U.S. SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 0R 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 for the fiscal year ended September 30, 2019.

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 for the transition period from ______________ to ______________

Commission file number: 001-35011

DYNASIL CORPORATION OF AMERICA

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization)	22-1734088 (I.R.S. Employer Identification No.)
313 Washington Street, Suite 403, Newton, MA (Address of principal executive offices)	02458 (Zip Code)

Registrant's telephone number, including area code: (617) 668-6855

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

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☒ No ☐

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 whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company.

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☒	Smaller reporting company ☒
Emerging growth company ☐	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

As of March 31, 2019, the aggregate market value of the voting stock held by non-affiliates of the Registrant was approximately $9,805,000.

As of December 10, 2019 there were 15,002,905 shares of common stock, par value $0.0005 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None

PART I

This annual report on Form 10-K contains not only historical information, but also forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and are subject to the safe harbor created by those sections. We refer you to the information under the heading "Forward-Looking Statements."

As used in this annual report on Form 10-K, references to "Dynasil," the "Company," "we," "our" or "us," unless the context otherwise requires, refer to Dynasil Corporation of America and our subsidiaries.

All trademarks or trade names referred to in this report are the property of their respective owners.

ITEM 1. BUSINESS

General

Dynasil Corporation of America was founded as a New Jersey corporation in 1960 and incorporated in the state of Delaware through a migratory merger in March 2008. Our corporate headquarters are located at 313 Washington Street, Suite 403, Newton, MA 02458, and our corporate website is www.dynasil.com. You can access, free of charge, our filings with the Securities and Exchange Commission, including our Annual Report on Form 10-K, our quarterly reports on Form 10-Q, current reports on Form 8-K and any other amendments to those reports, through a link at our website, or at the Commission's website at www.sec.gov.

We have the following three reporting segments based on our main operating activities:

- *Optics*: The Optics segment encompasses four business units – Dynasil Fused Silica, Evaporated Metal Films, Hilger Crystals, and Optometrics – that manufacture commercial products, including optical crystals for sensing in the security and medical imaging markets, as well as optical components, optical coatings and optical materials for scientific instrumentation and other applications.

- *Innovation and Development:* The Innovation and Development segment (formerly known as the Contract Research segment) consists of the Radiation Monitoring Devices, Inc. ("RMD") business unit, which is among the largest small business participants in United States ("U.S.") government-funded research.

- *Biomedical:* The Biomedical segment consists of a single business unit, Dynasil Biomedical Corporation ("Dynasil Biomedical"), a medical technology incubator which owns rights to certain early stage medical technologies. In October 2013, Dynasil Biomedical formed Xcede Technologies, Inc. ("Xcede"), a joint venture with Mayo Clinic, to spin out and separately fund the development of a tissue sealant technology. At September 30, 2019, Dynasil Biomedical owned approximately 63% of the outstanding common and preferred stock of Xcede, thus Xcede is included in our consolidated financial statements. Dynasil Biomedical currently has no operations other than those relating to its equity ownership in Xcede, whose operations were substantially curtailed in the fourth quarter of fiscal 2018.

The segment amounts included in MD&A are presented on a basis consistent with our internal management reporting and accounting principles generally accepted in the U.S. ("U.S. GAAP"). Segment information appearing in Note 16 – Segment, Customer and Geographical Reporting of the Notes to Financial Statements is also presented on this basis.

Our business strategy is based on continued development of products in our Optics segment, as well as organic growth of existing Optics products, development and expansion of our funded research portfolio, investment in the commercialization of the technologies originating from our Innovation and Development segment, continuing development of the Xcede medical technologies, and acquisitions that align with our core competencies.

As previously disclosed, following a special meeting of Dynasil's stockholders on August 7, 2019, the Company filed certificates of amendment to our certificate of incorporation and subsequently effected a 1-for-8,000 reverse stock split of our common stock, par value $0.0005 per share (the "Reverse Stock Split"), followed immediately by a 8,000-for-1 forward stock split of its common stock (the "Forward Stock Split," and together with the Reverse Stock Split, the "Transaction"). In regards to the Transaction, stockholders with fewer than 8,000 shares of Dynasil common stock held of record immediately before the Transaction became entitled to receive cash payments in lieu of fractional shares equal to $1.15 per pre-Reverse Stock Split share. As a result of the Transaction, 2,825,268 shares of common stock were due to be exchanged for cash, totaling approximately $3,249,000.

Following the Transaction, the Company filed a Form 25 and Forms 15 with the SEC indicating our intent to delist and deregister our stock. Following the filing of this Annual Report on Form 10-K for the year ended September 30, 2019, therefore, the Company will cease to file annual, quarterly, current, and other reports and documents with the SEC and stockholders will cease to receive annual reports and proxy statements.

Historical Growth by Acquisition

Through a series of acquisitions beginning in March 2005, Dynasil has evolved from a single product line optics company to one focused on multiple optical product lines and a significant contract research business focused on advanced materials used in radiation detection and other advanced instrumentation. Our revenue has increased from $2 million in FY 2004 to $44 million in FY 2019.

The acquisitions we completed during this period included:

- *Optometrics:* In March 2005, we acquired Optometrics LLC ("Optometrics"), a worldwide supplier of optical components and instruments, including diffraction gratings, interference filters, monochromators, laser optics and specialized optical systems.

- *Evaporated Metal Films:* In October 2006, we acquired Evaporated Metal Films Corporation ("EMF"), an optical thin-film coatings company with a broad range of application markets, including solar energy, display systems, dental photography, optical instruments, satellite communications and lighting.

- *RMD:* In July 2008, we acquired Radiation Monitoring Devices, Inc. ("RMD"), a contract research company with expertise in material science, radiation detection, digital imaging technology, magnetic imaging, laser optics and photonics. The team at RMD develops advanced technology in materials, sensors and prototype instruments that detect or measure radiation, light, magnetism or sound for use in security, medical and industrial applications.

- *Hilger Crystals:* In July 2010, we acquired Hilger Crystals, Ltd., ("Hilger") a manufacturer of synthetic crystals applicable to a wide range of industrial, medical, and homeland security applications with a long history of supplying high-quality synthetic crystals for infrared spectroscopy, X-ray and gamma ray detection.

- *Biomedical technologies:* In April 2011, we acquired the rights to six early stage biomedical technologies from Dr. Daniel Ericson, a former hematologist at the Mayo Clinic, which jointly owns rights to certain of the technologies acquired. The activity of our Biomedical segment is currently focused on the development of the tissue sealant technology that was part of this transaction in its Xcede subsidiary.

- *DichroTec Thin Films*: In June 2014, our EMF subsidiary acquired the assets of DichroTec Thin Films LLC, another optical thin-film coatings company with a broad range of applications, many of which are similar to EMF's applications.

Our Optical Technology

We specialize in the production of optical materials, components and coatings for various applications in the medical, industrial, and homeland security/defense sectors.

Our Optics segment supplies synthetic crystals, optical materials, components, and coatings that are used in devices such as baggage scanners, medical imaging systems, optical instruments, lasers, analytical instruments, automotive components, semiconductor/electronic devices, spacecraft/aircraft components and advertising displays. These products are offered through four business units (Dynasil Fused Silica, Optometrics, Hilger and EMF).

We compete for business with fabricators of industrial optical materials, other optical components manufacturers, other optical crystal manufacturers and other optical coaters as well as other analytical instruments manufacturers and synthetic crystal manufacturers. We believe our proprietary processes, reputation, specialty product offering, products in development and the price at which we offer our products enable us to successfully compete in these markets. However, many of our competitors have greater financial, sales and marketing resources than we do, which may enable them to develop and market products that would compete against those developed by us.

Our products are distributed through a direct sales and marketing staff of ten people and through other channels, including manufacturer's representatives and distributors in various foreign countries for international sales and U.S. manufacturers' representatives for certain product lines. Marketing efforts include direct customer contact through sales visits, advertising in trade publications, attendance at trade shows and our newly designed e-commerce website.

Innovation and Development – the Future of Our Technology

Our former Contract Research segment was recently renamed the Innovation and Development segment to emphasize the new technology that is being developed at this segment's business unit, RMD, particularly in the fields material science, radiation detection, digital imaging technology, magnetic imaging, laser optics and photonics. Using their expertise in these fields, the team at RMD develops advanced technology in materials, sensors and prototype instruments that detect or measure radiation, light, magnetism or sound for use in security, medical and industrial applications.

RMD is among the largest small business participants in U.S. government-funded research, performing research and development activities for government agencies including Department of Energy, Department of Defense, Department of Homeland Security, Domestic Nuclear Detection Office, National Institutes of Health and NASA. For over thirty years, RMD has successfully conducted government research under the auspices of the Small Business Innovation Research ("SBIR") program. In recent years, RMD has augmented its SBIR research with larger, competitively bid government research and development contracts. To grow our research portfolio within the federal government, we are broadening our relationships within key federal funding agencies and the U.S. military. RMD also provides research for non-governmental entities in areas where it has the appropriate expertise. Such research is currently not a significant portion of RMD's revenue. Our research initiatives are aligned with our focus on the homeland security, medical and industrial markets. As of September 30, 2019, RMD had a contract backlog of approximately $36.6 million, of which approximately 46% is SBIR contracts.

As of September 30, 2019, our Innovation and Development segment had a total of 78 employees, including 24 Ph.D. level scientists. RMD serves as a vehicle to expand our patent portfolio enabling the opportunity to advance our technology from development to commercialization using government-funded research. As of September 30, 2019, RMD had a portfolio of 75 issued U.S. patents and 31 pending patent applications, compared with 72 issued patents and 40 pending patent applications at the same point in 2018.

RMD competes for contract research work against a variety of small and large entities, including universities that submit research proposals based on specific government solicitations. We generate revenue under various types of contracts, which include Cost Reimbursement, Time & Materials (T&M), Fixed Price-Level of Effort and Firm Fixed Price (FFP) contracts. We believe that RMD's reputation for conducting state-of-the art research and development, as well as the quality of its proposals, are significant competitive advantages. In addition, RMD maintains strong working relationships with universities, government agencies, national laboratories, research hospitals and corporations. However, some of our competitors may have greater financial, technical and human resources than we have and may be better able to operate large, well-funded research and development programs.

We believe that research projects can provide an important source for new commercial products in areas such as medical imaging, industrial sensors, critical care and point of care diagnostics and homeland security. For example, Dynasil Products' lead paint analyzer and gamma medical probes businesses, which were sold in fiscal year 2014, emanated from the RMD portfolio. Most recently, our government-funded research work supported the development of our CLYC dual-mode radiation detection technology which we are currently selling commercially.

Biomedical: Xcede and Our Development of a Tissue Sealant Technology

Xcede's first product under development is a hemostatic patch ("Xcede Patch"), designed to be biocompatible, to be used when conventional techniques are inadequate or impractical to stop bleeding (hemostasis). As described above, in 2011, Dynasil Biomedical ("DBM") acquired rights to the underlying tissue sealant technology as part of a transaction with a former hematologist at the Mayo Clinic. Since that time, DBM has invested significant capital developing this tissue sealant technology, including costs to further the related intellectual property rights and to conduct animal studies.

Beginning at its inception and through November 2016, Xcede funded its pre-clinical research activities through the issuance of $5.2 million in the aggregate principal amount of convertible notes bearing interest at 5% ("the Notes"). In November of 2016, the Notes were converted into Series A convertible preferred stock of Xcede ("Series A Preferred"). Series A Preferred participants include both outside investors (accounted for as noncontrolling interest) and DBM. The outside investors converted $3.1 million of Notes and accrued interest into 3,055,551 shares of Series A Preferred. DBM converted the remaining $2.4 million of Notes and accrued interest into 2,338,569 shares of Series A Preferred.

Additionally, DBM invested $1.2 million of cash into Xcede in exchange for Series B convertible preferred stock of Xcede ("Series B Preferred"). Series A Preferred was issued at a 20% discount to the price per share of the Series B Preferred, in accordance with the amended provisions of the Notes. The value of DBM's Series A Preferred and Series B Preferred, as they are wholly owned by DBM, is eliminated in consolidation.

Each share of Series A Preferred and Series B Preferred (together "the Preferred Stock") is convertible, at the option of the holder, into such number of fully paid and non-assessable shares of Xcede common stock ("Common Stock") as determined by dividing the original issue price, as defined, by the conversion price in effect on the date of conversion, which is 1:1. Each holder of the Preferred Stock is entitled to one vote for each share of Common Stock that the holder of the Preferred Stock would be entitled to receive upon the conversion of the holder's Preferred Stock into Common Stock. Upon any liquidation event, which includes certain change of control events, following payment of pre-equity distributions, the remaining proceeds or net assets of Xcede shall be paid and distributed in the following amounts and order of priority: (1) to satisfy the liquidation preference payment due to each holder of Series B Preferred, (2) to satisfy the liquidation preference payment due to each holder of Series A Preferred, (3) payment in full of any acquisition transaction payment, and (4) the remaining assets available to be distributed ratably among the holders of the Common Stock. If a liquidation event were to occur, the Series A Preferred's liquidation value would be $1.016 per share and Series B Preferred's liquidation value would be $1.27 per share. As of September 30, 2019, the liquidation value of the Series B Preferred would be approximately $1.5 million and the Series A Preferred would be approximately $5.5 million, of which $2.4 million is DBM's portion and $3.1 million would be attributed to noncontrolling shareholders.

As of September 30, 2019, DBM owned approximately 63% of Xcede's outstanding Common Stock and Preferred Stock and, as a result, Xcede is included in the Company's consolidated balance sheets, results of operations and cash flows. Due to the Series A Preferred having a liquidation preference and therefore not representing a residual interest, cumulative net losses of Xcede are attributed only to common stockholders in accordance with common stock ownership. Noncontrolling interest represents the value of the Series A Preferred and common stock not owned by DBM plus 17% of cumulative losses of Xcede based on the 17% common stock ownership held by noncontrolling interests.

In 2016, Xcede signed agreements with Cook Biotech Inc. ("CBI") in connection with the development, regulatory approval and production of Xcede's hemostatic patch (the "Xcede Patch") in which CBI committed to fund up to $1.5 million for the pre-clinical testing for the Xcede Patch. Xcede utilized $0.5 million in CBI services in exchange for a note that is currently outstanding.

On July 20, 2018, Xcede received a notice of termination from CBI claiming that the results of a recent animal study showed that it is not commercially reasonable, in CBI's assessment, to continue to the next development phase of the Patch.

In light of the foregoing, Xcede has halted clinical trial preparations at this time and has curtailed its operations to a minimal level while the Board of Directors of Xcede evaluates alternatives, including the viability of modifying the Xcede Patch to address the shortcomings cited by CBI and/or the possible sale or license of Xcede IP assets, subject to amending CBI's security interest. Additionally, Xcede and the Company's RMD subsidiary have begun an investigation of possible continued development of the Xcede Patch, which includes seeking government funding of this development. In September 2019, Xcede and RMD resubmitted an application for a Phase I SBIR grant for $225,000. There can be no assurances with respect to any such alternatives or that any additional outside funding to continue development of the Xcede Patch will be available to Xcede.

Strategy to Commercialize our Technologies

Our business strategy focuses on combining our expertise in funded research, product development and technology innovation to commercialize detection and analysis equipment for the homeland security, industrial and medical markets. We are executing on this strategy by:

- developing and expanding our research portfolio;
- seeking to commercialize the technologies coming from our Innovation and Development segment;
- growing organically through investment in existing businesses; and
- identifying and investing in those technologies with the greatest revenue and growth potential in the market.

For example, our CLYC dual mode nuclear detection crystal technology was developed by RMD under a program for the Department of Homeland Security for use in locating nuclear bombs or nuclear materials at our nation's major cities, ports and borders. This technology has the potential to be very important to our national security, as well as other radiation detection applications, such as nuclear power plant safety. Our dual mode detection crystals have been commercialized in a detector currently being offered by a large manufacturer of detection equipment. RMD continues to further enhance this technology.

Our CLYC dual mode detection crystals technology is designed to be a single detector that replaces two detector subsystems – the gamma radiation detector and also the helium-3 detectors for neutrons. Increasing our value proposition is the fact that the stockpile of the chemical element helium-3, a byproduct of nuclear weapons production, is in short supply. The stockpile of helium-3 has been drawn down during the past 10 years, as the federal government has increased its use in neutron detectors to help prevent nuclear and radiological material from being smuggled into the U.S.

Intellectual Property (IP)

From October 2018 through September 2019, we have been granted four new U.S. patents and have filed 7 new patent applications. Our current portfolio, company-wide, is 79 issued and 39 pending applications, the largest percentage of which are issued to RMD. We believe that intellectual property represents an important strategic advantage for us.

Customers

We have more than 500 customers, with approximately 50% of our business concentrated in our top 10 customers. Our three largest customers are agencies and agents of the Federal government and accounted for approximately 14%, 8%, and 6%, respectively, of our revenues during fiscal year 2019. Our fourth and fifth largest customers are customers of our Optics segment and also accounted for approximately 5% and 3%, respectively, of our overall revenue during fiscal year 2019. The loss of any of these top five customers would likely have a material adverse effect on our business, financial condition and results of operations. Generally, our customers provide purchase orders for a specific part and quantity or they provide a contract for research projects. Product orders are normally filled over a period ranging from one to six weeks. We also have blanket orders for product quantities that will potentially be required in upcoming periods. Contract research projects generally run for a one to two year period.

Employees

As of September 30, 2019, we had a total of 218 employees, 207 of which are full-time. Of the total, 29 of our employees are engaged in administration, 12 are engaged in sales, 71 are engaged in research and/or engineering and 106 are engaged in manufacturing. The Company has a total of 26 Ph.D. level employees. Our operations are non-union except for a two-person union in one location.

Suppliers

Our largest supplier for materials and components is a supplier of the fused silica material that is fabricated and sold by our New Jersey facility. We believe that we have excellent relationships with our suppliers. If any of our suppliers should become unavailable to us for any reason, we believe that there are a number of potential replacements, although we might incur some delay in identifying such replacements.

Government Regulation

The businesses that we operate are subject to various federal and state regulations.

Our Innovation and Development segment (formerly Contract Research segment) is subject to the rules and regulations applicable to government contracting, including: the Federal Acquisition Regulation (FAR) and supplements, which regulate the formation, administration and performance of U.S. Government contracts; the Truth in Negotiations Act, which requires certification and disclosure of cost and pricing data in connection with certain contract negotiations; the Procurement Integrity Act, which regulates access to competitor bids and proposal information and government source selection information, and our ability to provide compensation to certain former government officials; the Civil False Claims Act, which provides for substantial civil penalties for violations, including for submission of a false or fraudulent claim to the U.S. Government for payment or approval; and the U.S. Government Cost Accounting Standards, which impose accounting requirements that govern our right to reimbursement under certain cost-based U.S. Government contracts.

The tissue sealant being developed by Xcede, our joint venture with Mayo Clinic, is subject to FDA regulations and approval in the United States and requires CE marking and other regulatory agency approval in other countries around the world.

Our use of radioactive materials in research and certain of our products (our dual-mode detector) subject us to laws regulating hazardous wastes under United States federal and certain state, environmental and atomic energy regulatory laws and similar laws in each jurisdiction in which our research and manufacturing facilities are located. Environmental compliance costs, which totaled approximately $54,000 for fiscal year 2019, have not historically had a material effect on our operating results.

With respect to our intellectual property rights, we rely on, and are subject to, the laws in the U.S. and abroad governing intellectual property protection.

Item 1A. RISK FACTORS

In your evaluation of our company and our businesses, you should carefully consider the risks and uncertainties described below, together with the information included elsewhere in this Annual Report on Form 10-K and the other documents we file with the Securities and Exchange Commission ("SEC"). The following factors describe the risks and uncertainties that we consider significant to the operation of our business, but should not be considered a complete listing of all potential risks and uncertainties that could adversely affect our operating results, financial position or liquidity. Additionally, our business is subject to the same general risks and uncertainties that affect many other companies, such as the overall United States ("U.S.") and global economic conditions, international conflicts, geopolitical events, changes in laws or accounting rules, fluctuations in interest and exchange rates or other disruptions of expected economic and business conditions.

Risks Related To Our Business

The Company relies on its Innovation and Development segment for approximately half of its revenue. A decline in or temporary suspension of U.S. Government spending, changes in federal budgetary priorities, the timing of contract awards or a restructuring of the SBIR/STTR programs may adversely affect our future revenue and limit our growth prospects.

Our Innovation and Development (formerly Contract Research) business unit, RMD, is among the largest small business participants in U.S. government-funded research, performing research and development activities for government agencies including Department of Energy, Department of Defense, Department of Homeland Security, Domestic Nuclear Detection Office, National Institutes of Health, and National Aeronautics and Space Administration. Historically RMD has conducted its government research contracts through the SBIR (Small Business Innovation Research Program) and the STTR (Small Business Technology Transfer Program). Though RMD has augmented its SBIR contracts with larger competitively bid government contracts in recent years, a reduction in or elimination of the SBIR or the STTR programs could result in our inability to win contracts, as we may not have the resources to compete effectively against much larger, better-funded companies. Further, a significant decline in overall U.S. Government spending, including in the areas of national security, intelligence and homeland security, a significant shift in its spending priorities, the substantial reduction or elimination of particular defense-related programs or significant delays in contract or task order awards for large programs could adversely affect our future revenue and limit our growth prospects. While the October 2013 and December 2018 government shutdowns did not have a significant impact on the Company, a future government shutdown could result in the suspension of work on contracts in progress or in payment delays which would adversely affect our future revenue and cash flow.

The Company relies on a small number of key customers for a substantial portion of its revenue.

Ten customers accounted for approximately 50% of the Company's revenue in 2019. Six of those ten customers were agencies of the U.S. Government and accounted for 37% of revenue. Although we have had business relationships with these customers for many years, there can be no guarantee that we will be able to win contracts with these agencies in the future. Accordingly our performance could be adversely affected by the loss of one or more of these key customers.

The U.S. Government may terminate, cancel, modify or curtail our contracts at any time prior to their completion and, if we do not replace them, we may be unable to achieve our expected future revenue and may suffer a decline in revenue.

As of September 30, 2019, our total contract research backlog was approximately $36.6 million. Backlog consists of the portion of existing contracts yet to be performed and awards of projects by agencies in favor of RMD for which contracts have not yet been executed. Many of the U.S. Government programs in which we participate as a contractor or subcontractor may extend for several years and include one or more base years and one or more option years. These programs are normally funded on an annual basis. Under our contracts, the U.S. Government generally has the right not to exercise options to extend or expand our contracts and may otherwise terminate, cancel, modify or curtail our contracts at its convenience. Any decisions by the U.S. Government not to exercise contract options or to terminate, cancel, modify or curtail our major programs or contracts would adversely affect our revenue, revenue growth and profitability.

The U.S. Government also has the right to terminate a contract for default, in which case, we may be exposed to liability, including for excess costs incurred by the customer in procuring undelivered services and products from another source. Depending on the nature and value of the contract, a performance issue or termination for default could cause our actual results to differ from those anticipated and could harm our reputation.

Our earnings and profitability may be adversely affected by our failure to accurately estimate and manage costs, time and resources.

We generate revenue under various types of contracts, which include cost reimbursement, Time & Materials (T&M), Fixed Price-Level of Effort and Firm Fixed Price contracts (FFP). Our earnings and profitability may vary materially depending on changes in the proportionate amount of revenue derived from each type of contract, the nature of services or products provided, as well as the achievement of performance objectives and the stage of performance at which the right to receive fees, particularly under incentive and award fee contracts, is finally determined. Cost reimbursement and T&M contracts generally have lower profitability than FFP contracts. Our operating results in any period may also be affected, positively or negatively, by variable purchasing patterns by our customers of our more profitable proprietary products. Our failure to accurately estimate costs or the resources and technology needed to perform our contracts or to effectively manage and control our costs during the performance of our work could result, and in some instances has resulted, in reduced profits or in losses. More generally, any increased or unexpected costs or unanticipated delays in connection with the performance of our contracts, including costs and delays caused by contractual disputes or other factors outside of our control, such as performance failures of our subcontractors, natural disasters or other force majeure events, could make our contracts less profitable than expected or unprofitable.

Goodwill and other intangible assets represent approximately 21% of our total assets and any impairment of these assets could negatively impact our results of operations.

Non-amortizing intangible assets, including goodwill, are tested for impairment annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Examples of events or changes in circumstances indicating that the carrying value of such intangible assets may not be recoverable could include a significant adverse change in legal factors or in the business climate, an adverse action or assessment by a regulator, unanticipated competition, loss of key personnel, or a more-likely-than-not expectation that a reporting unit or a significant portion of a reporting unit will be sold or otherwise disposed of. Any future impairment of goodwill or other intangible assets would have a negative impact on our profitability and financial results.

Our Innovation and Development business faces aggressive competition that can impact our ability to obtain contracts and therefore affect our future revenue and growth prospects.

RMD’s competitors include other small high technology companies performing SBIR R&D, large firms such as Raytheon which performs related R&D, universities and national laboratories.

The markets in which we operate are characterized by rapid technology development and the needs of our customers change and evolve regularly. Accordingly, our success depends on our ability to develop services and products that address these changing needs and to provide people and technology needed to deliver these services and products. To remain competitive, we must consistently provide superior service, technology and performance on a cost-effective basis to our customers. Our competitors may be able to provide our customers with different or greater capabilities or technologies or better contract terms than we can provide, including technical qualifications, past contract experience, geographic presence, price and the availability of qualified professional personnel. In addition, our competitors may consolidate or establish teaming or other relationships among themselves or with third parties to increase their ability to address customers’ needs. Accordingly, larger or new competitors or alliances among competitors may emerge which may adversely affect our ability to compete.

***Our business is subject to reviews, audits and cost adjustments by the U.S. Government, which, if resolved unfavorably to us, could adversely affect our profitability, cash position or growth prospects*.**

U.S. Government agencies, including the DCAA (Defense Contract Audit Agency), DCMA (Defense Contract Management Agency) and others, routinely audit and review a contractor's performance on government contracts, indirect rates and pricing practices, and compliance with applicable contracting and procurement laws, regulations and standards. They also review the adequacy of the contractor's compliance with government standards for its accounting and management internal control systems, including: control environment and overall accounting system, estimating system, purchasing system, property system and earned value management system. Both contractors and the U.S. Government agencies conducting these audits and reviews have come under increased scrutiny.

A finding of significant control deficiencies in our system audits or other reviews could result in decremented billing rates to our U.S. Government customers until the control deficiencies are corrected and our corrections are accepted by the auditing agency. Government audits and reviews may conclude that our practices are not consistent with applicable laws and regulations and result in adjustments to contract costs and mandatory customer refunds. Such adjustments can be applied retroactively, which could result in significant customer refunds. Our receipt of adverse audit findings or the failure to obtain an "approved" determination of our various accounting and management internal control systems, including our changes to indirect cost and direct labor estimating systems, from the responsible U.S. Government agency could significantly and adversely affect our business, including our ability to bid on new contracts and our competitive position in the bidding process. A determination of non-compliance with applicable contracting and procurement laws, regulations and standards could also result in the U.S. Government imposing penalties and sanctions against us, including withholding of payments, suspension of payments and increased government scrutiny that could delay or adversely affect our ability to invoice and receive timely payment on contracts, perform contracts or compete for contracts with the U.S. Government. We may suffer harm to our reputation if allegations of impropriety are made against us, which would impair our ability to win new contract awards or receive contract renewals.

Our indirect cost audits by the DCAA have been completed for fiscal year 2018 while fiscal year 2019 remains open pending DCAA audit. Although we have recorded contract revenue subsequent to fiscal 2018 based upon our estimate of costs that we believe will be approved upon final audit or review, we do not know the outcome of any ongoing or future audits or reviews and adjustments and, if future adjustments exceed our estimates, our profitability would be adversely affected.

Our failure to comply with a variety of complex procurement rules and regulations could result in our being liable for penalties, including termination of our U.S. Government contracts, disqualification from bidding on future U.S. Government contracts and suspension or debarment from U.S. Government contracting.

We must comply with laws and regulations relating to the formation, administration and performance of U.S. Government contracts, which affect how we do business with our customers and may impose added costs on our business. Some significant statutes and regulations that affect us include:

- the Federal Acquisition Regulation (FAR) and supplements, which regulate the formation, administration and performance of U.S. Government contracts;
- the Truth in Negotiations Act, which requires certification and disclosure of cost and pricing data in connection with certain contract negotiations;
- the Procurement Integrity Act, which regulates access to competitor bid and proposal information and government source selection information, and our ability to provide compensation to certain former government officials;
- the Civil False Claims Act, which provides for substantial civil penalties for violations, including for submission of a false or fraudulent claim to the U.S. Government for payment or approval; and
- the U.S. Government Cost Accounting Standards, which impose accounting requirements that govern our right to reimbursement under certain cost-based U.S. Government contracts.

Our failure to comply with any of these rules or regulations could result in loss of business or penalties that could have a material adverse effect on our financial condition or results of operations.

Our loan agreements impose restrictions on our ability to take certain corporate actions and raise additional capital, and include a material adverse change ("MAC") clause.

Our loan agreements contain numerous customary restrictions that limit our ability to undertake certain activities without the express prior written approval of our lenders. These include, but are not limited to, restricting our ability to:

- incur additional indebtedness;
- pay or declare dividends;
- enter into a business substantially different from existing operations;
- issue or authorize any additional or new equity that will result in a change of control; and
- take any corporate action outside the ordinary course of the business, including without limitation, the sale of material assets or other strategic divestitures, without the prior written approval of our lender.

These restrictions could significantly hamper our ability to raise additional capital. Our ability to receive the necessary approvals is largely dependent upon our relationship with our lenders and our financial performance, and no assurances can be given that we will be able to obtain the necessary approvals in the future. Our inability to raise additional capital could lead to working capital deficits that could have a material adverse effect on our operations in future periods.

One of our loan agreements also includes a MAC clause which permits the bank to call the loan if any event, fact, circumstance, change in, or effect on the Company could reasonably be expected to be materially adverse to the business.

We may not be able to generate sufficient positive cash flow in the future to fund our operations.

In addition to our bank financing, we are dependent upon cash flow from our businesses to fund our operations. It is our expectation that we can continue to increase our cash flows; however, there can be no assurance that we will be able to continue to do so. If we are unable to fund our operations from future cash flows together with our available bank financing, we will need to seek additional debt and/or equity financing, which may not be available on attractive terms, if at all, in which case there could be a material adverse effect on our results of operations and financial condition.

Our internal controls over financial reporting were not effective as of September 30, 2018.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404(a) of the Sarbanes-Oxley Act. Our management, including the Chief Executive Officer and the Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures and of our internal control over financial reporting as of September 30, 2018 and concluded that, as of that date, our disclosure controls and procedures were not effective as a result of material weaknesses in our internal control over financial reporting. We believe that these issues are now corrected and the necessary changes have been made. We will continue to monitor their effectiveness to properly ensure our ability to report financial results or other information required to be disclosed on a timely and accurate basis.

Our Xcede joint venture requires further funding to support the development of its technology.

In July, 2018, Xcede received a notice of termination from CBI, its collaboration partner with respect to the Xcede Patch, which claimed that the results of a recent animal study showed that, in CBI's assessment, continuing to the next development phase of the Xcede Patch it is not commercially reasonable. Upon a valid termination, CBI has no obligation to conduct further developmental activities with respect to the Xcede Patch, including any further in-kind funding under the Loan Agreement dated November 16, 2016 between Xcede and CBI. In addition, CBI has asserted that these study results trigger an immediate repayment of the $500,000 promissory note owed by Xcede to CBI under the Loan Agreement, which otherwise has a stated maturity of December 31, 2025. The Xcede promissory note is collateralized by a security interest which CBI has in all of Xcede's intellectual property. While Xcede vigorously contests this assertion, at this time it is unclear how this matter will be resolved between Xcede and CBI.

As a result of this action by CBI, Xcede halted clinical trial preparations and has curtailed its operations to a minimal level while the Board of Directors of Xcede evaluates alternatives, including the viability of modifying the Xcede Patch to address the shortcomings cited by CBI and/or the possible sale or license of Xcede IP assets, subject to amending the security interest described above.

Xcede will require outside funding in order to continue development of the Xcede Patch, any additional pre-clinical development activities, and any human clinical trials they may initiate. In the event Xcede raises any additional equity financing from outside sources, our equity interest in Xcede will decrease. There can be no assurance, however, that Xcede will be able to obtain future financing as needed or on terms which are attractive, in which case it might be required to close its operations and liquidate its assets in which case our investment would likely not be recovered.

Our failure to attract, train and retain skilled employees, including our management team, would adversely affect our ability to execute our strategy.

Portions of our business involve the development of tailored solutions for our customers, a process that relies heavily upon the expertise and services of our employees. Our continued success depends on our ability to recruit and retain highly trained and skilled engineering, technical and professional personnel. Competition for skilled personnel is intense and competitors aggressively recruit key employees. Particularly in highly specialized areas, it may become more difficult to retain employees and meet all of our needs for employees in a timely manner, which may affect our growth in the current fiscal year and in future years. Although we intend to continue to devote significant resources to recruit, train and retain qualified employees, we may not be able to attract and retain these employees. Any failure to do so could impair our ability to perform our contractual obligations efficiently and timely meet our customers' needs and win new business, which could adversely affect our future results.

In addition to attracting and retaining qualified engineering, technical and professional personnel, we believe that our success will also depend on the continued employment of a highly qualified and experienced senior management team and its ability to retain existing business and generate new business. Our senior management team is important to our business because personal reputations and individual business relationships are a critical element of retaining and obtaining customer contracts in our industry, particularly with agencies performing classified operations. Our inability to hire and retain appropriately qualified and experienced senior executives could cause us to lose customers or new business opportunities.

Misconduct of employees, subcontractors, agents and business partners could cause us to lose existing contracts or customers and adversely affect our ability to obtain new contracts and customers and could have a significant adverse impact on our business and reputation.

Misconduct, should it occur, could include fraud or other improper activities such as falsifying time or other records and violations of laws, including the Anti-Kickback Act. Other examples could include the failure to comply with our policies and procedures or with federal, state or local government procurement regulations, regulations regarding the use and safeguarding of classified or other protected information, legislation regarding the pricing of labor and other costs in government contracts, laws and regulations relating to environmental, health or safety matters, bribery of foreign government officials, import-export control, lobbying or similar activities, and any other applicable laws or regulations. Intentional or unintentional violation of the Export Control Act or International Traffic in Arms Regulations could result in severe fines which could adversely affect our profitability. Any data loss or information security lapses resulting in the compromise of personal information or the improper use or disclosure of sensitive or classified information could result in claims, remediation costs, regulatory sanctions against us, loss of current and future contracts and serious harm to our reputation. Although we have implemented policies, procedures and controls to prevent and detect these activities, these precautions may not prevent all misconduct, and as a result, we could face unknown risks or losses. Our failure to comply with applicable laws or regulations or misconduct by any of our employees, subcontractors, agents or business partners could damage our reputation and subject us to fines and penalties, restitution or other damages, loss of security clearance, loss of current and future customer contracts and suspension or debarment from contracting with federal, state or local government agencies, any of which would adversely affect our business and our future results.

Quality problems with our processes, goods, and services could harm our reputation for producing high-quality products and erode our competitive advantage, sales and market share.

Quality is extremely important to us and our customers due to the serious and costly consequences of product failure. Our quality certifications are critical to the marketing success of our goods and services. If we fail to meet these standards, our reputation could be damaged, we could lose customers, and our revenue and results of operations could decline. Aside from specific customer standards, our success depends generally on our ability to manufacture to exact tolerances precision-engineered components, subassemblies, and finished devices from multiple materials. If our components fail to meet these standards or fail to adapt to evolving standards, our reputation as a manufacturer of high-quality components will be harmed, our competitive advantage could be damaged, and we could lose customers and market share.

From time to time we may make acquisitions. The failure to successfully integrate future acquisitions could harm our business, financial condition and operating results.

One component of our growth strategy is to selectively pursue strategic acquisitions. These transactions require significant investment of time and resources and may disrupt our business and distract our management from other responsibilities. Even if successful, these transactions could reduce earnings for a number of reasons, including the amortization of intangible assets, impairment charges, acquired operations that are not yet profitable or the payment of additional consideration under earn-out arrangements if an acquisition performs better than expected. Acquisitions, investments and joint ventures pose many other risks that could adversely affect our reputation, operations or financial results, including:

- we may not be able to identify, compete effectively for or complete suitable acquisitions and investments at prices we consider attractive;
- we may not be able to accurately estimate the financial effect of acquisitions and investments on our business and we may not realize anticipated synergies or acquisitions may not result in improved operating performance;
- we may encounter performance problems with acquired technologies, capabilities and products, particularly with respect to those that are still in development when acquired;
- we may have trouble retaining key employees and customers of an acquired business or otherwise integrating such businesses, such as incompatible accounting, information management, or other control systems, which could result in unforeseen difficulties;
- we may assume material liabilities that were not identified as part of our due diligence or for which we are unable to receive a purchase price adjustment or reimbursement through indemnification;
- we may assume legal or regulatory risks, particularly with respect to smaller businesses that have immature business processes and compliance programs;
- acquired entities or joint ventures may not operate profitably, which could adversely affect our operating income or operating margins and we may be unable to recover investments in any such acquisitions;
- acquisitions, investments and joint ventures may require us to spend a significant amount of cash or to issue capital stock, resulting in dilution of ownership; and
- we may not be able to effectively influence the operations of our joint ventures or we may be exposed to certain liabilities if our joint venture partners do not fulfill their obligations.

If our acquisitions fail, perform poorly or their value is otherwise impaired for any reason, including contractions in credit markets and global economic conditions, our business and financial results could be adversely affected.

In addition, we periodically divest businesses, including businesses that are no longer a part of our ongoing strategic plan. These divestitures similarly require significant investment of time and resources, may disrupt our business, distract management from other responsibilities and may result in losses on disposal or continued financial involvement in the divested business, including through indemnification, guarantee or other financial arrangements, for a period of time following the transaction, which would adversely affect our financial results.

Our financial results may vary significantly from period-to-period.

Our financial results may fluctuate as a result of a number of factors, many of which are outside of our control. For these reasons, comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance. Our financial results may be negatively affected by any of the risk factors listed in this "Risk Factors" section and other matters described elsewhere in this Annual Report on Form 10-K and the other documents we file with the SEC.

Changes in tax laws or exposure to additional income tax liabilities could have a material impact on our financial condition and results of operations.

We are subject to income taxes as well as non-income based taxes, in both the U.S. and United Kingdom (U.K.). We are subject to tax audits in various jurisdictions. Tax authorities may disagree with certain positions we have taken and assess additional taxes. We regularly assess the likely outcomes of these audits in order to determine the appropriateness of our tax provision. However, there can be no assurance that we will accurately predict the outcomes of these audits, and the actual outcomes of these audits could have a material impact on our consolidated earnings and financial condition. Additionally, changes in tax laws or tax rulings could materially impact our effective tax rate.

We face risks associated with our international business.

In 2019 and 2018, we generated approximately 21% and 25% of our sales outside the U.S., respectively. Our international business operations may be subject to additional and different risks than our U.S. business. Our ability to achieve and maintain profitable growth in international markets is subject to risks related to the differing legal, political, social and regulatory requirements and economic conditions of many countries. As a result of our expansion outside the U.S., we are subject to certain inherent risks, including political and economic uncertainty, inflation rates, exchange rates, trade protection measures, local labor conditions and laws, restrictions on foreign investments and repatriation of earnings, and weak intellectual property protection. If we are unable to manage these risks it would have a material adverse effect on our results of operations and financial condition.

The United Kingdom's decision to exit the European Union may bring short-term and long-term adverse impacts on our financial results.

The outcome of the United Kingdom's decision to leave the European Union ("Brexit") could adversely affect our business and our results of operations as our Hilger Crystals Ltd. business unit is located in the U.K. In the short-term, volatility in the British Pound could continue, which would negatively impact our financial results. In the longer term, any impact from Brexit on our United Kingdom operations will depend on the outcome of yet-to-be negotiated tariff, trade, regulatory and other matters.

Uncertainty over global tariffs, or the financial impact of tariffs, may negatively affect our results.

Recent changes in U.S. domestic and global tariff frameworks have increased our costs of producing goods and resulted in additional risks to our supply chain. Additional tariff changes are possible. We are engaged in efforts to mitigate tariff increases, but there is no assurance we will be successful. Further, uncertainties about future tariff changes could result in mitigation actions that prove to be detrimental to our business.

Increases in prices and declines in the availability of raw materials could negatively impact our financial results.

Our financial results are significantly affected by the cost of raw materials and energy. Most of the raw materials and energy used in production are purchased from outside sources, and the Company has made, and plans to continue to make, supply arrangements to meet the planned operating requirements for the future. Supply of critical raw materials and energy is managed by establishing contracts, multiple sources, and identifying alternative materials or technology whenever possible. An inability to obtain critical raw materials would adversely impact our ability to produce products. Increases in the cost of raw materials and energy may have an adverse effect on our earnings or cash flow in the event we are unable to mitigate these higher costs in a timely manner.

Our business and operations expose us to numerous legal and regulatory requirements and any violation of these requirements could harm our business.

We are subject to numerous federal, state and foreign legal requirements on matters as diverse as data privacy and protection, employment and labor relations, immigration, taxation, anticorruption, import/export controls, trade restrictions, internal and disclosure control obligations, securities regulation, environmental and anti-competition. We are also focused on expanding our business in certain identified growth areas, such as homeland security and biomedical technologies, which are highly regulated and may expose us to increased compliance risk. Compliance with diverse and changing legal requirements is costly, time-consuming and requires significant resources. Violations of one or more of these requirements in the conduct of our business could result in significant fines and other damages, criminal sanctions against us or our officers, prohibitions on doing business and damage to our reputation. Violations of these regulations or contractual obligations related to regulatory compliance in connection with the performance of customer contracts could also result in liability for significant monetary damages, fines and/or criminal prosecution, unfavorable publicity and other reputational damage, restrictions on our ability to compete for certain work and allegations by our customers that we have not performed our contractual obligations.

Moreover, we use controlled hazardous and radioactive materials in our business and generate wastes that are regulated as hazardous wastes under United States federal and certain state, environmental and atomic energy regulatory laws and similar laws in each jurisdiction in which our facilities are located. Our use of these substances and materials is subject to stringent, and periodically changing, regulation that can impose costly compliance obligations on us and have the potential to adversely affect our manufacturing activities. The risk of accidental contamination or injury from these materials cannot be completely eliminated. If an accident with these substances occurs, we could be held liable for any damages that result, in addition to incurring clean-up costs and liabilities, which can be substantial. Additionally, an accident could damage our research and manufacturing facilities resulting in delays and increased costs.

Our insurance may be insufficient to protect us from product and other liability claims or losses.

We maintain insurance coverage with third-party insurers as part of our overall risk management strategy and because some of our contracts require us to maintain specific insurance coverage limits. However, not every risk or liability is or can be protected by insurance, and, for those risks we insure, the limits of coverage we purchase or that are reasonably obtainable in the market may not be sufficient to cover all actual losses or liabilities incurred. If any of our third-party insurers fail, cancel our coverage or otherwise are unable to provide us with adequate insurance coverage, then our overall risk exposure and our operational expenses would increase and the management of our business operations would be disrupted. Our insurance may be insufficient to protect us from significant product and other liability claims or losses. Moreover, there is a risk that commercially available liability insurance will not continue to be available to us at a reasonable cost, if at all. If liability claims or losses exceed our current or available insurance coverage, our business and prospects may be harmed. Regardless of the adequacy of our liability insurance coverage, any significant claim may have an adverse effect on our industry and market reputation, leading to a substantial decrease in demand for our products and services and reduced revenue.

Our business and financial results could be negatively affected by cyber or other security threats.

As a U.S. Government contractor operating in multiple regulated industries and geographies, we handle sensitive information. Therefore, we are continuously exposed to cyber and other security threats, including computer viruses, attacks by hackers or physical break-ins. Any electronic or physical break-in or other security breach or compromise may jeopardize security of information stored or transmitted through our information technology systems and networks. This could lead to disruptions in mission critical systems, unauthorized release of confidential or otherwise protected information and corruption of data. Although we have implemented policies, procedures and controls to protect against, detect and mitigate these threats, attempts by others to gain unauthorized access to our information technology systems are becoming more sophisticated. These attempts include covertly introducing malware to our computers and networks and impersonating authorized users, among others, and may be perpetrated by well-funded organized crime or state sponsored efforts. We seek to detect and investigate all security incidents and to prevent their occurrence or recurrence. We continue to improve our threat protection, detection and mitigation policies, procedures and controls. In addition, we work with other companies in the industry and government participants on increased awareness and enhanced protections against cyber security threats. However, because of the evolving nature of these security threats, there can be no assurance that our policies, procedures and controls have or will detect or prevent any of these threats and we cannot predict the full impact of any such incident. We may experience similar security threats to the information technology systems that we develop, install or maintain under customer contracts. Although we work cooperatively with our customers and other business partners to seek to minimize the impacts of cyber and other security threats, we must rely on the safeguards put in place by those entities. Any remedial costs or other liabilities related to cyber or other security threats may not be fully insured or indemnified by other means. Occurrence of any of these security threats could adversely affect our reputation, ability to work on sensitive U.S. Government contracts, business operations and financial results.

Risks Relating To Dynasil's Stock

We are a non-reporting company.

In August 2019, we filed a Form 25 and Forms 15 with the SEC to deregister and delist our stock. As a result, our stock is no longer listed on the Nasdaq Capital Market and trading in our stock will only occur in privately negotiated sales and potentially on the OTC Pink Sheets, if one or more brokers continues to choose to make a market for our common stock there and complies with applicable regulatory requirements; however, there can be no assurances regarding any such trading. Because of the limited liquidity for our common stock, the termination of our obligation to publicly disclose financial and other information, and the deregistration of our common stock under the Exchange Act, our stockholders may potentially experience a significant decrease in the value of their common stock.

Following the filing of this Annual Report on Form 10-K, we will cease to file annual, quarterly, current, and other reports and documents with the SEC, and stockholders will cease to receive annual reports and proxy statements. We do intend to continue to prepare audited annual financial statements and periodic unaudited financial statements and plan to make audited annual financial statements available to our stockholders. Nonetheless, our stockholders will have significantly less information about the Company and our business, operations, and financial performance than they have previously. We do intend to continue to hold stockholder meetings as required under Delaware law, including annual meetings, or to take actions by written consent of our stockholders in lieu of meetings.

As a result of our deregistration and delisting, we are no longer subject to the provisions of the Sarbanes-Oxley Act, the liability provisions of the Exchange Act or the oversight of the Nasdaq Capital Market. Our executive officers, directors and 10% stockholders are no longer required to file reports relating to their transactions in our common stock with the SEC. In addition, our executive officers, directors and 10% stockholders are no longer subject to the recovery of profits provision of the Exchange Act, and persons acquiring 5% of our common stock are no longer required to report their beneficial ownership under the Exchange Act. Additionally, we do not have the ability to access the public capital markets or to use public securities in attracting and retaining executives and other employees, and we have a decreased ability to use stock to acquire other companies.

Additionally, our public reporting obligations could be reinstated if on the first day of any fiscal year we have more than 300 stockholders of record, in which instance we would be required to resume reporting pursuant to Section 15(d) of the Exchange Act.

While our common stock is traded on the OTC Pink Sheets, its price is characterized by significant price volatility.

While our common stock is traded on the OTC Pink Sheets, its trading price is characterized by significant volatility when compared to the shares of larger, more established companies that have large public floats, and we expect that our share price will continue to be more volatile than the shares of such larger, more established companies traded on the major markets for the indefinite future. The volatility in our share price is attributable to a number of factors. First, as noted above, our common stock is, compared to the shares of such larger, more established companies, sporadically and thinly traded. As a consequence of this limited liquidity, the trading of relatively small quantities of shares by our stockholders may disproportionately influence the price of those shares in either direction. The price for our shares could, for example, decline precipitously in the event that a large number of our common stock is sold on the market without commensurate demand. As a consequence of this enhanced risk, more risk-adverse investors may, under the fear of losing all or most of their investment in the event of negative news or lack of progress, be more inclined to sell their shares on the market more quickly and at greater discounts than would be the case with the stock of a larger, more established company that has a large public float. Many of these factors are beyond our control and may decrease the market price of our common stock, regardless of our operating performance. We cannot make any predictions or projections as to what the prevailing market price for our common stock will be at any time, including as to whether our common stock will sustain its current market price, or as to what effect that the sale of shares or the availability of common stock for sale at any time will have on the prevailing market price, or if our common stock will continue to be traded on the OTC Pink Sheets.

We do not anticipate paying any cash dividends to our common shareholders.

We presently do not anticipate that we will pay dividends on any of our common stock in the foreseeable future. If payment of dividends does occur at some point in the future, it would be contingent upon our revenues and earnings, if any, capital requirements, and general financial condition. The payment of any common stock dividends will be within the discretion of our Board of Directors. We presently intend to retain any earnings to implement our business plan; accordingly, we do not anticipate the declaration of any dividends for common stock in the foreseeable future.

Xcede, our joint venture, is a pre-clinical stage business with no approved products, which makes it difficult to assess the business's future viability.

In October 2013, Dynasil Biomedical formed Xcede, a joint venture with Mayo Clinic, to focus on and separately fund the development of its tissue sealant technology. Xcede has not yet demonstrated an ability to successfully overcome many of the risks and uncertainties frequently encountered by companies in new and rapidly evolving fields, particularly in the biomedical area. For example, to execute its business plan, Xcede will need to successfully:

- develop a commercially viable version of the Xcede Patch;
- raise the funds necessary to execute its product development plan;
- manage its spending as costs and expenses increase during the clinical trial and regulatory approval processes;
- obtain required regulatory approvals for the development and commercialization of the tissue sealant product applications;
- maintain and expand the tissue sealant intellectual property portfolio;
- build and maintain robust sales, distribution and marketing capabilities, either on its own or in collaboration with strategic partners; and
- gain market acceptance for its products.

If Xcede is unsuccessful in accomplishing these objectives, it may not be able to develop its tissue sealant product, raise capital, expand its business or continue its operations, which may have a material adverse effect on our stock price.

If our internal control over financial reporting is found not to be effective or if we make disclosure of existing or potential significant deficiencies or material weaknesses in those controls, investors could lose confidence in our financial reports, and our stock price may be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 has required us to include an internal control report with our Annual Report on Form 10-K. That report has included management's assessment of the effectiveness of our internal control over financial reporting as of the end of the fiscal year. We have evaluated our internal control over financial reporting based on the integrated framework issued in 2013 by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission. During the course of our evaluation of the internal controls, we have identified areas requiring improvement, and would have had to design enhanced processes and controls to address issues identified through this review. Additionally, in the past, due to the implementation of new accounting standards, our existing controls have had to be adapted and new deficiencies have arisen. Remedying significant deficiencies or material weaknesses that we identified have required us to incur significant costs and expend significant time and management resources. The disclosure of existing significant deficiencies or material weaknesses in those internal controls over financial reporting have had the potential to cause investors to lose confidence in our financial reports, and our stock price could have been adversely affected. As a result of our deregistration and delisting transaction, we are no longer subject to the provisions of the Sarbanes-Oxley Act.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

We own a manufacturing and office facility consisting of a one-story, masonry and steel building containing approximately 15,760 square feet in West Berlin, NJ. We lease a 10,000 square foot manufacturing and office building in Ayer, MA with a lease that expires in May 2025. We lease 7,200 square feet of manufacturing office space in a building in Littleton, MA with a lease that expires in November 2020. We lease a 40,654 square foot manufacturing and office building in Rochester, NY with a lease that expires in March 2022. We own a two-story, 44,000 square foot manufacturing and office facility in Ithaca, NY. We own a two-story, 17,000 square foot manufacturing and office facility in Margate, Kent, in the U.K. All of the foregoing owned and leased properties are used by our Optics segment. We lease a 40,000 square foot manufacturing, research, and office building in Watertown, MA for our RMD business from a related party with a month-to-month lease that continues until terminated by the landlord with not less than three years' prior written notice or by the Company with not less than six months' prior written notice. We lease 2,368 square feet of office space in Newton, MA for our Dynasil Corporation of America office with a lease that expires in December 2020. We believe that the properties are in satisfactory condition and suitable for our purposes. The New Jersey, New York, and U.K. properties are collateral against notes payable to banks.

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

The Company's Common Stock has been listed on the Pink Open Market since August 26, 2019 under the symbol DYSL. From September 30, 2013 until August 23, 2019, the Company's Common Stock was listed on the Nasdaq Capital Market. From December 20, 2010 until September 30, 2013, the Company's Common Stock was listed on the Nasdaq Global Market. Prior to December 20, 2010, the Company's Common Stock was quoted on the NASD-OTC Bulletin Board under the symbol "DYSL.OB".

As of December 10, 2019, there were 15,002,905 shares of the Company's common stock outstanding held by approximately 31 holders of record.

The Company has paid no cash dividends on its common stock since its inception. The Company intends to retain any future earnings for use in its business and does not intend to pay cash dividends on its common stock in the foreseeable future.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following management's discussion and analysis should be read in conjunction with our financial statements and the notes thereto appearing elsewhere in this Annual Report on Form 10-K.

Overview

Reportable Segments

We have three reporting segments based on our main operating activities. Below is a summary of these segments:

- *Optics*: The Optics segment encompasses four business units – our original optics business, doing business as Dynasil Fused Silica, Optometrics, Hilger, and Evaporated Metal Films ("EMF") – that manufacture commercial products, including optical crystals for sensing in the security and medical imaging markets, as well as optical components, optical coatings and optical materials for scientific instrumentation and other applications.

- *Innovation and Development*: The Innovation and Development segment consists of the Radiation Monitoring Devices, Inc. ("RMD") business unit and was formerly known as the Contract Research segment.

- *Biomedical*: The Biomedical segment consists of a single business unit, Dynasil Biomedical Corporation, a medical technology incubator which owns rights to certain early stage medical technologies. In October 2013, Dynasil Biomedical formed Xcede Technologies, Inc., a joint venture with the Mayo Clinic to spin out and separately fund the development of a tissue sealant technology. Dynasil Biomedical currently has no operations other than those relating to its equity ownership in Xcede.

The segment amounts included in management's discussion and analysis are presented on a basis consistent with our internal management reporting and accounting principles generally accepted in the U.S. ("U.S. GAAP"). Segment information appearing in Note 16 – Segment, Customer and Geographical Reporting of the Notes to Financial Statements included in this Report are also presented on this basis. A description of our strategy is included in Item 1 of this Annual Report on Form 10-K.

Our markets are characterized by rapidly changing technology and the needs of our customers, which change and evolve regularly. Accordingly, our success depends on our ability to develop services and products that address these changing needs and to provide the people and technology needed to deliver these services and products. To remain competitive, we must consistently provide superior service, technology and performance on a cost-effective basis to our customers. Our business performance is also influenced by a variety of other factors including, but not limited to, economic conditions, U.S. Government spending on research and development programs, competition, regulatory requirements and insurance costs. Further information on certain risks to our Company is included in Item 1A of this Annual Report on Form 10-K.

Fiscal 2019 Financial Overview

Our revenue in 2019 was $43.7 million, as compared to $40.7 million in 2018. This 7% increase in revenue resulted largely from a $2.8 million, or 16%, increase in revenue in our Innovation and Development segment, as well as a $0.2 million, or 1%, increase in revenue in our Optics segment.

In fiscal year 2019, we had net loss of ($0.4) million, compared to net income of $1.6 million in 2018, due in part to a $1.6 million tax benefit in 2018 related to R&E tax credits for the years ended 2013 through 2016. Additionally, during 2019, Dynasil incurred $0.8 million in expenses in a transaction to delist from the Nasdaq Stock Market and terminate the registration of our common stock with the Securities and Exchange Commission (the "SEC"), including a 1-for-8,000 reverse stock split of our common stock, par value $0.0005 per share, followed immediately by a 8,000-for-1 forward stock split of its common stock. As a result of this transaction, stockholders with fewer than 8,000 shares of Dynasil common stock held of record immediately prior became entitled to receive cash payments in lieu of fractional shares equal to $1.15 per pre-reverse stock split share.

Following the filing of this Annual Report on Form 10-K, the Company will cease to file annual, quarterly, current, and other reports and documents with the SEC, and stockholders will cease to receive annual reports and proxy statements. The Company's common stock is no longer listed on the Nasdaq Capital Market.

Results of Operations

Results of Operations for the Fiscal Year Ended September 30, 2019				
	Optics	Innovation and Development	Biomedical	Total
Revenue	$ 23,250,000	$ 20,451,000	$ -	$ 43,701,000
Gross profit	7,939,000	8,135,000	-	16,074,000
GM %	34%	40%	-	37%
Operating expenses	7,853,000	8,086,000	123,000	16,062,000
Impairment of long-lived assets	-	-	-	-
Operating income (loss)	86,000	49,000	(123,000)	12,000
Depreciation and amortization	1,165,000	241,000	14,000	1,420,000
Capital expenditures	716,000	177,000	-	893,000
Intangibles, net	307,000	128,000	192,000	627,000
Goodwill	882,000	4,939,000	-	5,821,000
Total assets	$ 20,520,000	$ 10,112,000	$ 195,000	$ 30,827,000

Results of Operations for the Fiscal Year Ended September 30, 2018				
	Optics	Innovation and Development	Biomedical	Total
Revenue	$ 23,053,000	$ 17,628,000	$ -	$ 40,681,000
Gross profit	7,667,000	7,569,000	-	15,236,000
GM %	33%	43%	-	37%
Operating expenses	7,003,000	7,072,000	817,000	14,892,000
Impairment of long-lived assets	-	-	182,000	182,000
Operating income (loss)	664,000	497,000	(999,000)	162,000
Depreciation and amortization	1,006,000	237,000	14,000	1,257,000
Capital expenditures	2,033,000	211,000	73,000	2,317,000
Intangibles, net	390,000	162,000	203,000	755,000
Goodwill	961,000	4,939,000	-	5,900,000
Total assets	$ 22,946,000	$ 8,376,000	$ 210,000	$ 31,532,000

Revenue

Revenue for the fiscal year ended September 30, 2019 was $43.7 million, an increase of $3.0 million or 7% from the $40.7 million of revenue recorded in 2018.

Revenue in our Optics segment for the 12 months ended September 30, 2019 increased 1% to $23.2 million from $23.1 million in 2018, largely as the result of growth in a new product line.

Innovation and Development segment revenue increased 16% to $20.5 million in the year ended September 30, 2019, from $17.6 million in the same period in 2018, largely resulting from increased funding of awarded contracts. The contract revenue backlog increased to $36.6 million at September 30, 2019, up from the September 30, 2018 level of $30.8 million. The current backlog is comprised of approximately 46% SBIR contracts, which is reduced from the 47% SBIR contracts in the backlog at September 30, 2018. The Innovation and Development segment continues to seek to limit reliance on the SBIR program and increase the number of government agencies that currently contract for its research, as well as to diversify its contracting sources including contracting with commercial businesses. During the twelve months ended September 30, 2019 and 2018, the Innovation and Development segment generated $0.7 million and $1.7 million, respectively, in commercial revenue.

The Biomedical segment currently has no revenue.

Gross Profit

Gross profit for the year ended September 30, 2019 increased $0.9 million, or 6%, to $16.1 million from the prior year amount of $15.2 million. Gross profit as a percentage of revenue was 37% in both fiscal years 2019 and 2018.

The Optics segment's gross profit as a percentage of revenue in fiscal year 2019 increased slightly to 34% as compared to 33% in fiscal year 2018. The gross profit in fiscal year 2019 was $7.9 million, an increase of $0.2 million, as a result of the improved efficiencies in certain product lines and slightly higher revenue during the 12 months ended September 30, 2019.

The Innovation and Development segment's gross profit as a percent of revenue decreased to 40% in fiscal year 2019, as compared to 43% in fiscal year 2018, largely as a result of the mix of active contracts during 2019 and the decrease in the higher margin commercial revenue. Gross profit dollars in this segment increased to $8.1 million during fiscal year 2019 from $7.6 million in the same period in 2018.

Operating Expenses

Operating expenses increased in fiscal year 2019 to $16.1 million, or 37% of revenue, an increase of $1.0 million from $15.1 million in fiscal year 2018 or 37% of revenues. The increase was largely due to the increase in expenses in 2019 related to the Company's delisting and deregistration transaction.

Operating expenses within the Optics segment increased to $7.9 million in fiscal year 2019, compared to $7.0 million in fiscal year 2018, due to increases in marketing, engineering personnel, and facility related expenditures. The percentage of SG&A to revenue increased to 34% in the 12 months ended September 30, 2019, as compared to 30% in the prior year.

Operating expenses within the Innovation and Development segment increased to $8.1 million, or 40% of revenue, in fiscal year 2019 from $7.1 million, or 40% of revenue, in the prior year. The increase in SG&A expenses in fiscal year 2019 are largely the result of investments in personnel and technology, as well other expenses related to the increased revenue in 2019.

Operating expenses in the Biomedical segment in fiscal year 2019 were approximately $0.1 million, as compared to $1.0 million in fiscal year 2018. The $0.9 million decrease in expenses year over year was primarily the result of Xcede's decision to halt clinical trial preparations and curtail operations to a minimal level while it evaluates alternative avenues for the Xcede Patch, following the July 2018 notice of termination from Cook Biotech Inc.

As of September 30, 2019, the Company owned 63% of Xcede's stock and, as a result, Xcede is included in the Company's consolidated balance sheets, results of operations and cash flows. The 63% ownership includes preferred stock with a liquidation preference. For reporting purposes only, common stock ownership is used in the allocation of the noncontrolling interest. Dynasil's common stock ownership is 83% and the remaining 17% of Xcede's common stock is owned by others and accounted for under the rules applicable to non-controlling interest. The pre-tax loss related to the common stock owned by others was $0.02 million in the fiscal year ended September 30, 2019, as compared to $0.2 million in 2018, and was not included in the Company's net income (loss) attributable to common stockholders of ($0.4) million and $1.8 million, respectively.

In 2019, Xcede was funded by $0.1 million in cash from Dynasil. In 2018, Xcede was funded by $0.6 million in cash from Dynasil and $0.2 million in R&D services from Cook Biotech as it worked on developing the first in human clinical trial for Xcede's hemostatic tissue sealant product under a note agreement.

Net Interest Expense

Net interest expense was $0.2 million in both fiscal years 2019 and 2018.

Income Tax Expense/Benefit

Total income tax expense was an expense of $0.2 million in fiscal year 2019, as compared to a credit of $1.6 million in fiscal 2018. The 2019 tax expense resulted from The 2018 credit included R&E tax credits for the years ended 2013 through 2016, the release of a tax reserve for state deferred tax assets being carried on the balance sheet that are now expected to be used in the foreseeable future, and net of higher expenses from recording the initial effect of the 2017 Tax Act.

Net Income

As a result of the items mentioned previously, our net loss for the year ended September 30, 2019 was ($0.4) million, compared to net income of $1.6 million in the prior year.

Our net income includes losses of approximately $0.1 million and $1.0 million in the years ended September 30, 2019 and 2018, respectively, from our Biomedical segment.

Liquidity and Capital Resources

Liquidity Overview

Our net cash as of September 30, 2019 was $0.3 million, a decrease of $2.1 million, compared to $2.4 million at September 30, 2018. The cash reduction was primarily due to the Company's delisting and deregistration transaction.

We believe our cash on hand and borrowing capacity under our revolving line of credit will be sufficient to fund our current debt obligations, estimated capital expenditures and working capital needs for the next twelve months.

Net Cash From Operating Activities

Net cash used in operating activities was $0.5 million for fiscal year 2019 versus net cash provided by operating activities of $2.0 million for fiscal year 2018.

In fiscal year 2019, the net cash used of $0.5 million was primarily from the net loss of $0.4 million, which includes $0.8 million of costs associated with the Company's delisting and deregistration transaction. Unbilled receivables increased approximately $1.4 million due to strong innovation and development revenue in the fourth quarter of 2019. In addition, inventory increased by approximately $0.7 million to ensure the proper supply of material is available to meet customer demand. These increases were offset by non-cash items of approximately $2.1 million.

Cash Flows from Investing Activities

Cash flows from investing activities resulted in a use of $0.9 million for fiscal 2019 compared with a use of $2.3 million for fiscal 2018. In both fiscal 2019 and 2018, these funds were primarily used to purchase property, plant and equipment. The 2018 amount increased as we invested in future operations, including our new highly efficient anti-reflective, diamond-like coating product lines. We currently plan on additional capital expenditures of approximately $2.0 million during fiscal year 2020 for expansion within our existing segments.

Cash Flows from Financing Activities

Cash flows from financing activities resulted in a use of cash of $0.6 million. We used $3.2 million of cash to repurchase common stock. This transaction was financed using $2.0 million of new borrowing from Massachusetts Capital Resources Company, $0.9 million from the Middlesex Savings Bank line of credit, and $0.3 million of cash. The remaining cash used for financing activities was used to repay existing debts. We have approximately $3.1 million available under our line of credit with Middlesex Savings Bank at September 30, 2019.

Terms of Outstanding Indebtedness

As of September 30, 2019, Dynasil is in compliance with the terms of all of its outstanding indebtedness. As of such date, we had total indebtedness consisting of:

- approximately $0.9 million revolving line of credit note with Middlesex Savings Bank, subject to the terms and conditions of the Middlesex Savings Bank Loan Agreement;

- approximately $0.6 million senior debt term loan with Middlesex Savings Bank, subject to the terms and conditions of the Middlesex Savings Bank Loan Agreement;

- approximately $1.0 million of equipment term notes; and

- approximately $2.9 million of subordinated debt owed to Massachusetts Capital Resource Company;

- Additionally, Xcede had $0.5 million of outstanding indebtedness owed to Cook Biotech Inc.

The following is a summary of the terms of the existing loan agreement in place with our senior lender, Middlesex Savings Bank, the terms of subordinated debt owed to Massachusetts Capital Resources Company and the terms of subordinated debt owed by Xcede to Cook Biotech Inc.

Middlesex Savings Bank Loan Agreement

Dynasil currently has a loan and security agreement with Middlesex Savings Bank (“Middlesex”) for general corporate purposes, as well as a $4.0 million line of credit note and an annual $1.0 million equipment line of credit agreement with a one year draw period in which the outstanding balance will be converted into a five year term note on the one year anniversary.

On July 31, 2018, the Company converted the outstanding balance on the original equipment line of credit with Middlesex of approximately $750,000 into a five year term note with an interest rate of 5.66%. Additionally, on August 9, 2018, the Company’s equipment line of credit was renewed for $750,000 through April 30, 2019. As part of the renewal process and due to the additional credit being extended to the Company, the Middlesex loan and security agreement was amended on August 9, 2018 to change the maximum debt leverage ratio covenant to 2.5x from 3.0x.

On April 30, 2019, the Company converted the outstanding balance on the equipment line of credit with Middlesex of approximately $484,000 into a five year term note with an interest rate of 5.17%, which will be repaid in equal monthly installments from May 2019 through April 2024. Additionally, on May 1, 2019, the Company’s equipment line of credit was renewed for $750,000 through April 30, 2020, at which time the outstanding balance will be converted into a five year term note. Additionally, a modification was made to the borrowing base under the revolving line of credit note to increase the percentage of eligible accounts receivable available for borrowing from 80% to 85% and to eliminate eligible unbilled receivables as a category in obtaining advances under the revolving line of credit.

On August 5, 2019, the Company entered into a Loan Modification Agreement with Middlesex to modify the loan and security agreement, by and between the Company and Middlesex, to allow for the exclusion of certain Transaction-related expenses from the calculation of EBITDA.

On December 23, 2019, the Company and Middlesex entered in an agreement to extend the terms of the existing term loan and line of credit from May 2020 to April 2022, at which time all outstanding principal and unpaid interest will be due and payable. The new agreement includes a modification of the terms of the line of credit’s interest rate to add, at the Company's election, the option of the LIBOR Benchmark Rate, plus two and one-half of one (2.50%) percent per annum, in addition to the existing rate of the Lender's Prime Rate, but in no event less than three and one-quarter of one (3.25%) percent. Additionally, the $750,000 availability under the existing equipment line of credit has been extended through December 2020.

As of September 30, 2019, approximately $0.9 million was due under the revolving line of credit with Middlesex and the total availability was $3.1 million. As of September 30, 2019, no amount was outstanding under the equipment line of credit with Middlesex.

Note Purchase Agreement – Massachusetts Capital Resource Company

The Company and with Massachusetts Capital Resource Company (“MCRC”) entered into a Note Purchase Agreement (the “Agreement”) in July of 2012 in which the Company issued and sold to MCRC a $3.0 million subordinated note (the “Original MCRC Note”) for a purchase price of $3.0 million. The Original MCRC Note provided for interest at the rate of ten percent (10%) per annum, with interest to be payable monthly on the last day of each calendar month and principal payments of $130,000 beginning on September 30, 2015, and on the last day of each calendar month thereafter through and including July 31, 2017.

This Original MCRC Note was amended in 2015 to adjust the interest rate to six percent (6%) in connection with a prepayment of $2.0 million.

On January 3, 2018, the Company amended the Agreement with MCRC to reinstate the interest only payment requirements of the loan and defer principal repayment requirements to November 30, 2018. Such amendment also increased the interest rate of the Original MCRC Note from six percent (6%) to seven percent (7%) per annum.

On November 27, 2018, the Company amended the Agreement with MCRC to reinstate the interest only payment requirements of the Original MCRC Note and defer principal repayment requirements to November 30, 2019. Such amendment also extended the maturity date from July 31, 2019 to November 30, 2021.

On May 7, 2019, the Company received a waiver from MCRC to terms of the Agreement to allow and permit the Company’s proposed transaction to delist its Common Stock from the Nasdaq Stock Market, including the 1-for-8,000 reverse stock split on its outstanding shares of Common Stock (the “Reverse Split”), the payment of cash to stockholders subsequent to the Reverse Split who hold only a fractional interest, and the subsequent forward stock split of 8,000-for-1 to restore the remaining shareholders to their original share ownership as of immediately prior to the Reverse Split (for additional information, see Note 10, “Stockholders Equity”).

In connection with the events described above, on August 6, 2019, the Company entered into an Note Purchase Agreement with MCRC in which the Company borrowed an additional $2,000,000 in cash and replaced the Original MCRC Note which has an outstanding principal amount of $865,216, for an aggregate principal amount of $2,865,216 which will be due July 31, 2026 and bears eight (8%) percent interest per annum (the “Consolidated Note”). Until August 31, 2022 the Consolidated Note will require interest only payments, followed by principal and interest payments for the remaining four years of the Consolidated Note. Until August 31, 2021, the Company is subject to early-payback penalties. As a result of this amendment to the Agreement, the debt balance as of September 30, 2019 with MCRC was classified as long-term.

Under the terms of the Agreement and a Subordination Agreement dated August 6, 2019, MCRC and any successor holder of the Subordinated Note have agreed that the payment of the principal of and interest on the Subordinated Note is subordinated in right of payment, to the prior payment in full of all indebtedness of the Company for money borrowed from banks or other institutional lenders at any time outstanding.

The Agreement contains customary representations, warranties and covenants, including covenants by the Company limiting additional indebtedness, liens, guaranties, mergers and consolidations, substantial asset sales, investments and loans, sale and leasebacks, transactions with affiliates and fundamental changes. In addition, the Agreement contains financial covenants by the Company (as further defined in the Agreement) that (i) impose a Consolidated Maximum Leverage Ratio (consolidated total funded debt to consolidated EBITDA) equal to or less than 4.0 to 1.0 for each rolling four quarter period ending on or after September 30, 2019, and (ii) require a Debt Service Coverage Ratio of at least 1.10 to 1.0 for the prior 12 month period (EBITDA excluding non-cash and/or non-recurring expenditures, effective for the subsequent three fiscal quarters to give effect to the trailing twelve month testing periods for this covenant, minus unfinanced capital expenditures, minus dividends and distributions, minus cash taxes paid for ongoing operations, divided by scheduled interest and principal payments made on all debt) of not less than 1.10 to 1.00 for each rolling four quarter period ending on or after September 30, 2019. Non-recurring expenditures include without limitation, up to $750,000 of certain expenditures incurred in the de-listing of certain of the Company's stock from NASDAQ and the deregistration of the Company's common stock for the fiscal quarters ending June 30, 2019, September 30, 2019 and December 31, 2019 only.

The Agreement also provides for events of default customary for agreements of this type, including, but not limited to, non-payment, breach of covenants, insolvency and defaults on other debt. Upon an event of default, MCRC may elect to declare all obligations (including principal, interest and all others amounts payable) immediately due and payable, which will occur automatically if the Company becomes insolvent.

Note Purchase Agreement – Cook Biotech, Inc. and Xcede

In November 2016, Xcede entered into an additional Services Agreement, a Secured Promissory Note, a Loan Agreement, a Security Agreement and an Intellectual Property Security Agreement (collectively the "Note Agreement") with Cook Biotech, Inc. (CBI), in which CBI committed to fund the pre-clinical testing of, and subject to the receipt of applicable regulatory approvals to initiate first in human clinical trials for, the Xcede Patch. Under the terms of the Note Agreement, in exchange for the services performed by CBI, Xcede committed to a multiple draw credit facility in the aggregate amount not to exceed $1.5 million, with three draws of principal available, each in the amount of $500,000, upon satisfaction of conditions identified in the Note Agreement. The principal amounts outstanding bear interest at a fixed rate of 2% and are secured by all the rights of Xcede under the Development Agreement, Supply Agreement, and License Agreement, all the rights to the data and work product arising from the clinical trial being performed under the Services Agreement, all regulatory approvals for the Xcede Patch, all patent and patent applications owned or controlled by Xcede, and all trademark and service mark registrations and applications. The outstanding principal and unpaid interest are due and payable in full at the earlier of closing of an acquisition transaction or December 31, 2025.

On July 20, 2018, Xcede received a notice of termination from CBI, its collaboration partner with respect to the Xcede Patch, which claimed that the results of a recent animal study showed that, in CBI's assessment, continuing to the next development phase of the Xcede Patch is not commercially reasonable. Upon a valid termination, CBI has no obligation to conduct further developmental activities with respect to the Xcede Patch, including any further in-kind funding under the Note Agreement between Xcede and CBI. In addition, CBI has asserted that the foregoing study results trigger an immediate repayment of the $500,000 promissory note owed by Xcede to CBI under the Note Agreement, which otherwise has a stated maturity of December 31, 2025. The Xcede promissory note is collateralized by a security interest which CBI has in all of Xcede's intellectual property. While Xcede vigorously contests this assertion, at this time it is unclear how this matter will be resolved between Xcede and CBI. See Note 3 – Xcede Technologies, Inc. Joint Venture.

As of September 30, 2019, Xcede had $0.5 million of outstanding indebtedness owed to CBI, which the Company carries in short-term debt. Dynasil has no contractual obligation with respect to Xcede indebtedness. The Xcede promissory note is a contractual obligation solely of Xcede and is secured by Xcede's intellectual property.

"Off Balance Sheet" Arrangements

Dynasil has no "Off Balance Sheet" arrangements other than non-cancelable operating lease agreements, primarily for property, that expire through 2025. See Note 12, "Lease Agreements," in the Notes to Consolidated Financial Statements for a full description.

NEW ACCOUNTING PRONOUNCEMENTS

See Note 2, "Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements for a full description of recent accounting pronouncements, including the respective dates of adoption or expected adoption and effects on our consolidated financial position, results of operations and cash flows, including the effects of significant changes in revenue recognition.

CRITICAL ACCOUNTING POLICIES

Our discussion and analysis of financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America and pursuant to the rules and regulations of the SEC. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. We have identified the following as the items that require the most significant judgment and often involve complex estimation: revenue recognition, valuation of long-lived assets, intangible assets and goodwill, estimating allowances for doubtful accounts receivable, stock-based compensation, valuation of inventory, and accounting for income taxes.

Revenue Recognition

Effective October 1, 2018, the Company adopted Accounting Standards Codification ("ASC") 606, Revenue from Contracts with Customers, and all the related amendments using the modified retrospective transition method. Under the modified retrospective approach, the Company applied the standards to new contracts and those that were not completed as of October 1, 2018 which resulted in a cumulative adjustment to increase the retained earnings in the amount of $22,000. Prior periods were not be retrospectively adjusted, but the Company maintained dual reporting for the year of initial application in order to maintain comparability of the periods presented.

The Company receives payments from customers based on a billing schedule as established in our contracts. Contract asset relates to our conditional right to consideration for our completed performance under the contract. Accounts receivable are recorded when the right to consideration becomes unconditional. Contract liability relates to payments received in advance of performance under the contract. Contract liabilities are recognized as revenue as (or when) we perform under the contract. The Company recognized revenue in the amount of $253,000 during the twelve months ended September 30, 2019 for amounts included in the contract liability balance at September 30, 2018.

Innovation and Development Segment Revenues

The Company performs research and development for U.S. Federal government agencies, educational institutions and commercial organizations. The Company accounts for a research contract when a contract has been executed, the rights of the parties are identified, payment terms are identified, the contract has commercial substance, and collectability of the contract price is considered probable. Revenue is earned under reimbursement of costs plus fees, fixed price, or time and material type contracts.

Under the new standard, most contracts in the Innovation and Development segment were not materially impacted upon the adoption of Topic 606 as revenue will continue to be recognized over time.

The Company's contracts with agencies of the U.S. government are subject to periodic funding by the respective contracting agency. Funding for a contract may be provided in full at inception of the contract or ratably throughout the contract as the services are provided. In evaluating the probability of funding for purposes of assessing collectability of the contract price, the Company considers previous experience with the customers, communication with the customers regarding funding status, and knowledge of available funding for the contract or program. If funding is not assessed as probable, revenue recognition is deferred until realization is reasonably assured.

Under the typical payment terms of the Company’s U.S. government contracts, the customer pays either performance-based payments or progress payments. Performance-based payments, which are typically used in the firm fixed price contracts, are interim payments based on quantifiable measures of performance or on the achievement of specified events or milestones. Progress payments, which are typically used in the Company’s cost-plus type contracts, are interim payments based on costs incurred as the work progresses. For the Company’s U.S. government cost-plus contracts, the customer generally pays during the performance period for 80%-90% of the actual costs incurred. Because the customer retains a small portion of the contract price until completion of the contract and audit of allowable costs, cost-plus type contracts generally result in revenue recognized in excess of billings which the Company presents as contract assets on the balance sheet. Amounts billed and due from customers are classified as receivables on the balance sheet, whereas amounts earned, but not yet billed to the Company’s customers due to timing, are classified as unbilled receivables on the balance sheet. The Company recognizes a liability for performance-based payments paid in advance which are in excess of the revenue recognized and presents these amounts as contract liabilities on the balance sheet.

To determine the proper revenue recognition method for research and development contracts, the Company evaluates whether two or more contracts should be combined and accounted for as one single modified contract and whether the combined or single contract should be accounted for as more than one performance obligation. For instances where a contract has options that were bid with the initial contract and awarded at a later date, the Company combines the options with the original contract when options are awarded. For most contracts, the customer contracts for research with multiple milestones that are interdependent, thus, the entire contract is accounted for as one performance obligation. The effect of the combined or modified contract on the transaction price and measure of progress for the performance obligation to which it relates, is recognized as an adjustment to revenue (either as an increase in or a reduction of revenue) on a cumulative catch-up basis.

Contract revenue recognition is measured over time as the Company performs the work because of continuous transfer of knowledge and control to the customer. For U.S. government contracts which are typically subject to the Federal Acquisition Regulation ("FAR"), this continuous transfer of knowledge and control to the customer is supported by clauses in the contract that allow the customer to unilaterally terminate the contract for convenience, pay for cost incurred plus a reasonable profit, and take control of any work in process. From time to time, as part of normal management processes, facts may change, causing revisions to estimated total costs or revenues expected. The cumulative impact of any revisions to estimates and the full impact of anticipated losses on any type of contract are recognized in the period in which they become known.

Because of knowledge and control transferring over time, revenue is recognized based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the services to be provided. The Company generally uses the input method, more specifically the cost-to-cost measure of progress for the contracts because it best depicts the transfer of knowledge and control to the customer which occurs as the Company incur costs on these contracts. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. The underlying bases for estimating contract research revenues are measurable expenses, such as labor, subcontractor costs and materials, and data that are updated on a regular basis for purposes of preparing cost estimates. The Company’s research contracts generally have a period of performance of nine months to three years, and estimates of contract costs have historically been consistent with actual results. Revisions in these estimates between accounting periods to reflect changing facts and circumstances have not had a material impact on operating results, and the Company does not expect future changes in these estimates to be material. The cumulative impact of any revisions to estimates and the full impact of anticipated losses on any type of contract are recognized in the period in which they become known.

Under cost-plus contracts, the Company is reimbursed for costs that are determined to be reasonable, allowable and allocable to the contract and paid a fixed fee representing the profit negotiated between the Company and the contracting agency. Revenue from cost-plus contracts is recognized as costs are incurred plus an estimate of applicable fees earned. The Company considers fixed fees under cost-plus contracts to be earned in proportion to the allowable costs incurred in performance of the contract.

Revenue from time and materials contracts is recognized based on direct labor hours expended at contract billing rates plus other billable direct costs. The Company has elected the practical expedient to recognize revenue in the amount for which it has the right to invoice the customer, provided that invoiced amount corresponds directly with the value to the customer of the Company's performance to date.

Fixed price contracts may include either a product delivery or specific service performance throughout a period. For fixed price contracts that are based on the proportional performance method and involve a specified number of deliverables, the Company recognizes revenue based on the proportion of the cost of the deliverables compared to the cost of all deliverables included in the contract as this method more accurately measures performance under these arrangements. For fixed price contracts that provide for the development and delivery of a specific prototype or product, revenue is recognized based upon the performance completed to date, using an output method of revenue recognition based on milestones reached.

Whether certain costs under government contracts are allowable is subject to audit by the government. Certain indirect costs are charged to contracts using provisional or estimated indirect rates, which are subject to later revision based on government audits of those costs. Management is of the opinion that costs subsequently disallowed, if any, would not likely have a significant impact on revenues recognized for those contracts.

Optics Segment Revenues

The Company produces standard and customized products for commercial organizations, educational institutions, and U.S. Federal government agencies. In addition, the Company also offers services which include non-recurring engineering services. To determine the proper revenue recognition method for Optics contracts, the Company evaluates whether two or more contracts should be combined and accounted for as one single contract and whether the combined or single contract should be accounted for as more than one performance obligation. The Company recognizes revenue when the performance obligation has been satisfied by transferring the control of the product or service to the customer. For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation based on their relative stand-alone selling prices. In such circumstances, the Company uses the observable price of goods or services which are sold separately in similar circumstances to similar customers. If these prices are not observable, then the Company will estimate the stand-alone selling price using information that is reasonably available. For the majority of the Company's standard products and services, price list, and discount structures related to customer type are available. For products and services that do not have price list and discount structures, the Company may use one or more of the following: (i) adjusted market assessment approach or (ii) expected cost plus a margin approach. The adjusted market approach requires evaluation of the market in which the Company sells goods or services and estimates the price that a customer in that market would be willing to pay for those goods or services. The expected cost plus margin approach requires the Company to forecast expected costs of satisfying the performance obligation and then add a reasonable margin for that good or service. Shipping and handling activities primarily occur after a customer obtains control and are considered fulfillment cost rather than separate performance obligations. Similarly, sales and similar taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the entity from a customer are excluded from the measurement of the transaction price.

Contracts in the Optics segment generally provide for the following revenue sources: standard product sales, custom product development and sales, and non-recurring engineering contracts. Revenues for this segment are recognized using either the “point in time” or “over time” methods of Topic 606, depending upon the revenue source. The change in revenue recognition for the Optics segment related to certain custom optics products and the related non-recurring engineering costs which changed from “point in time” to “over time” upon the adoption of Topic 606. This change resulted in the recognition of revenue over time when compared to existing standards with the cumulative adjustment relating to contracts that were not complete as of September 30, 2018 recognized as an adjustment of $22,000 to opening retained earnings on October 1, 2018. The revenue for the standard products is recognized using the "point in time" model of Topic 606, and the timing of such revenue recognition is not expected to differ materially from the historical revenue recognition. Other immaterial adjustments related to the Optics segment that are sometimes offered to customers include customer rights of return and volume discounts. The Company has elected the practical expedient that the Company will not be required to adjust promised amounts of consideration for the effects of a significant financing component if the transfer of promised goods or services will occur in one year or less.

See Note 2, “Summary of Significant Accounting Policies,” for further information regarding the Company’s adoption of ASC 606, Revenue from Contracts with Customers.

Goodwill

Goodwill and intangible assets which have indefinite lives are subject to annual impairment tests. Goodwill is tested by reviewing the carrying value compared to the fair value at the reporting unit level. Fair value for the reporting unit is derived using the income approach. Under the income approach, fair value is calculated based on the present value of estimated future cash flows. Assumptions by management are necessary to evaluate the impact of operating and economic changes and to estimate future cash flows. Management’s evaluation includes assumptions on future growth rates and cost of capital that are consistent with internal projections and operating plans.

We generally perform our annual impairment testing of goodwill at the end of the fourth quarter of the fiscal year, or more frequently if events or changes in circumstances indicate that the assets might be impaired. We test impairment at the reporting unit level using the two-step process. Our primary reporting units tested for impairment are RMD, which comprises our Innovation and Development segment, and Hilger, which is a component of the Optics segment.

Step one of the impairment testing compares the carrying value of a reporting unit to its fair value. The carrying value represents the net book value of the net assets of the reporting unit or simply the equity of the reporting unit if the reporting unit is the entire entity. If the fair value of the reporting unit is greater than its carrying value, no impairment has been incurred and no further testing or analysis is necessary. We estimate fair value using a discounted cash flow methodology which calculates fair value based on the present value of estimated future cash flows. Estimating future cash flows requires significant judgment and includes making assumptions about projected growth rates, industry-specific factors, working capital requirements, weighted average cost of capital, and current and anticipated operating conditions. Assumptions by management are necessary to evaluate the impact of operating and economic changes. Our evaluation includes assumptions on future growth rates and cost of capital that are consistent with internal projections and operating plans. The use of different assumptions or estimates for future cash flows could produce different results. We regularly assess the estimates based on the actual performance of each reporting unit.

If the carrying value of a reporting unit is greater than its fair value, step two of the impairment testing process is performed to determine the amount of impairment to be recognized. Step two requires us to estimate an implied fair value of the reporting unit's goodwill by allocating the fair value of the reporting unit to all of the assets and liabilities other than goodwill. An impairment then exists if the carrying value of the goodwill is greater than the goodwill's implied fair value. With respect to our annual goodwill impairment testing performed during the fourth quarter of fiscal year 2019, step one of the testing determined the estimated fair value of RMD and Hilger exceeded their carrying values. Accordingly, we concluded that no impairment had occurred and no further testing was necessary.

Impairment of Long-Lived Assets

Our long-lived assets include property, plant and equipment and intangible assets subject to amortization. We evaluate long-lived assets for recoverability whenever events or changes in circumstances indicate that an asset may have been impaired. In evaluating an asset for recoverability, we estimate the future cash flow expected to result from the use of the asset and eventual disposition. If the expected future undiscounted cash flow is less than the carrying amount of the asset, an impairment loss, equal to the excess of the carrying amount over the fair value of the asset, is recognized.

There was no impairment charge in the year ended September 30, 2019 and there was an impairment charge of $0.2 million in the year ended September 30, 2018.

Intangible Assets

Our intangible assets consist of acquired customer relationships and trade names of Hilger Crystals, Ltd., acquired know-how of Radiation Monitoring Devices, Inc. and provisionally patented technologies within Dynasil Biomedical Corp.

We estimate the fair value of indefinite-lived intangible assets using an income approach, and recognize an impairment loss when the estimated fair value of the indefinite-lived intangible assets is less than the carrying value. During the fourth quarter of fiscal year 2019, we conducted our annual impairment review of indefinite-lived intangible assets and concluded the fair value exceeded the carrying value.

We review intangible assets with finite lives for impairment whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. Recoverability of these intangible assets is assessed based on the undiscounted future cash flows expected to result from the use of the asset. If the undiscounted future cash flows are less than the carrying value, the intangible assets with finite lives are considered to be impaired. The amount of the impairment loss, if any, is measured as the difference between the carrying amount of these assets and the fair value based on a discounted cash flow approach or, when available and appropriate, to comparable market values.

We amortize our intangible assets with definitive lives over their useful lives, which range from 5 to 20 years, based on the time period we expect to receive the economic benefit from these assets.

Allowance for Doubtful Accounts Receivable

We perform ongoing credit evaluations of our customers and adjust credit limits based upon payment history and the customer's current credit worthiness, as determined by a review of their current credit information. We continuously monitor collections and payments from our customers and maintain a provision for estimated credit losses based upon historical experience and any specific customer collection issues that have been identified. While such credit losses have historically been minimal, within our expectations and the provisions established, we cannot guarantee that we will continue to experience the same credit loss rates as in the past. A significant change in the liquidity or financial position of any of our significant customers could have a material adverse effect on the collectability of our accounts receivable and future operating results.

Stock-Based Compensation

We account for stock-based compensation using fair value. Compensation costs are recognized for stock options granted to employees and directors. Options granted to employees and non-employees are recorded as an expense over the requisite service period based on the grant date estimated fair value of the grant, determined using the Black-Scholes option pricing model.

Income Taxes

As part of the process of preparing our consolidated financial statements, we are required to estimate our income tax provision (benefit) in each of the jurisdictions in which we operate. This process involves estimating our current income tax provision (benefit) together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheets. We regularly evaluate our ability to recover the reported amount of our deferred income tax asset considering several factors, including our estimate of the likelihood of our generating sufficient taxable income in future years during the period over which temporary differences reverse. As a result of the conversion of the Xcede convertible notes in November 2016, our ownership percentage in Xcede decreased to less than 80%. Based on this ownership percentage, beginning with the year ended September 30, 2017, Xcede is no longer included in the consolidated federal tax return and the Company can no longer offset taxable income or share net operating losses with Xcede. The tax accounting impact, including the assessment on the valuation allowance against the U.S. federal and state net deferred tax assets, will continue to be evaluated in subsequent periods. The valuation allowance will be addressed independently for the Company and Xcede, instead of on a consolidated basis.

Inventories

Inventories are stated at the lower of average cost or net realizable value. Cost is determined using the first-in, first-out (FIFO) method and includes material, labor and overhead. Inventories consist primarily of raw materials, work-in-process and finished goods.

A significant decrease in demand for the Company's products could result in a short-term increase in the cost of inventory and an increase of excess inventory quantities on hand. In addition, as technologies change or new products are developed, product obsolescence could result in an increase in the amount of obsolete inventory quantities on hand. The Company records, as a charge to cost of revenue, any amounts required to reduce the carrying value to net realizable value.

Forward-Looking Statements

The statements contained in this Annual Report on Form 10-K which are not historical facts are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements regarding future events and our future results are based on current expectations, estimates, forecasts, and projections and the beliefs and assumptions of our management, including, without limitation, our expectations regarding results of operations, our compliance with the financial covenants under our loan agreements with Middlesex Savings Bank and Massachusetts Capital Resource Company, our expectations regarding results of operations, the commercialization of our technology, including the Xcede patch and our dual mode detectors, the success of efforts to develop a successful Xcede Patch and to fund that development, our development of new technologies including at Dynasil Biomedical, the adequacy of our current financing sources to fund our current operations, our growth initiatives, our capital expenditures, the strength of our intellectual property portfolio and statements about the perceived benefits of the Company’s delisting and deregistration transaction. These forward-looking statements may be identified by the use of words such as “plans,” “intends,” “may,” “could,” “expect,” “estimate,” “anticipate,” “continue,” or similar terms, though not all forward-looking statements contain such words. The actual results of the future events described in such forward looking statements could differ materially from those stated in such forward looking statements due to a number of important factors. These factors that could cause actual results to differ from those anticipated or predicted include, without limitation, our ability to develop and commercialize our products, including obtaining regulatory approvals, the size and growth of the potential markets for our products and our ability to serve those markets, the rate and degree of market acceptance of any of our products, general economic conditions, costs and availability of raw materials and management information systems, our ability to obtain and maintain intellectual property protection for our products, Xcede’s ability to produce preclinical data sufficient to enable it to initiate clinical studies of hemostatic patch, clinical results of Xcede’s programs which may not support further development, the ability of our RMD business unit to identify and pursue possible continued development opportunities for the Xcede patch, which is not assured, competition, the loss of key management and technical personnel, our ability to obtain timely payment of our invoices to governmental customers, litigation, the effect of governmental regulatory developments, the availability of financing sources, our ability to deleverage our balance sheet, our ability to identify and execute on acquisition opportunities and integrate such acquisitions into our business, seasonality and the many variables that may impact the Company’s projected cost savings, variables and risks related to the Company’s delisting and deregistration transaction, set forth in this Annual Report on Form 10-K, including the risk factors contained in Item 1A, and from time to time in the Company's other filings with the Securities and Exchange Commission. The Company disclaims any intention or obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

Financial Statements

	Page
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Financial Statements:	
Balance Sheets as of September 30, 2019 and 2018	F-3
Statements of Operations and Comprehensive Income (Loss) for the years ended September 30, 2019 and 2018	F-5
Statements of Changes in Stockholders' Equity for the years ended September 30, 2019 and 2018	F-6
Statements of Cash Flows for the years ended September 30, 2019 and 2018	F-7
Notes to Consolidated Financial Statements	F-8

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Dynasil Corporation of America and Subsidiaries

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Dynasil Corporation of America and its subsidiaries (the Company) as of September 30, 2019 and 2018, the related consolidated statements of operations and comprehensive income (loss), changes in stockholders' equity and cash flows for the years then ended, and the related notes to the consolidated financial statements (collectively, the financial statements). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of September 30, 2019 and 2018, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ RSM US LLP

We have served as the Company's auditor since 2012.

Boston, Massachusetts
December 26, 2019

DYNASIL CORPORATION OF AMERICA AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
SEPTEMBER 30, 2019 and 2018

ASSETS

	September 30, 2019	September 30, 2018
Current Assets		
Cash and cash equivalents	$ 268,000	$ 2,327,000
Accounts receivable, net of allowances of $276,000 and $262,000 at September 30, 2019 and 2018, respectively	4,140,000	4,069,000
Unbilled receivables	2,723,000	1,214,000
Contract assets	77,000	1,000
Inventories, net of reserves	4,646,000	4,106,000
Prepaid expenses and other current assets	816,000	664,000
Total current assets	12,670,000	12,381,000
Property, Plant and Equipment, net	7,593,000	8,098,000
Other Assets		
Intangibles, net	627,000	755,000
Deferred tax asset, net	4,044,000	4,333,000
Goodwill	5,821,000	5,900,000
Long term contract assets	14,000	7,000
Security deposits	58,000	58,000
Total other assets	10,564,000	11,053,000
Total Assets	$ 30,827,000	$ 31,532,000

LIABILITIES AND STOCKHOLDERS' EQUITY

	September 30, 2019	September 30, 2018
Current Liabilities		
Line of credit	$ 929,000	$ -
Current portion of long-term debt	1,189,000	1,246,000
Capital lease obligations, current portion	32,000	40,000
Accounts payable	2,491,000	2,355,000
Contract liabilities	163,000	253,000
Accrued expenses and other liabilities	3,032,000	2,803,000
Total current liabilities	7,836,000	6,697,000
Long-term Liabilities		
Long-term debt, net of current portion	3,862,000	2,075,000
Capital lease obligations, net of current portion	20,000	52,000
Deferred tax liability, net	186,000	205,000
Other long-term liabilities	135,000	175,000
Total long-term liabilities	4,203,000	2,507,000

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

DYNASIL CORPORATION OF AMERICA AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
SEPTEMBER 30, 2019 and 2018 (Continued)

LIABILITIES AND STOCKHOLDERS' EQUITY (Continued)

	September 30, 2019	September 30, 2018
Stockholders' Equity		
Common Stock, $0.0005 par value, 40,000,000 shares authorized, 18,438,333 and 18,152,074 shares issued, 14,802,905 and 17,341,914 shares outstanding at September 30, 2019 and 2018, respectively	9,000	9,000
Additional paid in capital	22,233,000	21,865,000
Accumulated other comprehensive income (loss)	(997,000)	(700,000)
Retained earnings	511,000	841,000
Less treasury stock - at cost, 3,635,428 shares and 810,160 shares at September 30, 2019 and 2018, respectively	(4,235,000)	(986,000)
Total Dynasil stockholders' equity	17,521,000	21,029,000
Noncontrolling interest	1,267,000	1,299,000
Total stockholders' equity	18,788,000	22,328,000
Total Liabilities and Stockholders' Equity	$ 30,827,000	$ 31,532,000

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

DYNASIL CORPORATION OF AMERICA AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
FOR THE YEARS ENDED SEPTEMBER 30, 2019 and 2018

	2019	2018
Net revenue	$ 43,701,000	$ 40,681,000
Cost of revenue	27,627,000	25,445,000
Gross profit	16,074,000	15,236,000
Operating expenses:		
Sales and marketing	1,695,000	1,336,000
Research and development	626,000	823,000
General and administrative	13,741,000	12,733,000
Impairment of long-lived assets	-	182,000
Total operating expenses	16,062,000	15,074,000
Income (loss) from operations	12,000	162,000
Interest expense, net	222,000	180,000
Income (loss) before taxes	(210,000)	(18,000)
Income tax (benefit)	182,000	(1,608,000)
Net income (loss)	(392,000)	1,590,000
Less: Net income (loss) attributable to noncontrolling interest	(22,000)	(170,000)
Net income (loss) attributable to common stockholders	$ (370,000)	$ 1,760,000
Net income (loss)	$ (392,000)	$ 1,590,000
Other comprehensive income (loss):		
Foreign currency translation	(297,000)	(161,000)
Total comprehensive income (loss)	(689,000)	1,429,000
Less: comprehensive income (loss) attributable to noncontrolling interest	(22,000)	(170,000)
Total comprehensive income (loss) attributable to common stockholders	$ (667,000)	$ 1,599,000
Basic net income (loss) per common share	$ (0.02)	$ 0.10
Diluted net income (loss) per common share	$ (0.02)	$ 0.10
Weighted average shares outstanding		
Basic	17,053,085	17,161,825
Diluted	17,053,085	17,171,523

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

DYNASIL CORPORATION OF AMERICA AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
FOR THE YEARS ENDED SEPTEMBER 30, 2019 and 2018

	2019	2018
Common Amount		
Balance, beginning of period	$ 9,000	$ 9,000
Balance, end of period	9,000	9,000
Additional Paid-in Capital		
Balance, beginning of period	21,865,000	21,406,000
Issuance of shares of common stock under employee stock purchase plan	14,000	17,000
Stock-based compensation costs	354,000	442,000
Balance, end of period	22,233,000	21,865,000
Other Comprehensive Income (Loss)		
Balance, beginning of period	(700,000)	(539,000)
Foreign currency translation adjustment	(297,000)	(161,000)
Balance, end of period	(997,000)	(700,000)
Retained Earnings (Accumulated Deficit)		
Balance, beginning of period	841,000	(919,000)
Impact of change in accounting policy	22,000	-
Xcede stock surrender of Series A Preferred	18,000	-
Net income (loss)	(370,000)	1,760,000
Balance, end of period	511,000	841,000
Treasury Stock		
Balance, beginning of period	(986,000)	(986,000)
Common stock repurchase	(3,249,000)	-
Balance, end of period	(4,235,000)	(986,000)
Noncontrolling Interest		
Balance, beginning of period	1,299,000	1,454,000
Stock-based compensation costs	8,000	15,000
Xcede stock surrender of Series A Preferred	(18,000)	-
Net income (loss)	(22,000)	(170,000)
Balance, end of period	1,267,000	1,299,000
Total Stockholders' Equity	$ 18,788,000	$ 22,328,000
Common Shares		
Number of shares, beginning of period	18,152,074	17,893,763
Issuance of shares of common stock under employee stock purchase plan	17,453	15,896
Stock-based compensation - shares issued	268,806	242,415
Number of shares, end of period	18,438,333	18,152,074
Treasury Shares		
Number of shares, beginning of period	810,160	810,160
Common stock repurchase	2,825,268	-
Number of shares, end of period	3,635,428	810,160

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

DYNASIL CORPORATION OF AMERICA AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2019 and 2018

	2019	2018
Cash flows from operating activities:		
Net income (loss)	$ (392,000)	$ 1,590,000
Adjustments to reconcile net income (loss) to net cash:		
Stock compensation expense	362,000	457,000
Foreign exchange loss (gain)	44,000	17,000
Depreciation and amortization	1,420,000	1,257,000
Provision for doubtful accounts and sales returns	15,000	63,000
Deferred income taxes	282,000	(1,715,000)
Disposal loss (gain)	(7,000)	-
Non-cash R&D services	-	166,000
Impairment of long-lived assets	-	182,000
Other	67,000	(11,000)
Other changes in assets and liabilities:		
Accounts receivable, net	(152,000)	(788,000)
Unbilled receivables	(1,469,000)	96,000
Contract assets	(83,000)	-
Inventories	(705,000)	216,000
Prepaid expenses and other assets	(162,000)	202,000
Accounts payable	161,000	(10,000)
Accrued expenses and other liabilities	200,000	295,000
Contract liabilities	(89,000)	112,000
Net cash from operating activities	(508,000)	2,129,000
Cash flows from investing activities:		
Purchases of property, plant and equipment	(893,000)	(2,244,000)
Purchases of intangibles	-	(73,000)
Net cash from investing activities	(893,000)	(2,317,000)
Cash flows from financing activities:		
Proceeds from issuance of common stock	14,000	17,000
Repurchase of common stock	(3,249,000)	-
Principal payments on capital leases	(40,000)	(93,000)
Proceeds from (payments of) line of credit, net	929,000	-
Proceeds from (payments of) equipment line of credit, net	484,000	742,000
Proceeds from long-term debt	2,000,000	-
Payments of long-term debt	(763,000)	(533,000)
Net cash from financing activities	(625,000)	133,000
Effect of exchange rates on cash and cash equivalents	(33,000)	(33,000)
Net change in cash and cash equivalents	(2,059,000)	(88,000)
Cash and cash equivalents, beginning	$ 2,327,000	$ 2,415,000
Cash and cash equivalents, ending	$ 268,000	$ 2,327,000

Supplemental Disclosure of Cash Flow Information – See Note 15

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

DYNASIL CORPORATION OF AMERICA
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 and 2018

Note 1 – Nature of Operations

Nature of Operations

Dynasil Corporation of America ("Dynasil" or the "Company") is primarily engaged in the development, marketing and manufacturing of detection, sensing and analysis technology and optical components as well as contract research. The Company's products and services are used in a broad range of application markets including the homeland security, industrial and medical markets sectors. The products and services are sold throughout the United States ("U.S.") and internationally.

Note 2 – Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts of assets and liabilities and the disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Dynasil Corporation of America and its wholly-owned subsidiaries: Optometrics Corporation ("Optometrics"), Evaporated Metal Films Corporation ("EMF"), Radiation Monitoring Devices, Inc. ("RMD"), Hilger Crystals, Ltd ("Hilger") and Dynasil Biomedical Corp ("Dynasil Biomedical"). Xcede Technologies, Inc. ("Xcede") is a joint venture between Dynasil Biomedical and Mayo Clinic to spin out and separately fund the development of a tissue sealant technology. As of September 30, 2019, Dynasil Biomedical owned 63% of Xcede's stock and, as a result, Xcede is included in the Company's consolidated balance sheets, results of operations and cash flows. The 63% ownership includes preferred stock with a liquidation preference, and as a result, for reporting purposes only, common stock ownership is used in the allocation of noncontrolling interest. Dynasil's common stock ownership is 83% and the remaining 17% of Xcede's common stock is owned by others and accounted for under the rules applicable to non-controlling interest. All significant intercompany transactions and balances have been eliminated.

Revenue Recognition

Effective October 1, 2018, the Company adopted Accounting Standards Codification ("ASC") 606, *Revenue from Contracts with Customers*, and all the related amendments using the modified retrospective transition method. Under the modified retrospective approach, the Company applied the standards to new contracts and those that were not completed as of October 1, 2018 which resulted in a cumulative adjustment to increase the retained earnings in the amount of $22,000. Prior periods were not retrospectively adjusted, but the Company maintained dual reporting for the year of initial application in order to maintain comparability of the periods presented. The cumulative effect of the changes made to the October 1, 2018 unaudited consolidated balance sheet for the adoption of Topic 606 was as follows:

Note 2 – Summary of Significant Accounting Policies (continued)

	Balance at September 30, 2018	Adjustment for Topic 606	Adjusted balance at October 1, 2018
Assets:			
Unbilled receivables	1,214,000	40,000	1,254,000
Inventories, net of reserves	4,106,000	(18,000)	4,088,000
Liabilities:			
Contract liabilities	253,000	-	253,000
Stockholders' equity:			
Retained earnings	841,000	22,000	863,000

Contract assets were formerly reported within costs in excess of billings and unbilled receivables. Contract liabilities were formerly reported as deferred revenue. The titles have been changed in the table below, as well as in the accompanying September 30, 2019 balance sheet, to be consistent with accounts currently used under the new standard.

	September 30, 2018	
	As Reported	As Adopted
Unbilled receivables	1,215,000	1,214,000
Contract assets	-	1,000
Security and other deposits	65,000	58,000
Long term contract assets	-	7,000
Deferred revenue	253,000	-
Contract liabilities	-	253,000

The Company receives payments from customers based on a billing schedule as established in our contracts. Contract asset relates to our conditional right to consideration for our completed performance under the contract. Accounts receivable are recorded when the right to consideration becomes unconditional. Contract liability relates to payments received in advance of performance under the contract. Contract liabilities are recognized as revenue as (or when) we perform under the contract. The Company recognized revenue in the amount of $253,000 during the twelve months ended September 30, 2019 for amounts included in the contract liability balance at September 30, 2018.

Under the new standard, most contracts in the Innovation and Development (formerly Contract Research) segment, which primarily provide contract research services, were not materially impacted upon the adoption of Topic 606 as revenue will continue to be recognized over time. Contracts in the Optics segment generally provide for the following revenue sources: standard product sales, custom product development and sales, and non-recurring engineering contracts. Revenues for this segment are recognized using either the “point in time” or “over time” methods of Topic 606, depending upon the revenue source. The change in revenue recognition for the Optics segment related to certain custom optics products and the related non-recurring engineering costs which changed from “point in time” to “over time” upon the adoption of Topic 606. This change will result in the recognition of revenue over time when compared to existing standards with the cumulative adjustment relating to contracts that are not complete as of September 30, 2018 recognized as an adjustment of $22,000 to opening retained earnings on October 1, 2018. The revenue for the standard products will be recognized using the "point in time" model of Topic 606, and the timing of such revenue recognition is not expected to differ materially from the historical revenue recognition. Other immaterial adjustments related to the Optics segment that are sometimes offered to customers include customer rights of return and volume discounts. The Company has elected the practical expedient that the Company will not be required to adjust promised amounts of consideration for the effects of a significant financing component if the transfer of promised goods or services will occur in one year or less.

Note 2 – Summary of Significant Accounting Policies (continued)

The impact of the adoption of ASC 606 on the Company's consolidated financial statements for the twelve months ended September 30, 2019 was a cumulative adjustment to increase the retained earnings in the amount of $22,000.

Innovation and Development Segment Revenues

The Company performs research and development for U.S. Federal government agencies, educational institutions and commercial organizations. The Company accounts for a research contract when a contract has been executed, the rights of the parties are identified, payment terms are identified, the contract has commercial substance, and collectability of the contract price is considered probable. Revenue is earned under reimbursement of costs plus fees, fixed price, or time and material type contracts.

The Company's contracts with agencies of the U.S. government are subject to periodic funding by the respective contracting agency. Funding for a contract may be provided in full at inception of the contract or ratably throughout the contract as the services are provided. In evaluating the probability of funding for purposes of assessing collectability of the contract price, the Company considers previous experience with the customers, communication with the customers regarding funding status, and knowledge of available funding for the contract or program. If funding is not assessed as probable, revenue recognition is deferred until realization is reasonably assured.

Under the typical payment terms of the Company's U.S. government contracts, the customer pays either performance-based payments or progress payments. Performance-based payments, which are typically used in the firm fixed price contracts, are interim payments based on quantifiable measures of performance or on the achievement of specified events or milestones. Progress payments, which are typically used in the Company's cost-plus type contracts, are interim payments based on costs incurred as the work progresses. For the Company's U.S. government cost-plus contracts, the customer generally pays during the performance period for 80%-90% of the actual costs incurred. Because the customer retains a small portion of the contract price until completion of the contract and audit of allowable costs, cost-plus type contracts generally result in revenue recognized in excess of billings which the Company presents as contract assets on the balance sheet. Amounts billed and due from customers are classified as receivables on the balance sheet, whereas amounts earned, but not yet billed to the Company's customers due to timing, are classified as unbilled receivables on the balance sheet. The Company recognizes a liability for performance-based payments paid in advance which are in excess of the revenue recognized and presents these amounts as contract liabilities on the balance sheet.

Note 2 – Summary of Significant Accounting Policies (continued)

To determine the proper revenue recognition method for research and development contracts, the Company evaluates whether two or more contracts should be combined and accounted for as one single modified contract and whether the combined or single contract should be accounted for as more than one performance obligation. For instances where a contract has options that were bid with the initial contract and awarded at a later date, the Company combines the options with the original contract when options are awarded. For most contracts, the customer contracts for research with multiple milestones that are interdependent, thus, the entire contract is accounted for as one performance obligation. The effect of the combined or modified contract on the transaction price and measure of progress for the performance obligation to which it relates, is recognized as an adjustment to revenue (either as an increase in or a reduction of revenue) on a cumulative catch-up basis.

Contract revenue recognition is measured over time as the Company performs the work because of continuous transfer of knowledge and control to the customer. For U.S. government contracts which are typically subject to the Federal Acquisition Regulation ("FAR"), this continuous transfer of knowledge and control to the customer is supported by clauses in the contract that allow the customer to unilaterally terminate the contract for convenience, pay for cost incurred plus a reasonable profit, and take control of any work in process. From time to time, as part of normal management processes, facts may change, causing revisions to estimated total costs or revenues expected. The cumulative impact of any revisions to estimates and the full impact of anticipated losses on any type of contract are recognized in the period in which they become known.

Because of knowledge and control transferring over time, revenue is recognized based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the services to be provided. The Company generally uses the input method, more specifically the cost-to-cost measure of progress for the contracts because it best depicts the transfer of knowledge and control to the customer which occurs as the Company incur costs on these contracts. Under the cost-to-cost measure of progress, the extent of progress towards completion is measured based on the ratio of costs incurred to date to the total estimated costs at completion of the performance obligation. The underlying bases for estimating contract research revenues are measurable expenses, such as labor, subcontractor costs and materials, and data that are updated on a regular basis for purposes of preparing cost estimates. The Company's research contracts generally have a period of performance of nine months to three years, and estimates of contract costs have historically been consistent with actual results. Revisions in these estimates between accounting periods to reflect changing facts and circumstances have not had a material impact on operating results, and the Company does not expect future changes in these estimates to be material. The cumulative impact of any revisions to estimates and the full impact of anticipated losses on any type of contract are recognized in the period in which they become known.

Under cost-plus contracts, the Company is reimbursed for costs that are determined to be reasonable, allowable and allocable to the contract and paid a fixed fee representing the profit negotiated between the Company and the contracting agency. Revenue from cost-plus contracts is recognized as costs are incurred plus an estimate of applicable fees earned. The Company considers fixed fees under cost-plus contracts to be earned in proportion to the allowable costs incurred in performance of the contract.

Note 2 – Summary of Significant Accounting Policies (continued)

Revenue from time and materials contracts is recognized based on direct labor hours expended at contract billing rates plus other billable direct costs. The Company has elected the practical expedient to recognize revenue in the amount for which it has the right to invoice the customer, provided that invoiced amount corresponds directly with the value to the customer of the Company's performance to date.

Fixed price contracts may include either a product delivery or specific service performance throughout a period. For fixed price contracts that are based on the proportional performance method and involve a specified number of deliverables, the Company recognizes revenue based on the proportion of the cost of the deliverables compared to the cost of all deliverables included in the contract as this method more accurately measures performance under these arrangements. For fixed price contracts that provide for the development and delivery of a specific prototype or product, revenue is recognized based upon the performance completed to date, using an output method of revenue recognition based on milestones reached.

Whether certain costs under government contracts are allowable is subject to audit by the government. Certain indirect costs are charged to contracts using provisional or estimated indirect rates, which are subject to later revision based on government audits of those costs. Management is of the opinion that costs subsequently disallowed, if any, would not likely have a significant impact on revenues recognized for those contracts.

Optics Segment Revenues

The Company produces standard and customized products for commercial organizations, educational institutions, and U.S. Federal government agencies. In addition, the Company also offers services which include non-recurring engineering services. To determine the proper revenue recognition method for Optics contracts, the Company evaluates whether two or more contracts should be combined and accounted for as one single contract and whether the combined or single contract should be accounted for as more than one performance obligation. The Company recognizes revenue when the performance obligation has been satisfied by transferring the control of the product or service to the customer. For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation based on their relative stand-alone selling prices. In such circumstances, the Company uses the observable price of goods or services which are sold separately in similar circumstances to similar customers. If these prices are not observable, then the Company will estimate the stand-alone selling price using information that is reasonably available. For the majority of the Company's standard products and services, price list, and discount structures related to customer type are available. For products and services that do not have price list and discount structures, the Company may use one or more of the following: (i) adjusted market assessment approach or (ii) expected cost plus a margin approach. The adjusted market approach requires evaluation of the market in which the Company sells goods or services and estimates the price that a customer in that market would be willing to pay for those goods or services. The expected cost plus margin approach requires the Company to forecast expected costs of satisfying the performance obligation and then add a reasonable margin for that good or service. Shipping and handling activities primarily occur after a customer obtains control and are considered fulfillment cost rather than separate performance obligations. Similarly, sales and similar taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the entity from a customer are excluded from the measurement of the transaction price.

DYNASIL CORPORATION OF AMERICA
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 and 2018

Note 2 – Summary of Significant Accounting Policies (continued)

Unfulfilled Performance Obligations

For standard products, the Company recognizes revenue at a point in time when control passes to the customer. Absent substantial product acceptance clauses, this is based on the shipping terms.

For custom products that require engineering and development based on customer requirements and provide for cost plus reasonable margin throughout the contract, the Company recognizes revenue over time using the output method for any items shipped and any finished goods or work in process that is produced for balances of open sales orders. For any finished goods or work in process that has been produced for the balance of open sales orders the Company recognizes revenue by applying the average selling price for such open order to the lesser of the on hand balance in finished goods or open sales order quantity which the Company presents as a contract asset on the balance sheet. Cost of sales is recognized based on the standard cost of the finished goods and work in process associated with this revenue and inventory balances are reduced accordingly.

Unfulfilled performance obligations represent amounts expected to be earned on executed contracts. Indefinite delivery and quantity contracts and unexercised options are not reported in total unfulfilled performance obligations. Unfulfilled performance obligations include funded obligations, which is the amount for which money has been directly authorized by the U.S. government and by a commercial customer for which a purchase order has been received, and unfunded obligations, representing firm orders for which funding has not yet been appropriated. The approximate value of our Innovation and Development segment unfulfilled performance obligations was $37.5 million at September 30, 2019. The Company expects to satisfy 39% of the performance obligations in fiscal year 2020, 35% in fiscal year 2021, and the remaining amount by fiscal year 2022. The approximate value of our Optics segment unfulfilled performance obligations was $7.2 million at September 30, 2019. The Company expects to satisfy 82% of the performance obligations in fiscal year 2020 and 18% in fiscal year 2021.

The Company disaggregates revenue from contracts with customers by geographic locations, customer-type, contract type, timing of recognition, and major categories for each segments, as the Company believes it best depicts how the nature, amount, timing and uncertainty of revenue and cash flows are affected by economic factors. See details of revenue for fiscal year ended September 30, 2019 in the tables below.

Note 2 – Summary of Significant Accounting Policies (continued)

	Optics	Innovation & Development	Total
Total Revenue by Geographic Location			
United States	$ 14,916,000	$ 19,505,000	$ 34,421,000
Asia	3,172,000	34,000	3,206,000
Europe	4,916,000	251,000	5,167,000
Other	246,000	661,000	907,000
Total	$ 23,250,000	$ 20,451,000	$ 43,701,000
Total Revenue by Contract Type			
Firm-fixed price	$ 23,250,000	$ 2,266,000	$ 25,516,000
Non-Firm Fixed price	-	18,185,000	18,185,000
Total	$ 23,250,000	$ 20,451,000	$ 43,701,000
Total Revenue by Major Customer Type			
U.S. government revenue	$ 114,000	$ 18,937,000	$ 19,051,000
U.S. commercial revenue	14,873,000	568,000	15,441,000
Foreign commercial and other revenue	8,263,000	946,000	9,209,000
Total	$ 23,250,000	$ 20,451,000	$ 43,701,000
Total Revenue by Major Products/Services			
Optical components	$ 23,057,000	$ -	$ 23,057,000
Contract research	-	19,785,000	19,785,000
Other products and services	193,000	666,000	859,000
Total	$ 23,250,000	$ 20,451,000	$ 43,701,000
Total Revenue by Timing of Recognition			
Goods/services transferred over time	$ 2,326,000	$ 19,840,000	$ 22,166,000
Goods transferred at a point in time	20,924,000	611,000	21,535,000
Total	$ 23,250,000	$ 20,451,000	$ 43,701,000

Note 2 – Summary of Significant Accounting Policies (continued)

Allowance for Doubtful Accounts Receivable

The Company performs ongoing credit evaluations of its customers and adjusts credit limits based upon payment history and the customer's current credit worthiness, as determined by a review of their current credit information. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon historical experience and any specific customer collection issues that have been identified. While such credit losses have historically been minimal, within expectations and the provisions established, the Company cannot guarantee that it will continue to experience the same credit loss rates as in the past. A significant change in the liquidity or financial position of any significant customers could have a material adverse effect on the collectability of accounts receivable and future operating results. When all collection efforts have failed and it is deemed probable that a customer account is uncollectible, that balance is written off against the existing allowance.

Shipping and Handling Costs

Shipping and handling costs are included in the cost of sales. The amounts billed for shipping and included in net revenue were approximately $31,000 and $40,000 for the years ended September 30, 2019 and 2018, respectively.

Research and Development

The Company expenses research and development costs as incurred. Research and development costs include salaries, employee benefit costs, direct project costs, supplies and other related costs. Substantially all the Innovation and Development segment’s cost of revenue relates to research contracts performed by RMD which are in turn billed to the contracting party. Amounts of research and development included within cost of revenue for the years ended September 30, 2019 and 2018 were $12.4 million and $9.9 million, respectively. Research and development for the Company’s other businesses totaled $0.6 million and $0.8 million in fiscal years 2019 and 2018, respectively.

Unbilled Receivables

Unbilled receivables relate to research and development contracts and consists of actual costs incurred plus fees in excess of billings at contractual rates.

Patent Costs

Costs incurred in filing, prosecuting and maintaining patents (principally legal fees) are expensed as incurred and recorded within general and administrative expenses on the consolidated statements of operations. Such costs aggregated approximately $0.3 and $0.4 million for the years ended September 30, 2019 and 2018, respectively. Xcede capitalizes its patents which totaled $0 and $0.1 million at September 30, 2019 and 2018, respectively. In fiscal year 2018, Xcede recorded an impairment of $0.2 million.

Note 2 – Summary of Significant Accounting Policies (continued)

Inventories

Inventories are stated at the lower of average cost or net realizable value. Cost is determined using the first-in, first-out (FIFO) method and includes material, labor and overhead. Inventories consist primarily of raw materials, work-in-process and finished goods.

A significant decrease in demand for the Company's products could result in a short-term increase in the cost of inventory and an increase of excess inventory quantities on hand. In addition, as technologies change or new products are developed, product obsolescence could result in an increase in the amount of obsolete inventory quantities on hand. The Company records, as a charge to cost of revenue, any amounts required to reduce the carrying value to net realizable value.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost or at fair market value for assets acquired in a business combination. Depreciation is provided using the straight-line method over the estimated useful lives of the respective assets. The estimated useful lives of assets for financial reporting purposes are as follows: building and improvements, 8 to 25 years; machinery and equipment, 5 to 20 years; office furniture and fixtures, 5 to 10 years; transportation equipment, 5 years. Maintenance and repairs are charged to expense as incurred; major renewals and betterments are capitalized. When items of property, plant and equipment are sold or retired, the related costs and accumulated depreciation are removed from the accounts and any gain or loss is included in income.

Goodwill

The Company annually assesses goodwill impairment at the end of the fourth quarter of the fiscal year by applying a fair value test. In the first step of testing for goodwill impairment, the Company estimates the fair value of each reporting unit. The reporting units with goodwill have been determined to be RMD, which is the Innovation and Development reportable segment, and Hilger, which is a component of the Optics reportable segment. The Company compares the fair value with the carrying value of the net assets assigned to each reporting unit. If the fair value is less than its carrying value, then the Company performs a second step and determines the fair value of the goodwill. In this second step, the fair value of goodwill is determined by deducting the fair value of a reporting unit’s identifiable assets and liabilities from the fair value of the reporting unit as a whole, as if that reporting unit had just been acquired and the purchase price were being initially allocated. If the fair value of the goodwill is less than its carrying value for a reporting unit, an impairment charge is recorded to earnings.

To determine the fair value of each of the reporting units as a whole, the Company uses a discounted cash flow analysis, which requires significant assumptions and estimates about the future operations of each reporting unit. Significant judgments inherent in this analysis include the determination of appropriate discount rates, the amount and timing of expected future cash flows and growth rates. The cash flows employed in the discounted cash flow analyses are based on financial forecasts developed internally by management. The discount rate assumptions are based on an assessment of the Company’s risk adjusted discount rate applicable for each reporting unit. In assessing the reasonableness of the determined fair values of the reporting units, the Company evaluates its results against its current market capitalization.

Note 2 – Summary of Significant Accounting Policies (continued)

Goodwill (continued)

In addition, the Company evaluates a reporting unit for impairment if events or circumstances change between annual tests indicating a possible impairment. Examples of such events or circumstances include the following:

- a significant adverse change in legal status or in the business climate,
- an adverse action or assessment by a regulator,
- a more likely than not expectation that a segment or a significant portion thereof will be sold, or
- the testing for recoverability of a significant asset group within the segment.

Intangible Assets

The Company's intangible assets consist of acquired customer relationships, trade names, acquired backlog, know-how and provisionally patented technologies. The Company amortizes its intangible assets with definitive lives over their useful lives, which range from 5 to 20 years, based on the time period the Company expects to receive the economic benefit from these assets.

The Company has a trade name related to its subsidiary located in the United Kingdom ("U.K.") that has been determined to have an indefinite life and is therefore not subject to amortization and is reviewed at least annually for potential impairment. The fair value of the Company's trade name is estimated and compared to its carrying value to determine if impairment exists. The Company estimates the fair value of this intangible asset based on an income approach using the relief-from-royalty method. This methodology assumes that, in lieu of ownership, a third party would be willing to pay a royalty in order to exploit the related benefits of this asset. This approach is dependent on a number of factors, including estimates of future sales, royalty rates in the category of intellectual property, discount rates and other variables. Significant differences between these estimates and actual results could materially affect the Company's future financial results.

Note 2 – Summary of Significant Accounting Policies (continued)

Recovery of Long-Lived Assets

The Company continually assesses whether events or changes in circumstances have occurred that may warrant revision of the estimated useful lives of its long-lived assets (other than goodwill and any indefinite lived assets) or whether the remaining balances of those assets should be evaluated for possible impairment. Long-lived assets include, for example, customer relationships, trade names, backlog, know-how and provisionally patented technologies. Events or changes in circumstances that may indicate that an asset may be impaired include the following:

- a significant decrease in the market price of an asset or asset group,
- a significant adverse change in the extent or manner in which an asset or asset group is being used or in its physical condition,
- a significant adverse change in legal factors or in the business climate that could affect the value of an asset or asset group, including an adverse action or assessment by a regulator,
- an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset,
- a current period operating or cash flow loss combined with a history of operating or cash flow losses or a projection or forecast that demonstrates continuing losses associated with the use of a long-lived asset or asset group,
- a current expectation that, more likely than not, a long-lived asset or asset group will be sold or otherwise disposed of significantly before the end of its previously estimated useful life, or
- an impairment of goodwill at a reporting unit.

If an impairment indicator occurs, the Company performs a test of recoverability by comparing the carrying value of the asset or asset group to its undiscounted expected future cash flows, including proceeds from the disposition of the asset. The Company groups its long-lived assets for this purpose at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets or asset groups. If the carrying values are in excess of undiscounted expected future cash flows, the Company measures any impairment by comparing the fair value of the asset or asset group to its carrying value.

To determine fair value the Company uses discounted cash flow analyses and estimates about the future cash flows of the asset or asset group. This analysis includes a determination of an appropriate discount rate, the amount and timing of expected future cash flows and growth rates. The cash flows employed in the discounted cash flow analyses are typically based on financial forecasts developed internally by management. The discount rate used is commensurate with the risks involved. The Company may also rely on third party valuations and or information available regarding the market value for similar assets.

Note 2 – Summary of Significant Accounting Policies (continued)

Recovery of Long-Lived Assets (continued)

If the fair value of an asset or asset group is determined to be less than the carrying amount of the asset or asset group, impairment in the amount of the difference is recorded in the period that the impairment occurs. Estimating future cash flows requires significant judgment and projections may vary from the cash flows eventually realized.

Advertising

The Company expenses all advertising costs as incurred. Advertising expense for the years ended September 30, 2019 and 2018 was approximately $143,000 and $145,000, respectively.

Retirement Plans

The Company has retirement savings plans available to substantially all full time employees which are intended to qualify as deferred compensation plans under Section 401(k) of the Internal Revenue Code and similar laws in the United Kingdom. Pursuant to these plans, employees contribute amounts as required or allowed by the plans or by law. The Company also makes matching contributions in accordance with the terms of the plans.

Income Taxes

The Company uses the asset and liability approach to account for deferred income taxes. Under this approach, deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and net operating loss and tax credit carry-forwards. The amount of deferred taxes on these temporary differences is determined using the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, as applicable, based on tax rates, and tax laws, in the respective tax jurisdiction then in effect.

Dynasil Corporation of America and its wholly owned U.S. subsidiaries file a consolidated federal income tax return and various state returns. The Company's U.K. subsidiary files tax returns in the U.K. Prior to November 18, 2016, the Company's subsidiary, Xcede was included in the federal and state tax returns filed by Dynasil. On November 18, 2016, Dynasil's ownership in Xcede was reduced to less than 80%. As a result, Xcede is no longer included in Dynasil's federal consolidated tax return and files a separate federal return. Xcede continues to be included in the Dynasil consolidated state tax filings pursuant to the respective state tax requirements.

The Company applies the authoritative provisions related to accounting for uncertainty in income taxes. As required by these provisions, the Company recognizes the financial statement benefit of a tax position only after determining that the relevant tax authority would more-likely-than-not sustain the position following an audit. For tax positions meeting the more-likely-than-not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50 percent likelihood of being reached upon ultimate settlement with the relevant tax authority.

Note 2 – Summary of Significant Accounting Policies (continued)

Income Taxes (continued)

Due to the Tax Cuts and Jobs Act ("2017 Tax Act") that was signed into law on December 22, 2017, the Company estimated and accounted for the tax implications of the 2017 Tax Act and the resultant changes are reflected in the current financial statements. The Company re-measured certain U.S. deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%, and recorded an income tax expense of $0.7 million related to such re-measurement in 2018. The 2017 Tax Act provided for a one-time transition tax is based on the total unremitted earnings of a company's foreign subsidiaries which has previously been deferred from U.S. income taxes. The Company recorded an estimated provision for its one-time transition liability of its foreign subsidiary resulting in additional income tax expense of $0.2 million in 2018 and an income tax benefit of $0.07 million in 2019. As of September 30, 2018, the Company has completed its accounting for the tax effects of the 2017 Tax Act. See Note 9 – Income Taxes.

Earnings Per Common Share

Basic earnings (loss) per common share is computed by dividing the net income or loss attributable to common shares by the weighted average number of common shares outstanding during each period. Diluted earnings per common share adjusts basic earnings per share for the effects of common stock options, common stock warrants, convertible preferred stock and other potential dilutive common shares outstanding during the periods.

For purposes of computing diluted earnings per share for the years ended September 30, 2019 and 2018, no common stock options were included in the calculation of dilutive shares as all of the 95,602 and 160,537 common stock options outstanding, respectively, had exercise prices above the current quarterly average market price per share and their inclusion would be anti-dilutive.

The computations of the weighted shares outstanding for the years ended September 30 are as follows:

	2019	2018
Weighted average shares outstanding		
Basic	17,053,085	17,161,825
Effect of dilutive securities		
Stock Options	-	-
Restricted Stock	-	9,698
Dilutive Average Shares Outstanding	17,053,085	17,171,523

Note 2 – Summary of Significant Accounting Policies (continued)

Stock Based Compensation

Stock-based compensation cost is measured using the fair value recognition provisions of the FASB authoritative guidance, which requires the measurement and recognition of compensation expense for all stock-based awards made to employees and directors, including employee stock options, based on estimated fair values. Stock-based compensation cost is measured at the grant date based on the value of the award and is recognized over the requisite service period of the award.

Foreign Currency Translation

The operations of Hilger, the Company's foreign subsidiary, use their local currency as its functional currency. Assets and liabilities of the Company's foreign operations, denominated in their local currency, Great Britain Pounds (GBP), are translated at the rate of exchange at the balance sheet date. Revenue and expense accounts are translated at the average exchange rates during the period. Adjustments resulting from translating foreign functional currency financial statements into U.S. dollars are included in the foreign currency translation adjustment, a component of accumulated other comprehensive income in stockholders' equity. Gains and losses generated by transactions denominated in foreign currencies are recorded in the accompanying statement of operations in the period in which they occur.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Other comprehensive income (loss) represents cumulative translation adjustments related to Hilger, the Company's foreign subsidiary. The Company presents comprehensive income and losses in the consolidated statements of operations and comprehensive income (loss).

Financial Instruments

The carrying amount reported in the balance sheets for cash and cash equivalents, accounts receivable and accounts payable approximates fair value because of the immediate or short-term maturity of these financial instruments. The carrying amounts for fixed rate long-term debt and variable rate long-term debt approximate fair value because the underlying instruments are primarily at current market rates available to the Company for similar borrowings.

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of accounts receivable. In the normal course of business, the Company extends credit to certain customers. Management performs initial and ongoing credit evaluations of its customers and generally does not require collateral.

Note 2 – Summary of Significant Accounting Policies (continued)

Concentration of Credit Risk

The Company maintains allowances for potential credit losses and has not experienced any significant losses related to the collection of its accounts receivable. As of September 30, 2019 and 2018, approximately $1,145,000 and $1,724,000 or 26% and 40% of the Company's accounts receivable are due from foreign sales.

The Company maintains cash and cash equivalents at various financial institutions in New Jersey, Massachusetts and New York. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to $250,000. Hilger also maintains cash and cash equivalents at a financial institution in the U.K. Accounts at this institution are insured by the Financial Services Compensation Scheme, the U.K.'s deposit guarantee scheme, up to £75,000. At September 30, 2019 and 2018, the Company's uninsured bank balances totaled approximately $0.1 million and $2.0 million, respectively. The Company has not experienced any significant losses on its cash and cash equivalents.

Recent Accounting Pronouncements

Service Concession Arrangements (Topic 853): Determining the Customer of the Operation Services. In May 2017, the FASB issued ASU 2017-10 which provides guidance for operating entities when they enter into a service concession arrangement with a public-sector grantor. This update was effective for the Company in the fiscal year beginning October 1, 2018, at the time the Company adopted Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606). The Company implemented this ASU on October 1, 2018 and it did not have a material impact on the Company's consolidated financial position, results of operations or cash flows.

Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory. In October 2016, the FASB issued ASU 2016-16 which eliminates the exception, other than for inventory transfers, under current U.S. GAAP under which the tax effects of intra-entity asset transfers (intercompany sales) are deferred until the transferred asset is sold to a third party or otherwise recovered through use. Upon adoption of ASU 2016-16, the Company will recognize the tax expense from the sale of that asset in the seller's tax jurisdiction when the transfer occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. Any deferred tax asset that arises in the buyer's jurisdiction would also be recognized at the time of the transfer. Modified retrospective adoption is required with any cumulative-effect adjustment recorded to retained earnings as of the beginning of the period of adoption. The cumulative-effect adjustment, if any, would consist of the net impact from (1) the write-off of any unamortized tax expense previously deferred and (2) recognition of any previously unrecognized deferred tax assets, net of any necessary valuation allowances. The impact of the adoption of this standard on future periods will be dependent on future asset transfers, which generally occur in connection with acquisitions and other business structuring activities. The Company implemented this ASU on October 1, 2018 and it did not have a material impact on the Company's consolidated financial position, results of operations or cash flows.

Note 2 – Summary of Significant Accounting Policies (continued)

Recent Accounting Pronouncements (continued)

Business Combinations (Topic 805): Clarifying the Definition of a Business. In January 2017, the FASB issued ASU 2017-01 which clarifies the definition of a business for determining whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The Company implemented this guidance in the fiscal year beginning October 1, 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial position, results of operations, or cash flows.

Compensation – Stock Compensation (Topic 718): Scope of Modification Accounting. In May 2017, the FASB issued ASU No. 2017-09 which was issued to clarify and reduce both (i) diversity in practice and (ii) cost and complexity when applying the guidance in Topic 718, "Compensation – Stock Compensation" to changes in the terms and conditions of a share-based payment award. This update is effective for the Company in the fiscal year beginning October 1, 2018. The adoption of this standard did not have a material impact on the Company's consolidated financial position, results of operations, or cash flows.

Leases (Topic 842). In February 2016, the FASB issued ASU 2016-02 (as subsequently amended by ASU 2018-01, ASU 2018-10, ASU 2018-11 and ASU 2018-20) which requires that a lessee recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. As with previous guidance, there continues to be a differentiation between finance leases and operating leases, however this distinction now primarily relates to differences in the manner of expense recognition over time and in the classification of lease payments in the statement of cash flows. Lease assets and liabilities arising from both finance and operating leases will be recognized in the statement of financial position. ASU 2016-02 leaves the accounting for leases by lessors largely unchanged from previous GAAP. The transitional guidance for adopting the requirements of ASU 2016-02 calls for a modified retrospective approach that includes a number of optional practical expedients that entities may elect to apply. In addition, ASU 2018-11 provides for an additional (and optional) transition method by which entities may elect to initially apply the transition requirements in Topic 842 at that Topic's effective date with the effects of initially applying Topic 842 recognized as a cumulative effect adjustment to the opening balance of retained earnings in the period of adoption and without retrospective application to any comparative prior periods presented. Also, ASU 2018-20 provides certain narrow-scope improvements to Topic 842 as it relates to lessors. The guidance in ASU 2016-02 will become effective for the Company as of the beginning of the 2020 fiscal year. The Company is reviewing vendor relationships and assessing the impact of this ASU on its consolidated financial statements with the intention to adopt this ASU in fiscal year 2020.

Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment. In January 2017, the FASB issued ASU 2017-04 which simplifies the test for goodwill impairment by eliminating Step 2 from the Goodwill impairment test. This new guidance is effective for the Company beginning in fiscal year 2021. The adoption of this standard is not expected to have a material impact on the Company's financial statements.

Note 2 – Summary of Significant Accounting Policies (continued)

Cash and Cash Equivalents

The Company generally considers all highly liquid investments with original maturities of three months or less to be cash equivalents.

Reclassifications

Certain prior year balances have been reclassified to conform to the current year presentation. These reclassifications did not affect previously reported net income or stockholders' equity.

Note 3 – Xcede Technologies, Inc. Joint Venture

In October 2013, the Company, through its subsidiary Dynasil Biomedical ("DBM"), formed Xcede, a joint venture with Mayo Clinic, in order to spin out and separately fund the development of its hemostatic tissue sealant technology, which formerly comprised the majority of its expense within the biomedical segment.

Beginning at its inception and through November 2016, Xcede funded its pre-clinical research activities through the issuance of $5.2 million in the aggregate principal amount of convertible notes bearing interest at 5% ("the Notes"). In November of 2016, the Notes were converted into Series A convertible preferred stock of Xcede ("Series A Preferred"). Series A Preferred participants include both outside investors (accounted for as noncontrolling interest) and DBM. The outside investors converted $3.1 million of Notes and accrued interest into 3,055,551 shares of Series A Preferred. DBM converted the remaining $2.4 million of Notes and accrued interest into 2,338,569 shares of Series A Preferred.

Additionally, DBM invested $1.2 million of cash into Xcede in exchange for Series B convertible preferred stock of Xcede ("Series B Preferred"). Series A Preferred was issued at a 20% discount to the price per share of the Series B Preferred, in accordance with the amended provisions of the Notes. The value of DBM's Series A Preferred and Series B Preferred, as they are wholly owned by DBM, is eliminated in consolidation.

Each share of Series A Preferred and Series B Preferred (together "the Preferred Stock") is convertible, at the option of the holder, into such number of fully paid and non-assessable shares of Xcede common stock ("Common Stock") as determined by dividing the original issue price, as defined, by the conversion price in effect on the date of conversion, which is 1:1. Each holder of the Preferred Stock is entitled to one vote for each share of Common Stock that the holder of the Preferred Stock would be entitled to receive upon the conversion of the holder's Preferred Stock into Common Stock. Upon any liquidation event, which includes certain change of control events, following payment of pre-equity distributions, the remaining proceeds or net assets of Xcede shall be paid and distributed in the following amounts and order of priority: (1) to satisfy the liquidation preference payment due to each holder of Series B Preferred, (2) to satisfy the liquidation preference payment due to each holder of Series A Preferred, (3) payment in full of any acquisition transaction payment, and (4) the remaining assets available to be distributed ratably among the holders of the Common Stock. If a liquidation event were to occur, the Series A Preferred's liquidation value would be $1.016 per share and Series B Preferred's liquidation value would be $1.27 per share. As of September 30, 2019, the liquidation value of the Series B Preferred would be approximately $1.5 million and the Series A Preferred would be approximately $5.5 million, of which $2.4 million is DBM's portion and $3.1 million would be attributed to noncontrolling shareholders.

Note 3 – Xcede Technologies, Inc. Joint Venture (continued)

As of September 30, 2019, DBM owned approximately 63% of Xcede's outstanding Common Stock and Preferred Stock and, as a result, Xcede is included in the Company's consolidated balance sheets, results of operations and cash flows. Due to the Series A Preferred having a liquidation preference and therefore not representing a residual interest, cumulative net losses of Xcede are attributed only to common stockholders in accordance with common stock ownership. Noncontrolling interest represents the value of the Series A Preferred and common stock not owned by DBM plus 17% of cumulative losses of Xcede based on the 17% common stock ownership held by noncontrolling interests.

In 2016, Xcede signed agreements with Cook Biotech Inc. ("CBI") in connection with the development, regulatory approval and production of Xcede's hemostatic patch (the "Xcede Patch") in which CBI committed to fund up to $1.5 million for the pre-clinical testing for the Xcede Patch. Xcede utilized $0.5 million in CBI services in exchange for a note that is currently outstanding.

On July 20, 2018, Xcede received a notice of termination from CBI claiming that the results of a recent animal study showed that it is not commercially reasonable, in CBI's assessment, to continue to the next development phase of the Patch.

In light of the foregoing, Xcede has halted clinical trial preparations at this time and has curtailed its operations to a minimal level while it evaluates alternatives, including the viability of modifying the Xcede Patch to address the shortcomings cited by CBI and/or the possible sale or license of Xcede IP assets, subject to amending CBI's security interest. Additionally, Xcede and the Company's RMD subsidiary have begun an investigation of possible continued development of the Xcede Patch, which includes seeking government funding of this development. In September 2019, Xcede and RMD resubmitted an application for a Phase I SBIR grant for $225,000. There can be no assurances with respect to any such alternatives or that any additional outside funding to continue development of the Xcede Patch will be available to Xcede.

Note 4 – Inventories

Inventories, net of reserves, at September 30, 2019 and 2018, consisted of the following:

	2019	2018
Raw Materials	$ 2,484,000	$ 2,362,000
Work-in-Process	1,023,000	890,000
Finished Goods	1,139,000	854,000
	$ 4,646,000	$ 4,106,000

Note 5 - Property, Plant and Equipment

Property, plant and equipment, at September 30, 2019 and 2018, consist of the following:

	2019	2018
Land	$ 151,000	$ 158,000
Building and improvements	3,743,000	3,591,000
Machinery and equipment	14,458,000	14,086,000
Office furniture and fixtures	1,354,000	1,239,000
Transportation equipment	-	53,000
	19,706,000	19,127,000
Less accumulated depreciation	(12,113,000)	(11,029,000)
	$ 7,593,000	$ 8,098,000

Depreciation expense for the years ended September 30, 2019 and 2018 was $1,312,000 and $1,145,000, respectively.

Note 6 – Intangible Assets

Intangible assets, at September 30, 2019 and 2018, consist of the following:

September 30, 2019	Useful Life (years)	Gross Amount	Accumulated Amortization	Net
Acquired Customer Base	5 to 15	$ 682,000	$ 632,000	$ 50,000
Know How	15	512,000	384,000	128,000
Trade Name	Indefinite	257,000	-	257,000
Patents	20	223,000	31,000	192,000
Biomedical Technologies	5	260,000	260,000	-
		$ 1,934,000	$ 1,307,000	$ 627,000

September 30, 2018	Useful Life (years)	Gross Amount	Accumulated Amortization	Net
Acquired Customer Base	5 to 15	$ 719,000	$ 601,000	$ 118,000
Know How	15	512,000	350,000	162,000
Trade Name	Indefinite	272,000	-	272,000
Patents	20	223,000	20,000	203,000
Biomedical Technologies	5	260,000	260,000	-
		$ 1,986,000	$ 1,231,000	$ 755,000

Amortization expense for the years ended September 30, 2019 and 2018 was $108,000 and $112,000, respectively. In fiscal year 2018, the Company recorded an impairment loss of $182,000.

Note 6 – Intangible Assets (continued)

Estimated amortization expense for each of the next five fiscal years is as follows:

	2020	2021	2022	2023	2024	Thereafter	Total
Acquired Customer Base	$ 50,000	$ -	$ -	$ -	$ -	$ -	$ 50,000
Know How	34,000	34,000	34,000	26,000	-	-	128,000
Patents	11,000	11,000	11,000	11,000	11,000	137,000	192,000
	$ 95,000	$ 45,000	$ 45,000	$ 37,000	$ 11,000	$ 137,000	$ 370,000

Note 7 – Goodwill

The changes to goodwill during the years ended September 30, 2019 and 2018 are summarized as follows:

	Innovation & Development	Optics	Total
Goodwill at September 30, 2017	$ 4,939,000	$ 1,001,000	$ 5,940,000
Currency translation on Hilger Crystals	-	(40,000)	(40,000)
Goodwill at September 30, 2018	$ 4,939,000	$ 961,000	$ 5,900,000
Currency translation on Hilger Crystals	-	(79,000)	(79,000)
Goodwill at September 30, 2019	$ 4,939,000	$ 882,000	$ 5,821,000

With respect to the Company's annual goodwill impairment testing performed during the fourth quarter of fiscal year 2019, step one of the testing determined the estimated fair value of RMD (included in the Innovation and Development segment) and Hilger (included in the Optics segment) reporting units exceeded their carrying value by more than 20%. Accordingly, the Company concluded that no impairment had occurred and no further testing was necessary.

The step one test for the RMD reporting unit and the resulting calculation of the indicated fair value was performed as described above based on certain specific assumptions. The Company relied on a weighted average cost of capital of approximately 15% for this reporting unit which takes into consideration certain industry and specific premiums. The Company utilized a long term growth rate of approximately 1.5% for this reporting unit which considers industry research and management's expectations as to the prospects for long term growth in this industry.

The step one test for the Hilger reporting unit and the resulting calculation of the indicated fair value was performed as described above based on certain specific assumptions. The Company relied on a weighted average cost of capital of 15% for this reporting unit which takes into consideration certain industry and specific premiums. The Company utilized a long term growth rate of approximately 3% for this reporting unit which considers industry research and management's expectations as to the prospects for long term growth in this industry.

Note 7 – Goodwill (continued)

Determining the fair value using a discounted cash flow method requires significant estimates and assumptions, including market conditions, discount rates, and long-term projections of cash flows. The Company's estimates are based upon historical experience, current market trends, projected future volumes and other information. The Company believes that the estimates and assumptions underlying the valuation methodology are reasonable; however, different estimates and assumptions could result in a different estimate of fair value. In estimating future cash flows, the Company relies on internally generated projections for a defined time period for revenue and operating profits, including capital expenditures, changes in net working capital, and adjustments for non-cash items to arrive at the free cash flow available to invested capital. A terminal value utilizing a constant growth rate of cash flows is used to calculate a terminal value after the explicit projection period. The future projected cash flows for the discrete projection period and the terminal value are discounted at a risk adjusted discount rate to determine the fair value of the reporting unit.

Note 8 – Debt

As of September 30, 2019, the Company is in compliance with the financial covenants included in its outstanding indebtedness.

Senior Debt

The Company currently has a loan and security agreement with Middlesex Savings Bank ("Middlesex") for general corporate purposes, as well as a $4.0 million line of credit note and an annual $1.0 million equipment line of credit agreement with a one year draw period in which the outstanding balance will be converted into a five year term note on the one year anniversary.

The loan and security agreement, the line of credit note and the equipment line of credit are secured by (i) a security interest in substantially all of the Company's personal property and (ii) sixty-five percent (65%) of Dynasil's equity interests in its U.K. subsidiary, Hilger Crystals, Ltd. Under the Note, the borrowing base is determined monthly based on eligible billed and unbilled accounts receivable and eligible inventory.

On July 31, 2018, the Company converted the outstanding balance on the original equipment line of credit with Middlesex of approximately $750,000 into a five year term note with an interest rate of 5.66%. Additionally, on August 9, 2018, the Company's equipment line of credit was renewed for $750,000 through April 30, 2019. As part of the renewal process and due to the additional credit being extended to the Company, the Middlesex loan and security agreement was amended on August 9, 2018 to change the maximum debt leverage ratio covenant to 2.5x from 3.0x.

On April 30, 2019, the Company converted the outstanding balance on the equipment line of credit with Middlesex of approximately $484,000 into a five year term note with an interest rate of 5.17%, which will be repaid in equal monthly installments from May 2019 through April 2024. Additionally, on May 1, 2019, the Company's equipment line of credit was renewed for $750,000 through April 30, 2020, at which time the outstanding balance will be converted into a five year term note. Additionally, a modification was made to the borrowing base under the revolving line of credit note to increase the percentage of eligible accounts receivable available for borrowing from 80% to 85% and to eliminate unbilled receivables as a category in obtaining advances under the revolving line of credit.

Note 8 – Debt (continued)

Senior Debt (continued)

On August 5, 2019, the Company entered into a Loan Modification Agreement with Middlesex to modify the loan and security agreement, by and between the Company and Middlesex, to allow for the exclusion of certain transaction-related expenses from the calculation of EBITDA.

On December 23, 2019, the Company and Middlesex entered in an agreement to extend the terms of the existing term loan and line of credit from May 2020 to April 2022, at which time all outstanding principal and unpaid interest will be due and payable. The new agreement includes a modification of the terms of the line of credit's interest rate to add, at the Company's election, the option of the LIBOR Benchmark Rate, plus two and one-half of one (2.50%) percent per annum, in addition to the existing rate of the Lender's Prime Rate, but in no event less than three and one-quarter of one (3.25%) percent. Additionally, the $750,000 availability under the existing equipment line of credit has been extended through December 2020.

As of September 30, 2019, approximately $0.9 million was due under the revolving line of credit with Middlesex and the total availability was $3.1 million. As of September 30, 2019, no amount was outstanding under the equipment line of credit with Middlesex.

Subordinated Debt

The Company and Massachusetts Capital Resource Company ("MCRC") entered into a Note Purchase Agreement (the "Agreement") in July of 2012 in which the Company issued and sold to MCRC a $3.0 million subordinated note (the "Original MCRC Note") for a purchase price of $3.0 million. The Original MCRC Note provided for interest at the rate of ten percent (10%) per annum, with interest to be payable monthly on the last day of each calendar month and principal payments of $130,000 beginning on September 30, 2015, and on the last day of each calendar month thereafter through and including July 31, 2017.

This Original MCRC Note was amended in 2015 to adjust the interest rate to six percent (6%) in connection with a prepayment of $2.0 million.

On January 3, 2018, the Company amended the Agreement with MCRC to reinstate the interest only payment requirements of the loan and defer principal repayment requirements to November 30, 2018. Such amendment also increased the interest rate of the Original MCRC Note from six percent (6%) to seven percent (7%) per annum.

On November 27, 2018, the Company amended the Agreement with MCRC to reinstate the interest only payment requirements of the Original MCRC Note and defer principal repayment requirements to November 30, 2019. Such amendment also extended the maturity date from July 31, 2019 to November 30, 2021.

On May 7, 2019, the Company received a waiver from MCRC to terms of the Agreement to allow and permit the Company's proposed transaction to delist its Common Stock from the Nasdaq Stock Market, including the 1-for-8,000 reverse stock split on its outstanding shares of Common Stock (the "Reverse Split"), the payment of cash to stockholders subsequent to the Reverse Split who hold only a fractional interest, and the subsequent forward stock split of 8,000-for-1 to restore the remaining shareholders to their original share ownership as of immediately prior to the Reverse Split (for additional information, see Note 10, "Stockholders Equity").

Note 8 – Debt (continued)

Subordinated Debt (continued)

In connection with the events described above, on August 6, 2019, the Company entered into a Note Purchase Agreement with MCRC in which the Company borrowed an additional $2,000,000 in cash and replaced the Original MCRC Note which had an outstanding principal amount of $865,216, for an aggregate principal amount of $2,865,216 which will be due July 31, 2026 and bears eight (8%) percent interest per annum (the "Consolidated Note"). Until August 31, 2022 the Consolidated Note will require interest only payments, followed by principal and interest payments for the remaining four years of the Consolidated Note. Until August 31, 2021, the Company is subject to early-payback penalties. As a result of this amendment to the Agreement, the debt balance as of September 30, 2019 with MCRC was classified as long-term.

Under the terms of the Agreement and a Subordination Agreement dated August 6, 2019, MCRC and any successor holder of the Subordinated Note have agreed that the payment of the principal and interest on the Subordinated Note is subordinated in right of payment, to the prior payment in full of all indebtedness of the Company for money borrowed from banks or other institutional lenders at any time outstanding.

The Agreement contains customary representations, warranties and covenants, including covenants by the Company limiting additional indebtedness, liens, guaranties, mergers and consolidations, substantial asset sales, investments and loans, sale and leasebacks, transactions with affiliates and fundamental changes. In addition, the Agreement contains financial covenants by the Company (as further defined in the Agreement) that (i) impose a Consolidated Maximum Leverage Ratio (consolidated total funded debt to consolidated EBITDA) equal to or less than 4.0 to 1.0 for each rolling four quarter period ending on or after September 30, 2019, and (ii) require a Debt Service Coverage Ratio of at least 1.10 to 1.0 for the prior 12 month period (EBITDA excluding non-cash and/or non-recurring expenditures, effective for the subsequent three fiscal quarters to give effect to the trailing twelve month testing periods for this covenant, minus unfinanced capital expenditures, minus dividends and distributions, minus cash taxes paid for ongoing operations, divided by scheduled interest and principal payments made on all debt) of not less than 1.10 to 1.00 for each rolling four quarter period ending on or after September 30, 2019. Non-recurring expenditures include without limitation, up to $750,000 of certain expenditures incurred in the de-listing of certain of the Company's stock from NASDAQ and the deregistration of the Company's common stock for the fiscal quarters ending June 30, 2019, September 30, 2019 and December 31, 2019 only.

The Agreement also provides for events of default customary for agreements of this type, including, but not limited to, non-payment, breach of covenants, insolvency and defaults on other debt. Upon an event of default, MCRC may elect to declare all obligations (including principal, interest and all others amounts payable) immediately due and payable, which will occur automatically if the Company becomes insolvent.

Note 8 – Debt (continued)

Other Debt

The Company’s RMD and Optometrics subsidiaries entered into equipment financing notes payable in connection with the purchase of certain equipment. Optometrics entered into equipment financing notes payable with two government agencies for up to $0.5 million bearing interest at 5% to 5.25% which were repayable in monthly installments over a five year period. RMD entered into equipment financing notes payable with a private equipment funding source bearing interest at 8.7% to 14.59% which were repayable in monthly installments through July 2019. All three of these notes were fully paid during the year ended September 30, 2019.

In November 2016, Xcede entered into an additional Services Agreement, a Secured Promissory Note, a Loan Agreement, a Security Agreement and an Intellectual Property Security Agreement (collectively the “Note Agreement”) with Cook Biotech, Inc. (CBI), in which CBI committed to fund the pre-clinical testing of, and subject to the receipt of applicable regulatory approvals to initiate first in human clinical trials for, the Xcede Patch. Under the terms of the Note Agreement, in exchange for the services performed by CBI, Xcede has committed to a multiple draw credit facility in the aggregate amount not to exceed $1.5 million, with three draws of principal available, each in the amount of $500,000, upon satisfaction of conditions identified in the Note Agreement. The principal amounts outstanding bear interest at a fixed rate of 2% and are secured by all the rights of Xcede under the Development Agreement, Supply Agreement, and License Agreement, all the rights to the data and work product arising from the clinical trial being performed under the Services Agreement, all regulatory approvals for the Xcede Patch, all patent and patent applications owned or controlled by Xcede, and all trademark and service mark registrations and applications. The outstanding principal and unpaid interest are due and payable in full at the earlier of closing of an acquisition transaction or December 31, 2025. The note was recorded at fair value at issuance net of unamortized discount based on an imputed interest rate of 5.4%. On July 20, 2018, Xcede received a notice of termination from CBI, which included CBI’s assertion that the foregoing study results trigger an immediate repayment of the $500,000 promissory note owed by Xcede to CBI under the Note Agreement and cancelled the remaining availability under the Note Agreement. While Xcede vigorously contests this assertion, at this time it is unclear how this matter will be resolved between Xcede and CBI. The Company carries the promissory note in short-term debt. During the twelve months ended September 30, 2018, upon termination of the CBI agreements, research and development expense of $35,000 was recorded to accrete the note to face value. As of September 30, 2019, Xcede had $0.5 million of outstanding indebtedness owed to CBI. See Note 3 – Xcede Technologies, Inc. Joint Venture.

Note 8 – Debt (continued)

Debt at September 30, 2019 and 2018 is summarized as follows:

	2019	2018
Term note payable to Middlesex Savings Bank. The note payable to Middlesex is due in monthly installments of $37,000 for principal and interest through February 2021. The interest rate is 4.52% and the note is secured by an interest in substantially all of the Company's personal property and sixty-five percent of the Company's equity interests in its UK subsidiary, Hilger Crystals, Ltd.	$ 614,000	$ 1,024,000
Equipment term note payable to Middlesex Savings Bank. The note payable to Middlesex is due in monthly installments of $14,000 for principal and interest through July 2023. The interest rate is 5.66% and the note is secured by an interest in substantially all of the Company's personal property and sixty-five percent of the Company's equity interests in its UK subsidiary, Hilger Crystals, Ltd.	596,000	742,000
Equipment term note payable to Middlesex Savings Bank. The note payable to Middlesex is due in monthly installments of $9,000 for principal and interest through April 2024. The interest rate is 5.17% and the note is secured by an interest in substantially all of the Company's personal property and sixty-five percent of the Company's equity interests in its UK subsidiary, Hilger Crystals, Ltd.	448,000	-
Note payable to Town of Ayer Industrial Development Finance Authority (Ayer) for an equipment line of credit made with Dynasil subsidiary Optometrics. The note payable to Ayer was due in monthly installments totaling $17,000 per year and was amortized over ten years with a balloon payment at five years from the date of the note. The interest rate was 5.00%. The note was secured by an interest in the equipment purchased with the line.	-	122,000
Note payable to Massachusetts Development Finance Agency (MDFA) for promissory note made with Dynasil subsidiary Optometrics. The note payable to MDFA was due in monthly installments of $6,000 for principal and interest through March, 2019. The interest rate was 5.25%. The note was secured by an interest in substantially all of Optometric's personal property.	-	36,000
Subordinated note payable to Massachusetts Capital Resource Company in monthly installments of $5,000 through November 2019 for interest only, followed by monthly payments of $39,000 of interest and principal through November 2021. The interest rate was fixed at 7.00%. Subordinated note was refinanced and combined with consolidated subordinated note payable to Massachusetts Capital Resource Company.	-	865,000
Consolidated subordinated note payable to Massachusetts Capital Resource Company in monthly installments of $19,000 through July 2022 for interest only, followed by monthly payments of $70,000 of interest and principal through July 2026. The interest rate is fixed at 8.00%.	2,865,000	-
Note payable to Leaf Capital Funding, LLC (Leaf) for equipment financing with Dynasil subsidiary RMD. The note payable to Leaf was due in monthly installments of $1,000 for principal and interest through July 2019. The interest rate was 8.70%. The note was secured by an interest in the financed equipment.	-	14,000
Xcede Note agreement with Cook Biotech Inc. to fund pre-clinical testing for Xcede. Credit draw not to exceed $1.5 million, in three draws of $500,000 upon satisfaction of conditions in Note Agreement. Upon termination of the CBI note the remaining $1.0 million is no longer available. Note bears interest at a rate of 2% and is secured by all the rights of Xcede under the Development Agreement, Supply Agreement, and License Agreement. The note was recorded at inception at fair value net of unamortized discount based on an imputed interest rate of 5.4%. During the year ended September 30, 2018, R&D expense of $35,000 was recorded to accrete the note to face value.	528,000	518,000
Total Debt	$ 5,051,000	$ 3,321,000
Less current portion	(1,189,000)	(1,246,000)
Long term portion	3,862,000	2,075,000

Note 8 – Debt (continued)

The aggregate maturities of debt based on the payment terms of the agreement are as follows:

For the years ending on September 30:

2020	$1,189,000
2021	430,000
2022	361,000
2023	886,000
2024	758,000
Thereafter	1,427,000
	$5,051,000

There was no unamortized debt issuance costs for the years ended September 30, 2019 and 2018. There was no amortization expense for the years ended September 30, 2019 and 2018.

Note 9 – Income Taxes

Income (loss) before the provision (benefit) for income taxes consists of the following:

	2019	2018
Domestic	$ (513,000)	$ (67,000)
Foreign	303,000	49,000
Total	$ (210,000)	$ (18,000)

The provision (benefit) for income taxes in the accompanying consolidated financial statements consists of the following:

	2019	2018
Current		
Federal	$ (74,000)	$ 124,000
State	14,000	15,000
Foreign	(40,000)	(32,000)
Total current	$ (100,000)	$ 107,000
Deferred		
Federal	$ 169,000	$ (183,000)
State	120,000	(1,508,000)
Foreign	(7,000)	(24,000)
Total deferred	282,000	(1,715,000)
Total provision (benefit)	$ 182,000	$ (1,608,000)

Note 9 – Income Taxes (continued)

A reconciliation of the federal statutory rate to the Company's effective tax rate is as follows:

	2019	2018
Federal statutory rate	21.00%	24.28%
State rate, net of federal benefit	-36.16%	-9.29%
Permanent differences	-45.18%	**
Change in valuation allowance	-66.33%	**
Foreign rate differential and other	27.80%	**
Federal impact under TCJA	34.29%	**
Tax credits genereated in foreign jurisdictions	60.23%	**
Non-deductible related de-registration costs	-82.62%	**
Effective tax rate	-86.97%	8703.64%

** These values are not meaningful. Please see the subsequent paragraphs of this note for more detailed explanations.

Net deferred tax assets (liabilities) consisted of the following at September 30, 2019:

	Domestic	Foreign	Worldwide
Deferred tax assets			
Credits	$ 3,501,000	$ -	$ 3,501,000
NOLs	2,974,000	24,000	2,998,000
Stock compensation	202,000	-	202,000
Accruals	310,000	-	310,000
Other	126,000	-	126,000
Gross deferred tax assets	7,113,000	24,000	7,137,000
Valuation allowance	(1,916,000)	-	(1,916,000)
Net deferred tax assets	5,197,000	24,000	5,221,000
Deferred tax liabilities			
Depreciation	(1,194,000)	(157,000)	(1,351,000)
Intangibles	41,000	(52,000)	(11,000)
Other	-	-	-
Gross deferred tax liabilities	(1,153,000)	(209,000)	(1,362,000)
Net deferred tax asset (liability)	$ 4,044,000	$ (185,000)	$ 3,859,000

Note 9 – Income Taxes (continued)

Net deferred tax assets (liabilities) consisted of the following at September 30, 2018:

	Domestic	Foreign	Worldwide
Deferred tax assets			
Credits	$ 3,530,000	$ -	$ 3,530,000
NOLs	3,235,000	25,000	3,260,000
Stock compensation	203,000	-	203,000
Accruals	209,000	-	209,000
Other	109,000	-	109,000
Gross deferred tax assets	7,286,000	25,000	7,311,000
Valuation allowance	(1,777,000)	-	(1,777,000)
Net deferred tax assets	5,509,000	25,000	5,534,000
Deferred tax liabilities			
Depreciation	(1,168,000)	(164,000)	(1,332,000)
Intangibles	(7,000)	(66,000)	(73,000)
Gross deferred tax liabilities	(1,175,000)	(230,000)	(1,405,000)
Net deferred tax asset (liability)	$ 4,334,000	$ (205,000)	$ 4,129,000

In assessing the ability to realize the net deferred tax assets, management considers various factors including taxable income in carryback years, future reversals of existing taxable temporary differences, tax planning strategies and projections of future taxable income, to determine whether it is more likely than not that some portion or all of the net deferred tax assets will not be realized.

As a result of the conversion of the Xcede convertible notes and accrued interest to preferred stock in November 2016 (see Note 3), the Company's ownership percentage in Xcede decreased to less than 80%. Xcede, therefore, is no longer included in Dynasil's federal consolidated tax return and files a separate federal return. Xcede will continue to be included in the Dynasil consolidated state tax filings pursuant to the respective state tax requirements.

As a result of Xcede's de-consolidation from the Company's federal tax returns, the Company is no longer able to offset taxable income with Xcede's current or cumulative net operating losses. Upon review of relevant criteria for the new Dynasil federal consolidated group, it was determined that it is more likely than not that the federal, deferred tax assets of the new Dynasil federal consolidated group will be realized based upon positive earnings history and expected future profits of the group. As a result, the federal deferred tax asset valuation allowance associated with the Dynasil federal consolidated group was reversed resulting in an income tax benefit in the amount of $2.7 million during the twelve months ended September 30, 2017. Going forward, as the Company records income, it will be able to utilize the NOLs (net operating losses) within its deferred tax assets.

Note 9 – Income Taxes (continued)

As a result of Xcede’s decision to halt clinical trial preparations and curtail operations to a minimal level while the Board of Directors of Xcede evaluates alternative avenues to develop the Xcede Patch, following the July 2018 notice of termination from Cook Biotech Inc. (“CBI”) claiming that the results of a recent animal study showed that it is not commercially reasonable, in CBI’s assessment, to continue to the next development phase of the Xcede Patch, the Company has concluded that it is more likely than not that the deferred tax assets associated with the Company’s unitary state filings will be realized based on future profit for the group and thus has reversed the related valuation allowance on the Company’s NOLs of approximately $0.6 million. In addition, the Company conducted a research and experimentation study which released the tax valuation allowance and increased deferred tax assets by $0.6 million. The reversal resulted in an income tax benefit of approximately $1.2 million recorded during the year ended September 30, 2018.

The valuation allowance will continue to be addressed independently for the Company and Xcede, instead of on a consolidated basis. The net change in the valuation allowances for the years ending September 30, 2019 and 2018 was $0.1 million and ($0.6) million, respectively.

On December 22, 2017, the 2017 Tax Act was signed into law. The 2017 Tax Act, which was effective on December 22, 2017, significantly revised the U.S. tax code by, among other changes, lowering the corporate income tax rate from 35% to 21%, requiring a one-time transition tax on accumulated foreign earnings of certain foreign subsidiaries that were previously tax deferred and creating new taxes on certain foreign sourced earnings. As of September 30, 2019, the Company has completed its accounting for the tax effects of the 2017 Tax Act.

The Company re-measured certain U.S. deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21%, and recorded an income tax expense of $0.7 million related to such re-measurement in 2018.

The one-time transition tax is based on the total unremitted earnings of the Company’s foreign subsidiary, Hilger, which has previously been deferred from U.S. income taxes. The Company recorded an estimated provision for its one-time transition liability of its foreign subsidiary resulting in additional income tax expense of $0.2 million in 2018 and an income tax benefit of $0.07 million in 2019.

As of September 30, 2019 and 2018, the Company has federal net operating losses of $8.5 million and $9.0 million, respectively. Included in the balance as of September 30, 2019 are federal operating losses of $1.2 million that have an indefinite carryforward period. As of September 30, 2019 and 2018, the Company has state net operating losses of $17.0 million and $19.3 million, respectively. The federal and state net operating losses begin expiring in 2033 and 2026, respectively. At September 30, 2019 and 2018, the Company has foreign net operating loss carryforwards of approximately $144,000 and $147,000, respectively which can be carried forward indefinitely.

As of September 30, 2019 and 2018, the Company has federal research credits of $2.9 million and $2.9 million, respectively. The $2.9 million primarily resulted from a benefit in the second quarter of 2018 related to R&E tax credits for the years ended 2013 through 2016. The federal credits begin expiring in fiscal year 2030. As of September 30, 2019 and 2018, the Company has state research credits of $815,000 and $852,000, respectively. The state credits begin expiring in fiscal year 2027.

Note 9 – Income Taxes (continued)

As of September 30, 2019 and 2018, the Company has no unrecorded liabilities for uncertain tax positions. Interest and penalty charges, if any, related to uncertain tax positions would be classified as income tax expense in the accompanying consolidated statement of operations. As of September 30, 2019 and 2018, the Company has no accrued interest or penalties related to uncertain tax positions.

The Company is subject to taxation in the United States, various states, and the United Kingdom. At September 30, 2018, domestic tax years from fiscal 2012 through fiscal 2018 remain open to examination by the United States taxing authorities and tax years 2016 through 2019 remain open in the United Kingdom.

Note 10 – Stockholders' Equity

Stock Based Compensation

The Company adopted Stock Incentive Plans in 1996, 1999 and 2010 (the "Plans") which provide for, among other incentives, the granting to officers, directors, employees and consultants options to purchase shares of the Company's common stock. The Plans also allow eligible persons to be issued shares of the Company's common stock either through the purchase of such shares or as a bonus for services rendered to the Company. Shares are generally issued at the fair market value on the date of issuance. The maximum number of shares of common stock which may be issued under the 2010 Stock Incentive Plan is 6,000,000, of which 2,962,827 and 3,166,698 shares of common stock are available for future purchases under the plan, at September 30, 2019 and 2018, respectively. Options are generally exercisable at the fair market value or higher on the date of grant over a three to five year period currently expiring through 2020.

The fair value of the stock options granted is estimated at the date of grant using the Black-Scholes option pricing model. The expected volatility was determined with reference to the historical volatility of the Company's stock. The Company uses historical data to estimate option exercises and employee terminations within the valuation model. The expected term of options granted represents the period of time that the options granted are expected to be outstanding. The risk-free interest rate for periods within the contractual life of the option is based on the U.S. Treasury rate in effect at the time of grant. The dividend yield is expected to be 0.0% because historically the Company has not paid dividends on common stock.

The Company's Xcede joint venture adopted an Equity Incentive Plan in 2013 which provides for, among other incentives, the granting to officers, directors, employees and consultants options to purchase shares in Xcede's common stock. The options granted generally vest over a 3 year period. The fair value of the stock options granted is estimated at the date of grant using the Black-Scholes option pricing model using assumptions generally consistent with those used for Company stock options. Because Xcede is not publicly traded, the expected volatility is estimated with reference to the average historical volatility of a group of publicly traded companies that are believed to have similar characteristics to Xcede. As of September 30, 2019, 1,699,044 options remained in this plan.

Note 10 – Stockholders' Equity (continued)

Stock Based Compensation (continued)

Stock compensation expense is recorded in general and administrative expenses and is presented below for the years ended September 30, 2019 and 2018:

	2019	2018
Stock Grants	$ 282,000	$ 287,000
Restricted Stock Grants	34,000	55,000
Option Grants	-	17,000
Employee Stock Purchase Plan	3,000	3,000
Subsidiary Option Grants	43,000	95,000
Total	$ 362,000	$ 457,000

At September 30, 2019 there was approximately $18,000 in unrecognized stock compensation cost for Dynasil which is expected to be recognized over a period of fifteen months. At September 30, 2019, the Company's Xcede joint venture had no unrecognized stock compensation.

Note 10 – Stockholders' Equity (continued)

Restricted Stock Grants

A summary of restricted stock activity for the years ended September 30, 2019 and 2018 is presented below:

Restricted Stock Activity for the Year ended September 30, 2019	Shares		Weighted-Average Grant-Date Fair Value
Nonvested at September 30, 2018	60,000	$	1.61
Granted	-		
Vested	(35,000)	$	1.68
Cancelled	(10,000)		1.70
Nonvested and expected to vest at September 30, 2019	15,000	$	1.37

Restricted Stock Activity for the Year ended September 30, 2018	Shares		Weighted-Average Grant-Date Fair Value
Nonvested at September 30, 2017	70,000	$	1.73
Granted	20,000	$	1.37
Vested	(30,000)	$	1.73
Cancelled	-		-
Nonvested and expected to vest at September 30, 2018	60,000	$	1.61

Note 10 – Stockholders' Equity (continued)

Stock Option Grants

A summary of stock option activity for the years ended September 30, 2019 and 2018 is presented below:

	Options Outstanding	Weighted Average Exercise Price per Share	Weighted Average Remain Contractual Term (in Years)
Balance at September 30, 2017	196,769	$ 1.98	1.64
Outstanding and exercisable at September 30, 2017	196,769	$ 1.98	1.64
Granted	-	-	
Exercised	-	-	
Cancelled	(36,232)	1.82	
Balance at September 30, 2018	160,537	$ 2.01	0.93
Outstanding and exercisable at September 30, 2018	160,537	$ 2.01	0.93
Granted	-	-	
Exercised	-	-	
Cancelled	(64,935)	2.33	
Balance at September 30, 2019	95,602	$ 1.80	0.34
Outstanding and exercisable at September 30, 2019	95,602	$ 1.80	0.34

During the years ended September 30, 2019 and 2018, no stock options were granted or exercised.

Note 10 – Stockholders' Equity (continued)

Subsidiary Stock Option Grants

A summary of Xcede stock option activity for the years ended September 30, 2019 and 2018 is presented below:

	Options Outstanding	Weighted Average Exercise Price per Share ($)	Weighted Average Remaining Contractual Term (in Years)
Balance, expected to vest, at September 30, 2017	1,375,956	1.00	8.70
Outstanding and exercisable at September 30, 2017	923,617	1.00	8.30
Granted	-	-	
Exercised	-	-	
Cancelled	(75,000)	1.00	
Balance, expected to vest, at September 30, 2018	1,300,956	1.00	7.31
Outstanding and exercisable at September 30, 2018	1,229,685	1.00	7.11
Granted	-	-	
Exercised	-	-	
Cancelled	-	-	
Balance, expected to vest, at September 30, 2019	1,300,956	1.00	6.10
Outstanding and exercisable at September 30, 2019	1,300,956	1.00	6.10

Employee Stock Purchase Plan

On December 13, 2018, the Company adopted a Second Amended and Restated Employee Stock Purchase Plan (the "ESPP"). The existing plan was amended to extend the termination date to September 30, 2030. The ESPP permits substantially all employees to purchase up to $20,000 of common stock per calendar year at a purchase price of 85% of the fair market value of the shares. Under the ESPP, a total of 450,000 shares have been reserved for issuance of which 368,204 and 350,751 shares have been issued as of September 30, 2019 and 2018, respectively.

During the years ended September 30, 2019 and 2018, 17,453 shares and 15,896 shares of common stock were issued under the ESPP for aggregate purchase prices of $14,338 and $17,480, respectively. On May 1, 2019, the Board of Directors voted to suspend the ESPP following the purchases made under the ESPP on June 29, 2019. The ESPP remained suspended as of September 30, 2019.

Reverse and Forward Stock Split Transaction

On August 7, 2019, the Company held a special meeting of stockholders (the "Special Meeting"). At the Special Meeting, the holders of a majority of the Company's issued and outstanding shares of common stock entitled to vote approved amendments to the Company's certificate of incorporation, as amended (the "Certificate of Incorporation"), to effect a 1-for-8,000 reverse stock split of the Company's common stock (the "Reverse Stock Split"), followed immediately by a 8,000-for-1 forward stock split of the Company's common stock (the "Forward Stock Split," and together with the Reverse Stock Split, the "Transaction").

Note 10 – Stockholders' Equity (continued)

Reverse and Forward Stock Split Transaction (continued)

Following the Special Meeting, the Company filed certificates of amendment to the Certificate of Incorporation with the State of Delaware to effect the Reverse Stock Split, followed immediately by the Forward Stock Split, both effective on August 7, 2019 at 5:01 and 5:02 p.m., respectively. As a result of the Transaction, each stockholder owning fewer than 8,000 shares of the Company's common stock immediately prior to the effective time of the Reverse Stock Split became entitled to receive $1.15 per share, without interest, in cash for each share of the Company's common stock held by such stockholder at the effective time of the Reverse Stock Split. As a result of the Transaction, based on information provided to the Company by its transfer agent, Continental Stock Transfer & Trust Company, and the Depository Trust Company (DTC), 2,825,268 pre-split shares of common stock were due to be exchanged for cash and returned to the Company's Treasury Stock. The aggregate amount that was payable by the Company to the former holders of such shares was approximately $3,249,000.

Stockholders who owned 8,000 or more shares of the Company's common stock immediately prior to the effective time of the Reverse Stock Split were not entitled to receive any cash for their fractional share interests resulting from the Reverse Stock Split, if any. The Forward Stock Split that immediately followed the Reverse Stock Split reconverted whole shares and fractional share interests held by such stockholders back into the same number of shares of the Company's common stock held by such stockholders immediately before the effective time of the Reverse Stock Split. As a result, the total number of shares of the Company's common stock held by such stockholders did not change.

The Company gave notice to The Nasdaq Stock Market ("Nasdaq") of its intent to voluntarily delist its common stock and to withdraw the registration of its common stock with the Securities and Exchange Commission (SEC). The Company filed a Form 25 Notification of Removal From Listing with the SEC on August 19, 2019. As a result, the Company shares are no longer listed on Nasdaq. The Company intends to file a Form 15 with the SEC on the date of the filing of this Form 10-K to suspend the Company's reporting obligations under Section 15(d) of the Exchange Act.

Note 11– Retirement Plans

Defined Contribution Plans

The Company has retirement savings plans available to substantially all full time employees which are intended to qualify as deferred compensation plans under Section 401(k) of the Internal Revenue Code (the "401k Plans") or similar laws in the United Kingdom. The Company recorded an expense of approximately $194,000 and $179,000, for the twelve months ended September 30, 2019 and 2018, respectively, for the Company contributions to these plans.

Note 12 – Lease Agreements

Capital Leases

The Company has entered into long-term capital lease agreements for purchases of various computer and telephone equipment at a weighted average interest rate of 7.7%. At September 30, 2019 and 2018, the remaining principal payments due under all capital leases were $52,000 and $92,000, respectively. Aggregate minimum annual principal and interest obligations at September 30, 2019, under non-cancelable leases are as follows:

	2020	2021	2022	2023	2024	Total
Capital Lease Obligations	$ 35,000	$ 21,000	$ -	$ -	$ -	$ 56,000

Property Leases

The Company has non-cancelable operating lease agreements, primarily for property, that expire through 2025. One of the Company's facilities is leased from a company controlled by the estate of the former owner of RMD. This building is leased as a month-to-month tenancy and will continue until terminated by either the Company, with not less than six months' prior written notice, or the facility's owner, with not less than three years' prior written notice (see Note 13). Rent expense for the years ended September 30, 2019 and 2018 amounted to $1.6 million. Future non-cancelable minimum lease payments under property leases as of September 30, 2019 are as follows:

Years ending September 30,

2020	$ 986,000
2021	335,000
2022	204,000
2023	100,000
2024	102,000
thereafter	44,000
Total	$ 1,771,000

DYNASIL CORPORATION OF AMERICA
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 and 2018

Note 13 - Related Party Transactions

During the years ended September 30, 2019 and 2018, building lease payments of $1,160,000 and $1,140,000, respectively were paid to Charles River Realty which is owned by The Gerald Entine 1988 Family Trust (the “Entine Trust”). The late Dr. Entine was a former director and employee of the Company, as well as a greater than 5% beneficial owner of the Company’s stock until his death in May of 2018. The Entine Trust retains a greater than 5% beneficial ownership in the Company’s stock.

In October 2013, the Company’s subsidiary, Dynasil Biomedical, formed Xcede Technologies, Inc., a joint venture with Mayo Clinic, to spin out and separately fund the development of its tissue sealant technology. As of September 30, 2019, officers and directors of the Company collectively own the equivalent of 13.4% of Xcede’s outstanding common stock.

Note 14 - Vendor Concentration

The Company purchased $1.5 million and $1.7 million respectively, of its raw materials from one supplier during the years ended September 30, 2019 and 2018. As of September 30, 2019 and 2018, amounts due to this supplier included in accounts payable were $57,000 and $258,000, respectively.

Note 15 – Supplemental Disclosure of Cash Flow Information

	2019	2018
Cash Paid during the year for:		
Interest	$ 199,000	$ 148,000
Income taxes (refunds)	$ (29,000)	$ (78,000)
Non cash activities:		
Equipment line of credit to term note conversion	$ 484,000	$ -
Xcede stock surrender of Series A Preferred	18,000	-
Assets purchased under capital leases	-	12,000
Refinance of Massachusetts Capital Resource Company Note	865,000	

Note 16 – Segment, Customer and Geographical Reporting

Segment Financial Information

Operating segments are based upon Dynasil's internal organizational structure, the manner in which the operations are managed, the criteria used by the Chief Operating Decision Makers (CODM) to evaluate segment performance and the availability of separate financial information. Dynasil reports three reportable segments: optics ("Optics"), innovation and development (formerly Contract Research, now "Innovation and Development"), and biomedical ("Biomedical"). Within these segments, there is a segregation of operating segments based upon the organizational structure used to evaluate performance and make decisions on resource allocation, as well as availability and materiality of separate financial results consistent with that structure. Dynasil's Optics segment aggregates four operating segments – Dynasil Fused Silica, Optometrics, Hilger Crystals, and Evaporated Metal Films – that manufacture commercial products, including optical crystals for sensing in the security and medical imaging markets, as well as optical components, optical coatings and optical materials for scientific instrumentation and other applications. The Innovation and Development segment is one of the largest small business participants in U.S. government-funded research. The Biomedical segment consists of a single operating segment, Dynasil Biomedical Corporation ("Dynasil Biomedical"), a medical technology incubator which owns rights to certain early stage medical technologies. Dynasil Biomedical holds the Company's stock of the Xcede joint venture which is developing a tissue sealant technology and currently has no other operations.

DYNASIL CORPORATION OF AMERICA
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 2019 and 2018

Note 16 – Segment, Customer and Geographical Reporting (continued)

The Company's segment information is summarized below:

Results of Operations for the Fiscal Year Ended September 30, 2019

	Optics	Innovation and Development	Biomedical	Total
Revenue	$ 23,250,000	$ 20,451,000	$ -	$ 43,701,000
Gross profit	7,939,000	8,135,000	-	16,074,000
GM %	34%	40%	-	37%
Operating expenses	7,853,000	8,086,000	123,000	16,062,000
Impairment of long-lived assets	-	-	-	-
Operating income (loss)	86,000	49,000	(123,000)	12,000
Depreciation and amortization	1,165,000	241,000	14,000	1,420,000
Capital expenditures	716,000	177,000	-	893,000
Intangibles, net	307,000	128,000	192,000	627,000
Goodwill	882,000	4,939,000	-	5,821,000
Total assets	$ 20,520,000	$ 10,112,000	$ 195,000	$ 30,827,000

Results of Operations for the Fiscal Year Ended September 30, 2018

	Optics	Innovation and Development	Biomedical	Total
Revenue	$ 23,053,000	$ 17,628,000	$ -	$ 40,681,000
Gross profit	7,667,000	7,569,000	-	15,236,000
GM %	33%	43%	-	37%
Operating expenses	7,003,000	7,072,000	817,000	14,892,000
Impairment of long-lived assets	-	-	182,000	182,000
Operating income (loss)	664,000	497,000	(999,000)	162,000
Depreciation and amortization	1,006,000	237,000	14,000	1,257,000
Capital expenditures	2,033,000	211,000	73,000	2,317,000
Intangibles, net	390,000	162,000	203,000	755,000
Goodwill	961,000	4,939,000	-	5,900,000
Total assets	$ 22,946,000	$ 8,376,000	$ 210,000	$ 31,532,000

Note 16 – Segment, Customer and Geographical Reporting (continued)

Customer Financial Information

For both the years ended September 30, 2019 and September 30, 2018, there was one customer that represented 10% of the total Optics segment revenue.

For the years ended September 30, 2019 and 2018, the top three customers for the Innovation and Development segment were each various agencies of the U.S. Government. For the years ended September 30, 2019 and 2018, these customers made up 61% and 60%, respectively, of Innovation and Development revenue.

The Biomedical segment did not have any revenue in the years ending September 30, 2019 and 2018.

Geographic Financial Information

Revenue by geographic location in total and as a percentage of total revenue, for the years ended September 30, 2019 and 2018 are as follows:

	2019		2018	
Geographic Location	**Revenue**	**% of Total**	**Revenue**	**% of Total**
United States	$ 34,421,000	79%	$ 30,777,000	76%
Asia	3,206,000	7%	3,017,000	7%
Europe	5,167,000	12%	6,486,000	16%
Other	907,000	2%	401,000	1%
	$ 43,701,000	100%	$ 40,681,000	100%

Note 17 – Subsequent Events

On December 23, 2019, the Company and Middlesex entered in an agreement to extend the terms of the existing term loan and line of credit from May 2020 to April 2022, at which time all outstanding principal and unpaid interest will be due and payable. The new agreement includes a modification of the terms of the line of credit's interest rate to add, at the Company's election, the option of the LIBOR Benchmark Rate, plus two and one-half of one (2.50%) percent per annum, in addition to the existing rate of the Lender's Prime Rate, but in no event less than three and one-quarter of one (3.25%) percent. Additionally, the $750,000 availability under the existing equipment line of credit has been extended through December 2020.

The Company has evaluated subsequent events through the date the financial statements were released.

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

There were no disputes or disagreements of any nature between the Company or its management and its public auditors with respect to any aspect of accounting or financial disclosure.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures.

Our management, with the participation and supervision of our Chief Executive Officer and Chief Financial Officer, is responsible for our disclosure controls and procedures pursuant to Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified under the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to our principal executive officer and our principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, including the Chief Executive Officer and the Chief Financial Officer, carried out an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2019. Based on this evaluation, our management concluded that as of September 30, 2019, these disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control over Financial Reporting.

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. Internal control over financial reporting is a process designed by, or under the supervision of, the Company's principal executive and principal financial officers, or persons performing similar functions, and effected by the Company's board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;

- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and

- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of inherent limitations, no matter how well designed and operated, internal control over financial reporting may not prevent or detect misstatements and can only provide reasonable assurance of achieving the desired control objectives. In addition, the design of internal control over financial reporting must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Our management performed the evaluation of our internal control over financial reporting under the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control—Integrated Framework (2013).

Based on its assessment of the effectiveness in internal control over financial reporting as of September 30, 2019, our management concluded that our internal controls over financial reporting were effective.

This Annual Report on Form 10-K does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Our report was not subject to attestation by our registered public accounting firm pursuant to the rules of the SEC that permit us to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

Effective October 1, 2018, we implemented ASC 606, Revenue from Contracts with Customers. Changes were made to the relevant business processes and the related control activities in order to monitor and maintain appropriate controls over financial reporting. There were no other changes in our internal controls over financial reporting during the fiscal year ended September 30, 2019 that have materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

On December 12, 2019, the Company replaced the 2010 Stock Incentive Plan with the 2019 Stock Incentive Plan by a vote of the Company's Board of Directors. The 2019 Plan will be presented to the Company's stockholders for approval at the Company's 2020 Annual Meeting of Stockholders. Set forth below is a description of the material terms of the 2019 Plan.

Eligibility. The 2019 Plan allows us, under the direction of our Board of Directors, to make grants of stock options, restricted and unrestricted stock awards and other stock-based awards to employees, consultants and directors who, in the opinion of the Board of Directors, are in a position to make a significant contribution to our long-term success. All employees, directors and consultants of the Company and its affiliates are eligible to participate in the 2019 Plan.

Shares Available for Issuance. The 2019 Plan provides for the issuance of up to 2,762,827 shares of our common stock plus a number of additional shares to be issued if awards outstanding under our 2010 Stock Incentive Plan are cancelled, expire or are forfeited on or after the date of the adoption of the 2019 Plan. Generally, shares of common stock reserved for awards under the 2019 Plan that lapse or are canceled (other than by exercise) will be added back to the share reserve available for future awards. However, shares of common stock tendered in payment for an award or shares of common stock withheld for taxes are not available again for future awards.

Stock Options. Stock options granted under the 2019 Plan may either be incentive stock options, which are intended to satisfy the requirements of Section 422 of the Internal Revenue Code of 1986 (the "Code"), or non-qualified stock options, which are not intended to meet those requirements. Incentive Stock Options may be granted to employees of the Company and its affiliates. Non-qualified options may be granted to employees, directors and consultants of the Company and its affiliates and the term of the option may not be longer than ten years. The exercise price of a stock option may not be less than 100% of the fair market value of our common stock on the date of grant. If an incentive stock option is granted to an individual who owns more than 10% of the combined voting power of all classes of our capital stock, the exercise price may not be less than 110% of the fair market value of our common stock on the date of grant and the term of the option may not be longer than five years.

Award agreements for stock options include rules for exercise of the stock options after termination of service. Options may not be exercised unless they are vested, and no option may be exercised after the end of the term set forth in the award agreement. Generally, stock options will be exercisable for three months after termination of service for any reason other than death or total and permanent disability, and for 12 months after termination of service on account of death or total and permanent disability but will not be exercisable if the termination of service was due to cause.

Restricted Stock. Restricted stock is common stock that is subject to restrictions, including a prohibition against transfer and a substantial risk of forfeiture, until the end of a "restricted period" during which the grantee must satisfy certain time or performance-based vesting conditions. If the grantee does not satisfy the vesting conditions by the end of the restricted period, the restricted stock is forfeited. During the restricted period, the holder of restricted stock generally has the rights and privileges of a regular stockholder, except that the restrictions set forth in the applicable award agreement apply. For example, the holder of restricted stock may vote the restricted shares; but he or she may not sell the shares until the restrictions are lifted.

Other Stock-Based Awards. The 2019 Plan also authorizes the grant of other types of stock-based compensation including, but not limited to stock appreciation rights, phantom stock awards, and stock unit awards. Our Board of Directors may award such stock-based awards subject to such conditions and restrictions as it may determine. These conditions and restrictions may include continued employment with us through a specified restricted period or achievement of one or more performance goals.

Plan Administration. In accordance with the terms of the 2019 Plan, our Board of Directors is authorized to administer the 2019 Plan. The Board of Directors may delegate part of its authority and powers under the 2019 Plan to one or more of our directors and/or officers. In accordance with the provisions of the 2019 Plan, our Board of Directors determines the terms of awards, including:

- which employees, directors and consultants will be granted awards;
- the number of shares subject to each award;
- the vesting provisions of each award;
- the termination or cancellation provisions applicable to awards; and
- all other terms and conditions upon which each award may be granted in accordance with the 2019 Plan.

In addition, our Board of Directors may, in its discretion, amend any term or condition of an outstanding award provided (i) such term or condition as amended is permitted by our 2019 Plan, and (ii) any such amendment shall be made only with the consent of the participant to whom such award was made, if the amendment is adverse to the participant unless such amendment is required by applicable law or necessary to preserve the economic value of such award.

Stock Dividends and Stock Splits. If our common stock shall be subdivided or combined into a greater or smaller number of shares or if we issue any shares of common stock as a stock dividend, the number of shares of our common stock deliverable upon exercise of an option issued or upon issuance of an award shall be appropriately increased or decreased proportionately, and appropriate adjustments shall be made in the exercise price per share of stock options or purchase price, if any, and performance goals applicable to performance-based awards, if any, to reflect such subdivision, combination or stock dividend.

Corporate Transactions. Upon a merger or other reorganization event, our Board of Directors, may, in its sole discretion, take any one or more of the following actions pursuant to our 2019 Plan, as to some or all outstanding awards:

- provide that all outstanding options shall be assumed or substituted by the successor corporation;
- upon written notice to a participant provide that the participant's unexercised options will terminate immediately prior to the consummation of such transaction unless exercised by the participant;
- in the event of a merger pursuant to which holders of our common stock will receive a cash payment for each share surrendered in the merger, make or provide for a cash payment to the participants equal to the difference between the merger price times the number of shares of our common stock subject to such outstanding options, and the aggregate exercise price of all such outstanding options, in exchange for the termination of such options;
- provide that outstanding awards shall be assumed or substituted by the successor corporation, become realizable or deliverable, or restrictions applicable to an award will lapse, in whole or in part, prior to or upon the merger or reorganization event; and
- with respect to stock grants and in lieu of any of the foregoing, our Board of Directors may provide that, upon consummation of the transaction, each outstanding stock grant shall be terminated in exchange for payment of an amount equal to the consideration payable upon consummation of such transaction to a holder of the number of shares of common stock comprising such award (to the extent such stock grant is no longer subject to any forfeiture or repurchase rights then in effect or, at the discretion of our board of directors or an authorized committee, all forfeiture and repurchase rights being waived upon such transaction).

Amendment and Termination. The 2019 Plan may be amended by our stockholders. It may also be amended by our Board of Directors, provided that any amendment approved by our Board of Directors which is of a scope that requires stockholder approval as required in order to ensure favorable federal income tax treatment for any incentive stock options under Code Section 422 or for any other reason, is subject to obtaining such stockholder approval. However, no such action may adversely affect any rights under any outstanding award without the holder's consent unless such amendment is required by applicable law or necessary to preserve the economic value of such award.

Duration of Plan. The 2019 Plan will expire by its terms on December 12, 2029.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Directors and Executive Officers

Directors are elected to hold office subject to the provisions of the Company’s by-laws until the next annual meeting of stockholders or until their respective successors are duly elected and qualified. Directors shall be elected by a plurality of the votes of the shares present in person or represented by proxy and entitled to vote on the election of directors at the Company’s annual meeting of stockholders.

Officers serve for such terms as determined by our Board. Each officer holds office until such officer’s successor is elected or appointed and qualified or until such officer’s earlier resignation or removal.

The following table sets forth certain information, as of September 30, 2019, with respect to our directors and executive officers.

Name	Age	Position within the Company	Term
Mr. Peter Sulick	68	Chairman, Chief Executive Officer, & President	June 2008 to present
Mr. Craig T. Dunham	63	Director	October 2004 to present
Mr. Lawrence Fox	76	Director	February 2011 to present
Dr. William K. Hagan	68	Lead Director	July 2012 to present
Mr. David Kronfeld	72	Director	February 2010 to present
Mr. Thomas C. Leonard	65	Director	February 2016 to present
Ms. Holly A. Hicks	37	Chief Financial Officer	October 2019 to present
Mr. Alan Levine	75	Former Director	May 2013 to September 2019
Mr. Robert J. Bowdring	62	Former Chief Financial Officer	January 2016 to September 2019

Background and Business Experience

The business experience during the past five years of the persons listed above as an Officer or Director of the Company either presently or during the year ended September 30, 2019 is listed below.

Non-Employee Directors

Craig Dunham, 63, Director, invested in Dynasil and then joined the Company in October 2004 as President, Chief Executive Officer and a director. In May 2011, Mr. Dunham retired from his management role at Dynasil and became Chief Executive Officer and Director of Applied Pulsed Power Inc., a pulsed power components and systems company near Ithaca, NY, a role he held until 2015. Beginning in March 2014, Mr. Dunham served as a consultant to the board of directors of LightPath Technologies (Nasdaq:LPTH) and he formally became a Director and member of the Audit Committee in April 2016. Since April 2015, he has done a variety of business and M&A consulting. Prior to joining Dynasil, Mr. Dunham spent approximately one year partnering with a private equity group to pursue acquisitions of mid-market manufacturing companies. From 2000 to 2003, he was Vice President/General Manager of the Tubular Division at Kimble Glass Corporation. From 1979 to 2000, he held progressively increasing leadership responsibilities at Corning Incorporated in manufacturing, engineering, commercial, and general management positions. At Corning, he delivered results in various glass and ceramics businesses including optics and photonics businesses. Mr. Dunham earned a Bachelor of Science in Mechanical Engineering and a Master of Business Administration from Cornell University. Mr. Dunham brings operations and management experience, executive leadership, business acumen, strategy development, optics/photonics market knowledge, and knowledge of the acquisitions process to the Board, the Nominating and Corporate Governance Committee, and the Audit Committee.

Lawrence Fox, 76, Director, has been a member of the Board since February 2011. Mr. Fox currently serves as a partner at Schoeman Updike Kaufman & Gerber LLP, where he provides professional responsibility advice and expert witness testimony on lawyer standards of care and ethical obligations. From 1976 until 2017, Mr. Fox served as a partner and managing partner of Drinker Biddle & Reath LLP, where he specialized in securities and general commercial litigation and the counseling of law firms. Currently, he is a visiting lecturer of law and the Crawford Lecturer at Yale Law School. From 2007 to 2010 he was a lecturer on law at Harvard Law School. He was the I. Grant Irey, Jr. adjunct professor at Penn Law School from 2000-2008. He is the author of a long list of articles that have appeared in regional and national publications, covering a wide variety of subjects with particular emphasis on ethical issues and has written numerous book chapters relating to internal investigations, sanctions, expert witnesses and other topics. Mr. Fox currently serves as a director for Aberdeen Emerging Market Income Fund. He has a B.A. degree from the University of Pennsylvania and a LLB from the University of Pennsylvania Law School. Mr. Fox brings extensive legal and corporate governance experience to the Board from his legal experience and previous Board positions which, through his participation as chairman of the Nominating and Corporate Governance Committee, significantly expand the Board’s depth of corporate governance experience.

William Hagan, Ph.D., 68, Lead Director, joined the Board of Directors in July of 2012. Since 2011, Dr. Hagan has served as President of Hagan & Associates LLC. Prior to forming this consulting business, Dr. Hagan was the Acting Director of the Department of Homeland Security’s Domestic Nuclear Detection Office (DNDO) from December of 2009 until August of 2010. Before serving as Acting Director, Dr. Hagan was the DNDO’s Acting Deputy Director, Assistant Director for the Transformational and Applied Research Directorate, and Chief Scientist. Prior to DNDO, Dr. Hagan was a Senior Vice President at Science Applications International Corporation (SAIC). During a 30-year career at SAIC, his areas of emphasis included nuclear technology, telecommunications, optics, transportation, system integration, and technology assessments. Business roles included Group leadership, mergers and acquisitions, venture capital investment, and business development. Dr. Hagan received a bachelor’s degree in Engineering Physics, a master’s degree in Physics, and a master’s degree in Nuclear Engineering from the University of Illinois at Urbana. He received his Ph.D. in Physics from the University of California at San Diego. Dr. Hagan brings experience in a combination of commercial, government, and high technology business to his role on the Board and as chairman of the Compensation Committee.

David Kronfeld, 72, Director, has been a member of the Board since February 2010. Mr. Kronfeld founded JK&B Capital (JK&B) in 1996, a venture capital firm focused in the software, information technology, and communications markets with over $1.1 billion of cumulative capital under management, where he continues to work. Mr. Kronfeld is an experienced venture capital investor and telecommunications industry executive with over 30 years of experience. Prior to forming JK&B, Mr. Kronfeld was a General Partner at Boston Capital Ventures (BCV) where he focused on making venture capital investments in telecommunications and software companies. Before joining BCV, Mr. Kronfeld was Vice President of Acquisitions and Venture Investments with Ameritech where he was responsible for directing venture capital investments in a broad array of telecommunications-related companies and all of Ameritech's mergers and acquisitions activities. In addition, Mr. Kronfeld was a Senior Manager at Booz Allen & Hamilton and a Systems Analyst at Electronic Data Systems (E.D.S.). He has served on four public company boards, thirty private company boards, and currently sits on the board of directors of NeuLion, Inc., a public IPTV company. Mr. Kronfeld earned a Bachelor of Science in Electrical Engineering with high honors and a Master of Science in Computer Science from Stevens Institute of Technology, and a Master of Business Administration from The Wharton School of Business. Mr. Kronfeld brings extensive venture capital experience in evaluating opportunities and managing portfolio businesses as well as multiple board experiences which enable him to contribute to the Company's Compensation and Nominating and Corporate Governance Committees.

Thomas C. Leonard, 65, Director, has been a member of the Board since February of 2016. Mr. Leonard joined the Company as Chief Financial Officer in January of 2013 and retired from that position in January of 2016. Mr. Leonard is a member of the board of directors, chairman of the audit committee and a member of the compensation committee of Kadant Corp., a publicly traded manufacturing company based in Westford, MA. Mr. Leonard served as Chief Financial Officer for Pennichuck Corp, a publicly traded water utility company, from 2008 until 2013. He served as Vice President of CRA International from 2006 to 2008, and as Managing Director for Huron Consulting Group from 2002 to 2006. From 1987 to 2002, Mr. Leonard held positions of increasing responsibility at Arthur Andersen LLP, ending his time there as Partner in Charge of Audit Division. Mr. Leonard is a Certified Public Accountant and has a Bachelor of Arts in Accounting. Mr. Leonard brings extensive public company financial and corporate governance experience to the Board and to the Audit Committee, as well as his three years of experience as Chief Financial Officer of the Company. Mr. Leonard assumed the role of Audit Committee Financial Expert and Audit Committee Chairman on October 1, 2019.

Alan Levine, 75, former Director, served on the Board of Directors from May, 2013 through September, 2019. Mr. Levine was Vice President and Chief Financial Officer of the Graduate Management Admission Council from 2007 to 2011. From 1998 to 2007, Mr. Levine served in a number of Chief Financial Officer and Financial Consultant roles, largely in technology-based companies. Mr. Levine was a Partner with Ernst & Young LLP from 1986 to 1998. Prior to serving in the Partner role, Mr. Levine was an Audit Principal, Audit Manager, and Audit Senior during twenty-four years with Ernst & Young. His areas of business expertise include entrepreneurial services, venture capital financing, initial public offerings, and accounting and financial education. He currently serves as a director and Audit Committee member for RBC Bearings Incorporated. Mr. Levine received his Master of Accounting from the University of Arizona and a Bachelor of Arts from the University of Vermont. Mr. Levine was a Certified Public Accountant for 30 years. Mr. Levine brought extensive public company financial and corporate governance experience to the Company's Board, Audit Committee, and Compensation Committee, and served as the Company's Audit Committee Financial Expert during his tenure on the Board.

Executive Officers

Peter Sulick, 68, Chairman, Chief Executive Officer and President, joined the Board in June 2008. Mr. Sulick is currently President and Chief Executive Officer of AmeriSite, LLC, a family-owned real estate development and investment company, which he founded in 1998. From 2009 until 2016, Mr. Sulick served on the board of Prism Microwave. During that time, he served as Chairman and Chief Executive Officer. Prism was founded in 2008 and provided RF conditioning products for the mobile wireless infrastructure industry. From 1985 until 2002, Mr. Sulick founded and led telecommunications companies that were later acquired by Nextel and T-Mobile. In the early part of his career, Mr. Sulick was a principal financial officer for Cablevision Systems and has also held several senior-level financial positions in the Communications Operations Group of ITT. He began his career in the audit department at Arthur Andersen & Co, in New York City following graduate school. He is a certified public accountant who earned a Master of Business Administration in finance from the University of Massachusetts and a Bachelor of Science in Business Administration from The Citadel and was recently awarded an Honorary Doctorate in Entrepreneurship from The Citadel. Mr. Sulick brings to the Board entrepreneurial skills, executive leadership and business and financial acumen to serve as Chairman and in his role as Chief Executive Officer and President.

Holly A. Hicks, 37, became Chief Financial Officer of the Company in October 2019, after serving as the Company’s Corporate Controller from January 2015 through September 2019. Ms. Hicks is a Certified Public Accountant and Master Analyst of Financial Forensics. From 2013 to 2015, she provided audit, tax, and assurance consulting services through Cordua, Pastore & Associates of Cherry Hill, NJ. From 2004 to 2012, she held positions of increasing responsibility at Haefele, Flanagan & Co. of Moorestown, NJ, ending her time there as an Audit Manager. Ms. Hicks has a B.S. in Business Administration from Bloomsburg University.

Robert J. Bowdring, 62, joined the Company as Corporate Controller in March 2013. Mr. Bowdring served as the Company’s Chief Financial Officer from February 2016 through September 2019, at which time he was appointed to the role of the Company’s Vice President of Financial Integration. Mr. Bowdring is a member of the board of directors, treasurer, and secretary of INVO Bioscience, a small publicly traded infertility medical device company based in Sarasota, FL. Mr. Bowdring served as the Chief Financial Officer for INVO Bioscience from 2008 until 2013. He served as Chief Financial Officer of Cyphermint, Inc. from 2003 to 2008, and as Vice President and Corporate Controller for Lifeline Systems from 1989 to 2003. Prior to 1989, Mr. Bowdring held positions of increasing responsibility at Remanco, Inc., Warburton’s Inc., Cyborg Corporation, and Technogenics, Inc. Mr. Bowdring has a Bachelor of Arts in Accounting from the University of Massachusetts.

Director Independence

The Board has determined that all directors, other than Mr. Sulick, are independent under the SEC rules, based on information known to the Company and on the annual questionnaire completed by each director.

Code of Conduct and Ethics

We have adopted a Code of Conduct that applies to all employees including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. The text of our Code of Conduct is posted in the “Investor Information—Corporate Governance” section of our website, www.dynasil.com.

We intend to disclose on our website any amendments to, or waivers from, our Code of Business Conduct and Ethics that are required to be disclosed pursuant to the disclosure requirements of Item 5.05 of Form 8-K.

Involvement in Certain Legal Proceedings

None.

Board Leadership Structure

The Company has historically had different persons serving in the offices of Chairman of the Board and Chief Executive Officer, although it has no formal policy requiring that structure. As Mr. Sulick is currently serving in both of these roles, Dr. Hagan serves as Lead Director. The responsibilities of the lead director include setting the Board's agenda in collaboration with the Chief Executive Officer, providing guidance to the Chief Executive Officer, acting as a regular communication channel between the Board and Chief Executive Officer, presiding over executive sessions of the Board to review the Company's performance and management effectiveness, coordinating the activities of non-employee directors, reviewing the activities and effectiveness of the Board committees, and evaluating the need for any changes. The Board believes that having a separate Chairman or lead director allows the Chief Executive Officer to focus principally on managing the Company, which adds value to the Company’s senior management team and operating business units, enhances Board involvement and communications among the non-employee directors, and ensures consistent Board leadership during any Chief Executive Officer transition.

Board’s Role in Risk Oversight

The Company’s business involves many operational and financial risks, which management and the Board seek to mitigate through careful planning and execution. Assessing and managing risk is primarily the responsibility of the Company’s management. However, the Board of Directors has an active role, as a whole and also at the committee level, in overseeing management of the Company’s risks. The Board of Directors provides oversight by receiving reports from management in Board meetings and conference calls, as well as through periodic management reports. These include reports on the market environment and strategic situation, customer sales results and forecasts, availability of raw materials and components, product development, liquidity, and overall financial performance and forecasts. Board members have the opportunity to provide input and direction to management on managing risks on a current basis, either directly or through the Lead Director or Chairman. In order to ensure that longer term risks are also considered in a timely and consistent manner, each year the full Board reviews and approves a budget that is used by management throughout the year. The Chairman oversees the Company’s business activities, including its management of operational risks, between meetings of the Board. The Audit Committee has responsibility for overseeing the Company’s internal financial and accounting controls. As such, the Audit Committee regularly discusses with management and the Company’s independent registered public accounting firm the Company’s major financial and controls-related risk exposures and the steps that management has taken to monitor and control such exposures. The Compensation Committee is responsible for overseeing the management of risks relating to the Company’s executive compensation plans and arrangements. The Company believes that Board leadership by an independent lead director or chairman enhances the Board’s ability to oversee the Company’s operational and financial risks.

Board Meetings

During the fiscal year ended September 30, 2019, the Board of Directors held a total of ten meetings. All of the directors attended all of the fiscal year 2019 meetings. The Board regularly holds sessions at which only non-employee directors are present, including a portion of each quarterly meeting. All of the Board members attended the annual meeting of stockholders on February 28, 2019.

Committees of the Board

The Board of Directors has an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee, all the members of which are independent, as defined by Securities and Exchange Commission (“SEC”) rules. During fiscal year 2019, a Special Committee of the Board was formed to evaluate the potential of a transaction leading to voluntary delisting of the Company’s common stock from The Nasdaq Stock Market and voluntary termination of the Company’s registration of the common stock under the Securities and Exchange Commission Act of 1934, as amended. Mr. Leonard, Mr. Levine, and Dr. Hagan were the members of the Special Committee, with Mr. Leonard serving as chairman. The Special Committee held five meetings in fiscal year 2019.

Additionally, due to the participation of three of the directors in the financing of Xcede Technologies, Inc. (“Xcede”), the three independent directors serving on the board at the time of the Xcede financing, Mr. Dunham, Mr. Levine, and Mr. Kronfeld served on an Independent Xcede Committee, which was charged with independently representing the Company’s interests in any decisions involving the financing of Xcede. This committee did not meet in fiscal year 2019.

In addition to the meetings described below, the members of each committee communicate regularly amongst themselves and with management on Company matters.

Each of the Audit Committee, the Compensation Committee and the Nominating and Corporate Governance Committee operates under a written charter that is available on the Company’s web site: https://investors.dynasil.com/corporate-governance/.

Compensation Committee. During fiscal year 2019, the members of the Compensation Committee were Dr. Hagan, Mr. Levine, and Mr. Kronfeld, with Dr. Hagan serving as the Chairman. The Compensation Committee is responsible for negotiating compensation and employment agreements for the named executive officers and directors of the Company and presenting these proposals to the Board of Directors for approval. Current compensation practices are outlined in the Director Compensation and Executive Compensation sections of this filing. There were four Compensation Committee meetings in fiscal year 2019 and each of the committee members attended all of those meetings.

Generally all executive officer and director compensation programs of the Company are subject to the review and approval of the Compensation Committee, which also reviews and determines the base salary and incentive compensation of the named executive officers. The Chief Executive Officer provides a compensation recommendation for each named executive officer (other than himself), which the Compensation Committee considers in making its decisions. Compensation decisions are made throughout the year as circumstances warrant. All compensation actions taken by the Compensation Committee are reported to the full Board of Directors, and certain actions are subject to the approval of the Board, excluding management directors. The Compensation Committee has previously used a compensation consultant to provide comparable market data as well as compensation advice in setting executive and director compensation and policies. The Compensation Committee also reviews and makes recommendations to the Board on director compensation and equity awards.

The Compensation Committee is composed of outside directors who are not officers or employees of the Company. The Board has determined that these directors are all independent under applicable SEC rules.

Audit Committee. At the beginning of fiscal year 2019, the members of the Audit Committee were Mr. Levine, Mr. Dunham and Mr. Fox. Mr. Fox served on the Audit Committee until the Company’s annual meeting of stockholders in February of 2019, at which time Mr. Leonard was appointed to the Audit Committee. Mr. Levine serving as both Chairman and Audit Committee Financial Expert. Subsequent to the end of fiscal year 2019, when Mr. Levine left the Board of Directors, Mr. Leonard replaced Mr. Levine as both Chairman and Audit Committee Financial Expert. The Audit Committee is responsible for reviewing reports of the Company's financial results, audits, internal controls, and adherence to its Code of Conduct, compliance with federal procurement and other laws and regulations, and other matters. The Audit Committee recommends to the Board of Directors the selection of the Company's outside auditors, reviews their procedures for ensuring their independence with respect to the services performed for the Company and approves their compensation. There were seven Audit Committee meetings in fiscal year 2019 and Mr. Levine and Mr. Dunham attended all of those meetings. Mr. Fox was excused from one of the three meetings during his tenure and Mr. Leonard attended all meetings that occurred after his appointment.

The Audit Committee is composed of outside directors who are not officers or employees of the Company. The Board has determined that these directors are all independent under applicable SEC rules.

Nominating and Corporate Governance Committee. The current members of the Nominating and Corporate Governance Committee are Mr. Fox, Mr. Dunham and Mr. Kronfeld, with Mr. Fox serving as the Chairman. The Nominating and Corporate Governance Committee held one meeting in fiscal year 2019 and all of the committee members were in attendance at that meeting.

Director Nominations

The Nominating and Corporate Governance Committee is responsible for (i) identifying individuals qualified to become Board members, consistent with criteria approved by the Board, and (ii) recommending to the Board the persons to be nominated for election as directors at any meeting of stockholders and the persons to be elected by the Board to fill any vacancies on the Board. Director nominees are considered for recommendation by the Nominating and Corporate Governance Committee in accordance with the policies and principles in its charter and the criteria set forth in the Corporate Governance Guidelines, as outlined below. It is expected that the Nominating and Corporate Governance Committee will have direct input from the Chairman of the Board, the Chief Executive Officer and, if one is appointed, the Lead Director.

Criteria for Nomination as a Director

General Criteria

1. Nominees should have a reputation for integrity, honesty and adherence to high ethical standards.
2. Nominees should have demonstrated business acumen, experience and ability to exercise sound judgments in matters that relate to the current and long-term objectives of the Company and should be willing and able to contribute positively to the decision-making process of the Company.
3. Nominees should have a commitment to understand the Company and its industry and to regularly attend and participate in meetings of the Board and its committees.
4. Nominees should have the interest and ability to understand the sometimes conflicting interests of the various constituencies of the Company, which include stockholders, employees, customers, governmental units, creditors and the general public, and to act in the interests of all stockholders.
5. Nominees should not have, nor appear to have, a conflict of interest that would impair the nominee’s ability to represent the interests of all the Company’s stockholders and to fulfill the responsibilities of a director.
6. Nominees shall not be discriminated against on the basis of race, religion, national origin, sex, sexual orientation, disability or any other basis proscribed by law. The value of diversity on the Board should be considered.

Application of Criteria to Existing Directors

The re-nomination of existing directors should not be viewed as automatic, but should be based on continuing qualification under the criteria set forth above. In addition, the Nominating and Corporate Governance Committee shall consider the existing directors’ performance on the Board and any committee, which shall include consideration of the extent to which the directors undertook continuing director education.

Criteria for Composition of the Board

The backgrounds and qualifications of the directors considered as a group should provide a significant breadth of experience, knowledge and abilities that shall assist the Board in fulfilling its responsibilities.

The Nominating and Corporate Governance Committee's process for evaluating nominees for director, including nominees recommended by stockholders, is to consider their skills, character and professional ethics, judgment, leadership experience, business experience and acumen, familiarity with relevant industry issues, national and international experience, and other relevant criteria as they may contribute to the Company's success. This evaluation is performed in light of the Committee's views as to what skill set and other characteristics would most complement those of the current directors, including the diversity (principally, of education and backgrounds), age, skills and experience of the Board as a whole.

In order to recommend a candidate for consideration by the Nominating and Corporate Governance Committee, a stockholder must provide the Committee with the candidate's name, background and relationship with the proposing stockholder, a brief statement outlining the reasons the candidate would be an effective director of the Company and information relevant to the considerations described above. Such information should be sent to the Nominating and Corporate Governance Committee of Dynasil Corporation of America, 313 Washington Street, Suite 403, Newton, MA 02458; Attn: Corporate Secretary. The Nominating and Corporate Governance Committee may seek further information from or about the candidate, or the stockholder making the recommendation, including information about all business and other relationships between the candidate and the stockholder.

Directors' Compensation

Each of our non-employee directors receives an annual retainer of $50,000, a minimum of 50% of which is required to be paid in the form of equity, with the remaining 50% being paid in cash or equity, in any ratio, at the director's election. The Chairman and Audit Committee Chairman are paid additional annual cash retainers of $20,000 and $10,000, respectively, in recognition of the added responsibility associated with these positions. Our directors also receive reimbursement of out-of-pocket expenses incurred in attending Board and committee meetings.

Equity is given as director compensation in either quarterly stock grants at market price or options to purchase stock with either a) a three year term, granted at thirty-three percent (33%) above market price, or b) a five year term, granted at fifty percent (50%) above market price.

Directors' Compensation for Fiscal Year Ended September 30, 2019

Pursuant to our Director Compensation Policy, during fiscal year 2019, each of our non-employee directors received total annual compensation of $50,000, 50% of which is payable in equity of the Company and the remaining 50% of which is payable at the director's election in either cash or equity of the Company. We do not pay our directors additional retainers for their service on Board committees, other than for service as chair of the Audit Committee, as described above.

The table below summarizes the compensation paid to, or earned by, our non-employee directors for the twelve months ended September 30, 2019. Mr. Sulick, our President and Chief Executive Officer, does not receive any compensation for his Board service beyond the compensation he receives as an executive officer of the Company.

Name	Fees Earned or Paid In Cash ($)	Stock Awards ($)(1)	Total ($)
Craig Dunham (2)	25,000	25,000	50,000
Lawrence Fox (2)	-	50,000	50,000
William Hagan (2)	25,000	25,000	50,000
David Kronfeld (2)	-	50,000	50,000
Thomas Leonard (2)	25,000	25,000	50,000
Alan Levine (2)	30,000	30,000	60,000

(1) Represents the aggregate grant date fair value of the stock awards received by the director during fiscal year 2019 determined in accordance with FASB ASC Topic 718. Assumptions used in the calculation of these amounts are included in footnote 10 to our audited financial statements for the fiscal year ended September 30, 2019 included in this Annual Report on Form 10-K.

(2) During fiscal year 2019, the six non-employee directors were asked to specify whether they wished to receive the equity portion of their director compensation and any equity portion of the electable 50% of their compensation in common stock grants or stock options. All of the non-employee directors elected to receive the equity component of their 2019 compensation in quarterly stock grants. In regards to the electable 50% of their compensation, Mr. Dunham, Dr. Hagan, Mr. Leonard, and Mr. Levine chose to receive the electable component of their compensation entirely in cash. Mr. Fox and Mr. Kronfeld chose to receive the electable component of their director compensation in quarterly stock grants. The quarterly stock grants for the 2019 fiscal year were made on October 1, 2018 at the grant date closing market price of $1.29 per share, on January 2, 2019 at the grant date closing market price of $0.89 per share, on April 1, 2019 at the grant date closing market price of $1.02 per share, and on July 2, 2019 at the grant date closing market price of $1.00 per share.

(3) On February 1, 2016, Mr. Leonard was granted an option to purchase 16,129 shares of Xcede Technologies, Inc. common stock at the option price of $1.00 per share in recognition of his service as a member of the Xcede board of directors. Twenty-five percent (25%) of this option vested on February 1, 2017 and an additional 3.125% of the option vested each month thereafter. This option fully vested on February 28, 2019.

Equity Compensation Plan Information

The Company adopted Stock Incentive Plans in 1996 and 1999 that permit, among other incentives, grants and options to officers, directors, employees and consultants to purchase up to 3,750,000 shares of the Company’s common stock. At the February 3, 2010 annual meeting, a new Stock Incentive Plan was adopted by the stockholders which permits up to 6,000,000 shares of the Company’s common stock to be issued through this plan. Options granted pursuant to the 2010 plan were exercisable at or above the common stock’s fair market value on the date of grant and generally vest over a three to five-year period. At September 30, 2019, 2,962,827 shares of common stock were available for issuance under the 2010 plan and 95,602 stock options were outstanding, with an exercise prices of $1.80. For the 2010 plan, options have been granted at exercise prices ranging from $1.80 to $7.32 per share.

At September 30, 2019, no options remain outstanding that were issued through the 1996 or 1999 Stock Incentive Plans.

On December 12, 2019, the 2010 Stock Incentive Plan was replaced with the 2019 Stock Incentive Plan by a vote of the Company’s Board of Directors. The 2019 plan will be presented to the Company’s stockholders for approval at the Company’s 2020 Annual Meeting of Stockholders. The 2019 Plan authorizes the issuance of the 2,762,827 shares of common stock remaining in the 2010 Stock Incentive Plan when the 2010 Plan was replaced. For a summary description of the 2019 Plan, see Item 9B herein.

On December 13, 2018, the Company adopted a Second Amended and Restated Employee Stock Purchase Plan (the “ESPP”). The existing ESPP was amended to extend the termination date to September 30, 2030. The ESPP permits substantially all employees to purchase common stock at a purchase price of 85% of the fair market value of the shares. As of September 30, 2019, under the ESPP, a total of 450,000 shares have been reserved for issuance. Of these, 368,204 shares have been purchased by employees at purchase prices ranging from $.06 to $4.445 per share. During any twelve-month calendar period, employees are limited to a total of $20,000 of stock purchases. On May 1, 2019, the Board of Directors voted to suspend the ESPP following the purchases made under the ESPP on June 29, 2019. The ESPP remained suspended as of September 30, 2019.

Plan Category	Number of securities to be issued upon 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 future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	95,602	$ 1.80	2,864,225(1)
Equity compensation plans not approved by security holders	none	none	none

(1) As of September 30, 2019, consists of 2,962,827 shares of common stock available for issuance in the 2010 Stock Incentive Plan and 99,249 shares of common stock available for issuance under the suspended Amended and Restated Employee Stock Purchase Plan.

Director Compensation and Board Changes for Fiscal Year 2020

Subsequent to the previously reported August 19, 2019 filing of a Form 25 with the Securities and Exchange Commission (the "SEC") to indicate our intention to terminate the registration of our common stock with the SEC and the August 29, 2019 filing of a Form 15 with the SEC to de-list our common stock from the Nasdaq Capital Market, the Board of Directors elected to amend their compensation plan, as well as make other changes in Board and Committee size, as the Company is no longer required to comply with the listing requirements of the Nasdaq Capital Market. Effective October 1, 2019, director compensation no longer includes an equity component. Director compensation is now paid in monthly cash payments of $4,167. Additionally, the Board Chairman and the Audit Committee Chairman no longer receive additional compensation for those roles.

The Board also decided to reduce the number of directors to six; and Mr. Alan Levine stepped down from the Board on September 30, 2019. Additionally, the size of the Audit and Compensation Committees has been reduced to two members each.

ITEM 11. EXECUTIVE COMPENSATION

Executive Officer Compensatory Arrangements

Fiscal Year 2019 Summary Compensation Table

Name and Position	Fiscal Year	Salary ($)	Bonus ($)	Stock Awards ($) (1)(2)	All Other Compensation ($) (3)	Total ($)
Peter Sulick	**2019**	319,635	69,463	77,400	45,326	511,824
Chairman, President &	**2018**	309,135	59,838	99,225	42,800	510,998
Chief Executive Officer						
Robert Bowdring	**2019**	200,000	24,000	-	-	224,000
Former Chief Financial Officer*	**2018**	199,819	18,000	-	-	217,819

* Mr. Bowdring resigned from this position and became Vice President of Financial Compliance on October 1, 2019.

(1) Represents the aggregate grant date fair value of the restricted stock awards received by the executive officer during the year indicated, determined in accordance with FASB ASC Topic 718.

(2) Mr. Sulick's stock awards during fiscal year 2019 represent four fully vested stock grants of 20,000 shares each issued as quarterly compensation on January 7, 2019, March, 1, 2019, May 30, 2019, and August 28, 2019 all under the Company's 2010 Stock Incentive Plan valued at a total of $77,400. Mr. Sulick's stock awards during fiscal year 2018 represent four fully vested stock grants of 20,000 shares each issued as quarterly compensation on January 8, 2018, March, 1, 2018, May 30, 2018, and August 29, 2018 all under the Company's 2010 Stock Incentive Plan valued at a total of $99,225.

(3) Amount consists of reimbursement for living expenses and local transportation costs while in the area of our corporate headquarters in Newton, Massachusetts and for travel between Massachusetts and Mr. Sulick's place of residency.

Peter Sulick

The Board has determined that the Company's Chief Executive Officer and President annual compensation should include both a cash and a stock component. All compensatory stock awards granted to Mr. Sulick in the years ended September 30, 2019 and 2018 were issued from the Company's 2010 Stock Incentive Plan.

For the years ended September 30, 2019 and 2018, Mr. Sulick's compensation consisted of a base cash salary of $320,000 and $310,000, respectively, and quarterly stock awards of 20,000 shares each.

During fiscal years 2019 and 2018, Mr. Sulick's compensation also included the opportunity to earn a performance bonus payable in cash based on the achievement of quarterly performance goals and the Board of Directors' periodic qualitative assessment of the Company's progress on its strategic objectives. Cash bonus amounts were payable quarterly. Actual amounts payable to Mr. Sulick in each quarter were determined by the extent to which the target performance goals were met or exceeded.

Mr. Sulick's target cash bonuses for the years ended September 30, 2019 and 2018 were set at $80,000 and $77,625, respectively. These target bonuses were dependent on the achievement of quarterly target cash bonus performance criteria. If performance had exceeded target goals by specified amounts, the annual cash bonus opportunities increased to $108,000 and $104,794, respectively.

For his fiscal year 2018 performance bonus, Mr. Sulick earned a total of $63,652 in cash, of which $39,589 was paid to him during the fiscal year, the remainder paid subsequent to the filing of Company's Annual Report on Form 10-K on December 21, 2018.

As of September 30, 2019, Mr. Sulick had been paid a total of $45,400 toward his fiscal year 2019 performance bonus. Mr. Sulick's final cash bonus installment for the 2019 fiscal year was $19,500 and was paid in December of 2019.

For fiscal year 2020, Mr. Sulick's annual base cash salary is $330,000 and a stock compensation component of quarterly stock awards of 20,000 shares each. His annual cash performance bonus opportunity is $99,000 per year, dependent on the achievement of annual performance criteria. If performance exceeds target goals by specified amounts, this cash bonus opportunity increases to $133,650 per year.

Robert Bowdring

Mr. Bowdring served as the Company's Chief Financial Officer from February 1, 2016 until September 30, 2019. During his first year in the position, Mr. Bowdring's annual base cash salary was $185,000 and he was eligible to earn a cash performance bonus of up to twenty-five (25%) percent of his base salary. Additionally, on February 1, 2016, Mr. Bowdring was granted a time-vested restricted stock award of 60,000 shares of the Company's stock. The shares in this grant vested in three equal annual increments, beginning with the grant date.

For both the years ended September 30, 2019 and 2018, Mr. Bowdring's annual base cash salary was $200,000, with a bonus opportunity of 30% of his salary or $60,000, based on specific performance goals for both Mr. Bowdring and the Company. If performance exceeds target goals by specified amounts, this cash bonus opportunity increases to $75,000 per year.

During the years ended September 30, 2019 and 2018, Mr. Bowdring received $24,000 and $18,000, respectively, for his fiscal years 2018 and 2017 bonus awards. Mr. Bowdring's bonus for the 2019 fiscal year was $19,500 and was paid in December of 2019.

Holly Hicks

Ms. Hicks was named Chief Financial Officer of the Company on October 1, 2019. Her base cash salary for fiscal year 2020 will be $185,000. Her target cash performance bonus opportunity is 30% of her salary or $55,500.

None of the Company's executive officers had outstanding equity awards at September 30, 2019.

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

Name and Address Of Beneficial Owner	No. of Shares and nature of Beneficial Ownership(1)	Percent of Class
Peter Sulick (5)	3,338,730	19.1%
Craig Dunham (2)	2,051,045	11.7%
The Gerald Entine 1988 Family Trust, 6747 Diversity Road, Middleton, WI 53562	1,396,325	8.0%
Lawrence Fox (3),(5)	309,222	1.8%
David Kronfeld	300,210	1.7%
Thomas Leonard	212,943	1.2%
William Hagan (4),(5)	177,644	*
Alan Levine	143,585	*
Robert Bowdring	67,558	*
All Officers and Directors as a Group (8 persons) (1)	**6,600,937**	**37.8%**

* Represents beneficial ownership of less than 1% of the outstanding shares of common stock.

(1) The numbers and percentages shown include shares of common stock that the identified person has a right to acquire within 60 days of September 30, 2019. In calculating the percentage of ownership, such shares are deemed to be outstanding for the purpose of computing the percentage share of common stock owned by such person, but are not deemed to be outstanding for the purpose of computing the percentage share of common stock owned by any other stockholders. The number of shares outstanding on September 30, 2019 was 14,802,905.

(2) Includes 1,000,000 shares of common stock held by the Dunham Family Limited Liability Company of which Mr. Dunham is the sole managing member.

(3) Includes options to purchase 95,602 shares of the Company's common stock at $1.80 per share.

(4) Includes shares held in the name of his family trust of which he is a trustee.

(5) As of September 30, 2019, Mr. Sulick and family own the equivalent of 11.4% of the Company's Xcede Technologies, Inc. subsidiary's ("Xcede") outstanding common stock, Mr. Fox owns the equivalent of 1.7% of Xcede's outstanding common stock, Dr. Hagan owns the equivalent of 0.3% of Xcede's outstanding common stock, and The Gerald Entine 1988 Family Trust owns the equivalent of 1.1% of Xcede's outstanding common stock. See "Related Party Transactions" for more information.

Corporate Structure Changes Related to Stockholder Matters

As previously disclosed, following a special meeting of Dynasil's stockholders on August 7, 2019, the Company filed certificates of amendment to our certificate of incorporation and subsequently effected a 1-for-8,000 reverse stock split of our common stock, par value $0.0005 per share (the "Reverse Stock Split"), followed immediately by a 8,000-for-1 forward stock split of its common stock (the "Forward Stock Split," and together with the Reverse Stock Split, the "Transaction"). In regards to the Transaction, stockholders with fewer than 8,000 shares of Dynasil common stock held of record immediately before the Transaction became entitled to receive cash payments in lieu of fractional shares equal to $1.15 per pre-Reverse Stock Split share. As a result of the Transaction, 2,825,268 shares of common stock were due to be exchanged for cash, totaling approximately $3,249,000.

As a result of the subsequent filings with the SEC of a Form 25 and Forms 15, following the filing of this Annual Report on Form 10-K for the year ended September 30, 2019, the Company will cease to file annual, quarterly, current, and other reports and documents with the SEC and stockholders will cease to receive annual reports and proxy statements.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Related Party Transactions

During the years ended September 30, 2019 and 2018, building lease payments of $1,160,000 and $1,140,000, respectively were paid to Charles River Realty which is owned by The Gerald Entine 1988 Family Trust (the "Entine Trust"). The late Dr. Entine was a former director and employee of the Company, as well as a greater than 5% beneficial owner of the Company's stock until his death in May of 2018. The Entine Trust retains a greater than 5% beneficial ownership in the Company's stock.

In October 2013, the Company's subsidiary, Dynasil Biomedical, formed Xcede Technologies, Inc., a joint venture with Mayo Clinic, to spin out and separately fund the development of its tissue sealant technology. As of September 30, 2019, officers and directors of the Company collectively own the equivalent of 13.4% of Xcede's outstanding common stock.

Patricia Tuohy is the Company's Vice President of Corporate Development. During the year ended September 30, 2019, Ms. Tuohy worked a partial year and earned $163,000 in compensation. During the year ended September 30, 2018, Ms. Tuohy worked a partial year in this position and earned $185,000 in compensation. Ms. Tuohy is Peter Sulick's daughter.

Director Independence

The Board has determined that all directors, other than Mr. Sulick, are independent under the SEC rules, based on information known to the Company and on the annual questionnaire completed by each director.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Accountants Fees

RSM US LLP was our independent registered public accounting firm for fiscal years 2019 and 2018. During the period covering the fiscal years ended September 30, 2019 and 2018, RSM US LLP performed the following professional services:

(a) Audit Fees

The aggregated fees billed or to be billed by RSM US LLP for professional services rendered for the audit of the Company's consolidated financial statements included in its Annual Report on Form 10-K for the year ended September 30, 2019, the review of the consolidated financial statements included in the Company's Quarterly Reports on Form 10-Q during that fiscal year and out-of-pocket expenses are $367,000. The aggregated fees billed or to be billed by RSM US LLP for professional services rendered for the audit of the Company's consolidated financial statements included in its Annual Report on Form 10-K for the year ended September 30, 2018, the review of the consolidated financial statements included in the Company's Quarterly Reports on Form 10-Q during that fiscal year and out-of-pocket expenses are $441,000.

(b) Tax Fees

During fiscal years 2019 and 2018, the Company incurred fees of $74,000 and $143,000, respectively, for professional services rendered by RSM US LLP for tax compliance and advisory services.

(c) Pre-approval Policies and Procedures

The Board of Directors has adopted a pre-approval policy requiring that the Audit Committee pre-approve the audit and non-audit services performed by the independent auditor in order to assure that the provision of such services do not impair the auditor's independence. All auditor fees were pre-approved during fiscal years 2019 and 2018.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) The financial statements are included under Part II, Item 8 of this Report.

(2) Schedules are omitted because they are not applicable, or are not required, or because the information is included in the consolidated financial statements and the notes thereto.

(3) EXHIBITS –

The exhibits are listed below under Part IV, Item 15(b) of this Report.

(b) EXHIBITS

3.01 Certificate of Incorporation of the Company, filed as Exhibit A to the Definitive Proxy Statement filed on January 4, 2008 and incorporated herein by reference.

3.02 Certificate of Merger of Foreign Corporation into a Domestic Corporation, dated February 29, 2008, filed as Exhibit 3.02 to Form 8-A filed on December 16, 2010 and incorporated herein by reference.

3.03 Certificate of Amendment of Certificate of Incorporation, dated March 6, 2008, filed as Exhibit 3.03 to Form 8-A filed on December 16, 2010 and incorporated herein by reference.

3.04 Certificate of Amendment of Certificate of Incorporation, dated February 26, 2009, filed as Exhibit 3.1 to Form 10-Q filed on May 15, 2009 and incorporated herein by reference.

3.05 Certificate of Amendment of Certificate of Incorporation, dated August 7, 2019, filed as Exhibit 3.1 to Form 8-K filed on August 7, 2019 and incorporated herein by reference.

3.06 Certificate of Amendment of Certificate of Incorporation, dated August 7, 2019, filed as Exhibit 3.2 to Form 8-K filed on August 7, 2019 and incorporated herein by reference.

3.07 Certificate of Designation of Preferred Stock of Dynasil Corporation of America, dated March 27, 2009, filed as Exhibit 3.05 to Form 8-A filed on December 16, 2010 and incorporated herein by reference.

3.08 Bylaws of the Company, filed as Exhibit B to the Definitive Proxy Statement filed on January 4, 2008 and incorporated herein by reference.

10.01* 2010 Stock Incentive Plan, filed as Exhibit 99 to the Definitive Proxy Statement filed on January 5, 2010 and incorporated herein by reference.

10.02 Loan and Security Agreement by and between Middlesex Savings Bank, as Lender, and the Company, as Borrower, dated as of May 1, 2014, filed as Exhibit 10.1 to Form 8-K filed on May 2, 2014 and incorporated herein by reference.

10.03 Revolving Line of Credit by and between Middlesex Savings Bank, as Lender, and the Company, as Borrower, dated as of May 1, 2014, filed as Exhibit 10.2 to Form 8-K filed on May 2, 2014 and incorporated herein by reference.

10.04 Loan Document Modification Agreement between the Company and Middlesex Savings Bank, dated September 29, 2015, filed as Exhibit 10.04 to Form 10-K filed on December 17, 2015 and incorporated herein by reference.

10.05 Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated July 31, 2012, filed as Exhibit 10.1 to Form 8-K filed on August 6, 2012 and incorporated herein by reference.

10.06 Amendment No. 1 to Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated September 26, 2013, filed as Exhibit 10.19 to Form 10-K filed on December 20, 2013 and incorporated herein by reference.

10.07 Amendment to Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated October 1, 2015, filed as Exhibit 10.07 to Form 10-K filed on December 17, 2015 and incorporated herein by reference.

10.08 Lease Agreement between RMD Instruments, Inc. and Charles River Realty, dated July 1, 2008, filed as Exhibit 10.5 to Form 8-K filed on July 7, 2008 and incorporated herein by reference.

10.09 Lease Agreement between Radiation Monitoring Devices, Inc. and Charles River Realty, dated July 1, 2008, filed as Exhibit 10.6 to Form 8-K filed on July 7, 2008 and incorporated herein by reference.

10.14* Second Amended and Restated Employee Stock Purchase Plan, dated December 13, 2018, filed as Exhibit 10.14 to Form 10-K filed on December 21, 2018 and incorporated herein by reference.

10.15 Omnibus Amendment to Leases, dated December 6, 2012, filed as Exhibit 10.1 to Form 8-K filed on December 12, 2012 and incorporated herein by reference.

10.16* Employment Letter dated November 13, 2015 between the Company and Robert J. Bowdring, filed as Exhibit 10.1 to Form 8-K filed on November 13, 2015 and incorporated herein by reference.

10.17* Employment Letter dated September 27, 2019 between the Company and Holly A. Hicks, filed as Exhibit 10.1 to Form 8-K filed on September 27, 2019 and incorporated herein by reference.

10.18 Term Note Agreement between the Company and Middlesex Savings Bank, dated February 1, 2016, filed as Exhibit 10.1 to Form 10-Q filed on February 11, 2016 and incorporated herein by reference.

10.19 Third Amendment to the Loan and Security Agreement between the Company and Middlesex Savings Bank, dated May 16, 2017, filed as Exhibit 10.01 to Form 10-Q filed on August 14, 2017 and incorporated herein by reference.

10.20 Line of Credit by and between Middlesex Savings Bank, as Lender, and the Company, as Borrower, dated as of May 16, 2017, filed as Exhibit 10.02 to Form 10-Q filed on August 14, 2017 and incorporated herein by reference.

10.21 Second Amendment to Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated January 3, 2018, filed as Exhibit 10.01 to Form 10-Q filed on February 13, 2018 and incorporated herein by reference.

10.22 Equipment Line of Credit Term Note between the Company and Middlesex Savings Bank, dated July 31, 2018 and filed as Exhibit 10.22 to Form 10-K filed on December 21, 2018 and incorporated herein by reference.

10.23 Loan Document Modification Agreement to the Line of Credit between the Company and Middlesex Savings Bank, dated August 9, 2018 and filed as Exhibit 10.23 to Form 10-K filed on December 21, 2018 and incorporated herein by reference.

10.24 Equipment Line of Credit Note between the Company and Middlesex Savings Bank, dated August 13, 2018 and filed as Exhibit 10.24 to Form 10-K filed on December 21, 2018 and incorporated herein by reference.

10.25 Amendment to Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated November 27, 2018 and filed as Exhibit 10.25 to Form 10-K filed on December 21, 2018 and incorporated herein by reference.

10.26 Equipment Line of Credit Term Note between the Company and Middlesex Savings Bank, dated April 30, 2019 and filed as Exhibit 10.01 to Form 10-Q filed on May 14, 2019 and incorporated herein by reference.

10.27 Amendment to the Loan Agreement between the Company and Middlesex Savings Bank, dated August 5, 2019 and filed as Exhibit 10.01 to Form 10-Q filed on August 13, 2019 and incorporated herein by reference.

10.28 Note Purchase Agreement between the Company and Massachusetts Capital Resource Company, dated August 6, 2019 and filed as Exhibit 10.02 to Form 10-Q filed on August 13, 2019 and incorporated herein by reference.

10.29* 2019 Stock Incentive Plan, dated December 12, 2019 and filed herewith.

10.30 Loan Document Modification Agreement to the Line of Credit between the Company and Middlesex Savings Bank, dated December 23, 2019 and filed herewith.

10.31 Equipment Line of Credit Note between the Company and Middlesex Savings Bank, dated December 23, 2019 and filed herewith.

21.1 Subsidiaries of the Company, filed herewith.

31.1(a) Rule 13a-14(a)/15d-14(a) Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.

31.1(b) Rule 13a-14(a)/15d-14(a) Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.

32.1 Section 1350 Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished but not filed for purposes of the Securities Exchange Act of 1934) furnished herewith.

101** The following materials from the Company's Annual Report on Form 10-K for the year ended September 30, 2019, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets as of September 30, 2019 and September 30, 2018, (ii) Consolidated Statements of Operations and Comprehensive Income and Loss for the years ended September 30, 2019 and 2018, (iii) Consolidated Statements of Changes in Stockholders' Equity for the years ended September 30, 2019 and 2018; (iv) Consolidated Statements of Cash Flows for the years ended September 30, 2019 and 2018, and (v) Notes to Consolidated Financial Statements, tagged as blocks of text.

---

* Management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dynasil Corporation of America

BY: /s/ Peter Sulick
Peter Sulick, President and CEO (Principal Executive Officer)

DATED: December 26, 2019

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

Signature	Title	Date
BY: /s/ Holly A. Hicks Holly A. Hicks	Chief Financial Officer (Principal Financial and Accounting Officer)	December 26, 2019
BY: /s/ Peter Sulick Peter Sulick	Chairman of the Board of Directors, President, Chief Executive Officer (Principal Executive Officer)	December 26, 2019
BY: /s/ Craig Dunham Craig Dunham	Director	December 26, 2019
BY: /s/ Lawrence Fox Lawrence Fox	Director	December 26, 2019
BY: /s/ William K. Hagan William K. Hagan	Director	December 26, 2019
BY: /s/ David Kronfeld David Kronfeld	Director	December 26, 2019
BY: /s/ Thomas Leonard Thomas Leonard	Director	December 26, 2019

Exhibit 10.29

DYNASIL CORPORATION OF AMERICA

2019 EMPLOYEE, DIRECTOR AND CONSULTANT EQUITY INCENTIVE PLAN

1. DEFINITIONS.

Unless otherwise specified or unless the context otherwise requires, the following terms, as used in this Dynasil Corporation of America 2020 Employee, Director and Consultant Equity Incentive Plan, have the following meanings:

Administrator means the Board of Directors, unless it has delegated power to act on its behalf to the Committee, in which case the term “Administrator” means the Committee.

Affiliate means a corporation or other entity which, for purposes of Section 424 of the Code, is a parent or subsidiary of the Company, direct or indirect.

Agreement means an agreement between the Company and a Participant pertaining to a Stock Right delivered pursuant to the Plan, in such form as the Administrator shall approve.

Board of Directors means the Board of Directors of the Company.

Cause means, with respect to a Participant (a) dishonesty with respect to the Company or any Affiliate, (b) insubordination, substantial malfeasance or non-feasance of duty, (c) unauthorized disclosure of confidential information, (d) breach by a Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or similar agreement between the Participant and the Company or any Affiliate, and (e) conduct substantially prejudicial to the business of the Company or any Affiliate; provided, however, that any provision in an agreement between a Participant and the Company or an Affiliate, which contains a conflicting definition of Cause for termination and which is in effect at the time of such termination, shall supersede this definition with respect to that Participant. The determination of the Administrator as to the existence of Cause will be conclusive on the Participant and the Company.

Change of Control means the occurrence of any of the following events:

(i) *Ownership*. Any “Person” (as such term is used in Sections 13(d) and 14(d) of the Exchange Act) becomes the “Beneficial Owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the total voting power represented by the Company’s then outstanding voting securities (excluding for this purpose any such voting securities held by the Company or its Affiliates or by any employee benefit plan of or cancellation the Company) other than as a result of an acquisition of securities directly from the Company or as a result of an acquisition or cancellation of voting securities by the Company which reduces the voting rights attached to the total number of voting securities; or

(ii) *Merger/Sale of Assets*. (A) A merger or consolidation of the Company whether or not approved by the Board of Directors, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or the parent of such entity) more than 50% of the total voting power represented by the voting securities of the Company or such surviving entity or parent of such corporation, as the case may be, outstanding immediately after such merger or consolidation; or (B) the sale or disposition by the Company of all or substantially all of the Company's assets in a transaction requiring stockholder approval; or

(iii) *Change in Board Composition*. A change in the composition of the Board of Directors, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" shall mean directors who either (A) are directors of the Company as of December 12, 2019, or (B) are elected, or nominated for election, to the Board of Directors with the affirmative votes of at least a majority of the Incumbent Directors at the time of such election or nomination (but shall not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company).

(iv) "Change of Control" shall be interpreted, if applicable, in a manner, and limited to the extent necessary, so that it will not cause adverse tax consequences under Section 409A of the Code.

Code means the United States Internal Revenue Code of 1986, as amended including any successor statute, regulation and guidance thereto.

Committee means the committee of the Board of Directors, if any, to which the Board of Directors has delegated power to act under or pursuant to the provisions of the Plan.

Common Stock means shares of the Company's common stock, $.0005 par value per share.

Company means Dynasil Corporation of America, a Delaware corporation.

Consultant means any natural person who is an advisor or consultant who provides bona fide services to the Company or its Affiliates, provided that such services are not in connection with the offer or sale of securities in a capital raising transaction, and do not directly or indirectly promote or maintain a market for the Company's or its Affiliates' securities.

Disability or Disabled means permanent and total disability as defined in Section 22(e)(3) of the Code.

Employee means any employee of the Company or of an Affiliate (including, without limitation, an employee who is also serving as an officer or director of the Company or of an Affiliate), designated by the Administrator to be eligible to be granted one or more Stock Rights under the Plan.

Exchange Act means the United States Securities Exchange Act of 1934, as amended.

Fair Market Value of a Share of Common Stock means:

(1) If the Common Stock is listed on a national securities exchange or traded in the over-the-counter market and sales prices are regularly reported for the Common Stock, the closing or, if not applicable, the last price of the Common Stock on the composite tape or other comparable reporting system for the trading day on the applicable date and if such applicable date is not a trading day, the last market trading day prior to such date;

(2) If the Common Stock is not traded on a national securities exchange but is traded on the over-the-counter market, if sales prices are not regularly reported for the Common Stock for the trading day referred to in clause (1), and if bid and asked prices for the Common Stock are regularly reported, the mean between the bid and the asked price for the Common Stock at the close of trading in the over-the-counter market for the most recent trading day on which Common Stock was traded on the applicable date and if such applicable date is not a trading day, the last market trading day prior to such date; and

(3) If the Common Stock is neither listed on a national securities exchange nor traded in the over-the-counter market, such value as the Administrator, in good faith, shall determine in compliance with applicable laws.

ISO means a stock option intended to qualify as an incentive stock option under Section 422 of the Code.

Non-Qualified Option means a stock option which is not intended to qualify as an ISO.

Option means an ISO or Non-Qualified Option granted under the Plan.

Participant means an Employee, director or Consultant of the Company or an Affiliate to whom one or more Stock Rights are granted under the Plan. As used herein, "Participant" shall include "Participant's Survivors" where the context requires.

Plan means this Dynasil Corporation of America 2020 Employee, Director and Consultant Equity Incentive Plan.

Securities Act means the Securities Act of 1933, as amended.

Shares means shares of the Common Stock as to which Stock Rights have been or may be granted under the Plan or any shares of capital stock into which the Shares are changed or for which they are exchanged within the provisions of Paragraph 3 of the Plan. The Shares issued under the Plan may be authorized and unissued shares or shares held by the Company in its treasury, or both.

Stock-Based Award means a grant by the Company under the Plan of an equity award or an equity based award which is not an Option or a Stock Grant.

Stock Grant means a grant by the Company of Shares under the Plan.

Stock Right means a right to Shares or the value of Shares of the Company granted pursuant to the Plan -- an ISO, a Non-Qualified Option, a Stock Grant or a Stock-Based Award.

Survivor means a deceased Participant's legal representatives and/or any person or persons who acquired the Participant's rights to a Stock Right by will or by the laws of descent and distribution.

2. <u>PURPOSES OF THE PLAN.</u>

The Plan is intended to encourage ownership of Shares by Employees and directors of and certain Consultants to the Company and its Affiliates in order to attract and retain such people, to induce them to work for the benefit of the Company or of an Affiliate and to provide additional incentive for them to promote the success of the Company or of an Affiliate. The Plan provides for the granting of ISOs, Non-Qualified Options, Stock Grants and Stock-Based Awards.

3. <u>SHARES SUBJECT TO THE PLAN.</u>

(a) The number of Shares which may be issued from time to time pursuant to this Plan shall be the sum of: (i) 2,762,827 shares of Common Stock and (ii) any shares of Common Stock that are represented by awards granted under the Company’s 2010 Stock Incentive Plan that are forfeited, expire or are cancelled without delivery of shares of Common Stock or which result in the forfeiture of shares of Common Stock back to the Company on or after December 12, 2019, or the equivalent of such number of Shares after the Administrator, in its sole discretion, has interpreted the effect of any stock split, stock dividend, combination, recapitalization or similar transaction in accordance with Paragraph 24 of this Plan; provided, however, that no more than 295,602 Shares shall be added to the Plan pursuant to subsection (ii).

(b) If an Option ceases to be “outstanding”, in whole or in part (other than by exercise), or if the Company shall reacquire at not more than its original issuance price any Shares issued pursuant to a Stock Grant or Stock-Based Award, or if any Stock Right expires or is forfeited, cancelled, or otherwise terminated or results in any Shares not being issued, the unissued or reacquired Shares which were subject to such Stock Right shall again be available for issuance from time to time pursuant to this Plan. Notwithstanding the foregoing, if a Stock Right is exercised, in whole or in part, by tender of Shares or if the Company or an Affiliate’s tax withholding obligation is satisfied by withholding Shares, the number of Shares deemed to have been issued under the Plan for purposes of the limitation set forth in Paragraph 3(a) above shall be the number of Shares that were subject to the Stock Right or portion thereof, and not the net number of Shares actually issued. However, in the case of ISOs, the foregoing provisions shall be subject to any limitations under the Code.

4. <u>ADMINISTRATION OF THE PLAN.</u>

The Administrator of the Plan will be the Board of Directors, except to the extent the Board of Directors delegates its authority to the Committee, in which case the Committee shall be the Administrator. Subject to the provisions of the Plan, the Administrator is authorized to:

(a) Interpret the provisions of the Plan and all Stock Rights and to make all rules and determinations which it deems necessary or advisable for the administration of the Plan;

(b) Determine which Employees, directors and Consultants shall be granted Stock Rights;

(c) Determine the number of Shares for which a Stock Right or Stock Rights shall be granted.

(d) Specify the terms and conditions upon which a Stock Right or Stock Rights may be granted;

(e) Amend any term or condition of any outstanding Stock Right, including, without limitation, to reduce or increase the exercise price or purchase price, accelerate the vesting schedule or extend the expiration date, provided that (i) such term or condition as amended is permitted by the Plan; (ii) any such amendment shall not impair the rights of a Participant under any Stock Right previously granted without such Participant’s consent or in the event of death of the Participant the Participant’s Survivors; and (iii) any such amendment shall be made only after the Administrator determines whether such amendment would cause any adverse tax consequences to the Participant, including, but not limited to, the annual vesting limitation contained in Section 422(d) of the Code and described in Paragraph 6(b)(iv) below with respect to ISOs and pursuant to Section 409A of the Code;

(f) Buy out for a payment in cash or Shares, a Stock Right previously granted and/or cancel any such Stock Right and grant in substitution therefor other Stock Rights, covering the same or a different number of Shares and having an exercise price or purchase price per share which may be lower or higher than the exercise price or purchase price of the cancelled Stock Right, based on such terms and conditions as the Administrator shall establish and the Participant shall accept; and

(g) Adopt any sub-plans applicable to residents of any specified jurisdiction as it deems necessary or appropriate in order to comply with or take advantage of any tax or other laws applicable to the Company, any Affiliate or to Participants or to otherwise facilitate the administration of the Plan, which sub-plans may include additional restrictions or conditions applicable to Stock Rights or Shares issuable pursuant to a Stock Right;

provided, however, that all such interpretations, rules, determinations, terms and conditions shall be made and prescribed in the context of potential tax consequences under Section 409A of the Code and preserving the tax status under Section 422 of the Code of those Options which are designated as ISOs. Subject to the foregoing, the interpretation and construction by the Administrator of any provisions of the Plan or of any Stock Right granted under it shall be final, unless otherwise determined by the Board of Directors, if the Administrator is the Committee. In addition, if the Administrator is the Committee, the Board of Directors may take any action under the Plan that would otherwise be the responsibility of the Committee.

To the extent permitted under applicable law, the Board of Directors or the Committee may allocate all or any portion of its responsibilities and powers to any one or more of its members and may delegate all or any portion of its responsibilities and powers to any other person selected by it. The Board of Directors or the Committee may revoke any such allocation or delegation at any time.

5. ELIGIBILITY FOR PARTICIPATION.

The Administrator will, in its sole discretion, name the Participants in the Plan; provided, however, that each Participant must be an Employee, director or Consultant of the Company or of an Affiliate at the time a Stock Right is granted. Notwithstanding the foregoing, the Administrator may authorize the grant of a Stock Right to a person not then an Employee, director or Consultant of the Company or of an Affiliate; provided, however, that the actual grant of such Stock Right shall be conditioned upon such person becoming eligible to become a Participant at or prior to the time of the execution of the Agreement evidencing such Stock Right. ISOs may be granted only to Employees who are deemed to be residents of the United States for tax purposes. Non-Qualified Options, Stock Grants and Stock-Based Awards may be granted to any Employee, director or Consultant of the Company or an Affiliate. The granting of any Stock Right to any individual shall neither entitle that individual to, nor disqualify him or her from, participation in any other grant of Stock Rights or any grant under any other benefit plan established by the Company or any Affiliate for Employees, directors or Consultants.

6. TERMS AND CONDITIONS OF OPTIONS.

Each Option shall be set forth in writing in an Option Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Administrator may provide that Options be granted subject to such terms and conditions, consistent with the terms and conditions specifically required under this Plan, as the Administrator may deem appropriate including, without limitation, subsequent approval by the shareholders of the Company of this Plan or any amendments thereto. The Option Agreements shall be subject to at least the following terms and conditions:

(a) Non-Qualified Options: Each Option intended to be a Non-Qualified Option shall be subject to the terms and conditions which the Administrator determines to be appropriate and in the best interest of the Company, subject to the following minimum standards for any such Non-Qualified Option:

(i) Exercise Price: Each Option Agreement shall state the exercise price (per share) of the Shares covered by each Option, which exercise price shall be determined by the Administrator and shall be at least equal to the Fair Market Value per share of the Common Stock on the date of grant of the Option.

(ii) Number of Shares: Each Option Agreement shall state the number of Shares to which it pertains.

(iii) Vesting Periods: Each Option Agreement shall state the date or dates on which it first is exercisable and the date after which it may no longer be exercised, and may provide that the Option rights accrue or become exercisable in installments over a period of months or years, or upon the occurrence of certain performance conditions or the attainment of stated goals or events.

(iv) Additional Conditions: Exercise of any Option may be conditioned upon the Participant's execution of a stockholders agreement in a form satisfactory to the Administrator providing for certain protections for the Company and its other shareholders, including requirements that:

A. The Participant's or the Participant's Survivors' right to sell or transfer the Shares may be restricted; and

B. The Participant or the Participant's Survivors may be required to execute letters of investment intent and must also acknowledge that the Shares will bear legends noting any applicable restrictions.

(v) Term of Option: Each Option shall terminate not more than ten years from the date of the grant or at such earlier time as the Option Agreement may provide.

(b) ISOs: Each Option intended to be an ISO shall be issued only to an Employee who is deemed to be a resident of the United States for tax purposes, and shall be subject to the following terms and conditions, with such additional restrictions or changes as the Administrator determines are appropriate but not in conflict with Section 422 of the Code and relevant regulations and rulings of the Internal Revenue Service:

(i) Minimum standards: The ISO shall meet the minimum standards required of Non-Qualified Options, as described in Paragraph 6(a) above, except subsections (i) and (v) thereunder.

(ii) Exercise Price: Immediately before the ISO is granted, if the Participant owns, directly or by reason of the applicable attribution rules in Section 424(d) of the Code:

A. Ten percent (10%) or less of the total combined voting power of all classes of stock of the Company or an Affiliate, the exercise price per share of the Shares covered by each ISO shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock on the date of grant of the Option; or

B. More than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate, the exercise price per share of the Shares covered by each ISO shall not be less than one hundred ten percent (110%) of the Fair Market Value per share of the Common Stock on the date of grant of the Option.

(iii) Term of Option: For Participants who own:

A. Ten percent (10%) or less of the total combined voting power of all classes of stock of the Company or an Affiliate, each ISO shall terminate not more than ten years from the date of the grant or at such earlier time as the Option Agreement may provide; or

B. More than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate, each ISO shall terminate not more than five (5) years from the date of the grant or at such earlier time as the Option Agreement may provide.

(iv) Limitation on Yearly Exercise: The Option Agreements shall restrict the amount of ISOs which may become exercisable in any calendar year (under this or any other ISO plan of the Company or an Affiliate) so that the aggregate Fair Market Value (determined on the date each ISO is granted) of the stock with respect to which ISOs are exercisable for the first time by the Participant in any calendar year does not exceed one hundred thousand dollars ($100,000).

7. TERMS AND CONDITIONS OF STOCK GRANTS.

Each Stock Grant to a Participant shall state the principal terms in an Agreement duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Agreement shall be in a form approved by the Administrator and shall contain terms and conditions which the Administrator determines to be appropriate and in the best interest of the Company, subject to the following minimum standards:

(a) Each Agreement shall state the purchase price per share, if any, of the Shares covered by each Stock Grant, which purchase price shall be determined by the Administrator but shall not be less than the minimum consideration required by the Delaware General Corporation Law, if any, on the date of the grant of the Stock Grant;

(b) Each Agreement shall state the number of Shares to which the Stock Grant pertains; and

(c) Each Agreement shall include the terms of any right of the Company to restrict or reacquire the Shares subject to the Stock Grant, including the time and events upon which such rights shall accrue and the purchase price therefor, if any.

8. TERMS AND CONDITIONS OF OTHER STOCK-BASED AWARDS.

The Administrator shall have the right to grant other Stock-Based Awards based upon the Common Stock having such terms and conditions as the Administrator may determine, including, without limitation, the grant of Shares based upon certain conditions, the grant of securities convertible into Shares and the grant of stock appreciation rights, phantom stock awards or stock units. The principal terms of each Stock-Based Award shall be set forth in an Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Agreement shall be in a form approved by the Administrator and shall contain terms and conditions which the Administrator determines to be appropriate and in the best interest of the Company. Each Agreement shall include the terms of any right of the Company including the right to terminate the Stock-Based Award without the issuance of Shares, the terms of any vesting conditions or events upon which Shares shall be issued. Under no circumstances may the Agreement covering stock appreciation rights (a) have a base price (per share) that is less than the Fair Market Value per share of Common Stock on the date of grant or (b) expire more than ten years following the date of grant.

The Company intends that the Plan and any Stock-Based Awards granted hereunder be exempt from the application of Section 409A of the Code or meet the requirements of paragraphs (2), (3) and (4) of subsection (a) of Section 409A of the Code, to the extent applicable, and be operated in accordance with Section 409A so that any compensation deferred under any Stock-Based Award (and applicable investment earnings) shall not be included in income under Section 409A of the Code. Any ambiguities in the Plan shall be construed to effect the intent as described in this Paragraph 8.

9. EXERCISE OF OPTIONS AND ISSUE OF SHARES.

An Option (or any part or installment thereof) shall be exercised by giving written notice to the Company or its designee (in a form acceptable to the Administrator, which may include electronic notice), together with provision for payment of the aggregate exercise price in accordance with this Paragraph for the Shares as to which the Option is being exercised, and upon compliance with any other condition(s) set forth in the Option Agreement. Such notice shall be signed by the person exercising the Option (which signature may be provided electronically in a form acceptable to the Administrator), shall state the number of Shares with respect to which the Option is being exercised and shall contain any representation required by the Plan or the Option Agreement. Payment of the exercise price for the Shares as to which such Option is being exercised shall be made (a) in United States dollars in cash or by check, or (b) at the discretion of the Administrator, through delivery of shares of Common Stock held for at least six months (if required to avoid negative accounting treatment) having a Fair Market Value equal as of the date of the exercise to the aggregate cash exercise price for the number of Shares as to which the Option is being exercised, or (c) at the discretion of the Administrator, by having the Company retain from the Shares otherwise issuable upon exercise of the Option, a number of Shares having a Fair Market Value equal as of the date of exercise to the aggregate exercise price for the number of Shares as to which the Option is being exercised, or (d) at the discretion of the Administrator (after consideration of applicable securities, tax and accounting implications), by delivery of the grantee's personal recourse note bearing interest payable not less than annually at no less than one hundred (100%) of the applicable Federal rate, as defined in Section 1274(d) of the Code, or (e) at the discretion of the Administrator, in accordance with a cashless exercise program established with a securities brokerage firm, and approved by the Administrator, or (f) at the discretion of the Administrator, by any combination of (a), (b), (c), (d) and (e) above or (g) at the discretion of the Administrator, by payment of such other lawful consideration as the Administrator may determine. Notwithstanding the foregoing, the Administrator shall accept only such payment on exercise of an ISO as is permitted by Section 422 of the Code.

The Company shall then reasonably promptly deliver the Shares as to which such Option was exercised to the Participant (or to the Participant's Survivors, as the case may be). In determining what constitutes "reasonably promptly," it is expressly understood that the issuance and delivery of the Shares may be delayed by the Company in order to comply with any law or regulation (including, without limitation, state securities or "blue sky" laws) which requires the Company to take any action with respect to the Shares prior to their issuance. The Shares shall, upon delivery, be fully paid, non-assessable Shares.

10. PAYMENT IN CONNECTION WITH THE ISSUANCE OF STOCK GRANTS AND STOCK-BASED AWARDS AND ISSUE OF SHARES.

Any Stock Grant or Stock-Based Award requiring payment of a purchase price for the Shares as to which such Stock Grant or Stock-Based Award is being granted shall be made (a) in United States dollars in cash or by check, or (b) at the discretion of the Administrator, through delivery of shares of Common Stock held for at least six months (if required to avoid negative accounting treatment) and having a Fair Market Value equal as of the date of payment to the purchase price of the Stock Grant or Stock-Based Award, or (c) at the discretion of the Administrator (after consideration of applicable securities, tax and accounting implications), by delivery of the grantee's personal recourse note bearing interest payable not less than annually at no less than one hundred percent (100%) of the applicable Federal rate, as defined in Section 1274(d) of the Code, or (d) at the discretion of the Administrator, by any combination of (a), (b) and (c) above; or (e) at the discretion of the Administrator, by payment of such other lawful consideration as the Administrator may determine.

The Company shall when required by the applicable Agreement, reasonably promptly deliver the Shares as to which such Stock Grant or Stock-Based Award was made to the Participant (or to the Participant's Survivors, as the case may be), subject to any escrow provision set forth in the applicable Agreement. In determining what constitutes "reasonably promptly," it is expressly understood that the issuance and delivery of the Shares may be delayed by the Company in order to comply with any law or regulation (including, without limitation, state securities or "blue sky" laws) which requires the Company to take any action with respect to the Shares prior to their issuance.

11. RIGHTS AS A SHAREHOLDER.

No Participant to whom a Stock Right has been granted shall have rights as a shareholder with respect to any Shares covered by such Stock Right except after due exercise of an Option or issuance of Shares as set forth in any Agreement, tender of the aggregate exercise or purchase price, if any, for the Shares being purchased and registration of the Shares in the Company's share register in the name of the Participant.

12. ASSIGNABILITY AND TRANSFERABILITY OF STOCK RIGHTS.

By its terms, a Stock Right granted to a Participant shall not be transferable by the Participant other than (i) by will or by the laws of descent and distribution, or (ii) as approved by the Administrator in its discretion and set forth in the applicable Agreement, provided that no Stock Right may be transferred by a Participant for value. Notwithstanding the foregoing, an ISO transferred except in compliance with clause (i) above shall no longer qualify as an ISO. The designation of a beneficiary of a Stock Right by a Participant, with the prior approval of the Administrator and in such form as the Administrator shall prescribe, shall not be deemed a transfer prohibited by this Paragraph. Except as provided above during the Participant's lifetime a Stock Right shall only be exercisable by or issued to such Participant (or his or her legal representative) and shall not be assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to execution, attachment or similar process. Any attempted transfer, assignment, pledge, hypothecation or other disposition of any Stock Right or of any rights granted thereunder contrary to the provisions of this Plan, or the levy of any attachment or similar process upon a Stock Right, shall be null and void.

13. EFFECT ON OPTIONS OF TERMINATION OF SERVICE OTHER THAN FOR CAUSE OR DEATH OR DISABILITY.

Except as otherwise provided in a Participant's Option Agreement, in the event of a termination of service (whether as an Employee, director or Consultant) with the Company or an Affiliate before the Participant has exercised an Option, the following rules apply:

(a) A Participant who ceases to be an Employee, director or Consultant of the Company or of an Affiliate (for any reason other than termination for Cause, Disability, or death for which events there are special rules in Paragraphs 14, 15, and 16, respectively), may exercise any Option granted to him or her to the extent that the Option is exercisable on the date of such termination of service, but only within such term as the Administrator has designated in a Participant's Option Agreement.

(b) Except as provided in Subparagraph (c) below, or Paragraph 15 or 16, in no event may an Option intended to be an ISO, be exercised later than three months after the Participant's termination of employment.

(c) The provisions of this Paragraph, and not the provisions of Paragraph 15 or 16, shall apply to a Participant who subsequently becomes Disabled or dies after the termination of employment, director status or consultancy; provided, however, in the case of a Participant's Disability or death within three months after the termination of employment, director status or consultancy, the Participant or the Participant's Survivors may exercise the Option within one year after the date of the Participant's termination of service, but in no event after the date of expiration of the term of the Option.

(d) Notwithstanding anything herein to the contrary, if subsequent to a Participant's termination of employment, termination of director status or termination of consultancy, but prior to the exercise of an Option, the Administrator determines that, either prior or subsequent to the Participant's termination, the Participant engaged in conduct which would constitute Cause, then such Participant shall forthwith cease to have any right to exercise any Option.

(e) A Participant to whom an Option has been granted under the Plan who is absent from the Company or an Affiliate because of temporary disability (any disability other than a Disability as defined in Paragraph 1 hereof), or who is on leave of absence for any purpose, shall not, during the period of any such absence, be deemed, by virtue of such absence alone, to have terminated such Participant's employment, director status or consultancy with the Company or with an Affiliate, except as the Administrator may otherwise expressly provide; provided, however, that, for ISOs, any leave of absence granted by the Administrator of greater than three months, unless pursuant to a contract or statute that guarantees the right to reemployment, shall cause such ISO to become a Non-Qualified Option on the date that is six months following the commencement of such leave of absence.

(f) Except as required by law or as set forth in a Participant's Option Agreement, Options granted under the Plan shall not be affected by any change of a Participant's status within or among the Company and any Affiliates, so long as the Participant continues to be an Employee, director or Consultant of the Company or any Affiliate.

14. <u>EFFECT ON OPTIONS OF TERMINATION OF SERVICE FOR CAUSE.</u>

Except as otherwise provided in a Participant's Option Agreement, the following rules apply if the Participant's service (whether as an Employee, director or Consultant) with the Company or an Affiliate is terminated for Cause prior to the time that all of his or her outstanding Options have been exercised:

(a) All outstanding and unexercised Options as of the time the Participant is notified his or her service is terminated for Cause will immediately be forfeited.

(b) Cause is not limited to events which have occurred prior to a Participant's termination of service, nor is it necessary that the Administrator's finding of Cause occur prior to termination. If the Administrator determines, subsequent to a Participant's termination of service but prior to the exercise of an Option, that either prior or subsequent to the Participant's termination the Participant engaged in conduct which would constitute Cause, then the right to exercise any Option is forfeited.

15. <u>EFFECT ON OPTIONS OF TERMINATION OF SERVICE FOR DISABILITY.</u>

Except as otherwise provided in a Participant's Option Agreement,

(a) A Participant who ceases to be an Employee, director or Consultant of the Company or of an Affiliate by reason of Disability may exercise any Option granted to such Participant:

(i) To the extent that the Option has become exercisable but has not been exercised on the date of the Participant's termination of service due to Disability; and

(ii) In the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of the Participant's termination of service due to Disability of any additional vesting rights that would have accrued on the next vesting date had the Participant not become Disabled. The proration shall be based upon the number of days accrued in the current vesting period prior to the date of the Participant's termination of service due to Disability.

(b) A Disabled Participant may exercise the Option only within the period ending one year after the date of the Participant's termination of service due to Disability, notwithstanding that the Participant might have been able to exercise the Option as to some or all of the Shares on a later date if the Participant had not been terminated due to Disability and had continued to be an Employee, director or Consultant or, if earlier, within the originally prescribed term of the Option.

(c) The Administrator shall make the determination both of whether Disability has occurred and the date of its occurrence (unless a procedure for such determination is set forth in another agreement between the Company and such Participant, in which case such procedure shall be used for such determination). If requested, the Participant shall be examined by a physician selected or approved by the Administrator, the cost of which examination shall be paid for by the Company.

16. EFFECT ON OPTIONS OF DEATH WHILE AN EMPLOYEE, DIRECTOR OR CONSULTANT.

Except as otherwise provided in a Participant's Option Agreement,

(a) In the event of the death of a Participant while the Participant is an Employee, director or Consultant of the Company or of an Affiliate, such Option may be exercised by the Participant's Survivors:

(i) To the extent that the Option has become exercisable but has not been exercised on the date of death; and

(ii) In the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of death of any additional vesting rights that would have accrued on the next vesting date had the Participant not died. The proration shall be based upon the number of days accrued in the current vesting period prior to the Participant's date of death.

(b) If the Participant's Survivors wish to exercise the Option, they must take all necessary steps to exercise the Option within one year after the date of death of such Participant, notwithstanding that the decedent might have been able to exercise the Option as to some or all of the Shares on a later date if he or she had not died and had continued to be an Employee, director or Consultant or, if earlier, within the originally prescribed term of the Option.

17. EFFECT OF TERMINATION OF SERVICE ON UNACCEPTED STOCK GRANTS AND STOCK-BASED AWARDS.

In the event of a termination of service (whether as an Employee, director or Consultant) with the Company or an Affiliate for any reason before the Participant has accepted a Stock Grant or a Stock-Based Award and paid the purchase price, if required at the time, such grant shall terminate.

For purposes of this Paragraph 17 and Paragraph 18 below, a Participant to whom a Stock Grant or a Stock-Based Award has been issued under the Plan who is absent from work with the Company or with an Affiliate because of temporary disability (any disability other than a Disability as defined in Paragraph 1 hereof), or who is on leave of absence for any purpose, shall not, during the period of any such absence, be deemed, by virtue of such absence alone, to have terminated such Participant's employment, director status or consultancy with the Company or with an Affiliate, except as the Administrator may otherwise expressly provide.

In addition, for purposes of this Paragraph 17 and Paragraph 18 below, any change of employment or other service within or among the Company and any Affiliates shall not be treated as a termination of employment, director status or consultancy so long as the Participant continues to be an Employee, director or Consultant of the Company or any Affiliate.

18. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE OTHER THAN FOR CAUSE, DEATH OR DISABILITY.

Except as otherwise provided in a Participant's Agreement, in the event of a termination of service (whether as an Employee, director or Consultant), other than termination for Cause, death or Disability for which events there are special rules in Paragraphs 19, 20, and 21, respectively, before all forfeiture provisions or Company rights of repurchase shall have lapsed, then the Company shall have the right to cancel or repurchase that number of Shares subject to a Stock Grant or Stock-Based Award as to which the Company's forfeiture or repurchase rights have not lapsed.

19. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE FOR CAUSE.

Except as otherwise provided in a Participant's Agreement, the following rules apply if the Participant's service (whether as an Employee, director or Consultant) with the Company or an Affiliate is terminated for Cause:

(a) All Shares subject to any Stock Grant or Stock-Based Award whether or not then subject to forfeiture or repurchase shall be immediately subject to repurchase by the Company at par value.

(b) Cause is not limited to events which have occurred prior to a Participant's termination of service, nor is it necessary that the Administrator's finding of Cause occur prior to termination. If the Administrator determines, subsequent to a Participant's termination of service, that either prior or subsequent to the Participant's termination the Participant engaged in conduct which would constitute Cause, then all Shares subject to any Stock Grant or Stock-Based Award that remained subject to forfeiture provisions or as to which the Company had a repurchase right on the date of termination shall be immediately forfeited to the Company.

20. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE FOR DISABILITY.

Except as otherwise provided in a Participant's Agreement, the following rules apply if a Participant ceases to be an Employee, director or Consultant of the Company or of an Affiliate by reason of Disability: to the extent the forfeiture provisions or the Company's rights of repurchase have not lapsed on the date of Disability, they shall be exercisable; provided, however, that in the event such forfeiture provisions or rights of repurchase lapse periodically, such provisions or rights shall lapse to the extent of a pro rata portion of the Shares subject to such Stock Grant or Stock-Based Award through the date of Disability as would have lapsed had the Participant not become Disabled. The proration shall be based upon the number of days accrued prior to the date of Disability.

The Administrator shall make the determination both as to whether Disability has occurred and the date of its occurrence (unless a procedure for such determination is set forth in another agreement between the Company and such Participant, in which case such procedure shall be used for such determination). If requested, the Participant shall be examined by a physician selected or approved by the Administrator, the cost of which examination shall be paid for by the Company.

21. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF DEATH WHILE AN EMPLOYEE, DIRECTOR OR CONSULTANT.

Except as otherwise provided in a Participant's Agreement, the following rules apply in the event of the death of a Participant while the Participant is an Employee, director or Consultant of the Company or of an Affiliate: to the extent the forfeiture provisions or the Company's rights of repurchase have not lapsed on the date of death, they shall be exercisable; provided, however, that in the event such forfeiture provisions or rights of repurchase lapse periodically, such provisions or rights shall lapse to the extent of a pro rata portion of the Shares subject to such Stock Grant or Stock-Based Award through the date of death as would have lapsed had the Participant not died. The proration shall be based upon the number of days accrued prior to the Participant's date of death.

22. PURCHASE FOR INVESTMENT.

Unless the offering and sale of the Shares shall have been effectively registered under the Securities Act, the Company shall be under no obligation to issue Shares under the Plan unless and until the following conditions have been fulfilled:

(a) The person who receives a Stock Right shall warrant to the Company, prior to the receipt of Shares, that such person is acquiring such Shares for his or her own account, for investment, and not with a view to, or for sale in connection with, the distribution of any such Shares, in which event the person acquiring such Shares shall be bound by the provisions of the following legend (or a legend in substantially similar form) which shall be endorsed upon the certificate evidencing the Shares issued pursuant to such exercise or such grant:

> "The shares represented by this certificate have been taken for investment and they may not be sold or otherwise transferred by any person, including a pledgee, unless (1) either (a) a Registration Statement with respect to such shares shall be effective under the Securities Act of 1933, as amended, or (b) the Company shall have received an opinion of counsel satisfactory to it that an exemption from registration under such Act is then available, and (2) there shall have been compliance with all applicable state securities laws."

(b) At the discretion of the Administrator, the Company shall have received an opinion of its counsel that the Shares may be issued in compliance with the Securities Act without registration thereunder.

23. DISSOLUTION OR LIQUIDATION OF THE COMPANY.

Upon the dissolution or liquidation of the Company, all Options granted under this Plan which as of such date shall not have been exercised and all Stock Grants and Stock-Based Awards which have not been accepted, to the extent required under the applicable Agreement, will terminate and become null and void; provided, however, that if the rights of a Participant or a Participant's Survivors have not otherwise terminated and expired, the Participant or the Participant's Survivors will have the right immediately prior to such dissolution or liquidation to exercise or accept any Stock Right to the extent that the Stock Right is exercisable or subject to acceptance as of the date immediately prior to such dissolution or liquidation. Upon the dissolution or liquidation of the Company, any outstanding Stock-Based Awards shall immediately terminate unless otherwise determined by the Administrator or specifically provided in the applicable Agreement.

24. ADJUSTMENTS.

Upon the occurrence of any of the following events, a Participant's rights with respect to any Stock Right granted to him or her hereunder shall be adjusted as hereinafter provided, unless otherwise specifically provided in a Participant's Agreement:

(a) Stock Dividends and Stock Splits. If (i) the shares of Common Stock shall be subdivided or combined into a greater or smaller number of shares or if the Company shall issue any shares of Common Stock as a stock dividend on its outstanding Common Stock, or (ii) additional shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such shares of Common Stock, each Stock Right and the number of shares of Common Stock deliverable thereunder shall be appropriately increased or decreased proportionately, and appropriate adjustments shall be made including, to the exercise, base or purchase price per share, to reflect such events. The number of Shares subject to the limitations in Paragraphs 3 and 4 shall also be proportionately adjusted upon the occurrence of such events.

(b) Corporate Transactions. If the Company is to be consolidated with or acquired by another entity in a merger, consolidation, sale of all or substantially all of the Company's assets or the acquisition of all of the outstanding voting stock of the Company in a single transaction or a series of related transactions by a single entity other than a transaction to merely change the state of incorporation (a "Corporate Transaction"), the Administrator or the board of directors of any entity assuming the obligations of the Company hereunder (the "Successor Board"), shall, as to outstanding Options, either (i) make appropriate provision for the continuation of such Options by substituting on an equitable basis for the Shares then subject to such Options either the consideration payable with respect to the outstanding shares of Common Stock in connection with the Corporate Transaction or securities of any successor or acquiring entity; or (ii) upon written notice to the Participants, provide that such Options must be exercised (either (A) to the extent then exercisable or, (B) at the discretion of the Administrator, any such Options being made partially or fully exercisable for purposes of this Subparagraph), within a specified number of days of the date of such notice, at the end of which period such Options which have not been exercised shall terminate; or (iii) terminate such Options in exchange for payment of an amount equal to the consideration payable upon consummation of such Corporate Transaction to a holder of the number of shares of Common Stock into which such Option would have been exercisable (either (A) to the extent then exercisable or, (B) at the discretion of the Administrator, any such Options being made partially or fully exercisable for purposes of this Subparagraph) less the aggregate exercise price thereof. For purposes of determining the payments to be made pursuant to Subclause (iii) above, in the case of a Corporate Transaction the consideration for which, in whole or in part, is other than cash, the consideration other than cash shall be valued at the fair value thereof as determined in good faith by the Board of Directors.

With respect to outstanding Stock Grants, the Administrator or the Successor Board, shall make appropriate provision for the continuation of such Stock Grants on the same terms and conditions by substituting on an equitable basis for the Shares then subject to such Stock Grants either the consideration payable with respect to the outstanding Shares of Common Stock in connection with the Corporate Transaction or securities of any successor or acquiring entity. In lieu of the foregoing, in connection with any Corporate Transaction, the Administrator may provide that, upon consummation of the Corporate Transaction, each outstanding Stock Grant shall be terminated in exchange for payment of an amount equal to the consideration payable upon consummation of such Corporate Transaction to a holder of the number of shares of Common Stock comprising such Stock Grant (to the extent such Stock Grant is no longer subject to any forfeiture or repurchase rights then in effect or, at the discretion of the Administrator, all forfeiture and repurchase rights being waived upon such Corporate Transaction). For purposes of determining such payments, in the case of a Corporate Transaction the consideration for which, in whole or in part, is other than cash, the consideration other than cash shall be valued at the fair value thereof as determined in good faith by the Board of Directors.

In taking any of the actions permitted under this Paragraph 24(b), the Administrator shall not be obligated by the Plan to treat all Stock Rights, all Stock Rights held by a Participant, or all Stock Rights of the same type, identically.

(c) Recapitalization or Reorganization. In the event of a recapitalization or reorganization of the Company other than a Corporate Transaction pursuant to which securities of the Company or of another corporation are issued with respect to the outstanding shares of Common Stock, a Participant upon exercising an Option or accepting a Stock Grant after the recapitalization or reorganization shall be entitled to receive for the price paid upon such exercise or acceptance if any, the number of replacement securities which would have been received if such Option had been exercised or Stock Grant accepted prior to such recapitalization or reorganization.

(d) Adjustments to Stock-Based Awards. Upon the happening of any of the events described in Subparagraphs (a), (b) or (c) above, any outstanding Stock-Based Award shall be appropriately adjusted to reflect the events described in such Subparagraphs. The Administrator or the Successor Board shall determine the specific adjustments to be made under this Paragraph 24, including, but not limited to the effect of any Corporate Transaction and, subject to Paragraph 4, its determination shall be conclusive.

(e) Modification of Options. Notwithstanding the foregoing, any adjustments made pursuant to Subparagraph (a), (b) or (c) above with respect to Options shall be made only after the Administrator determines whether such adjustments would (i) constitute a "modification" of any ISOs (as that term is defined in Section 424(h) of the Code) or (ii) cause any adverse tax consequences for the holders of Options, including, but not limited to, pursuant to Section 409A of the Code. If the Administrator determines that such adjustments made with respect to Options would constitute a modification or other adverse tax consequence, it may in its discretion refrain from making such adjustments, unless the holder of an Option specifically agrees in writing that such adjustment be made and such writing indicates that the holder has full knowledge of the consequences of such "modification" on his or her income tax treatment with respect to the Option. This paragraph shall not apply to the acceleration of the vesting of any ISO that would cause any portion of the ISO to violate the annual vesting limitation contained in Section 422(d) of the Code, as described in Paragraph 6(b)(iv).

25. ISSUANCES OF SECURITIES.

Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares subject to Stock Rights. Except as expressly provided herein, no adjustments shall be made for dividends paid in cash or in property (including without limitation, securities) of the Company prior to any issuance of Shares pursuant to a Stock Right.

26. FRACTIONAL SHARES.

No fractional shares shall be issued under the Plan and the person exercising a Stock Right shall receive from the Company cash in lieu of such fractional shares equal to the Fair Market Value thereof.

27. WITHHOLDING.

In the event that any federal, state, or local income taxes, employment taxes, Federal Insurance Contributions Act withholdings or other amounts are required by applicable law or governmental regulation to be withheld from the Participant’s salary, wages or other remuneration in connection with the issuance of a Stock Right or Shares under the Plan or for any other reason required by law, the Company may withhold from the Participant’s compensation, if any, or may require that the Participant advance in cash to the Company, or to any Affiliate of the Company which employs or employed the Participant, the statutory minimum amount of such withholdings unless a different withholding arrangement, including the use of shares of the Company’s Common Stock or a promissory note, is authorized by the Administrator (and permitted by law). For purposes hereof, the fair market value of the shares withheld for purposes of payroll withholding shall be determined in the manner set forth under the definition of Fair Market Value provided in Paragraph 1 above, as of the most recent practicable date prior to the date of exercise. If the Fair Market Value of the shares withheld is less than the amount of payroll withholdings required, the Participant may be required to advance the difference in cash to the Company or the Affiliate employer.

28. NOTICE TO COMPANY OF DISQUALIFYING DISPOSITION.

Each Employee who receives an ISO shall notify the Company in writing immediately after the Employee makes a Disqualifying Disposition of any Shares acquired pursuant to the exercise of an ISO. A Disqualifying Disposition is defined in Section 424(c) of the Code and includes any disposition (including any sale or gift) of such Shares before the later of (a) two years after the date the Employee was granted the ISO, or (b) one year after the date the Employee acquired Shares by exercising the ISO, except as otherwise provided in Section 424(c) of the Code. If the Employee has died before such Shares are sold, these holding period requirements do not apply and no Disqualifying Disposition can occur thereafter.

29. TERMINATION OF THE PLAN.

The Plan will terminate on December 12, 2029. The Plan may be terminated at an earlier date by vote of the shareholders or the Board of Directors of the Company; provided, however, that any such earlier termination shall not affect any Agreements executed prior to the effective date of such termination. Termination of the Plan shall not affect any Stock Rights theretofore granted.

30. AMENDMENT OF THE PLAN AND AGREEMENTS.

The Plan may be amended by the shareholders of the Company. The Plan may also be amended by the Administrator, including, without limitation, to the extent necessary to qualify any or all outstanding Stock Rights granted under the Plan or Stock Rights to be granted under the Plan for favorable federal income tax treatment as may be afforded ISOs under Section 422 of the Code (including deferral of taxation upon exercise), and to the extent necessary to qualify the Shares issuable under the Plan for listing on any national securities exchange or quotation in any national automated quotation system of securities dealers. Any amendment approved by the Administrator which the Administrator determines is of a scope that requires shareholder approval shall be subject to obtaining such shareholder approval. Any modification or amendment of the Plan shall not, without the consent of a Participant, adversely affect his or her rights under a Stock Right previously granted to him or her, unless such amendment is required by applicable law or necessary to preserve the economic value of such Stock Right. With the consent of the Participant affected, the Administrator may amend outstanding Agreements in a manner which may be adverse to the Participant but which is not inconsistent with the Plan. In the discretion of the Administrator, outstanding Agreements may be amended by the Administrator in a manner which is not adverse to the Participant. Nothing in this Paragraph 30 shall limit the Administrator's authority to take any action permitted pursuant to Paragraph 24.

31. EMPLOYMENT OR OTHER RELATIONSHIP.

Nothing in this Plan or any Agreement shall be deemed to prevent the Company or an Affiliate from terminating the employment, consultancy or director status of a Participant, nor to prevent a Participant from terminating his or her own employment, consultancy or director status or to give any Participant a right to be retained in employment or other service by the Company or any Affiliate for any period of time.

32. GOVERNING LAW.

This Plan shall be construed and enforced in accordance with the law of the State of Delaware.

Exhibit 10.30

LOAN DOCUMENT MODIFICATION AGREEMENT

This Loan Document Modification Agreement (this "**Agreement**") is made as of this 23rd day of December, 2019, by and between Middlesex Savings Bank, a banking corporation organized and existing under the laws of Massachusetts, of 6 Main Street, Natick, Massachusetts 01760 (the "**Lender**"), and Dynasil Corporation of America of 313 Washington Street, Suite 403, Newton, Massachusetts 02458 (the "**Borrower**"); and Optometrics Corporation of 8 Nemco Way, Ayer, Massachusetts 01432, Radiation Monitoring Devices, Inc. of 44 Hunt Street, Watertown, Massachusetts 02472, RMD Instruments Corp. of 44 Hunt Street, Watertown, Massachusetts 02472, Evaporated Metal Films Corp. of 239 Cherry Street, Ithaca, New York 14850, and Dynasil Biomedical Corp. of 44 Hunt Street, Watertown, Massachusetts 02472 (collectively, the "**Guarantors**").

WHEREAS, on May 1, 2014 Lender made a loan (the "**Loan**") to Borrower evidenced by a Revolving Line of Credit Note dated May 1, 2014 from Borrower to Lender in the original principal amount of Four Million and 00/100 ($4,000,000.00) Dollars (the "**LOC Note**");

WHEREAS, as security for the payment and performance of Borrower's obligations under the LOC Note, Borrower and Guarantors executed and delivered to Lender, (i) a Loan and Security Agreement dated May 1, 2014, by and between the Borrower and the Lender (the "**Loan Agreement**"), (ii) UCC-1 Financing Statements covering the Collateral described in the Loan Agreement and filed with the Secretary of State of the Commonwealth of Massachusetts, State of New York and State of Delaware (the "**UCC-1 Financing Statements**"), (iii) Entity Guaranty and Security Agreements, all dated May 1, 2014 from Guarantors to Lender (the "**Guaranties**"), (iv) a Stock Pledge Agreement by Borrower in favor of Lender dated May 1, 2014 (the "**Stock Pledge**"); and (v) a Subordination Agreement dated as of May 1, 2014 given by Massachusetts Capital Resource Company ("**MCRC**") to Lender (the "**MCRC Subordination**") by which all debt of Borrower to MCRC (the "**Junior Debt**") is subordinated to all Obligations of Borrower to Lender. Collectively, the Loan Agreement, the UCC-1 Financing Statements, the Guaranties, the Stock Pledge, and the MCRC Subordination are referred to, together with various other documents referred to therein, as the same may be amended from time to time, as the "**Security Instruments**";

WHEREAS, Borrower and Lender amended the terms of the Loan pursuant to a Loan Document Modification Agreement dated September 29, 2015, by adding or modifying certain financial covenants by Lender, granting to Borrower consent to pay-down or pay-off certain amounts of the Junior Debt, and by adding an option on the part of Borrower to term out a certain amount of Advances made to Borrower under the LOC Note;

WHEREAS, Borrower and Lender further amended the terms of the Loan pursuant to a Second Amendment of Loan Agreement dated December 2, 2016, to (i) provide for Borrower to pay dividends under certain circumstances, (ii) make a distribution to Dynasil Biomedical Corp. to invest in Xcede Technologies, and (iii) modify the debt service coverage covenant;

WHEREAS, Borrower and Lender further amended the terms of the Loan pursuant to a Loan Document Modification Agreement dated May 16, 2017, by modifying the Advance Period Termination Date as set forth therein, and providing for an equipment line of credit in favor of the Borrower (the "**Equipment Line of Credit**"), as evidenced by a certain Equipment Line of Credit Master Note (Non-Revolving) in the maximum principal amount of One Million and 00/100 ($1,000,000.00) Dollars (the "**Equipment Line of Credit Note**"); and

WHEREAS, the Borrower and Lender further amended the terms of the Loan pursuant to a Loan Document Modification Agreement dated August 13, 2018 for the purposes of (i) renewing and modifying the Equipment Line of Credit and replacing the Equipment Line of Credit Note, and (ii) modifying the Maximum Funded Debt Ratio set forth in the Loan Agreement; and

WHEREAS, the Borrower and the Lender further amended the Loan Agreement pursuant to a Loan Document Modification Agreement dated August 5, 2019 (the **"August 5, 2019 Modification Agreement"**), to increase the percentage of Eligible Accounts Receivable available for borrowing under the Revolving Line of Credit Note from 80% to 85% and to eliminate Eligible Unbilled Receivables as a category for the Borrower obtaining Advances under the Revolving Line of Credit effective April 30, 2019, and to modify the Equipment Line of Credit; and

WHEREAS, pursuant to the terms set forth in the August 5, 2019 Modification Agreement, the Loan Agreement was further amended to change the definitions used to calculate the Debt Service Coverage Ratio in Section 4.9 and the Maximum Leverage Ratio in Section 4.9A (to add back up to Seven Hundred Fifty Thousand and 00/100 ($750,000.00) Dollars of certain Go-Dark Expenses) from the twelve (12) month testing periods ending June 30, 2019 and September 30, 2019, and to consent to new subordinated indebtedness in the maximum amount of Two Million and 00/100 ($2,000,000.00) Dollars (Section 3.2), with payments of interest and principal to be included in the calculation of the Debt Service Coverage Ratio (Section 4.9); and

WHEREAS, pursuant to the terms set forth herein, the Loan Agreement shall be further amended to extend the Advance Period Termination Date, provide for a new Equipment Line of Credit, to create a new Equipment Line of Credit Note and to amend the Line of Credit Note to add an interest rate tied to a LIBOR Benchmark Rate (as defined herein).

NOW, THEREFORE, in consideration of the mutual covenants herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, it is hereby agreed as follows:

1. The first paragraph of Section 1.1.2 of the Loan Agreement is hereby deleted in its entirety, and the following new first paragraph is substituted therefor:

> "1.1.2 <u>Revolving Line of Credit Loan</u>. A Revolving Line of Credit Loan, evidenced by a Revolving Line of Credit Note dated May 1, 2014, allowing advances aggregating not more than Four Million and 00/100 ($4,000,000.00) Dollars (the **'Line of Credit Note'**). The availability of Advances under the Revolving Line of Credit Loan shall expire on April 30, 2022, unless renewed by the Lender in writing. Such date, as it may be so extended, is referred to as the **'Advance Period Termination Date'** upon which date all outstanding principal and unpaid interest shall become due and payable."

2. The Line of Credit Note is hereby amended to provide a LIBOR Benchmark option for the interest rate in addition to the Lender's Prime Rate by deleting the section entitled "**Variable Rate; Payments**" on Pages 1 and 2 of the Line of Credit Note in its entirety and substituting the following therefor:

"**Variable Rate; Payments:** The unpaid principal of this Note from time to time outstanding shall bear interest, at Borrower's election, computed on the basis of the actual number of days elapsed over a year assumed to have three hundred sixty (360) days, at an annual rate equal to either (i) the Lender's Prime Rate, but in no event less than three and one-quarter of one (3.25%) percent, or (ii) the LIBOR Benchmark Rate (as defined below), plus two and one-half of one (2.50%) percent per annum.

As used herein, Lender's Prime Rate means the rate from time to time announced and made effective by the Lender as its Prime Rate; the Prime Rate hereunder shall change as Lender's Prime Rate changes and any such change shall be effective on the announcement date by Lender of such change.

As used in this Note, the following terms shall have the following meanings:

'Business Day' means any day which is neither a Saturday nor Sunday nor a legal holiday on which commercial banks are authorized or required to be closed in Boston, Massachusetts.

'Interest Period' means, initially, the period commencing on December ____, 2019, and ending on December 31, 2019, and thereafter, commencing on the first day of each month and ending on the last day of such month.

'LIBOR Benchmark Rate' means relative to any Interest Period, the offered rate for delivery in two (2) London Banking Days (as defined below) of deposits of U.S. Dollars which the ICE Benchmark Administration fixes as its LIBOR Benchmark Rate and which is published by Bloomberg (or such other commercially available service providing quotations of ICE LIBOR, as designated by the Lender from time to time) as of 11:00 a.m. London time on the day on which the Interest Period commences, and for a period approximately equal to such Interest Period. If the first day of any Interest Period is not a day which is both a (i) Business Day, and (ii) a day on which United States dollar deposits are transacted in the London interbank market (a **'London Banking Day'**), the LIBOR Benchmark Rate shall be determined in reference to the next preceding day which is both a Business Day and a London Banking Day. If for any reason the LIBOR Benchmark Rate is unavailable and/or the Lender is unable to determine the LIBOR Benchmark Rate for any Interest Period, the LIBOR Benchmark Rate shall be deemed to be equal to the Bank's Prime Rate, but in no event less than three and one-quarter of one (3.25%) percent per annum.

Beginning on December 31, 2019, and on the last day of each and every month thereafter during the term of this Note, Borrower shall make payments of interest monthly in arrears on outstanding Advances.

Upon the occurrence of the Advance Period Termination Date, as set forth in the Loan and Security Agreement, or upon any Event of Default under any of the Security Instruments, all unpaid principal and all accrued and unpaid interest under this Note shall be immediately due and payable without presentment, demand, protest, notice of protest or other notice of dishonor of any kind, all of which are hereby expressly waived. No course of dealing or delay in accelerating the maturity of this Note or in taking any other action with respect to any Event of Default shall affect Lender's rights to take action with respect thereto, and no waiver as to any one Event of Default shall affect any of Lender's rights as to any other Event of Default.

Principal not paid when due hereunder shall bear interest at the rate set forth above from the date due until so paid and shall be due and payable upon demand, whether or not an Event of Default has occurred. Payments hereunder shall be applied first to interest then due on the unpaid balance of principal and then to such principal."

3. The Loan Agreement is hereby further amended by deleting Section 1.1.3 in its entirety and substituting the following new Section 1.1.3 therefor:

"1.1.3 Non-Revolving Equipment Line of Credit/Demand Loan. A Non-Revolving Equipment Line of Credit/Demand Loan evidenced by a Non-Revolving Equipment Line of Credit/Demand Note dated December 23, 2019, allowing advances aggregating not more than Seven Hundred Fifty Thousand ($750,000.00) Dollars (the **'Equipment Line of Credit Note'**). Subject to the demand of Lender, the availability of credit under the Non-Revolving Equipment Line of Credit/Demand Loan shall expire on April 30, 2022, unless renewed by Lender in writing. Such Equipment Line of Credit Note and all Term Notes executed pursuant thereto, together are referred to as the **'Notes'**, as such Notes may be modified, extended and/or amended from time to time.

Borrower agrees to pay Lender all advances (each, an **'Advance'**), whether pursuant to the Notes or otherwise, all of which, together with all other indebtedness, liabilities and commitments which Borrower owes to Lender, whether (a) arising under this Agreement or otherwise, (b) now existing or hereafter arising, or (c) direct or indirect, absolute or contingent, joint or several, due or not due, are referred to as the **'Obligation(s)'**.

All advances under the Equipment Line of Credit Note are being made upon the terms contained in this Agreement, the Notes and any other Security Instruments (as defined herein), the terms of which are incorporated herein.

No Advance under the Equipment Line of Credit shall exceed eighty (80%) percent of the net purchase price (exclusive of any soft costs, transportation or installation charges) of new equipment or eighty (80%) percent of the Net Orderly Liquidation Value of used equipment. The term **'Net Orderly Liquidation Value'** or **'NOLV'** means the value of equipment that is estimated to be recoverable in an orderly liquidation of such equipment, stated at cost under a court authorized going out of business sale, net of liquidation expenses, such value to be as determined from time to time by Lender in its commercially reasonable discretion or by a qualified appraisal company selected by Lender (excluding all shipping and related soft costs) of the equipment, expenditures or improvements referred to therein."

4. Borrower and Guarantors confirm that the Security Instruments, as amended by or added to in connection with this Agreement, constitute the valid and enforceable obligations of Borrower and Guarantors, and that neither Borrower nor Guarantors has any existing claims, defenses or rights of setoff with respect thereto.

5. Borrower and Guarantors hereby warrant and represent that the statements set forth in the recitals above are true and correct, and that all representations and warranties made by Borrower and Guarantors in the Security Instruments continue to be true and correct in all material respects.

6. It is further agreed that this Agreement shall not, in any manner, release, relinquish, or otherwise affect the liens, security interests, and rights created by or arising under the Security Instruments or its priority over other liens, charges, or encumbrances affecting the Collateral referred to therein (except by extending such lien to secure, inter alia, any and all new obligations created hereby and pursuant to the Equipment Line of Credit Note and the Term Note) or Borrower's or Guarantors' liability thereunder; and all other terms, conditions and covenants therein contained which are not hereby amended, are hereby ratified and confirmed as previously written.

7. Borrower and Guarantors hereby acknowledge that there are and were no oral or written representations, warranties, understandings, stipulations, agreements or promises made by any party or by any agent, employee or other representative of any party, pertaining to the subject matter of this Agreement which have not been incorporated herein. No express or implied consent to any further modifications involving any of the matters set forth in the Security Instruments or herein shall be inferred or implied by Lender's execution of this Agreement. Any further modification of the Loan Agreement shall require the express written approval of Lender. No provision hereof shall be modified or limited except by a written instrument signed by the parties hereto, expressly referring hereto and to the provision so modified or limited.

8. Except as expressly amended and modified by this Agreement all of the terms and conditions of the Security Instruments shall remain in full force and effect.

[Signature Page to Follow]

Executed under seal this 23rd day of December, 2019.

MIDDLESEX SAVINGS BANK

By: /s/ Tony Zhang
Tony Zhang, Senior Vice President

DYNASIL CORPORATION OF AMERICA
OPTOMETRICS CORPORATION
RADIATION MONITORING DEVICES, INC.
RMD INSTRUMENTS CORP.
EVAPORATED METAL FILMS CORP.
DYNASIL BIOMEDICAL CORP.

By: /s/ Holly Hicks
Holly Hicks, Chief Financial Officer of each of the above named corporations

[Signature Page to Loan Modification Agreement]

EQUIPMENT LINE OF CREDIT MASTER NOTE
(NON-REVOLVING)

$750,000.00 December 23, 2019

FOR VALUE RECEIVED, the undersigned DYNASIL CORPORATION OF AMERICA, a Delaware corporation, with a principal place of business and a mailing address of 313 Washington Street, Suite 403, Newton, Massachusetts 02458 (the **"Borrower"**), promises to pay to MIDDLESEX SAVINGS BANK, a Massachusetts banking corporation, at its principal office at 6 Main Street, Natick, Massachusetts 01760 (the **"Lender"**), OR TO ITS ORDER, the principal sum of Seven Hundred Fifty Thousand 00/100 ($750,000.00) DOLLARS, or such lesser amount as may actually be advanced (the **"Equipment Line of Credit"**) as provided in a Loan Modification Agreement (the **"Agreement"**) of even date herewith between Borrower and Lender, together with interest on the unpaid balance thereof from the date hereof until paid computed on the basis of the actual number of days elapsed over a year assumed to have 360 days, at the rate and in the manner hereinafter provided in lawful money of the United States of America.

Payments: Absent demand, beginning on December 31, 2019 and on the last day of each month thereafter for the twenty-four (24) month period ending December 31, 2021, unless extended by the Lender in writing (the **"Advance Period Termination Date"**), the Borrower shall make payments of interest monthly in arrears on outstanding principal at an annual rate equal to the Lender's Prime Rate, per annum. As used herein, Lender's **"Prime Rate"** means the rate from time to time announced and made effective by the Lender as its Prime Rate; the Prime Rate hereunder shall change as Lender's Prime Rate changes and any such change shall be effective on the announcement date by Lender of such change.

Draw Down Period. Prior to the Advance Period Termination Date, the available principal balance of the Equipment Line of Credit shall be reduced by the principal amount of each advance (whether or not evidenced by a Term Note), when and as advanced.

Term-Out Provision. On the date of each advance or annually on December 31, 2020 and on the Advance Period Termination Date, the Borrower shall term-out all outstanding balances under the Equipment Line of Credit, and make payments on the entire amount of outstanding principal and accrued and unpaid interest, in an initial amount calculated to fully amortize such amount over 5 years, at a fixed interest rate equal to the then Federal Home Loan Bank 5/5 Amortizing Advance Rate plus 2.50%, with payments of principal and interest commencing on and continuing on the same day of each month for a total of sixty (60) such payments, with the due date of the last payment to be the Maturity Date. Repayment shall be evidenced by certain Equipment Line of Credit Term Notes, substantially in the form of Schedule A attached hereto and incorporated herein, to be executed and delivered by the Borrower to the Lender (each a **"Term Note"**).

Loans made hereunder may be repaid but not re-borrowed, and the entire balance of principal, accrued interest, and other fees and charges shall be due and payable on the Advance Period Termination Date (unless converted to a Term Note) or unless extended by the Lender in writing.

Late Charge: Whenever any installment of principal and interest due hereunder shall not be paid within fifteen (15) days of its due date, the Borrower shall pay in addition thereto as a late charge, five percent (5%) of the amount of any such installment.

Security: This Note is secured by a first priority security interest in all assets of the Borrower, pursuant to a Loan and Security Agreement dated May 1, 2014, as modified by seven (7) Loan Modification Agreements (the **"Loan Agreement"**), which assets are located at 313 Washington Street, Suite 403, Newton, Massachusetts 02458. Such documents, together with various other instruments securing this Note (the terms and provisions of all of which are incorporated herein by reference) are hereinafter referred to as the **"Security Instruments"**.

Default: An Event of Default under any of the Security Instruments shall constitute an Event of Default hereunder, and such events of default include, but are not limited to, the failure of Borrower to make any payments of principal, interest or other charge on demand or when due hereunder.

Upon the occurrence of an Event of Default, the Lender may, at its option, without notice or demand, declare the unpaid principal and all accrued interest under this Note to be immediately due and payable without presentment, demand, protest, notice of protest or other notice of dishonor of any kind, all of which are hereby expressly waived. No course of dealing or delay in accelerating the maturity of this Note or in taking any other action with respect to any Event of Default shall affect Lender's rights to take action with respect thereto, and no waiver as to any one Event of Default shall affect any of Lender's rights as to any other Event of Default.

All payments will be applied first to any charges, costs, expenses or late fees outstanding, then to unpaid accrued interest, and any balance to principal.

In no event shall interest payable hereunder exceed the highest rate permitted by applicable law. To the extent any interest received by Lender exceeds the maximum amount permitted, such payment shall be credited to principal, and any excess remaining after full payment of principal shall be refunded to the Borrower. This Note evidences borrowings under the Agreement and is secured by and entitled to the benefits of the provisions of the Agreement and any other instruments or documents executed in connection therewith.

Setoff: Any deposits or other sums at any time credited by or due from the holder to the Borrower or Guarantors (as defined in the Agreement) and any securities or other property of Borrower or Guarantors in the possession or custody of the holder may at all times be held and treated as collateral security for the payment of this Note and any and all other liabilities, direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, of said respective Borrower or Guarantors to the holder. The holder hereof on or after default in payment hereof may apply such deposits or other sums to said Obligations and sell any such securities or other property at broker's board or at public or private sale without demand, notice or advertisement of any kind, all of which are hereby expressly waived.

Default Rate: Lender shall have the option of imposing, and Borrower shall pay upon billing therefore, an interest rate which is four percent (4%) per annum above the interest rate otherwise payable hereunder (**"Default Rate"**): (a) while any monetary default exists and is continuing, during that period between the due date and the date of payment; (b) following any Event of Default, unless and until the Event of Default is waived by Lender; and (c) after the Maturity Date.

Collection Costs: If this Note shall not be paid in full upon demand, the Borrower agrees to pay all costs and expenses of collection, including court costs and reasonable attorneys' fees.

Waiver: The Borrower agrees, by making this Note or by making any agreement to pay any of the indebtedness evidenced by this Note, to waive presentment for payment, protest and demand, notice of protest, demand and of dishonor and nonpayment of this Note, and consents without notice or further assent (a) to the substitution, exchange or release of the collateral securing this Note or any part thereof at any time, (b) to the acceptance by the holder or holders at any time of any additional collateral or security for or other guarantors of this Note, (c) to the modification or amendment at any time, and from time to time of this Note, the Loan Agreement or any Security Instrument hereinabove referred to, and any instrument securing this Note, at the request of any person liable hereon, (d) to the granting by the holder hereof of any extension of the time for payment of this Note or for the performance of the agreements, covenants and conditions contained in this Note, the Loan Agreement or any Security Instrument hereinabove referred to, or any instrument securing this Note, at the request of any other person liable hereon, and (e) to any and all forbearances and indulgences whatsoever; and such consent shall not alter or diminish the liability of any person.

Jury Trial Waiver: Borrower and Lender mutually hereby knowingly, voluntarily and intentionally waive the right to a trial by jury in respect of any litigation based on this Note, arising out of, under or in connection with the Agreement, the Loan and Security Agreement or any other Security Instruments contemplated to be executed in connection herewith, or any course of conduct, course of dealings, statements (whether verbal or written) or actions of any party. This waiver constitutes a material inducement for Borrower and Lender to enter into the transactions contemplated hereby.

The Borrower has received a copy of this Note.

This Note shall be the joint and several obligation of the Borrower and all sureties, guarantors and endorsers, and shall be binding upon them and their respective successors and assigns and each or any of them.

[Signature Page to Follow]

IN WITNESS WHEREOF, the Borrower has executed this Note as an instrument under seal, as of the day and year first above written.

Signed in the presence of:

Patricia A. Johnson
Witness

DYNASIL CORPORATION OF AMERICA

By: /s/ Holly Hicks
Holly Hicks, Chief Financial Officer

SCHEDULE A

EQUIPMENT LINE OF CREDIT TERM NOTE

$_________________________ **__________________, 20___**

FOR VALUE RECEIVED, the undersigned, with a principal place of business located at, 313 Washington Street, Suite 403, Newton, Massachusetts 02458 (hereinafter called the **"Borrower"**), promises to pay to MIDDLESEX SAVINGS BANK, a Massachusetts banking corporation, at its principal office at 6 Main Street, Natick, Massachusetts 01760 (hereinafter called the **"Lender"**), OR TO ITS ORDER, the principal sum of [_________________________________] ($ ____________) DOLLARS, or such lesser amount as may actually be advanced, with interest on the unpaid balance hereof from the date hereof until paid, at the rate and in the manner hereinafter provided, in lawful money of the United States of America.

Fixed Rate; Payments: The unpaid principal of this Note from time to time outstanding shall bear interest, computed on the basis of the actual number of days elapsed over a year assumed to have 360 days, at an annual rate equal to [the Federal Home Loan Bank 5/5 Amortizing Advance Rate plus 2.50%] (**"Interest Rate"**).

Beginning on [__________________, 20___], and on the same day of each and every month thereafter during the term hereof, Borrower shall make monthly payments of principal and interest in the amount of [_________________________________] Dollars ($ ____________) each. Principal not paid when due hereunder shall bear interest at the rate set forth above from the date due until so paid. Each payment shall be applied first to interest then due on the unpaid balance of principal and then to such principal.

Such monthly payments shall be based upon a five (5) year amortization schedule.

All indebtedness evidenced by this Note shall be due and payable five (5) years from the date hereof (the **"Maturity Date"**), unless such date is extended in a written agreement executed by Borrower and Lender.

Late Charge: Whenever any installment of principal and interest due hereunder shall not be paid within fifteen (15) days of its due date, the Borrower shall pay in addition thereto as a late charge, five percent (5%) of the amount of any such installment.

Security: This Note is secured by a first priority security interest in all assets of the Borrower, pursuant to a Loan and Security Agreement dated May 1, 2014, as amended, between Borrower and Lender (the **"Loan and Security Agreement"**), which assets are located at 313 Washington Street, Suite 403, Newton, Massachusetts 02458, and a Stock Pledge Agreement from Borrower regarding one hundred thirty (130) shares of Hilger Crystals Limited dated May 1, 2014. All of Borrower's obligations to the Lender however characterized (the **"Obligations"**) are guaranteed pursuant to each Entity Guaranty and Security Agreement, all dated May 1, 2014, from Optometrics Corporation, Radiation Monitoring Devices, Inc., RMD Instruments Corp, Evaporated Metal Films Corp. and Dynasil Biomedical Corp. (the **"Guarantors"**) (hereinafter, each a **"Guaranty"**). Such documents, together with various other instruments securing this Note (the terms and provisions of all of which are incorporated herein by reference) are hereinafter referred to as the **"Security Instruments"**.

Default: An Event of Default under any of the Security Instruments shall constitute an Event of Default hereunder, and such events of default include, but are not limited to, the failure of Borrower to make any payments of principal, interest or other charge when due hereunder. Upon the occurrence of an Event of Default, the Lender may, at its option, without notice or demand, declare the unpaid principal and all accrued interest under this Note to be immediately due and payable without presentment, demand, protest, notice of protest or other notice of dishonor of any kind, all of which are hereby expressly waived. No course of dealing or delay in accelerating the maturity of this Note or in taking any other action with respect to any Event of Default shall affect Lender's rights to take action with respect thereto, and no waiver as to any one Event of Default shall affect any of Lender's rights as to any other Event of Default.

Setoff: Any deposits or other sums at any time credited by or due from the holder to the Borrower or Guarantors and any securities or other property of Borrower or Guarantors in the possession or custody of the holder may at all times be held and treated as collateral security for the payment of this Note and any and all other liabilities, direct or indirect, absolute or contingent, due or to become due, now existing or hereafter arising, of said respective Borrower or Guarantors to the holder. The holder hereof on or after default in payment hereof may apply such deposits or other sums to said Obligations and sell any such securities or other property at broker's board or at public or private sale without demand, notice or advertisement of any kind, all of which are hereby expressly waived.

Default Rate: Lender shall have the option of imposing, and Borrower shall pay upon billing therefore, an interest rate which is four percent (4%) per annum above the interest rate otherwise payable hereunder (**"Default Rate"**): (a) while any monetary default exists and is continuing, during that period between the due date and the date of payment; (b) following any Event of Default, unless and until the Event of Default is waived by Lender; and (c) after the Maturity Date.

Collection Costs: If this Note shall not be paid in full upon demand, the Borrower agrees to pay all costs and expenses of collection, including court costs and reasonable attorneys' fees.

Prepayment: Borrower may make partial or a full prepayment of principal due hereunder without penalty, provided however, that as to full prepayments made with funds provided by another lending institution, a prepayment charge will be applicable for the first three (3) year period of the loan. The charge will be equal to three (3%) percent of the amount of principal prepaid for the first such year, two (2%) percent for the second such year, and one (1%) percent for the third such year.

Waiver: The Borrower agrees, by making this Note or by making any agreement to pay any of the indebtedness evidenced by this Note, to waive presentment for payment, protest and demand, notice of protest, demand and of dishonor and nonpayment of this Note, and consents without notice or further assent (a) to the substitution, exchange or release of the collateral securing this Note or any part thereof at any time, (b) to the acceptance by the holder or holders at any time of any additional collateral or security for or other guarantors of this Note, (c) to the modification or amendment at any time, and from time to time of this Note, the Loan and Security Agreement hereinabove referred to, and any instrument securing this Note, at the request of any person liable hereon, (d) to the granting by the holder hereof of any extension of the time for payment of this Note or for the performance of the agreements, covenants and conditions contained in this Note, the Loan and Security Agreement hereinabove referred to, or any instrument securing this Note, at the request of any other person liable hereon, and (e) to any and all forbearances and indulgences whatsoever; and such consent shall not alter or diminish the liability of any person.

Jury Trial Waiver: Borrower and Lender mutually hereby knowingly, voluntarily and intentionally waive the right to a trial by jury in respect of any litigation based on this Note, arising out of, under or in connection with the Loan and Security Agreement or any other Security Instruments contemplated to be executed in connection herewith, or any course of conduct, course of dealings, statements (whether verbal or written) or actions of any party. This waiver constitutes a material inducement for Borrower and Lender to enter into the transactions contemplated hereby.

The Borrower has received a copy of this Note.

This Note shall be the joint and several obligation of the Borrower and all sureties, guarantors and endorsers, and shall be binding upon them and their respective successors and assigns and each or any of them.

IN WITNESS WHEREOF, the Borrower has executed this Note as an instrument under seal, as of the day and year first above written.

Signed in the presence of: DYNASIL CORPORATION OF AMERICA

______________________________	By: ______________________________
Witness	Holly Hicks, Chief Financial Officer

EXHIBIT 21.1 Subsidiaries of the Company
Subsidiaries of Dynasil Corporation of America

	Jurisdiction of Incorporation
Hibshman Corporation (Inactive)	New Jersey
Optometrics Corporation	Delaware
Evaporated Metal Films Corporation	New York
Radiation Monitoring Devices, Inc.	Delaware
RMD Instruments Corporation	Delaware
Hilger Crystals, Ltd.	United Kingdom
Dynasil Biomedical Corporation	Delaware
Xcede Technologies, Inc.	Delaware

EXHIBIT 31.1 (a)
CERTIFICATION PURSUANT TO RULE 13a–14(a)/15d-14(a) and
SECTION 302 OF THE SARBANES-OXLEY ACT

I, Peter Sulick, certify that:

1. I have reviewed this Form 10-K of Dynasil Corporation of America;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s)and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 26, 2019

/s/ Peter Sulick
Peter Sulick
President and Chief Executive Officer

EXHIBIT 31.1 (b)
CERTIFICATION PURSUANT TO RULE 13a–14(a)/15d-14(a) and
SECTION 302 OF THE SARBANES-OXLEY ACT

I, Holly A. Hicks, certify that:

1. I have reviewed this Form 10-K of Dynasil Corporation of America;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s)and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 26, 2019	/s/ Holly A. Hicks
	Holly A. Hicks
	Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE
SARBANES-OXLEY ACT OF 2002

In connection with this Annual Report of DYNASIL CORPORATION OF AMERICA (the "Company") on Form 10-K for the period ended September 30, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Peter Sulick, President and Chief Executive Officer of the Company, and Holly A. Hicks, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of our knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Peter Sulick
Peter Sulick
President and
Chief Executive Officer

/s/ Holly A. Hicks
Holly A. Hicks
Chief Financial Officer

December 26, 2019