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ALTAIR NANOTECHNOLOGIES INC  
Form 10-K  
March 26, 2004

UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE FISCAL YEAR ENDED DECEMBER 31, 2003

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM \_\_\_\_\_ TO \_\_\_\_\_

ALTAIR NANOTECHNOLOGIES INC.

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(Exact name of registrant as specified in its charter)

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Canada	1-12497	33-1084375
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(State or other jurisdiction of incorporation)	(Commission File No.)	(IRS Employer Identification No.)

204 Edison Way  
Reno, Nevada 89502

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(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code: (775) 858-3750

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

Securities registered pursuant to Section 12(g) of the Act:

Common Shares, no par value	Nasdaq SmallCap Market
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(Title of Class)	(Name of each exchange on which registered)

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 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 an accelerated filer (as defined in Rule 12b-2 of the Act). YES  NO

The aggregate market value of the common shares held by non-affiliates of the Registrant on June 30, 2003, based upon the average bid and asked price of the common shares on the NASDAQ SmallCap Stock Market of \$1.07 per share on June 30, 2003, was approximately \$36,850,000. Common Shares held by each officer and director and by each other person who may be deemed to be an affiliate of

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the Registrant have been excluded. As of March 15, 2004, the Registrant had 48,650,140 common shares outstanding.

### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement on Schedule 14A for the Registrant's 2004 Annual Meeting of Shareholders are incorporated by reference in Part III as specified.

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### PART I

This Annual Report on Form 10-K for the year ended December 31, 2003 (this "Form 10-K") contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that involve risks and uncertainties. Purchasers of any of the common shares, no par value (the "common shares") of Altair Nanotechnologies Inc. ("Altair" or the "Company") are cautioned that the Company's actual results will differ (and may differ significantly) from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences include those factors discussed herein under "Factors That May Affect Future Results" and elsewhere in this Form 10-K generally. The reader is also encouraged to review other filings made by the Company with the Securities and Exchange Commission (the "Commission") describing other factors that may affect future results of the Company.

Unless the context requires otherwise, all references to "Altair," "we," "Altair Nanotechnologies Inc.," or the "Company" in this Form 10-K refer to Altair Nanotechnologies Inc. and all of its subsidiaries. Altair currently has one wholly-owned subsidiary, Altair US Holdings, Inc., a Nevada corporation. Altair US Holdings, Inc. directly or indirectly wholly-owns Altair Nanomaterials, Inc., a Nevada corporation, Mineral Recovery Systems, Inc., a Nevada corporation ("MRS"), Fine Gold Recovery Systems, Inc., a Nevada corporation ("Fine Gold") and Tennessee Valley Titanium, Inc., a Nevada corporation.

#### Item 1: Business

We are a development-stage Canadian company whose primary business is developing and commercializing nanomaterial and titanium dioxide pigment technologies. Our research, development, production and marketing efforts are currently directed toward four applications of our proprietary technologies:

- o the production of titanium dioxide pigments;
- o the development of titanium dioxide structures in connection with a research program aimed at developing a lower-cost process for producing titanium metals and related alloys;
- o a new active pharmaceutical ingredient that we call RenaZorb(TM), which is designed to be useful in the treatment of elevated serum phosphate levels in patients undergoing kidney dialysis; and
- o the development of nanomaterials for use in various products, such as thermal spray powders, dental fillings, algae removal materials, lithium ion batteries and fuel cells.

In December 2003, our board of directors approved a plan to restructure the Company in order to concentrate resources on the nanomaterials and titanium dioxide pigment applications identified above, which we believe are the applications most likely to generate significant revenues in the foreseeable future. Our future revenues will depend on the success of these projects, the results of our other research and development work and the success of our marketing efforts. As a part of the restructuring, we have determined to

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consolidate the assets related to the Altair Centrifugal Jig (the "Altair jig") and our Tennessee mineral property into (or under) a single corporation, cause such corporation to become an SEC reporting company and distribute substantially all of the shares of common stock of such corporation to our shareholders. The completion of this spin-off process is expected to take approximately six months and is contingent upon receipt of shareholder approval.

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### Our Nanomaterials and Titanium Dioxide Pigment Business

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#### Background and Description of Process

In November 1999, we acquired all patent applications, technology and tangible assets related to a hydrometallurgical process developed by BHP Minerals International, Inc. ("BHP") primarily for the production of titanium dioxide products from titanium bearing ores or concentrates and metal oxide nanoparticles (the "nanomaterials and titanium dioxide pigment technology"), and all tangible equipment and other assets used by BHP to develop and implement the nanomaterials and titanium dioxide pigment technologies (the "nanomaterials and titanium dioxide pigment assets"). These assets were being developed by BHP and had not yet been commercially operated. We are employing the nanomaterials and titanium dioxide pigment technology as a platform for the sale of contract services, intellectual property licenses and for the production and sale of metal oxide nanoparticles in various applications.

The nanomaterials and titanium dioxide pigment technology is capable of producing conventional titanium dioxide pigment products that are finely-sized powders consisting of titanium dioxide crystals. These powders approximate 170-300 nanometers in size. Our nanomaterials and titanium dioxide pigment technology is also capable of producing titanium dioxide and other metal and mixed metal oxide nanomaterials. These are specialty products with a size range of 10 to 100 nanometers (approximately one tenth the size of conventional TiO<sub>2</sub> pigment). The primary products currently being produced in the processing plant are titanium dioxide (TiNano40(TM) series), lithium titanate spinel and stabilized zirconia nanomaterials. The technology also enables the production of customized products for catalyst support structures and porous titanium oxide electrode structures for titanium metal production.

The nanomaterials and titanium dioxide pigment technology is based on a proprietary dense-phase crystal growth technique that controls crystal formation using a combination of mechanical and fluid dynamics and chemical and thermal control. The size, phase, catalytic activity and size distribution of crystals can be controlled within narrow limits and to specification through introduction of small quantities of selected chemicals ("doping elements") during crystal growth.

The technology, which is scaleable, uses standard chemical processing industry unit operations that we believe make it suitable for large-scale continuous production of highly uniform products.

#### Nanomaterials and Titanium Dioxide Pigment Tangible Assets

The nanomaterials and titanium dioxide pigment assets consist principally of a production facility located in Reno, Nevada in a building that we purchased from BHP. During 2000, we installed additional equipment to increase production capacity to a nominal annual amount of 200 tons of nanomaterials. We also added a separate pilot facility to produce large sample quantities of product for development, test and evaluation purposes. In 2001, we added hydration and filtering equipment to improve production processing. In

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2002, we purchased advanced milling equipment to improve product quality. In 2003, we purchased pilot plant scale solvent extraction columns to test and improve the purification unit operation process for the nanomaterials and titanium dioxide pigment technology.

### Overview of the Technology and Process

Our nanomaterials and titanium dioxide pigment technology is fundamentally different from current commercial processing techniques. Other processes are based on either a precipitation of materials from a solution or

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the formation of crystallites from molten droplets of titanium oxide generated in high temperature flame reactors. Our process is a dense-phase crystal growth technique which controls crystal formation using a combination of mechanical and fluid dynamics and chemical and thermal control.

Our process permits exceptional control over particle size, shape, and crystalline form. Our titanium processing technology produces discrete anatase crystals in nanometer sizes and may be doped to be thermally stable up to 800 degrees Centigrade. By remaining stable in high-temperature processing, nanomaterials produced by our titanium dioxide pigment processing technology retain the desired nanomaterials size and crystalline phase. In addition, our technology is designed to minimize process effluents needing environmental remediation and to accept a wide variety of low-cost, naturally occurring titanium feed stocks.

We have not operated the nanomaterials and titanium dioxide pigment technology at a commercial scale. Accordingly, we cannot describe processing efficiencies and costs associated with our nanomaterials and titanium dioxide pigment technology or compare such efficiencies and costs to those of competitors.

In addition, our ability to capitalize on and develop our technology may be limited by the limited amount of capital we have available and our lack of a substantial operating history. Competing nanomaterials producers generally are financially strong corporations with established customer relationships and operating histories. The nanomaterials application business is a young industry subject to rapid technological changes, and there is wide disparity within the industry with respect to the composition and attributes of nanomaterials products. The manufacturing methods and costs to manufacture also vary greatly, with certain methods lending themselves to specific niche applications. As a result, competition within the industry is driven by a variety of factors, principally price and product attributes. Our marketing efforts have focused on our ability to produce a wide range of products at attractive prices.

### Plans for Development

The nanomaterials and titanium dioxide pigment technology has potential to produce nanomaterials, which are sold on specialty product markets, titanium dioxide pigments, which are commercially traded in bulk, catalyst structures and other specialty ceramic products. During 2003, our development efforts were directed toward new nanomaterials products, pharmaceutical products, titanium dioxide pigment products, thermal spray powders, electrode grade powders, catalyst support and electrode structures.

The Altair Hydrochloride TiO<sub>2</sub> Pigment Process(TM) (AHPP)

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We have named the portion of the nanomaterials and titanium dioxide pigment technology that was developed to produce high quality titanium dioxide pigment the Altair Hydrochloride Pigment Process(TM) (AHPP). This package of technologies includes three US patents and over eight years of trade secrets and know-how. The technology represents a comprehensive process to extract titanium from raw materials, produce a high quality titanium dioxide pigment and minimize environmental impact.

### Key Features

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The AHPP is the first new, comprehensive technology to produce titanium dioxide pigment in over fifty years and takes advantage of new technologies to enable high quality pigment production. The AHPP uses a dense-phase crystal

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growth technique which controls crystal formation using a combination of mechanical and fluid dynamics and chemical and thermal control. A third party engineering study indicates that cost associated with this process will be lower than costs associated with alternative processes. All hydrochloric acid waste streams can be recycled to recover acid, and the waste solids generated from the purification process are easily manageable iron oxides.

### Target Markets

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We intend to benefit from the titanium dioxide pigment technology through technology license agreements with large materials companies under which we would receive royalties and other payments. We do not anticipate being a manufacturer of pigments or competing directly in the pigment market.

### Research, Testing and Development

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We have continued to research, test and develop our AHPP technology through development contracts. We have demonstrated the flexibility of the process for use on a wide variety of low-cost ilmenite feed stocks.

In January 2004, we entered into a license agreement with Western Oil Sands, Inc. with respect to its possible use of the AHPP for the production of titanium dioxide pigment and pigment-related products at the Athabasca Oil Sands Project in Alberta, Canada, and elsewhere. Upon execution of the agreement, we granted Western Oil Sands an exclusive, conditional license to use the AHPP on heavy minerals derived from oil sands in Alberta, Canada. The agreement also contemplates a three-phase, five-year program pursuant to which the parties will work together to further evaluate, develop and commercialize the AHPP. In the first phase of the program, Western Oil Sands is expected to spend \$650,000 (\$500,000 of which is scheduled to be paid to Altair for work performed) to evaluate the AHPP and confirm that the AHPP will produce pigment from oil sands. Assuming phase one is successful, Western Oil Sands may elect to commence phase two, the construction of a demonstration titanium pigment production facility using the AHPP. If phase two is successful, Western Oil Sands may elect to commence phase three, the construction and operation of a full-scale commercial titanium pigment production facility using the AHPP.

The scope of the license granted to Western Oil Sands under the agreement will vary with Western Oil Sands' commitment to the project. The initial license, related to use of the AHPP on heavy minerals derived from oil sands in Alberta, Canada, will terminate if Western Oil Sands fails to complete

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phase one and will convert to a non-exclusive license if Western Oil Sands commences phase two but fails to complete, or spend at least \$25 million in an effort to complete, phase two.

If Western Oil Sands completes phase one and commences phase two, Western Oil Sands' license will be expanded to include the right to use the AHPP for the production of titanium dioxide pigment and pigment-related products from oil sands resources, primary ore resources and titanium deposits in Canada and Minnesota and for the production of titanium dioxide pigment and pigment-related products from oil sands resources world wide. This expanded license will continue on an exclusive basis if Western Oil Sands completes phase two and completes, or spends at least \$50 million in an effort to complete, phase three. This expanded license will continue, but on a non-exclusive basis, if Western Oil Sands completes phase two but, after spending more than \$5 million but less than \$50 million on phase three, does not complete phase three. If Western Oil Sands does not commence, or spends less than \$5 million with respect to, phase three, the expanded license terminates.

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If commercialization occurs, Western Oil Sands is required to pay Altair royalties based on a percentage of net sales revenue from any production facility.

In addition to our work with Western Oil Sands, we have submitted proposals to five international minerals and energy resources companies to develop and license our titanium pigment production process. We have completed initial testing for a company located in the Pacific Rim and submitted a phase-two proposal for the economic evaluation of a demonstration titanium dioxide pigment plant that could be expanded to a full-scale plant with production capabilities of between 10,000 and 20,000 metric tons of titanium dioxide pigment per year. We have been informed that this proposal is under consideration and subject to due diligence evaluation. If the phase-two proposal is accepted in some form, we would expect to generate limited revenues in exchange for the testing and development work associated with the evaluation of a demonstration titanium dioxide plant. A licensing agreement associated with a full-scale plant may generate significant revenues in the long-term, but significant up-front revenues from such an agreement are unlikely.

We submitted phased development proposals for the testing and economic evaluation of our titanium pigment production technology to the other four minerals and energy resources companies during the first three quarters of 2003. We recently entered into a testing and development license with one of these companies, called Avireco and located in Vietnam, and anticipate that we may enter into additional testing agreements during 2004. Although we have been verbally informed that two hundred and fifty thousand dollars have now been authorized to begin the first phase of pilot plant testing during 2004, we have not received a formal work authorization. If the results of testing by one or more such companies are positive, we hope to enter into a long-term license agreement for regional exclusive use of the pigment technology. If one or more of such minerals and energy resources companies obtains such a license and subsequently constructs a full-scale production plant, we would expect to receive development fees and royalties over the long-term, but no significant up-front payments. We can provide no assurance that the results of any testing will be positive, that we will enter into a long-term license or that the licensee will construct a full-scale production plant in order to use our technology.

Proprietary Rights

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We have been awarded three US and international patents protecting this technology including: 1) Processing titaniferous ore to titanium dioxide pigment, 2) Processing aqueous titanium chloride solutions to ultrafine titanium dioxide and 3) Processing aqueous titanium solutions to titanium dioxide pigment.

### Catalyst Support and Electrode Structures for Titanium Metals

In July 2003 we entered into a memorandum of understanding (the "MOU") with Titanium Metals Corporation ("TIMET") to provide custom oxide feedstocks for a novel, four-year, titanium metal research program funded by the Department of Defense, Defense Advanced Research Projects Agency ("DARPA"). The MOU sets up a relationship under which TIMET and Altair will explore opportunities for collaboration and funding of development work in connection with the DARPA program. The DARPA program's goal is to lower the cost of titanium metal and titanium metal alloys to enable a broader market use. DARPA is specifically interested in lowering the cost to provide for a broader use in military applications such as aerospace and weapons systems.

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During 2003, we received \$9,000 in connection with the MOU agreement. In January 2004 we became a subcontractor for the DARPA program and were awarded a \$150,000 contract from TIMET to design and develop a titanium oxide electrode structure and provide TIMET optimized titanium oxide feedstock to produce 50 pounds of titanium metal per day in batch production demonstrations.

#### Key Features

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The DARPA program seeks to lower the cost of titanium metal and titanium metal alloys through the use of a new process for making titanium metal (the "FCC Cambridge Process") and thereby enable a broader market use and lower the cost of military applications. Under the terms of the MOU and subsequent DARPA subcontract, we will attempt to develop a low-cost manufacturing process for titanium dioxide pellets, critical to the successful commercialization of the FCC Cambridge process for production of titanium metal. Our unique process for making the titanium dioxide pellets may provide a superior feedstock for the FCC Cambridge process by enabling the process to work more efficiently.

#### Target Markets

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According to the AMPTIAC Quarterly, a Department of Defense-sponsored publication, current global production of titanium metal is approximately 50,000 tons per year at a market value of \$600 million. AMPTIAC estimates that, due to the current state of manufacturing, titanium is produced at only about 1/20th of its current potential world volume. It is widely believed that a reduction of cost in the manufacturing process will expand the use of titanium metal in a wider range of applications that include lightweight armored military vehicles, the manufacture of automotive components and components for utility plants, oil and gas drilling, and lightweight and durable consumer goods. Our intent is to develop a suitable process for making the titanium dioxide pellets used by the FCC Cambridge process but not ultimately to manufacture the pellets. We would most likely license the technology for manufacture of the titanium dioxide pellets to producers of metal using the FCC Cambridge Process or their suppliers.

#### Research, Testing and Development

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We have an active, funded research program underway with TIMET to optimize our product for use in their development-stage FCC Cambridge Process technology to manufacture low-cost titanium metal. Both our technology and the FCC Cambridge Process are in a development stage and are not expected to generate significant revenue for several years, if ever.

### Proprietary Rights

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We have been awarded one US patent protecting the catalyst and electrode structure technologies entitled "Method for producing catalyst structures".

### Pharmaceutical Products

#### RenaZorb(TM)

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In the second quarter of 2002, we initiated research and development efforts directed toward the utilization of nanomaterials in the pharmaceuticals industry. In July 2002, we announced the development of a new active pharmaceutical ingredient ("API") for the treatment of hyperphosphatemia

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(elevated serum phosphate levels) in patients undergoing kidney dialysis, as well as a new drug delivery system using inorganic ceramic nanomaterials. This API, given the name RenaZorb(TM), showed excellent capacity for phosphate removal in laboratory tests using standard in-vitro (laboratory) procedures. Animal testing of this product was initiated in late 2002 and was completed during the first quarter of 2003. Results of this pre-clinical animal testing confirmed the efficacy for phosphate binding. We plan to conduct additional animal testing of RenaZorb(TM) in animals starting in March, 2004. The testing program is designed to directly compare RenaZorb(TM) with Renagel(TM) (Genzyme) and Fosrenol (Shire Pharmaceuticals) with regard to phosphate binding per gram of active drug. The testing is designed to determine whether, as suggested by laboratory results and literature data, RenaZorb(TM) could require approximately 30% less drug to bind an equivalent amount of phosphate compared to either Renagel or Fosrenol. Generally, lower drug dosages often result in smaller tablet or capsules resulting in better patient compliance and perhaps lower side effects. The test protocol for the animal testing that has been scheduled was reviewed by a major pharmaceutical company that has expressed interest in licensing RenaZorb(TM). We also expect to submit an Investigational New Drug application to the FDA that provides data showing that it is reasonable to begin tests of RenaZorb(TM) on humans. We continue to seek business relationships with pharmaceutical companies that can conduct additional testing and development, seek necessary FDA approvals and take the necessary steps to bring the new pharmaceutical ingredient and drug delivery system to market.

### Key Features

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RenaZorb(TM) is a highly active, lanthanum-based nanomaterial with low intestinal solubility and excellent in vitro phosphate binding. Animal testing of RenaZorb(TM) has been conducted in dogs and rats, but no human tests have yet been conducted. Based upon our initial laboratory and animal testing, we believe that RenaZorb(TM) may offer the following advantages over competing products:

- o Lower dosage requirements because of better phosphate binding per gram of drug compared with existing or currently proposed drugs;

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- o Fewer and less severe side effects because of less gassing and lower dosage;
- o Better patient compliance because of fewer and smaller tablets; and
- o Lower cost than existing or proposed prescription drugs in this therapeutic category.

### Target Markets

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Our pharmaceutical product RenaZorb(TM) was developed to treat elevated phosphate levels in kidney dialysis patients. According to information published by AnorMED, the worldwide market for phosphate binders for chronic renal failure patients is approximately \$400 million to \$600 million annually. It is not our intent to manufacture pharmaceuticals but, rather, to grant licenses to pharmaceutical companies for the manufacture and sale of products developed using our technology. We are seeking business relationships with pharmaceutical companies that can conduct additional testing and development using their pharmaceutical active ingredients to coat our experimental drug delivery system and then seek necessary FDA approvals and take the other steps necessary to bring the combined drug delivery system to market.

### Research, Testing and Development

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We have performed laboratory (in vitro) tests using standard techniques to determine phosphate binding efficiencies and kinetics for a wide range of lanthanum compounds. We have entered into 12 confidentiality agreements relating

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to the development/licensing of RenaZorb(TM). Animal testing of RenaZorb(TM) began in December 2002 and was conducted by two pharmaceutical companies, one of which tested in dogs and both of which tested in rats. Results of these tests were made available in March 2003, and the results showed positive indications of phosphate binding. RenaZorb(TM) must undergo human testing and receive FDA approval before it could be approved for marketing. Human testing typically takes 1 to 2 years and, if merited by the results of animal testing, the process of seeking FDA approval typically takes between 3 and 5 years. We believe, however, that FDA approval of Fosrenol(TM), a chemically related drug, could accelerate the approval process for RenaZorb(TM).

### Proprietary Rights

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We have applied for patent protection for the manufacture of RenaZorb(TM) and a wide range of similar compounds for the application as an orally administered phosphate binder for patients suffering from end stage renal disease.

### Competition

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Existing phosphate binders include Tums(TM) antacid, which contains calcium carbonate, and also aluminum hydroxide-based products such as Gaviscon(TM) manufactured by Glaxo Smith Kline, both of which are available over the counter, as well as Renagel(TM) (chemical name sevelmer) manufactured by Genzyme, which is available only by prescription. In addition, Fosrenol(TM), another lanthanum based active pharmaceutical agent developed by Shire Pharmaceuticals ("Shire") of the UK, is awaiting United States FDA and foreign regulatory approvals. Shire announced in March 2003 that it had received an approvable letter from the FDA for Fosrenol(TM). The approvable letter requested

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additional data and analysis from Shire. FDA approval is expected in the second quarter of 2004.

While over the counter phosphate binders are relatively inexpensive, they have several disadvantages. Calcium carbonate-containing phosphate binders, such as Tums(TM), in high doses, may cause increased blood pressure and increased risk of cardiovascular disease and is generally not recommended for long-term use by dialysis patients. With prolonged use, aluminum hydroxide-based phosphate binders, such as Gaviscon(TM), may cause toxic neurological effects and are generally avoided by physicians. Aluminum dementia has been widely reported in kidney dialysis patients using these products.

The prescription phosphate binder Renagel(TM) is relatively expensive (approximately \$1,300 per patient per year), has a high dosage requirement (2 x 800 mg or 4 x 400 mg capsules/tablets three times per day) and water intake is required. The most common side effects related to the use of Renagel(TM) include nausea (7% of patients), constipation (2% of patients), diarrhea (4% of patients), gas or bloating (4% of patients) and heartburn or indigestion (5% patients). Renagel is the only prescription non-calcium phosphate binder currently approved by the United States FDA.

Fosrenol(TM) (LCTH), for which US FDA approval is pending, is expected to be marketed as a chewable tablet with a proposed dosage of 1.5 to 3.0 grams active drug per day. As with all medicines, Fosrenol(TM) will probably display some side effects but these are expected to be minor. It has been reported that the use of Fosrenol does increase serum lanthanum levels compared with levels in patients taking a placebo. RenaZorb(TM), which is nanotechnology based, is expected to be developed in a tablet or capsule dosage form with a projected dosage of 0.6 to 2.0 grams per day. Although we have done no human testing on RenaZorb(TM), we believe RenaZorb(TM) has the potential for fewer side effects,

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lower cost and better patient compliance. We base these possible advantages upon in vitro testing conducted by Altair in which RenaZorb was compared to LCTH, the active chemical in Fosrenol. Our in vitro testing showed that RenaZorb binds at least 30% more phosphate per gram of drug than LCTH, therefore requiring a lower dose. Lower dose often correlates well with a reduction of observed side effects in chemically related homologous compounds. In all animal testing conducted on RenaZorb(TM), which to date included three separate testing protocols, no adverse side effects were reported. In all testing, RenaZorb(TM) was administered to the animals by mixing the drug with the food they eat. In no case was there any reduction in the amount of food the animals ate when RenaZorb(TM) was mixed with the food. The drug appears to be tasteless.

Both RenaZorb(TM) and Fosrenol(TM) involve the binding of phosphate by lanthanum compounds. In fact, the end product of the binding mechanism is identical; lanthanum orthophosphate is formed. Based on laboratory tests conducted by Altair comparing RenaZorb(TM) with LCTH, the active ingredient in Fosrenol(TM), RenaZorb(TM) required 30% less drug to bind the same amount of phosphate and shows less lanthanum going into solution in simulated stomach fluid at pH values of 3.0 and 4.5. In addition, in Altair's testing, using methods published by AnorMED, RenaZorb(TM) reacts with phosphate more rapidly, possibly because of its high nanomaterials-derived surface area. In 20 minute simulated stomach acid tests conducted by Altair, RenaZorb(TM) absorbed approximately 140 mg of phosphate and LCTH absorbed approximately 60 mg of phosphate.

Drug Delivery - TiNano Sphere(TM)  
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Our proposed drug delivery system involves depositing drugs on or

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inside hollow "wiffle ball" spheres made of titanium dioxide and other metal oxide nanomaterials.

Because of the early stage of development of this drug delivery system, we are unable to state with any certainty how (or if) such drug delivery system would be used and, if used, what the uses for such system would be and what the comparative advantages, side effects and other aspects of such drug delivery system would be. Nevertheless, based upon our early testing, we believe that the following uses of a nanomaterials-based drug delivery system are feasible:

- o New delivery forms for existing drugs;
- o Delivery methods for new drugs;
- o Delivery of hard to dissolve drugs;
- o Delivery of sustained release drugs;
- o Delivery of dual action drugs;
- o Delivery of narcotics in a system that is non-defeatable and reduces the chances of abuse; and
- o Delivery of other Class 4 (restricted) drugs

### Key Features

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Altair's hollow sphere "wiffle ball" like structures can deliver active chemicals or drugs in a sustained release fashion because the active component can be "mounted" on both the outside surface and inside the hollow ball structure. The dissolution and availability of the surface-mounted active component will be different than the active component inside the hollow spheres. Material inside the hollow structure will be released slowly compared to surface-mounted material. An additional feature of Altair's nanomaterials based hollow "wiffle ball" structures is that two different active substances could be mounted, one inside the hollow spheres and another on the surface. This allows the possibility for dual action pharmaceuticals to be developed using this technology.

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### Target Markets

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New Delivery Forms and New Drugs. Our drug delivery system may be useful in connection with drugs whose patents are expiring. On average, patented drugs generate \$200 to \$400 million in sales, with average sales margins of 90% to 95%. The margin for generic drugs drops, however, to 20% to 30% or less. New dosage forms are patentable and, if patented, may extend the drug's patent protection for 20 years. In addition, new dosage forms may reduce the cost of producing various drugs, increasing margins if exclusive or generic, and may reduce undesirable side effects.

Hard to Dissolve Drugs. Our drug delivery system may also be used to deliver drugs that work in the gastrointestinal tract without being absorbed. These types of drugs remove unwanted materials from the digestive systems. Possible uses for these types of drugs include lowering cholesterol. Another use for our drug delivery system would be for highly insoluble drugs that need greater absorption to enter the blood stream. The significant increase in surface area of our titanium dioxide micro-spheres may allow greater drug absorption. This greater absorption may also be used to redevelop previously failed candidate drug compounds that were unsuccessful because of inadequate absorption rates or amounts.

Sustained Release Drugs and Dual Action Drugs. We also believe our system may be useful in connection with the sustained release of fungicides,

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including the following applications:

- o Anti-fungal drugs;
- o Topical anti-fungal drugs with sustained release;
- o Tile cleaning products (mold, mildew) with residual action;
- o Cosmetics (preservatives);
- o Mildew prevention in paints and coatings;
- o Fabric mildew protection;
- o Exterior cleaning systems for removal and prevention of mold, mildew and green algae;
- o Wood protection and preservation; and
- o UV protection of wood.

### Research, Testing and Development

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To date, our research on drug delivery systems involving the use of nanomaterials has been limited to coating known drugs on the surface of titanium dioxide nanomaterials. We have not done any animal or human testing with our new drug delivery systems and do not have the expertise, resources or capacity to complete such testing. We are currently seeking business relationships with pharmaceutical companies that can conduct additional testing and development using their pharmaceutical active ingredients to coat our nanomaterials and then seek necessary FDA approvals and take the other steps necessary to bring the combined drug delivery system to market.

### Proprietary Rights

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We have filed two patent applications regarding this field including:  
1) "Pharmaceutical composition and structure containing rare earth porous particles" and 2) "Pharmaceutical composition with controlled surface area."

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## Altium(TM) (Nanomaterials) Products

### General

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For the year ended December 31, 2003, we generated \$17,602 of revenue through sales of titanium dioxide, lithium titanate spinel and yttria stabilized zirconia nanomaterials and other materials. These products were used principally in thermal spray and catalyst applications and for developmental work on battery materials. We are also developing nanomaterials products that may be useful in controlling algae in swimming pools, in cosmetics, in self-cleaning and sanitizing and in environmental purification.

### Altium(TM) Thermal Spray Grade Powders (TSGP)

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We have developed thermal spray grade nanomaterial powders that can be applied on the surface of metals by standard thermal "gunning" techniques. We have sold approximately one ton of our powders to F.W. Gartner Thermal Spraying Company for thermal application onto heavy-duty ball valves. Ball valves made of solid titanium alloys have been introduced to control the flow and containment of hot acidic slurry solutions in high pressure acid leach technologies applied to metal extraction of nickel/cobalt ores. To extend the life of these critical components, a ceramic coating is applied via a thermal spray process. These coatings must be impervious to the acidic solution and provide protection against wear from the abrasive solid particles. F.W. Gartner's use of our nanomaterial powders application was delayed due to technical and political

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problems associated with other aspects of the mining prospect. Thermal spray products have use in a variety of additional harsh environment applications such as aerospace propulsion systems, blades and vanes, medical applications, textile and paper machinery, boilers for power plants, waste incinerators, oil and gas industry, etc.

### Key Features

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Our nanomaterials coatings possess enhanced toughness and increased hardness; these features contribute to superior abrasive wear resistance over the conventional coating of the same material. The nanomaterial coatings also demonstrate improved porosity over standard thermal spray powders making them more resistant to acid attack. We believe that improvements will enable longer periods between maintenance, repairs and examinations of these critical components therefore improving the economics of the industrial application.

### Target Markets

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Altair has executed an agency agreement with Global Strategy, Inc., an international business development consultant, to seek business collaborations and identify markets for Altium(TM) Thermal Spray Grade Powders. These markets include companies that service, supply equipment to, and sell powders to thermal spray shops.

### Research, Testing and Development

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F.W. Gartner Thermal Spraying Company, Mogas Industries, Inc. and Perpetual Technologies researchers have reported on the use of our nanomaterial powders in tests to determine the bond strength, corrosion and abrasion resistance and the porosity after applying ours and competitors' materials on metal using Vacuum Plasma Spray and Atmosphere Plasma Spray. The results of

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these researchers' tests indicate that our novel coatings possess enhanced toughness and increased hardness; these features contribute to its superior abrasive wear resistance over the conventional coating of the same material. Ball valves with the new coatings have been introduced into different high pressure acid leach autoclave installations over the past two years.

In November 2003, we contracted the National Research Council of Canada to demonstrate and test and evaluate our powders and prepare specification sheets of standard thermal spray gunning instructions to advise specialty thermal spray shops how to apply our material. The goal of the project is to produce titania coatings by thermal spraying using nano-structured titania powders developed by Altair and compare and contrast to conventional titania powders. The coatings will be characterized and evaluated to determine various characteristics, including porosity and abrasion resistance. This report is expected to be completed in the first quarter of 2004 and will be used to market our powders.

### Proprietary Rights

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Our thermal spray grade powders are protected by U.S. Patent titled, "Processing aqueous titanium chloride solutions to Ultrafine titanium dioxide".

Altium(TM) Lithium Titanate Spinel

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We have developed technologies to manufacture nano-sized specialty materials to make electrodes for lithium ion batteries that will allow very rapid charging and discharging of these types of batteries. We believe that advancements in materials availability will ultimately be paired with advancements in the electrolyte's ability to carry high current density and result in batteries that can yield very high power and recharge in only a few minutes. Altair has demonstrated nanomaterials that can accept a full charge within less than one minute. Altair has now prepared special nano-sized samples of lithium titanate, lithium manganate, and lithium cobaltate. Each of these materials, in large crystalline sizes, is currently used by the battery industry.

Key Features

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The large specific surface area of Altium(TM) Lithium Titanate Spinel nanoparticle material enables very rapid charge and discharge rates. The material is durable and is projected to last for thousands of charging cycles.

Target Markets

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Batteries constitute a \$42 billion market worldwide according to information supplied by Telcordia (Subsidiary of SAI; Science Applications International). Of that, around \$6 billion is rechargeable and \$3 billion includes the market that has, and continues to be taken by, lithium ion batteries. These lithium ion rechargeable batteries do not develop memory and fail and are expected to gradually increase their share of the world market. New developments indicate that high energy batteries of this type will ultimately be developed for application as replacements for lead acid batteries in automobiles, electric vehicles, and hybrid automobiles where direct electrical energy for starting and passing will assist the gasoline engines. Also, the development of fuel cells and solar generation systems will require enhanced battery capabilities.

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Research, Testing and Development

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We have completed a series of tests in collaboration with the EPFL Switzerland, Heyrovsky Institute in Prague, Czech Republic and the Xoliox subsidiary of Ntera, a display and battery technology development company. A joint patent was filed with Ntera related to electrode performance of nanoparticles made by Altair. We recently extended a marketing agreement with Nissho Iwai Americas Corporation for product marketing in Japan to leading lithium ion battery manufacturers. In addition, we have added the capability to make test electrodes of lithium titanates, manganates, and cobaltates and have developed a testing program for electrode performance at the University of Nevada, Reno.

Proprietary Rights

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We have filed three patent applications including 1) "Process for making lithium titanate", 2) "High Performance Lithium Titanium Spinel for Electrode Material", and 3) "Process for making nano-sized and sub-micron sized lithium-transition metal oxides". We have also filed a joint patent on

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nano-lithium titanate performance with Ntera.

Nanocheck (TM)

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We have developed a nano-phase compound that has an affinity for many metal oxy anions including phosphate, arsenate, arsenite, and the like. Immediate applications for this material include: 1) phosphate removal from swimming pool and aquariums to arrest the growth of bacteria and 2) arsenic removal from drinking water.

The correct management of a swimming pool is a difficult and time-consuming task. The chemical balance of the water must be carefully monitored to ensure that it does not become fouled with algae, or grow too much bacteria. Either of these will make the water smell and look unpleasant, and can be a serious health hazard. Nanocheck(TM) safely deprives algae of the phosphate nutrients required for them to reproduce and therefore reduces algae formation.

The Safe Drinking Water Act required the EPA to revise the existing 50 parts per billion (ppb) standard for arsenic in drinking water. On January 22, 2001 the EPA adopted a new standard, and public water systems must comply with the 10 ppb standard beginning January 23, 2006. Significantly high arsenic levels are found in some rural Western U.S. communities that rely on well water as a drinking water source. Low-cost, point-of-entry or point-of-use treatments are required to comply with the new standard. We expect that Nanocheck could be added to these point-of-entry or point-of-use treatment devices to lower arsenic levels to compliance levels. Nanocheck is a non-regeneratable material that would require replacement after a period of time.

Key Feature

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Nanocheck(TM) is a lanthanum based compound that can be used to treat water for the removal of a wide range of deleterious impurities. It has no reported human health hazards and works effectively in existing filtration units without the need of purchasing additional equipment.

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Target Markets

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We are attempting to license and sell the technology to manufacture Nanocheck(TM) to companies that already sell products into the water treatment market including pool and spa chemical companies and drinking water treatment companies.

Research, Testing and Development

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We have conducted in-house tests for phosphate removal in swimming pool simulations, and a pool and spa chemical company has performed materials testing that shows effective phosphate removal and high kinetics. Larger scale swimming pool tests are expected to be performed in the summer months beginning June 2004. We also expect to perform an arsenic removal study during the second quarter of 2004.

Proprietary Rights

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We have filed two U.S. patent applications for the application of this product entitled "Rare Earth Compositions and Structures for Removing Phosphates



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from Water" and "Ceramic structure for removing toxic elements from water."

### Solid Oxide Fuel Cell ("SOFC") Materials

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Altair has focused its efforts in the fuel cell area on the development of materials for the solid oxide fuel cell market. Our materials are novel precursor ceramic materials used in the construction of a solid oxide fuel cell. Virtually every ceramic material used as functional components of the fuel conversion element of this type of cell can be manufactured by Altair's basic process for making nanomaterials. Raw materials used by the Altair process are in the category of commodity chemicals available on a worldwide basis. Altair is engaged in a process of attempting to demonstrate that 1) using its proprietary nanotechnology, the cost of raw materials for a solid oxide fuel cell can be reduced to below \$20 per kilowatt. 2) using the specially prepared nanomaterials, all fuel cell elements can be made from tape cast components, and 3) several fuel cells can be stacked in a single fuel conversion unit. Stages 1 and 2 have been demonstrated in concept and are being improved, and stage 3 is under development now. Altair has recently operated its fuel cell with hydrogen as a fuel, and the final stages of adding a compatible ceramic catalyst to the cell are being completed by MIT under contract with Altair. The catalyst developed by MIT is intended to overcome the high cost of the platinum catalyst in the solid oxide fuel cell.

#### Key Feature

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We have developed low-cost solid oxide fuel cell materials using our proprietary nanomaterials manufacturing technology to produce the appropriate physical and chemical characteristics required for our low-cost monolithic fabrication design.

#### Research, Testing and Development

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We have successfully completed our single cell program, and we do not have any ongoing research or development activities specifically for this program other than the work of adding a compatible ceramic catalyst that is being performed by MIT. The fundamental research is complete and testing confirmed the feasibility of our concept. The project is on hold while Altair searches for partners and/or funding to help defer further costs of development.

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#### Proprietary Rights

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We have been awarded one US patent for the application of this product entitled "Method for producing catalyst structures."

### Nanosensors Program

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In September 2003, we entered into an agreement with Western Michigan University ("WMU") to provide research services and materials to support research involving a technology used in the detection of chemical, biological and radiological agents. The teaming/research agreement with WMU, funded by the Department of Energy, provides for total payments to Altair of \$356,500 over a two-year period. During 2003, we received \$36,600 in connection with this

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research agreement. In December 2003, WMU was awarded a second, one-year Department of Energy grant for which Altair will also participate as a subcontractor. The project is a collaboration involving WMU, Altair and the University of Nevada, Reno. The \$2 million was included in the Omnibus Appropriations Bill passed by the U.S. House of Representatives December 9, 2003. WMU and Altair have a joint partnership for seeking Federal support for nanotechnology research and development and will utilize the new grant funding equally.

### Altium(TM) TiNano40(TM)

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We have developed a line of titanium dioxide nanomaterial products that cover a range of chemical and physical characteristics suitable for a variety of applications that include cosmetics, photocatalysts, thermal spray powders, self-cleaning, solar cells, chemical mechanical planarization, plastics and environmental remediation.

### Research, Testing and Development

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We have completed developing the TiNano40 series (40 nanometer nominal particle size) and are now focusing on TiNano20 and TiNano10 products that have nominal particle size characteristics of 20 nanometers and 10 nanometers, respectively. The TiNano20 product series is being developed in conjunction with our research activities with Western Michigan University. It is also being used in test solar cells. Our TiNano10 product has extremely high specific surface area and applications may include commercial use as photocatalysts and catalyst support.

### Proprietary Rights

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We have been awarded one US patent protecting this technology titled, "Processing Aqueous Titanium Chloride Solutions to Ultrafine Titanium Dioxide."

### Tennessee Mineral Property

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The Tennessee mineral property presently consists of approximately 3,100 acres of land containing fine, heavy minerals that we have leased in or near Camden, Tennessee since 1996.

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Between 1996 and 2000, we conducted, and hired consultants to conduct, various tests and pre-feasibility studies on approximately 14,000 acres of property in Tennessee on which we held mineral leases. Based on the positive results of initial testing and reports, we designed and commissioned construction of a spiral-based pilot plant for testing at the Tennessee mineral property in 2000. The plant includes dedicated electrical service, a lay-down area for heavy mineral sand samples, and a combined water storage/sand placement structure. Plant elements include a feed system, conveyors, trommel, two stages of cyclones, and a five-stage spiral plant. During 2001, we excavated 970 tons of material from four sites on the Tennessee mineral property and processed it through the test facility. Plant operations closely approximated design expectations; we incurred no significant operating problems, and test results were generally consistent with expectations. During 2002 and 2003, we significantly curtailed our testing on the Tennessee mineral property in order to conserve capital. During that same period, we actively sought to enter into joint venture or other relationships with larger mining operations that could

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provide capital and other resources necessary to complete testing of the Tennessee mineral property and, if merited, develop a mine on the property. Such efforts were not successful.

During late 2003, our board of directors determined to more narrowly focus our limited resources on the development and exploitation of our nanomaterials and titanium dioxide pigment technology and to limit our expenditures on our centrifugal jig and our Tennessee mineral property to the minimum amount necessary to preserve their basic value for the short term. Consistent with this determination, during 2003, we assessed the properties under lease to determine whether we could reduce lease costs while maintaining a viable quantity of leased acreage. As a result of our assessment, we identified 3,100 acres that represent the most important core holdings to support a potential commercial mining venture. We renegotiated the leases with respect to such 3,100 acres in order to extend the term of the leases and reduce the lease payments. The leases with respect to the remaining acres are terminable at any time by the property owners in light of our decision not to make any further lease payments with respect to such leases.

For 2004, our board of directors approved a minimum workscope and budget for maintaining the Tennessee mineral property, making sample products for consumer testing and continuing baseline samples for permitting purposes. In the meantime, we are consolidating the assets related to the Tennessee mineral property, together with those related to the Altair jig, into (or under) a single corporation with the intent of causing such corporation to become an SEC reporting company and, subject to shareholder approval, distributing substantially all of the shares of common stock of such corporation to our shareholders.

The Altair Jig

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Description of the Altair jig

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The Altair Jig segregates particles based on differences in their specific gravity. A conventional jig separates a slurry of mineral particles as it flows across the top of a screen. Water is periodically pulsed up through the screen to eliminate interparticle friction and allow differential settling according to the variations in the net specific gravities of the ore. Heavier minerals are allowed to pass downward through the screen while lighter materials flow across the screen to a discharge point. The Altair jig operates according to conventional jig principles except that the screen surface is cylindrical and is rotated to subject the particles to centrifugal forces. As currently designed, materials to be processed by the Altair jig are introduced into the top of the Altair jig in a slurry mix with water. The slurry is diffused across

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the top of the interior of a vertical cylindrical screen which is rotating. Water is pulsed through the screen allowing differential separation in the slurry material. Heavy particles pass through the screen, are collected, and exit the machine in a "concentrate" stream. Lighter particles flow down the screen interior, are collected and exit out the bottom of the machine in a separate "tails" stream. Use of the Altair jig requires no chemical additives. In operation, the Altair jig utilizes a combination of standard mechanical jig and centrifugal technologies. The Altair jig is of simple mechanical design with few wear surfaces. To compete as a viable commercial unit, the Altair jig must perform reliably over long time periods. The 600+ hours that we have tested and operated the Series 30 Jig is insufficient to give assurance as to the length of the operating life of the Altair jig.

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Preliminary demonstration tests conducted by Altair and a previous owner of the Altair jig suggest that the Altair jig could be commercially useful in a number of applications, including:

- o Recovery of ultra fine gold from waste streams or former tailings;
- o Recovery of zircon, rutile, ilmenite, leucoxene, and other valuable fractions from heavy mineral sand operations;
- o Sulfur and ash removal from fine coal;
- o Recovery of tin and iron ore fines from fine tailings;
- o Concentration of heavy minerals, such as anatase, apatite, barite, cassiterite, chromite, columbite, industrial diamonds, fluorite, various garnets, monazite, tantalite and wolframite; and
- o Remediation of nuclear waste.

Initial patents related to the concept of the Altair jig as a whole were issued in the United States, South Africa, United Kingdom, Australia and Canada. These patents expired on various dates between May 1999 and December 2000. A series of second patents with respect to the process by which water is pulsed through the cylindrical screen on the Altair jig, a critical component differentiating the Altair jig from competing products, have been issued in the United States, South Africa, Japan, Europe, Australia, Canada, United Kingdom, Germany and France. These patents expire on various dates between January 2010 and January 2011. A third series of patents with respect to an efficiency enhancing component of the Altair jig have been issued in the United States, Europe, Australia, Japan, South Africa, Canada and Brazil. These patents have expiration dates between April and November 2018.

### Technology License Agreement

In September 2003, we entered into a technology license agreement with Bateman Luxembourg SA ("Bateman") for the manufacture, installation and operation of the Altair jig. After an initial six-month evaluation period that will conclude in August 2004, Bateman is expected to have exclusive use of the Altair jig for specifically identified applications in selected territories throughout the world. If and when Bateman utilizes the Altair jig in commercial applications, it is required to compensate Altair through a licensing fee for each project managed by Bateman that utilizes the Altair jig. The compensation, if any, is based on Bateman's profits generated through utilization of the Altair jig and will vary based on the size and scope of the individual projects.

### Disposition of the Altair jig

Notwithstanding the execution of the Bateman agreement, during late 2003, our board of directors determined to more narrowly focus our limited resources on the development and exploitation of our nanomaterials and titanium dioxide pigment technology and to limit our expenditures on the Altair jig and our Tennessee mineral property to the minimum amount necessary to preserve their basic value for the short term. Consistent with this determination, we are

consolidating the assets related to the Altair jig, together with the assets related to the Tennessee mineral property, into (or under) a single corporation with the intent of causing such corporation to become an SEC reporting company and, subject to shareholder approval, distributing substantially all of the shares of common stock of such corporation to our shareholders.

### Government Regulation and Environmental Concerns

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Government Regulation

Most of our current and proposed activities are subject to a number of federal, state, and local laws and regulations concerning machine safety and environmental protection. Such laws include, without limitation, the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response Compensation Liability Act. Such laws require that we take steps to, among other things, maintain air and water quality standards, protect threatened, endangered and other species of wildlife and vegetation, preserve certain cultural resources, and reclaim exploration, mining and processing sites.

Compliance with federal, state, or local laws or regulations represents a small part of our present budget. If we fail to comply with any such laws or regulations, however, a government entity may levy a fine on us or require us to take costly measures to ensure compliance. Any such fine or expenditure may adversely affect our development.

We are committed to complying with and, to our knowledge, are in compliance with, all governmental regulations. We cannot predict the extent to which future legislation and regulation could cause us to incur additional operating expenses, capital expenditures, and/or restrictions and delays in the development of our products and properties.

Environmental Regulation and Liability

Any proposed processing operation at our main operating facility in Reno, Nevada or any other property we use will be subject to federal, state, and local environmental laws. In addition, our operations on the Tennessee mineral property have been, and will continue to be, subject to such environmental laws. Under such laws, we may be jointly and severally liable with prior property owners for the treatment, cleanup, remediation, and/or removal of substances discovered at any other property used by us, to the extent the substances are deemed by the federal and/or state government to be toxic or hazardous ("Hazardous Substances"). Courts or government agencies may impose liability for, among other things, the improper release, discharge, storage, use, disposal, or transportation of Hazardous Substances. We use Hazardous Substances in our testing and operations and, although we employ all reasonably practicable safeguards to prevent any liability under applicable laws relating to Hazardous Substances, companies engaged in materials production are inherently subject to substantial risk that environmental remediation will be required.

Subsidiaries

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Altair Nanotechnologies Inc. was incorporated under the laws of the province of Ontario, Canada in April 1973 under the name Diversified Mines Limited, which was subsequently changed to Tex-U.S. Oil & Gas Inc. in February 1981, then to Orex Resources Ltd. in November 1986, then to Carlin Gold Company Inc. in July 1988, then to Altair International Gold Inc. in March 1994, then to Altair International Inc. in November 1996 and then to Altair Nanotechnologies

Inc. in July 2002. In July 2002, Altair Nanotechnologies Inc. redomesticated from the Ontario Business Corporations Act to Canada's federal corporate statutes, the Canada Business Corporations Act.

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Altair US Holdings, Inc. was incorporated by Altair in December 2003 for the purpose of facilitating a corporate restructuring and consolidation of all U.S. subsidiaries under a U.S. holding company. At the completion of the corporate restructuring, Fine Gold, MRS and Altair Nanomaterials, Inc. were direct wholly-owned subsidiaries of Altair US Holdings, Inc., while Tennessee Valley Titanium, Inc. remained a wholly-owned subsidiary of MRS.

Fine Gold was acquired by Altair in April 1994. Fine Gold has earned no operating revenues to date. Fine Gold acquired the intellectual property associated with the Altair jig in 1996. Altair intends that Fine Gold will hold and maintain jig technology rights, including patents.

MRS was incorporated by Altair in April, 1987 and was formerly known as Carlin Gold Company. MRS previously has been involved in the exploration for minerals on unpatented mining claims in Nevada, Oregon and California. All mining claims have now been abandoned. MRS currently holds, directly or indirectly, all of Altair's interest in the Tennessee mineral property. Its wholly-owned subsidiary, Tennessee Valley Titanium, does not presently have any assets or operations.

Altair Nanomaterials, Inc. was incorporated in 1998 as a wholly-owned subsidiary of MRS and holds all of the Company's interest in our nanomaterials and titanium dioxide pigment technology and related assets.

### Corporate History

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Altair Nanotechnologies Inc. was incorporated under the laws of the Province of Ontario, Canada in April 1973 for the purpose of acquiring and exploring mineral properties. It was redomesticated in July 2002 from the Business Corporations Act (Ontario) to the Canada Business Corporations Act, a change which causes Altair to be governed by Canada's federal corporate statute. The change reduced the requirement for resident Canadian directors from 50% to 25% of the board of directors, which gives us greater flexibility in selecting qualified nominees to our board.

During the period from inception through 1994, we acquired and explored multiple mineral properties. In each case, sub-economic mineralization was encountered and the exploration was abandoned.

Since 1996, we have leased mineral property near Camden, Tennessee and owned the rights to the Altair jig. However, as discussed above, our board of directors has determined to more narrowly focus our limited resources on the development and exploitation of our nanomaterials and titanium dioxide pigment technology and to limit our expenditures on our centrifugal jig and our Tennessee mineral property to the minimum amount necessary to preserve their basic value for the short term as we assess viability and desirability of various strategic alternatives for disposing of the Tennessee mineral property and the Altair jig.

In November 1999, we acquired all the rights of BHP in the nanomaterials and titanium dioxide pigment technologies and the nanomaterials and titanium dioxide pigment assets from BHP. We are employing the nanomaterials and titanium dioxide pigment technology as a platform for the sale of contract services, intellectual property licenses and for the production and sale of metal oxide nanoparticles in various applications.

We have experienced an operating loss in every year of operation. In

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the fiscal year ended December 31, 2003, we experienced a net loss of \$6,237,939.

### Employees

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The business of Altair is currently managed by Dr. William P. Long, Chief Executive Officer of the Company, Dr. Rudi E. Moerck, President of the Company and Mr. Douglas Ellsworth, Senior Vice President of the Company and President of Altair Nanomaterials, Inc. In addition, we employ a Chief Financial Officer, twelve employees devoted principally to research and development, four operating employees and four clerical employees. Aside from Dr. Long and the Chief Financial Officer, we have no employment agreements with any of our personnel.

During 2004, we expect to hire 5-7 additional employees, principally scientific and technical staff, to assist with research, development and production work.

### Enforceability of Civil Liabilities Against Foreign Persons

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We are a Canadian corporation, and two of our directors are residents of Canada. In addition, certain of our experts (including Canadian legal counsel) are located in Canada. As a result, investors may be unable to effect service of process upon such persons within the United States and may be unable to enforce court judgments against such persons predicated upon civil liability provisions of the United States securities laws. It is uncertain whether Canadian courts would (i) enforce judgments of United States courts obtained against us or such directors, officers or experts predicated upon the civil liability provisions of United States securities laws or (ii) impose liability in original actions against Altair or its directors, officers or experts predicated upon United States securities laws.

### Forward-looking Statements

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This Form 10-K contains various forward-looking statements. Such statements can be identified by the use of the forward-looking words "anticipate," "estimate," "project," "likely," "believe," "intend," "expect," or similar words. These statements discuss future expectations, contain projections regarding future developments, operations, or financial conditions, or state other forward-looking information. When considering such forward-looking statements, you should keep in mind the risk factors noted in the following section and other cautionary statements throughout this Form 10-K and our other filings with the Commission. You should also keep in mind that all forward-looking statements are based on management's existing beliefs about present and future events outside of management's control and on assumptions that may prove to be incorrect. If one or more risks identified in this Form 10-K or any other applicable filings materializes, or any other underlying assumptions prove incorrect, our actual results may vary materially from those anticipated, estimated, projected, or intended.

Among the key factors that may have a direct bearing on our operating results are risks and uncertainties described under "Factors That May Affect Future Results," including those attributable to the absence of significant operating revenues, the absence of profits, risks related to our proposed development and exploitation of our nanomaterials and titanium dioxide pigment technology and nanomaterials and titanium dioxide pigment assets and uncertainties regarding our ability to obtain capital sufficient to continue our operations and pursue our proposed business strategy.

Factors that May Affect Future Results  
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We have not generated any substantial operating revenues and may not ever generate substantial revenues.

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To date, we have not generated substantial revenues from operations. As of December 31, 2003, we have generated \$340,892 of revenues from our nanomaterials and titanium dioxide pigment technology and \$28,270 from the use of our centrifugal jig in consulting contracts. We have not generated any revenue from our Tennessee mineral property. We believe that our nanomaterials and titanium dioxide pigment technology is the only one of our three lines of business that may generate significant revenues in the foreseeable future. Although we currently have approximately \$1.1 million in unfulfilled contractual commitments, such commitments primarily relate to our provision of research and development services or to sales of products for experimental purposes. We have no sales or other commitments with respect to on-going revenues from our nanomaterials and titanium dioxide pigment technology and can provide no assurance that we will generate additional revenues.

We may continue to experience significant losses from operations.

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We have experienced a loss from operations in every fiscal year since our inception. Our losses from operations were \$5,785,210 in 2003 and \$7,856,711 in 2002. We will continue to experience a net operating loss until, and if, one of the applications of our nanomaterials and titanium dioxide pigment technology begins generating significant revenues. Even if any or all applications of the nanomaterials and titanium dioxide pigment technology begin generating significant revenues, the revenues may not exceed our costs of production and operating expenses. We may not ever realize a profit from operations.

We may not be able to raise sufficient capital to meet future obligations.

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As of February 25, 2004, we had \$11.9 million in cash, an amount sufficient to fund our ongoing operations until December 31, 2006 at current working capital expenditure levels. However, we may use our existing capital sooner than projected in connection with an unanticipated transaction, litigation or another unplanned event. We may also use more capital than projected as we expand our research, development and marketing efforts. Unless we experience a significant increase in revenue, we will need to raise significant amounts of additional capital in the future in order to sustain our ongoing operations, continue unfinished testing and additional development work and, if certain of our products have been commercialized, produce and market such products.

We may not be able to obtain the amount of additional capital needed or may be forced to pay an extremely high price for capital. Factors affecting the availability and price of capital may include the following:

- o market factors affecting the availability and cost of capital generally;
- o the price, volatility and trading volume of our shares of common stock;
- o our financial results, particularly the amount of revenue we are generating from operations;
- o the amount of our capital needs;
- o the market's perception of nanotechnology and/or chemical stocks;
- o the economics of projects being pursued;



- o the market's perception of our ability to generate revenue through the licensing or use of our nanoparticle technology for pharmaceutical, pigment production, nanoparticle production and other uses; and
- o the market's perception of the value of our centrifugal jig and our Tennessee mineral property as we attempt to dispose of or distribute such assets.

If we are unable to obtain sufficient capital or are forced to pay a high price for capital, we may be unable to meet future obligations or adequately exploit existing or future opportunities, and may be forced to discontinue operations.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

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We regard our intellectual property, particularly our proprietary rights in our nanomaterials and titanium dioxide pigment technology, as critical to our success. We have received various patents, and filed other patent applications, for various applications and aspects of our nanomaterials and titanium dioxide pigment technology and other intellectual property. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons, including the following:

- o Our pending patent applications may not be granted for various reasons, including the existence of similar patents or defects in the applications;
- o The patents we have been granted may be challenged, invalidated or circumvented because of the pre-existence of similar patented or unpatented intellectual property rights or for other reasons;
- o Parties to the confidentiality and invention agreements may have such agreements declared unenforceable or, even if the agreements are enforceable, may breach such agreements;
- o The costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may make aggressive enforcement cost prohibitive;
- o Even if we enforce our rights aggressively, injunctions, fines and other penalties may be insufficient to deter violations of our intellectual property rights; and
- o Other persons may independently develop proprietary information and techniques that, although functionally equivalent or superior to our intellectual proprietary information and techniques, do not breach our patented or unpatented proprietary rights.

Because the value of our company and common stock is rooted primarily in our proprietary intellectual property rights, our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could have a material adverse effect on our business.

In addition, we may inadvertently be infringing on the proprietary rights of other persons and may be required to obtain licenses to certain intellectual property or other proprietary rights from third parties. Such licenses or proprietary rights may not be made available under acceptable terms, if at all. If we do not obtain required licenses or proprietary rights, we could encounter delays in product development or find that the development or sale of products requiring such licenses is foreclosed.

We have a substantial number of warrants and options outstanding and may issue a significant number of additional shares upon exercise thereof.

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As of March 15, 2004, there were outstanding warrants to purchase up to 5,416,455 shares of common stock and options to purchase up to 3,446,200 shares of common stock. The existence of such warrants and options, and any additional warrants and options we issue in the future, may hinder future equity offerings, and the exercise of such warrants and options may further dilute the interests of all shareholders. The shares of common stock issuable upon the exercise of many of our outstanding warrants are subject to resale registration statements, and all of our options are subject to a registration statement on Form S-8. Accordingly, future resale of the shares of common stock issuable on the exercise of such warrants and options may generally occur immediately after exercise and may have an adverse effect on the prevailing market price of the shares of common stock.

Our competitors have more resources than we do, which may give them a competitive advantage.

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We have limited financial and other resources and, because of our early stage of development, have limited access to capital. We compete or may compete against entities that are much larger than we are, have more extensive resources than we do and have an established reputation and operating history. Because of their size, resources, reputation, history and other factors, certain of our competitors may be able to exploit acquisition, development and joint venture opportunities more rapidly, easily or thoroughly than we can. In addition, potential customers may choose to do business with our more established competitors, without regard to the comparative quality of our products, because of their perception that our competitors are more stable, are more likely to complete various projects, are more likely to continue as a going concern and lend greater credibility to any joint venture.

We may be unable to exploit any potential pharmaceutical application of our nanomaterials and titanium dioxide pigment technology.

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We do not presently have the technical or financial resources to conduct clinical tests on, and take to market, any pharmaceutical application of our nanomaterials and titanium dioxide pigment technology. In order for us to get any significant, long-term benefit from any potential pharmaceutical application of our technology, the following must occur:

- o we must enter into an evaluation license or similar agreement with a pharmaceutical company under which such company would pay a fixed or contingent fee for the right to evaluate a pharmaceutical use of our technology for a specific period of time and for an option to purchase or receive a license for such use of our technology;
- o clinical tests conducted by such pharmaceutical company or a third party would have to indicate that the pharmaceutical use of our technology is safe, technically viable and financially viable;
- o such pharmaceutical company would have to apply for and obtain FDA approval of the pharmaceutical use of our technology, or any related products, which would involve extensive additional testing; and
- o such pharmaceutical company would have to successfully market the product incorporating our technology.

As of the date of this report, we have not entered into an evaluation license or similar agreement with a pharmaceutical company. We may never enter into any

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such license or agreement. If we do enter into such a license or similar agreement, we may receive some payments in various stages of the testing and evaluation of the pharmaceutical application of our technology. We do not, however, expect to receive significant ongoing revenue unless and until an end product incorporating the technology goes to market.

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We may not benefit from licenses to use our technology for titanium dioxide pigment production.

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Because of our relatively small size and limited resources, we do not plan to use our titanium processing technology for large-scale production of titanium dioxide pigments. We have entered into discussions with various minerals and materials companies about licensing our technology to such entities for large-scale production of titanium dioxide pigments. To date, we have entered into a license agreement with only one such entity, Western Oil Sands, Inc. Under our license agreement with Western Oil Sands, we expect to receive a limited amount of revenue during the early testing and development phase of the agreement but will receive significant royalties only if Western Oil Sands and licensees of Western Oil Sands determine in their discretion, after testing at a demonstration plant, to construct or license the construction of a full-scale titanium pigment production facility. If we enter into other license agreements, we expect that, as with the Western Oil Sands agreement, we would not receive significant revenues from such licenses unless and until feasibility testing yielded positive results and the licensee determined, in its discretion, to construct and operate a titanium pigment production facility.

We may not be able to sell nanoparticles produced using the nanomaterials and titanium dioxide pigment technology.

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We plan to use the nanomaterials and titanium dioxide pigment technology to produce titanium dioxide nanoparticles. Titanium dioxide nanoparticles and other products we intend to initially produce with the nanomaterials and titanium dioxide pigment technology generally must be customized for a specific application working in cooperation with the end user. We are still testing and customizing our titanium dioxide nanoparticle products for various applications and have no long-term agreements with end users to purchase any of our titanium dioxide nanoparticle products. We may be unable to recoup our investment in the nanomaterials and titanium dioxide pigment technology and nanomaterials and titanium dioxide pigment equipment for various reasons, including the following:

- o products utilizing our titanium dioxide nanoparticle products, most of which are in the research or development stage, may not be completed or, if completed, may not be readily accepted by expected end users;
- o we may be unable to customize our titanium dioxide nanoparticle products to meet the distinct needs of potential customers;
- o potential customers may purchase from competitors because of perceived or actual quality or compatibility differences;
- o our marketing and branding efforts may be insufficient to attract a sufficient number of customers; and
- o because of our limited funding, we may be unable to continue our development efforts until a strong market for nanoparticles develops.

Our costs of production may be too high to permit profitability.

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We have not produced any pigments, nanoparticles or other products using our nanomaterials and titanium dioxide pigment technology and equipment on

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a commercial basis. Our actual costs of production, or those of our licensees, may exceed those of competitors and, even if our costs of production are lower, competitors may be able to sell titanium dioxide and other products at a lower price than is economical for us or our licensees.

We have not created a production model of our centrifugal jig and are presently focusing our resources on other projects.

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We have not developed a production model of any series of our centrifugal jig and have determined to discontinue investing significant assets on its development. In October 2003, we entered into a technology license

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agreement with Bateman Luxembourg S.A. for the manufacture, installation and operation of our centrifugal jig. Such agreement permits Bateman to opt out after a six-month testing period. In addition, the agreement does not require Bateman to manufacture or utilize our centrifugal jig. There is no assurance that Bateman will ever utilize our centrifugal jig in its projects or pay fees to us. We do not otherwise expect to complete our own testing and development of our centrifugal jig and have determined to focus most of our limited resources on the nanomaterials and titanium dioxide pigment technology.

Even if we or Bateman were to complete development of and begin marketing a production model of our centrifugal jig, it may not prove attractive to potential end users, may be rendered obsolete by competing technologies or may not recover end product at a commercially viable rate. Even if technology included in our centrifugal jig initially proves attractive to potential end users, performance problems and maintenance issues may limit the market for our centrifugal jig.

In addition, all of the initial patents issued on our centrifugal jig have expired, and we are unable to prevent competitors from copying the technology once protected by such patents. Additional patents related to the process through which water is pulsed through the cylindrical screen on our centrifugal jig expire beginning in 2010, and patents for an efficiency-enhancing aspect of the cylindrical screen expire during 2018. The cost of enforcing patents is often significant. We may be unable to enforce even our patents that have not yet expired.

We have suspended exploration of our Tennessee mineral property and do not expect to restart testing efforts.

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We have suspended feasibility testing of our Tennessee mineral property and do not expect to start feasibility testing of our Tennessee mineral property in the future. If a mine is developed on the Tennessee mineral property in the future, which may or may not occur, the development will likely occur under the control of another party, and our financial interest in the development will likely be limited, and may be nonexistent.

Our disposition of centrifugal jig and our Tennessee mineral property may not enhance the value of our common stock.

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We have determined to consolidate the assets related to the Tennessee mineral property and the Altair jig into (or under) a single corporation with the intent of causing such corporation to become an SEC reporting company and, subject to shareholder approval, distributing substantially all of the shares of common stock of such corporation to our shareholders. We may not receive shareholder approval for such spin-off. If shareholder approval is not received, our alternatives will be limited, and we may be compelled to abandon any interest in the Tennessee mineral property and the Altair jig. Such abandonment would likely involve out of pocket costs for remediation of the Tennessee

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mineral property and would eliminate any possibility of Altair shareholders receiving any benefit from Altair's investment in the Altair jig and Tennessee mineral property. Even if the proposed spin-off is approved and effected, we expect that the shares of the spin-off corporation will have a very low market value in the short-term and can provide no assurance that such shares will increase in value over time.

We have issued a \$3,000,000 note to secure the purchase of the land and the building where our nanomaterials and titanium dioxide pigment assets are located.

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In August 2002, we entered into a purchase and sale agreement with BHP Minerals International Inc. to purchase the land, building and fixtures in Reno, Nevada where our nanomaterials and titanium dioxide pigment assets are located. In connection with this transaction, we issued to BHP a note in the amount of

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\$3,000,000, at an interest rate of 7%, secured by the property we acquired. The first payment of \$600,000 of principal plus accrued interest is due February 8, 2006. Additional payments of \$600,000 plus accrued interest are due annually on February 8, 2007 through 2010. If we fail to make the required payments on the note, BHP has the right to foreclose and take the property. If this should occur, we would be required to relocate our primary operating assets and offices, causing a significant disruption in our business.

Operations using the nanomaterials and titanium dioxide pigment technology, our centrifugal jig or our Tennessee mineral property may lead to substantial environmental liability.

-----  
Virtually any prior or future use of the nanomaterials and titanium dioxide pigment technology, our centrifugal jig or our Tennessee mineral property is subject to federal, state and local environmental laws. Under such laws, we may be jointly and severally liable with prior property owners for the treatment, cleanup, remediation and/or removal of any hazardous substances discovered at any property we use. In addition, courts or government agencies may impose liability for, among other things, the improper release, discharge, storage, use, disposal or transportation of hazardous substances.

Certain of our experts and directors reside in Canada and may be able to avoid civil liability.

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We are a Canadian corporation, and two of our directors and our Canadian legal counsel are residents of Canada. As a result, investors may be unable to effect service of process upon such persons within the United States and may be unable to enforce court judgments against such persons predicated upon civil liability provisions of the U.S. securities laws. It is uncertain whether Canadian courts would (i) enforce judgments of U.S. courts obtained against us or such directors, officers or experts predicated upon the civil liability provisions of U.S. securities laws or (ii) impose liability in original actions against us or our directors, officers or experts predicated upon U.S. securities laws.

We are dependent on key personnel.

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Our continued success will depend to a significant extent on the services of Dr. Rudi Moerck, our President, Doug Ellsworth, our Senior Vice President and the senior vice president of our new life sciences division that we intend to recruit. Our failure to recruit a competent life sciences Vice President, or the loss or unavailability of Dr. Moerck or Mr. Ellsworth could have a material adverse effect on our business and the market price of our shares of common stock. We do not carry key man insurance on the lives of any of

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our personnel and do not have agreements requiring any of them to remain with our company.

In addition, we have recently announced the pending resignation of our Chief Executive Officer and as a director, Dr. William P. Long. Although we intend to recruit a new Chairman of Board of Directors, we do not presently intend to hire a replacement Chief Executive Officer. Dr. Long's efforts have been instrumental in the strategic decision making, capital raising, shareholder relations and other aspects of our business. The resignation of Dr. Long may have a material adverse effect on these or other aspects of our operations.

We may issue substantial amounts of additional shares without stockholder approval.

Our articles of incorporation authorize the issuance of an unlimited number of shares of common stock that may be issued without any action or approval by our stockholders. In addition, we have two stock option plans and a stock purchase plan that have potential for diluting the ownership interests of our stockholders. The issuance of any additional shares of common stock would further dilute the percentage ownership of Altair held by existing stockholders.

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The market price of our common stock may increase or decrease dramatically at any time for any or no apparent reason.

The market price of our common stock, like that of the securities of other early stage companies, may be highly volatile. Our stock price may change dramatically as the result of announcements of our quarterly results, new products or innovations by us or our competitors, uncertainty regarding the viability of the nanomaterials and titanium dioxide pigment technology, significant customer contracts, significant litigation or other factors or events that would be expected to affect our business, financial condition, results of operations and future prospects. In addition, the market price for our common stock may be affected by various factors not directly related to our business or future prospects, including the following:

- o Intentional manipulation of our stock price by existing or future shareholders;
- o A single acquisition or disposition, or several related acquisitions or dispositions, of a large number of our shares;
- o The interest of the market in our business sector, without regard to our financial condition, results of operations or business prospects;
- o Positive or negative statements or projections about our company, or our industry, by analysts, stock gurus and other persons;
- o The adoption of governmental regulations or government grant programs and similar developments in the United States or abroad that may enhance or detract from our ability to offer our products and services or affect our cost structure;
- o Economic and other external market factors, such as a general decline in market prices due to poor economic indicators or investor distrust; and
- o Speculation by short sellers of our common stock or other persons who stand to profit from a rapid increase or decrease in the price of our common stock.

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We

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currently intend to retain any future earnings, if any, for use in our business and, therefore, do not anticipate paying dividends on our common stock in the foreseeable future.

### Item 2. Properties

Our corporate headquarters is located at 204 Edison Way, Reno, Nevada 89502 in a building we purchased in August 2002. Our nanomaterials and titanium dioxide pigment assets are located in this building which contains approximately 80,000 square feet of production, laboratory, testing and office space.

We also maintain a registered office at 56 Temperance Street, Toronto, Ontario M5H 3V5. We do not lease any space for, or conduct any operations out of, the Toronto, Ontario registered office. In addition, we lease 900 square feet of office space at 1725 Sheridan Avenue, Suite 140, Cody, Wyoming 82414, which serves as an administrative office for Altair and its subsidiaries. Our lease for the Cody, Wyoming office space may be terminated by either party on 30 days' prior written notice.

We believe that the existing offices and test facilities of Altair and its subsidiaries are adequate for our current needs. In the event that alternative or additional office space is required, we believe we could obtain additional space on commercially acceptable terms.

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We no longer view the Tennessee mineral property as being materially important to our business. We have determined to limit our expenditures on our Tennessee mineral property to the minimum necessary to preserve its core value for the short term and are in the process of consolidating the assets related to the Tennessee mineral property and the Altair jig into (or under) a single corporation with the intent of causing such corporation to become an SEC reporting company and, subject to shareholder approval, distributing substantially all of the shares of common stock of such corporation to our shareholders.

Consistent with the determination to minimize expenses with respect to the Tennessee mineral property, during 2003, we assessed the properties under lease to determine whether we could reduce lease costs while maintaining a viable quantity of leased acreage. As a result of our assessment, we identified 3,100 acres then subject to mineral leases that represent the most important core holdings to support a potential commercial mining venture. We renegotiated the leases with respect to such 3,100 acres in order to extend the term of the leases and reduce the lease payments. The leases with respect to the remaining acres once included in the Tennessee mineral property are terminable at any time by the property owners in light of our decision not to make any further lease payments with respect to such leases.

The renegotiated leases on the Tennessee mineral property grant MRS certain exclusive rights, including the right to explore, test, mine, extract, process, and sell any minerals or other materials found on the land, in exchange for the payment of minimum annual advance royalty payments prior to commencement of production on the properties (or after commencement of production, to the extent production royalty payments do not equal nominal royalty payments) and, thereafter, production royalty payments in an amount equal to a percentage of the value of minerals mined and sold from the property. See the Notes to the Consolidated Financial Statements for information regarding present and future minimum advance royalty payments. The leases typically are for a minimum term of ten years, and may be extended indefinitely at MRS' option, provided MRS is actively conducting exploration, development, or mining operations. The leases are cancelable by MRS at any time, and are cancelable by the lessor in the event

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MRS breaches the terms of the lease. The minerals on the Tennessee mineral property have not proven to be a reserve, our historic operations plan with respect to it is exploratory in nature, and we presently are conducting only minimal maintenance operations with respect to such property. The Tennessee mineral property is accessed by public roads and, to our knowledge, has not been used in prior mining operations.

### Item 3. Legal Proceedings

We are from time to time involved in routine litigation incidental to the conduct of our business. We are currently not involved in any suit, action or other legal proceedings, nor are we aware of any threatened suit, action or other legal proceedings which management believes will materially and adversely affect the business or operations of Altair or its subsidiaries.

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

We did not submit any matters to a vote of security holders during the fourth quarter of the 2003 fiscal year.

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## PART II

### Item 5. Market for the Common Shares and Related Shareholder Matters

#### Market Price

Our common shares are traded on the Nasdaq SmallCap Market under the symbol "ALTI." The following table sets forth, for the periods indicated, the high and low sales prices for our common shares, as reported on our principal trading market at the time.

Fiscal Year Ended December 31, 2002	Low	High
	-----	-----
1st Quarter.....	\$0.750	\$1.560
2nd Quarter.....	\$0.370	\$1.140
3rd Quarter.....	\$0.300	\$0.930
4th Quarter.....	\$0.450	\$0.800
Fiscal Year Ended December 31, 2003	Low	High
	-----	-----
1st Quarter.....	\$0.310	\$0.560
2nd Quarter.....	\$0.300	\$1.480
3rd Quarter.....	\$0.730	\$1.650
4th Quarter.....	\$1.120	\$2.900

The last sale price of our common shares, as reported on the Nasdaq SmallCap Market, on March 14, 2004 was \$2.62 per share.

#### Outstanding Shares and Number of Shareholders

As of March 15, 2004, the number of common shares outstanding was 48,650,140 held by approximately 500 holders of record. In addition, as of the same date, we have reserved 4,514,200 common shares for issuance upon exercise



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of options that have been, or may be, granted under our employee stock option plans and 5,416,455 common shares for issuance upon exercise of outstanding warrants.

### Dividends

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 We have never declared or paid cash dividends on our common shares. Moreover, we currently intend to retain any future earnings for use in our business and, therefore, do not anticipate paying any dividends on our common shares in the foreseeable future.

### Securities Authorized for Issuance under Equity Compensation Plans

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 We have stock option plans administered by the Board of Directors that provide for the granting of options to employees, officers, directors and other service providers of the Company. All option plans have been approved by security holders. We also have an Employee Stock Purchase Plan ("ESPP") which allows employees to purchase common shares through payroll deductions when, as and if determined by our board of directors. The ESPP, which is a broadly-based plan open to all employees, other than executive officers, has not been approved by shareholders. The following table sets forth certain information with respect to compensation plans under which equity securities are authorized for issuance at December 31, 2003:

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Plan Category	Number of securities to be issued upon future exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	3,663,600	\$3.11	1,235,000
Equity compensation plans not approved by security holders	None	N/A	348,552
Total	3,663,600	\$3.11	1,583,552

### Recent Sales of Unregistered Securities

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 Except as previously reported, we did not sell any securities in transactions that were not registered under the Securities Act in the quarter ended December 31, 2003.

### Transfer Agent and Registrar

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 The Transfer Agent and Registrar for our common shares is Equity Transfer Services, Inc., Suite 420, 120 Adelaide Street West, Toronto, Ontario, M5H 4C3.

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### Canadian Taxation Considerations

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Dividends paid on common shares owned by non-residents of Canada are subject to Canadian withholding tax. The rate of withholding tax on dividends under the Income Tax Act (Canada) (the "Act") is 25%. However, Article X of the reciprocal tax treaty between Canada and the United States of America (the "Treaty") generally limits the rate of withholding tax on dividends paid to United States residents to 15%. The Treaty further generally limits the rate of withholding tax to 5% if the beneficial owner of the dividends is a U.S. corporation which owns at least 10% of the voting shares of the Company.

If the beneficial owner of the dividend carries on business in Canada through a permanent establishment in Canada, or performs in Canada independent personal services from a fixed base in Canada, and the shares of stock with respect to which the dividends are paid is effectively connected with such permanent establishment or fixed base, the dividends are taxable in Canada as business profits at rates which may exceed the 5% or 15% rates applicable to dividends that are not so connected with a Canadian permanent establishment or fixed base. Under the provisions of the Treaty, Canada is permitted to apply its domestic law rules for differentiating dividends from interest and other disbursements.

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A capital gain realized on the disposition of common shares by a person resident in the United States ("a non-resident") will be subject to tax under the Act if the shares held by the non-resident are "taxable Canadian property." In general, common shares will be taxable Canadian property if the particular non-resident used (or in the case of a non-resident insurer, used or held) the Common Stock in carrying on business in Canada or where at any time during the five-year period immediately preceding the realization of the gain, not less than 25% of the issued and outstanding shares of any class or series of shares of the Company, which were listed on a prescribed stock exchange, were owned by the particular non-resident, by persons with whom the particular non-resident did not deal at arms' length, or by any combination thereof. If common shares constitute taxable Canadian property, relief nevertheless may be available under the Treaty. Under the Treaty, gains from the alienation of common shares owned by a non-resident who has never been resident in Canada generally will be exempt from Canadian capital gains tax if the shares do not relate to a permanent establishment or fixed base which the non-resident has or had in Canada, and if not more than 50% of the value of the shares was derived from real property (which includes rights to explore for or to exploit mineral deposits) situated in Canada.

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### Item 6. Selected Financial Data

The following table sets forth selected consolidated financial information with respect to the Company and its subsidiaries for the periods indicated. The data is derived from financial statements prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). The selected financial data should be read in conjunction with the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and accompanying notes included herein. All amounts are stated in U.S. dollars.

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For the Year Ended December 31,	2003	2002	2001	2000
STATEMENTS OF OPERATIONS				
Sales	\$ 72,851	\$ 253,495	\$ 42,816	\$ --
Cost of sales	\$ 62,159	\$ 93,583	\$ 18,175	\$ --
Operating expenses	\$ 5,795,902	\$ 8,016,623	\$ 6,046,173	\$ 6,647,367
Interest expense	\$ 454,415	\$ 1,151,388	\$ 1,881,077	\$ 215,216
Interest income	\$ (1,879)	\$ (2,105)	\$ (148,980)	\$ (83,440)
(Gain) loss on foreign exchange	\$ 193	\$ 835	\$ 402	\$ (864,669)
Loss on extinguishment of debt	\$ --	\$ 914,667	\$ --	\$ --
Gain on forgiveness of debt	\$ --	\$ --	\$ --	\$ --
Net Loss	\$ 6,237,939	\$ 9,921,496	\$ 7,754,031	\$ 5,914,474
Basic and diluted net loss per common share	\$ 0.19	\$ 0.40	\$ 0.39	\$ 0.34
Cash dividends declared per common share	\$ --	\$ --	\$ --	\$ --
=====				
BALANCE SHEET DATA				
Working capital	\$ 3,565,039	\$ (204,365)	\$ (81,154)	\$ 234,714
Total assets	\$ 11,659,754	\$ 8,914,405	\$ 10,853,243	\$ 16,651,770
Long-term obligations	\$ 2,686,130	\$ 3,905,040	\$ 1,462,060	\$ 2,689,493
Current liabilities	\$ 397,141	\$ 604,503	\$ 714,689	\$ 3,741,366
Net shareholders' equity	\$ 8,576,483	\$ 4,404,862	\$ 8,676,494	\$ 10,220,911

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

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto.

Overview

From inception through the end of 1999, our business consisted principally of the exploration of mineral properties and the development of the Altair Centrifugal Jig. In November 1999, we acquired all patent applications and technology related to a hydrometallurgical process developed by BHP Minerals International, Inc. ("BHP") primarily for the production of (1) titanium dioxide ("TiO<sub>2</sub>") products from titanium bearing ores or concentrates and (2) metal oxide nanoparticles (the "nanomaterials and titanium dioxide pigment technology") and all tangible equipment and other assets (the "nanomaterials and titanium dioxide pigment assets") used by BHP to develop and implement the nanomaterials and

titanium dioxide pigment technology. The nanomaterials and titanium dioxide pigment technology has potential to produce both titanium pigments, which are commercially traded in bulk, and nanoparticles, which are sold on specialty product markets. At the time, the nanomaterials and titanium dioxide pigment technology was in development stage and not in commercial operation.

When we acquired the nanomaterials and titanium dioxide pigment

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technology and related assets, we expected to be able to produce TiO<sub>2</sub> nanoparticles for sale in established markets within a short period of time. Our expectation was that revenues from these sales, combined with external financing, would provide adequate cash flow to fund our development activities for the nanomaterials and titanium dioxide pigment technology, the Tennessee mineral property and the Altair jig. We underestimated the difficulty of entering the markets for TiO<sub>2</sub> nanoparticles with the result that sales revenues have been below expectations and our external financing needs have been greater than anticipated.

During much of the period from 2001 through 2003, we suffered cash shortages as our share price declined and financing became more difficult. In response to this, we reduced cash expenditures to the extent possible while still continuing to develop the nanomaterials and titanium dioxide pigment technology. At the same time, we reduced expenditures for the Tennessee mineral property and jig and finally suspended work on these assets during 2003.

We currently have agreements in place to (1) provide research involving a technology used in the detection of chemical, biological and radiological agents, (2) provide custom oxide feedstocks for a titanium metal research program funded by the Department of Defense and (3) license and evaluate our pigment production process for the production of TiO<sub>2</sub> pigment and pigment-related products from titanium-bearing oil sands. In addition, we have a pharmaceutical product in development. Future revenues will depend on the success of these projects, the results of our other research and development work and the success of our marketing efforts.

### Restructuring Plans and Progress

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In December 2003, the board of directors of Altair approved a plan to restructure the Company in order to concentrate resources on the nanomaterials and titanium dioxide pigment business. The reorganization is intended to maximize management focus on nanomaterials, nanotechnology and material science in targeted markets for TiO<sub>2</sub> pigment, TiO<sub>2</sub> electrodes for titanium metal, pharmaceutical delivery structures, pharmaceuticals, dental materials and nanostructured materials for lithium ion batteries and fuel cells. As a part of the restructuring, we have taken, or are in the process of taking, the following steps:

- o We are creating a new life sciences division that will focus on the continued development of pharmaceutical delivery structures (TiNano Spheres(TM)), dental materials and new nano-based pharmaceuticals including Altair's lead drug candidate, RenaZorb(TM). We are presently implementing a search for a senior vice president of the new life sciences division.
- o We are consolidating the assets related to the Altair Jig and our Tennessee mineral property into (or under) a single corporation with the intent to cause such corporation to become an SEC reporting company and distribute substantially all of the shares of common stock of such corporation to our shareholders (with any non-distributed shares being retained by Altair). This spin-off will, we believe, give shareholders of Altair the opportunity to

participate in any success management of the spin-off entity has in generating revenue from the Altair jig or the Tennessee mineral property but will permit Altair and its management to focus their

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efforts on the development of the nanomaterials and titanium dioxide pigment technology. The completion of this spin-off process is expected to take approximately six months and is contingent upon receipt of shareholder approval. Accumulated losses at our subsidiary companies which conducted the exploration work at the Tennessee mineral property and development work on the Altair jig assets total \$17.6 million as of December 31, 2003.

- o We have announced the resignation, effective May 1, 2004, of Dr. William P. Long as our Chief Executive Officer and as a director. Following the resignation, Dr. Long is expected to be involved in the proposed consolidation and spin-off of our mineral assets and to serve as President and a director of the spin-off entity. Dr. Rudi E Moerck, our President, will become our senior executive officer and will be responsible for our day-to-day operations implementing our strategic plan. We also intend to commence a search for a new non-executive Chairman of its Board of Directors to work with Dr. Moerck and the remainder of the board of directors in their efforts to focus the resources on Altair on generating revenue and increasing value for shareholders.

We expect to continue our restructuring efforts during the coming year. We expect that future changes will not be structural, but will relate primarily to decisions regarding allocation of resources among existing or proposed projects as we attempt to evaluate the various projects we are working on or considering, determine which have the best potential for short- and long- term revenue generation and focus most of our resources on such projects.

### Liquidity and Capital Resources

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In late 2003, our share price rose significantly with the result that a large number of warrants and options were exercised, thus providing a large (relative to our working capital needs) inflow of cash to the Company. This continued through January 2004 such that we now have funds available to meet our needs for approximately three years at current working capital expenditure levels. In January 2004, a shelf registration statement went effective for the sale of 5,000,000 common shares. We believe this will significantly increase our financing flexibility and our ability to raise funds for continued development of the nanomaterials and titanium dioxide pigment business.

During 2003, we concentrated our resources on research, development and marketing associated with the nanomaterials and titanium dioxide pigment technology. We generated sales revenues of \$72,851 in 2003 but incurred an operating loss of \$5,785,210. Historically, we have financed operations primarily through the issuance of equity securities (common shares, convertible debentures, stock options and warrants) and by the issuance of debt. We expect to continue this method of financing until sales revenues are sufficient to fund our operating requirements.

Our cash and short-term investments increased from \$244,681 at December 31, 2002 to \$3,869,669 at December 31, 2003 due principally to the issuance of common shares and the exercise of options and warrants to purchase common shares.

Security Issuances. During 2003, we sold 7,196,783 common shares together with 5,105,277 warrants in private placements for gross proceeds of \$4,324,898. The warrants are exercisable at prices ranging from \$1.00 to \$2.00 and expire on the earlier of five years from the date of issue or on specified dates after the closing price equals or exceeds prices ranging from \$3.50 to \$4.00.

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From September through December 2003, the trading price of our shares increased significantly. As a result of this, 3,210,328 warrants and 478,100 options were exercised, resulting in net proceeds to us of \$3,417,109 and \$488,836, respectively.

We established an Employee Stock Purchase Plan ("ESPP") in August 2002. During the year ended December 31, 2003, we issued 873,480 shares under the ESPP with net proceeds to us of \$606,675.

Also during 2003, we issued 972,221 common shares in payment of principal and interest on the Doral 18, LLC note, and we issued 213,102 common shares to vendors for services provided to the Company.

Notes Payable. In addition to the common shares issued to Doral 18, LLC in payment of principal and interest on the note,, we made cash principal payments of \$1,120,000 against the note payable in 2003. The note was paid in full in September 2003.

In August 2002, we issued a note payable in the amount of \$3,000,000 to BHP Minerals International, Inc. for purchase of the land, building and fixtures in Reno, Nevada where our nanomaterials and titanium dioxide pigment assets are located. Interest, at the rate of 7%, begins to accrue in August 2005 and the first principal payment of \$600,000 is due in February 2006. Additional payments of \$600,000 plus accrued interest are due annually in February 2007 through 2010.

Capital Commitments. The following table discloses aggregate information about our contractual obligations including notes payable, mineral lease payments, facilities lease payments and contractual service agreements, and the periods in which payments are due as of December 31, 2003:

Contractual Obligations	Total	Less Than 1 Year	1-3 Years	4-5 Years	After 5 Years
Notes Payable	\$3,000,000*	\$ --	\$ 600,000	\$1,200,000	\$1,200,000
Mineral Leases	940,367	160,605	339,510	303,918	136,334
Contractual Service Agreements	798,683	686,183	112,500	--	--
<b>Total Contractual Obligations</b>	<b>\$4,739,050</b>	<b>\$ 846,788</b>	<b>\$1,052,010</b>	<b>\$1,503,918</b>	<b>\$1,336,334</b>

\* Before discount of \$313,870.

At December 31, 2003, we had no significant commitments for capital asset expenditures.

Current and Expected Liquidity. At December 31, 2003, we had cash and cash equivalents of \$3,869,669, an amount sufficient to fund our basic operations through December 31, 2004. From December 31, 2003 through the date of this report, we received cash from the exercise of warrants and stock options in an amount sufficient to fund our operations for approximately two additional years.

In 2004, we expect to generate limited revenues from contract services

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utilizing our nanomaterials and titanium dioxide pigment technology. In addition, we hope to generate revenues through the licensing of RenaZorb(TM), a potential drug we developed that may be useful in phosphate control in kidney dialysis patients. A drug of similar compounds has been submitted for FDA approval with a decision expected during the second quarter of 2004. If this similarly compounded drug is approved, we expect to be able to negotiate a license agreement for RenaZorb(TM) with one or more pharmaceutical companies

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during 2004. We are uncertain what the terms of such license agreement would be, but pharmaceutical license agreements often involve up-front or staged payments, in addition to royalties once the drug is approved by the FDA and marketed. We can, however, provide no assurance that we will enter into such a license agreement or that such license agreement would involve any significant up-front payments.

Although we have entered an agreement to license and evaluate our pigment production process for the production of TiO<sub>2</sub> pigment and pigment-related products from titanium-bearing oil sands, and we have submitted proposals to five international minerals and energy resources companies to develop and license our titanium pigment production process, we cannot be certain that such evaluations will be successful or that we will eventually license the technology to additional parties. If we were able to obtain additional licenses for the technology, we would expect to receive development fees and royalties over the long-term, but no significant up-front payments. In the near term, in the absence of a significant up-front payment in connection with the licensing of RenaZorb(TM), we expect to continue to finance our operations principally through the issuance of equity securities.

Although we currently have capital sufficient to fund our operations at current levels, we expect our capital needs to increase during 2004 and 2005. We expect to hire additional personnel in order to satisfy our contractual obligations under existing and anticipated services agreements. In addition, our management is focused on facilitating the commercialization of one or more of its products in the foreseeable future. Substantially all of our products are at a conceptual or development stage and, if we are to commercialize one or more products ourselves (as opposed to licensing it for commercialization by the licensee), we will likely be required to hire additional employees, purchase additional equipment, and engage the research, marketing and other services of third parties. This may require significant additional capital. We also believe that our efforts to find strategic partners would be enhanced if we had a stronger balance sheet.

Accordingly, we may raise additional capital during 2004 or 2005. We would most likely generate such financing through the issuance of equity securities in one or more private placements of common shares (probably with accompanying re-sale registration rights and warrants to purchase common shares) or public offerings of our common shares. We do not expect to, but may also issue debt securities or enter into loan or capital leasing arrangements, with one or more financial institutional investors. Any financing, especially an issuance of equity securities in a public offering or large private placement, may dilute existing shareholders and have an adverse effect on the market price of our common shares. We can provide no assurance that, if we determine to seek additional financing, we will be able to obtain additional financing at a reasonable cost, or at all.

### Critical Accounting Policies and Estimates

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Management based the following discussion and analysis of our financial

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condition and results of operations on our consolidated financial statements. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our critical accounting policies and estimates, including those related to long-lived assets and stock-based compensation. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

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We believe the following critical accounting policies affect the more significant judgments and estimates used in the preparation of our consolidated financial statements. These judgments and estimates affect the reported amounts of assets and liabilities and the reported amounts of revenues and expenses during the reporting periods. Changes to these judgments and estimates could adversely affect the Company's future results of operations and cash flows.

- o Long-lived assets. Our long-lived assets consist principally of the nanomaterials and titanium dioxide pigment assets, the intellectual property (patents and patent applications) associated with them, and a building. At December 31, 2003, the carrying value of these assets was \$7,616,746, or 65% of total assets. We evaluate the carrying value of long-lived assets when events or circumstances indicate that an impairment may exist. In our evaluation, we estimate the net undiscounted cash flows expected to be generated by the assets, and recognize impairment when such cash flows will be less than the carrying values. Events or circumstances that could indicate the existence of a possible impairment include obsolescence of the technology, an absence of market demand for the product, and/or continuing technology rights protection.
- o Stock-Based Compensation. We have two stock option plans which provide for the issuance of stock options to employees and service providers. Although Statement of Financial Accounting Standards ("SFAS") No. 123, Accounting for Stock Based Compensation, encourages entities to adopt a fair-value-based method of accounting for stock options and similar equity instruments, it also allows an entity to continue measuring compensation cost for stock-based compensation using the intrinsic-value method of accounting prescribed by Accounting Principles Board ("APB") Opinion No. 25, Accounting for Stock Issued to Employees. We have elected to follow the accounting provisions of APB 25 and to furnish the pro forma disclosures required under SFAS No. 123, but we also issue warrants and options to non-employees that are recognized as expense when issued in accordance with the provisions of SFAS No. 123. We calculate compensation expense under SFAS No. 123 using a modified Black-Scholes option pricing model. In so doing, we estimate certain key variables used in the model. We believe the estimates we use are appropriate and reasonable.

### Results of Operations

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Operating losses totaled \$6,237,939 (\$.19 per share) for the 2003 fiscal year, \$9,921,496 (\$0.40 per share) for the 2002 fiscal year, \$7,754,031 (\$0.39 per share) for the 2001 fiscal year and \$45,519,844 (\$4.83 per share) from April 9, 1973 (date of inception) to December 31, 2003. Principal factors



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contributing to the losses during these periods were the lack of substantial revenues coupled with the incurrence of operating expenses.

Fiscal Year 2003 vs. 2002

During 2003, we generated \$55,249 of revenues from contract research work and other contracted services and \$17,602 of revenues from the sale of nanoparticle products. The revenues from contract research work includes \$36,553 earned under an agreement with Western Michigan University for research services involving a technology used in the detection of chemical, biological and radiological agents. This work is being billed at cost with no contribution to margin. As a result, gross margin as a percentage of sales was 15% in 2003 versus 63% in 2002. During 2004, we expect our sales to increase but we do not expect to realize an operating profit.

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We have significantly reduced our expenditures for mineral exploration and development in order to conserve cash for operating requirements and development of the nanomaterials and titanium dioxide pigment technology. In addition, certain employees who were previously involved in mineral exploration and development have been reassigned to research and development work, primarily titanium pigment process development. Accordingly, mineral exploration and development expenses decreased by \$443,268 from \$598,977 in 2002 to \$155,709 in 2003. In December 2003, our board of directors directed management to review the viability and desirability of various strategic alternatives for the Altair Jig and our Tennessee mineral property, including their possible sale, use in a joint venture, spin-off to shareholders or abandonment.

During 2003, we concentrated our research and development efforts on nanotechnology and materials science, specifically TiO<sub>2</sub> pigment, TiO<sub>2</sub> electrodes for titanium metal, pharmaceutical delivery structures, pharmaceuticals, dental materials and nanostructured materials for lithium ion batteries and fuel cells. The suspension of development work on the Tennessee mineral properties and jig allowed us to reassign certain employees from those efforts to other research and development work, primarily titanium pigment process development. As a result of this, research and development expenses increased by \$318,320 from \$587,137 in 2002 to \$905,457 in 2003.

Professional fees decreased by \$136,203 from \$712,530 in 2002 to \$576,327 in 2003 primarily due to a decrease in consulting fees. We issued stock options and warrants in 2002 and 2003 in payment for a portion of our consulting fees, primarily for assistance with financing. The options and warrants issued in 2002 had a fair value of \$218,925 whereas the options and warrants issued in 2003 had a fair value of \$91,998. In addition to this, cash payments for consulting decreased by \$48,848 due to a decrease in services purchased. Accounting fees decreased by \$18,452, from \$126,929 in 2002 to \$107,688 in 2003 due to a decrease in audit fees. These decreases in consulting and accounting fees were partially offset by an increase in legal fees of \$58,024, from \$234,838 in 2002 to \$292,862 in 2003, the increase being attributable to patent work, financing transactions and general corporate matters.

Our general and administrative expenses increased by \$919,337 from \$2,360,315 in 2002 to \$3,279,652 in 2003 primarily due to an increase in the fair value of certain repriced stock options. The trading price of our common shares increased significantly in December 2003, thus resulting in an increase in the fair value of stock options repriced in prior periods of \$870,068. The fair value of stock options and warrants granted also increased by \$46,080 in 2003. Investor relations expenses increased by \$235,925 from \$53,277 in 2002 to \$289,202 in 2003 as a result of increased investor relations programs aimed at increasing investor awareness of Altair. Insurance expense increased by \$11,123

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from \$143,297 in 2002 to \$154,420 in 2003 as a result of increased premiums for liability insurance. Partially offsetting these increases was a decrease in general office expenses of \$146,629 (from \$710,791 in 2002 to \$564,161 in 2003) and a decrease in technical operating costs of \$103,909 (from \$356,918 in 2002 to \$253,009 in 2003), both of which occurred as a result of our efforts to reduce operating costs.

During the year ended December 31, 2002, we recorded \$1,080,000 of interest expense for interest accruals, amortization of debt issuance costs and amortization of debt discount on the Doral 18, LLC ("Doral") note. In November 2002, we entered into a new note with Doral (see Note 6 to the consolidated financial statements), the balance of unamortized debt issuance costs was written off as a component of loss on extinguishment of debt and no further amortization of debt discount costs was incurred. In September 2003, we paid the remaining balance due on the Doral note. As a result of all this, interest expense decreased by \$696,973 from \$1,151,388 in 2002 to \$454,415 in 2003.

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Preferential warrant dividend increased by \$543,820 from \$48,666 in 2002 to \$592,486 in 2003. On June 2, 2003, we reduced the exercise price of 796,331 outstanding warrants held by a shareholder to \$1.00 per share. As a result, we recorded a preferential warrant dividend of \$176,472 as of the repricing date. The warrants had been previously issued with exercise prices ranging from \$2.50 to \$3.50. In addition, in September 2003, we issued 631,882 warrants to a shareholder which had a fair value of \$416,014 and was recorded as a preferential warrant dividend.

Fiscal Year 2002 vs. 2001

During 2002, we generated \$134,925 of revenues through sales of titanium dioxide nanoparticles, lithium titanate nanoparticles and other materials. Titanium dioxide nanoparticle sales included \$62,073 sold to a customer for use in commercial thermal spray applications. Revenues also included \$90,300 earned under a services agreement entered into with a materials company in September 2002. Under the terms of the agreement, we tested the materials company's mineral concentrates in the production of titanium dioxide pigments using our titanium processing technology. The testing was conducted over a five-month period and generated total revenues of \$109,000 at its completion in early 2003. Also included in revenues in 2002 was \$28,270 earned from a consulting project involving use of the Altair jig to recover titanium dioxide from pigment processing waste.

During 2002, we suffered from a shortage of working capital which forced us to reassess planned expenditures for our development projects. We elected to concentrate our resources on the development of the nanomaterials and titanium dioxide pigment technology and suspend development work on the Tennessee mineral property and jig. As a result of this, expenditures for mineral exploration and development decreased from \$930,777 in 2001 to \$598,977 in 2002.

During 2002, our research and development ("R&D") efforts were directed toward pharmaceuticals, the titanium pigment process, batteries, catalysts, thermal spray coatings and fuel cells. R&D expense increased from \$559,454 in 2001 to \$587,137 in 2002, primarily as a result of increased staff time being devoted to these R&D projects with a resulting decrease in time spent on construction projects and administrative and general activities.

Professional services, which consist principally of legal, consulting and audit expenses, increased from \$593,088 in 2001 to \$712,530 in 2002. Consulting expenses increased from \$238,000 in 2001 to \$347,000 in 2002,

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primarily as a result of our efforts to locate and secure additional financing. Legal fees increased from \$197,000 in 2001 to \$235,000 in 2002, primarily as a result of the preparation of regulatory filings and other documents associated with financing activities and costs associated with patent applications. These increases were partially offset by a decrease in audit expenses of \$27,000.

During 2002, we reduced our general and administrative expenses as much as possible in order to conserve cash. As a result, these expenses decreased by \$464,331 to \$2,360,315 in 2002, compared to \$2,824,646 in 2001. The major components of general and administrative expenses that decreased in 2002 were:

- o Investor relations - these expenses decreased by \$283,000 (from \$336,000 to \$53,000) due to a significant reduction in investor relations programs.
- o Rents - Our purchase of the building that we previously rented at 204 Edison Way in Reno, Nevada, and the relocation of staff from rented office space to the purchased building resulted in a reduction of rents expense by \$67,000 (from \$274,000 to \$207,000).
- o Sample costs - these decreased by \$64,000 (from \$173,000 to \$109,000) due to the purchase of raw materials in bulk quantities as opposed to smaller lots, and less labor being required in sample production.

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- o Bank charges - these decreased by \$28,000 (from \$34,000 to \$6,000) due to a decrease in fees for a letter of credit associated with a term note. The letter of credit was terminated in 2001.
- o Stock options expense - this decreased by \$105,000 (from \$105,000 to zero) due to a reduction in options granted.
- o Other - expenses for such items as tools, operating supplies, laboratory supplies and temporary labor decreased by \$138,000 (from \$459,000 to \$321,000) as a result of our efforts to reduce costs.

These decreases were partially offset by an increase in property taxes of \$87,000 (from \$1,000 to \$88,000), and an increase in property and liability insurance expenses of \$47,000 (from \$96,000 to \$143,000). In addition, salary expense increased by \$84,000 (from \$1,143,000 to \$1,227,000) due to a payment in connection with an employment agreement.

In November 2002, we entered into a note amendment agreement with an investor who held a \$2,000,000 term note issued by us in December 2001. In accordance with the terms of the note amendment agreement, we issued to the investor 1,500,000 common shares and a warrant for 750,000 common shares in return for a reduction in the principal balance of the note by \$600,000 and changes to certain terms contained in the prior note. We then issued to the investor an amended term note in the amount of \$1,400,000. Under generally accepted accounting principles, the transaction is recorded as an extinguishment of debt and the issuance of a new note. Accordingly, costs associated with the issuance of the 1,500,000 common shares and warrant for 750,000 common shares, together with the write off of costs incurred in the issuance of the prior note, were recorded as a loss on extinguishment of debt in the amount of \$914,667.

During the second quarter of 2002, due to a shortage of cash, we elected to reduce expenditures on the Tennessee mineral property to a minimal amount. As a result of this, development activities were delayed, including our intended use of the Altair jig to enhance the recovery of heavy minerals on the property. Since we could not determine when adequate funds would be available to further develop and utilize the Altair jig, we recorded an impairment of jig assets in the amount of \$2,759,956. This impairment charge had the effect of reducing the Altair jig assets' depreciable balance to zero, thereby terminating further depreciation charges. As a result, depreciation and amortization expense

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decreased by \$140,500 to \$997,708 in 2002 compared to \$1,138,208 for 2001.

Interest expense decreased from \$1,881,077 in 2001 to \$1,151,388 in 2002 due principally to a reduction in the balance of our term note for much of the year 2002.

During most of 2001, we had a restricted cash balance associated with the term note of between \$2,500,000 and \$4,000,000 that was earning interest income. In December 2001, we terminated the term note, transferred the restricted cash to the holder of the note and issued a new term note in a lesser amount. As a result of this, cash balances available for investment were significantly reduced during 2002 and interest income declined from \$148,980 in 2001 to \$2,105 in 2002.

### Carrying Value of Assets

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We have recorded our investments in the nanomaterials and titanium dioxide pigment technology and the nanomaterials and titanium dioxide pigment assets at actual cost. We depreciate such assets using the straight-line method

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over their estimated useful life. The asset carrying value is the actual cost less accumulated depreciation. We assess the carrying values of these assets on a quarterly basis by comparing the projected undiscounted cash flows to be generated by the assets to the carrying costs of the assets. In order to determine the projected cash flows related to these assets, we use the information and feedback obtained from prospective customers together with general information as to product markets, competitive forces and our production capability to arrive at assumptions with respect to sales volumes and pricing. We next estimate costs of sales based on engineering analysis and actual experience. Operating margins are then calculated based on these assumptions and compared to the carrying cost of the assets. Delays in revenue generation may make the recoverability of our assets less likely.

When we acquired the nanomaterials and titanium dioxide pigment technology and related assets from BHP, the core technology for producing titanium dioxide nanoparticles was completely developed, a pilot plant was under construction, and we believed the titanium processing technology and titanium processing assets had near-term commercial value. We expected to complete the pilot plant as a processing facility and begin generating sales revenues through nanoparticle product sales in 2000. We completed construction of the processing facility, and since that time we have generated \$195,342 from sales of nanoparticles, \$36,553 from contract research work and \$108,996 from service revenues associated with the technology. In 2003, we entered into an agreement to license and evaluate our pigment production process for the production of TiO<sub>2</sub> pigment and pigment-related products from titanium-bearing oil sands, and we submitted proposals to five international minerals and energy resources companies to develop and license our titanium pigment production process. We have also developed RenaZorb(TM) for the treatment of hyperphosphatemia in kidney dialysis patients and we are currently seeking business relationships with pharmaceutical companies that can conduct additional testing and development, seek necessary FDA approvals and take the other steps necessary to bring the new product to market. If testing is successful, we expect to license RenaZorb(TM) to a pharmaceutical manufacturer. We presently estimate that cash flows from future nanoparticle sales and fees from licensing the titanium pigment production process and RenaZorb(TM) will be in excess of the carrying value of the assets.

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As discussed above in "Results of Operations - Fiscal Year 2002 vs. 2001", a cash shortage during 2002 required that we delay development of the Tennessee mineral property and jig. Since we could not determine when adequate funds would be available to further develop and utilize the Altair jig, we recorded an impairment of jig assets in the amount of \$2,759,956 in 2002. This impairment charge had the effect of reducing the Altair jig assets' carrying cost to zero.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Not Applicable.

Item 8. Financial Statements and Supplementary Data.

Supplementary Data. The following Supplementary Financial Information for the fiscal quarters ended March 31, June 30, September 30 and December 31 in each of the years 2002 and 2003 were derived from our unaudited quarterly consolidated financial statements filed by us with the SEC in our Quarterly Reports on Form 10-Q with respect to such periods (except for 4th quarter data).

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Supplementary Financial Information by Quarter, 2003 and 2002  
(Unaudited)

	Quarter Ended March 31 -----	Quarter Ended June 30 -----	Quarter Ended September 30 -----	Quarter Dec -----
Year Ended December 31, 2003:				
Sales	\$ 20,277	\$ 4,434	\$ 17,318	\$
Gross Margin	\$ 5,327	\$ 3,496	\$ 612	\$
Net Loss (1)	\$1,316,994	\$1,334,591	\$1,329,471	\$2
Loss per Common Share: (1)				
Basic and Diluted	\$ 0.04	\$ 0.04	\$ 0.05	\$
Year Ended December 31, 2002:				
Sales	\$ 48,937	\$ 4,734	\$ 45,089	\$
Gross Margin	\$ 18,762	\$ 3,583	\$ 28,387	\$
Net Loss	\$1,679,531	\$4,588,254	\$1,531,005	\$2
Loss per Common Share: (2)				
Basic and Diluted	\$ 0.07	\$ 0.19	\$ 0.06	\$

(1) The increase in net loss from the quarter ended September 30, 2003 to the quarter ended December 31, 2003 is primarily the result of \$870,000 of expense associated with stock options that were repriced in prior periods. The Company uses the variable accounting method to account for repricing of stock options and the market price of the Company's stock increased substantially in the quarter ended December 31, 2003.

(2) Loss per common share is computed independently for each of the quarters presented. Therefore, the sum of the quarterly loss per common share amounts does not necessarily equal the total for the year.

Financial Statements. The financial statements required by this Item appear on pages F-1 through F-26 of this Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

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None.

### Item 9A. Controls and Procedures

The information required by this Item is incorporated by reference to the Section entitled "Principal Accountant Fees and Services" in the Company's definitive proxy statement to be filed with the Commission.

- a) Under the supervision and with the participation of our management, including our principal executive officer, president and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as of December 31, 2003. Based on this evaluation, our principal executive officer, president and principal financial officer concluded that our disclosure controls and procedures are effective in alerting them on a timely basis to material information relating to our Company (including its consolidated subsidiaries) required to be included in our reports filed or submitted under the Exchange Act.
- b) There have been no significant changes (including corrective actions with regard to significant deficiencies or material weaknesses) in our internal controls or in other factors that could significantly affect these controls subsequent to the date of the evaluation referenced in paragraph (a) above.

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## Part III

### Item 10. Directors and Executive Officers of the Registrant

The information required by this Item is incorporated by reference to the section entitled "Election of Directors" in the Company's definitive proxy statement to be filed with the Commission.

### Item 11. Executive Compensation

The information required by this Item is incorporated by reference to the section entitled "Executive Compensation" in the Company's definitive proxy statement to be filed with the Commission.

### Item 12. Security Ownership of Certain Beneficial Owners and Management

The information required by this Item is incorporated by reference to the section entitled "Security Ownership of Certain Beneficial Owners and Management" in the Company's definitive proxy statement to be filed with the Commission.

### Item 13. Certain Relationships and Related Transactions

The information required by this Item is incorporated by reference to the section entitled "Certain Relationships and Related Transactions" in the Company's definitive proxy statement to be filed with the Commission.

### Item 14. Principal Accountant Fees and Services

The information required by this Item is incorporated by reference to the section entitled "Auditor Fees and Services" in the Company's definitive

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proxy statement to be filed with the Commission.

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### Part IV

Item 15. Exhibits, Financial Statement Schedules and Reports on Form 8-K

(a) Documents Filed

1. Financial Statements. The following Consolidated Financial Statements of the Company and Auditors' Report are filed as part of this Annual Report on Form 10-K:

- o Independent Auditors' Report of Deloitte & Touche LLP
- o Consolidated Balance Sheets, December 31, 2003 and 2002
- o Consolidated Statements of Operations for Each of the Three Years in the Period Ended December 31, 2003 and for the Period from April 9, 1973 (Date of Inception) to December 31, 2003
- o Consolidated Statements of Shareholders' Equity from April 9, 1973 (Date of Inception) to December 31, 2003
- o Consolidated Statements of Cash Flows for Each of the Three Years in the Period Ended December 31, 2003 and for the Period from April 9, 1973 (Date of Inception) to December 31, 2003
- o Notes to Consolidated Financial Statements

2. Financial Statement Schedule. Not applicable.

3. Exhibit List

Exhibit No. -----	Description -----	Incorporated by Reference/ Filed Herewith (and Sequent -----
3.1	Articles of Continuance	Incorporated by reference to Report on Form 8-K filed with the SEC on November 18, 2002.
3.2	Bylaw No. 1	Incorporated by reference to Report on Form 8-K filed with the SEC on November 18, 2002.
4.1	Form of Common Stock Certificate	Incorporated by reference to Report on Form 10-SB filed with the SEC on November 25, 2002 (File No. 33-12497).
4.2	Amended and Restated Shareholder Rights Plan dated October 15, 1999, between the	Incorporated by reference to Current Report on Form 8-K filed with the SEC on November 19, 2002.

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Company and Equity Transfer Services, Inc.

1-12497.

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10.1	Employment Agreement between Altair International Inc. and William P. Long dated January 1, 1998	Annual Report on Form 10-K Commission on March 31, 1999 Amendment No. 1 to Annual Report on Form 10-K/A filed on May 15, 1999
10.2	Employment Agreement between Fine Gold Recovery Systems Inc. and C. Patrick Costin dated August 15, 1994	Incorporated by reference to Registration Statement on Form 10-SB filed with the Commission on November 25, 1994
10.3	Altair International Inc. Stock Option Plan adopted by shareholders on May 10, 1996	Incorporated by reference to Registration Statement on Form 10-SB filed with the Commission on July 11, 1996
10.4	1998 Altair International Inc. Stock Option Plan adopted by Shareholders on June 11, 1998	Incorporated by reference to Definitive Proxy Statement filed with the Commission on May 11, 1998
10.5	2003 Employee Wage Stock Purchase Plan	Incorporated by reference to Registration Statement on Form S-2, File No. 333-108419, filed with the Commission on September 2, 2003.
10.6	Form of Renegotiated Mineral Lease	Filed herewith.
10.7	Purchase and Sale Agreement dated August 8, 2002 between the Company and BHP Minerals International Inc. (re Edison Way property)	Incorporated by reference to Registration Statement on Form S-2, File No. 333-102577, filed with the Commission on February 7, 2002
10.8	Installment Note dated August 8, 2002 (re Edison Way property)	Incorporated by reference to Registration Statement on Form S-2, File No. 333-102577, filed with the Commission on February 7, 2002
10.9	Trust Deed dated August 8, 2002 (re Edison Way property)	Incorporated by reference to Registration Statement on Form S-2, File No. 333-102577, filed with the Commission on February 7, 2002
10.10	Technology License Agreement dated September 29, 2003, with Bateman Luxembourg SA *	Incorporated by reference to Quarterly Report on Form 10-Q filed with the Commission November 14, 2003
10.11	Memorandum of Understanding dated as of April 21, 2003, with Titanium Metals Corporation *	Incorporated by reference to Quarterly Report on Form 10-Q filed with the Commission November 14, 2003



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10.12	Western Michigan University Project Agreement dated August 15, 2003	Incorporated by reference to Quarterly Report on Form 10-K Commission November 14, 2003
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10.13	Technology Investment Agreement dated January 8, 2004 between Titanium Metals Corporation and Altair Nanomaterials, Inc. *	Incorporated by reference to Current Report on Form 8-K Commission on February 3, 2004
10.14	License Agreement for Altair TiO2 Pigment Technology between Altair Nanotechnologies, Inc. and Western Oil Sands, Inc. *	Incorporated by reference to Current Report on Form 8-K Commission on February 3, 2004
10.15	Memorandum of Understanding with Hosokawa Nano Particle Technology Center (USA)	Filed herewith.
21	List of Subsidiaries	Incorporated by reference to Current Report on Form 8-K Commission on February 3, 2004
23.1	Consent of Deloitte & Touche LLP	Filed herewith.
24	Powers of Attorney	Included in the Signature Page
31.1	Rule 13-14(a)/15d-14a Certification of Chief Executive Officer	Filed herewith
31.2	Rule 13-14(a)/15d-154a Certification of President	Filed herewith
31.3	Rule 13-14(a)/15d-154a Certification of Chief Financial Officer	Filed herewith
32.1	Section 1350 Certification of Chief Executive Officer	Filed herewith
32.2	Section 1350 Certification of President	Filed herewith
32.3	Section 1350 Certification of Chief Financial Officer	Filed herewith

\*Portions of this Exhibit have been omitted pursuant to Rule 24b-2, are filed separately with the SEC and are subject to a confidential treatment request.

(b) Reports on Form 8-K

No current reports on Form 8-K were filed during the quarter ended December 31, 2003.

(c) Exhibits

Exhibits to this Report are attached following page F-26 hereof.

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(d) Financial Statement Schedule. Not applicable.

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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, on March 25, 2004.

ALTAIR NANOTECHNOLOGIES INC.

By: /s/ William P. Long  
 -----  
 William P. Long,  
 Chief Executive Officer

Date: March 25, 2004

POWER OF ATTORNEY AND ADDITIONAL SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, this Form 10-K has been signed by the following persons in the capacities and on the dates indicated. Each person whose signature to this Form 10-K appears below hereby constitutes and appoints Rudi E. Moerck and Edward Dickinson, and each of them, as his true and lawful attorney-in-fact and agent, with full power of substitution, to sign on his behalf individually and in the capacity stated below and to perform any acts necessary to be done in order to file all amendments and post-effective amendments to this Form 10-K, and any and all instruments or documents filed as part of or in connection with this Form 10-K or the amendments thereto and each of the undersigned does hereby ratify and confirm all that said attorney-in-fact and agent, or his substitutes, shall do or cause to be done by virtue hereof.

Signature -----	Title -----	Date
/s/ William P. Long ----- William P. Long	Chief Executive Officer and Director (Principal Executive Officer)	March
/s/ Rudi E. Moerck ----- Rudi E. Moerck	President and Director	March
/s/ Edward Dickinson ----- Edward Dickinson	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	March
/s/ Jon N. Bengtson ----- Jon N. Bengtson	Director	March

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/s/ James I. Golla Director March  
-----  
James I. Golla

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/s/ George Hartman Director March  
-----  
George Hartman

/s/ David King Director March  
-----  
David King

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Altair Nanotechnologies Inc.  
and Subsidiaries  
(A Development Stage Company)

Consolidated Financial Statements as of December 31, 2003 and 2002 and for  
Each of the Three Years in the Period Ended December 31, 2003 and for the  
Period from April 9, 1973 (Date of Inception) to December 31, 2003 and  
Independent Auditors' Report

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Altair nanotechnologies inc. and subsidiaries  
(A Development Stage Company)

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Period Ended December 31, 2003 and for the Period from April 9, 1973  
(Date of Inception) to December 31, 2003

Consolidated Statements of Shareholders' Equity for the Period from April 9, 1973  
(Date of Inception) to December 31, 2003

Consolidated Statements of Cash Flows for Each of the Three Years in the  
Period Ended December 31, 2003 and for the Period from April 9, 1973  
(Date of Inception) to December 31, 2003

Notes to Consolidated Financial Statements

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### INDEPENDENT AUDITORS' REPORT

To the Board of Directors and Shareholders of  
Altair Nanotechnologies Inc.  
Reno, Nevada

We have audited the accompanying consolidated balance sheets of Altair Nanotechnologies Inc. (a development stage company) and subsidiaries (collectively referred to as the "Company") as of December 31, 2003 and 2002, and the related consolidated statements of operations, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2003, and for the period from April 9, 1973 (date of inception) to December 31, 2003. These consolidated financial statements 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 Company's consolidated financial statements for the period from April 9, 1973 (date of inception) to December 31, 1997 were audited by other auditors whose report, dated February 17, 2000, expressed an unqualified opinion on those statements. The financial statements for the period from April 9, 1973 (date of inception) through December 31, 1997 reflect a net loss of \$7,350,462 of the related totals. The other auditors' report has been furnished to us and our opinion, insofar as it relates to the amounts included for such prior periods, is based solely on the report of such other auditors.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes 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 and the report of other auditors provide a reasonable basis for our opinion.

In our opinion, based on our audit and the report of other auditors, such consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2003 and 2002, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2003, and for the period from April 9, 1973 (date of inception) to December 31, 2003, in conformity with accounting principles generally accepted in the United States of America.

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/s/ DELOITTE & TOUCHE LLP

-----  
Salt Lake City, Utah  
March 10, 2004

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)

CONSOLIDATED BALANCE SHEETS  
DECEMBER 31, 2003 AND 2002  
(Expressed in United States Dollars)

ASSETS	2003	2002
CURRENT ASSETS:		
Cash and cash equivalents	\$ 3,869,669	\$ 244,681
Accounts receivable, net	13,324	132,859
Other current assets	79,187	22,598
	-----	-----
Total current assets	3,962,180	400,138
PROPERTY, PLANT AND EQUIPMENT, Net	6,618,805	7,349,818
PATENTS, Net	1,060,569	1,146,249
OTHER ASSETS	18,200	18,200
	-----	-----
TOTAL ASSETS	\$ 11,659,754	\$ 8,914,405
	=====	=====
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Trade accounts payable	\$ 85,255	\$ 332,716
Accrued liabilities	311,886	271,787
	-----	-----
Total current liabilities	397,141	604,503
	-----	-----
NOTES PAYABLE, Long-term portion	2,686,130	3,905,040
	-----	-----
COMMITMENTS AND CONTINGENCIES (Notes 6, 8, 9, and 11)		
SHAREHOLDERS' EQUITY:		
Common stock, no par value, unlimited shares authorized;		
43,188,362 and 30,244,348 shares issued and outstanding		

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at December 31, 2003 and 2002	54,789,896	43,787,850
Deficit accumulated during the development stage	(46,213,413)	(39,382,988)
	-----	-----
Total shareholders' equity	8,576,483	4,404,862
	-----	-----
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$ 11,659,754	\$ 8,914,405
	=====	=====

See notes to the consolidated financial statements.

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF OPERATIONS  
FOR EACH OF THE THREE YEARS IN THE PERIOD ENDED DECEMBER 31, 2003 AND  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Year Ended December 31,		
	2003	2002	2001
SALES	\$ 72,851	\$ 253,495	\$ 42,816
COST OF SALES	62,159	93,583	18,175
	-----	-----	-----
GROSS MARGIN	10,692	159,912	24,641
	-----	-----	-----
OPERATING EXPENSES:			
Mineral exploration and development	155,709	598,977	930,777
Research and development	905,457	587,137	559,454
Professional services	576,327	712,530	593,088
General and administrative expenses	3,279,652	2,360,315	2,824,646
Depreciation and amortization	878,757	997,708	1,138,208
Asset impairment	--	2,759,956	--
	-----	-----	-----
Total operating expenses	5,795,902	8,016,623	6,046,173
	-----	-----	-----
LOSS FROM OPERATIONS	5,785,210	7,856,711	6,021,532
	-----	-----	-----
OTHER EXPENSE (INCOME):			
Interest expense	454,415	1,151,388	1,881,077
Interest income	(1,879)	(2,105)	(148,980)
Gain on foreign exchange	193	835	402
Loss on extinguishment of debt	--	914,667	--
Gain on forgiveness of debt	--	--	--

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Loss on redemption of convertible debentures	--	--	--
	-----	-----	-----
Total other expense, net	452,729	2,064,785	1,732,499
	-----	-----	-----
NET LOSS	6,237,939	9,921,496	7,754,031
PREFERENTIAL WARRANT DIVIDEND	592,486	48,666	52,417
	-----	-----	-----
NET LOSS APPLICABLE TO SHAREHOLDERS	\$ 6,830,425	\$ 9,970,162	\$ 7,806,448
	=====	=====	=====
LOSS PER COMMON SHARE--Basic and diluted	\$ 0.19	\$ 0.40	\$ 0.39
	=====	=====	=====
WEIGHTED AVERAGE SHARES--Basic and diluted	36,222,026	24,975,837	20,063,473
	=====	=====	=====

See notes to the consolidated financial statements.

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)  
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Common Stock		Stock	Deficit
	Shares	Amount	Subscription	Accumulated
	-----	-----	Receivable	During the
			-----	Development
				Stage
	-----	-----	-----	-----
APRIL 9, 1973 (DATE OF INCEPTION)	--	--	\$ --	\$ --
Common stock issued	101,668	387,073	--	--
Net loss	--	--	--	(361,572)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1984	101,668	387,073	--	(361,572)
Common stock issued	40,000	240,770	--	--
Common stock issued for management fees	1,280	7,004	--	--
Net loss	--	--	--	(78,606)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1985	142,948	634,847	--	(440,178)
Common stock issued for property	3,333	18,058	--	--
Acquisition of subsidiary	780,000	44,551	--	--
Common stock issued for underwriter bonus	4,000	1	--	--
Net loss	--	--	--	(210,667)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1986	930,281	697,457	--	(650,845)

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Common stock issued for property	6,667	8,027	--	--
Flow through shares	298,650	463,301	--	--
Common stock issued for rights offering	257,822	253,947	--	--
Net loss	--	--	--	(696,642)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1987	1,493,420	1,422,732	--	(1,347,487)
Common stock issued for services	16,667	14,592	--	--
Common stock issued	16,667	14,592	--	--
Common stock issued in settlement of debt	233,333	51,073	--	--
Net loss	--	--	--	(149,316)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1988	1,760,087	1,502,989	--	(1,496,803)
Common stock issued	127,500	75,058	--	--
Common stock issued in settlement of lawsuit	41,667	22,800	--	--
Net loss	--	--	--	(151,372)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1989	1,929,254	1,600,847	--	(1,648,175)
	-----	-----	-----	-----

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)  
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Common Stock		Stock	Deficit
	Shares	Amount	Subscription Receivable	Accumulated During the Development Stage
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1989	1,929,254	\$1,600,847	\$ --	\$ (1,648,175)
Common stock issued	133,333	218,882	--	--
Exercise of stock options	33,333	18,240	--	--
Common stock issued for property	11,666	11,674	--	--
Common stock issued for services	13,333	21,888	--	--
Net loss	--	--	--	(230,125)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1990	2,120,919	1,871,531	--	(1,878,300)
Common stock issued	266,667	196,994	--	--
Common stock issued for property	28,333	17,146	--	--
Net loss	--	--	--	(258,209)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1991	2,415,919	2,085,671	--	(2,136,509)



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Common stock issued	1,086,753	443,237	--	--
Common stock issued for property	115,000	49,249	--	--
Common stock issued for settlement of debt	55,177	24,155	--	--
Net loss	--	--	--	(353,665)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1992	3,672,849	2,602,312	--	(2,490,174)
Common stock issued	48,000	36,393	--	--
Common stock issued for property	46,667	55,012	--	--
Net loss	--	--	--	(193,323)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1993	3,767,516	2,693,717	--	(2,683,497)
Common stock issued	600,000	131,329	--	--
Common stock issued for shares of subsidiary	750,000	257,187	--	--
Common stock issued for royalties	83,333	33,641	--	--
Net loss	--	--	--	(227,860)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1994	5,200,849	3,115,874	--	(2,911,357)
Common stock issued	2,700,000	875,529	--	--
Exercise of stock options	247,000	53,553	--	--
Exercise of stock warrants	350,000	171,458	--	--
Net loss	--	--	--	(424,109)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1995	8,497,849	4,216,414	--	(3,335,466)
	-----	-----	-----	-----

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)  
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Common Stock		Stock	Deficit
	Shares	Amount	Subscription Receivable	Accumulated During Develop- ment Stage
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 1995	8,497,849	\$ 4,216,414	\$ --	\$ (3,335,466)
Common stock issued	554,027	1,637,307	--	--
Exercise of stock options	702,000	526,850	--	--
Exercise of stock warrants	3,012,463	2,471,219	--	--
Stock options issued to non-employees	--	285,503	--	--
Common stock issued for acquisition of TMI	1,919,957	2,521,469	--	--
Net loss	--	--	--	(1,030,000)
	-----	-----	-----	-----

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BALANCE, DECEMBER 31, 1996	14,686,296	11,658,762	--	(4,36)
Exercise of stock options	362,500	1,530,406	--	
Stock options issued to non-employees	--	528,555	--	
Stock options issued to employees	--	62,800	--	
Exercise of stock warrants	443,949	1,038,788	--	
Net loss	--	--	--	(2,98)
-----				
BALANCE, DECEMBER 31, 1997	15,492,745	14,819,311	--	(7,35)
Stock options issued to non-employees	--	841,944	--	
Stock options issued to employees	--	15,420	--	
Common stock cancelled	(723,065)	--	--	
Common stock issued for convertible debenture	387,735	3,061,444	--	
Exercise of stock options	17,500	113,664	--	
Net loss	--	--	--	(4,65)
-----				
BALANCE, DECEMBER 31, 1998	15,174,915	18,851,783	--	(12,00)
Stock options issued to non-employees	--	765,386	--	
Common stock issued	300,000	1,862,500	--	
Net loss	--	--	--	(3,68)
-----				
BALANCE, DECEMBER 31, 1999	15,474,915	21,479,669	--	(15,69)
Stock options issued to non-employees	--	424,063	--	
Stock subscription receivable	--	--	(561,300)	
Stock warrants issued	--	1,245,050	--	
Exercise of stock options	71,300	335,778	--	
Common stock issued	3,779,273	8,904,029	--	
Net loss	--	--	--	(5,91)
-----				
BALANCE, DECEMBER 31, 2000	19,325,488	32,388,589	(561,300)	(21,60)
-----				

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)  
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Common Stock		Stock	Deficit
	Shares	Amount	Subscription Receivable	Accumulated During the Development Stage
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 2000	19,325,488	\$32,388,589	\$ (561,300)	\$ (21,606,378)
Stock options issued to non-employees	--	158,089	--	--
Stock subscription receivable	--	--	561,300	--

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Stock warrants issued	--	776,469	--	--
Preferential warrant dividend	--	52,417	--	(52,417)
Shares issued for settlement of debt	824,800	1,220,423	--	--
Exercise of stock options	65,000	130,000	--	--
Common stock expired	(266,170)	--	--	--
Exercise of warrants	713,333	713,333	--	--
Common stock issued	2,031,691	2,650,000	--	--
Net loss	--	--	--	(7,754,031)
-----				
BALANCE, DECEMBER 31, 2001	22,694,142	38,089,320	--	(29,412,826)
Stock options issued to non-employees	--	27,601	--	--
Shares issued under Employee Stock Purchase Plan	161,550	92,183	--	--
Stock warrants issued	--	347,773	--	--
Preferential warrant dividend	--	48,666	--	(48,666)
Shares issued for settlement of debt	1,500,090	975,000	--	--
Shares issued for interest	299,304	292,208	--	--
Shares issued for services	400,000	279,500	--	--
Exercise of warrants	286,169	300,477	--	--
Common stock issued	4,903,093	3,335,122	--	--
Net loss	--	--	--	(9,921,496)
-----				
BALANCE, DECEMBER 31, 2002	30,244,348	43,787,850	--	(39,382,988)
-----				

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)  
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Common Stock		Stock Subscription Receivable	Deficit Accumulated During the Development Stage
	Shares	Amount		
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 2002	30,244,348	\$43,787,850	\$ --	\$(39,382,988)
Stock options issued to non-employees	--	64,346	--	--
Variable accounting on stock options	--	903,668	--	--
Shares issued under Employee Stock Purchase Plan	873,480	606,675	--	--
Stock warrants issued	--	101,416	--	--
Preferential warrant dividend	--	592,486	--	(592,486)
Shares issued for settlement of debt	695,052	280,000	--	--
Shares issued for interest	277,169	133,315	--	--
Shares issued for services	213,102	89,297	--	--
Exercise of stock options	478,100	488,836	--	--
Exercise of warrants	3,210,328	3,417,109	--	--

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Common stock issued	7,196,783	4,324,898	--	--
Net loss	--	--	--	(6,237,939)
	-----	-----	-----	-----
BALANCE, DECEMBER 31, 2003	43,188,362	\$54,789,896	\$ --	\$(46,213,413)
	=====	=====	=====	=====

See notes to consolidated financial statements.

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF CASH FLOWS  
FOR EACH OF THE THREE YEARS IN THE PERIOD ENDED DECEMBER 31, 2003 AND  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Year Ended December 31,		
	2003	2002	2001
CASH FLOWS FROM DEVELOPMENT ACTIVITIES:			
Net loss	\$(6,237,939)	\$(9,921,496)	\$(7,754,000)
Adjustments to reconcile net loss to net cash used in development activities:			
Depreciation and amortization	878,757	997,708	1,138,000
Shares issued for services	89,297	203,500	
Shares issued for interest	133,315	292,208	820,000
Issuance of stock options to non-employees	64,346	27,601	158,000
Issuance of stock options to employees	--	--	
Variable accounting on stock options	903,668	--	
Issuance of stock warrants	101,416	108,556	396,000
Amortization of discount on note payable	181,090	384,616	403,000
Amortization of debt issuance costs	--	404,567	100,000
Asset impairment	--	2,759,956	
Loss on extinguishment of debt	--	914,667	
Loss on redemption of convertible debenture	--	--	
Gain on forgiveness of debt	--	--	
Loss on disposal of fixed assets	25,661	--	
Gain on foreign currency translation	--	--	
Deferred financing costs written off	--	--	
Changes in assets and liabilities (net of effects of acquisition):			
Restricted cash	--	--	4,000
Accounts receivable	119,535	(128,705)	(4,000)
Other current assets	(56,589)	6,899	18,000
Other assets	--	(2,000)	
Accounts payable	(247,461)	(30,974)	369,000
Accrued liabilities	40,099	107,072	
Deferred revenue	--	(40,972)	(16,000)
	-----	-----	-----

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Net cash used in development activities	(4,004,805)	(3,916,797)	(370)
CASH FLOWS FROM INVESTING ACTIVITIES:			
Asset acquisition	--	--	
Purchase of property and equipment	(92,400)	(2,525,916)	(158)
Proceeds received from sale of property and equipment	4,675	--	
Disposal (purchase) of patents and related expenditures	--	--	5
Net cash used in investing activities	(87,725)	(2,525,916)	(152)

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ALTAIR NANOTECHNOLOGIES INC. AND SUBSIDIARIES  
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF CASH FLOWS  
FOR EACH OF THE THREE YEARS IN THE PERIOD ENDED DECEMBER 31, 2003 AND  
FOR THE PERIOD FROM APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

	Year Ended December 31,		
	2003	2002	
CASH FLOWS FROM FINANCING ACTIVITIES:			
Issuance of common shares for cash, net of issuance costs	\$ 4,324,898	\$ 3,335,122	\$ 2,6
Collection of stock subscription receivable	--	--	5
Issuance of shares under Employee Stock Purchase Plan	606,675	92,183	
Issuance of convertible debenture	--	--	
Proceeds from exercise of stock options	488,836	--	1
Proceeds from exercise of warrants	3,417,109	300,477	7
Issuance of related party notes	--	6,243	1
Issuance of notes payable	--	2,505,040	
Payment of notes payable	(1,120,000)	--	(4,3
Payment of related party notes	--	(149,243)	(
Payment on capital lease	--	(2,312)	(
Purchase of call options	--	--	
Redemption of convertible debentures	--	--	
Net cash provided by (used in) financing activities	7,717,518	6,087,510	(2
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	3,624,988	(355,203)	(7
CASH AND CASH EQUIVALENTS			
Beginning of period	244,681	599,884	1,3
End of period	\$ 3,869,669	\$ 244,681	\$ 5

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	Year Ended December 31,		
	2003	2002	2001
SUPPLEMENTAL DISCLOSURES:			
Cash paid for interest	\$ 140,000	\$ --	\$ 386,557
	=====	=====	=====
Cash paid for income taxes	\$ --	\$ --	\$ --
	=====	=====	=====

(Continued)

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ALTAIR NANOTECHNOLOGIES INC. and subsidiaries  
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED DECEMBER 31, 2003, 2002, AND 2001,  
AND FOR THE PERIOD APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:

For the year ended December 31, 2003:

- o We issued 695,052 common shares to Doral 18, LLC in payment of \$280,000 of principal on our note payable. The conversion of the note resulted in additional interest expense of \$133,315 (see Note 6).
- o On or about June 2, 2003, we repriced warrants, held by a shareholder, for 796,331 common shares. The repriced warrants had an incremental fair value of \$176,472 and have been accounted for as a preferential warrant dividend.
- o In September 2003, we entered into an agreement with a shareholder wherein the shareholder agreed to exercise 631,882 warrants that had an exercise price of \$1.00 each. In return, we issued the shareholder 631,882 new warrants having an exercise price of \$1.75 each. The new warrants had a fair value of \$416,014 and have been accounted for as a preferential warrant dividend.

For the year ended December 31, 2002:

- o We issued 50,000 common shares in payment of financing fees associated with the Doral 18, LLC 2001 Note. The common shares had a fair value of \$76,000 which was recorded as debt issuance cost on the balance sheet.
- o In connection with the extinguishment of the Doral 18, LLC 2001 Note, we issued 1,500,000 shares of our common stock to reduce our note payable balance by \$600,000. We also issued to Doral 18, LLC a warrant for 750,000 common shares that had a fair value of \$239,217, as determined by the Black-Scholes pricing model. As a result of this transaction, we recorded a loss on extinguishment of debt of \$914,667.
- o We entered into a note payable with BHP with a face amount of \$3,000,000. There is no interest due on the note for the first 36 months. As a result, we imputed the interest and reduced the face amount of the note payable by

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\$566,763. The imputed interest expense for the period was \$71,803.

- o We repriced warrants, held by a shareholder, for 582,500 common shares. The repriced warrants had an incremental fair value of \$48,666 and have been accounted for as a preferential warrant dividend.

(Continued)

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ALTAIR NANOTECHNOLOGIES INC. and subsidiaries  
(A Development Stage Company)

CONSOLIDATED STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED DECEMBER 31, 2003, 2002, AND 2001,  
AND FOR THE PERIOD APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

---

For the year ended December 31, 2001:

- o In connection with amendments to the Doral 18, LLC 2000 Note, we issued warrants for 300,000 shares of common stock. The warrants had an estimated fair value of \$346,354 of which \$239,562 has been amortized into interest expense during the year ended December 31, 2003. The remaining amount will be recognized over the life of the note.
- o We cancelled call options on 228,456 shares of our common stock to pay \$97,743 of principal and \$244,941 of interest on the Doral 18, LLC 2000 Note. In addition, the cancellation of the call options resulted in an additional interest expense of \$210,568.
- o In accordance with the terms of our Doral 18, LLC 2000 Note, we paid \$644,804 of principal and \$273,731 of interest through the issuance of 824,800 shares of our common stock. In addition, the conversion of the note resulted in an additional interest expense of \$301,888.
- o We repriced warrants, held by a shareholder, for 713,333 common shares. The repriced warrants had an incremental fair value of \$52,417 and have been accounted for as a preferential warrant dividend.
- o In connection with the 2001 Note issued to Doral 18, LLC, we issued warrants for 200,000 common shares. The warrants had an estimated fair value of \$74,733. We also repriced existing warrants for 650,000 common shares from \$3.00 per share to \$1.50 per share. The repriced warrants had an incremental fair value of \$199,222.

See notes to consolidated financial statements.

(Concluded)

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ALTAIR NANOTECHNOLOGIES INC. and subsidiaries  
(A Development Stage Company)

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

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FOR THE YEARS ENDED DECEMBER 31, 2003, 2002, AND 2001,  
AND FOR THE PERIOD APRIL 9, 1973 (DATE OF INCEPTION) TO DECEMBER 31, 2003  
(Expressed in United States Dollars)

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### 1. DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Description of Business--Altair Nanotechnologies Inc., a development stage company, is incorporated in Canada and has been engaged in the business of (1) development, production, and sale of metal oxide nanoparticles, sale of contract services, and sale of intellectual property licenses, all related to our nanomaterials and titanium dioxide pigment technology, (2) exploring and developing mineral properties in the United States, and (3) developing mineral processing equipment (a centrifugal jig) for use in the recovery of fine and heavy mineral particles. In December 2003, the board of directors of Altair approved a plan to restructure the Company in order to concentrate resources on the nanomaterials and titanium dioxide pigment business. As a part of the restructuring, on March 9, 2004, we determined to consolidate the assets related to the centrifugal jig and our Tennessee mineral property into (or under) a single corporation, cause such corporation to become an SEC reporting company, and distribute substantially all of the shares of common stock of such corporation to our shareholders. The completion of this spin-off process is contingent upon receipt of shareholder approval and is anticipated to occur in 2004.

Principles of Consolidation--The consolidated financial statements include the accounts of Altair Nanotechnologies Inc. and its subsidiaries which include (1) Altair US Holdings, Inc., (2) Mineral Recovery Systems, Inc. ("MRS"), (3) Fine Gold Recovery Systems, Inc. ("FGRS"), (4) Altair Nanomaterials, Inc. ("ANI"), and (5) Tennessee Valley Titanium, Inc. ("TVT"), (collectively referred to as the "Company"), all of which are 100% owned. All of the subsidiaries are incorporated in the United States of America. Intercompany transactions and balances have been eliminated in consolidation.

Basis of Presentation--The accompanying consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. As shown in the consolidated financial statements for the years ended December 31, 2003, 2002, and 2001, we incurred net losses of \$6,237,939, \$9,921,496, and \$7,754,031, respectively, and since the date of inception have incurred cumulative losses of \$45,519,844. At December 31, 2003 and 2002, we had stockholder's equity of \$8,576,483 and \$4,404,862, respectively.

The consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might be necessary should we be unable to continue as a going concern. Our continuation as a going concern is dependent upon our ability to generate sufficient cash flow to meet our obligations on a timely basis, to obtain additional financing or refinancing as may be required, to develop commercially viable products and processes, and ultimately to establish successful operations. We are in the process of developing and commercializing our nanomaterials and titanium dioxide pigment technology. We have financed operations primarily through the issuance of equity securities (common stock, convertible debentures, stock options and warrants), and by the issuance of debt (term notes). Additional funds will be required to complete development activities. We believe that current working capital, cash receipts from anticipated sales, and funding through sales of common stock will be sufficient to enable us to continue as a going concern through 2006. Subsequent to December 31, 2003, we have received cash proceeds of approximately \$8 million from the exercise of stock options and warrants.



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### 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Use of Estimates--The preparation of the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires that we 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 consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents--Cash and cash equivalents are highly liquid investments with an original maturity of three months or less. Cash equivalents are recorded at cost, which approximates fair value.

Accounts Receivable--Accounts receivable consists of amounts due from customers for sales of products and services, net of an allowance for losses of \$466 and \$3,203 at December 31, 2003 and 2002, respectively.

Property, Plant and Equipment--Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is recorded using the straight-line method over the following useful lives:

Furniture and office equipment	3-7 years
Vehicles	5 years
Pigment production equipment	5-10 years
Building	30 years

Patents--Patents related to the pigment production technology are carried at cost and amortized on a straight-line basis over their estimated useful lives, which range from 14 to 20 years.

Exploration--Expenditures incurred in the search for mineral deposits and the determination of the commercial viability of such deposits are charged to expense as incurred.

Research and Development Expenditures--Research and development expenditures are charged to expense as incurred.

Foreign Currency Translation--Asset and liability accounts, which are originally recorded in the appropriate local currencies, are translated into U.S. dollars at year-end exchange rates. Revenue and expense accounts are translated at the average exchange rates for the period. Transaction gains and losses are included in the accompanying consolidated statements of operations. Substantially all of our assets are located in the United States of America.

Stock-Based Compensation--Our stock option plans are subject to the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123, Accounting for Stock-Based Compensation. Under the provisions of SFAS 123, employee and director stock-based compensation expense is measured using the intrinsic-value method as prescribed by Accounting Principles Board ("APB") Opinion No. 25, Accounting for Stock Issued to Employees, or the fair value method described in SFAS 123. We have elected to follow the accounting provisions of APB 25 for our employee and director stock-based awards and to furnish the pro forma disclosures required under SFAS 123.

We are required to implement the provision of SFAS 123 for stock-based awards to other than employees and directors. We account for stock options and warrants issued to non-employees in accordance with SFAS 123.

To estimate compensation expense that would be recognized under SFAS 123 for all stock-based awards, we have used the modified Black-Scholes option pricing

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model. If we had accounted for our stock options issued to employees and directors using the accounting method prescribed by SFAS 123, our net loss and loss per share would be as follows:

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	2003	2002	2001
Net loss applicable to shareholders:			
As reported	\$ 6,830,425	\$ 9,970,162	\$7,806,448
Deduct stock-based employee compensation expense included in reported net loss	(903,668)	--	--
Add stock-based employee compensation expense determined under value based method for all awards	590,908	235,823	1,474,690
	-----	-----	-----
Pro forma	\$ 6,517,665	\$10,205,985	\$9,281,138
	=====	=====	=====
Loss per common share (both basic and diluted):			
As reported	\$ 0.19	\$ 0.40	\$ 0.39
	=====	=====	=====
Pro forma	\$ 0.18	\$ 0.41	\$ 0.46
	=====	=====	=====

In calculating pro forma compensation, the fair value of each stock option is estimated on the date of grant using the Black-Scholes option-pricing model and the following weighted average assumptions:

	2003	2002	2001
Dividend yield	None	None	None
Expected volatility	65 %	67 %	81 %
Risk-free interest rate	3.02 %	2.19 %	4.76 %
Expected life (years)	4.8	5.0	5.0

Long-Lived Assets--We evaluate the carrying value of long-term assets, including intangibles, when events or circumstance indicate the existence of a possible impairment, based on projected undiscounted cash flows, and recognize impairment when such cash flows will be less than the carrying values. Measurement of the amounts of impairments, if any, is based upon the difference between carrying value and fair value. Events or circumstances that could indicate the existence of a possible impairment include obsolescence of the technology, an absence of market demand for the product, and/or continuing technology rights protection.

Revenue Recognition--Revenue is recognized at the time the purchaser has accepted delivery of the product or after the service has been performed. For the year ended December 31, 2003, we sold titanium dioxide and lithium titanate nanoparticles, and other materials, to customers totaling \$17,602. Revenue also includes \$18,696 earned under a services agreement with a materials company where we tested the company's mineral concentrates in the production of titanium dioxide pigments using our titanium processing technology. In addition, revenue includes \$36,553 earned from contract research work done under an agreement with Western Michigan University.

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Net Loss Per Common Share--Basic net loss per common share is calculated by dividing net loss by the weighted average number of common shares outstanding during the period. The existence of stock options, warrants, and convertible debentures does not affect the calculation of net loss per share on a fully diluted basis because the effect of including the additional common stock equivalents would be antidilutive.

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Recent Accounting Pronouncements--In June 2001, the FASB issued SFAS No. 143, Accounting for Asset Retirement Obligations, which requires asset retirement obligations to be recognized when they are incurred and displayed as liabilities. SFAS 143 was effective for the year ended December 31, 2003. Upon adoption of SFAS 143, we recorded an accrual for asset retirement obligations of \$19,754.

In December 2002, the FASB issued SFAS No. 148, Accounting for Stock-Based Compensation-Transition and Disclosure. SFAS 148 amends SFAS No. 123, Accounting for Stock-Based Compensation, to provide alternative methods of transition to SFAS 123's fair value method of accounting for stock-based employee compensation. SFAS 148 also amends the disclosure provisions of SFAS 123 and Accounting Principles Board (APB) Opinion No. 28, Interim Financial Reporting, to require disclosure in the summary of significant accounting policies of the effects of an entity's accounting policy with respect to stock-based employee compensation on reported net income and earnings per share in annual and interim financial statements. We adopted this statement effective January 1, 2003 but have elected, as permitted under SFAS 123, to continue to follow the accounting provisions of APB Opinion No. 25, Accounting for Stock Issued to Employees, and to furnish the pro forma disclosures required under SFAS 148.

In November 2002, the FASB issued Financial Accounting Standards Board Interpretation No. ("FIN") 45, Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others, which requires the guarantor to recognize as a liability the fair value of the obligation at the inception of the guarantee. The disclosure requirements in FIN 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. Management believes we have no guarantees that are required to be disclosed in the financial statements. The recognition provisions are to be applied on a prospective basis to guarantees issued after December 31, 2002. The adoption of the recognition provisions of FIN 45 did not have a material impact on our consolidated financial statements.

On April 30, 2003, the FASB issued SFAS No. 149, Amendment of Statement 133 on Derivative Instruments and Hedging Activities. SFAS 149 amends and clarifies accounting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS 133. The new guidance amends SFAS 133 for decisions made as part of the Derivatives Implementation Group ("DIG") process that effectively required amendments to SFAS 133, and decisions made in connection with other FASB projects dealing with financial instruments and in connection with implementation issues raised in relation to the application of the definition of a derivative and characteristics of a derivative that contains a financing component that warrants special reporting in the statement of cash flows. SFAS 149 is effective for contracts entered into or modified after June 30, 2003 and for hedging relationships designated after June 30, 2003. The adoption of SFAS 149 did not have a material impact on our consolidated financial statements.

SFAS No. 150, Accounting for Certain Financial Instruments with Characteristics of both Liability and Equity, was issued in May 2003. SFAS 150 establishes standards for how an issuer classifies and measures certain financial

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instruments with characteristics of both liability and equity in its statement of financial position. SFAS 150 is effective for the Company for new or modified financial instruments beginning June 1, 2003, and for existing instruments beginning August 1, 2003. The adoption of SFAS 150 did not have a material impact on our consolidated financial statements.

In December 2003, the FASB issued Financial Accounting Standards Board Interpretation No. ("FIN") 46 (revised), Consolidation of Variable Interest Entities, which is an interpretation of ARB 51 and addresses consolidation by business enterprises of variable interest entities. FIN 46 is effective

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immediately to variable interest entities created after January 31, 2003, and to variable interest entities in which an enterprise obtains an interest after that date. It applies in the first fiscal year or interim period beginning after June 15, 2003, to variable interest entities in which an enterprise holds a variable interest that it acquired before February 1, 2003. We adopted this statement on July 1, 2003. We do not have any variable interest entities as of December 31, 2003.

Comprehensive Income--The only component of comprehensive income in 2003, 2002, and 2001 was net loss.

Deferred Income Taxes--We use the asset and liability approach for financial accounting and reporting for income taxes. Deferred income taxes are provided for temporary differences in the bases of assets and liabilities as reported for financial statement purposes and income tax purposes. We have recorded a valuation allowance against all net deferred tax assets.

Deferred Revenue--We entered into a sales contract on October 6, 2000 with a customer for titanium dioxide nanoparticles under which the total contract amount was prepaid. During 2002, \$40,972 of products was delivered under the contract and recognized as sales revenues.

Fair Value of Financial Instruments--Our financial instruments such as cash and cash equivalents and long-term debt, when valued using market interest rates, would not be materially different from the amounts presented in the consolidated financial statements.

Reclassifications--Certain reclassifications have been made to the prior period amounts to conform to classifications adopted in the current year.

### 3. ASSET IMPAIRMENT

During the quarter ended June 30, 2002, we made the determination that certain assets of the Company were impaired. Due to a shortage of cash, we made the decision to reduce expenditures associated with exploring and developing the Tennessee mineral property to the minimum amount required to maintain it. As a result, development activities have been delayed, including our intended use of the jig to enhance the recovery of heavy minerals on this property. We have utilized the jig to perform tests for fine particle recovery at a third party's facility, entered into a license agreement with respect to the Altair jig, and continue to seek manufacturers and distributors for marketing the jig under licensing and/or distributorship agreements. We could not determine when and if the jig will generate substantial revenues and profits. This, in combination with our lack of funds to further develop the jig for commercial use, caused us to believe that the jig assets were impaired. Since we could not determine when adequate funds would be available to further develop and utilize the jig, we have recorded an impairment charge related to the jig assets in the amount of \$2,759,956, which represents the remaining net book value of the jig patents and

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related expenditures of \$2,366,155 and the jigs included in property, plant, and equipment of \$393,801.

During 2003, we assessed the carrying value of our long-lived assets at each reporting state as we have continued to experience net losses. We assessed the carrying value of the titanium processing technology and titanium and nanoparticle processing assets by analyzing future estimated cash flows associated with these assets over the succeeding ten-year period. These assets have begun generating sales revenues, we have entered into development contracts and non-disclosure agreements with companies interested in joint development and/or testing of certain nanomaterials products, and we are in discussions regarding licensing of our technology to others. In our future estimated cash flow analysis, we examined product markets, assessed our opportunities for

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market entry and sales based on current sales and/or customer interest, including samples supplied and development agreements signed, and estimated the costs, including capital costs, associated with the generation of revenues. At the same time, we took into consideration recent developments with respect to licensing our technology to others and pharmaceutical applications that have significant revenue potential, and estimated future cash flows associated with these activities. Based on our future estimated cash flow analysis, we believe that the titanium nanoparticle processing technology and titanium and nanoparticle processing assets are not impaired as of December 31, 2003.

#### 4. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consisted of the following as of December 31, 2003 and 2002:

	2003	2002
Furniture and office equipment	\$ 75,749	\$ 82,113
Vehicles	129,734	125,031
Pigment production equipment	7,144,365	7,162,641
Building	2,335,979	2,335,978
	-----	-----
Total	9,685,827	9,705,763
Less accumulated depreciation	(3,067,022)	(2,355,945)
	-----	-----
Total property, plant and equipment	\$ 6,618,805	\$ 7,349,818
	=====	=====

Depreciation expense for the years ended December 31, 2003, 2002, and 2001 totaled \$793,077, \$770,250, and \$772,268, respectively.

#### 5. PATENTS

Patents consisted of the following at December 31, 2003 and 2002:

	2003	2002
Pigment production patents	\$ 1,517,736	\$ 1,517,736
Less accumulated amortization	(457,167)	(371,487)
	-----	-----
Total patents	\$ 1,060,569	\$ 1,146,249

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Patents are being amortized over their useful lives with a weighted average amortization period of approximately 16.5 years. Amortization expense was \$85,680 for the year ended December 31, 2003, which represented the amortization relating to the identified intangible assets still required to be amortized under SFAS 142. For each of the next five years, amortization expense relating to intangibles will be \$85,680 per year. Amortization expense was \$365,940 and \$484,558 for the years ended December 31, 2001 and 2000, respectively.

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6. NOTES PAYABLE

Notes payable consisted of the following at December 31, 2003 and 2002:

	2003	2002
Note payable to BHP Minerals International, Inc.	\$2,686,130	\$2,505,040
Note payable to Doral 18, LLC	--	1,400,000
Less current portion	--	--
	-----	-----
Long-term portion of notes payable	\$2,686,130	\$3,905,040
	=====	=====

On December 15, 2000, pursuant to a securities purchase agreement, we sold to Doral 18, LLC ("Doral") a \$7 million 10% Asset-Backed Exchangeable Term Note (the "2000 Note") and detachable warrants to purchase 350,000 common shares at \$3.00 per share. Net proceeds of \$4 million from the 2000 Note were placed in a restricted bank account to secure a letter of credit and were scheduled to be released as principal payments were made. Under the 2000 Note, we were required to make monthly payments in the principal amount of \$291,667 plus accrued interest and we had the right to redeem the monthly payment amounts in cash at any time. If we elected not to redeem the monthly payment amount in cash, on each due date, the holder of the 2000 Note automatically received the right to exchange (immediately or at any later date during the term) the monthly payment amount into common shares at a specified exchange price. The 2000 Note was due and payable in full on December 15, 2003.

During 2001, we made cash principal payments of \$1,894,394, interest payments of \$286,557, and incurred additional interest expense of \$100,000 related to fees to extend the registration statement associated with the 2000 Note. Doral also converted \$644,804 of principal and \$273,731 of interest payable on the 2000 Note into 824,800 shares of common stock.

On December 28, 2001, a Termination and Issuance Agreement was signed with Doral. The 2000 Note was exchanged for a new note ("2001 Note") having a face amount of \$2,000,000. In addition, the letter of credit discussed above was terminated and \$2,500,733 of restricted cash securing the letter of credit was paid to Doral. The 2001 Note had an interest rate of 11% per annum with interest payments due monthly. If interest was not paid, Doral automatically received the right to exchange (immediately or at any later date during the term) the monthly interest payment amount into common stock at a specified exchange price. The principal amount of the 2001 Note was due and payable on March 31, 2003 but was amended during 2002 prior to being paid.

During the first quarter of 2002, a total of \$53,644 of monthly interest payment amounts were exchanged by Doral for 59,599 common shares. The conversion of

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these shares resulted in additional interest expense of \$16,095. On April 2, 2002, we entered an agreement with Doral whereby Doral agreed to waive, for the period March 27, 2002 through September 27, 2002, a provision of the 2001 Note that required us to maintain a cash and cash equivalents balance of \$250,000 any time our common shares closed at less than \$1.00 per share for three consecutive trading days. In addition, Doral agreed to amend, for the period March 27, 2002 through September 27, 2002, a provision of the 2001 Note which required us to have a cash and cash equivalents balance of at least \$250,000 at the end of every quarter. Such amount was reduced to \$125,000. In return, we prepaid a total of \$110,904 of interest on the 2001 Note for the period March 27, 2002 through September 27, 2002 by issuing Doral 143,791 common shares. The conversion of these shares resulted in additional interest expense of \$35,762.

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On September 23, 2002, we entered an agreement with Doral whereby Doral agreed to waive, for the period September 28, 2002 through January 1, 2003, a provision of the 2001 Note that required us to maintain a cash and cash equivalents balance of \$250,000 any time our common shares closed at less than \$1.00 per share for three consecutive trading days. In addition, Doral agreed to amend, for the period September 28, 2002 through January 1, 2003, a provision of the 2001 Note which required us to have a cash and cash equivalents balance of at least \$250,000 at the end of every quarter. Such amount was reduced to \$125,000. In return, we prepaid a total of \$57,260 of interest on the 2001 Note for the period September 28, 2002 through January 1, 2003 by issuing Doral 95,914 common shares. The conversion of these shares resulted in additional interest expense of \$18,543.

On November 21, 2002, a Second Amended and Restated Secured Term Note ("2002 Note") was signed with Doral. At closing, we issued to Doral 1,500,000 common shares in exchange for a reduction of the principal amount outstanding from \$2,000,000 to \$1,400,000. We also issued to Doral a warrant for 750,000 common shares in exchange for Doral's agreement to (i) extend the due date of the 2002 Note to March 31, 2004, (ii) eliminate the requirement that we maintain a cash and cash equivalents balance of \$250,000 any time our common shares close at less than \$1.00 per share for three consecutive trading days, and (iii) eliminate the requirement that we have a cash and cash equivalents balance of at least \$250,000 at the end of every quarter. The fair value of the warrant was \$239,217 and was calculated by using the modified Black-Scholes pricing model with the following assumptions: risk-free rate of 3.2%, expected yield of 0%, volatility of 68%, and expected life of 5 years. The warrant was exercisable at \$1.00 per share and was exercised by Doral on December 2, 2003. The 2002 Note had an interest rate of 11% with the interest payable monthly in cash. The principal amount may be prepaid at any time with a 5% prepayment penalty. Under the terms of the 2002 Note, a conversion right with respect to \$280,000 of principal accrues on each of March 1, 2003, June 1, 2003, September 1, 2003, December 1, 2003 and March 1, 2004. If the amount that would be subject to a conversion right was prepaid prior to the date of accrual, such conversion right did not accrue. Once a conversion right accrued, the principal amount subject to that conversion right could not be prepaid unless all principal amounts not subject to a conversion right had been prepaid in full. Each conversion right gave Doral the right to convert the subject principal amount into common shares at a conversion price equal to the lesser of (a) \$1.00 per share and (b) 70% of the average of the closing price of our common shares for the five trading days ending on the trading day immediately preceding the date on which that conversion right accrued. Because this was a contingent embedded beneficial conversion feature, no amounts were allocated to the beneficial conversion feature pending resolution of the contingency.

In accordance with EITF 96-19, Debtor's Accounting for a Modification or Exchange of Debt Instruments, the exchange of the notes discussed above was

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considered to result in a substantially different debt instrument. Accordingly, the fair value of the warrants issued, the unamortized debt discount and debt issuance costs associated with the original note and the debt issuance costs associated with the new note were recorded as a loss on extinguishment of debt in the amount of \$914,667.

Doral elected to convert the \$250,000 of principal under their conversion right which accrued on March 1, 2003, and, as a result, we issued 695,052 common shares to Doral. The conversion of these shares resulted in additional interest expense of \$133,315 for which we issued an additional 277,169 common shares. We subsequently made cash principal payments of \$280,000 each on May 29, 2003 and August 28, 2003, and we paid the remaining principal amount of \$560,000 on September 15, 2003. We recorded additional interest expense of \$56,000 related to prepayment penalties.

The 2002 Note was secured by a pledge of the equipment, intellectual property and common stock of ANI, and by a pledge of the leasehold interest in mineral deposits and common stock of MRS.

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On August 8, 2002, we entered into a purchase and sale agreement with BHP Minerals International, Inc. ("BHP") wherein we purchased the land, building and fixtures in Reno, Nevada where our titanium processing assets are located. In connection with this transaction, BHP also agreed to terminate our obligation to pay royalties associated with the sale or use of the titanium processing technology. In return, we issued to BHP a note in the amount of \$3,000,000, at an interest rate of 7%, secured by the property we acquired. Interest does not begin to accrue until August 8, 2005. As a result, we imputed the interest and reduced the face amount of the note payable by \$566,763, an amount that is being amortized to interest expense over the life of the note. The first payment of \$600,000 of principal plus accrued interest is due February 8, 2006. Additional payments of \$600,000 plus accrued interest are due annually on February 8, 2007 through 2010.

### 7. STOCK OPTIONS AND WARRANTS

Stock Options--We have stock option plans administered by the Board of Directors that provide for the granting of options to employees, officers, directors and other service providers of the Company. Options granted under the plans generally are granted with an exercise price equal to the market value of a common share at the date of grant, have five-year terms and typically vest over periods ranging from immediately to three years from the date of grant.

Stock option activity for the years ended December 31, 2003, 2002, and 2001 is summarized as follows:

	2003		2002		2001
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Exercise Price	Shares
Outstanding at beginning of year	4,061,700	\$ 3.83	3,666,700	\$ 4.38	2,958,700
Granted during the year	1,010,000	1.10	975,000	0.94	1,368,000
Cancelled/Expired	(925,000)	6.20	(580,000)	1.93	(595,000)
Exercised	(483,100)	1.02	--	--	(65,000)



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Outstanding at end of year	3,663,600	\$ 3.11	4,061,700	\$ 3.83	3,666,700
	=====	=====	=====	=====	=====
Options exercisable at year end	3,181,100	\$ 3.38	3,410,700	\$ 4.26	2,999,700
	=====	=====	=====	=====	=====
Weighted average fair value of options granted during year		\$ 0.51		\$ 0.64	
		=====		=====	

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The following table summarizes information about stock options outstanding at December 31, 2003:

Stock Options Outstanding					Sto
-----					Ex
Range of Exercise Prices	Weighted Number Outstanding	Average Remaining Contractual Life (Years)	Weighted Average Exercise Price		Number Exercisable
\$0.47 to \$1.20	1,196,900	3.9	\$ 1.04		951,9
\$1.22 to \$2.05	1,028,000	2.8	1.77		790,5
\$2.25 to \$4.94	779,000	1.4	3.93		779,0
\$6.125 to \$10.00	659,700	0.05	7.98		659,7
	-----	-----	-----		-----
	3,663,600	2.4	\$ 3.11		3,181,1
	=====	=====	=====		=====

We have elected to follow the measurement provisions of APB 25, under which no recognition of expense is required in accounting for stock options granted to employees and directors for which the exercise price equals or exceeds the fair market value of the stock at the grant date. Generally, stock options are granted at an option price at or greater than fair market value on the date of grant. We recorded compensation expense of \$903,668 for stock options that had been previously repriced and are accounted for under variable accounting in accordance with APB 25 for the year ended December 31, 2003.

We follow the measurement provisions of SFAS 123 for stock options issued to non-employees. We recorded compensation expense of \$64,346, \$27,601, and \$158,089 for stock options granted to non-employees for the years ended December 31, 2003, 2002, and 2001, respectively.

Warrants--Warrant activity for the years ended December 31, 2003, 2002, and 2001 is summarized as follows:

2003	2002	2001
-----	-----	-----
Weighted Average	Weighted Average	

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	Warrants	Exercise Price	Warrants	Exercise Price	Warrants	
Outstanding at beginning of year	9,170,171	\$ 1.92	4,612,007	\$ 2.92	1,883,672	\$
Granted during the year	5,331,827	1.31	5,069,333	1.41	3,441,668	
Expired	(837,839)	2.72	(225,000)	9.00	--	
Exercised	(3,210,328)	1.38	(286,169)	1.05	(713,333)	
	-----	-----	-----	-----	-----	
Outstanding at end of year	10,453,831	\$ 1.71	9,170,171	\$ 1.92	4,612,007	\$
	=====	=====	=====	=====	=====	

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The following table summarizes information about warrants outstanding at December 31, 2003:

Range of Exercise Prices	Warrants Outstanding			Warrants Ex
	Number Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number Exercisable
\$0.45 to \$1.00	2,697,386	4.1	\$ 0.98	2,697,386
\$1.20 to \$1.50	3,150,107	3.3	1.45	3,150,107
\$1.75 to \$2.00	3,069,374	4.0	1.90	3,069,374
\$2.50 to \$6.00	1,536,965	2.8	3.12	1,536,965
	-----	-----	-----	-----
	10,453,832	3.6	\$ 1.71	10,453,832
	=====	=====	=====	=====

The warrants were issued in conjunction with debt offerings, issuance of common stock, and payment for outside services. To estimate expense related to the issuance of warrants, we have used the modified Black-Scholes option pricing model using a life equal to the maximum contractual life. The warrants expire on various dates ranging from March 2004 to September 2008. Most warrants contain provisions whereby the expiration date is accelerated if our common shares close at or above specified prices for specified periods of time, the prices ranging from \$2.50 to \$8.00 per share.

8. OTHER TRANSACTIONS

On October 18, 2001, we reduced the exercise price of 255,000 outstanding warrants to \$1.00 per share for a period of 45 days and we reduced the exercise price of 458,333 outstanding warrants to \$1.00 per share through December 14, 2001. As a result of these repricings, we recorded a preferential warrant dividend of \$52,417 as of the repricing date. The warrants had been previously issued with exercise prices ranging from \$4.00 to \$8.00.

On April 16, 2002, we reduced the exercise price of 582,500 outstanding warrants to \$1.05 per share for the period April 26, 2002 through June 30, 2002. The

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warrants had been previously issued with exercise prices ranging from \$3.50 to \$5.00. As a result of these repricings, we recorded a preferential warrant dividend of \$48,666 as of the repricing date. A total of 286,169 warrants were exercised prior to the expiration date.

On or about June 2, 2003, we reduced the exercise price of 796,331 warrants to \$1.00 per share. As a result of these repricings, we recorded a preferential warrant dividend of \$176,472 as of the repricing date. The warrants had been previously issued with exercise prices ranging from \$2.50 to \$4.50.

In September 2003, we entered into an agreement with a shareholder wherein the shareholder agreed to exercise 631,882 warrants that had an exercise price of \$1.00 each. In return, we issued to the shareholder 631,882 new warrants having an exercise price of \$1.75 each. The new warrants have a fair value of \$416,014 and were recorded as a preferential warrant dividend.

On August 6, 2002, we adopted an Employee Stock Purchase Plan ("ESPP") which allows employees to purchase common shares at the fair market value through payroll deductions. Through December 31, 2003, a total of 864,584 common shares were issued under the ESPP at prices ranging from \$0.33 to \$2.10 per share.

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### 9. LEASES

Operating Leases--We lease certain premises and equipment under operating leases, all of which are on a month-to-month basis.

Lease expense for the years ended December 31, 2003, 2002, and 2001 totaled \$33,239, \$207,265, and \$304,330, respectively.

Mineral Leases--Our subsidiary, MRS, has entered into various mineral leases for a 100% interest in approximately 8,700 acres of land in the state of Tennessee, United States. During 2003, MRS renegotiated the leases on 3,100 acres, representing the most important core holdings, in order to extend the term of the leases and reduce the advance royalty payments. It has effectively abandoned the mineral leases on the remaining 5,600 acres, but the leases remain in effect until terminated by the lessor for nonpayment. The minimum annual advance royalty payments for the 8,700 acres under lease are as follows:

Year ending December 31:	
2004	\$ 160,605
2005	165,763
2006	173,747
2007	159,385
2008	144,533
Thereafter	136,334

The mineral leases are subject to a production royalty; however, MRS will receive a credit against production royalties for all advance royalties paid. Upon failure of MRS to make the minimum payments as required by the leases, the remedies of the lessors are limited to termination of the leases. The Company has incurred royalties of \$147,467, \$129,691, and \$87,593 for the years ended December 31, 2003, 2002, and 2001, respectively. As of December 31, 2003, we owed \$193,571 of royalty payments to lessors.

### 10. INCOME TAXES

Because of the net operating losses and a valuation allowance on deferred tax assets, there was no provision for income taxes recorded in the accompanying consolidated financial statements for the three years in the period ended

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December 31, 2003.

A reconciliation of the federal statutory income tax rate and our effective income tax rates is as follows:

	Year Ended December 31,		
	2003	2002	2001
Federal statutory income tax (benefit)	\$(2,390,649)	\$(3,489,557)	\$(2,713,911)
Meals and entertainment	3,821	3,470	601
Valuation allowance	2,386,828	3,486,087	2,713,310
	-----	-----	-----
Total	\$       --	\$       --	\$       --

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The components of the deferred tax assets consisted of the following as of December 31, 2003 and 2002:

	2003	2002
Deferred tax assets:		
Net operating loss carryforward	\$ 8,174,014	\$ 10,502,652
Basis difference in assets	493,242	--
Allowance for bad debts	163	--
Unrealized loss	--	172,557
	-----	-----
Total deferred tax assets	8,667,419	10,675,209
Deferred tax liabilities:		
Basis difference in assets	--	(1,748,777)
Allowance for bad debts	--	(1,121)
Accrued vacation	(27,012)	--
Valuation allowance	(8,640,407)	(8,925,311)
	-----	-----
Total deferred tax assets	\$       --	\$       --

The net operating loss carryforwards total approximately \$23,000,000 as of December 31, 2003 and will expire at various dates beginning in 2004 through 2023.

### 11. COMMITMENTS AND CONTINGENCIES

**Litigation**--We are currently not aware of any investigations, claims, or lawsuits which we believe could have a material adverse effect on our consolidated financial position or on our consolidated results of operations.

**Significant Contracts**--In July 2003 we entered into a memorandum of understanding (the "MOU") with Titanium Metals Corporation ("TIMET") to provide custom oxide feedstocks for a four-year, titanium metal research program funded

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by the Department of Defense, Defense Advanced Research Projects Agency ("DARPA"). The MOU sets up a relationship under which TIMET and Altair will explore opportunities for collaboration and funding of development work in connection with the DARPA program. The DARPA program's goal is to lower the cost of titanium metal and titanium metal alloys to enable a broader market use. DARPA is specifically interested in lowering the cost to provide for a broader use in military applications such as aerospace and weapons systems. During 2003, we received \$9,000 in connection with the MOU agreement. In January 2004 we became a subcontractor for the DARPA program and were awarded a \$150,000 contract from TIMET to design and develop a titanium oxide electrode structure and provide TIMET optimized titanium oxide feedstock to produce 50 pounds of titanium metal per day in batch production demonstrations.

In September 2003, we entered into an agreement with Western Michigan University ("WMU") to provide research services and materials to support research involving a technology used in the detection of chemical, biological and radiological agents. The teaming/research agreement with WMU, funded by the Department of Energy, provides for total payments to Altair of \$356,500 over a two-year period. During 2003, we received \$36,600 in connection with this research agreement. In December 2003, WMU was awarded a second, one-year Department of Energy grant for which Altair will also participate as a subcontractor. The project is a collaboration involving WMU, Altair and the University of Nevada, Reno. The \$2 million was included in the Omnibus Appropriations Bill passed by the U.S. House of Representatives December 9, 2003. WMU and Altair have a joint partnership for seeking Federal support for nanotechnology research and development and will utilize the new grant funding equally.

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In January 2004, we entered into a license agreement with Western Oil Sands, Inc. with respect to its possible use of the Altair Hydrochloride Pigment Process ("AHPP") for the production of titanium dioxide pigment and pigment-related products at the Athabasca Oil Sands Project in Alberta, Canada, and elsewhere. Upon execution of the agreement, we granted Western Oil Sands an exclusive, conditional license to use the AHPP on heavy minerals derived from oil sands in Alberta, Canada. The agreement also contemplates a three-phase, five-year program pursuant to which the parties will work together to further evaluate, develop and commercialize the AHPP. In the first phase of the program, Western Oil Sands is expected to spend \$650,000 (\$500,000 of which is scheduled to be paid to Altair for work performed) to evaluate the AHPP and confirm that the AHPP will produce pigment from oil sands. Assuming phase one is successful, Western Oil Sands may elect to commence phase two, the construction of a demonstration titanium pigment production facility using the AHPP. If phase two is successful, Western Oil Sands may elect to commence phase three, the construction and operation of a full-scale commercial titanium pigment production facility using the AHPP.

### 12. RELATED PARTY TRANSACTIONS

During the year ended December 31, 2002, officers made loans to us of \$6,243 and we repaid loans from officers of \$149,243. These were short-term, unsecured, non-interest bearing loans payable on demand, the proceeds of which were used to meet working capital needs. There were no related party loans outstanding at December 31, 2003 and 2002.

### 13. BUSINESS SEGMENT INFORMATION

In accordance with SFAS No. 131, Disclosure about Segments of an Enterprise and Related Information, management views the Company as being three business segments: Nanomaterials and Titanium Dioxide Pigment Technology, Tennessee Mineral Property, and the jig.

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Reportable segment data reconciled to the consolidated financial statements as of and for the fiscal years ended December 31, 2003, 2002, and 2001 is as follows:

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	Net Sales	Loss from Operations	Assets
2003:			
Nanomaterials and Titanium Dioxide			
Pigment Technology	\$ 72,851	\$2,822,884	\$ 5,362,003
Tennessee Mineral Property	--	155,709	40,418
The Jig	--	27,729	--
Unallocated	--	2,778,888	6,257,333
	-----	-----	-----
Consolidated total	\$ 72,851	\$5,785,210	\$11,659,754
	=====	=====	=====
2002:			
Nanomaterials and Titanium Dioxide			
Pigment Technology	\$225,225	\$2,456,771	\$ 6,274,732
Tennessee Mineral Property	--	598,977	18,200
The Jig	28,270	2,929,010	10,270
Unallocated	--	1,871,953	2,611,203
	-----	-----	-----
Consolidated total	\$253,495	\$7,856,711	\$ 8,914,405
	=====	=====	=====
2001:			
Nanomaterials and Titanium Dioxide			
Pigment Technology	\$ 45,816	\$2,783,647	\$ 6,752,399
Tennessee Mineral Property	--	930,777	16,200
The Jig	--	300,913	2,929,930
Unallocated	--	2,006,195	1,154,714
	-----	-----	-----
Consolidated total	\$ 45,816	\$6,021,532	\$10,853,243
	=====	=====	=====

\* \* \* \* \*

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