

Great Basin Scientific (Nasdaq/GBSN)

BUY **2nd approved assay to fuel growth**

Great Basin makes and markets molecular diagnostic instruments and assays

May 26, 2015

Robert M. Wasserman

Director of Research

561-208-2905

rwasserman@dawsonjames.com

Investment Highlights

1) Great Basin has recently received FDA marketing clearance for its second diagnostic assay, for Group B Strep infections, and the Company expects to begin marketing the test as soon as this quarter. Meanwhile its initial assay, for *Clostridium difficile* (*C. diff*), has been recording increased sales in the US as the Company increases its number of customers and existing users grow more comfortable with the new easier-to-use analyzer and cartridge system.

2) In addition to two already-approved tests, Great Basin has initiated clinical trials in preparation for FDA 510(k) marketing clearance: A) Staph blood infections (Staph ID/R), a potential \$100-\$150 million annual market in the US, and B) Shiga Toxin Producing E. Coli (STEC) test, also an approximate \$100-\$150 million US market. Marketing approvals for these next two diagnostic assays are expected to be filed in 2015 with potential clearance sometime this year or next. In addition, the Company has identified three additional assays for next-step clinical trials, including two in the higher-revenue multiplex panel category, with the other for the large-market size *Staph aureus* pre-surgical screening assay.

3) After completing a somewhat smaller-size IPO last year, Great Basin management can finally breathe easier regarding its long-term business plan following a recent, much larger equity raise earlier this year. In addition to the \$21.7 million in approximate gross proceeds garnered from the February 2015 preferred stock offering, the Company has been able to raise additional funds through the subsequent exercise of warrants, and may continue to do so in the future depending on share price and volume. This additional cash is key to the Company's growth going forward, fueling not only greater sales and marketing budgets, but increased inventories of both analyzer instruments (provided free of charge to customers) and disposable cartridges, as customer usage of Great Basin's proprietary molecular diagnostic tests increase.

Current Price \$2.92

Price Target \$10.00

Estimates	F2014A	F2015E	F2016E
Revenues(\$000s)	\$1,606	\$3,457 E	\$25,934
1Q March	349	459 A	
2Q June		706 E	
3Q September		984 E	
4Q December		1,308 E	

EPS (diluted)	(\$19.34)	(\$15.69) E	(\$0.03)
1Q March	(34.98)	(13.99) A	
2Q June		(0.60) E	
3Q September		(0.57) E	
4Q December		(0.53) E	

P/E (x)	N/A	N/A	N/A
---------	-----	-----	-----

EBITDA/Share	(\$8.57)	(\$2.06)	\$0.35
EV/EBITDA (x)	N/A	N/A	0.9

Stock Data			
52-Week Range			\$1.02-\$9.90
Shares Outstanding (mil.)			6.5
Market Capitalization (mil.)			\$18.8
Enterprise Value (mil.)			\$2.0
Debt to Capital (3/15)			N/A
Book Value/Share (3/15)			N/A
Price/Book			N/A
Average Trading Volume (3-month)			1,329,000
Insider Ownership			33.9%
Institutional Ownership			32.9%
Short interest			180,000
Dividend / Yield			\$0.00/0.0%



Price target and ratings changes over the past 3 yrs:

Initiated - May 26, 2015 - Buy - Price Target \$10

Conclusion

Great Basin shares have rebounded well from lows of earlier this year, following completion of a large secondary offering as well as positive news flow related to new products and growth in new customers. GBSN shares have also benefitted this year from increased investor favor toward life science stocks in general and molecular diagnostic stocks in particular, including several of the Company's competitors even though they are experienced reduced market share due to growth in Great Basin's customer roster, for example. With a much-bolstered balance sheet, a growing customer base in its target small- to medium-sized hospital market, one new diagnostic assay recently approved and as many as five more potentially cleared and ready to launch through 2016, we believe both growth- and value-oriented investors can find Great Basin shares attractive at present and in the future, and thus we are initiating coverage on GBSN shares with a BUY rating and 12-18 month price target of \$10 per share, based on a molecular diagnostic comparable company valuation analysis as detailed below.

Company Business

Great Basin is a molecular diagnostic testing company focused on the development and commercialization of a patented, molecular diagnostic platform for testing for infectious disease, especially hospital-acquired infections. The Company's platform is an automated molecular diagnostic system consisting of an analyzer and an associated diagnostic test cartridge, which utilizes a sample-to-result format. The sample-to-result format means that once a patient specimen is received, it undergoes limited processing before it is placed in the analyzer where the test is run without further technician intervention, thus reducing assay complexity and eliminating the need for highly trained and expensive molecular technicians to run the assay tests. By providing an affordable solution that meets the rapidly evolving needs of patients and providers, Great Basin's platform has the ability to transform molecular testing for infectious diseases at small to medium sized hospitals. Great Basin was founded in 2005, and in April 2012, the Company received marketing clearance from the US Food and Drug Administration (FDA) for a test for clostridium difficile, or *C. diff*, and in April 2015 the Company received marketing clearance from the FDA for a second test for Group B Strep infections. Great Basin's customers consist of hospitals, clinics, laboratories and other health care providers in the United States, the European Union and New Zealand. Great Basin completed its Initial Public Offering in June 2014 and the Company is based in Salt Lake City, Utah.

Diagnostic Platform

Great Basin's molecular diagnostic platform employs a combination of proprietary and patented technology, and consists of a bench top analyzer (shown in the photo to the right) with a touch screen (or, in early models, laptop computer) into which self-contained, single-use diagnostic cartridges are inserted. The platform is designed to be user friendly and intuitive and provide the hospital with the ability to perform molecular diagnostic assays in an efficient and cost-effective manner. Once a patient specimen is received in the lab, a technician will typically perform no more than three to five steps of sample preparation before placing the sample in a disposable diagnostic cartridge and inserting it in the analyzer, where the assay is run without further technician intervention. The Company's first FDA-cleared assay, for diagnosing *C. diff*, was rated by Clinical Laboratory Improvement Amendments of 1988, or CLIA, as moderately complex, which typically eliminates the need for highly-trained and expensive molecular technicians to run the assays,





bringing additional cost benefits to users. The Company anticipates that its future assays will also be rated moderately complex or meet CLIA waiver criteria, which is reserved for assays that are simple and are judged by the FDA to present a low risk for erroneous results. The Great Basin analyzer provides accurate results in 45 to 115 minutes depending on the assays, and this speed allows for early diagnosis and treatment, which can lead to better patient outcomes and reduced cost to the hospital. The photo to the left portrays a typical technician user interface with the Great Basin diagnostic system.

Great Basin believes that its platform offers small-to-medium sized hospitals the following benefits:

- *Ease of Use* - Because the Great Basin platform is easier to use than non-sample-to-result molecular systems this results in greater labor efficiency for the laboratory staff;
- *Cost Savings* - Great Basin's pricing strategy offers an additional advantage to users, making it possible for many small to medium sized hospitals— that often have greater cost sensitivity and constraints—to adopt molecular testing. In the United States, the Company provides the customer - a hospital, lab or clinic - the use of an analyzer with no upfront charge, while the Company retains ownership. Great Basin then sells its diagnostic assays to the hospital at a cost that is less expensive than other non-sample-to-result systems and similar to or less expensive than other molecular diagnostic solutions. This reduces the up-front cost for the customer, minimizes the need for expensive, highly-trained molecular laboratory technicians, minimizes customer approval processes and accelerates adoption of the platform;
- *Versatile Platform with the Capability to Deliver a Broad Assay Menu* - The Great Basin platform has broad application across a number of areas in molecular diagnostic testing for infectious disease, including the detection of pathogens from whole blood samples. The same analyzer can be utilized for all of the Company's planned future diagnostic assays;
- *Low-cost Low-plex tests* – The Great Basin platform, including its low-cost chip detection and single-use diagnostic cartridge, has a cost structure that allows the Company to compete very effectively, and at very good margins, in the cost-sensitive market for low-plex tests, including tests for factors such as *C. diff* or MRSA screening. The Company believes the low-plex method is currently the largest market for molecular infectious disease tests and that low-plex tests like *C. diff* will drive system placements as hospitals convert from traditional testing methods; and
- *Ability to Multiplex* - In addition to use in low-plex tests, the Great Basin platform has the ability to analyze up to 64 distinct targets in a single diagnostic panel, including controls, which is referred to as a multi-plex panel. This will allow hospitals to test for multiple possible causes of an individual patient's symptoms in a one-step detection process. This capability will reduce the time required for a laboratory to perform a diagnostic analysis that involves testing for multiple infectious disease pathogens. Two of the Company's tests in development, Staph Identification and Resistance (ID/R) panel and the food borne pathogen panel, will utilize the multiplexing technology.

Technology

Great Basin's proprietary and patented technology is based on detection of DNA targets on a coated silicon chip with results visible to the naked eye. DNA naturally forms a double-stranded structure, with each strand binding with high affinity and selectivity to a complementary strand. This technology can detect DNA target strands of interest by attaching complementary strands of DNA to the chip surface, called capture probes, using proprietary technology and processes. The capture probe can thereby immobilize the DNA target of interest. In order for the DNA target to be detected, it is labeled with biotin, a small molecule which can be used to create a signal in the diagnostic test. Biotin, immobilized onto the chip surface via DNA target hybridization to the DNA probe will bind to a molecule which recognizes biotin and is conjugated to a signal generating enzyme, horseradish peroxidase, or HRP. Immobilized HRP can be reacted with a complex mixture to create a large colored product which deposits on the chip surface. This deposit causes the color of the chip surface to change. This color change is readily apparent to the naked eye as a dot in the vicinity of the DNA probe. In order to create tests with appropriate sensitivity for the given clinical indication, this technology can either amplify the quantity of DNA targets of interest or amplify the biotin-based signal. Each of these amplification approaches also serve to label DNA target(s) of interest with biotin.

Within the cartridge three distinct processes occur: sample processing, amplification, and detection. During sample processing, the specimen is treated to remove clinical matrices such as blood or feces that may interfere with assay results and is treated to break open cells to release potential DNA targets. Next, the sample is subjected to target amplification to create billions of copies of target DNA to improve assay sensitivity and to label each target with biotin. Finally, detection is triggered by hybridization of the biotin-labeled target DNA with capture probes on the chip surface. The chip is currently configured to hold as many as 64 probes, including controls, each of which can be configured to detect a different target DNA, enabling highly multiplexed testing. If signal amplification is used, a proprietary polymer is added to the detection reaction, which converts each target DNA associated biotin into 80 additional biotins to improve detection sensitivity. All waste generated from the assay is stored in a self-contained waste chamber which significantly reduces contamination risk. The proprietary Great Basin diagnostic system cartridge is shown in the diagram to the right.



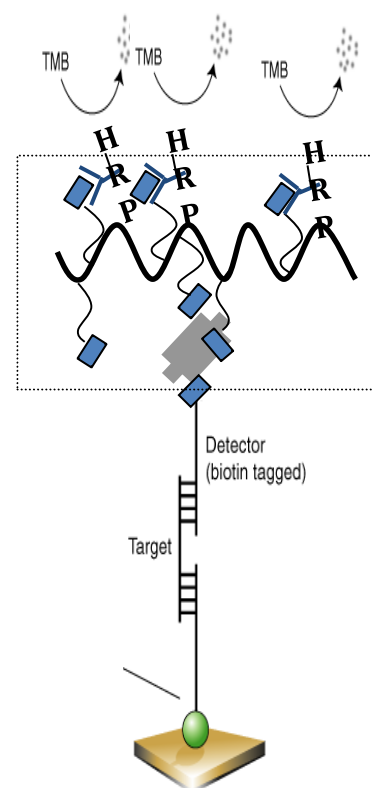
Helicase-dependent amplification, or HDA, is a process that utilizes an enzyme, helicase, to unwind double-stranded DNA to create two single strands through isothermal, or single temperature, amplification. Once this DNA is single-stranded, complementary DNA primers, which are short pieces of DNA that are complementary to the DNA target, can hybridize. Through the action of an enzyme, DNA polymerase, the DNA primers grow, or extend, to create a complementary strand of the DNA target, creating double-stranded DNA again. This process can be repeated and the degree of copying, or amplification, is exponential, so that billions of copies can be created. HDA is a method already commercially available for detection of DNA targets, however, it is a mistake-prone process. DNA primers can incorrectly hybridize to non-target DNA at lower temperatures and be copied, creating so-called primer artifacts, which leads to tests that are slow and poorly sensitive.

Great Basin's patented target amplification approach, termed blocked primer-mediated, helicase-dependent amplification, or bpHDA, utilizes blocked primers to enhance test speed and sensitivity. Blocked primers are DNA primers that contain a block at lower temperatures, where most incorrect hybridization events occur, preventing extension of the DNA primers or copying of the DNA target. As the temperature is raised, incorrect hybridization events are not stable and fall apart, but hybridization of DNA primers to complementary DNA

targets is still very strong and an enzyme, RNase H, becomes active which can remove the block in blocked primers hybridized to DNA targets only. As a result, the accuracy of the process is dramatically improved, leading to faster and more sensitive tests. In order to label the DNA target for detection, each DNA primer has a biotin molecule attached to one end.

The Company's platform is also capable of performing polymerase chain reaction, or PCR, which is a widely used method of DNA amplification. The Company's patented signal amplification approach, which is referred to as amPED, utilizes a bridging molecule to connect the biotin label on each DNA target to a polymer containing 80 biotins, thereby amplifying the signal up to 80 times in each diagnostic test. The amPED polymer works in the presence of blood, mucus, and feces typically present in clinical samples, thereby simplifying sample processing. The amPED signal amplification process takes approximately 20 to 30 minutes and is a more rapid approach for detection of DNA targets than target DNA amplification, which typically takes 45 to 120 minutes. The patented amPED polymer is highly water soluble and stable and displays low non-specific binding properties, which are critical requirements for highly specific signal amplification approaches.

Based on papers published in peer-reviewed journals, the Company believes its amPED detector to be among the most sensitive in the industry with a proven limit of detection of 20,000 DNA molecules, more than adequate for the development of assays focused on the nascent "direct from whole blood" market which is believed to have the potential to be exceptionally disruptive by eliminating the need for culturing blood prior to testing. Currently patients suspected of having a blood infection (sepsis) have their blood drawn. That sample is then cultured for a day before testing. But published studies consistently show that treatment within 12 hours of symptoms has significant clinical benefit. Direct from whole blood testing has the potential to eliminate the need for culture, speeding diagnosis to under 12 hours, thus potentially improving patient morbidity and mortality.



**amPED
Detection**

Great Basin's patent-pending diagnostic cartridges are self-contained devices specifically configured for a given diagnostic assay. The diagnostic cartridge is injection-molded and includes features such as reaction chambers, a waste chamber, and channels to direct the movement of fluids. The diagnostic cartridge also contains a coated silicon detection chip consisting of an array of up to 64 DNA probes, including controls. Integrated into the diagnostic cartridge are lance devices for the reagent blister packs and stirring devices. Reaction chambers and fluid channels are covered with a clear thermoplastic to form liquid-tight features. All of the reagents necessary to perform the assay are stored within blister packs affixed to the cartridge, other than the target amplification reagents, which are stored as a freeze-dried pellet. The diagnostic cartridge utilizes patent-pending methods for controlling the flow of fluid and managing air to prevent bubbles. The diagnostic cartridge also contains bar coded information related to the test, including the cartridge lot number and expiration date.

Product Pipeline

Currently, the Company has received FDA clearance and a CE mark for its assay for *C. diff.*, and began marketing this test in Europe in the first quarter of 2012 and in the United States in the fourth quarter of 2012. In addition, Great Basin filed a 510(K) application for its Group B Strep test in November 2014 and received FDA clearance

in April 2015, and the Company expects to begin marketing its second test in mid-2015. Great Basin has also initiated a clinical trial for its Staph ID/R panel, in the fourth quarter of 2014, as well as initiated a clinical trial for Shiga toxin producing E. coli in the first quarter of 2015. In addition, the Company has three other diagnostic assays in the late stages of product development: (1) a Staphylococcus aureus Pre-Surgical screening test, (2) Food Borne Pathogens panel, and (3) Candida Blood Infections panel, which the Company expects to begin clinical trials for late 2015 or 2016. Finally, Great Basin has a pipeline of assays in an early stage of development, including chlamydia/gonorrhea and other sexually transmitted diseases, respiratory testing, and sepsis (blood infection) panels.

C. diff

C. diff infections are often life-threatening and can create a significant financial burden for hospitals. As a hospital-acquired infection, costs associated with the care of patients with *C. diff* are not covered by insurance or Medicaid/Medicare. An independent peer reviewed paper, published in the *American Journal of Infection Control* in 2012, highlights a significant reduction in *C. diff* infection rates when a hospital switched from culture to molecular testing—reducing cost and improving patient outcomes.

Great Basin's *C. diff* test is a rapid medical diagnostic test for the detection of *C. diff*, a gram-positive bacteria that causes severe diarrhea and other intestinal disorders. The test detects the presence of the *C. diff* toxin B gene, or tcdB gene, in the pathogenicity locus, or PaLOC region of *C. diff*, present in all known toxigenic strains, to diagnose the toxin in the stool. The test requires minimal sample preparation and can deliver results in under 90 minutes. A swab from a loose stool is placed into transfer solution and a portion of this solution is placed into the diagnostic cartridge. The diagnostic cartridge is then placed into the analyzer.

According to the Agency for Healthcare Research and Quality, there are 347,000 cases of *C. diff* annually in the United States. Great Basin has estimated the potential total market opportunity for *C. diff* testing in the US to be approximately \$110 million to \$120 million annually. Following the market launch of *C. diff*, in 2012, the Company sold approximately 35,700 cartridges for the test in 2013 and 77,000 cartridges in 2014.

Group B Strep Test

Group B streptococcus, or Group B Strep, is a bacterium that colonizes in the warm moist areas of many humans. Harmless to healthy adults, it can be transmitted to a newborn during childbirth and is the single largest cause of meningitis in newborn infants. For this reason nearly every pregnant woman in the United States is tested for Group B Strep in the late third trimester. Historically this test was done by culture, but based on the recent introduction and sales of other Group B Strep molecular diagnostic tests, many labs are switching to molecular testing.

Great Basin's Group B Strep test is designed to detect Group B Strep from an anal/vaginal swab taken from a pregnant woman. With this test, hospitals will be able to identify Group B Strep colonization in pregnant women, who can then be treated with antibiotics to reduce the risk of transmission to the baby, reducing the risk of development of sepsis in the newborn. Great Basin filed a 510(k) application in November 2014 for this test, received FDA clearance to market the test in April 2015, and expects commercial launch in mid-2015. According to the US CDC, there were 3.95 million live births in the United States in 2012 and nearly every pregnant woman in the United States is tested for Group B Strep in the late third trimester. Based on these assumptions, the potential total market for Group B Strep testing can be estimated at approximately \$80 million to \$120 million annually.

Staphylococcus Identification and Resistance Blood Infection Panel (Staph ID/R)

Staphylococcus aureus is a major cause of hospital and community-acquired infections and is associated with high rates of morbidity and mortality. Methicillin-resistant *Staphylococcus aureus*, or MRSA, is a potentially life-threatening infection that most frequently occurs in the hospital setting. Rapid diagnosis of Staph blood infections has been shown, in a report published in *Clinical Practice* in 2010, to save up to approximately \$7,000 per patient and shorten length of hospital stay by 6.2 days.

Great Basin's Staph ID/R panel will be designed to be a multiplex panel to:

- (1) Identify species of *Staphylococcus* infections based on the detection of highly discriminatory and specific DNA sequences within a bacterial replication gene;
- (2) Detect the *mecA* gene, which confers drug resistance, directly from positive blood cultures; and
- (3) Provide information on the antibiotic resistance profile of the bacteria.

This test will be designed to produce a result in less than one hour. The Staph ID/R panel is designed to provide over 99% positive predictive value, or PPV, after only two blood draws, accelerating time to patient diagnosis and appropriate treatment.

With existing *Staphylococcus* tests, nearly one third of all positive blood cultures are not true infections, but are due to contamination during the blood draw. On the other hand, in a Company-run study of 99 single-pathogen clinical samples, the test demonstrated 99% accuracy in identifying different *Staphylococcus* species. The Staph ID/R panel's increased ability to distinguish true infections from false positives is due to its ability to differentiate among seven species of *Staphylococcus*, and as a result, to distinguish between true infection and contaminants. Great Basin's Staph ID/R panel is currently in development and clinical trials began in the fourth quarter of 2014. In support of a planned 510 (k) FDA clearance for its Staph ID/R assay, Great Basin is currently undertaking a multi-center study at three U.S. hospital laboratories, Tricore Laboratories, Indiana University Health, and Primary Children's Medical Center, Salt Lake City. Each site will test approximately 250 blood cultures (750 to 800 total samples). Each sample will be compared to two culture reference methods as required by the FDA, an automated biochemical method for species identification and cefoxitin disk diffusion for *mecA* gene detection. The study will take approximately four to eight weeks at each site and this study design was reviewed by the FDA in their pre-Submission process.

According to a market survey, there are 4.2 million positive blood cultures each year in the United States. The Company believes that a significant portion of these positive blood cultures represent the market opportunity for a *Staphylococcus* species panel, and has estimated the market to be approximately \$100-\$150 million annually.

Shiga Toxin Producing E. Coli (STEC) Test

Escherichia coli (*E. coli*) bacteria normally live in the intestines of healthy people and animals. Most varieties of *E. coli* are harmless or cause relatively brief diarrhea. But a few strains, such as *E. coli* O157:H7, can cause severe abdominal cramps, bloody diarrhea and vomiting. Great Basin's STEC Test will be a rapid test that identifies shiga toxin produced by *E. coli*, including *E. coli* O157:H7 which is the most serious type of *E. coli* contracted from contaminated food. The Company began its clinical trial for this test in the first quarter of 2015, with trials at three US hospital laboratories, Tricore Laboratories, Medical College of Wisconsin, and Primary Children's Medical Center, Salt Lake City. Each site will test approximately 350 samples (900 to 1100 total samples). Each sample will be compared to three different reference methods, an FDA approved broth/EIA test to detect Shiga

toxin, a validated DNA sequencing method also to detect Shiga toxin, and a plate culture/latex agglutination test to detect serotype O157. The study will take approximately four to eight weeks at each site. The study design was reviewed by the FDA in their pre-Submission process.

According to the Agency for Healthcare Research and Quality, there were nearly five million US hospital visits in 2010 for gastrointestinal distress that suggested food-borne illness and each of these patients could potentially be tested for STEC. Based on these assumptions, the total market for gastrointestinal infection testing for STEC can be estimated at approximately \$100 to \$150 million annually.

Staphylococcus aureus Pre-Surgical Nasal Screen

Staphylococcus aureus (SA) often colonizes the nasal passages and other warm moist areas in healthy humans. Harmless in most circumstances, the colonization represents real risk to patients undergoing surgery. Studies have shown the relative risk of post-surgical infection is up to nine times greater in carriers of SA than in non-carriers. Great Basin's SA nasal screening test will be a rapid test for the presence of SA in the nasal passages of a pre-surgical patient. If approved, hospitals will be able to use the test to identify pre-surgical patients who are SA carriers and treat those patients with topical antibiotics, which has been shown in multiple peer-reviewed studies to significantly reduce the risk of post-surgical infection. According to the CDC there were 51.4 million in-patient surgeries in the United States in 2010. These surgeries represent the primary market for a SA Pre-Surgical Nasal Screen test, as every surgical patient could potentially be tested. Based on these assumptions, the potential market for SA screening in the pre-surgical setting can be estimated at approximately \$800 million to \$900 million annually.

Food-Borne Pathogens Panel

According to the Agency for Healthcare Research and Quality, there were nearly five million US hospital visits in 2010 for gastrointestinal distress that suggested food-borne illness. In 2010, inpatient costs attributable to patients suffering from gastrointestinal infections cost the healthcare system nearly \$1.8 billion. One of the challenges faced by physicians assessing a patient with symptoms of gastrointestinal infection is determining the underlying cause. The Company's Food Borne Pathogen panel will be designed to detect the main causes of food poisoning. If approved, hospitals will be able to use the panel to identify the causative pathogen of food poisoning and provide appropriate treatment quickly, improving patient outcomes. Additionally, the results may be used to aid public health agencies to track causes of food poisoning outbreaks. The total market for gastrointestinal infection testing is estimated at approximately \$150 million to \$200 million per year.

Candida Blood Infections Panel

According to the United States Center for Disease Control there are 90,000 Candida blood infections annually in the US. Candida infections, while rare, have mortality rates as high as 40% if not diagnosed quickly. The Company's candida panel is a multiplex panel that will be designed to identify five species of Candida directly from positive blood cultures.

Research and Development

Great Basin currently has 20 employees focused on research and development. Research and development expenditures grew to \$4.6 million in 2014 from \$3.3 million in 2013. In addition to the two cleared assay tests (*C. diff* and Group B Strep), the two tests currently in clinical trials (*E. coli* and Staph ID/R), and the three additional assays identified and targeted for initiation of trials over the next 6-9 months, the Company is targeting development of additional low-plex tests, multi-plex panels and/or direct from whole blood tests or panels through 2018.

Manufacturing

Great Basin currently manufactures its proprietary diagnostic cartridges and analyzers at its 33,000 square feet headquarters facility located in Salt Lake City, Utah. The Company hand-builds its diagnostic cartridges and purchases materials at higher per unit cost due to lower purchase volumes, but in the future believes that gross margins can be significantly improved through the automation of portions of the manufacturing and assembly process and through volume purchase pricing. The Company also performs reagent formulation, diagnostic cartridge manufacturing and packaging of final components and diagnostic cartridges in accordance with applicable guidelines for medical device manufacturing in its facility. Great Basin also relies on third party suppliers, including sole source suppliers in certain instances, for certain reagents used in its products and much of the disposable component molding for test cartridges.

Sales and Marketing

Great Basin currently sells its diagnostic tests in the US through a five-person direct sales force and a technical specialist service organization of four, which is supported by a centralized team of marketing, customer support, and technical support personnel. Outside of the US, Great Basin offers its diagnostic platform for sale in the European Union and New Zealand through a network of distributors, who then sells directly to the customer. The Company intends to increase the size of its sales force in the future, targeting the 2016 time frame most likely, when Great Basin has a larger roster of assays on the market.

With its easy-to-use and cost-effective platform, Great Basin is focusing its marketing efforts on small-to-medium sized hospitals under 400 beds (approximately 4,900 of the 5,700 hospitals in the US, according to a recent survey by the US CDC). According to research from outside firms, fewer than half of these smaller hospitals have made the switch to molecular methods for diagnosing infectious disease and thus are thought to be excellent candidates for Great Basin's molecular diagnostic systems, which will allow smaller hospitals to modernize their laboratory testing and provide better patient care at an affordable cost.

Although the Company's molecular diagnostic system and first test cartridge were introduced several years ago, it has only been in the past six-nine months (since the IPO) that Great Basin has expanded its marketing efforts due to the availability of additional working capital for building analyzers as well as in anticipation of additional test assays available for marketing, for example the recently approved Group B Strep test. To date, Great Basin has been successful in obtaining customers that previously were not using a molecular method or using a competitive product that did not have the combination of low-cost and ease of use.

In the United States, a typical sales cycle includes customer evaluations, a decision to use the Company's platform, and then validations of the platform and the *C. diff* test (and soon the Group B Strep test). During the evaluation period, potential customers utilize the Great Basin platform alongside their current testing method (molecular or non-molecular) and at the end of the evaluation period determine if they are interested in switching to the new platform, as evidenced by the purchase of Great Basin's proprietary assays on a recurring basis, or by remaining with their current testing method. Upon successful validation the evaluating entity becomes a customer. After the purchase decision has been made, the analyzer is provided to the customer for their use at no charge, however, and the Company retains ownership and control of the analyzer while the customer purchases the proprietary diagnostic cartridges and utilizes one disposable test cartridge each time they run an assay in a modified razor/razor blade revenue model.

At September 2014, Great Basin had 80 active customers in the US, approximately 20 active sites internationally, along with 4 active evaluations underway and 1 evaluation scheduled for implementation, or 85 total units. Due to increased marketing efforts, these numbers have increased to 101 US customers, 27 active evaluations, and 25 scheduled evaluations (total 153 units) at March 31, 2015, the last date in which the Company reported these figures. Great Basin's goal is to increase the number of active customers in the US to 170-180 by the end of this year.

Great Basin competes with a number of larger companies in the hospital-based molecular diagnostic field, including Cepheid (Nasdaq/CPHD/not Rated), Meridian Bioscience (Nasdaq/VIVO/NR), Nanosphere (Nasdaq/NSPH/NR), Qiagen NV (Nasdaq/QGEN), Roche Diagnostics (Nasdaq/RHHBY/NR), Quidel Corporation (Nasdaq/QDEL/NR), France-based bioMerieux (which recently acquired Biofire Diagnostics), T2 Biosystems (Nasdaq/TTOO/NR), Becton, Dickinson and Company (NYSE/BDX/NR), GenMark Diagnostics (Nasdaq/GNMK), Hologic (Nasdaq/HOLX/NR) and others. Great Basin's platform competes largely on the basis of its broad menu potential including both low-plex and multi-plex assays, ease-of-use leading to enhanced laboratory workflow, and return on investment for customers, as outlined in the competitive chart below:

						
Workflow: Sample to Result	✓		✓	✓	✓	✓
Cost: Low CapEx	✓	✓				
Menu: Both low-plex and multi-plex	✓					

Intellectual Property and Proprietary Technology

With integrated capabilities in platform design, development, production and DNA amplification technologies, along with design, development and manufacture of primers, probes, dyes, quenchers and other individual reagent

components, Great Basin has and is continuing to develop its own proprietary intellectual property in addition to licensing specific third-party technologies. The Company's issued patents include one covering bpHDA, or Blocked Primer Helicase Dependent Amplification, which is the patented technology creating "target-dependent hot start" functionality in HDA amplification reactions and is used in Great Basin's *C. diff. test*. In addition, the Company also has an issued patent for its amplification method in the presence of the coated silicon chip, a method which is intended to be used in each of its assays, and an issued patent for the AMPED signal amplification method, which is intended to be utilized in assays currently under development. The issued patents described above were issued in the United States and each expires in 2029. Other issued patents are pending in Europe and Canada as well. In addition to patents, the Company relies on a combination of trade secrets, copyright and trademark laws, nondisclosure agreements, licenses and other contractual provisions and technical measures to maintain and develop its competitive position with respect to intellectual property. Finally, Great Basin holds non-exclusive licenses to key technologies from BioHelix (a wholly-owned subsidiary of Quidel as of 2013) related to isothermal amplification of nucleic acid targets, utilizing helicase-dependent amplification, and with Integrated DNA Technologies (Private), or IDT, related to the use of blocked primers.

Recent Results and Balance Sheet/Cash Flow

Great Basin reported financial results for their Q1/2015 in mid-May, including revenues of \$459,000, an increase of 31% year-over-year, and a net loss of \$71.2 million, or (\$13.99) per share, compared to a net loss of \$4.1 million or (\$34.98) per share in Q1/2014. Results for this year included a non-cash \$67.0 million charge for a change in the fair value of derivative liability or (\$13.99) per share – without this charge and other items loss from operations in Q1/2015 for Great Basin were \$3.9 million as compared to \$2.5 million in Q1/2014. Revenue growth during the first quarter was driven by an increase in the number of customers in the US using the Company's analyzer and cartridges, to 101 at the end of March 2015 from 71 in the same period one year ago. Cost of sales increased to \$966,600 in the first quarter, as compared to \$847,000 in the prior year period, due mainly to an increase of \$60,000 for non-cash depreciation expense for additional analyzers placed in the field as well as an increase of \$58,900 for additional expenses related to *C. diff.* assays needed to support higher cartridge usage at existing user sites. Research and development expenses rose \$689,300 during Q1/2015 to \$1.5 million, spurred by additional staff and materials required for FDA filings and clinical tests for new assays in development. Selling and marketing expenses also increased \$171,900 to \$806,100 during the quarter, or 27%, although these decreased as a percentage of sales in Q1/2015, due primarily to additional staff, travel and sales commissions. Finally, general and administrative expenses increased \$454,700 to \$1.1 million during the quarter, due primarily to added expenses required as a public company and for related financial activities. Operating cash burn during the quarter for Great Basin was approximately \$3.6 million as compared to \$1.8 million in the previous year period, offset by \$22.1 million raised from proceeds of a preferred stock offering. At the end of March 31, 2015, Great Basin held \$20.6 million in cash with approximately \$3.7 million in long-term debt and capital lease obligations. Subsequent to quarter-end, the Company received an additional \$1.7 million, approximately, from the exercise of warrants.

Outlook/Growth Drivers

We estimate that Great Basin will post \$706,300 in revenue for its upcoming Q2/2015E, an increase of over 50% from the previous quarter, with a net loss of \$3.8 million or (\$0.60) per share, comparable to the results posted in Q1/2015. Results for the second quarter are expected to be impacted positively from the increase to 101 customers using its diagnostic system at the start of the second quarter as compared to approximately 70 customers in the prior year period and less than 90 to start the prior quarter. We are also estimating that overhead costs will remain

fairly level in Q2/2015 as compared with Q1/2015. For 2015E as a whole, we are estimating that revenues for Great Basin will increase to \$3.5 million, more than twice revenues for 2014, driven primarily by new customers acquired during the year (to approximately 160 average for the fourth quarter, or 170-180 by year-end) as well as initial sales of the new Group B Strep test. Our bottom-line estimates for Great Basin for 2014 are an operating loss of \$14.3 million, as compared to an operating loss of \$12.2 million in 2014. For 2016E, we are projecting that additional placements of analyzers as well as sales of cartridges for several new diagnostic assays expected to be approved over the next 12-18 months will help boost revenues to \$25.9 million for the year, with a bottom line near break-even. Operating cash burn for 2015E is estimated at approximately \$14 million for Great Basin, well within the range of cash on hand at the start of the second quarter of 2015, with increased revenues next year allowing the Company to operate at a cash-flow break-even or even a positive level in 2016E.

Catalysts/Investor Timeline

- 1) Q2/2015 (June) quarterly earnings announcement – late-July 2015
- 2) New Product Launch – Group B Strep Test – Q2/2015
- 3) New Product Marketing Clearances – Staph ID/R and E. Coli Tests – H2/2015
- 4) New Product 510(k) applications submitted to FDA – Pre-Surgical Screening and Food-borne pathogens Tests – H2/2015
- 5) Upcoming Medical and Investment Conferences – Ongoing 2015-2016
- 6) Additional clinical trials initiated – H2/2015 through H1/2016

Management

Ryan Ashton has served as President, CEO and a Director of Great Basin since joining the Company in January 2005. Prior to joining the Company, he served as the CEO of Printelligent Corporation and held management positions at Inari and Megahertz, which was acquired by US Robotics.

Robert Jenison has served as Chief Technology Officer and Senior Vice President of Research since joining the Company in 2006. Prior to joining the Company, he held R&D management positions at Thermo BioStar, Nexstar Pharmaceuticals, ISIS Pharmaceuticals, and the Research Institute, Scripps Clinic. He holds a BA degree in Chemistry and Biochemistry from the University of California, San Diego.

Jeffrey A. Rona has served as the Chief Financial Officer since the Company's initial public offering in 2014. Prior to joining the Company he was a financial consultant to Great Basin since 2013 and served as the Managing Director of Rona Capital, LLC, a life sciences-focused transactional advisory consultancy, since 2011. In addition, he has held financial management positions at GlobeImmune, AlgoRx Pharmaceuticals, Corgentech, Antigenics, as well as financial services firms UBS Warburg, Carr & Company and Coopers and Lybrand. He received a BS degree in Accounting from Case Western Reserve University.

Other key management team members at Great Basin include **Wesley C. Lindsey**, Vice President of Product Development and formerly of Nanosphere, Somalogic, BioStar, Visible Genetics and R.C.McEntire & Co.; **Sandra Nielsen**, Vice President of Marketing and Customer Support, previously with the Data Solutions business unit (formerly Edustructures) of Pearson PLC, Omniture, IBahn and Viewpoint Digital; **Laurence Rea**, Vice President, Engineering and formerly with Inverness/BioStar, Thermo BioStar and Quantum Corp.; and **Walter Hammond**, Vice President, Manufacturing who has served in similar capacities at three previous firms.

David Spafford has served as a Director and Executive Chairman since the Company's inception and is a founding investor of Great Basin. Previously, he was a co-founder, director and senior executive officer of

Megahertz Corporation, which was acquired by US Robotics in 1995 in a transaction valued at approximately \$450 million. In addition to Ryan Ashton and David Spafford, other directors of the Company include **Stephen Aldous**, a co-founder of Megahertz Corporation; **Sam Chawla**, a Portfolio Manager of Perceptive Advisors LLC, and **Ronald Labrum**, formerly an executive vice president at Cardinal Health (NYSE/CAH/NR) and CEO of Fenwal.

Stock Valuation/Comparables

We have compiled a five-stock comparison group for Great Basin, selecting companies in the molecular diagnostics area, many of which are competitors of the Company, including Cepheid (Nasdaq/CPHD/NR), Meridian Bioscience (Nasdaq/VIVO/NR), Hologic (Nasdaq/HOLX/NR), GenMark Diagnostics (Nasdaq/GNMK/NR), and T2 Biosystems (Nasdaq/TTOO/NR). The comparison group, shown in Table 1 below, portrays Great Basin's shares as undervalued vis-à-vis the comparable group, particularly in respect to price/revenues valuation metrics for 2015E and 2016E. Using an average of industry multiples of a little under 9X projected revenues for our comparable group for both 2015E and 2016E, multiplied by our projected revenues for Great Basin for those two years, offset to some extent for expected increases in shares outstanding for the Company (especially next year), we determined a valuation for GBSN shares of \$10, and thus we are initiating coverage on shares of GBSN with a Buy rating and 12-18 month price target of \$10 per share.

Table 1. Molecular Diagnostics Medical Device Industry Comparable Company Analysis

Table 1. Molecular Diagnostics Medical Device Industry Comparison Company Financial Analysis																
Company	Symbol	Price	Shares	Market Cap	Calendar Year			Revenues (\$Mill)			Calendar Year		Price/Revs			Notes
			(millions)	(\$Millions)	EPS '14A	EPS '15E	2014A	2015E	2016E	P/E '14A	P/E '15E	2014A	2015E	2016E		
Cepheid	CPHD	\$55.24	71.8	3,966.2	(\$0.72)	(\$0.44)	470.1	551.4	646.5	210.3	\$1.16	8.4	7.2	6.1	GeneXpert system designed for large hospitals	
Hologic	HOLX	\$34.61	280.1	9,694.3	\$1.51	\$1.60	2,530.0	2,620.0	2,720.0	38.7	\$1.47	3.8	3.7	3.6	Women's health diagnostics and imaging systems	
Meridian Bioscience	VIVO	\$64.61	41.7	2,694.2	\$0.83	\$0.86	188.8	196.9	204.7	27.2	\$1.84	14.3	13.7	13.2	Lower-cost Illumigene system suitable for smaller hospitals	
GenMark Diagnostics	GNMK	\$9.05	42.1	381.0	(\$0.93)	(\$1.16)	30.6	38.2	52.2	294.6	\$4.78	12.5	10.0	7.3	Eight tests offered through XT-8 molecular diagnostic system	
T2 Biosystems	TTOO	\$16.62	20.2	335.7	(\$4.15)	(\$2.25)	0.1	3.2	25.6	237.2	\$0.66	N/A	N/A	13.1	Offers T2Dx bench-top system and T2Candida test	
Average												9.7	8.6	8.7		

Great Basin Scientific GBSN \$2.92 6.5 18.8 (\$19.34) (\$15.69) \$1.6 \$3.46 \$25.93 N/A N/A 11.7 5.4 0.7 Low-cost, easy-to-use system targets smaller hospitals

Source: Dawson James Securities; Capital IQ

Risk Factors

In addition to normal economic and market risk factors that impact most equities and the common risks shared by Great Basin with other companies in the industry, we believe an investment in GBSN involves the following risks:

- **FDA and regulatory risks** – Great Basin is subject to regulatory review for its ongoing research and development activities, as well as manufacturing facilities, principally with the US Food and Drug Administration but also potentially with other international regulatory agencies as well.
- **Need to defend patents, trade secrets and other intellectual property** – At present, GBSN holds certain intellectual property related to its molecular diagnostic tests and analyzer system. The Company may need to defend its intellectual property in the US and overseas in the future, particularly as its medical device and related diagnostic tests become commercially successful.
- **Need to raise additional capital** - Currently, GBSN has enough cash on hand to fund ongoing research and development programs and product commercialization activities well into fiscal 2016, approximately. However, the Company does not have a history of profitable operations and unforeseen events including potential delays in product sales, clinical programs and regulatory approvals could require GBSN to raise additional capital through the sale of equity within a shorter time-frame, therefore potentially diluting

current shareholders. In addition, at present the Company has a large number of warrants which may be exercised in the future, which could dilute current shareholders to a large degree.

- **Limited stock liquidity** – Trading volume in GBSN has been comparatively light compared to other stocks in its industry, and as such, news regarding GBSN, its target market, partners and/or competitors could lead to significant volatility in the stock price.
- **Competitive Markets** – The Company competes in its target medical device markets with a number of other manufacturers, some of which represent much larger companies. There can be no assurance that the Company will be able to successfully launch new tests into these competitive markets in the future.

Great Basin Scientific, Inc.
Consolidated Statements of Operations

Robert M. Wasserman

FYE December	2013	2014	Q1/2015A	Q2/2015E	Q3/2015E	Q4/2015E	2015E	2016E	2017E
Revenue	\$760,646	\$1,606,254	\$458,730	\$706,300	\$984,100	\$1,307,500	\$3,456,630	\$25,934,300	\$59,918,400
Cost of sales	<u>2,185,992</u>	<u>3,968,185</u>	<u>966,593</u>	<u>807,900</u>	<u>947,900</u>	<u>1,073,100</u>	<u>3,795,493</u>	<u>10,564,800</u>	<u>29,124,000</u>
Gross profit (loss)	(1,425,346)	(2,361,931)	(507,863)	(101,600)	36,200	234,400	(338,863)	15,369,500	30,794,400
Operating Expenses:									
Research and development	3,345,693	4,609,913	1,503,558	1,550,000	1,560,000	1,570,000	6,183,558	6,500,000	7,000,000
Sales and marketing	2,618,901	2,301,610	806,118	850,000	860,000	870,000	3,386,118	3,500,000	4,000,000
General and administrative	1,866,875	2,928,186	1,060,652	1,100,000	1,110,000	1,120,000	4,390,652	4,500,000	5,000,000
Other one-time	<u>22,768</u>	<u>(8,166)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total operating expenses	<u>7,854,237</u>	<u>9,831,543</u>	<u>3,370,328</u>	<u>3,500,000</u>	<u>3,530,000</u>	<u>3,560,000</u>	<u>13,960,328</u>	<u>14,500,000</u>	<u>16,000,000</u>
Operating income (loss)	(9,279,583)	(12,193,474)	(3,878,191)	(3,601,600)	(3,493,800)	(3,325,600)	(14,299,191)	869,500	14,794,400
Other income (expense), net									
Interest expense	(284,323)	(1,136,054)	(305,582)	(300,000)	(320,000)	(340,000)	(1,265,582)	(1,300,000)	(1,400,000)
Interest income	3,876	3,176	4,297	70,000	70,000	70,000	214,297	200,000	150,000
Other income (expense)	<u>0</u>	<u>(8,396,169)</u>	<u>(66,994,149)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(66,994,149)</u>	<u>0</u>	<u>0</u>
Income (loss) before tax	(9,560,030)	(21,722,521)	(71,173,625)	(3,831,600)	(3,743,800)	(3,595,600)	(82,344,625)	(230,500)	13,544,400
Income tax expense (benefit)	<u>1,250</u>	<u>5,297</u>							<u>4,063,000</u>
Net income (loss)	(9,561,280)	(21,727,818)	(71,173,625)	(3,831,600)	(3,743,800)	(3,595,600)	(82,344,625)	(230,500)	9,481,400
Cumulative preferred stock dividends	<u>(2,533,470)</u>	<u>(2,533,470)</u>							
Net loss to common stockholders	<u>(12,094,750)</u>	<u>(24,261,288)</u>	<u>(71,173,625)</u>	<u>(3,831,600)</u>	<u>(3,743,800)</u>	<u>(3,595,600)</u>	<u>(82,344,625)</u>	<u>(230,500)</u>	<u>9,481,400</u>
Net loss per share - basic and diluted	<u>(\$104.71)</u>	<u>(\$19.34)</u>	<u>(\$13.99)</u>	<u>(\$0.60)</u>	<u>(\$0.57)</u>	<u>(\$0.53)</u>	<u>(\$15.69)</u>	<u>(\$0.03)</u>	<u>\$1.05</u>
Shares outstanding - basic and diluted	115,510	1,254,142	5,086,906	6,400,000	6,600,000	6,800,000	6,221,727	7,000,000	9,000,000
Key ratios:									
Revenue growth	N/A	111.2%	31.4%				115.2%	650.3%	131.0%
Gross margins	-187.4%	-147.0%	-110.7%	-14.4%	3.7%	17.9%	-9.8%	59.3%	51.4%
R&D/revenues	439.8%	287.0%	327.8%	219.5%	158.5%	120.1%	178.9%	25.1%	11.7%
Sales & marketing/revenues	344.3%	143.3%	175.7%	120.3%	87.4%	66.5%	98.0%	13.5%	6.7%
General & admin/revenues	245.4%	182.3%	231.2%	155.7%	112.8%	85.7%	127.0%	17.4%	8.3%
Depr, amort & stock-based comp.	\$966,041	\$1,455,220	\$358,313	\$360,000	\$370,000	\$380,000	\$1,468,313	\$1,600,000	\$1,700,000
Tax Rate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30.0%
Cash Flow/share	(\$74.41)	(\$9.47)	(\$0.75)	(\$0.54)	(\$0.51)	(\$0.47)	(\$2.23)	\$0.20	\$1.24
EBITDA/share	(\$71.98)	(\$8.57)	(\$0.69)	(\$0.51)	(\$0.47)	(\$0.43)	(\$2.06)	\$0.35	\$1.38

Balance Sheets

	12/31/14	3/31/15
Assets:		
Cash	\$2,017,823	\$20,588,361
Accounts receivable	267,485	290,509
Inventory	457,094	504,696
Prepaid expenses & other	<u>376,778</u>	<u>558,519</u>
Total current	\$3,119,180	\$21,942,085
Property and equipment, net	4,237,467	4,504,608
Intangible assets and other	<u>216,580</u>	<u>190,874</u>
TOTAL ASSETS	7,573,227	26,637,567
Liabilities:		
Accounts payable	\$1,369,169	\$2,204,640
Accrued expenses	612,359	1,107,419
Current portion of notes payable	49,994	43,718
Notes payable - related party	441,667	716,667
Current portion of capital lease obligations	<u>947,422</u>	<u>1,086,439</u>
Total current	3,420,611	5,158,883
Notes payable, net of current portion	5,693	
Capital lease obligations, net of current	2,156,837	1,859,730
Derivative liability	<u>9,998,636</u>	<u>98,691,685</u>
Total liabilities	15,581,777	105,710,298
Stockholders' equity (deficit)	<u>(8,008,550)</u>	<u>(79,072,731)</u>
TOTAL LIAB & EQ	\$7,573,227	\$26,637,567

Net sales by test (\$000s)

	2014A	2015E	2016E	2017E
Customer placements - Year-end	84	160	260	360
C. difficile	\$1,606	\$2,585	\$6,074	\$9,934
Group B strep	0	871	4,677	8,988
E. Coli	0	0	1,898	4,205
Staph blood infections	0	0	2,847	7,884
SA Pre-screen	0	0	4,745	13,140
Food-borne pathogens	0	0	2,847	7,884
Candid blood infections	0	0	2,847	7,884
Total revenues	\$1,606	\$3,457	\$25,934	\$59,918

* Assumes Group B strep product launch Q2/2015, E. Coli and Staph Blood infection tests launch end of 2015, and test launches for SA Prescreen, Food-borne pathogens and Candida blood infections H1/2016.

Source: Dawson James Securities, Inc. estimates; Company documents

Important Disclosures:

Price Chart:



Price target and ratings changes over the past 3 years:

Initiated – May 26, 2015 – Price Target \$10

Dawson James Securities, Inc. (the “Firm”) is a member of the Financial Industry Regulatory Authority (“FINRA”) and the Securities Investor Protection Corporation (“SIPC”).

The Firm does not make a market in the securities of the profiled company. The Firm has received investment banking compensation from this company (GBSN) in the past and may seek compensation for investment banking services in the future. The Firm has not received any other compensation from the profiled company in the last 12 months.

Neither the research analyst(s) whose name appears on this report nor any member of his (their) household is an officer, director or advisory board member of these companies. The Firm and/or its directors and employees may own securities of the company(s) in this report and may increase or decrease holdings in the future. As of April 30, 2015, the firm as a whole, however, did not beneficially own 1% or more of any class of common equity securities of the subject company.

The Firm, its officers, directors, analysts or employees may effect transactions in and have long or short positions in the securities (or options or warrants related to those securities) of the companies subject to this report. The Firm may effect transactions as principal or agent in those securities.

Analysts receive no direct compensation in connection with the Firm's investment banking business. All Firm employees, including the analyst(s) responsible for preparing this report, may be eligible to receive non-product or service specific monetary bonus compensation that is based upon various factors, including total revenues of the Firm and its affiliates as well as a portion of the proceeds from a broad pool of investment vehicles consisting of components of the compensation generated by investment banking activities, including but not limited to shares of stock and/or warrants, which may or may not include the securities referenced in this report.

Although the statements in this report have been obtained from and are based upon recognized statistical services, issuer reports or communications, or other sources that the Firm believes to be reliable, we cannot guarantee their accuracy. All opinions and estimates included in this report constitute the analyst's judgment as of the date of this report and are subject to change without notice.

Information about valuation methods and risks can be found in the “STOCK VALUATION” and “RISK FACTORS” sections of this report.

The securities of the company discussed in this report may be unsuitable for investors depending on their specific investment objectives and financial position. This report is offered for informational purposes only, and does not

constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such would be prohibited. Additional information is available upon request.

Ratings Definitions:

- 1) **Buy:** the analyst believes the price of the stock will appreciate and produce a total return of at least 20% over the next 12-18 months;
- 2) **Neutral:** the analyst believes the price of the stock is fairly valued for the next 12-18 months;
- 3) **Sell:** the analyst believes the price of the stock will decline by at least 20% over the next 12-18 months and should be sold.

The following chart reflects the range of current research report ratings for all companies followed by the analysts of the Firm. The chart also reflects the research report ratings relating to those companies for which the Firm has performed investment banking services.

	Company Coverage		Investment Banking	
Ratings Distribution	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	18	75%	12	67%
Market Perform (Neutral)	6	25%	4	67%
Market Underperform (Sell)	0	0%	0	0%
Total	24	100%	16	67%

Analyst Certification:

The analyst(s) whose name appears on this research report certifies that 1) all of the views expressed in this report accurately reflect his (their) personal views about any and all of the subject securities or issuers discussed; and 2) no part of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst in this research report; and 3) all Dawson James employees, including the analyst(s) responsible for preparing this research report, may be eligible to receive non-product or service specific monetary bonus compensation that is based upon various factors, including total revenues of Dawson James and its affiliates as well as a portion of the proceeds from a broad pool of investment vehicles consisting of components of the compensation generated by investment banking activities, including but not limited to shares of stock and/or warrants, which may or may not include the securities referenced in this report.