materials processor equipment but rather subcontracts the manufacture of most components. Based on quality, price, and performance, the Company has selected certain suppliers, vendors, and subcontractors that provide parts, subassemblies, machining and finishing of components that are assembled by the Company's production staff. Although the Company has identified alternate sources for such parts, components, machining and finishing, there can be no assurance that a transition to such alternative sources would not entail quality assurance and quality control difficulties, on-time delivery problems, or other transitional problems, any or all of which could have an impact on the Company's production of equipment and could have a material adverse effect on the Company's business, financial condition, or results of operations.

**Our customer base is concentrated, and a substantial portion of our sales are provided by just three customers.**

Three customers accounted for an aggregate of 32.2% of the Company's revenues for the year ended December 31, 2006. Historically, our largest single customer has been the Japanese distributor of our Microfluidizer processor equipment and spare parts, which accounted for 9.2% of our revenues for the year ended December 31, 2006, 19.5% of our revenues for the year ended December 31, 2005 and 20.5% of our revenues for the year ended December 31, 2004. Our next historically largest customer accounted for 15.23% of our revenues for the year ended December 31, 2006, 18.9% of our revenues for the year ended December 31, 2005 and 12.8% of our revenues for the year ended December 31, 2004. A third customer is a distributor in Canada who accounted for 7.8% of our revenues for the year ended December 31, 2006, 3.2% of our revenues for the year ended December 31, 2005 and 3.11% of our revenues for the year ended December 31, 2004. Although we are unaware of any plans by any of these customers to reduce their business with us, the loss of any one or more of these customers would be highly problematic for us, and would likely cause a material change in our near-term, and possibly long-term, financial prospects. In addition, a reduction or delay in orders from any of these customers could have a material adverse effect on the Company's results of operations.

As of December 31, 2006, 14.4% and 13.6% of the Company's trade accounts receivable were due from two customers, both of which are long-established customers of the Company and neither of which have presented credit issues in the past. Nevertheless, if either or both of these customers were to default on their obligations to us such default would likely cause a material change in our near-term, and possibly long-term, financial prospects.

**Many of our current and potential customers are from the pharmaceutical and biotechnology industries and are subject to risks faced by those industries.**

We derive a substantial portion of our revenues from pharmaceutical and biotechnology companies. We expect that pharmaceutical and biotechnology companies will continue to be one of our major sources of revenues for the foreseeable future. As a result, we are subject to risks and uncertainties that affect the

pharmaceutical and biotechnology industries, such as pricing pressures as third-party payers continue challenging the pricing of medical products and services, government regulation, ongoing consolidation and uncertainty of technological change, and to reductions and delays in research and development expenditures by companies in these industries.

In particular, the biotechnology industry has been faced with declining market capitalization and a difficult capital-raising and financing environment. If biotechnology companies are unable to obtain the financing necessary to purchase our products, our business and results of operations could be materially adversely affected. As it relates to both the biotechnology and pharmaceutical industries, many companies have significant patents that have expired or are about to expire, which could result in reduced revenues for those companies. If pharmaceutical companies suffer reduced revenues as a result of these patent expirations, they may be unable to purchase our products, and our business and results of operations could be materially adversely affected.

In addition, we are dependent, both directly and indirectly, upon general health care spending patterns, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, as well as upon the financial condition and purchasing patterns of various governments and government agencies. Many of our customers, including universities, government research laboratories, private foundations and other institutions, obtain funding for the purchase of products from grants by governments or government agencies. There exists the risk of potential decrease in the level of governmental spending allocated to scientific and medical research, which could substantially reduce or even eliminate these grants. If government funding necessary to purchase our products were to decrease, our business and results of operations could be materially adversely affected.

**We have only one manufacturing facility.**

The Company has only one manufacturing facility located in Newton, Massachusetts. Our success depends on the efficient and uninterrupted operation of that facility. Whether as a result of a fire, natural disaster, or other cause, any disruption to our manufacturing operations would significantly impair our ability to operate our business on a day-to-day basis. Although the Company maintains business interruption insurance, our business would be injured by any extended interruption of the operations of our manufacturing facility. Further, although the Company carries property and business interruption insurance, our coverage may not be adequate to compensate us for all losses that may occur. This insurance may not continue to be available to the Company. Finally, if the Company seeks to replicate our manufacturing operations at another location, the Company will face a number of technical as well as financial challenges, which the Company may not be able to address successfully.

**We rely on our trade secrets to protect our technology.**

The Company's Microfluidizer processor equipment method patent expired on March 13, 2007 and its device patent expired on August 6, 2002. In addition, the Company has neither sought patent protection for its Microfluidizer interaction chamber nor trademark protection of its Microfluidizer trade name in any country other than the United States. As such, its proprietary rights are not subject to the protection of patent or trademark laws of foreign countries where the Company's equipment is sold. Although the Company has made many alterations, improvements and advances to its equipment over the years and continues to make such advancements with such modification and innovations having been and being treated by the Company as trade secrets, the lack or limited nature of our patent protections will expose the Company to potential competition that would likely have a material adverse effect on the Company.

In order to afford additional protection to its intellectual property, in November 2006 the Company adopted a provision as part of its standard terms and conditions of purchase. Such provision is an acknowledgement and agreement by a purchaser of the Company's merchandise and equipment (the



Equipment ) that certain proprietary intellectual property of the Company, including the design, operation and use of the Equipment's interaction chamber or reaction chamber constitutes the Company's trade secret information (the Trade Secret Information ). Such purchaser agrees that it will not (and will not aid, assist or permit any other person to): (i) tamper with the Equipment, (ii) utilize imaging equipment or other means to reveal the inner structures and/or designs of the Equipment, (iii) attempt to disassemble or reverse engineer the Equipment, including specifically the interaction or reaction chamber, or (iv) otherwise attempt to discover and/or utilize any of the Trade Secret Information. A purchaser is further prohibited from disclosing (or aiding, assisting or permitting third parties to disclose) any information which the purchaser may learn or discover about the materials and methods of construction, design, assembly, functioning, geometries, measurements and tolerances of the internal components of the Equipment. In the event of a violation of any of the above prohibitions, the purchaser has stipulated that it is liable to the Company and/or its subsidiary, Microfluidics Corporation, for any and all actual and potential, direct and indirect, incidental and consequential damages, including, without limitation, resulting lost profits, and all available equitable relief. The Company has made such provision applicable to purchasers, renters and subsidized users of the Equipment ( Users ). Despite the protection afforded by such provision, there can be no assurance that the Company will be able to monitor compliance by all Users or that if the Company becomes aware of a violation that it will be able to enforce its rights regarding such violation.

To protect its other proprietary rights, the Company relies on a combination of trademark laws, trade secrets, confidentiality agreements, contractual provisions and technical means. In the event of a breach of these protections, there can be no assurance that these measures will prove to have been adequate to protect the Company's interests, or that the Company will have sufficient resources to prosecute or prevail in an action against a third party. The Company maintains confidentiality and non-competition agreements with those parties to whom it discloses non-public technical information relating to its equipment. The Company believes that enforcement of the provisions of such agreements should adequately protect the Company's proprietary information. However, in the event of a material breach of such agreements, certain of the Company's valuable intellectual property may be disclosed to third parties (including competitors). In such event, despite provisions for equitable relief and damages in the event of such breaches, the Company may suffer competitively and be materially and negatively impacted as a result of such unauthorized disclosure.

**We must continue our research and development efforts to maintain our competitiveness.**

The Company's research and development efforts are focused on: (i) developing new processing applications for the process industries and further enhancing the functionality, reliability and performance of existing products, and development of new equipment models, and (ii) development of the Multiple-Stream High Pressure Mixer/Reactor (MMR) by: (a) working with customers who assist in the development of the system with both application knowledge and financial support, and (b) internal development program relating to interaction chamber design and creation of a variety of nanomaterials. There can be no assurance that the Company will be able to meet the enhancement challenges posed by applications of its core Microfluidizer processor business. Likewise there can be no assurance that the Company will be able to design and manufacture systems for its MMR applications that will deliver the desired result for specific applications. The inability to meet the enhancement challenges or design and manufacture systems for its MMR applications may have a material adverse effect on the Company.

**Our ability to continue planned operations is dependent upon access to financing under a credit facility with our commercial lender.**

The Company's credit facility is comprised of a revolving line of credit in the maximum principal amount of \$1,000,000 and a term loan note in a face amount of \$1,000,000 under which the Company

currently owed approximately \$312,000 at December 31, 2006. Under the terms of the credit facility, the Company is subject to a number of restrictions that impact the Company's use of funds. The Company is limited in ability to acquire property and pay dividends, and it must maintain certain financial covenants as defined. The Company's ability to operate is potentially impacted by the Company's ability to achieve future compliance with the financial covenants of the credit facility. The obligations due the lender are essentially demand obligations and under certain circumstances, including the lender's determination that the Company's prospect of payment of all or any part of the obligations due the lender are impaired, the lender may declare a default and accelerate payment of the obligations. Loans under the credit facility are secured by a collateral pledge to the lender of substantially all the assets of the Company and its subsidiary. In the event of a breach of the covenants or events of default under the credit facility there can be no assurance that the Company can obtain a waiver of such breach or default from its lender. Likewise, in the event of that the Company cannot effect a cure or obtain a waiver of a breach or default under the credit facility there can be no assurance either that the lender will not terminate the credit facility or that the Company will be able to obtain alternate financing, or that it can obtain alternate financing on terms that are favorable to the Company. Either event could have a material adverse effect on the Company's business, financial condition, or results of operations.

Pursuant to its agreements with the lender, the Company may not issue, create or incur additional debt in excess of its obligations to lender, except in the ordinary course of business.

There can be no assurance that the Company will have access to sufficient working capital through continued and improving cash flow from sales and ongoing borrowing availability, the latter being subject to the Company's ability to comply with the covenants and terms of the Company's loan agreement with its lender.

**We may be subjected to increased government regulation which could affect our ability to sell our products outside of the United States.**

Although the Company has not historically been significantly affected by any United States governmental restrictions on technology transfer, import, export and customs regulations and other present local, state or federal regulation, any future legislation or administrative action restricting our ability to sell our products to certain countries outside the United States could significantly affect our ability to make certain foreign sales. The extent of adverse governmental regulation, which might result from future legislation or administrative action, cannot be accurately predicted. In particular, the USA Patriot Act and other governmental regulations may impose export restrictions on sale of equipment or transfer of technology to certain countries or groups. There can be no assurance that sale of the Company's equipment will not be impacted by any such legislation or designation. Depending upon which countries and sales may be designated for trade restriction such action could have a material adverse effect on the Company's business, financial condition, or results of operations. Also, certain agreements that may be entered into by the Company involving exclusive license rights may also be subject to national or supranational antitrust regulatory control, the effect of which cannot be predicted.

**We rely on our key management and technical personnel.**

The Company's continued operation, innovation and growth are to some significant degree reliant on the continued services of its key executive officers and leading technical personnel. The Company does not maintain employment contracts with its key management or leading technical personnel. There can be no assurance that the Company will be able to retain such key management and technical personnel if employment is offered by other companies better able to pay higher compensation, provide more and better benefits, or willing to offer longer term job security by entering into employment contracts with the Company's employees. Further, there can be no assurance that key executive officers and leading technical personnel will not leave the Company's employment, or either die or become disabled to an extent that

they cannot render their services to the Company. Though the Company believes that it can identify and recruit replacement key management and technical personnel, there can be no assurance as to such availability, the length of time required to obtain such replacement management and technical personnel, the salary level that may have to be paid to obtain their respective services, or the impact on operations that may be experienced through the interim absence of such key management and technical personnel. The loss of key management or leading technical personnel could, therefore, have a material adverse effect on the Company's business, financial condition, or results of operations.

**Our stock is listed on the OTC Bulletin Board and our stockholders may have limited liquidity.**

The Company's common stock is quoted on the OTC Bulletin Board, which provides significantly less liquidity than a securities exchange (such as the American or New York Stock Exchanges or The Nasdaq Stock Market LLC). In general, over the past two years, fewer than 100,000 shares of our common stock have traded on a daily basis. Management expects, when and if the Company qualifies, to seek a listing on a national securities exchange, which may increase stockholders liquidity. There is uncertainty that the Company will ever be accepted for a listing on a securities exchange.

**Our quarterly revenues and stock performance are variable.**

The timing of orders and subsequent shipment will significantly affect quarterly revenues and resulting net income results for particular quarters which may cause increased volatility in both the Company's revenues and stock price.

**We allow our customers to lease some of our products and those leases may not turn into sales.**

We sometimes lease our products to our customers prior to or instead of selling a product to a customer. The Company's products are expensive, and customers frequently want to test out a product's capabilities prior to purchase. We have had reasonable success in converting leases into subsequent sales of the same or a newer product, however there is no guarantee that we will continue to be able to convert any of our leases into sales.

**We may be subject to product liability claims from our customers or by persons harmed by our customers' products.**

The Company maintains what it deems to be reasonable levels of product liability coverage through insurance policies with a reasonably small deductible. Nonetheless, inasmuch as the Company sells its equipment to a number of customers who make pharmaceutical preparations and consumer cosmetics, there can be no assurance that if a consumer of end products is injured or dies from such product that a suit by an injured party (or a class of similar situated plaintiffs) will not include the Company as well as the maker of the drug or cosmetic. Although the Company may have no control over the manufacture of end-products made on its equipments, it may not be able to bar a plaintiff's claims against all parties whose products and equipment were involved in the manufacturing process under a variety of legal theories of liability. The Company may be required to present a vigorous and costly defense if it cannot be dismissed from such an action. The cost of such legal defense may significantly impact the cash flow of the Company.

**Our international business operations expose us to a variety of risks.**

For the years ended December 31, 2006, 2005 and 2004, shipments outside of North America accounted for approximately 44.8%, 48.2% and 48.9%, respectively, of our net revenues in those periods. In particular, approximately 9.2%, 19.5% and 20.5% of our net revenues in 2006, 2005 and 2004, respectively, resulted from sales to Japan and approximately 9.5%, 12.1% and 4.8% of those net revenues resulted from sales to Korea in 2006, 2005 and 2004, respectively. In addition, approximately 22.3%, 13.0%

and 17.9% of our net revenues resulted from sales to Europe in 2006, 2005 and 2004, respectively. We expect that shipments outside of North America will continue to account for a significant portion of our total net product revenues.

We attempt to reduce some of our risk related to sales and shipments outside of the United States by requiring that our contracts generally be paid in United States Dollars. Nevertheless, a downturn in the economies of Japan, Korea or Europe might reduce investment in new technology or products while a weakening of foreign currency against the United States Dollar would make our products more expensive, each of which could have a substantial impact on our operating results.

In addition, a significant portion of our total net revenue is subject to the risks associated with shipping to foreign markets in general, including unexpected changes in legal and regulatory requirements; changes in tariffs; political and economic instability; risk of terrorism; difficulties in managing distributors and representatives; difficulties in protecting our intellectual property overseas; and natural disasters, any of which could have a negative impact on our operating results.

**Compliance with internal controls reporting requirements will increase our costs.**

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the Securities and Exchange Commission adopted rules requiring public companies to include a report of management on a company's internal control over financial reporting in their annual reports on Form 10-K. This report is required to contain an assessment by management of the effectiveness of such company's internal controls over financial reporting. In addition, the public accounting firm auditing a public company's financial statements must attest to and report on management's assessment of the effectiveness of a company's internal controls over financial reporting. We intend to expend resources in developing the necessary documentation and testing procedures required by Section 404. Going forward, there is a risk that we will not comply with all of the requirements imposed by Section 404. If the Company fails to implement required new or improved controls, we may be unable to comply with the requirements of Section 404 in a timely manner. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of the Company's financial statements, which could cause the market price of the Company's common stock to decline and make it more difficult for the Company to finance its operations. Under current rules, the Company is required to comply with certain requirements of Section 404 by its first fiscal year ending on or after December 15, 2007.

**Future changes in financial accounting standards may adversely affect our reported results of operations.**

A change in accounting standards can have a significant effect on our reported financial results. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. These new accounting pronouncements may adversely affect our reported financial results.

**If our accounting estimates are not correct, our financial results could be adversely affected.**

Management judgment and estimates are necessarily required in the application of our Critical Accounting Policies. We discuss these estimates in the subsection entitled Critical Accounting Policies beginning on page 30. If our estimates are incorrect, our future financial operating results and financial condition could be adversely affected.

**Item 1B. Unresolved Staff Comments**

None.

**Item 2. Properties**

The Company's corporate headquarters are in Newton, Massachusetts. The Company also maintains a sales office and laboratory facility in Lampertheim, Germany and a sales and laboratory office in Irvine, California. The Company rents approximately 35,000 square feet of offices, production and research and development facilities at these locations for administrative, development and production activities. The lease terms expire at various times through October, 2011 (with options under which the Company can extend the lease at the Newton facility through October 31, 2015). A portion of the space at the Newton, Massachusetts facility is sublet to a non-affiliated company (the Sub-Lessee) under a tenant-at-will arrangement. Through April 30, 2006, the Sub-Lessee's lease obligation to the Company was \$21,600 per annum, which was increased to \$30,000 per annum on May 1, 2006. The Company believes these facilities will be adequate for operations for the next five years.

**Item 3. Legal Proceedings**

The Company is not a party to any legal proceedings, other than ordinary routine litigation incidental to its business, which the Company believes will not have a material affect on its financial position or results of operations.

**Item 4. Submission of Matters to a Vote of Security Holders**

No matters were submitted to a vote of the Company's security holders during the quarter ended December 31, 2006.

**PART II****Item 5. Market for Registrant's Common Equity and Related Stockholder Matters***Market*

The Company's Common Stock is traded on the Over-the-Counter Bulletin Board under the symbol MFIC. The following table sets forth the range of quarterly high and low bid quotations for the last two fiscal years, as furnished by the National Association of Securities Dealers Automated Quotation System. The quotations represent interdealer quotations without adjustment for retail markups, markdowns, or commissions, and may not necessarily represent actual transactions.

	<b>Fiscal Year 2006</b>	
	<b>High</b>	<b>Low</b>
4th Quarter	\$ 2.00	\$ 1.28
3rd Quarter	1.45	1.20
2nd Quarter	1.45	1.26
1st Quarter	1.64	1.27

	<b>Fiscal Year 2005</b>	
	<b>High</b>	<b>Low</b>
4th Quarter	\$ 1.95	\$ 1.26
3rd Quarter	2.78	1.58
2nd Quarter	2.90	1.50
1st Quarter	3.99	1.90

 *Holders*

As of March 23, 2007, there were approximately 370 holders of record of the Company's Common Stock.

*Sales of Unregistered Securities*

On March 30, 2004, the Company completed a private placement of investment units (each unit consisting of one share of common stock and a 3-year warrant to purchase an additional ½ share of common stock). A total of 1,426,616 units were sold, yielding gross proceeds of approximately \$3,567,000. The units were priced at \$2.50 each and the associated warrants to purchase 713,308 shares of common stock are exercisable at \$3.05. Additionally, the placement agent for the offering received five-year warrants to purchase 213,992 shares of common stock at an exercise price of \$3.20 per share. The value of the warrants granted to the placement agent was approximately \$351,000. The investment units and warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. The placement agent and the purchasers of the units (the Purchasers) were accredited investors pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on May 13, 2004, for purposes of registering the shares of common stock underlying the units and warrants. The warrants associated with the units are exercisable in whole or in part at any time on or prior to their termination date in March, 2007. In addition, these warrants provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.05. The warrants issued to the placement agent may be exercised in whole or in part at any time prior to their termination date in March 2009. In addition, the warrants issued to the placement agent provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20.

*Issuance of Warrants*

On November 17, 2004, the Company entered into a general financial and advisory services agreement with Maxim Group LLC pursuant to which Maxim Group LLC was granted, on April, 1, 2005, a three-year warrant to purchase 100,000 shares of the Company's common stock at an exercise price of \$3.20 per share. These warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. Maxim Group LLC was an accredited investor pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on June 5, 2006, for purposes of registering the shares of common stock underlying the warrants. Maxim Group LLC has waived its rights to receive, based upon the date that the registration statement on Form SB-2 was declared effective, an additional warrant to purchase shares of the Company's common stock. The warrants may be exercised in whole or in part at any time on or prior to April 1, 2008. In addition, the warrants provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20.

*Dividends*

The Company has never paid any cash dividends on its Common Stock and presently anticipates that no dividends on its Common Stock will be declared in the foreseeable future. The Company's current policy is to retain all of its earnings to finance future growth.

*Securities Authorized for Issuance Under Equity Compensation Plans*

The equity compensation plan information in the table below is as of December 31, 2006. See also Note 12 to the Consolidated Financial Statements.

<b>Plan Category</b>	<b>Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)</b>	<b>Weighted-average exercise price of outstanding options, warrants and rights (b)</b>	<b>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)</b>
Equity compensation plans approved by stockholders	1,561,086	\$ 1.45	754,000
Equity compensation plans not approved by stockholders	1,027,300	\$ 3.10	
<b>Total</b>	<b>2,588,386</b>	<b>\$ 2.10</b>	<b>754,000</b>

*Performance Graph*

**COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\***  
 Among MFIC Corporation, The AMEX Composite Index  
 And A Peer Group

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\* \$100 invested on 12/31/01 in stock or index-including reinvestment of dividends.

Fiscal year ending December 31.

	Cumulative Total Return as of December 31,					
	2001	2002	2003	2004	2005	2006
MFIC Corporation	100.00	64.71	441.18	764.71	264.71	301.96
AMEX Composite	100.00	100.08	144.57	178.46	220.35	262.17
Peer Group	100.00	57.92	146.24	113.62	55.28	45.54

The Company's competitors are either larger integrated companies or privately-held companies. The Company has chosen a peer group consisting of companies with a market capitalization from \$7 million to \$27 million in the information technology sector of the American Stock Exchange. The peer group consists of the following issuers:

- Apogee Technology Inc.
- AXS-One Inc.
- Blonder Tongue Laboratories Inc.
- Cash Technology Inc.
- Conversion Services International Inc.
- CVD Equipment Corporation
- Elecsys Corporation
- Ilinc Communications Inc.
- Intelligent Systems LP
- MPC Corporation
- Pinnacle Data Systems Inc.
- Thinkengine Network Inc.
- Trans-Lux Corporation
- US Dataworks Inc.
- Winland Electronics Inc.
- Wireless Xcessories Group Inc.





**Item 6. Selected Financial Data**

The selected financial information presented below is derived from the audited consolidated financial statements of the Company for each of the five years in the period ended December 31, 2006. The information set forth below should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and related Notes included elsewhere in this Form 10-K. All fiscal years noted below have been restated to reflect discontinued operations.

	<b>For The Years Ended December 31,</b>				
	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>
	<b>(in thousands, except share and per share data)</b>				
<b>Consolidated Statement of Operations Data:</b>					
Total revenues	\$ 15,654	\$ 11,645	\$ 12,159	\$ 10,460	\$ 9,514
Total costs and expenses	14,450	12,416	11,462	9,694	8,872
Income (loss) from continuing operations before income taxes	1,204	(771 )	697	766	642
Interest expense	(35 )	(59 )	(69 )	(116 )	(179 )
Interest income	50	26	27	10	7
Net income (loss) from continuing operations before income taxes	1,219	(804 )	655	660	470
Income tax (benefit) provision	(58 )	185	(450 )		
Net income (loss) from continuing operations before discontinued operations	1,277	(989 )	1,105	660	470
Loss from discontinued operations (net of loss from disposal of discontinued operations of \$1,422 in 2003)			(231 )	(4,110 )	(2,983 )
Net income (loss)	\$ 1,277	\$ (989 )	\$ 874	\$ (3,450 )	\$ (2,513 )
Basic amounts per common share:					
Basic net income (loss) per share from continuing operations	\$ 0.13	\$ (0.10 )	\$ 0.11	\$ 0.08	\$ 0.06
Basic net income (loss) per share from discontinued operations			(0.02 )	(0.52 )	(0.40 )
Basic net income (loss) per share	\$ 0.13	\$ (0.10 )	\$ 0.09	\$ (0.44 )	\$ (0.34 )
Diluted amounts per common share:					
Diluted net income (loss) per share from continuing operations	\$ 0.12	\$ (0.10 )	\$ 0.10	\$ 0.08	\$ 0.06
Diluted net income (loss) per share from discontinued operations			(0.02 )	(0.52 )	(0.40 )
Diluted net income (loss) per share	\$ 0.12	\$ (0.10 )	\$ 0.08	\$ (0.44 )	\$ (0.34 )
Weighted average shares outstanding:					
Shares used in computing net loss per common share, basic	10,012,685	9,756,221	9,345,560	7,767,712	7,426,586
Shares used in computing net loss per common share, diluted	10,611,635	9,756,221	10,329,313	8,501,110	7,470,090

	<b>As of December 31,</b>				
	<b>2006</b>	<b>2005</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>
<b>Consolidated Balance Sheet Data:</b>					
Cash and cash equivalents	\$ 1,860	\$ 1,452	\$ 2,028	\$ 50	\$ 85
Current assets	7,857	5,734	6,821	5,194	9,159
Working capital	5,644	4,273	5,180	574	3,915
Total assets	8,226	6,212	7,292	5,487	9,487
Long-term note (including current portion)	312	563	813	59	154
Total stockholders' equity	5,948	4,426	5,089	861	4,102

**Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations**

**Future Operating Results**

This report may contain forward-looking statements that are subject to certain risks and uncertainties including statements relating to the Company's plan to achieve, maintain, and/or increase revenue growth, and/or operating profitability, and to achieve, maintain, and/or increase net operating profitability. Such statements are based on the Company's current expectations and are subject to a number of factors and uncertainties that could cause actual results achieved by the Company to differ materially from those described in the forward-looking statements. The Company cautions investors that there can be no assurance that the actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors, including but not limited to, the following risks and uncertainties: (i) whether the performance advantages of the Company's Microfluidizer® materials processing equipment will be realized commercially or that a commercial market for the equipment will continue to develop, (ii) whether the timing of orders will significantly affect quarter to quarter revenues and resulting net income results for a particular quarter, which may cause increased volatility in the Company's stock price, (iii) whether the Company will have access to sufficient working capital through continued and improving cash flow from sales and ongoing borrowing availability, the latter being subject to the Company's ability to maintain compliance with the covenants and terms of the Company's loan agreement with its senior lender, (iv) whether the Company's technology will be adopted by customers as a means of producing MMR (defined below) innovative materials in large quantities, (v) whether the Company is able to deploy prototype MMR placements and then manufacture and introduce commercial production MMR equipment, (vi) whether the Company will achieve a greater proportion of its sales in the future through the sale of advanced processor production systems, and (vii) as well as those risks set forth in Item 1a, Risk Factors. The Company assumes no responsibility to update any forward-looking statements as a result of new information, future events, or otherwise.

**Overview**

MFIC Corporation (MFIC or the Company) has, for over 20 years, specialized in manufacturing and marketing a broad line of high shear fluid processing systems used in numerous applications in the chemical, pharmaceutical, biotech, food and cosmetics industries.

MFIC's line of high shear fluid processor equipment, marketed under the Company's Microfluidizer trademark and trade name, process premixed formulations to produce small uniform structures, usually of the submicron and nanoscale size (commonly defined as particles having dimensions less than 100 nanometers) including nanostructures, microemulsions and nanosuspensions. The equipment produces commercial quantities of such materials important to producers of pharmaceuticals, coatings and other products. Further, the Company guarantees scaleup of formulations and results on its processor equipment from 10 milliliters per minute on its laboratory and bench top models to more than 15 gallons per minute on its pilot and production models.

The Company's technology embodied within its Microfluidizer high shear fluid processor is used for formulation of products that are normally very difficult to mix and stabilize. Microfluidizer processors through process intensification allow manufacturers in the chemical, pharmaceutical, cosmetic, and food processing industries to produce higher quality products with better characteristics on a more consistent basis than with other blending, mixing or homogenizing techniques. Additionally, the equipment is used for cell disruption to harvest the cultivated contents of bacterial, yeast, mammalian and/or plant cells and for liposomal encapsulation of materials for the cosmetics and biotech/biopharma industries.

The Company has begun to take steps toward commercializing its proprietary equipment, processes and technology for the continuous production of precipitated submicron or nanoscale particles by

interaction of discrete streams of reacting materials, through a novel adaptation of its Microfluidizer processor equipment that permits the mixing of, and reactions between, streams of different solutions at high pressures. The Company refers to this technology as a Multiple Stream High Pressure Mixer/Reactor (MMR). In August 1997, the Company filed a patent application for the device and its processes with the United States Patent and Trademark Office (USPTO), and filed a Patent Cooperation Treaty (PCT) application on May 5, 1998. In July and November 2000, the USPTO issued to the Company notices of allowances of utility patent claims regarding the MMR and the use thereof. On September 18, 2002, the European Patent Office advised the Company it would grant its MMR patent substantially as applied for, including its device and process claims. The Company has gained national entry of the patent in France, Germany, Italy, The Netherlands, and the United Kingdom. The Company is still prosecuting the allowance of the patent in Canada. The Company's management believes that future commercialization and growth of nanotechnology may be, in large part, enabled by the manufacturing capability of the Company's materials processor and MMR equipment.

## Results of Operations

*Year Ended December 31, 2006 vs. December 31, 2005*

### *Revenues*

Total revenues for the years ended December 31, 2006 were approximately \$15,654,000, as compared to revenues of \$11,645,000 for the comparable prior year, an increase of approximately \$4,009,000, or 34.4%.

North American sales for the year ended December 31, 2006 increased to approximately \$8,636,000, a 43.3% increase, as compared to sales of approximately \$6,028,000 for the year ended December 31, 2005. The increase in North American sales was principally due to an increase in the sale of machines of approximately \$2,922,000, partially offset by a decrease in the sale of spare parts of approximately \$314,000. Foreign sales were approximately \$7,018,000 for the year ended December 31, 2006, compared to \$5,617,000 for the year ended December 31, 2005, an increase of \$1,401,000, or 24.9%. The increase in foreign sales was principally due to an increase in the sale of machines of approximately \$1,466,000, partially offset by a decrease in the sale of spare parts of approximately \$65,000. The overall increase in sales was due to two factors: (i) the number of machines sold increased over 2005, and (ii) the Company instituted an overall price increase of 10% for standard machines effective in the first quarter of fiscal 2006.

### *Cost of Goods Sold*

Cost of goods sold for the year ended December 31, 2006 was approximately \$7,001,000, or 44.7% of revenue, compared to \$5,918,000, or 50.8% of revenue, for the comparable prior year. The increase in cost of goods sold in absolute dollars for the year ended December 31, 2006, reflects the overall increase in sales. The Company's major product lines have different profit margins, as well as multiple profit margins within each product line. The decrease in cost of goods sold as a percentage of sales is attributable to (i) an average price increase of 10% for standard machines effective in the first quarter of fiscal 2006, (ii) a higher volume of machines sold, and (iii) a product mix having more favorable overall gross margins. In addition, the Company also sold a non-standard piece of equipment (the Non-Standard Equipment) in the year ended December 31, 2005 at a selling price which approximated the cost of the equipment resulting in a higher cost of goods as a percentage of revenues for that period. This Non-Standard Equipment was built and supplied to demonstrate certain advanced features and capabilities that are now offered as optional features on the M700 line of equipment. Cost of goods sold for products other than the Non-Standard Equipment was 49.6% in 2005.

*Research and Development Expenses*

Research and development expenses for the year ended December 31, 2006 were approximately \$1,763,000, compared to \$1,702,000 for the comparable prior year, an increase of approximately \$61,000, or 3.6%. The increase in research and development expenses was primarily due to a planned increase in payroll and related costs of approximately \$167,000, and an increase in test supplies of approximately \$29,000, partially offset by a decrease in development costs of approximately \$78,000, and a decrease in consultants costs of approximately \$77,000.

*Selling Expenses*

Selling expenses for the year ended December 31, 2006 were approximately \$2,985,000, compared to \$2,412,000 for the comparable prior year, an increase of \$573,000, or 23.8%. The increase is primarily attributable to an increase in payroll and related expenses of approximately \$270,000, an increase in outside commissions of approximately \$222,000, and an increase in delivery costs of approximately \$55,000; partially offset by a decrease in travel and related costs of approximately \$31,000.

*General and Administrative Expenses*

General and administrative expenses for the year ended December 31, 2006, were approximately \$2,701,000, compared to \$2,384,000 for the comparable prior year, an increase of \$317,000, or 13.3%. The increase in general and administrative expenses is principally due to a planned increase in payroll of approximately \$157,000, an increase in corporate expenses of approximately \$141,000, and an increase in professional fees of approximately \$121,000, partially offset by a decrease in consultant costs of approximately \$86,000 and a decrease in occupancy costs of \$29,000. The increase in corporate expenses was principally due to the Company adopting SFAS 123R as of January 1, 2006, and recognizing compensation expense in conjunction with share based payments to employees and directors in the amount of \$130,000. The increase in professional fees is partially due to utilization of outside professionals to improve the Company's financial reporting, corporate governance and internal controls. The decrease in consulting costs is the result of the expiration of a one-year consulting agreement which expired on December 31, 2005.

*Interest Income and Expense*

Interest expense for the year ended December 31, 2006 was approximately \$35,000 compared to \$59,000 for the comparable prior year, a decrease of approximately \$24,000 or 40.7%. The decrease is due to the net pay down of the line of credit and a reduction of the term loan with the Company's lender.

Interest income for the year ended December 31, 2006 was approximately \$50,000 compared to \$26,000 for the comparable prior year, an increase of \$24,000 or 92.3%. The increase is due to the increase in cash available for investing.

*Income Tax Provision*

For the year ended December 31, 2006, the Company recognized a tax benefit of approximately \$58,000. For the year ended December 31, 2005 the Company recognized a tax provision of approximately \$185,000. The tax benefit and tax provision recognized for the years ended December 31, 2006 and 2005, respectively, are based upon the Company's valuation of its deferred tax asset accounts.

*Year Ended December 31, 2005 vs. December 31, 2004*

## **Results of Continuing Operations**

### *Revenues*

Total revenues for the year ended December 31, 2005 from continuing operations were approximately \$11,645,000 as compared to revenues of \$12,159,000 for the year ended December 31, 2004, representing a decrease of approximately \$514,000, or 4.2%.

North American sales for the year ended December 31, 2005 decreased to approximately \$6,028,000, or a 3.0% decrease, as compared to North American sales of approximately \$6,212,000 for the year ended December 31, 2004. This decrease in North American sales was principally due to a decrease in the sale of machines of approximately \$1,478,000, offsetting an increase in the sale of spare parts of approximately \$1,294,000. Foreign sales were approximately \$5,617,000 for the year ended December 31, 2005, compared to \$5,947,000 for the year ended December 31, 2004, a decrease of approximately \$330,000, or 5.5%. The decrease in foreign sales was principally due to a decrease in the sale of spare parts of approximately \$1,374,000, partially offset by an increase in the sale of machines of approximately \$1,044,000. The decline in the sale of machines is a result, in part, of longer lead times associated with the increased complexity of manufactured automated operating controls, data acquisition systems, and sterilization features of systems orders received from biopharma customers. The decline is also the result of increased competition from several companies that sell laboratory units. The Company believes its laboratory machines are superior in terms of technology, and that, with relatively minor modifications to these units that are currently in development, the Company hopes to regain market share.

### *Cost of Goods Sold*

Total cost of goods sold for the year ended December 31, 2005 was approximately \$5,918,000, or 50.8% of revenue, as compared to \$5,608,000, or 46.1% of revenue for the comparable prior year. The increase in cost of goods sold is primarily a result of the increased costs from the manufacture and sales of production units, as opposed to manufacturing laboratory machines. Production units have a higher cost to manufacture and a lower corresponding gross profit margin than laboratory machines. A substantial contributor to the increased cost of goods sold in 2005 was the Company's production of a highly customized production system for the Korean Institute of Industrial Technology (KITECH). This customized production machine accounted for approximately 2.8% of the total revenues for 2005 or approximately \$324,000, and approximately 5.2% of the total costs of goods sold for the year ended December 31, 2005 or approximately \$308,000.

The Company believes that the construction and design of this customized production system for KITECH enhanced the Company's knowledge and skills in producing advanced systems, and will allow the Company to quote other significant equipment orders at higher profit margins in the future. The Company also believes that, because KITECH provides high visibility for its equipment to companies that work with KITECH, it may lead those companies to consider purchasing our equipment to scale up the production of products developed on this system.

The Company's major product lines have different profit margins, as well as multiple profit margins within each product line. In the course of the periods compared, there may be significant changes in the cost of revenues as a percentage of revenue depending on the mix of product sold. Also, the cost of sales as a percentage of revenue will differ between laboratory and pilot plant units sold, due to the difference in costs between air driven and electric-hydraulic units.

*Research and Development Expenses*

Research and development expenses for the year ended December 31, 2005 were approximately \$1,702,000 compared to \$1,034,000 for the comparable prior year, an increase of approximately \$668,000 or 64.6%. The increase in research and development expenses is primarily due to a planned increase in payroll and related costs of approximately \$419,000, an increase in consulting costs of approximately \$134,000, and an increase in development costs of approximately \$101,000. The development costs were primarily for outside contractors and supplies.

It is the Company's position that a greater proportion of its sales in the future will be for more advanced processor production systems that will incorporate features not currently included in many of the current production machines. In order to meet that challenge going forward, it became necessary to hire additional research and development personnel, and also to increase spending in research and development.

*Selling Expenses*

Selling expenses for the year ended December 31, 2005 were approximately \$2,412,000 compared to \$2,588,000 for the comparable prior year, a decrease of approximately \$176,000 or 6.8%. The decreases were due principally to a decrease in commission expense of approximately \$136,000, a decrease of approximately \$35,000 in delivery costs, a decrease of approximately \$33,000 in payroll and related costs, a decrease in advertising expenses of approximately \$19,000, partially offset by an increase in facility operating costs of approximately \$40,000, and an increase in printing costs of approximately \$20,000. The decrease in commission costs was caused by a decrease in direct sales. Sales made in Asia, where the Company's products are sold primarily through distributors, were approximately 35.2% of sales for the year ended December 31, 2005, compared to 31.0% of sales for the year ended December 31, 2004. Sales made to distributors are sold net of a discount, but without a commission. Accordingly, these sales generally reflect a lower gross margin offset by lower selling costs. The decrease in payroll was due to a reduction in personnel. The decrease in delivery costs was principally due to a change in vendors. The increase in printing costs was due to increased purchases of general brochures and cost data sheets compared to the previous year.

*General and Administrative Expenses*

General and administrative expenses for the year ended December 31, 2005 were approximately \$2,384,000 compared to \$2,232,000 for the comparable prior year, an increase of approximately \$152,000 or 6.8%. The increase in general and administrative expenses is primarily due to an increase in consultants costs of approximately \$166,000, an increase in facility operating costs of approximately \$74,000, an increase in corporate expenses of approximately \$53,000, and an increase in professional fees of approximately \$17,000, offset in part by a decrease in payroll costs of approximately \$114,000. The increase in consultant costs was caused by the use of outside consultants that included a non-cash charge for warrants issued in the approximate amount of \$119,000, and a recruiting placement fee of approximately \$41,000. The increases in facility operating costs were primarily rent and energy related. The increase in corporate costs is due to the expense incurred in accelerating employees' stock options of approximately \$65,000. The decrease in payroll is a result of a planned decrease in payroll costs, including both a reduction in personnel and no bonuses paid employees for 2005, due to the loss from operations.

*Interest Income and Expense*

Interest expense for the year ended December 31, 2005 was approximately \$59,000 as compared to \$69,000 for the comparable prior year, a decrease of approximately \$10,000 or 14.5%. The decrease was principally due to a reduction in the term debt outstanding.

Interest income for the year ended December 31, 2005 was approximately \$26,000 as compared to \$27,000 for the comparable prior year, a decrease of approximately \$1,000 or 3.7%. The decrease is due to less cash available for investing.

### **Results of Discontinued Operations**

In 1998, the Company purchased the assets and selected liabilities of Morehouse-COWLES, Inc. (Morehouse-COWLES). This was done to complete a strategic combination with Microfluidics, in order to enhance the Company's position in the coatings market, which, at the time, was the dominant part of the Company's business.

Since that time, the direction of the core business of the Company changed significantly from coatings to other areas, in particular the health care sector. The Company determined that it could no longer support the previous strategic plan and the Company, therefore, prepared a plan to divest the Morehouse-COWLES Division.

It was expected that the sale would positively impact the Company's cash flow, and would allow the Company to focus on the core business, and expand its sales and marketing resources for the Company's Microfluidizer processor systems line, and promote its new MMR nanoparticle production systems.

During the fourth quarter of 2003, management committed to a plan to sell substantially all the assets and associated liabilities of Morehouse-COWLES. Accordingly, at fiscal year end 2003, the Company reported the division as discontinued operations and reclassified the assets and associated liabilities as available for sale. The search for a buyer eventually resulted in NuSil Corporation, a California corporation (NuSil) making an offer in December 2003 to purchase the Morehouse-COWLES Division's assets and related liabilities at a price that was acceptable to the Company.

On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil, MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division), to NuSil. Other than NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

The assets of the Division that were sold included accounts receivable, furniture, fixtures and equipment, inventory and supplies, books and records, bids, contracts, prepaid expenses, leases, intellectual property, goodwill, domain names and claims, all as described in the Asset Purchase Agreement (collectively, the Assets). In addition, certain rights and obligations arising after February 9, 2004 under the Division's PacifiCare Group Health Insurance Policy were assigned. The Division's cash or cash equivalents on hand on February 9, 2004 were excluded from the assets being sold. Under the Asset Purchase Agreement, the Division's executory obligations under certain contracts and bids, and the Division's accounts payable as of February 9, 2004 in the amount of \$623,240, were assumed by NuSil.

The purchase price (other than the assumption of accounts payable described in the preceding paragraph) paid under the Asset Purchase Agreement was approximately \$918,000. Of the purchase price approximately \$768,000 was paid in cash (the Closing Cash), \$100,000 was paid in the form of a Promissory Note (the Purchase Note) and \$50,000 was withheld for payment at a future date subject to any purchase price adjustments and offsets (the Holdback Payment), as provided for in the Asset Purchase Agreement. In accordance with the Asset Purchase Agreement, the Company received the Holdback Payment on March 26, 2004.

The Closing Cash was paid directly to PNC Bank, National Association (PNC), to be applied to MFIC's outstanding balance under MFIC's Revolving Credit Loan with PNC (the Revolving Credit Loan).



The aforementioned Purchase Note bore interest at five percent (5%) per annum, was secured by the Assets pursuant to a Security Agreement dated February 5, 2004 (the Security Agreement) between the parties and was subject to certain offsets as provided in the Asset Purchase Agreement. Principal and interest on the Purchase Note were payable on February 9, 2005. NuSil forwarded a payment to the Company on that date which, in conjunction with an allowable offset of approximately \$8,000 paid by NuSil for the benefit of the Company, satisfied the claim.

Pursuant to the Asset Purchase Agreement, MFIC entered into a Noncompetition and Nonsolicitation Agreement, dated February 5, 2004, which limits MFIC's ability to compete with the business of the Division for a period of five years.

The sale generated a loss of approximately \$1,420,000 in 2003. Due to the sale of the Morehouse-COWLES Division, goodwill associated with the 1998 purchase of this division in the amount of \$2,100,000 was impaired in 2003.

In the three months ended March 31, 2004, the Company sold the assets and selected liabilities of the Division to NuSil. During the year ended December 31, 2005, the Company had no discontinued operations. Thus, all items of discontinued operations decreased 100% when compared to the comparable periods for the prior year.

There were no revenues from discontinued operations recorded for the year ended December 31, 2005, as compared to revenues of \$324,000 for the comparable prior year. The decrease during this period is due to the sale of the Division to NuSil on February 9, 2004.

There were no cost of goods sold from discontinued operations recorded for the year ended December 31, 2005, as compared to \$309,000 for the comparable prior year. The decrease in cost of goods sold is attributable to the sale of the Division to NuSil on February 9, 2004.

There were no research and development, selling and general and administrative expenses from discontinued operations recorded for the year ended December 31, 2005, as compared to aggregate research and development, selling and general and administrative expenses of \$239,000 for the comparable prior year. The decrease in these operating expenses is due to the sale of the Division to NuSil on February 9, 2004.

## **LIQUIDITY AND CAPITAL RESOURCES**

As of December 31, 2006, the Company had approximately \$1,860,000 in cash and cash equivalents, compared to \$1,452,000 as of December 31, 2005. For the year ended December 31, 2006, the Company generated cash from operations of approximately \$649,000 from income from operations and an increase in current liabilities, partially offset by the funding of its increase in trade accounts receivable and the increase in its inventory due to production requirements for orders. For the year ended December 31, 2005, the Company used cash from operations of approximately \$396,000 to fund its net loss, and its decrease in current liabilities, offset by a decrease in receivables, inventories, and other current assets. For the year ended December 31, 2004, the Company used cash from operations of approximately \$142,000 to fund its increase in inventories, trade and other receivables, prepaid expenses, and a decrease in current liabilities, partially offset by net income.

For the year ended December 31, 2006, the Company used cash from investing activities of approximately \$57,000 for the purchase of capital equipment. For the year ended December 31, 2005, the Company used cash from investing activities of approximately \$96,000 for the purchase of capital equipment. For the year ended December 31, 2004, the Company generated cash from investing activities of \$513,000 primarily through the sale of the Morehouse-COWLES Division, partially offset by the purchase of capital equipment.

For the year ended December 31, 2006, the Company used cash from financing activities of approximately \$184,000, primarily as a result of repayments of its term loan, offset by the issuance of common stock for options exercised and from proceeds from stock issued from the employee stock purchase plan. For the year ended December 31, 2005, the Company used cash from financing activities of approximately \$84,000 primarily as a result of repayments on its term loan; and offset by the issuance of common stock for options exercised, from proceeds from stock issued from the employee stock purchase plan, and the collection of a note receivable. For the year ended December 31, 2004, the Company generated cash from financing activities of approximately \$1,607,000 primarily through the net proceeds from the private placement offering, the issuance of common stock for options exercised, proceeds from stock issued from the employee stock purchase plan, and net proceeds from a new term loan and line of credit.

As of December 31, 2006, the Company maintains a revolving credit and term loan agreement with Banknorth, N.A., providing the Company with a \$1,000,000, four-year revolving credit line and a \$1,000,000 four-year term loan facility. As of December 31, 2006, there was no balance due under its revolving credit line and a balance of \$312,000 under its term loan facility, having a due date of March 1, 2008.

The Company's contractual obligations as of December 31, 2006 are as follows:

	<b>Total as of December 31, 2006 (in thousands)</b>	<b>Payable In</b>		
		<b>2007</b>	<b>2008</b>	<b>2009</b>
Long-term debt	\$ 312	\$ 250	\$ 62	\$
Operating leases	1,188	410	389	389
Capital leases	14	11	3	
	\$ 1,514	\$ 671	\$ 454	\$ 389

Assuming that there is no significant change in the Company's business, the Company believes that cash flows from operations, together with the credit facility, and the existing cash balances, will be sufficient to meet its working capital requirements for at least the next twelve months.

#### *Off-Balance Sheet Arrangements*

The Company is not a party to any off-balance sheet arrangements.

#### **Critical Accounting Policies**

Our significant accounting policies are summarized in Note 1 to our consolidated financial statements. However, certain of our accounting policies require the application of significant judgment by our management, and such judgments are reflected in the amounts reported in our consolidated financial statements. In applying these policies, our management uses its judgment to determine the appropriate assumptions to be used in the determination of estimates. Those estimates are based on our historical experience, terms of existing contracts, our observance of market trends, information provided by our strategic partners and information available from other outside sources, as appropriate. Actual results may differ significantly from the estimates contained in our consolidated financial statements. Our critical accounting policies are as follows:

- *Revenue Recognition.* The Company recognizes revenue in accordance with Staff Accounting Bulletin (SAB) No. 104, *Revenue Recognition in Financial Statements*. The Company recognizes revenue from product sales upon shipment, provided that a purchase order has been received or a contract has been executed, there are no uncertainties regarding customer acceptance, the sales

price is fixed or determinable and collection is deemed probable. If uncertainties regarding customer acceptance exist, the Company recognizes revenue when those uncertainties are resolved and title has been transferred to the customer. Amounts collected or billed prior to satisfying the above revenue recognition criteria are recorded as deferred revenue.

- *Accounts Receivable Valuation.* We perform various analyses to evaluate accounts receivable balances and record an allowance for bad debts based on the estimated collectibility of the accounts such that the amounts reflect estimated net realizable value. If actual uncollectible amounts significantly exceed the estimated allowance, the Company's operating results would be significantly and adversely affected.
- *Inventory Valuation.* We value our inventory at the lower of our actual cost or the current estimated market value. We regularly review inventory quantities on hand and inventory commitments with suppliers and record a provision for excess and obsolete inventory based primarily on our historical usage for the prior twenty-four month period. Although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated change in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.
- *Product Warranties.* Our products are generally sold with a twelve month warranty provision that requires us to remedy deficiencies in quality or performance of our products at no cost to our customers only after it has been determined that the cause of the deficiency is not due to the actions of the machine operator or product used in the machine. The Company has established a policy for replacing parts that wear out or break prematurely. The policy called for replacing the parts or repairing a machine within one year of the sale. Commencing in May of 2006, the Company altered its warranty by limiting to a period of 90 days its warranty coverage on certain critical wear items. The Company is now selling more advanced processor production systems than past years that may require more costly parts. A reserve balance was established during the year ended December 31, 2005. We believe the reserve balance in the amount of \$74,000 to be adequate as of December 31, 2006.

#### **Recent Accounting Pronouncements**

The Company has adopted SFAS No. 151, *Inventory Costs - an amendment of ARB No. 43*, which is the result of the FASB's efforts to converge U.S. accounting standards for inventories with international Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after September 15, 2005. The Company adopted SFAS No. 151 on January 1, 2006 and it did not have a material impact on our consolidated financial statements.

The Company has adopted SFAS No. 154, *Accounting Changes and Corrections*. SFAS No. 154 addresses the accounting and reporting for changes in accounting principles. It replaces APB 20 and FIN 20, and is effective for all fiscal years beginning after December 15, 2005. It requires that the cumulative effect of a change in accounting principle be recorded directly in the opening retained earnings balance. The Company has evaluated this standard, and has determined there is no material impact on our consolidated financial statements.

In June 2006, the FIN 48, *Accounting for Uncertainty in Income Taxes*, an interpretation of SFAS No. 109. FIN 48 clarifies the accounting for uncertainties in income taxes recognized in an enterprise's financial statements. The Interpretation requires that we determine whether it is more likely than not that a tax position will be sustained upon examination by the appropriate taxing authority. If a tax position

meets the more likely than not recognition criteria, FIN 48 requires the tax position be measured at the largest amount of benefit greater than fifty percent (50%) likely of being realized upon ultimate settlement. This accounting standard is effective for fiscal years beginning after December 15, 2006. The effect, if any, of adopting FIN 48 on our financial position and results of operations has not been determined.

**Item 7A. Quantitative and Qualitative Disclosures About Market Risk**

The Company's financial instruments are generally not subjected to changes in market value as a result of changes in interest rates due to the short maturities of the instruments. The Company's fixed rate debt is not exposed to cash flow or interest rate changes but is exposed to fair market value changes in the event of refinancing this fixed rate debt. The Company does not have significant exposure to fluctuations in foreign exchange rates.

The Company had no variable rate borrowings outstanding under its revolving credit agreement at December 31, 2006. Therefore, until the Company decides to borrow under its revolving credit agreement, an adverse change in interest rates for this variable rate debt would have no material effect on the Company's earnings and cash flows on an annual basis.

For additional information about the Company's financial instruments, see Note 8 to the Consolidated Financial Statements.

**Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of MFIC Corporation:

We have audited the accompanying consolidated balance sheet of MFIC Corporation and subsidiaries as of December 31, 2006 and the related consolidated statements of operations, stockholders' equity, and cash flows for the one year period ended December 31, 2006. These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. The financial statements of MFIC Corporation and subsidiaries for the two years ended December 31, 2005 and 2004 were audited by other auditors whose reports dated March 1, 2006, except for Note 6, as to which the date is March 23, 2006, and March 2, 2005, respectively, expressed unqualified opinions on those financial statements.

We conducted our audits in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstance, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of MFIC Corporation and subsidiaries at December 31, 2006 and the consolidated results of their operations and their cash flows for the year ended December 31, 2006, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ UHY LLP

Boston, Massachusetts

March 12, 2007

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**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of MFIC Corporation:

We have audited the accompanying consolidated balance sheets of MFIC Corporation and subsidiaries as of December 31, 2005 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the two years in the period ended December 31, 2005. Our audits also included the financial statement schedule listed in the Index at Item 15(c). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements and schedule based on our audits.

We conducted our audits in accordance with the auditing standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstance, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of MFIC Corporation and subsidiaries at December 31, 2005 and the consolidated results of their operations and their cash flows for the two years in the period ended December 31, 2005, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ Brown & Brown, LLP

Boston, Massachusetts

March 1, 2006, except for Note 6,  
as to which the date is March 23, 2006

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**MFIC CORPORATION**  
**CONSOLIDATED BALANCE SHEETS**  
(in thousands, except share and per share amounts)

	December 31, 2006	2005
<b>ASSETS</b>		
<i>Current assets:</i>		
Cash and cash equivalents	\$ 1,860	\$ 1,452
Accounts receivable, net of allowance of \$38 and \$43 as of December 31, 2006 and 2005, respectively	3,253	1,864
Inventories, net	2,025	1,849
Prepaid and other current assets	350	304
Deferred income taxes	369	265
<b>TOTAL CURRENT ASSETS</b>	<b>7,857</b>	<b>5,734</b>
Property and equipment, net	303	406
Patents and licenses, net	66	72
<b>TOTAL ASSETS</b>	<b>\$ 8,226</b>	<b>\$ 6,212</b>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
<i>Current liabilities:</i>		
Current maturities of long-term debt and obligations under capital lease	\$ 259	\$ 289
Accounts payable	247	115
Accrued expenses	818	441
Customer advances	853	616
Income taxes payable	36	
<b>TOTAL CURRENT LIABILITIES</b>	<b>2,213</b>	<b>1,461</b>
<i>Long-term liabilities:</i>		
Long-term debt and obligations under capital leases, net of current maturities	65	325
Total liabilities	2,278	1,786
<i>Commitments (Note 13)</i>		
<i>Stockholders equity:</i>		
Common stock; \$.01 par value; 20,000,000 shares authorized; 10,349,812 and 10,166,430 shares issued; 10,089,366 and 9,905,984 shares outstanding as of December 31, 2006 and 2005, respectively respectively	104	102
Additional paid-in capital	17,052	16,809
Accumulated deficit	(10,520)	(11,797)
Treasury stock, 260,446 shares, at cost, as of December 31, 2006 and 2005, respectively	(688)	(688)
<b>TOTAL STOCKHOLDERS EQUITY</b>	<b>5,948</b>	<b>4,426</b>
<b>TOTAL LIABILITIES AND STOCKHOLDERS EQUITY</b>	<b>\$ 8,226</b>	<b>\$ 6,212</b>

The accompanying notes are an integral part of these consolidated financial statements.

**MFIC**

## Consolidated Statements of Operations

(in thousands, except share and per share amounts)

	Years Ended December 31,		
	2006	2005	2004
Revenues	\$ 15,654	\$ 11,645	\$ 12,159
Cost of sales	7,001	5,918	5,608
Gross profit	8,653	5,727	6,551
Operating expenses:			
Research and development	1,763	1,702	1,034
Selling	2,985	2,412	2,588
General and administrative	2,701	2,384	2,232
	7,449	6,498	5,854
Income (loss) from continuing operations	1,204	(771 )	697
Interest expense	(35 )	(59 )	(69 )
Interest income	50	26	27
Income (loss) from continuing operations before income tax provision (benefit)	1,219	(804 )	655
Income tax (benefit) provision	(58 )	185	(450 )
Net income (loss) from continuing operations	1,277	(989 )	1,105
Loss from discontinued operations			231
Net income (loss)	\$ 1,277	\$ (989 )	\$ 874
Net income (loss) per common share, basic:			
Net income (loss) per share from continuing operations	\$ 0.13	\$ (0.10 )	\$ 0.11
Net (loss) per share from discontinued operations			(0.02 )
	\$ 0.13	\$ (0.10 )	\$ 0.09
Net income (loss) per common share, diluted:			
Net income (loss) per share from continuing operations	\$ 0.12	\$ (0.10 )	\$ 0.10
Net (loss) per share from discontinued operations			(0.02 )
	\$ 0.12	\$ (0.10 )	\$ 0.08
Weighted average number of common and common equivalent shares outstanding:			
Basic	10,012,685	9,756,221	9,345,560
Diluted	10,611,635	9,756,221	10,329,313

The accompanying notes are an integral part of these consolidated financial statements.



**MFIC CORPORATION**  
**Consolidated Statements of Cash Flows**  
**(in thousands)**

	Years Ended December 31,		
	2006	2005	2004
<i>Cash flows from operating activities:</i>			
Net income (loss)	\$ 1,277	\$ (989 )	\$ 874
Adjustments to reconcile net income (loss) to net cash flows:			
Income tax (benefit) provision	(68 )	185	(450 )
Depreciation and amortization	174	187	112
Allowance for doubtful accounts	(5 )	30	(45 )
Provision for other receivables			46
Provision for obsolete inventory	9	22	53
Provision for warranty expense	16	58	
Share-based payments to consultants		119	
Acceleration of stock options		65	
Share-based compensation	141	22	
<i>Changes in assets and liabilities:</i>			
Accounts receivable	(1,383 )	162	(197 )
Other current assets	(116 )	45	
Inventories	(185 )	17	(257 )
Prepaid expenses	61	(50 )	(67 )
Accounts payable	131	(5 )	(761 )
Accrued expenses	91	(14 )	173
Customer advances	237	(159 )	552
Accrued commissions	87	(32 )	
Accrued compensation and vacation pay	182	(59 )	21
Assets and liabilities available for sale			(196 )
Net cash flows provided by (used in) operating activities	649	(396 )	(142 )
<i>Cash flows from investing activities:</i>			
Purchase of property, plant and equipment	(57 )	(96 )	(305 )
Proceeds from sale of assets available for sale			818
Net cash flows (used in) provided by investing activities	(57 )	(96 )	513
<i>Cash flows from financing activities:</i>			
Net repayments on line of credit			(2,426 )
Proceeds from term loan			1,000
Principal repayments on long-term debt and obligations under capital leases	(288 )	(288 )	(246 )
Repayment of subordinated debt from related party		(6 )	(75 )
Proceeds from notes receivable		91	
Proceeds from private placement, net of \$578 in closing costs			2,989
Net proceeds from issuance of common stock	104	119	365
Net cash flows (used in) provided by financing activities	(184 )	(84 )	1,607
Net change in cash and cash equivalents	408	(576 )	1,978
Cash and cash equivalents at beginning of period	1,452	2,028	50
Cash and cash equivalents at end of period	\$ 1,860	\$ 1,452	\$ 2,028
<i>Supplemental Disclosure of Cash Flow Information:</i>			
Assets acquired in exchange for notes	\$	\$ 89	\$
Interest received	50	26	28
Interest paid	34	61	68
Taxes paid	10		

The accompanying notes are an integral part of these consolidated financial statements.

**MFIC Corporation**  
**Consolidated Statements of Changes in Stockholders' Equity**

(in thousands)	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Treasury Stock		Total Stockholders Equity (Deficit)
	Number of Shares	Amount			Number of Shares	Amount	
Balance as of January 1, 2003	8,028	\$ 80	\$ 13,151	\$ (11,683 )	260	\$ (688 )	\$ 860
Issuance of common stock in connection with exercise of stock options	441	4	339				343
Issuance of common stock in connection with private placement	1,426	14	2,975				2,989
Issuance of common stock under employee stock purchase plan	27	1	21				22
Net income				874			874
Balance at December 31, 2004	9,922	99	16,486	(10,809 )	260	(688 )	5,088
Issuance of common stock in connection with exercise of stock options	129	1	76				77
Issuance of common stock under employee stock purchase plan	23	1	42				43
Issuance of common stock in connection with exercise of warrants			119				119
Correction exercised options	70	1	(1 )				
Compensation expense related to director stock options	22		22				22
Compensation expense related to acceleration of stock options			65				65
Net loss				(988 )			(988 )
Balance at December 31, 2005	10,166	102	16,809	(11,797 )	260	(688 )	4,426
Issuance of common stock in connection with exercise of stock options	144	2	69				71
Issuance of common stock under employee stock purchase plan	29		33				33
Compensation expense related to stock options			130				130
Compensation expense related to director stock options	11		5				5
Compensation expense related to employee purchase plan			6				6
Net income				1,277			1,277
Balance at December 31, 2006	10,350	\$ 104	\$ 17,052	\$ (10,520 )	260	\$ (688 )	\$ 5,948

The accompanying notes are an integral part of these consolidated financial statements.

**MFIC CORPORATION**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Organization**

MFIC Corporation ( MFIC or the Company ), through its wholly-owned subsidiary, Microfluidics Corporation ( Microfluidics ), its operating division, operates in one segment, specializing in producing and marketing a broad line of proprietary fluid materials processing systems used for a variety of fluid grinding, mixing, milling, and blending applications across a variety of industries and for use in numerous applications within those industries. Microfluidizer materials processor systems are produced at Microfluidics.

**Principles of Consolidation**

The consolidated financial statements of the Company include the accounts of the Company and its wholly owned subsidiaries. All significant intercompany transactions and balances have been eliminated in consolidation.

**Reclassifications**

Morehouse-COWLES Division: On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement ) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation, a California corporation ( NuSil ), MFIC sold substantially all of the assets and selected liabilities of its Morehouse-COWLES Division (the Division ), to NuSil. As such, in accordance with Generally Accepted Accounting Principles, results of operations have been reclassified to reflect Morehouse-COWLES operating results, net of income taxes, as Discontinued Operations. Further, certain prior period balances have been reclassified to conform to the current period presentation.

**Use of Estimates**

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America ( Generally Accepted Accounting Principles ) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**Revenue Recognition**

Revenue from the sale of machines and spare parts is generally recognized upon shipment of the product or when the earnings process is complete. Rental income for the lease of equipment is recognized on a straight-line basis over the term of the lease agreement. Rental income and equipment sales are classified in revenues in the consolidated statement of operations.

The Company has adopted Securities and Exchange Commission (SEC) Staff Accounting Bulletin (SAB) No. 104, *Revenue Recognition in Financial Statements*. The Company recognizes sales at the time of shipment of the system to the customer. Management believes the customer's post-delivery acceptance provisions and installation are routine. The Company has never failed to successfully complete a system installation. With few exceptions, the Company limits its liability to the return of the equipment sold.

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Installation costs are predictable and insignificant to the total purchase price. The Company has demonstrated a history of customer acceptance subsequent to shipment and installation of these systems.

The Company has adopted Financial Accounting Standards Board ( FASB ) Interpretation No. ( FIN ) 46R, *Consolidation of Variable Interest Entities*. The Company has evaluated this interpretation, and has determined that it has no Variable Interest Entities that would require consolidation within the Company's December 31, 2006 Consolidated Financial Statements.

#### **Cash and Cash Equivalents**

The Company considers all highly liquid securities with initial maturities of 90 days or less, at the time of acquisition, to be cash equivalents.

#### **Allowance for Doubtful Accounts**

The Company maintains an allowance for estimated losses resulting from the inability of its customers to make required payments. An estimate of uncollectible amounts is made by management based upon historical bad debts, current customer receivable balances, age of customer receivable balances, customer's financial condition and current economic trends. If the actual uncollected amounts significantly exceed the estimated allowance, the Company's operating results would be significantly adversely affected.

#### **Inventories**

Inventories consist of material, labor and manufacturing overhead and are stated at the lower of cost or market. Cost is determined on a first-in, first-out basis (FIFO).

The Company periodically reviews quantities of inventory on hand and compares these amounts to expected usage of each particular product line. Reserves are established to record provisions for slow moving inventories in the period in which it becomes reasonably evident that the item is not useable, salable or the market value is less than cost.

#### **Property and Equipment**

The Company's property and equipment is recorded at cost. Depreciation is computed using the straight-line method, based upon estimated useful lives of 3 to 7 years. Leasehold improvements are amortized using the straight-line method based upon the shorter of the estimated useful lives or remaining life of the lease. Expenditures for maintenance and repairs are expensed as incurred. Upon retirement or sale of property and equipment, the cost of the disposed asset and the related accumulated depreciation are removed from the accounts and any resulting gain, or loss is credited or charged to operations.

#### **Long-Lived Assets**

In accordance with Statements of Financial Accounting Standards ( SFAS ) No.144, *Accounting for the Impairment or Disposal of Long-Lived Assets*, the Company reviews long-lived assets and all amortizing intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount of such assets may not be recoverable. Recoverability of these assets is determined by comparing the forecasted undiscounted net cash flows of the operation to which the assets relate, to the carrying amount. If the operation is determined to be unable to recover the carrying amount of its assets, then intangible assets are written down first, followed by the other long-lived assets of the operation, to fair value. Fair value is determined based on discounted cash flows or appraised values, depending upon the nature of the assets.

### **Patents, Licenses and Other Intangible Assets**

Patents, patent applications and rights are stated at acquisition cost. Amortization is recorded using the straight-line method over the shorter of the legal lives or useful life of the patents. Patents, licenses and other intangible assets are being amortized over a period of 3 to 17 years.

### **Reserve for Warranty Expenses**

Our products are generally sold with a twelve month warranty provision that requires us to remedy deficiencies in quality or performance of our products at no cost to our customers only after it has been determined that the cause of the deficiency is not due to the actions of the machine operator or product used in the machine. The Company has established a policy for replacing parts that wear out or break prematurely. The policy called for replacing the parts or repairing a machine within one year of the sale. Commencing in May of 2006, the Company altered its warranty by limiting to a period of 90 days its warranty coverage on certain critical wear items. The Company is now selling more advanced processor production systems than past years that may require more costly parts. A reserve balance was established during the year ended December 31, 2005. We believe the reserve balance in the amount of \$74,000 to be adequate as of December 31, 2006.

### **Research and Development Expenses**

The Company charges research and development expenses to operations as incurred.

### **Earnings (Loss) per Share**

Basic and diluted net loss per share is presented in conformity with SFAS No. 128, *Earnings per Share*, for all periods presented. In accordance with SFAS No. 128, basic and diluted net loss per common share was determined by dividing net income or loss applicable to common stockholders by the weighted average number of common shares outstanding during the period. Options to purchase 1,561,086, 1,718,925 and 1,788,213 shares of common stock were outstanding for the years ended December 31, 2006, 2005, and 2004, respectively. Basic and diluted net incomes per share are \$.13 and \$.12, respectively, for the year ended December 31, 2006. Basic and diluted net loss per share are \$(.10) for the year ended December 31, 2005. Basic and diluted net incomes per share are \$.09 and \$.08, respectively, for the year ended December 31, 2004.

### **Fair Value of Financial Instruments**

The carrying amount of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximates fair value due to the short term nature of these accounts. The Company's bank debt, because it carries a variable interest rate, is stated at its approximate fair market value.

### **Income Taxes**

The Company accounts for income taxes under SFAS No. 109, *Accounting for Income Taxes*. Under SFAS No. 109, deferred tax assets or liabilities are computed based on the differences between the financial statement and income tax bases of assets and liabilities using the effective tax rates. Deferred income tax expense or credits are based on changes in the asset or liability from period to period. The Company records a valuation allowance against any net deferred tax assets if it is more likely than not that they will not be realized.

### **Stock-Based Compensation**

In December 2004, the FASB issued SFAS No. 123R, *Share-Based Payment An Amendment of FASB Statements No. 123 and 95*, which requires all companies to measure compensation cost for all

share-based payments, including employee stock options, at fair value. Generally, the approach in SFAS No. 123R is similar to the approach described in SFAS No. 123, *Accounting for Stock-Based Compensation*. However, SFAS No. 123R requires all share-based payments to employees, including grants of employee stock options, to be recognized in the financial statements based on their fair value over the requisite service period. Pro forma disclosure is no longer an alternative. In March 2005, the SEC issued Staff Accounting Bulletin ( SAB ) No. 107, which expressed the views of the SEC regarding the interaction between SFAS No. 123R and certain rules and regulations of the SEC. SAB No. 107 provides guidance related to the valuation of share-based payment arrangements for public companies, including assumptions such as expected volatility and expected term.

Prior to January 1, 2006, the Company applied the pro forma disclosure requirements under SFAS No. 123 and accounted for its stock-based employee compensation plans using the intrinsic value method under the recognition and measurement provisions of Accounting Principles Board Opinion ( APB ) No. 25, *Accounting for Stock Issued to Employees* and related interpretations. Accordingly, no stock-based employee compensation cost was recognized in the statement of operations for the year ended December 31, 2005, related to the grant of stock options, as all stock options granted had an exercise price equal to the market value of the underlying common stock on the date of grant. However, in connection with the acceleration of vesting of certain stock options, as further described below, the Company recognized approximately \$65,000 of compensation expense for in-the-money options.

Effective January 1, 2006, the Company adopted the fair value recognition provisions of SFAS No. 123R, using the modified prospective transition method. Under this transition method, compensation cost recognized in the statement of operations for the year ended December 31, 2006 includes: (a) compensation cost for all share-based payments granted prior to, but not yet vested as of January 1, 2006, based on the grant-date fair value estimated in accordance with the original provisions of SFAS No. 123; and (b) compensation cost for all share-based payments granted, modified or settled subsequent to January 1, 2006, based on the grant-date fair value estimated in accordance with the provisions of SFAS No. 123R. In accordance with the modified prospective transition method, results for prior periods have not been restated.

For the year ended December 31, 2006, the Company recorded share-based compensation expense of approximately \$130,000 for stock options that remain unvested as of December 31, 2006.

The following table illustrates the effect on net income (loss) and net income (loss) per share if the Company had applied the fair value recognition provisions of SFAS No. 123 to options granted for the years ended December 30, 2005 and 2004. Since stock-based compensation expense for the year ended December 31, 2006 was calculated under the provisions of SFAS No. 123R, there is no disclosure of pro forma net income and net income per share for that period. For purposes of the pro forma disclosure for the years ended December 31, 2005 and 2004 set forth in the table below, the value of the options is estimated using a Black-Scholes option pricing model.

## Edgar Filing: MFIC CORP - Form 10-K

Had compensation cost for the Company's stock option grants been determined consistent with SFAS 123, the Company's net income (loss) and net income (loss) per share would approximate the pro forma amounts below:

	<b>Years Ended December 31,</b>	
	<b>2005</b>	<b>2004</b>
	<b>(in thousands, except per share data)</b>	
Net (loss) income, as reported	\$ (989 )	\$ 874
Less: Stock-based employee compensation expense determined under fair value based method for all employee awards, net of related tax effects	(130 )	(232 )
Pro forma, net (loss) income	\$ (1,119 )	\$ 642
Basic net (loss) income per share:		
As reported	\$ (0.10 )	\$ 0.09
Pro forma	\$ (0.11 )	\$ 0.07
Diluted net (loss) income per share:		
As reported	\$ (0.10 )	\$ 0.09
Pro forma	\$ (0.11 )	\$ 0.06

For the year ended December 31, 2006, the Company recognized stock-based employee compensation expense of \$130,000 which is included in General and Administrative expense of the Consolidated Statement of Operations. The Company did not capitalize any stock-based compensation. The Company has established a valuation allowance for net deferred tax assets, accordingly, no significant tax benefit on the stock-based compensation was recorded during the year ended December 31, 2006.

On December 31, 2005, upon recommendation of its Compensation Committee, the Company approved the accelerated vesting of all of the then outstanding unvested stock options ( Options ), pursuant to the Company's 1988 Employee Stock Option Plan, to purchase shares of common stock of the Company. Of the Options approved for acceleration, Options to purchase 480,915 shares of the Company's common stock became immediately exercisable on December 31, 2005. In connection with the acceleration of vesting, the Company recognized approximately \$65,000 of compensation expense for in-the-money Options in the fourth quarter of fiscal 2005 as a one-time charge in accordance with APB No. 25. The remaining terms for each of the Options granted remain the same. With respect of the remaining Options to purchase 284,971 shares of the Company's common stock approved for acceleration, the option holders exercised their opt-out rights to forego acceleration. Accordingly, the Company has recognized a non-cash compensation charge of approximately \$87,000 in the year ended December 31, 2006 with regard to those Options. The decision to accelerate the vesting of these Options was made primarily to reduce non-cash compensation expense that would have been recorded in its income statement in the future periods upon the adoption of SFAS No. 123R on January 1, 2006.

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

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The fair value of each option granted during the years ended December 31, 2006, 2005 and 2004 is estimated on the date of grant using the Black-Scholes option pricing model with the following weighted average assumptions:

	Years Ended December 31,		
	2006	2005	2004
Dividend yield	None	None	None
Expected volatility	116.00	129.00	106.00
Risk-free interest rate	4.85	% 4.35	% 3.35
Expected life	5 years	5 years	5 years
Fair value of options granted	\$ 1.25	\$ 2.07	\$ 1.79

*Dividend yield* The Company has never declared or paid any cash dividends on any of its capital stock and does not expect to do so in the foreseeable future. Accordingly, the Company uses an expected dividend yield of zero to calculate the grant-date fair value of a stock option.

*Expected volatility* The expected volatility is a measure of the amount by which the Company's stock price is expected to fluctuate during the expected term of options granted. The Company determines the expected volatility solely based upon the historical volatility of the Company's Common Stock over a period commensurate with the option's expected term. The Company does not believe that the future volatility of its Common Stock over an option's expected term is likely to differ significantly from the past.

*Risk-free interest rate* The risk-free interest rate is the implied yield available on U.S. Treasury zero-coupon issues with a remaining term equal to the option's expected term on the grant date.

*Expected life* The expected life of options granted represents the period of time for which the options are expected to be outstanding and is derived from the Company's historical stock option exercise experience and option expiration data.

Other reasonable assumptions about these factors could provide different estimates of fair value. Future changes in stock price volatility, life of options, interest rates, forfeitures and dividend practices, if any, may require changes in our assumptions, which could materially affect the calculation of fair value.

The weighted average fair value of stock options granted during the years ended December 31, 2006, 2005 and 2004 was \$1.25, \$2.07 and \$1.79 per share, respectively. We estimate forfeitures related to options grants at an annual rate of 9% per year.

Total unrecognized stock-based compensation expense related to unvested stock options, expected to be recognized over a weighted average period of 5 years, amounted to approximately \$352,000 at December 31, 2006.

### Recent Accounting Pronouncements

The Company has adopted SFAS No. 151, *Inventory Costs - an amendment of ARB No. 43*, which is the result of the FASB's efforts to converge U.S. accounting standards for inventories with international Accounting Standards. SFAS No. 151 requires idle facility expenses, freight, handling costs, and wasted material (spoilage) costs to be recognized as current-period charges. It also requires that allocation of fixed production overheads to the costs of conversion be based on the normal capacity of the production facilities. SFAS No. 151 is effective for inventory costs incurred during fiscal years beginning after September 15, 2005. The Company adopted SFAS No. 151 on January 1, 2006 and it did not have a material impact on our consolidated financial statements.

The Company has adopted SFAS No. 154, *Accounting Changes and Corrections*. SFAS No. 154 addresses the accounting and reporting for changes in accounting principles. It replaces APB 20 and



FIN 20, and is effective for all fiscal years beginning after December 15, 2005. It requires that the cumulative effect of a change in accounting principle be recorded directly in the opening retained earnings balance. The Company has evaluated this standard, and has determined there is no material impact on our consolidated financial statements.

In June 2006, the FIN 48, *Accounting for Uncertainty in Income Taxes*, an interpretation of SFAS No. 109. FIN 48 clarifies the accounting for uncertainties in income taxes recognized in an enterprise's financial statements. The Interpretation requires that we determine whether it is more likely than not that a tax position will be sustained upon examination by the appropriate taxing authority. If a tax position meets the more likely than not recognition criteria, FIN 48 requires the tax position be measured at the largest amount of benefit greater than fifty percent (50%) likely of being realized upon ultimate settlement. This accounting standard is effective for fiscal years beginning after December 15, 2006. The effect, if any, of adopting FIN 48 on our financial position and results of operations has not been determined.

## 2. INDUSTRY SEGMENT, GEOGRAPHIC AND ENTERPRISE-WIDE REPORTING

SFAS No. 131, *Disclosures about Segments of an Enterprise and Related Information*, requires companies to report selected information about operating segments, as well as enterprise-wide disclosures about products, services, geographic areas and major customers. Operating segments are determined based on the way management organizes its business for making operating decisions and assessing performance. The Company's chief decision-maker, as defined under SFAS No. 131, is the chairman and chief executive officer. The Company has determined that it conducts its operations in one business segment: the development, manufacture, marketing and sale of process and formulation equipment. The Company's sales are primarily to companies with processing needs in the chemical, pharmaceutical, food, cosmetic, and biotechnology industries. The Company has less than 1% of total assets in foreign countries. As a result, the financial information disclosed herein represents all of the material financial information related to the Company's principal operating segment.

Approximate sales to customers by geographic markets, are as follows:

	Years Ended December 31,		
	2006	2005	2004
	(in thousands)		
North America	\$ 8,636	\$ 6,028	\$ 6,212
Asia	3,525	4,100	3,774
Europe	3,493	1,517	2,173
	\$ 15,654	\$ 11,645	\$ 12,159

The users of the Company's systems are in various industries, including the chemical, pharmaceuticals, food, cosmetic and biotechnology industries. Mizuho Industrial Co. Ltd. (Mizuho), and Teva Pharmaceuticals Industries Ltd. (Teva) and its wholly owned subsidiary accounted for 9.2% and 15.2% of the Company's revenues in 2006, respectively; 19.5% and 18.9%, respectively, in 2005; and 20.5% and 12.8%, respectively, in 2004. Mizuho, the Company's Japanese distributor of Microfluidizer processor equipment and spare parts, resells the Company's equipment to numerous end-users in Japan, none of which individually represents 10% or more of the Company's revenues. Two customers accounted for 14.4% and 13.6% of the trade accounts receivable as of December 31, 2006, respectively. Two customers accounted for 10.8% and 10.7% of the trade accounts receivable as of December 31, 2005, respectively. Three customers accounted for 15.1%, 14.7%, and 13.4% of the trade accounts receivable as of December 31, 2004, respectively. A reduction or delay in orders from any of the Company's significant customers could have a material adverse effect on the Company's results of operations.

The Company sells its products in various countries. The Company's sales in North America, including the United States, Canada, and Mexico, accounted for approximately 55.2% of the Company's revenues in 2006; approximately 51.8% of the Company's revenues in 2005; and approximately 51.1% of the Company's revenues in 2004; with almost all of those sales coming from United States and Canada. Sales to the rest of the world accounted for approximately 44.8% of the Company's revenues in 2006; 48.2% of the Company's revenues in 2005; and approximately 48.9% of the revenues in 2004. Sales through the Company's exclusive distributors in Japan accounted for approximately 9.2% of the Company's revenues in 2006; 19.5% of the Company's revenues in 2005; and 20.5% of the Company's revenues in 2004. Sales through the Company's representative in Korea accounted for approximately 9.5% of the Company's revenues in 2006; 12.1% of the Company's revenues in 2005; and 4.8% of the Company's revenues in 2004.

### 3. INVENTORIES

The components of inventories are as follows:

	<b>December 31,</b>	
	<b>2006</b>	<b>2005</b>
	<b>(in thousands)</b>	
Raw materials	\$ 1,957	\$ 1,711
Work-in progress	217	74
Finished goods	51	249
	2,225	2,034
Less: provision for excess inventory	(200 )	(185 )
	\$ 2,025	\$ 1,849

### 4. ASSETS AVAILABLE FOR SALE

In the fourth quarter of 2003 the Company determined that its Morehouse-COWLES Division (the Division) was not strategic to the Company's on-going objectives and in December 2003, management committed to a plan to sell substantially all the assets and associated liabilities of the Division. Accordingly, the Company reported the Division as a discontinued operation in accordance with SFAS No. 144. The consolidated financial statements were reclassified to segregate the assets and associated liabilities available for sale and operating results of these discontinued operations for all periods presented.

Summary Operating Results of the Discontinued Operations of the Division for the year ended December 31, 2004 is as follows:

	<b>2004</b>
	<b>(in thousands)</b>
Revenues	\$ 324
Cost of sales	309
Gross profit	15
Total operating expenses	238
Loss from discontinued operations before disposal	(223 )
Loss on disposal of discontinued operations	(8 )
Loss from discontinued operations	\$ (231 )

On February 9, 2004, pursuant to an Asset Purchase Agreement (the Asset Purchase Agreement) dated February 5, 2004 between MFIC and a wholly owned subsidiary of NuSil Corporation (NuSil), MFIC sold substantially all of the assets and selected liabilities of the Division, to NuSil. Other than

NuSil's prior purchases of products from the Division, there were no preexisting relationships between MFIC and NuSil.

The assets of the Division that were sold included accounts receivable, furniture, fixtures and equipment, inventory and supplies, books and records, bids, contracts, prepaid expenses, leases, intellectual property, goodwill, domain names and claims, all as described in the Asset Purchase Agreement (collectively, the Assets). In addition, certain rights and obligations arising after February 9, 2004 under the Division's PacifiCare Group Health Insurance Policy were assigned. The Division's cash on hand on February 9, 2004 were excluded from the assets being sold. Under the Asset Purchase Agreement, the Division's executory obligations under certain contracts and bids, and the Division's accounts payable as of February 9, 2004 in the approximate amount of \$623,000, were assumed by NuSil.

The purchase price (other than the assumption of accounts payable described in the preceding paragraph) paid under the Asset Purchase Agreement was \$918,000. Of the purchase price, \$768,000 (the Closing Cash) was paid in cash, \$100,000 was paid in the form of a Promissory Note (the Purchase Note) and \$50,000 (the Holdback Payment) was withheld for payment subject to any purchase price adjustments and offsets, as provided for in the Asset Purchase Agreement. In accordance with the Asset Purchase Agreement, the Company received the Holdback Payment on March 26, 2004.

The Closing Cash was paid directly to PNC Bank, National Association (PNC), to be applied to MFIC's outstanding balance under MFIC's Revolving Credit Loan with PNC (the Revolving Credit Loan).

The aforementioned Purchase Note bore interest at five percent (5%) per annum, and was secured by the Assets pursuant to a Security Agreement dated February 5, 2004 (the Security Agreement) between the parties and was subject to certain offsets as provided in the Asset Purchase Agreement. Principal and interest on the Purchase Note were payable on February 9, 2005. NuSil forwarded a payment to the Company on that date which, in conjunction with allowable offset of approximately \$8,000 paid by NuSil for the benefit of the Company, satisfied the claim.

Pursuant to the Asset Purchase Agreement, MFIC entered into a Noncompetition and Nonsolicitation Agreement, dated February 5, 2004, which limits MFIC's ability to compete with the business of the Division for a period of five years.

## 5. PROPERTY AND EQUIPMENT

Property and equipment consist of the following:

	<b>December 31,</b>	
	<b>2006</b>	<b>2005</b>
	<b>(in thousands)</b>	
Furniture, fixtures and office equipment	\$ 546	\$ 508
Machinery, equipment and tooling	435	420
Leasehold improvements	94	90
	1,075	1,018
Less: accumulated depreciation and amortization	(772)	(612)
	\$ 303	\$ 406

Depreciation expense for property and equipment for the years ended December 31, 2006, 2005 and 2004 was approximately \$160,000, \$173,000 and \$93,000, respectively.

## 6. INTANGIBLES AND OTHER ASSETS

In 2001, the Company capitalized approximately \$65,000 of costs related to the Multiple-Stream Mixer High Pressure Reactor patent, with an additional \$29,000 of costs related to this patent capitalized in 2004. These costs are being amortized over a 17-year period, beginning in the last quarter of 2001. Amortization of these costs for the years ended December 31, 2006, 2005 and 2004 was approximately \$6,000, \$6,000, and \$10,000, respectively.

Costs incurred in connection with the debt refinancing that occurred on March 1, 2004 (See Note 8) are being amortized over four years, the initial term of the line of credit. The total of such costs was approximately \$37,000. Amortization of these costs for the years ended December 31, 2006, 2005 and 2004 was approximately \$8,000, \$8,000 and \$9,000, respectively.

## 7. ACCRUED EXPENSES

Accrued expenses consist of the following:

	December 31,	
	2006	2005
	(in thousands)	
Accrued expenses	\$ 240	\$ 149
Accrued wages and vacation pay	256	74
Accrued commissions	248	160
Accrued warranty	74	58
	\$ 818	\$ 441

## 8. LONG-TERM DEBT AND OBLIGATIONS UNDER CAPITAL LEASE

Long-term debt and obligations under capital lease consist of the following:

	December 31,	
	2006	2005
	(in thousands)	
Term loan	\$ 312	\$ 563
Obligations under capital lease	12	51
	324	614
Less: current portion	(259 )	(289 )
Long-term debt, net of current portion	\$ 65	\$ 325

On March 1, 2004, the Company and its Microfluidics Corporation subsidiary, as co-borrowers, entered into a revolving credit and term loan agreement with Banknorth, N.A. (the Lender ) providing the Company with a \$2,000,000 demand revolving credit and four year term loan facility (the Credit Facility ). The Credit Facility was comprised of (i) a \$1,000,000 demand revolving line of credit (the Revolving Credit Line ), and (ii) a \$1,000,000 four year term promissory note (the Term Loan ). The Revolving Credit Line obtains advances thereunder bearing interest at a rate equal to the prime rate (8.07% at December 31, 2006). All borrowings under the Revolving Credit Line were evidenced by a \$1,000,000 demand promissory note (the Revolving Note ), and (ii) a \$1,000,000 term promissory note, amortized over a four year period but having a maturity date of March 3, 2008 and bearing interest at a rate equal to 5.67%. Loans under the Credit Facility are secured by a collateral pledge to the Lender of substantially all the assets of the Company and its subsidiaries. The Company's Microfluidics Corporation subsidiary guaranteed the Company's obligations to the Lender under the Credit Facility. The Company also pledged to the Lender all shares of Microfluidics Corporation owned by the Company. The Company is required to meet two covenants on an annual (calendar) basis as of December 31 of a given year as

follows: (i) the Company's senior debt may not be more than four times the amount of its tangible capital base, and (ii) its debt service coverage ratio may not be less than 1.20 to 1. On November 20, 2006 the Company and the lender agreed to a modification of the definition of the Debt Service Coverage Ratio. The purpose of the modification was to eliminate significant non-cash items, such as stock-based employee compensation expense, from affecting the ratio. At December 31, 2006, the Company was in compliance with the debt covenants.

Due to the subjective acceleration clause and the lock-box arrangement with the Lender, the Revolving Credit Line is classified as a current liability in the consolidated balance sheet. As of December 31, 2006 and 2005, there was no outstanding balance on the Revolving Credit Line. As of December 31, 2006 and 2005, the balance outstanding on the Term Loan was \$312,000 and \$562,000, respectively.

Obligations under capital lease consist of three (3) capitalized leases with bargain purchase options that the Company is obligated to pay over a two (2) year period.

Future minimum capital lease payments required under the capital leases are as follows:

Years Ended December 31,	(in thousands)
2007	\$ 10
2008	4
Thereafter	14
Less: interest expense	(2 )
Obligations under capital lease, net	\$ 12

## 9. EMPLOYEE BENEFIT PLANS

The Company offers a 401(k) profit-sharing plan (the 401K Plan) to its employees. All Company and related entity employees who are eighteen (18) years of age and have completed one hour of service are eligible to participate in the 401K Plan. Employees may contribute from 1% to 20% of their compensation. The Company's contribution is discretionary, with contributions made from time to time as management deems advisable. The Company made no matching contributions during the years ended December 31, 2006, 2005 or 2004. The Company also instituted a cafeteria plan in 1992, giving the employees certain pre-tax advantages on specific payroll deductions.

## 10. INCOME TAXES

The provision (benefit) for income taxes consists of the following:

	Years Ended December 31,		
	2006	2005	2004
	(in thousands)		
Current:			
Federal	\$ 21	\$	\$
State	10		
Foreign	15		
	\$ 46	\$	\$
Deferred:			
Federal	\$ (88 )	\$ 141	\$ (345 )
State	(16 )	44	(105 )
Foreign			
	\$ (104 )	\$ 185	\$ (450 )

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The amount reported as an income tax expense for the year ended December 31, 2006 is the result of current tax associated with both the domestic operations, including an alternative minimum tax, and the foreign operations of the sales branch in Germany. The deferred provision is the result of a decrease to the valuation allowance reserve that was recorded against the Company's deferred tax asset. The amount reported as an income tax expense for the year ended December 31, 2005 is the result of an increase to the valuation allowance reserve that was recorded against the Company's deferred tax assets.

The total income tax provision (benefit) differs from the income tax at the statutory federal income tax rate due to the following:

	Years Ended December 31,					
	2006		2005		2004	
Federal income tax at statutory rate	34.0	%	34.0	%	34.0	%
State income taxes, net of federal benefits	6.3	%	6.3	%	6.3	%
Permanent adjustments	4.2	%	-6.5	%	2.6	%
Net research and development and other tax credits	0.0	%	-11.7	%	0.0	%
Valuation allowance	-50.9	%	25.9	%	-42.8	%
Reversal of valuation allowance recorded in prior years	0.0	%	-25.0	%	-68.7	%
Other	1.6	%	0.0	%	0.0	%
Effective tax rate	-4.8	%	23.0	%	-68.6	%

The following is a summary of the significant components of the Company's deferred tax assets and liabilities:

	December 31,	
	2006	2005
(in thousands)		
Deferred tax assets:		
Net operating loss carry forwards	\$ 3,186	\$ 3,958
Research and development and other credits	79	93
Accruals and allowances not currently deductible for tax purposes	169	122
Depreciation and other	136	7
Valuation allowance	(3,201)	(3,915)
Total deferred tax assets	\$ 369	\$ 265

As of December 31, 2006, the Company has available federal net operating loss carry forwards for income tax purposes of approximately \$8,311,000, and state net operating losses of approximately \$5,743,000, which expire at various dates through 2026, federal research and development credit carry forwards of approximately \$74,000 expiring in varying amounts during the period through 2021 and state research and development credit carryforwards of approximately \$8,000 expiring in varying amounts during the period through 2011. Ownership changes, as defined in the Internal Revenue Code, may limit the amount of operating loss carry forwards that can be utilized annually to offset future taxable income. Subsequent ownership changes could further affect the limitation in future years.

Based on our review of the evidence available, we believe that the valuation allowance is adequate as of the year ended December 31, 2006, based on our projected results for 2007. If there is any significant change between actual and budgeted results, we would revisit the valuation allowance at the end of each quarter, and make the appropriate adjustment.

## 11. STOCKHOLDERS EQUITY

### *Private Placement*

On March 30, 2004, the Company completed a private placement of investment units (each unit consisting of one share of common stock and a 3-year warrant to purchase an additional ½ share of common stock). A total of 1,426,616 units were sold, yielding gross proceeds of approximately \$3,567,000. The units were priced at \$2.50 each and the associated warrants to purchase 713,308 shares of common stock were exercisable at \$3.05. Additionally, the placement agent for the offering received five-year warrants to purchase 213,992 shares of common stock at an exercise price of \$3.20 per share. The investment units and warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. The purchasers of the units (the Purchasers) and the placement agent were accredited investors pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on May 13, 2004, for purposes of registering the shares of common stock underlying the units and warrants. The warrants associated with the units are exercisable in whole or in part at any time on or prior to their termination date in March 2007. In addition, the investor warrants provided for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.05. The warrants issued to the placement agent may be exercised in whole or in part at any time on or prior to their termination date in March 2009. In addition, the warrants issued to the placement agent provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20. The value of the warrants granted to the placement agent was approximately \$351,000, and was accounted for as a non-cash financing activity.

### *Warrants*

On November 17, 2004, the Company entered into a general financial and advisory services agreement with Maxim Group LLC pursuant to which Maxim Group LLC was granted, on April 1, 2005, a three-year warrant to purchase 100,000 shares of the Company's common stock at an exercise price of \$3.20 per share. These warrants were issued pursuant to the exemption to the registration requirements of the Securities Act of 1933, as amended, available under Section 4(2) of that Act. Maxim Group LLC was an accredited investor pursuant to the rules of the Securities and Exchange Commission. The Company filed a registration statement on Form SB-2, which was declared effective on June 5, 2006, for purposes of registering the shares of common stock underlying the warrants. Maxim Group LLC has waived its rights to receive, based upon the date that the registration statement on Form SB-2 was declared effective, an additional warrant to purchase shares of the Company's common stock. The warrants may be exercised in whole or in part at any time on or prior to April 1, 2008. In addition, the warrants provide for certain adjustments to the exercise price upon the issuance by the Company of certain securities at a price below \$3.20. The estimated value of these warrants, included in general and administrative expense, was amortized to expense pursuant to the term of the agreement. The Company recognized \$119,000 in expenses for the year ended December 31, 2005.

### *Employee Stock Purchase Plan*

The Company has an employee stock purchase plan (the Purchase Plan). Under the Purchase Plan, participants are granted options to purchase the Company's common stock twice a year at the lower of 85% of market value at the beginning or end of each period. Calculation of the number of options granted, and subsequent purchase of these shares, is based upon voluntary payroll deductions during each six-month period. The number of options granted to each employee under this plan is limited to a maximum amount of 1,000 shares for each six-month period. The number of shares issued pursuant to this plan totaled 29,183, 23,289, and 26,678, in 2006, 2005, and 2004, respectively.

## 12. SUPPLEMENTAL DISCLOSURES FOR STOCK-BASED COMPENSATION

*Stock Options*

The Company has three (3) shareholder approved stock option plans as follows: (i) the 1988 Stock Plan, which authorized the grant of stock rights for up to 3,500,000 shares of common stock (the 1988 Plan ); (ii) the 1989 Non-Employee Director Stock Option Plan (the 1989 Plan ), which authorizes the grant of nonqualified stock options for up to 500,000 shares of common stock; and (iii) the 2006 Stock Plan (the 2006 Plan ) which authorizes the grant of stock rights for up to 4,000,000 shares of common stock, increased by the number of shares of common stock underlying unexercised options issued under either the 1988 Plan or the 1989 Plan (together, the Prior Plans ) that expired after June 20, 2006, and decreased by the number of shares of common stock issued and issuable pursuant to options outstanding under the Prior Plans. The 2006 Plan was approved by our shareholders at the Annual Meeting of Shareholders held on June 20, 2006. Upon adoption of the 2006 Plan by our shareholders, we ceased granting new options under the Prior Plans. The Prior Plans permitted, and the 2006 Plan permits, the granting of stock awards to employees, officers, and non-employee members of the Board of Directors. Options granted under the Prior Plans and the 2006 Plan permit vesting over a 3-to-5 year period and expire 5-to-10 years from the date of grant. At December 31, 2006, approximately 754,000 shares were available for future grants under the 2006 Plan and no shares were available for future grants under the Prior Plans.

During the year ended December 31, 2006, the Company issued 51,000 stock options at exercise prices equal to or greater than the fair market value of the Company's stock on the date of grant under the 1988 Stock Plan, and the 1989 Non-Employee Director Stock Option Plan, and 7,412 shares under the 2006 Stock Plan. Approximately 62,000 shares were forfeited and approximately 176,000 shares were vested during the year ended December 31, 2006.

Activity under the Plans is as follows:

	Years Ended December 31, 2006		2005		2004	
	Number of Options	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price	Number of Options	Weighted Average Exercise Price
Outstanding at beginning of period	1,718,925	\$ 1.37	1,788,213	\$ 1.14	1,929,662	\$ 0.74
Granted	58,412	1.24	424,900	2.14	392,668	2.27
Cancelled	(62,052 )	2.03	(273,031 )	1.07	(93,585 )	0.67
Exercised	(154,199 )	0.49	(221,157 )	0.57	(440,532 )	0.79
Outstanding at end of period	1,561,086	\$ 1.45	1,718,925	\$ 1.37	1,788,213	\$ 1.14
Exercisable at end of period	1,321,735	\$ 1.32	1,338,954	\$ 1.30	979,763	\$ 0.79

As of December 31, 2006, 754,000 shares were available for future grants under the Plans.



Summarized information about stock options outstanding as of December 31, 2006 are as follows:

Range of exercise prices	Number of options outstanding	Weighted average remaining contractual life (years)	Weighted average exercise price	Exercisable Number of options	Weighted average exercise price
\$0.30 - \$0.95	464,913	5.2	\$ 0.50	439,913	\$ 0.50
\$1.00 - \$1.75	652,427	7.3	1.28	554,390	1.25
\$2.06 - \$4.25	443,746	7.6	2.70	327,432	2.54
\$0.30 - \$4.25	1,561,086	6.6		1,321,735	

On April 7, 2004, an officer of the Company exercised 80,000 options that had been granted in 1998 at an exercised price of \$1.2375 per share, for a total expenditure of \$99,000. Upon a review of the 1988 Plan, it was discovered that the officer, due to his degree of ownership in the Company, could not exercise these options after five years, or 2003. Instead of having the money returned, the officer exercised other options held and exercisable. The effect of this transaction was an equal increase to Common Stock and decrease to Additional Paid-In Capital, with no resultant affect to equity as a whole.

### 13. COMMITMENTS

The Company leases its facilities under non-cancelable operating leases expiring through October, 2011. Future minimum rental payments under the operating leases at December 31, 2006 are as follows:

Years Ended December 31,	(in thousands)
2007	\$ 410
2008	389
Thereafter	1,104
Total lease payments	\$ 1,903

Rent expense for the years ended December 31, 2006, 2005, and 2004, was approximately \$415,000, \$468,000 and \$357,000, respectively. A portion of the Newton, Massachusetts rented facility is sublet to a non-affiliated company under a tenant-at-will arrangement for an approximate total of \$30,000 per annum

### 14. RELATED PARTY TRANSACTIONS

On December 20, 1999 the Company signed an agreement in principle (the Agreement) with the former owners (the Sellers), including entities controlled by the Sellers, of the Epworth Mill and Morehouse-COWLES businesses (the Sellers). The Agreement set forth the understandings among the parties concerning a restructuring of the Company's subordinated debt and resolution of various disputes at that time. On January 17, 2000, a definitive settlement agreement incorporating these subject matters was executed between the parties (the Settlement Agreement). In connection with the Settlement Agreement, a \$300,000 subordinated note was replaced with a new \$300,000 subordinated promissory note dated February 28, 2000 (the 2000 Subordinated Note). The 2000 Subordinated Note had a maturity date of February 28, 2005, bearing interest at a rate of ten percent (10%) per annum. The final principal payment on the 2000 Subordinated Note was made on January 25, 2005 in the approximate amount of \$6,000, including accrued interest.

## 15. CONDENSED CONSOLIDATED QUARTERLY FINANCIAL DATA (UNAUDITED)

The following consolidated interim financial information is unaudited. Such information reflects all adjustments, consisting solely of normal recurring adjustments, which are in the opinion of management necessary for a fair presentation of the quarterly financial data.

	Year Ended December 31, 2006			
	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
	(in thousands, except share and per share data)			
Revenues	\$ 3,151	\$ 3,910	\$ 3,553	\$ 5,040
Gross profit	1,704	2,109	1,995	2,845
Income from operations before income tax provision (benefit)	68	214	141	794
Income tax provision (benefit)	27	86	57	(228 )
Net income	42	128	85	1,022
Net income per share:				
Basic net income per share	\$	\$ 0.01	\$ 0.01	\$ 0.10
Diluted net income per share	\$	\$ 0.01	\$ 0.01	\$ 0.10

	Year Ended December 31, 2005			
	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Revenues	\$ 2,536	\$ 3,164	\$ 2,881	\$ 3,064
Gross profit	1,388	1,556	1,354	1,429
Income (loss) from operations before income tax provision (benefit)	(193 )	(36 )	(297 )	(277 )
Income tax provision (benefit)	(77 )			262
Net (loss)	(116 )	(36 )	(297 )	(539 )
Net (loss) per share:				
Basic net (loss) per share	\$ (0.01 )	\$	\$ (0.03 )	\$ (0.06 )
Diluted net (loss) per share	\$ (0.01 )	\$	\$ (0.03 )	\$ (0.06 )

## 16. VALUATION AND QUALIFYING ACCOUNTS

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	Balance at Beginning of Period (in thousands)	Additions Charged to Costs and Expenses	Deductions and Adjustments	Balance at End of Period
<b>Allowance for Doubtful Accounts:</b>				
For the year ended December 31, 2006	\$ 43	\$ 9	\$ (14 )	\$ 38
For the year ended December 31, 2005	13	30		43
For the year ended December 31, 2004	59	25	(71 )	13
<b>Inventory Reserve:</b>				
For the year ended December 31, 2006	\$ 185	\$ 15		\$ 200
For the year ended December 31, 2005	163	80	(58 )	185
For the year ended December 31, 2004	110	98	(45 )	163
<b>Accumulated Amortization Related to Goodwill and Other Intangibles:</b>				
For the year ended December 31, 2006	\$	\$	\$	\$
For the year ended December 31, 2005				
For the year ended December 31, 2004	6,918		(6,918 )	
<b>Warranty Reserve:</b>				
For the year ended December 31, 2006	\$ 58	\$ 16		\$ 74
For the year ended December 31, 2005		92	(34 )	58
For the year ended December 31, 2004		52	(52 )	

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**Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE**

On May 26, 2006, the partners of Brown & Brown, LLP ( B&B ) announced that they were joining UHY LLP ( UHY ), a New York limited liability partnership. UHY is an independent registered public accounting firm. On August 8, 2006, B&B notified MFIC Corporation (the Company ) that, as a result of the merger, B&B would no longer provide audit and attestation services and that those services would now be handled by UHY, as B&B s successor in interest. B&B requested that the Company accept and appoint UHY as the independent public auditors of the Company effective as of August 8, 2006.

None of the reports of B&B on the Company s financial statements for any of the past three years or subsequent interim periods contained an adverse opinion or disclaimer of opinion, or was qualified or modified as to uncertainty, audit scope or accounting principles.

During the three most recent fiscal years of the Company and any subsequent interim periods, there were no disagreements between the Company and B&B on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements, if not resolved to the satisfaction of B&B, would have caused it to make reference to the subject matter of the disagreements in connection with its report.

On August 8, 2006, the Company approved UHY, as the successor in interest to B&B, as the Company s independent public accountant for the Company s fiscal year ending December 31, 2006 and the interim periods prior to such year-end.

During the Company s three most recent fiscal years or subsequent interim period, the Company has not consulted with UHY, or any of its affiliates or parent regarding the application of accounting principles to a specific transaction, either completed or proposed, or the type of audit opinion that might be rendered on the Company s financial statements, nor did the limited liability partnership of UHY, or any of its affiliates or parent provide advice to the Company, either written or oral, that was an important factor considered by the Company in reaching a decision as to the accounting, auditing or financial reporting issue. Further, during the Company s three most recent fiscal years or subsequent interim periods, the Company has not consulted with the limited liability partnership of UHY, or any of its affiliates or parent on any matter that was the subject of a disagreement or a reportable event.

The decision to acknowledge the merger of B&B and UHY and accept the services of UHY as the Company s auditor as successor in interest to B&B was approved by the Audit Committee of the Company s Board of Directors.

**Item 9A. CONTROLS AND PROCEDURES**

a) Evaluation of disclosure controls and procedures. Based on their evaluation as of the end of the fiscal quarter ended December 31, 2006, each of our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended) are effective to ensure that material information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms.

b) Changes in internal control over financial reporting. There were no significant changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2006 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**Item 9B. OTHER INFORMATION**

None.

**PART III**

**Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE**

The information required by this Item 10 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 11. EXECUTIVE COMPENSATION**

The information required by this Item 11 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

The information required by this Item 12 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

The information required by this Item 13 will be incorporated by reference from the Company's definitive proxy statement or will be filed as an amendment to the Company's Form 10-K within 120 days of the Company's fiscal year end.

**Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

*Audit Fees*

During the years ended December 31, 2006 and 2005, UHY LLP ( UHY ), formerly Brown & Brown, LLP, was paid approximately \$91,000, and \$87,000 respectively for services rendered for the audit of the Company's financial statements and review of financial statements included in the Company's reports on Form 10-Q or services that are normally provided by UHY in connection with statutory and regulatory filings or engagements for those fiscal years. All services were approved by the Audit Committee.

*Audit Related Fees*

During the years ended December 31, 2006 and 2005, UHY received no payments for assurance and related services reasonably related to the performance of audit or review of the Company's financial statements and are not reported under Item 9(e) of the Company's definitive proxy statement. All services were approved by the Audit Committee.

*Tax Fees*

During the years ended December 31, 2006 and 2005, UHY was paid approximately \$22,000 and \$16,000, respectively, for tax compliance, tax advice and tax planning services. All tax services were approved by the Audit Committee.

*All Other Fees*

During the years ended December 31, 2006 and 2005, UHY was paid approximately \$46,000 and \$27,000, respectively, for non-audit services. All of these services were approved by the Audit Committee.

The Audit Committee pre-approves audit and non-audit services provided to the Company by the independent auditors (or subsequently approves non-audit services in those circumstances where a subsequent approval is necessary and permissible).

The Audit Committee has considered whether the provision of non-core audit services to the Company by the Company's principal auditor is compatible with maintaining independence, and have affirmed, in each instance, that the provision of such service was compatible with the principal auditor's independent role.

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## PART IV

## Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

## (a) Financial Statements

The following Consolidated Financial Statements are included in Item 8:

	<b>Page</b>
<u>Report of Independent Registered Public Accounting Firm</u>	F-1
<u>Report of Independent Registered Public Accounting Firm</u>	F-2
<u>Consolidated Balance Sheets as of December 31, 2006 and 2005</u>	F-3
<u>Consolidated Statements of Operations for the Three Years Ended December 31, 2006</u>	F-4
<u>Consolidated Statements of Cash Flows for the Three Years Ended December 31, 2006</u>	F-5
<u>Consolidated Statements of Changes in Stockholders' Equity for the Three Years Ended December 31, 2006</u>	F-6
<u>Notes to Consolidated Financial Statements</u>	F-7

## (b) Exhibit Index

Exhibit No.	Description
3(a)	Certificate of Incorporation for the Company, as amended (filed as Exhibit 2A to Registration Statement No. 0-11625 on Form 8-A and as Exhibit 3.1(a) to the Company's Report on Form 10-Q for the quarterly period ended September 30, 1999 and incorporated herein by reference).
3(b)	Amended and Restated By-Laws for the Company (filed as Exhibit 3.3(b) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 and incorporated herein by reference).
10.2	1988 Stock Plan (filed as Exhibit 10(g) to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1988 and incorporated herein by reference).
10.3	1989 Non-Employee Directors Stock Option Plan (filed as Exhibit 10.1 to the Company's registration statement on Form S-8 filed October 22, 1996 and incorporated herein by reference).
10.18	1988 Stock Plan as amended (filed as Exhibit 10(a) to the Company's Form 10-Q for the quarterly period ended March 31, 1997 and incorporated herein by reference).
10.19	Asset Purchase Agreement, dated as of June 19, 1998, by and among the Company, Epworth Manufacturing Company and Morehouse-COWLES, Inc. (filed as Exhibit 2.1 to Schedule 13D of Bret A. Lewis, File No. 005-35850, and incorporated herein by Reference).
10.20	Stockholders Agreement, dated August 14, 1998, by and among the Company and J.B. Jennings and Bret A. Lewis (filed as Exhibit 2.2 to Schedule 13D of Bret A. Lewis, File No. 005-35850, and incorporated herein by reference).
10.21	\$500,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, and incorporated herein by reference).
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- 10.22 \$300,000 Subordinated Promissory Note issued by the Company to Epworth Manufacturing Company (filed as Exhibit 99.2 to the Company's Form 8-K on August 27, 1998, File No. 000-11625, and incorporated herein by reference).
- 10.32 Subordinated Promissory Note on the Company in favor of Lake Shore Industries, Inc. in the amount of \$300,000.00 dated February 28, 2000. (Filed as Exhibit 10.35 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.33 Settlement Agreement, dated January 17, 2000 by and among the Company, Bret A. Lewis, J. B. Jennings, Lake Shore Industries, Inc., and JLJ Properties, Inc., with \$300,000 Subordinated Promissory Note dated February 28, 2000, issued by the Company to Lake Shore Industries, Inc. (FKA Epworth Manufacturing Company, Inc). (Filed as Exhibit 10.37 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, and incorporated herein by reference.)
- 10.42 Lease for 30 Ossipee Road, Newton, Massachusetts dated October 19, 2001, between Microfluidics International Corporation and King Real Estate Corp., Trustee of 1238 Chestnut Street Trust under Declaration of Trust dated May 23, 1969, recorded with Middlesex South Registry of Deeds in Book 11682, Page 384. (Filed as Exhibit 10.47 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
- 10.45 Second Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated March 29, 2002. (Filed as Exhibit 10.50 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
- 10.46 1986 Employee Stock Purchase Plan as Amended (Filed as Exhibit 10.51 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
- 10.47 1988 Stock Plan as Amended. (Filed as Exhibit 10.52 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001, and incorporated herein by reference.)
- 10.49 Third Amendment to Revolving Credit and Term Loan Agreement between the Company and PNC Bank N.A. dated February 19, 2003. (Filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2002, and incorporated herein by reference)
- 10.50 Fourth Amendment and Waiver to Revolving Credit and Term Loan Agreement between the Company and PNC Bank, N.A. dated February 6, 2004 (filed as Exhibit 10.54 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.51 Asset Purchase Agreement dated February 5, 2004, by and among MFIC Corporation and Morehouse Cowles, Inc. (filed as Exhibit 2 to the Company's Form 8K dated February 13, 2004, and incorporated herein by reference).
- 10.52 Revolving Line of Credit Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.56 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).

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- 10.54 Secured Term Note in the amount of \$1,000,000 in favor of Banknorth, N.A. dated March 3, 2004 (Filed as Exhibit 10.58 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.55 Loan and Security Agreement between Banknorth, N.A. and the Company dated March 3, 2004 (Filed as Exhibit 10.59 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.56 Trademark Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.60 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.57 Patent Security Agreement of the Company in favor of Banknorth, N.A., dated March 3, 2004 (Filed as Exhibit 10.61 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.58 Placement Agency Agreement between the Company and Casimir Capital L.P. dated February 13, 2004 (Filed as Exhibit 10.62 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.59 First Amendment to Placement Agency Agreement between the Company and Casimir Capital L.P. dated March 12, 2004 (Filed as Exhibit 10.63 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.60 Registration Rights Agreement between the Company and Purchasers dated March 16, 2004 (Filed as Exhibit 10.64 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003, and incorporated herein by reference).
- 10.61 Lease between ABB and MFIC Corporation dated April 1, 2004 for space at Lampertheim, Germany (filed as Exhibit 10.65 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
- 10.62 Letter Agreement between Maxim Group LLC and MFIC Corporation dated November 17, 2004 to provide general financial advisory and investment banking services to the Company (filed as Exhibit 10.66 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2004 and incorporated herein by reference).
- 10.63 Research Collaboration Agreement between University of Massachusetts, Lowell and MFIC Corporation, dated September 21, 2005 (filed as Exhibit 10.63 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2005, and incorporated herein by reference).
- 10.64 Warrant issued to Maxim Group LLC dated April 1, 2005 (filed as Exhibit 10.64 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2005, and incorporated herein by reference).
- 10.65 Form of Warrant issued to placement agent under the Placement Agency Agreement (filed as Exhibit 4.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference).
- 10.66 Form of Warrant issued to investors in the private placement described in the Placement Agency Agreement (filed as Exhibit 4.3 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2003 and incorporated herein by reference).

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- 10.67 2006 Stock Plan (filed as Exhibit 10.1 to the Company's Form 8-K on August 11, 2006 and incorporated herein by reference).
- 10.68\* Letter Agreement between MFIC Corporation and Maxim Group LLC dated February 24, 2006 concerning the warrant issued to Maxim Group LLC.
- 10.69\* Lease for 30 Ossipee Road, Newton, Massachusetts dated November 6, 2006, between MFIC Corporation and King Real Estate Corp., Trustee of 1238 Chestnut Street Trust under Declaration of Trust dated May 23, 1969, recorded with Middlesex South Registry of Deeds in Book 11682, Page 384.
- 10.70\* TD Banknorth Loan Modification Agreement dated November 20, 2006.
- 10.71\* Letter Agreement between MFIC Corporation and Maxim Group LLC dated March 20, 2007 concerning the warrant issued to Maxim Group LLC.
- 14 Code of Ethics, as adopted by the Company (Filed as Exhibit 14 to the Company's Form 10-K dated December 31, 2006, and incorporated herein by reference.)
- 21 Subsidiary of the Company, Microfluidics Corporation, a Delaware corporation
- 23(a)\* Consent of UHY LLP
- 23(b)\* Consent of Brown & Brown, LLP
- 31.1\* Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 31.2\* Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32.1\* Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
- 32.2\* Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

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\* Filed herewith.

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized, in the city of Newton, Commonwealth of Massachusetts, on the 28th day of March, 2007.

**MFIC CORPORATION**

By: /s/ IRWIN J. GRUVERMAN  
Irwin J. Gruverman  
*Chief Executive Officer*

Pursuant to the requirements of the Securities and Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<b>Signature</b>	<b>Title</b>	<b>Date</b>
/s/ IRWIN J. GRUVERMAN Irwin J. Gruverman	Chief Executive Officer (Principal Executive Officer), Chairman of the Board of Directors and Secretary	March 28, 2007
/s/ DENNIS P. RIORDAN Dennis P. Riordan	Controller (Principal Financial and Accounting Officer)	March 28, 2007
/s/ JAMES N. LITTLE James N. Little	Director	March 28, 2007
/s/ LEO PIERRE ROY Leo Pierre Roy	Director	March 28, 2007
/s/ GEORGE UVEGES George Uveges	Director	March 28, 2007
/s/ ERIC G. WALTERS Eric G. Walters	Director	March 28, 2007