

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

FORM S-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

SEQLL INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of
Incorporation or Organization)

46-5319744

(I.R.S. Employer
Identification Number)

**3 Federal Street
Billerica, MA 01821
(781) 460-6016**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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. See the definitions of "large accelerated filer", "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 7(a)(2)(B) of the Securities Act.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. This prospectus is not an offer to sell these securities, and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

**SUBJECT TO COMPLETION, DATED NOVEMBER 10, 2022
PRELIMINARY PROSPECTUS**



SEQLL INC.

\$75,000,000

**Common Stock
Preferred Stock
Debt Securities
Warrants
Rights
Units**

We may offer from time to time shares of our common stock, preferred stock, senior debt securities (which may be convertible into or exchangeable for common stock), subordinated debt securities (which may be convertible into or exchangeable for common stock), warrants, rights and units that include any of these securities. The aggregate initial offering price of the securities sold under this prospectus will not exceed \$75,000,000. We will offer the securities in amounts, at prices and on terms to be determined at the time of the offering.

Each time we sell securities hereunder, we will attach a supplement to this prospectus that contains specific information about the terms of the offering, including the price at which we are offering the securities to the public. The prospectus supplement may also add, update or change information contained or incorporated in this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. You should read this prospectus, the information incorporated by reference in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus carefully before you invest in our securities.

The securities hereunder may be offered directly by us, through agents designated from time to time by us or to or through underwriters or dealers. If any agents, dealers or underwriters are involved in the sale of any securities, their names, and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the section entitled "About This Prospectus" for more information.

Our common stock and certain of our outstanding warrants are listed on the NASDAQ Capital Market under the symbols SQL and SQLLW, respectively.

Investing in securities involves certain risks. See "Risk Factors" beginning on page 12 of this prospectus and in the applicable prospectus supplement, as updated in our future filings made with the Securities and Exchange Commission that are incorporated by reference into this prospectus. You should carefully read and consider these risk factors before you invest in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2022

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The distribution of this prospectus may be restricted by law in certain jurisdictions. You should inform yourself about and observe any of these restrictions. If you are in a jurisdiction where offers to sell, or solicitations of offers to purchase, the securities offered by this document are unlawful, or if you are a person to whom it is unlawful to direct these types of activities, then the offer presented in this prospectus does not extend to you.

We have not authorized anyone to give any information or make any representation about us that is different from, or in addition to, that contained in this prospectus, including in any of the materials that we have incorporated by reference into this prospectus, any accompanying prospectus supplement, and any free writing prospectus prepared or authorized by us. Therefore, if anyone does give you information of this sort, you should not rely on it as authorized by us. You should rely only on the information contained or incorporated by reference in this prospectus and any accompanying prospectus supplement.

You should not assume that the information contained in this prospectus and any accompanying supplement to this prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying supplement to this prospectus is delivered or securities are sold on a later date. Neither the delivery of this prospectus, nor any sale made hereunder, shall under any circumstances create any implication that there has been no change in our affairs since the date hereof or that the information incorporated by reference herein is correct as of any time subsequent to the date of such information.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, we may, from time to time, offer and sell any combination of the securities described in this prospectus in one or more offerings. The aggregate initial offering price of all securities sold under this prospectus will not exceed \$75,000,000.

This prospectus provides certain general information about the securities that we may offer hereunder. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of the offering and the offered securities. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. In each prospectus supplement, we will include the following information:

- the number and type of securities that we propose to sell;
- the public offering price;
- the names of any underwriters, agents or dealers through or to which the securities will be sold;
- any compensation of those underwriters, agents or dealers;
- any additional risk factors applicable to the securities or our business and operations; and
- any other material information about the offering and sale of the securities.

In addition, the prospectus supplement or free writing prospectus may also add, update or change the information contained in this prospectus or in documents incorporated by reference in this prospectus. The prospectus supplement or free writing prospectus will supersede this prospectus to the extent it contains information that is different from, or that conflicts with, the information contained in this prospectus or incorporated by reference in this prospectus. You should read and consider all information contained in this prospectus, any accompanying prospectus supplement and any free writing prospectus that we have authorized for use in connection with a specific offering, in making your investment decision. **You should also read and consider the information contained in the documents identified under the heading “Incorporation of Certain Documents by Reference” and “Where You Can Find More Information” in this prospectus.**

Unless the context otherwise requires, the terms “the Company,” “we,” “us,” and “our” in this prospectus each refer to SeqLL Inc., our subsidiaries and our consolidated entities.

TRADEMARKS AND TRADENAMES

We use our registered trademarks and trade names, such as “SeqLL[®],” “tSMS[®],” and “DRS[®],” in this prospectus. Solely for convenience, trademarks and trade names referred to in this prospectus appear without the [®] and [™] symbols, but those references are not intended to indicate that we will not assert, to the fullest extent under applicable law, our rights, or that the applicable owner will not assert its rights, to these trademarks and trade names. We do not intend our use or display of other companies’ trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

GLOSSARY OF CERTAIN SCIENTIFIC TERMS

The medical and scientific terms used in this prospectus have the following meanings:

“Bioinformatics” means a subdiscipline of biology and computer science concerned with the acquisition, storage, analysis, and dissemination of biological data, most often DNA, RNA, and amino acid sequences.

“cDNA” means complementary DNA created from RNA through the use of reverse transcriptase.

“DNA” means deoxyribonucleic acid, a self-replicating material present in nearly all living organisms as the carrier of genetic information.

“Double helix” is a structure formed by a pair of parallel helices intertwined around a common axis. DNA is a double helix.

“DRS” means Direct RNA Sequencing, a method for sequencing RNA molecules without conversion to complementary DNA (“cDNA”) or amplification via PCR.

“Epigenetic” is the changes in gene expression that do not involve changes in the DNA sequence.

“FDA” means the U.S. Food and Drug Administration.

“Flow cell” means an optical cell used for detection and measurement of biological samples.

“Gene” is a portion of a DNA that serves as the basic unit of heredity.

“Gene expression” is a process by which information from a gene is used for the synthesis of a functional product.

“Genome” is an organism’s complete set of DNA.

“Genomics” refers to the study of all an organism’s genes and their interactions to influence the organism. Large-scale studies are required to understand how changes in an organism’s genes influence the organism.

“Helix” is an extended spiral chain of molecules.

“LDT” means Laboratory Developed Tests.

“Ligation” is a process of joining two DNA strands by chemical linkage.

“Microfluidics” is the science of manipulating and controlling fluids, usually in very small ranges.

“Next Generation Sequencing” means a high-throughput sequencing to sequence DNA and RNA molecules much more quickly and cheaply than the previously used techniques.

“NGS” means Next Generation Sequencing.

“Nucleic Acid” means a complex organic substance present in living cells, such as DNA or RNA.

“Nucleotide bases” or “Nucleotides” are building blocks of nucleic acids and include adenine (“A”), cytosine (“C”), guanine (“G”), thymine (“T”) and uracil (“U”).

“Omics” refers to various different biological analyses approaches whereby researchers can analyze complex biological data, often in high throughput methods, to find novel associations between biological entities, pinpoint relevant biomarkers and build elaborate markers of disease and physiology. Examples of various “omics” analyses include: genomics, proteomics, transcriptomics, epigenomics, and metabolomics. When two or more of the -omics analyses approaches are combined either directly in analyses and/or in examination of -omics data sets, the approach is referred to as “multi-omics.”

“PCR” means Polymerase Chain Reaction, which is a technique used to generate multiple copies (thousands to millions) of DNA sequences.

“Proteomic(s)” refers to the large-scale study of proteins. The proteome is the entire set of proteins that is produced or modified in an organism or system.

“RNA” means ribonucleic acid, a material present in all living cells which acts as a messenger carrying instructions from the DNA for controlling the synthesis of proteins.

“RNA-Seq” means RNA Sequencing, an NGS method that involves the conversion of RNA into cDNA for subsequent sample preparation and sequencing.

“Throughput” refers to the rate at which an assay can be performed on during a given time period.

“Transcript” is a single stranded RNA synthesized by transcription of DNA.

“Transcriptome” refers to the sum of all RNA molecules, inclusive of noncoding and coding RNAs, that are contained within a population of cells or a single cell.

“tSMS” means True Single Molecule Sequencing.

THE COMPANY

This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider before investing in our securities. This summary is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus. You should read this entire prospectus carefully, including the information set forth in the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes thereto contained in this prospectus, before making an investment decision. Unless the context requires otherwise, references in this prospectus to “we,” “us,” “our,” “our company,” or similar terminology refer to SeqLL Inc.

Overview

We are a development-stage life sciences instrumentation and research services company engaged in the development of scientific assets and novel intellectual property across multiple “omics” fields. We intend to leverage our expertise with True Single Molecule Sequencing (“tSMS”) technology to enable researchers and clinicians to contribute major advancements to scientific research and development by accelerating one’s understanding of the molecular mechanisms of disease and fundamental biological processes. We believe our proprietary sequencing technology platform has critical advantages over existing Next Generation Sequencing (“NGS”) technologies, particularly for emerging applications in the research and development of biomarker discovery, epigenetics, nucleotide chemistry, forensics, and cell-free nucleic acid analysis. Our mission is to empower researchers with improved genetic tools that enable scientists and physicians to better understand the molecular mechanisms of disease and the underlying biological systems. This knowledge is essential to the continued development of new breakthroughs in genomic medicine that address the critical concerns involved with today’s precision medicine.

Our single molecule technology enables researchers to identify and synthesize DNA or RNA strands, irrespective of abundance, in a biological sample and is capable of analyzing billions of molecules in parallel, which positions us as both competitive and complementary with other NGS platforms. We believe our technology advantage is a simplified method of quantifying DNA and RNA molecules at single molecule resolution because our platform does not require the routine PCR amplification and ligation steps required during library preparation by most NGS systems, thereby avoiding systematic bias and consequential additional costs. Our current sequencing platform offers advantages, such as the ability in certain samples to reveal previously-unknown molecular profiles, by directly detecting single molecules with little to no manipulation of the original sample. Our tSMS platform then generates data that is highly-accurate and creates reproducible molecular profiles, often providing researchers with new insights into the biology being researched. As supported by multiple peer-reviewed research publications, our tSMS technology platform has assisted medical researchers in uncovering potentially significant DNA and RNA biomarkers for the early detection of diseases.

Our strategy is to integrate the tSMS platform with the development of novel applications across multiple market segments, and to generate revenue through sales of partnership-specific systems and related flowcells and reagents, which we refer to as “sequencing kits”, research services and research grants. We do not offer or sell any products that are founded upon or incorporate our tSMS platform directly to healthcare professionals or consumers. To strengthen our market position, we strive to build and control intellectual property around the instruments, sequencing kits and methods that enable these applications. Integral to this strategy will be to work with existing customers in developing new instruments optimized for specific assay and chemistry performance in order to support a wide array of applications. Our target customers are consumers of NGS products and services engaged in research activities and the development of new or improved products, such as academic and government institutions, hospitals and medical centers, pharmaceutical and biotechnology companies, and non-profit research organizations.

Under our current operating model, we expect the revenues we generate from a specific customer to scale as our partnership or collaboration with such customer matures and intellectual property founded on our tSMS platform is developed and sold by such customer. Initially, our customer-specific revenues are typically dependent on the funding of, or research grants obtained by, our partners and their ability to develop novel products. During the early stages of our partnerships or collaborations, we generally derive revenue from research services, grants and the sale of customized instruments and sequencing kits as intellectual property is developed. Over the longer term, however, we expect to generate increasing revenues from our customers from the sale of application-specific assays or tests that are developed on our platform and for which we will receive royalties, a revenue split or other remuneration for the use of our platform or jointly-developed intellectual property.

Background on Genetic Sequencing

Genetic inheritance in living systems is conveyed through a naturally-occurring information storage system known as deoxyribonucleic acid, or DNA. DNA stores information in linear chains of chemical bases known as adenine (“A”), cytosine (“C”), guanine (“G”) and thymine (“T”). Inside living cells, these chains usually exist in pairs bound together in a double helix by complementary base pairs. A “genome” is an organism’s complete set of DNA, which for humans consists of approximately three billion DNA base pairs. Ribonucleic acid, or RNA, is a molecule used by organisms to convey genetic information. A “transcriptome” is an organism’s complete set of RNA molecules at an active cellular state and includes both protein coding and noncoding RNA transcripts.

Genetic sequencing is the process of determining the order of nucleotide bases (A, C, G, or T) in a sample. This consists of three phases: sample preparation, physical sequencing and analysis. Generally, the first step of sample preparation is either to shear the target genome into multiple small fragments or, depending on the amount of sample DNA or RNA available, amplify the target region using a variety of molecular methods. In the physical sequencing phase, the individual bases in each fragment are identified in order, creating individual sequence reads. The number of individual bases identified contiguously is defined as “*read length*.” The sequencing throughput is generally defined as the product of the number of individual sequence reads and the average read length of the sequence reads. In the analysis phase, bioinformatics software is used to align overlapping reads, which allows the original genome to be assembled into contiguous sequence.

Studying genomes and transcriptomes helps scientists understand the inheritance of biological characteristics, developmental biology and normal and disease states of cells and organisms. Genetic variation accounts for many of the differences between individuals, such as eye color and blood group, and also affects a person’s susceptibility to certain diseases such as cancer, heart disease or diabetes. Genetic variation can also determine a person’s response to drug therapies.

A trend in healthcare is towards ‘personalized medicine’ to enable more accurate diagnosis and treatment through better understanding of each individual patient’s disease. We believe that a greater understanding of the genome will lead to this new healthcare paradigm where diseases are understood at the molecular level, allowing patients to be diagnosed according to genetic information, in many instances earlier and more accurately, and be treated with drugs designed to work on specific molecular targets. The goal is to offer precision-personalized medicine that will identify disease earlier, reduce healthcare costs, and enable more appropriate and effective treatment for better outcomes and quality of life. To date, this has largely been done through genomic testing, which provides information about a patient’s predisposition to disease or likely response to medication, due to each individual’s unique constellation of genes. However, DNA testing is, in most cases aside from tumor genome testing, a static readout that does not change through a patient’s lifetime or disease course. It does not provide information about the patient’s current health status. An increasing number of researchers, however, now believe the transcriptome provides dynamic information about the current state of the body that can be used to assess health, to detect early signs of disease and to enable physicians to select the appropriate treatment, monitor response to treatment and detect unwanted side effects.

Cell-free Nucleic Acids as Disease Biomarkers: Most of the DNA and RNA in the body are inside the cells, but a small amount of nucleic acids is also found in biological fluids such as blood, saliva and urine. This material is generally referred to as cell-free DNA (“cfDNA”) and cell-free RNA (“cfRNA”). Analysis of these free-floating molecules can lead to multiple applications such as early disease detection, drug selection and treatment monitoring. For example, a large amount of cell-free DNA material might indicate a bacterial infection or sepsis in very early stages. Cell-free DNA is typically derived from chromatin as intact nucleosomes, or histone-bound DNA, which can be analyzed in addition to solely assessing DNA. Another such example is cfRNA analysis for detection, diagnosis and monitoring of malignant diseases such as cancer. The cfRNA transcripts are differentially expressed between normal and cancerous tissues. These transcripts can be used as a reliable biomarker for cancer screening and diagnostic applications. Analysis of cfRNA can be used to measure dynamic changes in the gene expression, allow oncologists to evaluate disease status, predict outcomes from anti-tumoral therapies and monitor the disease after treatment.

Sequencing Technologies: There are different sequencing technologies available for sequencing genetic material, each producing the sequence data in a unique format. Some of the technologies produce millions of sequence reads with a very short-read length, generally less than 300 nucleotide bases. These technologies are generally referred to as short-read NGS platforms. Other technologies produce several thousand sequence reads of a very long-read length, generally more than 1000 nucleotide bases. These technologies are generally referred to as long-read NGS platforms. Both the short- as well as long-read NGS technologies have their advantages in various settings. For *de novo* assembly of genomes and long RNA transcripts, the long contiguous reads from the long-read NGS technologies are preferred. Generally, short reads can be used to further fill in gaps in the data from longer read technologies. For molecular counting applications, a large number of independent reads from short-read NGS technologies are preferred. Different genes are present in varying amounts in biological samples, and the success of the technique is highly-dependent on the dynamic range of the detection technology.

There are multiple NGS technologies available in the market, offered by companies such as Illumina Inc, Pacific Biosciences of California, and Thermo Fisher Scientific Inc., that partially address the need for accurate and sensitive analysis of genetic information. These technologies can further be classified based on the resolution of the technology as single-molecule sequencing technologies and amplification-based technologies. Most single-molecule sequencing technologies do not require amplification, though many of the long-read technologies still require complex sample manipulation prior to sequencing. This is especially true for the sequencing of RNA molecules. Over the past two decades, researchers and clinicians have used these technologies to gain a deeper understanding of nucleic acids, to study biomarkers associated with disease, to identify molecules for new drug discovery, to create novel applications for early screening and diagnosis, and more recently to create genome-editing techniques. While researchers are making progress on various fronts by utilizing a combination of these technologies, there remains a wide gap between the needs of the research community and the capabilities of existing sequencing tools. This gap is hindering the advancement of scientific research. The inherent limitations of current technologies are summarized below:

- **Biased results:** Short-read NGS technology typically requires a large number of DNA molecules during the sequencing process. To generate enough DNA molecules, an amplification step is required during sample preparation. This amplification process can introduce errors known as amplification bias. The effect of this bias is that resulting copies are not uniformly representative of the original template DNA, causing skewed data representation in the final results.
- **Lower sensitivity:** In cases where the original template DNA contains regions of relatively high G-C content or relatively high A-T content, the amplification process tends to under-represent these regions. As a result, these regions, which may contain entire genes, can be completely missed. As a result, the non-linear nature of the amplification may limit its ability to detect subtle changes in the genetic signature.
- **Inefficient library preparation:** Many of our competitors use systems requiring multi-step sample preparation protocols to prepare sample libraries before sequencing. This library preparation technique is inefficient, capturing only a fraction of the informative input material. The process selectively captures the molecules which are present in large quantities while losing lower frequency molecules, thus not producing a true representation of the input material. The library preparation protocol limits the minimal amount of input sample. The library preparation steps also add significant burden on the sample preparation.
- **Inadequate throughput:** Applications such as transcriptome profiling, gene expression and biomarker discovery require accurate quantification of data. We believe the long read single molecule technologies fall short due to the smaller number of strand throughput required to substantiate the presence or absence of a biomarker in a specific sample. The short-read amplification technologies are limited due to a skewed data representation caused by the non-linear amplification bias present in the workflow.

Our Technology Solution

Our tSMS platform offers a single molecule solution for DNA and RNA sequencing by performing detection of nucleic acids without the need for complex sample manipulation. Researchers using our platform can analyze many billions of single molecules in a single experiment and still generate highly accurate and reproducible data. We believe our technology's critical advantage over other technologies is because our platform does not require the routine library preparation steps, such as PCR amplification and ligation, necessary for use with most NGS systems, thereby avoiding systematic amplification bias. RNA sequencing on our platform detects transcripts regardless of abundance and with high accuracy in quantifying gene expression changes associated with certain disease as well as detecting subtle changes in RNA transcript levels that are undetectable with other methods.

Our single molecule platform is unique because it combines a proprietary fluorescence-based optical detection apparatus with a precision microfluidics and thermal control system to perform sequencing-by-synthesis reactions, as illustrated in Figure 1 below.

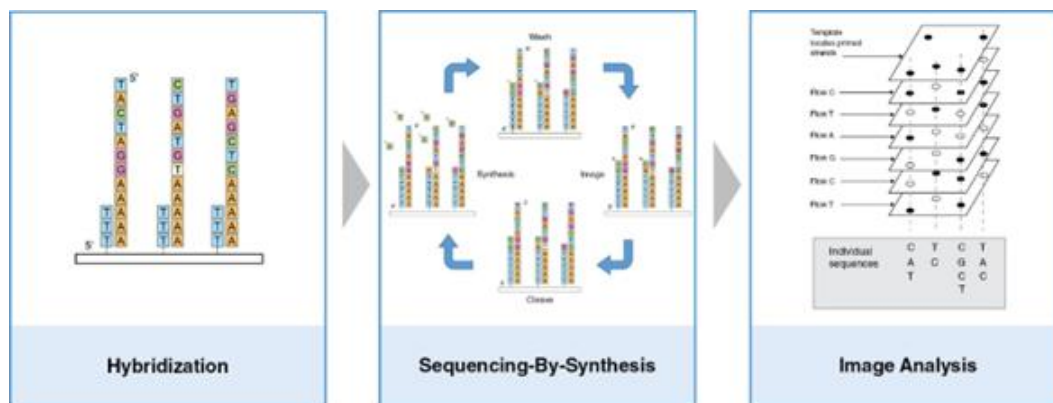


Figure 1. tSMS Technology Workflow

The single molecule fluorescence signal from millions of individual strands is captured by images using a high-sensitivity camera during multiple cycles of nucleotide incorporation. Our powerful image analysis system processes these images to produce the sequence data as an output. The output data contains millions of individual unique sequences with the average read length of between 35 – 60 nucleotide bases, with a range of 20 – 100 nucleotide bases. This length is sufficient to allow unambiguous identification of the origin of each sequence.

By giving short-read technology the power of single molecule resolution, we believe our tSMS technology offers critical advantages over existing technologies, including:

- **Greater Sensitivity.** The tSMS platform offers a high level of sensitivity as each strand is identified and synthesized irrespective of its abundance in the sample. In the existing amplification-based technologies, low expressing transcripts are typically masked due to preferences and may be missed or have their numbers minimized in the final data analysis. The simplified sample preparation along with single molecule resolution generally facilitates the unbiased, proportionate representation of input sample, even of the low expressing transcripts and constructs. This allows for obtaining more accurate information earlier, and for clinical treatments or decisions to be made sooner.
- **High Accuracy.** The tSMS platform provides an accurate set of data and results as well as a broader range of molecules to be evaluated. The ability to count each individual molecule, combined with simplified sample preparation and greater sample sensitivity, yields an accurate quantitative representation of sample in the final data. Our technology has been demonstrated to produce robust accurate short reads for a variety of applications.

- **Minimal Sample Preparation.** The tSMS platform offers a simple sample preparation process. The DNA strands are cut in shorter sizes, converted into single strands, and then tagged with a universal surface capture primer. By avoiding the complex multi-step library preparation method, the sample integrity is preserved, and the bias and errors in the sequence data output exhibited by other methods are avoided.
- **Seamless Flexibility.** Our tSMS platform provides flexibility in two main aspects — throughput and applications. The tSMS platform has the ability to scale throughput across a range of small to large projects. The programmable instrument workflow and modular design of sequencing kit components provide flexibility to choose the sample coverage and read length required for the final data. The simplified sample preparation allows for analysis of any genetic material that can be attached to a glass surface.

Market Opportunity

The market for our products and services is segmented into two major categories, DNA NGS and RNA NGS, which, according to The Insight Partners, accounted for a combined addressable market opportunity of approximately \$1.03 billion in 2019 that is projected to grow to \$5.26 billion by 2025 at a compound annual growth rate (CAGR) of 31.3%.

DNA NGS market opportunity: According to The Insight Partners *DNA NGS Market Report 2019*, the global DNA NGS market is projected to grow from \$6.82 billion in 2019 to \$22.72 billion in 2025 at a CAGR of 22.2% from 2019 to 2025. Our customers in the DNA NGS market largely consist of academic and research institutes and forensic labs. Collectively, academic and research institutes and forensic labs, pathology labs and diagnostic centers represent a projected 58.4% of the end-user market share in 2019. Our targeted end users, applications and regions for DNA NGS represented an addressable market opportunity of \$0.74 billion in 2019 that is projected to grow to \$4.10 billion in 2025 at a CAGR of 33.0%.

RNA NGS market opportunity: According to The Insight Partners *NGS-based RNA Seq. Market Report 2019*, the global RNA NGS market is projected to grow from \$1.63 billion in 2019 to \$4.96 billion in 2025 at a CAGR of 20.4%. The RNA NGS market can be segmented by products and services, end users, applications and sequencing technologies. Research and academic centers, pharmaceutical and biotech companies, and pathology labs forensic labs and diagnostic centers represented a projected 76.7% share of the end users in 2019. Our targeted end users, applications and regions for RNA NGS represented an addressable market opportunity of \$0.29 billion in 2019 that is projected to grow to \$1.16 billion in 2025 at a CAGR of 26.2%.

Markets for Our Technology

The initial target market for our instruments and research services has been the life sciences research and development market where we provide solutions for a variety of applications, including biomarker discovery and diagnostic assay developments. This market includes laboratories associated with universities, scientific research centers, government institutions, and biotechnology and pharmaceutical companies.

Introductions of new technologies and products, while positive to the overall development of these markets, may result in greater competition for the limited financial resources available. There are a number of emerging markets for sequencing-based technologies that represent significant potential opportunities for us, including:

- **Life sciences research and development:** NGS technologies are accelerating the discovery and development of more effective new drugs. The complex nature of biological pathways, disease mechanisms and multiple drug targets requires an accurate, unbiased, and sensitive molecular counting platform. Single molecule sequencing, with its unparalleled quantitative accuracy in large-scale expression profiling, could enable high-throughput screening of promising drug leads. During clinical trials, our technology could potentially be used for companion diagnostics to generate individual genetic profiles that can provide valuable information on likely response to therapy, toxicology or risk of adverse events. The tSMS platform may also enable more precise selection of patient pools and individualization of therapy.

- **Liquid biopsy:** Liquid biopsy is emerging as a simple and non-invasive alternative to the traditional tissue biopsy approach for disease screening and monitoring. A simple draw of blood contains millions of tiny fragments of cell-free DNA/RNA material with lengths on the order of 100 – 200bp, which carry informative signatures of cancer and other life-threatening diseases even in a very early stage of the disease progression. With its quantitative accuracy, simple sample preparation methodology, and its ability to accurately sequence fragmented short molecules, our single molecule sequencing offers an excellent solution for liquid biopsy.
- **Infectious disease:** Infectious diseases are caused by bacteria, viruses and fungi. These organisms contain DNA and RNA that act as infectious agents to transmit disease from person to person, by insect or animal, or through food and environmental means. The detection and sequencing of the DNA and RNA from pathogens provides medically actionable information for diagnosis, treatment and monitoring of infections. Accurate sequence information could also help to predict drug resistance.
- **Clinical diagnostics:** Our amplification and ligation-free sequencing method allows us to identify subtle changes in the RNA transcript levels that are undetectable with other methods presumably due to bias and loss of low-level transcripts inherent to the other technologies. The power of our tSMS technology can help to address the large unmet need for biomarker discovery to diagnose diseases such as cardiovascular diseases and cancer at very early stages.
- **Microbiome analysis:** Microbial communities in and on the body show uniform bacterial diversity in healthy individuals. Drugs and diet can disrupt the microbial diversity, and thereby can affect disease progression and treatment efficacy. Our technology can accurately quantify the gene signature for all bacteria present and capture a real-time snapshot of the microbiome. This data can be used by physicians for disease treatment by applying methods to encourage growth of beneficial microbes and eliminate harmful microbes.

These examples of emerging markets for sequencing-based technologies represent significant potential opportunities for us. The development of these markets is subject to variability driven by ongoing changes in the competitive landscape, evolving regulatory requirements, government funding of research and development activities, and macroeconomic conditions. Given the ability of the tSMS platform to sequence nucleic acid fragments as well as to detect post-translational modifications within larger chromatin molecules, we believe our technology is uniquely positioned to produce data from molecules at both ends of the single molecule nucleic acid spectrum. This concept, and the technology leaders for each single molecule market segment, is illustrated in Figure 2 below, with our potential applications highlighted in blue font.

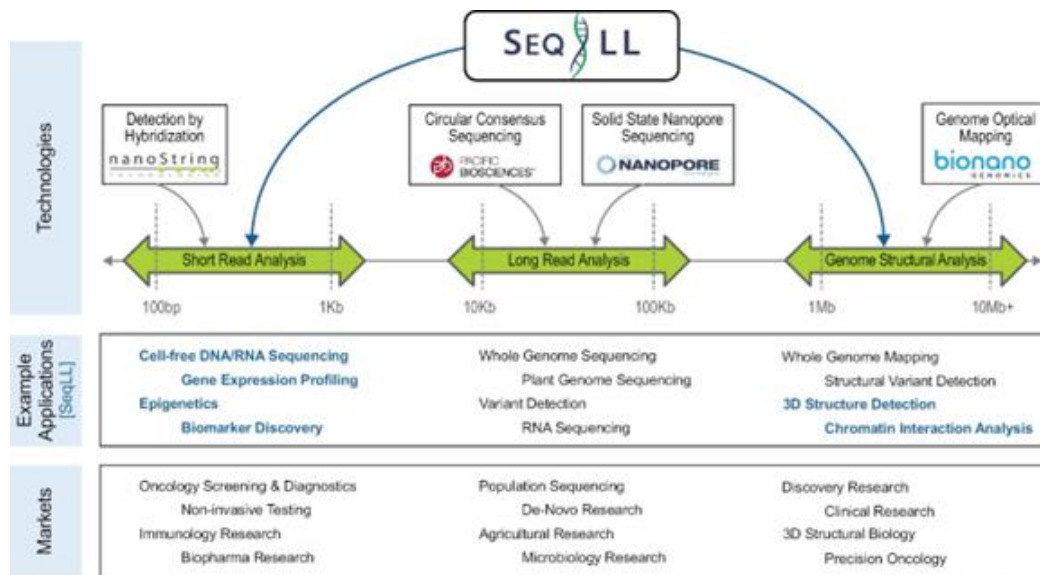


Figure 2. Illustrative Single Molecule Nucleic Acid Landscape

As our partners or collaborators expand their product lines to address the diagnosis of disease, regulation by governmental authorities in the United States will become an increasingly significant factor in development, testing, production and marketing. We have not sought FDA approval of our sequencers because to-date we have marketed them only for research purposes and not for clinical diagnostics. Through our partners or collaborators, we will likely need to assist in pursuing regulatory approvals from the FDA when they attempt to enter the diagnostics market, which approvals are expensive and involve a high degree of risk and for which there is no assurance that we or our partners will be able to develop a commercially-viable product. Even if the products under development are authorized and approved by the FDA, our partners or collaborators must still meet the challenges of successful marketing, distribution and customer acceptance. We do not intend to use proceeds from this offering to pursue FDA approval. If significant funds are required from us in seeking to obtain any FDA approval in the future, we intend to raise additional funds for such purpose prior to pursuing FDA approval.

Our Strategy

Our strategy is to integrate our tSMS platform with the development of novel applications across multiple market segments, and to generate revenue through partnership-specific system and sequencing kit sales, research services and research grants. Our target customers are consumers of NGS products and services engaged in research activities and the development of new or improved products, such as academic and government institutes, hospitals and medical centers, pharmaceutical and biotechnology companies, and non-profit research organizations. Integral to this strategy will be to work with existing customers in developing new instruments optimized for specific assay and chemistry performance in order to support a wide array of applications.

We have generated only nominal revenues to date from our current operating model and we do not expect our revenues to scale significantly until one or more of our customers or third-party partners or collaborators has developed application-specific assays or tests for which our platform serves as a foundation. As a result, we believe our ability to continue to operate at current levels is dependent on the success of this offering. Over the longer term, we expect to generate revenues from our customers, partners and collaborators through a combination of product sales, research services and research grants. We plan to expand these revenues from recurring and prospective clients by the following key strategies:

- Provide the scientific community with a combination of research services and NGS instrumentation to serve markets that we believe are inadequately addressed by existing technologies.

- Assist in the development of new classes of RNA-based diagnostics tests.
- Collaborate with researchers to enhance pharmacogenomics and biomarker discovery.
- Support drug developers seeking a better understanding of the side effects of their new drugs.
- Continue to innovate and develop new aspects of our products and technology, applications and instrumentation through scientific collaborations, including grants.
- Leverage our expertise and the broad applicability of our tSMS platform to grow into new markets through strategic collaborations, partnerships, existing data sets, and customers.
- Maintain a strong culture and network of technical resources while seeking to continuously attract new talent to build an industry-leading single molecule solutions company.

We expect to use a portion of the net proceeds of this offering to support our research and development activities and to improve and update our tSMS platform to develop additional applications in support of our existing partnerships and collaborations. While we anticipate increased revenues as a result of those efforts, we are planning to raise additional funds following this offering to support our existing partners and collaborators and to fund the initial costs of new relationships.

We have assembled an experienced management team, board of directors, and scientific founders and advisors who bring industry experience to our company and business strategy. We believe the members of our team have deep experience in discovering, developing and commercializing products with a particular focus on sequencing products and applications.

Our Customers and Collaborators

Our customers and collaborators are focused on academic research, biomarker discovery, and molecular diagnostic product development. The majority of our current customers and collaborators are early adopters of genomics technology, including tSMS. Over the years, they have produced scientific achievements through collaborative research efforts by accessing our technology. We often collaborate with customers to drive innovation in the field of genomic sciences through grant-funded research activities and we do not yet generate significant revenues from these activities from the sale of our products or services. In addition, we have not yet entered into any material agreements with any of these entities as to how our technology is currently being used by them or will be used by them in the future. Our key collaborators and our current activities are summarized below:

Bernstein Laboratory

We have worked closely with the lab of Bradley Bernstein, M.D., Ph.D. at the Dana-Farber Cancer Institute and Harvard Medical School to address fundamental questions in chromatin biology and epigenetic regulation. Dr. Bernstein is also the founder and Director of the Broad Institute Epigenomics Program. Scientists from the Broad Institute have used antibody-based detection coupled with tSMS to begin decoding a dual-marking system in modified histones that signals for a gene to be activated or repressed. Early results, published in *Science*, suggest differentiated cells exhibit different patterns of “bivalent” markings than embryonic cells. Our collaboration encompasses technology development, single-cell RNA and DNA analysis, and the creation of novel intellectual property. In addition to completing NIH grant-funded research activities, to date, we have provided Dr. Bernstein with tSMS systems and onsite support. We also published a technology development manuscript in *Cell Reports Methods*, a leading peer-reviewed scientific journal, that utilized a prototype tSMS system.

Ting Laboratory

We have been a long-time research collaborator with David Ting, M.D., Assistant Professor, Medicine at Harvard Medical School and a leading member at the Dana Farber/Harvard Cancer Center in using tSMS to better understand cancer. His research is focused on the role of non-coding RNA transcription in cancer as it relates to tumorigenesis and as novel biomarkers. In this research area, the Ting Laboratory was first to discover aberrant overexpression of pericentromeric RNA repeats by RNAseq using tSMS, which were found to play a significant role in pancreatic cancer and other epithelial cancers [Bersani, *PNAS*, December 2015]. This discovery resulted in new intellectual property related to pancreatic cancer biomarkers and the subsequent founding of Rome Therapeutics, an early-stage company focused on unlocking the repeatome to discover powerful new classes of medicines for cancer and autoimmune diseases. To date, we have provided Dr. Ting with tSMS systems and onsite support, research services and access to sample preparation methodologies.

Weizmann Institute of Science

In partnership with the laboratory of Efrat Shema, Ph.D., we have recently developed and applied innovative single-molecule technologies to gain a deeper understanding of chromatin regulation. We are working to establish robust single-molecule systems for genome-wide profiling of combinatorial chromatin and DNA modifications, as well as development of novel therapeutic and diagnostic tools. To date, we have provided this collaboration with access to prototype sequencing systems, sequencing kits and sample preparation methodologies. We have recently published manuscripts in leading peer-reviewed scientific journals. In September 2022 volume of *Nature Biotechnology*, our publication entitled “Multiplexed, single-molecule, epigenetic analysis of plasma-isolated nucleosomes for cancer diagnostics” detailed an innovative liquid biopsy application for pancreatic and colorectal cancer detection enabled by SeqLL’s tSMS technology. .

True Bearing Diagnostics, Inc.

We have participated in a research collaboration with Timothy McCaffrey, Ph.D. of The George Washington University’s Center of Genomic Medicine and True Bearing Diagnostics, Inc, performing tSMS on whole-blood RNA to identify transcripts associated with coronary artery disease (“CAD”). In comparison to other platforms that include NGS technologies, only our tSMS platform could consistently identify the novel mRNA signature in CAD patients. We believe this collaboration will provide the blueprint for a diagnostic test that could significantly reduce the over one million U.S. catheterizations that are performed annually at a cost of approximately \$20 billion per year. In 2021, we published a scientific manuscript in a peer reviewed journal detailing biomarker discovery efforts for CAD. To date, we have provided to True Bearing Diagnostics research services and access to sample preparation methodologies. Potential future work includes the development of a CAD-focused clinical system for regulatory clearance.

Tetracore, Inc.

Tetracore, Inc. focuses on antibody-based and nucleic acid-based detection reagents and technologies, and contracts with the U.S. government for the development of real-time PCR diagnostic tests for biological warfare threat agents, novel nucleic acid extraction procedures, and specialized nucleic acid products. To date, we have provided Tetracore with tSMS systems and on-site support. In 2022, Tetracore received funding to explore the development of potential products, including non-NGS applications, are for clinical, animal health, and domestic preparedness testing.

Recent Developments

On June 21, 2022, we received a written notice from the Nasdaq Stock Market LLC indicating that we are not in compliance with Nasdaq Listing Rule 5550(a)(2), as the closing bid price for our common stock was below \$1.00 per share for the last 30 consecutive business days. Pursuant to Nasdaq Listing Rule 5810(c)(3)(A), we have been granted a 180-calendar day compliance period, or until December 18, 2022, to regain compliance with the minimum bid price requirement. To regain compliance, the closing bid price of our common stock must meet or exceed \$1.00 per share for at least 10 consecutive business days during the 180-calendar day compliance period. If we are not in compliance by December 18, 2022, we may be afforded a second 180-calendar day compliance period. To qualify for this additional time, we will be required to meet the continued listing requirement for market value of publicly-held shares and all other initial listing standards for Nasdaq with the exception of the minimum bid price requirement and will need to provide written notice of our intention to cure the deficiency during the second compliance period. If we do not regain compliance within the allotted compliance period(s), including any extensions that may be granted by Nasdaq, Nasdaq will provide notice that our common stock will be subject to delisting.

We intend to monitor the closing bid price of our common stock between now and December 18, 2022 and to consider available options to cure the deficiency and regain compliance with the minimum bid price requirement within the compliance period. Our common stock will continue to be listed and trade on the Nasdaq Capital Market during this period, unaffected by our receipt of the written notice from Nasdaq.

Summary Risks Associated with Our Business

Our ability to execute our business strategy is subject to numerous risks, as more fully described in the section captioned “Risk Factors” immediately following this prospectus summary. You should read these risks before you invest in our common stock and warrants. In particular, risks associated with our business include, but are not limited to, the following:

- As we have incurred recurring losses and negative cash flows since our inception, there is no assurance that we will be able to continue as a going concern absent additional financing.
- We are an early, commercial-stage company with a limited operating history.
- If our tSMS sequencing instruments or sequencing services fail to achieve and sustain sufficient market acceptance, we will not generate expected revenue and our business may not succeed.
- Our research and development efforts may not result in the benefits we anticipate, and our failure to successfully market, sell and commercialize our current and future sequencing instruments and services products could have a material adverse effect on our business, financial condition and results of operations.
- If we are unable to successfully develop and timely manufacture our sequencing instruments and reagents, our business may be adversely affected.
- We must successfully manage new product introductions and transitions related to the tSMS technology, we may incur significant costs during these transitions, and they may not result in the benefits we anticipate.
- We rely on other companies for certain components and materials and intend to outsource sub-assembly manufacturing in the future. We may not be able to successfully assemble or manufacture reagents and instruments or scale the manufacturing process necessary to build and test multiple products on a full commercial basis, which could materially harm our business.
- We may be unable to consistently manufacture our instruments and reagents to the necessary specifications or in quantities necessary to meet demand at an acceptable cost.
- Increased market adoption of our products by customers may depend on the availability of sample preparation and informatics tools, some of which may be developed by third parties.
- Single molecule sequencers are highly complex, have recurring support requirements and could have unknown defects or errors, which may give rise to claims against us or divert application of our resources from other purposes.
- If we lose members of our senior management team or other key personnel or are unable to successfully retain, recruit and train qualified scientists, engineers and other personnel, our ability to maintain and develop our products could be harmed and we may be unable to achieve our goals.
- A significant portion of our potential sales depends on customers’ spending budgets that may be subject to significant and unexpected variation which could have a negative effect on the demand for our products.

- We are, and may become, subject to governmental regulations that may impose burdens on our operations, and the markets for our products may be narrowed.
- Our sales cycle is unpredictable and lengthy, which makes it difficult to forecast revenue and may increase the magnitude of quarterly or annual fluctuations in our operating results.

For a more detailed discussion of some of the risks you should consider, you are urged to carefully review and consider the section titled “Risk Factors” beginning on page 12 of this prospectus.

Implications of Being an Emerging Growth Company

We qualify as an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we remain an emerging growth company, we may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies. These provisions include, but are not limited to:

- being permitted to have only two years of audited financial statements and only two years of related selected financial data and management’s discussion and analysis of financial condition and results of operations disclosure;
- an exemption from compliance with the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;
- reduced disclosure about executive compensation arrangements in our periodic reports, registration statements and proxy statements; and
- exemptions from the requirements to seek non-binding advisory votes on executive compensation or golden parachute arrangements.

In addition, the JOBS Act permits emerging growth companies to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We are not choosing to “opt out” of this provision. We will remain an emerging growth company until the earliest of (i) December 31, 2026, (ii) the first fiscal year after our annual gross revenues exceed \$1.07 billion, (iii) the date on which we have, during the immediately preceding three-year period, issued more than \$1.0 billion in non-convertible debt securities or (iv) the end of any fiscal year in which the market value of our common stock held by non-affiliates exceeds \$700 million as of the end of the second quarter of that fiscal year.

Corporate Information

We were incorporated in Delaware on April 3, 2014. Our principal executive offices are located at 3 Federal Street, Billerica, Massachusetts 01821, and our telephone number is (781) 460-6016. Our corporate website address is www.seqll.com. The information contained on or accessible through our website is not a part of this prospectus.

RISK FACTORS

An investment in our securities involves a high degree of risk. Before making any investment decision, you should carefully consider the risk factors set forth below, the information under the caption “Risk Factors” in any applicable prospectus supplement, any related free writing prospectus that we may authorize to be provided to you and the information under the caption “Risk Factors” in our annual report on Form 10-K and quarterly reports on Form 10-Q that are incorporated by reference into this prospectus, as updated by our subsequent filings under the Securities Exchange Act of 1934, as amended, or the Exchange Act.

These risks could materially affect our business, results of operations or financial condition and affect the value of our securities. Additional risks and uncertainties that are not yet identified may also materially harm our business, operating results and financial condition and could result in a complete loss of your investment. You could lose all or part of your investment. For more information, see “Where You Can Find More Information.”

Risks Related to Our Securities and the Offering

If we are unable to maintain compliance with all applicable continued listing requirements and standards of Nasdaq, our common stock could be delisted from Nasdaq.

Our common stock is listed on the Nasdaq Capital Market under the symbol “SQL.” In order to maintain that listing, we must satisfy minimum financial and other continued listing requirements and standards, including those regarding director independence and independent committee requirements, minimum stockholders’ equity, minimum share price, and certain corporate governance requirements. There can be no assurances that we will be able to remain in compliance with Nasdaq’s listing standards or if we do later fail to comply and subsequently regain compliance with Nasdaq’s listing standards, that will be able to continue to comply with the applicable listing standards. If we are unable to maintain compliance with these Nasdaq requirements, our common stock will be delisted from Nasdaq. On June 21, 2022, we received a deficiency letter from the Listing Qualifications Department, or the Staff, of the Nasdaq Stock Market, notifying us that, based upon the closing bid price of our common stock, for the last 30 consecutive business days, we are not currently in compliance with the requirement to maintain a minimum bid price of \$1.00 per share for continued listing on The Nasdaq Capital Market, as set forth in Nasdaq Listing Rule 5550(a)(2) (the “Minimum Bid Requirement”). The Notice has no immediate effect on the continued listing status of our common stock on Nasdaq, and, therefore, our listing remains fully effective.

We have been provided a compliance period of 180 calendar days from the date of the Notice, or until December 18, 2022, to regain compliance with the Minimum Bid Requirement. If at any time before December 18, 2022, the closing bid price of our common stock closes at or above \$1.00 per share for a minimum of 10 consecutive business days, subject to Nasdaq’s discretion to extend this period pursuant to Nasdaq Listing Rule 5810(c)(3)(G), Nasdaq will provide written notification that we have achieved compliance with the Minimum Bid Requirement, and the matter would be resolved.

If we do not regain compliance with the Minimum Bid Requirement during the initial 180 calendar day period, we may be eligible for an additional 180 calendar day compliance period. To qualify, we would be required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the Minimum Bid Requirement, and would need to provide written notice of our intention to cure the deficiency during the second compliance period, by effecting a reverse stock split, if necessary.

We will continue to monitor the closing bid price of our common stock and seek to regain compliance with all applicable Nasdaq requirements within the allotted compliance periods. If we do not regain compliance within the allotted compliance periods, including any extensions that may be granted by Nasdaq, Nasdaq will provide notice that our common stock will be subject to delisting. We would then be entitled to appeal that determination to a Nasdaq hearings panel.

While we intend to actively monitor the closing bid price of our common stock and will evaluate available options to regain compliance with the Minimum Bid Requirement, there can be no assurance that we will regain compliance with the Minimum Bid Requirement during the 180-day compliance period, secure a second period of 180 days to regain compliance or maintain compliance with the other Nasdaq listing requirements. In the event our common stock is delisted from Nasdaq due to our failure to continue to comply with any requirement for continued listing on Nasdaq, and our common stock is not eligible for quotation on another market or exchange, trading of our common stock could, again, be conducted in the over-the-counter market or on an electronic bulletin board established for unlisted securities such as the OTC Pink or the OTCQB tiers of the OTC marketplace. In such event, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and it would likely be more difficult to obtain coverage by securities analysts and the news media, which could cause the price of our common stock to dec

Future sales or other dilution of our equity could depress the market price of our common stock.

Sales of our common stock, preferred stock, warrants, rights or convertible debt securities, or any combination of the foregoing, in the public market, or the perception that such sales could occur, could negatively impact the price of our common stock.

In addition, the issuance of additional shares of our common stock, securities convertible into or exercisable for our common stock, other equity-linked securities, including preferred stock, warrants or rights or any combination of these securities pursuant to this prospectus will dilute the ownership interest of our common shareholders and could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity securities.

We may need to seek additional capital. If this additional financing is obtained through the issuance of equity securities, debt securities convertible into equity or options, warrants or rights to acquire equity securities, our existing shareholders could experience significant dilution upon the issuance, conversion or exercise of such securities.

Our management will have broad discretion over the use of the proceeds we receive from the sale our securities pursuant to this prospectus and might not apply the proceeds in ways that increase the value of your investment.

Our management will have broad discretion to use the net proceeds from any offerings under this prospectus, and you will be relying on the judgment of our management regarding the application of these proceeds. Except as described in any prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you, the net proceeds received by us from our sale of the securities described in this prospectus will be added to our general funds and will be used for general corporate purposes. Our management might not apply the net proceeds from offerings of our securities in ways that increase the value of your investment and might not be able to yield a significant return, if any, on any investment of such net proceeds. You may not have the opportunity to influence our decisions on how to use such proceeds.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections titled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” but are also contained elsewhere in this prospectus. In some cases, you can identify forward-looking statements by the words “may,” “might,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “objective,” “anticipate,” “believe,” “estimate,” “predict,” “project,” “potential,” “continue” and “ongoing,” or the negative of these terms, or other comparable terminology intended to identify statements about the future, although not all forward-looking statements contain these words. These statements relate to future events or our future financial performance or condition and involve known and unknown risks, uncertainties and other factors that could cause our actual results, levels of activity, performance or achievement to differ materially from those expressed or implied by these forward-looking statements. These forward-looking statements include, but are not limited to, statements about:

- the success, cost and timing of our product development activities, including statements regarding the timing of initiation and completion of our research and development programs;
- developments regarding next generation sequencing technologies;
- our expectations regarding the market size and growth potential for our business;
- the implementation of our strategic plans, including strategy for our business and related financing;
- our ability to maintain and establish future collaborations and strategic relationships;
- the rate and degree of market acceptance of our products;
- our ability to generate sustained revenue or achieve profitability;
- the potential for our identified research priorities to advance our technology;
- the pricing and expected gross margin for our products;
- our commercialization, marketing and manufacturing capability and strategy;
- our expectations related to the use of proceeds from this offering;
- our research and development plans including, among other things, statements relating to future uses, quality or performance of, or benefits of using, products or technologies;
- updates or improvements of our products;
- intentions regarding seeking regulatory approval for our products;
- our competitive position;
- our estimates of our expenses, ongoing losses, future revenue, capital requirements and our needs for, or ability to obtain, additional financing as necessary; and
- our ability to maintain our intellectual property position for our technology.

You should read this prospectus, including the section titled “Risk Factors,” and the documents that we reference elsewhere in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual results may differ materially from what we expect as expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

These forward-looking statements represent our estimates and assumptions only as of the date of this prospectus regardless of the time of delivery of this prospectus or any sale of our common stock. Except as required by law, we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise after the date of this prospectus. All subsequent forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by the cautionary statements contained or referred to herein.

USE OF PROCEEDS

Except as may be stated in the applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you, we intend to use the net proceeds we receive from the sale of the securities offered by this prospectus for general corporate purposes, which may include, among other things, repayment of debt, repurchases of common stock, capital expenditures, the financing of possible acquisitions or business expansions, increasing our working capital and the financing of ongoing operating expenses and overhead.

DESCRIPTION OF CAPITAL STOCK

The following is a summary of our capital stock and certain provisions of our certificate of incorporation and bylaws. This summary does not purport to be complete and is qualified in its entirety by the provisions of our articles of incorporation, as amended, our bylaws and applicable provisions of the Delaware General Corporation Law (the "DGCL").

See "Where You Can Find More Information" elsewhere in this prospectus for information on where you can obtain copies of our articles of incorporation and our bylaws, which have been filed with and are publicly available from the SEC. Our authorized capital stock consists of 80,000,000 shares of common stock, par value \$0.00001 per share, and 20,000,000 shares of preferred stock, par value \$0.00001 per share.

DESCRIPTION OF COMMON STOCK

As of September 30, 2022, there were 11,886,379 shares of our common stock issued outstanding held by approximately 18 stockholders of record.

General

The following description of our common stock is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to the complete text of our Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation"), and our Amended and Restated Bylaws (the "Bylaws"), each of which included as exhibits to our Annual Report on Form 10-K for the year ended December 31, 2021, which is incorporated by reference herein. We encourage you to read our Certificate of Incorporation, the Certificate of Designations, our Bylaws and the applicable provisions of the DGCL, Title 8 of the Delaware Code for additional information.

Common Stock

Dividend Rights

Subject to the rights of any holders of any outstanding shares or series of preferred stock, holders of common stock are entitled to the payment of dividends when and as declared by our board of directors in accordance with applicable law and to receive other distributions.

Voting Rights

Except as provided by law or in a preferred stock designation, holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, have the exclusive right to vote for the election of directors and do not have cumulative voting rights. Except as otherwise required by law, holders of common stock are not entitled to vote on any amendment to the Certificate of Incorporation (including any certificate of designations relating to any series of preferred stock) that relates solely to the terms of any outstanding series of preferred stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the Certificate of Incorporation (including any certificate of designations relating to any series of preferred stock) or pursuant to the DGCL.

Liquidation Rights

Subject to the rights of any holders of any outstanding shares or series of preferred stock, in the event of any liquidation, dissolution or winding up of our affairs, whether voluntary or involuntary, our funds and assets, to the extent they may be legally distributed to holders of common stock, shall be distributed among the holders of the then outstanding common stock pro rata in accordance with the number of shares of common stock held by each such holder.

Other Rights and Preferences

All outstanding shares of common stock are fully paid and non-assessable. The holders of common stock have no pre-emptive or other subscription rights.

Classification of the Board of Directors

Our Certificate of Incorporation divide our board of directors into three classes, as nearly equal in number as possible, with staggered three-year terms. Under our Certificate of Incorporation and our Bylaws, any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by the affirmative vote of a majority of our directors then in office, even though less than a quorum of the board of directors.

Stock Exchange Listing

Our common stock is traded on the NASDAQ Capital Market under the symbol, "SQL."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is VStock Transfer, LLC. The address of VStock Transfer, LLC is 18 Lafayette Place, Woodmere, NY 11598 and its telephone number is (212) 828-8436.

DESCRIPTION OF PREFERRED STOCK

As of September 30, 2022, no shares of preferred stock had been issued or were outstanding.

The following summary of certain provisions of our preferred stock does not purport to be complete. This description is summarized from, and is qualified in its entirety by reference to, our Certificate of Incorporation and our Bylaws, to which you should refer and both of which are included as exhibits to the registration statement of which this prospectus is a part. The summary below is also qualified by provisions of applicable law, including the DGCL.

General

Our board of directors has the authority to issue up to 20,000,000 shares of preferred stock in one or more series and to determine the rights and preferences of the shares of any such series without stockholder approval. Our board of directors may issue preferred stock in one or more series and has the authority to fix the designation and powers, rights and preferences and the qualifications, limitations or restrictions with respect to each class or series of such class without further vote or action by the stockholders, unless action is required by applicable law or the rules of any stock exchange on which our securities may be listed. The ability of our board of directors to issue preferred stock without stockholder approval could have the effect of delaying, deferring or preventing a change of control of us or the removal of existing management. Further, our board of director may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description will include, but not be limited to, the following:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- whether the preferred stock will be convertible into our common stock, and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- a discussion of any material United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

Transfer Agent and Registrar

The transfer agent and registrar for our preferred stock will be set forth in the applicable prospectus supplement.

DESCRIPTION OF DEBT SECURITIES

General

We may issue debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. When we offer to sell debt securities, we will describe the specific terms of any debt securities offered from time to time in a supplement to this prospectus, which may supplement or change the terms outlined below. Senior debt securities will be issued under one or more senior indentures, dated as of a date prior to such issuance, between us and a trustee to be named in a prospectus supplement, as amended or supplemented from time to time. Any subordinated debt securities will be issued under one or more subordinated indentures, dated as of a date prior to such issuance, between us and a trustee to be named in a prospectus supplement, as amended or supplemented from time to time. The indentures will be subject to and governed by the Trust Indenture Act of 1939, as amended.

Before we issue any debt securities, the form of indentures will be filed with the SEC and incorporated by reference as an exhibit to the registration statement of which this prospectus is a part or as an exhibit to a current report on Form 8-K. For the complete terms of the debt securities, you should refer to the applicable prospectus supplement and the form of indentures for those particular debt securities. We encourage you to read the applicable prospectus supplement and the form of indentures for those particular debt securities before you purchase any of our debt securities.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title;
- whether or not such debt securities are guaranteed;
- the principal amount being offered, and if a series, the total amount authorized and the total amount outstanding;
- any limit on the amount that may be issued;
- whether or not we will issue the series of debt securities in global form, the terms and who the depository will be;
- the maturity date;
- the annual interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt;
- the place where payments will be payable;
- restrictions on transfer, sale or other assignment, if any;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;

- any restrictions our ability and/or the ability of our subsidiaries to:
 - incur additional indebtedness;
 - issue additional securities;
 - create liens;
 - pay dividends and make distributions in respect of our capital stock and the capital stock of our subsidiaries;
 - redeem capital stock;
 - place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;
 - make investments or other restricted payments;
 - sell or otherwise dispose of assets;
 - enter into sale-leaseback transactions;
 - engage in transactions with stockholders and affiliates;
 - issue or sell stock of our subsidiaries; or
 - effect a consolidation or merger;
- whether the indenture will require us to maintain any interest coverage, fixed charge, cash flow-based, asset-based or other financial ratios;
- a discussion of any material United States federal income tax considerations applicable to the debt securities;
- information describing any book-entry features;
- provisions for a sinking fund purchase or other analogous fund, if any;
- the denominations in which we will issue the series of debt securities;
- the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any additional events of default or covenants provided with respect to the debt securities, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering before the issuance of the related series of warrants. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants being offered, including:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;

- a discussion of any material or special United States federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

If any warrants represented by the warrant certificate are not exercised, we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Outstanding Warrants

As of September 30, 2022, we had outstanding warrants that were exercisable to purchase an aggregate of 4,388,185 shares of common stock at a weighted average exercise price of \$4.01 per share that expire between December 2022 and September 2026.

Transfer Agent and Registrar

The transfer agent and registrar for any warrants will be set forth in the applicable prospectus supplement.

DESCRIPTION OF RIGHTS

General

We may issue rights to purchase our common stock or preferred stock, in one or more series. Rights may be issued independently or together with any other offered security and may or may not be transferable by the person purchasing or receiving the subscription rights. In connection with any rights offering to our stockholders, we may enter into a standby underwriting arrangement with one or more underwriters pursuant to which such underwriters will purchase any offered securities remaining unsubscribed after such rights offering. In connection with a rights offering to our stockholders, we will distribute certificates evidencing the rights and a prospectus supplement to our stockholders on the record date that we set for receiving rights in such rights offering. The applicable prospectus supplement or free writing prospectus will describe the following terms of rights in respect of which this prospectus is being delivered:

- the title of such rights;
- the securities for which such rights are exercisable;
- the exercise price for such rights;
- the date of determining the security holders entitled to the rights distribution;
- the number of such rights issued to each security holder;
- the extent to which such rights are transferable;
- if applicable, a discussion of the material United States federal income tax considerations applicable to the issuance or exercise of such rights;
- the date on which the right to exercise such rights shall commence, and the date on which such rights shall expire (subject to any extension);
- the conditions to completion of the rights offering;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the rights;
- the extent to which such rights include an over-subscription privilege with respect to unsubscribed securities;
- if applicable, the material terms of any standby underwriting or other purchase arrangement that we may enter into in connection with the rights offering; and
- any other terms of such rights, including terms, procedures and limitations relating to the exchange and exercise of such rights.

Each right will entitle the holder thereof the right to purchase for cash such amount of shares of common stock or preferred stock, or any combination thereof, at such exercise price as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the rights offered thereby. Rights may be exercised at any time up to the close of business on the expiration date for such rights set forth in the prospectus supplement. After the close of business on the expiration date, all unexercised rights will become void. Rights may be exercised as set forth in the prospectus supplement relating to the rights offered thereby. Upon receipt of payment and the proper completion and due execution of the rights certificate at the office of the rights agent, if any, or any other office indicated in the prospectus supplement, we will forward, as soon as practicable, the shares of common stock and/or preferred stock purchasable upon such exercise. We may determine to offer any unsubscribed offered securities directly to persons other than stockholders, to or through agents, underwriters or dealers or through a combination of such methods, including pursuant to standby underwriting arrangements, as set forth in the applicable prospectus supplement.

Rights Agent

The rights agent for any rights we offer will be set forth in the applicable prospectus supplement.

DESCRIPTION OF UNITS

The following description, together with the additional information that we include in any applicable prospectus supplement, summarizes the material terms and provisions of the units that we may offer under this prospectus. While the terms we have summarized below will apply generally to any units that we may offer under this prospectus, we will describe the particular terms of any series of units in more detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the terms described below.

We will incorporate by reference from reports that we file with the SEC, the form of unit agreement that describes the terms of the series of units we are offering, and any supplemental agreements, before the issuance of the related series of units. The following summaries of material terms and provisions of the units are subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement and any supplemental agreements applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the particular series of units that we may offer under this prospectus, as well as any related free writing prospectuses and the complete unit agreement and any supplemental agreements that contain the terms of the units.

General

As specified in the applicable prospectus supplement, we may issue, in one more series, units consisting of common stock, preferred stock, debt securities and/or warrants or rights for the purchase of common stock, preferred stock and/or debt securities in any combination. The applicable prospectus supplement will describe:

- the securities comprising the units, including whether and under what circumstances the securities comprising the units may be separately traded;
- the terms and conditions applicable to the units, including a description of the terms of any applicable unit agreement governing the units; and
- a description of the provisions for the payment, settlement, transfer or exchange of the units.

The provisions described in this section, as well as those set forth in any prospectus supplement or as described under “Description of Common Stock,” “Description of Preferred Stock,” “Description of Debt Securities,” “Description of Warrants” and “Description of Rights” will apply to each unit, as applicable, and to any common stock, preferred stock, debt security, warrant, or right included in each unit, as applicable.

Unit Agent

The name and address of the unit agent for any units we offer will be set forth in the applicable prospectus supplement.

Issuance in Series

We may issue units in such amounts and in such numerous distinct series as we may determine.

Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

PLAN OF DISTRIBUTION

The securities covered by this prospectus may be offered and sold from time to time pursuant to one or more of the following methods:

- through agents;
- to or through underwriters;
- to or through broker-dealers (acting as agent or principal);
- in “at the market offerings” within the meaning of Rule 415(a)(4) of the Securities Act, to or through a market maker or into an existing trading market, on an exchange, or otherwise;
- directly to purchasers, through a specific bidding or auction process or otherwise; or
- through a combination of any such methods of sale.

Agents, underwriters or broker-dealers may be paid compensation for offering and selling the securities. That compensation may be in the form of discounts, concessions or commissions to be received from us, from the purchasers of the securities or from both us and the purchasers. Any underwriters, dealers, agents or other investors participating in the distribution of the securities may be deemed to be “underwriters,” as that term is defined in the Securities Act, and compensation and profits received by them on sale of the securities may be deemed to be underwriting commissions, as that term is defined in the rules promulgated under the Securities Act.

Each time securities are offered by this prospectus, the prospectus supplement, if required, will set forth:

- the name of any underwriter, dealer or agent involved in the offer and sale of the securities;
- the terms of the offering;
- any discounts concessions or commissions and other items constituting compensation received by the underwriters, broker-dealers or agents;
- any over-allotment option under which any underwriters may purchase additional securities from us; and
- any initial public offering price.

The securities may be sold at a fixed price or prices, which may be changed, at market prices prevailing at the time of sale, at prices relating to the prevailing market prices or at negotiated prices. The distribution of securities may be effected from time to time in one or more transactions, by means of one or more of the following transactions, which may include cross or block trades:

- transactions on the NASDAQ Capital Market or any other organized market where the securities may be traded;
- in the over-the-counter market;
- in negotiated transactions;
- under delayed delivery contracts or other contractual commitments; or
- a combination of such methods of sale.

If underwriters are used in a sale, securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions. Our securities may be offered to the public either through underwriting syndicates represented by one or more managing underwriters or directly by one or more firms acting as underwriters. If an underwriter or underwriters are used in the sale of securities, an underwriting agreement will be executed with the underwriter or underwriters at the time an agreement for the sale is reached. This prospectus and the prospectus supplement will be used by the underwriters to resell the shares of our securities.

If 5% or more of the net proceeds of any offering of our securities made under this prospectus will be received by a FINRA member participating in the offering or affiliates or associated persons of such FINRA member, the offering will be conducted in accordance with FINRA Rule 5121.

To comply with the securities laws of certain states, if applicable, the securities offered by this prospectus will be offered and sold in those states only through registered or licensed brokers or dealers.

Agents, underwriters and dealers may be entitled to indemnification by us against specified liabilities, including liabilities incurred under the Securities Act, or to contribution by us to payments they may be required to make in respect of such liabilities. The prospectus supplement will describe the terms and conditions of such indemnification or contribution. Some of the agents, underwriters or dealers, or their respective affiliates, may be customers of, engage in transactions with or perform services for us in the ordinary course of business. We will describe in the prospectus supplement naming the underwriter the nature of any such relationship.

Certain persons participating in the offering may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. We make no representation or prediction as to the direction or magnitude of any effect that such transactions may have on the price of the securities. For a description of these activities, see the information under the heading "Underwriting" in the applicable prospectus supplement.

LEGAL MATTERS

The validity of the shares of common stock and preferred stock and certain other legal matters of law will be passed upon for us by Pryor Cashman LLP, New York, New York. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements incorporated by reference into this prospectus as of December 31, 2021 and 2020 and for the years ended December 31, 2021 and December 31, 2020 have been audited by Wolf & Company, P.C., an independent registered public accounting firm, to the extent and for the periods set forth in their report incorporated by reference herein and are included in reliance upon such report given upon the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" the information we file with them into this prospectus. This means that we can disclose important information about us and our financial condition to you by referring you to another document filed separately with the SEC instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus and later information that we file with the SEC will automatically update and supersede this information. This prospectus incorporates by reference any future filings made with the SEC under Sections 13(a), 13(c), 14, or 15(d) of the Exchange Act, between the date of the initial registration statement and prior to effectiveness of the registration statement and the documents listed below that we have previously filed with the SEC:

- our Annual Report on [Form 10-K](#) for the year ended December 31, 2021 filed with the SEC on March 23, 2022;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended March 31, 2022 filed with the SEC on May 12, 2022;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended June 30, 2022 filed with the SEC on August 12, 2022;
- our Quarterly Report on [Form 10-Q](#) for the quarter ended September 30, 2022 filed with the SEC on November 8, 2022;

- our Current Reports on Form 8-K, filed with the SEC on [June 24, 2022](#) and [June 30, 2022](#) (other than portions of those documents furnished or not otherwise deemed to be filed); and
- the description of our common stock filed as Exhibit 4.1 to our Annual Report on [Form 10-K](#) for the year ended December 31, 2021 filed with the SEC on March 23, 2022, and any other amendment or report filed for the purpose of updating such description.

We also incorporate by reference all documents that we file with the SEC on or after the effective time of this prospectus pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act and prior to the sale of all the securities registered hereunder or the termination of the registration statement. Nothing in this prospectus shall be deemed to incorporate information furnished but not filed with the SEC.

Any statement contained in this prospectus or in a document incorporated or deemed to be incorporated by reference in this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in the applicable prospectus supplement or in any other subsequently filed document that also is or is deemed to be incorporated by reference modifies or supersedes the statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

You may request a copy of the filings incorporated herein by reference, including exhibits to such documents that are specifically incorporated by reference, at no cost, by writing or calling us at the following address or telephone number:

SeqLL Inc.
3 Federal Street
Billerica, MA 01821
(781) 460-6016
Attn: Daniel Jones

Statements contained in this prospectus as to the contents of any contract or other documents are not necessarily complete, and in each instance you are referred to the copy of the contract or other document filed as an exhibit to the registration statement or incorporated herein, each such statement being qualified in all respects by such reference and the exhibits and schedules thereto.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC registering the securities that may be offered and sold hereunder. The registration statement, including exhibits thereto, contains additional relevant information about us and these securities, as permitted by the rules and regulations of the SEC, we have not included in this prospectus. A copy of the registration statement can be obtained at the address set forth below or at the SEC's website as noted below. You should read the registration statement, including any applicable prospectus supplement, for further information about us and these securities.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov> or on our website at www.seqll.com/. Because our common stock is listed on the NASDAQ Capital Market, you may also inspect reports, proxy statements and other information at the offices of the NASDAQ Capital Market.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth all expenses payable by us in connection with the offering of our securities being registered hereby. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	\$ 8,265.00
Legal fees and expenses	*
Accounting fees and expenses	*
Printing and miscellaneous expenses	*
Total expenses	<u>\$ 8,265.00</u>

* These fees will depend on the type of securities offered and number of offerings and, therefore, cannot be estimated at this time. In accordance with Rule 430B under the Securities Act, additional information regarding estimated fees and expenses will be provided at the time information as to an offering is included in a prospectus supplement.

Item 15. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware (the "DGCL") permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except for breaches of the director's duty of loyalty to the corporation or its stockholders, acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of a law, authorizations of the payments of a dividend or approval of a stock repurchase or redemption in violation of Delaware corporate law or for any transactions from which the director derived an improper personal benefit. The Registrant's certificate of incorporation provides that no director will be liable to the Registrant or its stockholders for monetary damages for breach of fiduciary duties as a director, subject to the same exceptions as described above. The Registrant also maintains standard insurance policies that provide coverage (1) to its directors and officers against loss arising from claims made by reason of breach of duty or other wrongful act and (2) to the Registrant with respect to indemnification payments we may make to such officers and directors.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with a threatened, pending, or completed action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, indemnification is limited to expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with defense or settlement of such action or suit and no indemnification shall be made with respect to any claim, issue, or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper. In addition, to the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit, or proceeding described above (or claim, issue, or matter therein), such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith. Expenses (including attorneys' fees) incurred by an officer or director in defending any civil, criminal, administrative, or investigative action, suit, or proceeding may be advanced by the corporation upon receipt of an undertaking by such person to repay such amount if it is ultimately determined that such person is not entitled to indemnification by the corporation under Section 145 of the DGCL. The Registrant's amended and restated certificate of incorporation provides that the Registrant will, to the fullest extent permitted by law, indemnify any person made or threatened to be made a party to an action or proceeding by reason of the fact that he or she (or his or her testators or intestate) is or was our director or officer or serves or served at any other corporation, partnership, joint venture, trust or other enterprise in a similar capacity or as an employee or agent at our request, including service with respect to employee benefit plans maintained or sponsored by us, against expenses (including attorneys' fees), judgments, fines, penalties and amounts paid in settlement incurred in connection with the investigation, preparation to defend, or defense of such action, suit, proceeding, or claim. However, the Registrant is not required to indemnify or advance expenses in connection with any action, suit, proceeding, claim, or counterclaim initiated by the Registrant or on its behalf. The Registrant's amended and restated bylaws provide that the Registrant will indemnify and hold harmless each person who was or is a party or threatened to be made a party to any action, suit, or proceeding by reason of the fact that he or she is or was our director or officer, or is or was serving at our request in a similar capacity of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans (whether the basis of such action, suit, or proceeding is an action in an official capacity as a director or officer or in any other capacity while serving as a director or officer) to the fullest extent authorized by the DGCL against all expense, liability and loss (including attorney's fees, judgments, fines, ERISA excise taxes, or penalties and amounts paid in settlement) reasonably incurred or suffered by such person in connection with such action, suit or proceeding, and this indemnification continues after such person has ceased to be an officer or director and inures to the benefit of such person's heirs, executors and administrators. The indemnification rights also include the right generally to be advanced expenses, subject to any undertaking required under DGCL, and the right generally to recover expenses to enforce an indemnification claim or to defend specified suits with respect to advances of indemnification expenses.

Our amended and restated certificate of incorporation limits the liability of our directors for monetary damages for breach of their fiduciary duties, except for liability that cannot be eliminated under the DGCL. Consequently, our directors will not be personally liable for monetary damages for breach of their fiduciary duties as directors, except liability for any of the following:

- any breach of their duty of loyalty to us or our stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases, or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper personal benefit.

Our amended and restated bylaws also provide that we will indemnify our directors and executive officers and may indemnify our other officers and employees and other agents to the fullest extent permitted by law. Our amended and restated bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in this capacity, regardless of whether our amended and restated bylaws would permit indemnification, and we currently maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as indemnification for liabilities under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and may be unenforceable. There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

Item 16. Exhibits and Financial Schedule

See the Exhibit Index attached to this registration statement and incorporated herein by reference.

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) to reflect in the prospectus any facts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act, that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

(2) That, for the purposes of determining any liability under the Securities Act, each post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of a Registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(6) The undersigned registrant hereby undertakes that:

(i) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(ii) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

The Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the indemnification provisions described herein, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the Town of Billerica, State of Massachusetts, on November 10, 2022.

SEQLL INC.

By: /s/ Daniel Jones
Daniel Jones
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Daniel Jones, his true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for him and his name, place and stead, in any and all capacities, to sign any or all amendments (including pre-effective and post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto and other documents in connection therewith, including any Registration Statement filed pursuant to Rule 462(b) under the Securities Act of 1933, with the SEC, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent or any of his substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Name</u>	<u>Position</u>	<u>Date</u>
<u>/s/ Daniel Jones</u> Daniel Jones	Chairman and Chief Executive Officer (Principal Executive Officer)	November 10, 2022
<u>/s/ Frances Scally</u> Frances Scally	Chief Financial Officer (Principal Financial and Accounting Officer)	November 10, 2022
<u>/s/ Douglas Miscoll</u> Douglas Miscoll	Director	November 10, 2022
<u>/s/ David Pfeffer</u> David Pfeffer	Director	November 10, 2022
<u>/s/ Dr. Patrice Milos</u> Dr. Patrice Milos	Director	November 10, 2022

EXHIBIT INDEX

Exhibit Number	Description
1.1*	Form of Underwriting Agreement
4.1	Form of Indenture
4.2*	Form of Warrant Agreement, including form of Warrant
4.3*	Form of Unit Agreement
4.4*	Form of Pledge Agreement
4.5*	Form of Rights Certificate
5.1	Opinion of Pryor Cashman LLP
23.1	Consent of Wolf & Company, P.C., Independent Registered Public Accounting Firm
23.2	Consent of Pryor Cashman LLP (included in legal opinion filed as Exhibit 5.1)
24.1	Powers of Attorney (included on signature page)
107	Filing Fee Table

* To be filed, if applicable, by amendment or as an exhibit to a report filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and incorporated herein by reference.

INDENTURE

Dated as of _____, 20__

Between

SeqLL Inc.
as Issuer

And

[_____] ,
as Trustee

Debt Securities

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CROSS-REFERENCE TABLE

<u>TIA Section</u>	<u>Indenture Section</u>
Section 310 (a)(1)	7.10
(a)(2)	7.10
(a)(3)	N.A.
(a)(4)	N.A.
(a)(5)	7.10
(b)	7.08; 7.10
(c)	N.A.
Section 311 (a)	7.11
(b)	7.11
(c)	N.A.
Section 312 (a)	2.05
(b)(1)	N.A.
(b)(2)	7.06
(c)	7.06; 12.02
(d)	7.06
Section 314 (a)(1), (2), (3)	4.03
(a)(4)	4.04
(b)	N.A.
(c)(1)	10.04
(c)(2)	10.04
(c)(3)	N.A.
(d)	N.A.
(e)	10.05
(f)	N.A.
Section 315 (a)	7.01(b)
(b)	7.05; 10.02
(c)	7.01(a)
(d)	7.01(c)
(e)	6.11
Section 316(a) (last sentence)	2.09
(a)(1)(A)	6.05
(a)(1)(B)	6.04
(a)(2)	N.A.
(b)	6.07
(c)	9.04
Section 317 (a)(1)	6.08
(a)(2)	6.09
(b)	2.04
Section 318 (a)	10.01

N.A. means Not Applicable

NOTE: This Cross-Reference Table shall not, for any purpose, be deemed to be a part of the indenture.

INDENTURE dated as of _____, 20____, between SeqLL Inc., a Delaware corporation (the “Company”), as issuer, and [_____] a [_____] banking corporation, as Trustee (the “Trustee”).

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its debentures, notes or other evidences of indebtedness to be issued in one or more series (the “Securities”), as herein provided, up to such principal amount as may from time to time be authorized in or pursuant to one or more resolutions of the Board of Directors or by supplemental indenture.

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of each series of the Securities:

ARTICLE I

A. DEFINITIONS AND INCORPORATION BY REFERENCE

SECTION 1.01. Definitions.

“Affiliate” means, when used with reference to the Company or another person, any person directly or indirectly controlling, controlled by, or under direct or indirect common control with, the Company or such other person, as the case may be. For the purposes of this definition, “control” when used with respect to any specified person means the power to direct or cause the direction of management or policies of such person, directly or indirectly, whether through the ownership of voting Securities, by contract or otherwise; and the terms “Controlling” and “controlled” have meanings correlative of the foregoing.

“Agent” means any registrar, Paying Agent, authenticating agent or co-registrar.

“Board of Directors” means, with respect to any person, the Board of Directors of a person or any duly authorized committee of such Board of Directors.

“Board Resolution” means, with respect to any person, a copy of a resolution certified by the secretary or an assistant secretary of such person to have been duly adopted by the Board of Directors of such person or any duly authorized committee thereof and to be in full force and effect on the date of such certification, and delivered to the Trustee.

“Business Day” means a day that is not a Legal Holiday as defined in Section 10.07.

“Company” means the party named as such in this Indenture, or any other obligor under this Indenture, until a successor replaces it pursuant to this Indenture and thereafter means the successor.

“Consolidated” or “consolidated” means, when used with reference to any amount, such amount determined on a consolidated basis in accordance with GAAP, after the elimination of intercompany items.

“Consolidated Assets” means, at a particular date, all amounts which would be included under total assets on a consolidated balance sheet of the Company and its Subsidiaries as at such date, determined in accordance with GAAP.

“Corporate Trust Office” means the office of the Trustee at which at any particular time its corporate services business shall be principally administered, which office at the date of execution of this Indenture is located at [_____].

“Default” means any event which is, or after notice or lapse of time or both would be, an Event of Default.

“Event of Default” has the meaning provided in Section 6.01.

“Exchange Act” means the Securities Exchange Act of 1934, as amended any successor Statute.

“GAAP” means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession, which are applicable from time to time.

“Global Security” means a Security issued to evidence all or a part of any series of Securities that is executed by the Company and authenticated and delivered by the Trustee to a depository or pursuant to such depository’s instructions, all in accordance with this Indenture and pursuant to Section 2.01, which shall be registered as to principal and interest in the name of such depository or its nominee.

“Holder” means the person in whose name a Security is registered on the registrar’s books.

“Indebtedness” of a Person means all obligations which would be treated as liabilities upon a balance sheet of such Person prepared on a consolidated basis in accordance with GAAP.

“Indenture” means this Indenture, as amended, supplemented or modified from time to time, and shall include the terms of a particular series of Securities established as contemplated by Section 2.01.

“Lien” means any lien, security interest, charge or encumbrance of any kind.

“Obligations” means all obligations for principal, premium, interest, penalties, fees, indemnifications, reimbursements, damages and other liabilities payable under the documentation governing any Indebtedness.

“Officer” of any person means the Chairman of the Board, the Chief Executive Officer, the President, any Vice President, the Treasurer, the Secretary or the Controller of such person.

“Officers’ Certificate” means a certificate signed by two Officers or by an Officer and an Assistant Treasurer, Assistant Secretary or Assistant Controller of any person.

“Opinion of Counsel” means a written opinion from legal counsel who is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.

“Original Issue Discount Security” means any Security which provides that an amount less than its principal amount is due and payable upon acceleration after an Event of Default.

“Person” or “person” means any individual, corporation, partnership, joint venture, trust, association, limited liability company, joint stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“Redemption Date” means, with respect to any Security to be redeemed, the date fixed for such redemption pursuant to this Indenture.

“Redemption Price” has the meaning provided in Section 3.03.

“SEC” means the Securities and Exchange Commission and any government agency succeeding to its functions.

“Securities” means the means the securities authenticated and delivered under this Indenture.

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

“Series” means a series of Securities established pursuant to this Indenture.

“Subsidiary” of any Person means (i) a corporation a majority of whose capital stock with voting power, under ordinary circumstances, to elect directors is at the time, directly or indirectly, owned by such Person or by such Person and a subsidiary or subsidiaries of such Person or by a subsidiary or subsidiaries of such Person or (ii) any other Person (other than a corporation) in which such Person or such Person and a subsidiary or subsidiaries of such Person or a subsidiary or subsidiaries of such Persons, at the time, directly or indirectly, own at least a majority voting interest under ordinary circumstances.

“TIA” means the Trust Indenture Act of 1939 (15 U.S. Code Section 77aaa-77bbb), as in effect on the date of this Indenture; provided, however, that in the event the TIA is amended after such date, “TIA” means, to the extent required by such amendment, the Trust Indenture Act of 1939, as so amended.

“Trustee” means the party named as such above until a successor becomes such pursuant to this Indenture and thereafter means or includes each party who is then a trustee hereunder, and if at any time there is more than one such party, “Trustee” as used with respect to the Securities of any series means the Trustee with respect to Securities of that series. If Trustees with respect to different series of Securities are Trustees under this Indenture, nothing herein shall constitute the Trustees co-Trustees of the same trust, and each Trustee shall be the Trustee of a trust separate and apart from any trust administered by any other Trustee with respect to a different series of Securities.

“Trust Officer” means any officer in the corporate trust department of the Trustee or any other officer of the Trustee assigned by the Trustee to administer this Indenture.

“U.S. Government Obligations” means (i) direct obligations of the United States of America for the payment of which the full faith and credit of the United States of America is pledged or (ii) obligations of a person controlled or supervised by and acting as an agency or instrumentality of the United States of America, the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States of America and which in either case, are non-callable at the option of the issuer thereof.

SECTION 1.02. Other Definitions.

Term	Defined in Section
“ <u>Bankruptcy Law</u> ”	6.01
“ <u>Custodian</u> ”	6.01
“ <u>Legal Holiday</u> ”	10.07
“ <u>Paying Agent</u> ”	2.03
“ <u>Registrar</u> ”	2.03

SECTION 1.03. Incorporation by Reference of Trust Indenture Act. Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture.

The following TIA terms used in this Indenture have the following meanings:

“indenture Securities” means the Securities;

“indenture Security holder” means a Holder;

“indenture to be qualified” means this Indenture;

“indenture Trustee” or “institutional Trustee” means the Trustee; and

“obligor” on the Securities means the Company and any other obligor on the indenture Securities.

All other TIA terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule have the meanings assigned to them by such definitions.

SECTION 1.04. Rules of Construction. Unless the context otherwise requires: (i) a term has the meaning assigned to it; (ii) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP; (iii) “or” is not exclusive; (iv) words in the singular include the plural, and in the plural include the singular; (v) provisions apply to successive events and transactions; and (vi) statements relating to the payment of principal and interest shall include the payment, premium (if any) and interest.

ARTICLE II

THE SECURITIES

SECTION 2.01. Unlimited in Amount, Issuable in Series, Form and Dating.

The aggregate principal amount of Securities which may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more series. There shall be established pursuant to a Board Resolution or an Officers' Certificate pursuant to authority granted under a Board Resolution or established in one or more indentures supplemental hereto, prior to the issuance of Securities of any series:

(a) The title, ranking and authorized denominations of such Securities;

(b) The aggregate principal amount of such Securities and any limit on such aggregate principal amount;

(c) The price (expressed as a percentage of the principal amount thereof) at which such Securities will be issued and, if other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof;

(d) The date or dates, or the method for determining such date or dates, on which the principal of such Securities will be payable;

(e) The rate or rates (which may be fixed or variable), or the method by which such rate or rates shall be determined, at which such Securities will bear interest, if any;

(f) The date or dates, or the method for determining such date or dates, from which any such interest will accrue, the dates on which any such interest will be payable, the record dates for such interest payment dates, or the method by which such dates shall be determined, the persons to whom such interest shall be payable, and the basis upon which interest shall be calculated if other than that of a 360-day year of twelve 30-day months;

(g) The place or places where the principal of and interest, if any, on such Securities will be payable, where such Securities may be surrendered for registration of transfer or exchange and where notices or demands to or upon the Company in respect of such Securities and this Indenture may be served;

(h) The period or periods, if any, within which, the price or prices at which and the other terms and conditions upon which such Securities may, pursuant to any optional or mandatory redemption provisions, be redeemed, as a whole or in part, at the option of the Company;

(i) The obligation, if any, of the Company to redeem, repay or purchase such Securities pursuant to any sinking fund or analogous provision or at the option of a holder thereof, and the period or periods within which, the price or prices at which and the other terms and conditions upon which such Securities will be redeemed, repaid or purchased, as a whole or in part, pursuant to such obligation;

(j) If other than U.S. dollars, the currency or currencies in which such Securities are denominated and payable, which may be a foreign currency or units of two or more foreign currencies or a composite currency or currencies, and the terms and conditions relating thereto;

(k) Whether the amount of payments of principal of (and premium, if any) or interest, if any, on such Securities may be determined with reference to an index, formula or other method (which index, formula or method may, but need not be, based on the yield on or trading price of other Securities, including United States Treasury Securities, or on a currency, currencies, currency unit or units, or composite currency or currencies) and the manner in which such amounts shall be determined;

(l) Whether the principal of or interest on the Securities of the series is to be payable, at the election of the Company or a holder thereof, in a currency or currencies, currency unit or units or composite currency or currencies other than that in which such Securities are denominated or stated to be payable, the period or periods within which, and the terms and conditions upon which, such election may be made, and the time and manner of, and identity of the exchange rate agent with responsibility for, determining the exchange rate between the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are denominated or stated to be payable and the currency or currencies, currency unit or units or composite currency or currencies in which such Securities are to be so payable;

(m) Provisions, if any, granting special rights to the holders of Securities of the series upon the occurrence of such events as may be specified;

(n) Any deletions from, modifications of or additions to the Events of Default or covenants of the Company with respect to Securities of the series, whether or not such Events of Default or covenants are consistent with the Events of Default or covenants described herein;

(o) Whether and under what circumstances the Company will pay any additional amounts on such Securities in respect of any tax, assessment or governmental charge and, if so, whether the Company will have the option to redeem such Securities in lieu of making such payment;

(p) Whether Securities of the series are to be issuable as registered Securities, bearer Securities (with or without coupons) or both, any restrictions applicable to the offer, sale or delivery of bearer Securities and the terms upon which bearer Securities of the series may be exchanged for registered Securities of the series and vice versa (if permitted by applicable laws and regulations), whether any Securities of the series are to be issuable initially in temporary global form and whether any Securities of the series are to be issuable in permanent global form with or without coupons and, if so, whether beneficial owners of interests in any such permanent Global Security may exchange such interests for Securities of such series and of like tenor or any authorized form and denomination and the circumstances under which any such exchanges may occur, if other than in the manner provided in this Indenture, and, if registered Securities of the series are to be issuable as a Global Security, the identity of the depositary for such series;

(q) The date as of which any bearer Securities of the series and any temporary Global Security representing outstanding Securities of the series shall be dated if other than the date of original issuance of the first Security of the series to be issued;

(r) The person to whom any interest on any registered Security of the series shall be payable, if other than the person in whose name that Security (or one or more predecessor Securities) is registered at the close of business on the regular record date for such interest, the manner in which, or the person to whom, any interest on any bearer Security of the series shall be payable, if otherwise than upon presentation and surrender of the coupons appertaining thereto as they severally mature, and the extent to which, or the manner in which, any interest payable on a temporary Global Security on an interest payment date will be paid if other than in the manner provided in this Indenture;

(s) Whether such Securities will be issued in certificated or book entry form;

(t) The applicability, if any, of the legal defeasance and covenant defeasance provisions of this Indenture to the Securities of the series;

(u) If the Securities of such series are to be issuable in definitive form (whether upon original issue or upon exchange of a temporary Security of such series) only upon receipt of certain certificates or other documents or satisfaction of other conditions, then the form and/or terms of such certificates, documents or conditions;

(v) Whether the Securities will be listed for trading on an exchange and the identity of such exchange;

(w) Whether any underwriters will act as market makers for the Securities;

(x) Any guarantees of such Securities by the Company's Subsidiaries or others;

(y) The date or dates, if any, after which the Securities may be converted or exchanged into or for shares of the Company's common stock or another company's securities or properties or cash and the terms for any such conversion or exchange;

(z) Any other terms of the series.

The Securities of any series shall be substantially of the tenor and purport as set forth in one or more indentures supplemental hereto or as provided in a written order of the Company, in each case with such insertions, omission, substitutions and other variations as are required or permitted by this Indenture, and may have such letters, numbers or other marks of identification or designation and such legends or endorsements printed, lithographed or engraved thereon as the Company may deem appropriate and as are not inconsistent with the provisions of this Indenture, or as may be required to comply with any law or with any rule or regulation made pursuant thereto or with any rule or regulation of any stock exchange on which Securities of that series may be listed or of the depository, or to conform to usage.

The Trustee's Certificate of Authentication shall be in substantially the following form:

"This is one of the Securities of the series designated in accordance with, and referred to in the within-mentioned Indenture.

Dated:

[_____], as Trustee

By: _____
Authorized Signatory"

SECTION 2.02. Execution and Authentication. Two Officers shall sign the Securities for the Company by manual or facsimile signature.

If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall be valid nevertheless.

A Security shall not be valid until authenticated by the manual signature of the Trustee. The signature shall be conclusive evidence that the Security has been authenticated under this Indenture.

The Trustee shall authenticate Securities for original issue upon a written order of the Company signed by one Officer of the Company.

The Trustee may appoint an authenticating agent reasonably acceptable to the Company to authenticate Securities. Unless limited by the terms of such appointment, an authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

If the Company shall establish pursuant to Section 2.01 that the Securities of a series are to be issued in the form of one or more Global Securities, then the Company shall execute and the Trustee shall authenticate and deliver one or more Global Securities that (i) shall represent and shall be denominated in an amount equal to the aggregate principal amount of all of the Securities of such series to be issued in the form of Global Securities and not yet canceled, (ii) shall be registered in the name of the depository for such Global Security or Securities or the nominee of such depository, (iii) shall be delivered by the Trustee to such depository or pursuant to such depository's instructions, and (iv) shall bear a legend substantially to the following effect: "Unless and until it is exchanged in whole or in part for Securities in definitive registered form, this Security may not be transferred except as a whole by the depository to the nominee of the depository or by a nominee of the depository to the depository or another nominee of the depository or by the depository or any such nominee to a successor depository or a nominee of such successor depository."

Each depository designated pursuant to Section 2.01 must, at the time of its designation and at all times while it services as depository, be a clearing agency registered under the Exchange Act.

SECTION 2.03. Registrar and Paying Agent. The Company shall maintain an office or agency where Securities of a particular series may be presented for registration of transfer or for exchange (the "Registrar") and an office or agency where Securities may be presented for payment (the "Paying Agent"). The registrar for a particular series of Securities shall keep a register of the Securities of that series and of their transfer and exchange. The Company may appoint one or more co-registrars and one or more additional Paying Agents for each series of Securities. The term "Paying Agent" includes any additional paying agent and the term "Registrar" includes any additional registrar. The Company may change any Paying Agent or registrar without prior notice to any Holder.

The Company shall enter into an appropriate agency agreement with any Agent not a party to this Indenture, which shall incorporate the terms of the TIA and implement the terms of this Indenture which relate to such Agent. The Company shall give prompt written notice to the Trustee of the name and address of any Agent who is not a party to this Indenture. If the Company fails to appoint or maintain another entity as Registrar or Paying Agent, the Trustee shall act as such. The Company or any Affiliate of the Company may act as Paying Agent or Registrar.

The Company hereby initially appoints the Trustee as Registrar and Paying Agent for each series of Securities unless another Registrar or Paying Agent, as the case may be, is appointed prior to the time the Securities of that series are first issued.

SECTION 2.04. Paying Agent to Hold Assets in Trust. The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent shall hold in trust for the benefit of Holders or the Trustee all assets held by the Paying Agent for the payment of principal of and interest on the Securities (whether such money has been paid to it by the Company or any other obligor on the Securities) and shall notify the Trustee of any failure by the Company (or any other obligor on the Securities) in making any such payment. While any such failure continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee and to account for any funds disbursed. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money so paid over to the Trustee. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of the Holders all money held by it as Paying Agent.

SECTION 2.05. Holder Lists. The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders, separately by series, and shall otherwise comply with TIA Section 312(a). If the Trustee is not the registrar, the Company shall furnish to the Trustee on or before each interest payment date for the Securities and at such other times as the Trustee may request in writing a list in such form and as of such date as the Trustee may reasonably require of the names and addresses of Holders, separately by series, relating to such interest payment date or request, as the case may be.

SECTION 2.06. Registration of Transfer and Exchange. When Securities of a series are presented to the registrar or a co-registrar with a request to register their transfer or to exchange them for an equal principal amount of Securities of other denominations, the registrar or co-registrar shall register the transfer or make the exchange if its requirements for such transaction are met. To permit registrations of transfer and exchanges, the Company shall issue and the Trustee shall authenticate Securities at the registrar's or co-registrar's request. No service charge shall be made for any registration of transfer or exchange, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with registration, transfer or exchange of Securities other than exchanges pursuant to Section 2.10, 3.06 or 9.05 not involving any transfer.

The registrar or co-registrar shall not be required to register the transfer or exchange of (i) any Security of a particular series selected for redemption in whole or in part, except the unredeemed portion of any Security of that series being redeemed in part, or (ii) any Security of a particular series during a period beginning at the opening of business 15 days before the day of any selection of Securities of that series for redemption under Section 3.02 and ending at the close of business on the date of selection.

Any Holder of a beneficial interest in a Global Security shall, by acceptance of such beneficial interest, agree that transfers of beneficial interest in such Global Security may be effected only through a book entry system maintained by the holder of such Global Security (or its agent), and that ownership of a beneficial interest in the Security shall be required to be reflected in a book entry system.

SECTION 2.07. Replacement Securities. If a mutilated Security is surrendered to the Trustee or if the Holder of a Security claims that the Security has been lost, destroyed or wrongfully taken, the Company shall issue and the Trustee shall authenticate a replacement Security of the same series if the requirements of the Trustee and the Company are met; provided that, if any such Security has been called for redemption in accordance with the terms thereof, the Trustee may pay the Redemption Price thereof on the Redemption Date without authenticating or replacing such Security. The Trustee or the Company may, in either case, require the Holder to provide an indemnity bond sufficient in the judgment of each of the Trustee and the Company to protect the Company, the Trustee or any Agent from any loss which any of them may suffer if a Security is replaced or if the Redemption Price therefor is paid pursuant to this Section. The Company may charge the Holder who has lost a Security for its expenses in replacing a Security.

Every replacement Security is an obligation of the Company and shall be entitled to the benefits of this Indenture equally and proportionately with any and all other Securities of the same series.

SECTION 2.08. Outstanding Securities. The Securities of any series outstanding at any time are all the Securities of that series authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation and those described in this Section as not outstanding.

If a Security is replaced pursuant to Section 2.07, it ceases to be outstanding and interest ceases to accrue unless the Trustee receives proof satisfactory to it that the replaced Security is held by a bona fide purchaser.

If all principal of and interest on any of the Securities are considered paid under Section 4.01, such Securities shall cease to be outstanding and interest on them shall cease to accrue.

Except as provided in Section 2.09, a Security does not cease to be outstanding because the Company or an Affiliate of the Company holds such Security.

For each series of Original Issue Discount Securities, the principal amount of such Securities that shall be deemed to be outstanding and used to determine whether the necessary Holders have given any request, demand, authorization, direction, notice, consent or waiver, shall be the principal amount of such Securities that could be declared to be due and payable upon acceleration upon an Event of Default as of the date of such determination. When requested by the Trustee, the Company will advise the Trustee of such amount, showing its computations in reasonable detail.

SECTION 2.09. Treasury Securities. In determining whether the Holders of the required principal amount of Securities of any series have concurred in any direction, waiver or consent, Securities owned by the Company or an Affiliate of the Company shall be considered as though they are not outstanding, except that for the purposes of determining whether the Trustee shall be protected in relying on any such direction, waiver or consent, only Securities which such Trustee actually knows are so owned shall be so disregarded.

SECTION 2.10. Temporary Securities. Until definitive Securities are ready for delivery, the Company may prepare and execute and the Trustee shall authenticate temporary Securities. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and the Trustee shall authenticate definitive Securities in exchange for temporary Securities. Holders of temporary Securities shall be entitled to all of the benefits of this Indenture.

SECTION 2.11. Cancellation. The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange, payment or repurchase. The Trustee shall cancel all Securities surrendered for registration of transfer, exchange, payment, repurchase, redemption, replacement or cancellation and shall destroy such Securities (subject to the record retention requirements of the Exchange Act). Certification of the destruction of all cancelled Securities shall be promptly delivered to the Company. The Company may not issue new Securities to replace Securities that it has paid or that have been delivered to the Trustee for cancellation.

SECTION 2.12. CUSIP Numbers. The Company in issuing the Securities may use “CUSIP” numbers (if then generally in use), and the Trustee shall use CUSIP numbers in notices of redemption or exchange as a convenience to Holders; provided that any such notice shall state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any such notice and that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company shall promptly notify the Trustee of any change in the CUSIP numbers.

SECTION 2.13. Defaulted Interest. If the Company fails to make a payment of interest on any series of Securities, it shall pay such defaulted interest plus (to the extent lawful) any interest payable on the defaulted interest, in any lawful manner. It may elect to pay such defaulted interest, plus any such interest payable on it, to the Persons who are Holders of such Securities on which the interest is due on a subsequent special record date. The Company shall notify the Trustee in writing of the amount of defaulted interest proposed to be paid on each such Security. The Company shall fix any such record date and payment date for such payment. At least 15 days before any such record date, the Company shall mail to Holders affected thereby a notice that states the record date, payment date, and amount of such interest to be paid.

SECTION 2.14. Special Record Dates. The Company may, but shall not be obligated to, set a record date for the purpose of determining the identity of Holders entitled to consent to any supplement, amendment or waiver permitted by this Indenture. If a record date is fixed, the Holders of Securities of that series outstanding on such record date, and no other Holders, shall be entitled to consent to such supplement, amendment or waiver or revoke any consent previously given, whether or not such Holders remain Holders after such record date. No consent shall be valid or effective for more than 90 days after such record date unless consents from Holders of the principal amount of Securities of that series required hereunder for such amendment or waiver to be effective shall have also been given and not revoked within such 90-day period.

ARTICLE III
REDEMPTION

SECTION 3.01. Notices to Trustee. If the Company elects to redeem Securities of any series pursuant to any optional redemption provisions thereof, it shall notify the Trustee of the intended Redemption Date and the principal amount of Securities of that series to be redeemed.

The Company shall give each notice provided for in this Section and an Officers' Certificate at least 45 days before the Redemption Date (unless a shorter period shall be satisfactory to the Trustee).

SECTION 3.02. Selection of Securities to Be Redeemed. If fewer than all the Securities of any series are to be redeemed, the Trustee shall select the Securities of that series to be redeemed from the outstanding Securities of that series to be redeemed by a method that complies with the requirements of any exchange on which the Securities of that series are listed, or, if the Securities of that series are not listed on an exchange, on a pro rata basis or by lot, which in any case shall be in accordance with a method the Trustee considers fair and appropriate.

Except as otherwise provided as to any particular series of Securities, Securities and portions thereof that the Trustee selects shall be in amounts equal to the minimum authorized denomination for Securities of the series to be redeemed or any integral multiple thereof. Provisions of this Indenture that apply to Securities called for redemption also apply to portions of Securities called for redemption. The Trustee shall notify the Company promptly in writing of the Securities or portions of Securities to be called for redemption.

SECTION 3.03. Notice of Redemption. At least 30 days but not more than 60 days before the Redemption Date, the Company shall mail a notice of redemption by first-class mail to each Holder whose Securities are to be redeemed at the address of such Holder appearing in the register.

The notice shall identify the Securities of the series to be redeemed and shall state:

(1) the Redemption Date;

(2) the redemption price fixed in accordance with the terms of the Securities of the series to be redeemed, plus accrued interest, if any, to the date fixed for redemption (the "Redemption Price");

(3) if any Security is being redeemed in part, the portion of the principal amount of such Security to be redeemed and that, after the Redemption Date, upon surrender of such Security, a new Security or Securities in principal amount equal to the unredeemed portion will be issued;

(4) the name and address of the Paying Agent;

(5) that Securities called for redemption must be surrendered to the Paying Agent to collect the Redemption Price;

(6) that, unless the Company defaults in payment of the Redemption Price, interest on Securities called for redemption ceases to accrue on and after the Redemption Date; and

(7) the CUSIP number, if any, of the Securities to be redeemed.

At the Company's written request, the Trustee shall give the notice of redemption in the Company's name and at its expense. The notice mailed in the manner herein provided shall be conclusively presumed to have been duly given whether or not the Holder receives such notice. In any case, failure to give such notice by mail or any defect in the notice to the Holder of any Security shall not affect the validity of the proceeding for the redemption of any other Security.

SECTION 3.04. Effect of Notice of Redemption. Once notice of redemption is mailed, Securities called for redemption become due and payable on the Redemption Date at the Redemption Price. Upon surrender to the Paying Agent, such Securities shall be paid at the Redemption Price.

SECTION 3.05. Deposit of Redemption Price. On or before the Redemption Date, the Company shall deposit with the Trustee or with the Paying Agent (or if the Company or any Subsidiary of the Company is acting as its own Paying Agent, the Company or such Subsidiary shall segregate and hold in trust) money sufficient to pay the Redemption Price on all Securities to be redeemed on that date other than Securities or portions thereof called for redemption on that date which have been delivered by the Company to the Trustee for cancellation. The Paying Agent shall promptly return to the Company any money not required for that purpose.

SECTION 3.06. Securities Redeemed in Part. Upon surrender of a Security that is redeemed in part, the Company shall issue and the Trustee shall authenticate for the Holder at the expense of the Company, a new Security of the same series equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV

COVENANTS

SECTION 4.01. Payment of Securities. The Company shall pay or cause to be paid the principal of and interest on the Securities on the dates and in the manner provided in this Indenture and the Securities. Principal and interest shall be considered paid on the date due if the Paying Agent, if other than the Company or an Affiliate, holds as of 11:00 a.m., New York time, on that date immediately available funds designated for and sufficient to pay all principal and interest then due. To the extent lawful, the Company shall pay interest on overdue principal and overdue installments of interest at the rate per annum borne by the applicable series of Securities.

SECTION 4.02. Maintenance of Office or Agency. The Company shall maintain in the Borough of Manhattan, the City of New York, or in [_____], an office or agency (which may be an office of the Trustee or an affiliate of the Trustee or registrar) where Securities may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Company shall give prompt written notice to the Trustee of the location, and any change in the location, of such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee.

The Company may also from time to time designate one or more other offices or agencies where the Securities may be presented or surrendered for any or all such purposes and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an office or agency in the Borough of [_____], the City of [_____], or [_____], for such purposes. The Company shall give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other office or agency.

The Company hereby designates the Corporate Trust Office of the Trustee as one such office or agency of the Company in accordance with Section 2.03.

SECTION 4.03. SEC Reports. The Company shall deliver to the Trustee within 15 days after it files them with the SEC copies of the annual reports and of the information, documents, and other reports (or copies of such portions of any of the foregoing as the SEC may by rules and regulations prescribe) which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act; provided, however, the Company shall not be required to deliver to the Trustee any materials for which the Company has sought and received confidential treatment by the SEC. The Company also shall comply with the other provisions of TIA Section 314 (a).

SECTION 4.04. Compliance Certificate. The Company shall deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, an Officers' Certificate stating that in the course of the performance by the signers of their duties as officers of the Company, they would normally have knowledge of any failure by the Company to comply with all conditions, or default by the Company with respect to any covenants, under this Indenture, and further stating whether or not they have knowledge of any such failure or default and, if so, specifying each such failure or default and the nature thereof. For purposes of this Section, such compliance shall be determined without regard to any period of grace or requirement of notice provided for in this Indenture. The certificate need not comply with Section 10.04.

SECTION 4.05. Taxes. The Company shall pay prior to delinquency, all material taxes, assessments, and governmental levies except as contested in good faith by appropriate proceedings.

SECTION 4.06. Corporate Existence. Subject to Article V hereof, the Company shall do or cause to be done all things necessary to preserve and keep in full force and effect (i) its corporate existence and (ii) the material rights (charter and statutory), licenses and franchises of the Company and its Subsidiaries taken as a whole; provided, however, that the Company shall not be required to preserve any such right, license or franchise if the Board of Directors or management of the Company shall determine that the preservation thereof is no longer in the best interests of the Company, and that the loss thereof is not adverse in any material respect to the Holders.

ARTICLE V

MERGER, ETC.

SECTION 5.01. When Company May Merge, etc. (a) The Company shall not consolidate or merge with or into, or sell, assign, transfer, lease, convey or otherwise dispose of all or substantially all of its assets to, any Person unless: (i) the Person formed by or surviving any such consolidation or merger (if other than the Company), or to which such sale, assignment, transfer, lease, conveyance or disposition has been made, is a corporation organized and existing under the laws of the United States of America, any state thereof or the District of Columbia; (ii) the Person formed by or surviving any such consolidation or merger (if other than the Company), or to which such sale, assignment, transfer, lease, conveyance or disposition has been made, assumes by supplemental indenture satisfactory in form to the Trustee all the obligations of the Company under the Securities and this Indenture; and (iii) immediately after such transaction, and giving effect thereto, no Default or Event of Default shall have occurred and be continuing. Notwithstanding the foregoing, the Company may merge with another Person or acquire by purchase or otherwise all or any part of the property or assets of any other corporation or Person in a transaction in which the surviving entity is the Company.

(b) In connection with any consolidation, merger, sale, assignment, transfer or lease contemplated by this Section 5.01, the Company shall deliver, or cause to be delivered, to the Trustee, in form and substance reasonably satisfactory to the Trustee, an Officers' Certificate and an Opinion of Counsel, each stating that such consolidation, merger, sale, assignment, transfer or lease and the supplemental indenture in respect thereof comply with Article V and the TIA and that all conditions precedent herein provided for relating to such transaction have been complied with.

SECTION 5.02. Successor Corporation Substituted. Upon any consolidation or merger, or any sale, assignment, transfer, lease, conveyance or other disposition of all or substantially all the assets of the Company in accordance with Section 5.01, the successor corporation formed by such consolidation or into which the Company is merged or to which such sale, assignment, transfer, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor corporation had been named as the Company herein. In the event of any such sale or conveyance, but not any such lease, the Company or any successor corporation which thereafter shall have become such in the manner described in this Article V shall be discharged from all obligations and covenants under this Indenture and the Securities and may be dissolved, wound up or liquidated.

ARTICLE VI

DEFAULTS AND REMEDIES

SECTION 6.01. Events of Default. An “Event of Default” occurs with respect to Securities of any particular series, unless in the establishing Board Resolutions, Officers’ Certificate or supplemental indenture hereto, it is provided that such series shall not have the benefit of any such Event of Default, when any of the following occurs:

(i) the Company defaults in the payment of interest on any Security of that series when it becomes due and payable and such default continues for a period of 30 days;

(ii) the Company defaults in the payment of the principal of any Security of that series when the same becomes due and payable at maturity, upon acceleration, redemption or otherwise;

(iii) the Company fails to comply with any of its other agreements or covenants in, or provisions of, the Securities of that series or this Indenture and the Default continues for the period and after the notice specified below;

(iv) the Company pursuant to or within the meaning of any Bankruptcy Law: (A) commences a voluntary case or proceeding, (B) consents to the entry of an order for relief against it in an involuntary case or proceeding, (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, or (D) makes a general assignment for the benefit of its creditors; or

(v) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that: (A) is for relief against the Company in an involuntary case or proceeding, (B) appoints a Custodian for the Company or for all or substantially all of the Company’s property, or (C) orders the liquidation of the Company;

and in case of (v) the order or decree remains unstayed and in effect for 60 days.

The term “Bankruptcy Law” means Title 11 of the U.S. Code or any similar Federal or state law for the relief of debtors. The term “Custodian” means any receiver, Trustee, assignee, liquidator, sequestrator or similar official under any Bankruptcy Law.

A Default under clause (iii) of this Section 6.01 is not an Event of Default with respect to a particular series of Securities until the Trustee notifies the Company in writing, or the Holders of at least 25% in principal amount of the outstanding Securities of that series notify the Company and the Trustee, in writing, of the Default, and the Company does not cure the Default within 30 days after receipt of the notice. The notice must specify the Default, demand that it be remedied and state that the notice is a “Notice of Default”.

SECTION 6.02. Acceleration. If an Event of Default (other than an Event of Default specified in clause (iv) or (v) of Section 6.01) occurs and is continuing, the Trustee or the Holders of at least 25% of the principal amount of the outstanding Securities of that series, by written notice to the Company may declare due and payable 100% of the principal amount (or, in the case of Original Issue Discount Securities, such lesser amount as may be provided for in such Securities) of the Securities of that series plus any accrued interest to the date of payment. Upon a declaration of acceleration, such principal (or such lesser amount) and accrued interest to the date of payment shall be due and payable. If an Event of Default specified in clause (iv) or (v) of Section 6.01 occurs, all unpaid principal and accrued interest on the Securities shall become and be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder.

The Holders of a majority of the outstanding principal amount of the Securities of that series by written notice to the Trustee may rescind an acceleration and its consequences if (i) all existing Events of Default other than the nonpayment of principal (or such lesser amount) of or interest on the Securities of that series which have become due solely because of the acceleration, have been cured or waived and (ii) the rescission would not conflict with any judgment or decree of a court of competent jurisdiction.

SECTION 6.03. Other Remedies. If an Event of Default occurs and is continuing with respect to any series of Securities, the Trustee may pursue any available remedy by proceeding at law or in equity to collect the payment of principal of or interest on the Securities of that series or to enforce the performance of any provision of the Securities of that series or this Indenture.

The Trustee may maintain a proceeding even if it does not possess any of the Securities or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Holder in exercising any right or remedy accruing upon the Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. No remedy is exclusive of any other remedy. All remedies are cumulative to the extent permitted by law.

SECTION 6.04. Waiver of Past Defaults. Subject to Sections 6.07 and 9.02, the Holders of at least a majority in principal amount of the outstanding Securities of any series by notice to the Trustee may waive an existing Default or Event of Default and its consequences with respect to that series, except a Default in the nonpayment of the principal of or interest on any Security of that series (provided, however, that the Holders of a majority in principal amount of the then outstanding Securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration) . When a Default or Event of Default is waived, it is cured and ceases.

SECTION 6.05. Control by Majority. The Holders of at least a majority in principal amount of the outstanding Securities of any series may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on it. However, the Trustee may refuse to follow any direction that conflicts with law or this Indenture, that the Trustee determines may be unduly prejudicial to the rights of other Holders or that may involve the Trustee in personal liability. The Trustee may take any other action which it deems proper which is not inconsistent with any such direction.

SECTION 6.06. Limitation on Suits. A Holder of Securities of any series may not pursue a remedy with respect to this Indenture or the Securities of that series unless: (i) the Holder gives to the Trustee written notice of a continuing Event of Default with respect to such series; (ii) the Holders of at least 25% in principal amount of the outstanding Securities of that series make a written request to the Trustee to pursue the remedy; (iii) such Holder or Holders offer to the Trustee indemnity satisfactory to the Trustee against any loss, liability, cost or expense; (iv) the Trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; and (v) during such 60-day period the Holders of at least a majority in principal amount of the outstanding Securities of that series do not give the Trustee a direction inconsistent with the request.

A Holder may not use this Indenture to prejudice the rights of another Holder or to obtain a preference or priority over another Holder.

SECTION 6.07. Rights of Holders To Receive Payment. Notwithstanding any other provision of this Indenture, the right of any Holder of a Security to receive payment of principal of or interest, if any, on the Security on or after the respective due dates expressed or provided for in the Security, or to bring suit for the enforcement of any such payment on or after such respective dates, shall not be impaired or affected without the consent of the Holder.

SECTION 6.08. Collection Suit by Trustee. If an Event of Default specified in Section 6.01(i) or (ii) occurs and is continuing with respect to Securities of any series, the Trustee may recover judgment in its own name and as Trustee of an express trust against the Company for the whole amount of principal (or such portion of the principal as may be specified as due upon acceleration at that time in the terms of that series of Securities) and accrued interest, if any, remaining unpaid on the outstanding Securities of that series, together with (to the extent lawful) interest on overdue principal and interest, and such further amount as shall be sufficient to cover the costs and, to the extent lawful, expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel and any other amounts due the Trustee under Section 7.07.

SECTION 6.09. Trustee May File Proofs of Claim. The Trustee may file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee and the Holders allowed in any judicial proceeding relative to the Company (or any other obligor upon the Securities), its creditors or its property and shall be entitled and empowered to participate as a member, voting or otherwise, of any official committee of creditors appointed in such matter and to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same, and any custodian in any such judicial proceedings is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

SECTION 6.10. Priorities. If the Trustee collects any money pursuant to this Article VI, it shall pay out the money in the following order:

FIRST: to the Trustee, its agents and attorneys for amounts due under Section 7.07, including payment of all compensation, expense and liabilities incurred, and all advances made by the Trustee and the costs and expenses of collection;

SECOND: to Holders of any particular series of Securities for amounts due and unpaid on the Securities of such series for principal and interest, if any, ratably, without preference or priority of any kind, according to the amounts due and payable on the Securities of such series for principal and interest, respectively; and

THIRD: to the Company or any other obligors on the Securities of that series, as their interests may appear, or as a court of competent jurisdiction may direct.

The Trustee, upon prior written notice to the Company, may fix a record date and payment date for any payment to Holders pursuant to this Section 6.10. The Trustee shall notify the Company in writing reasonably in advance of any such record date and payment date.

SECTION 6.11. Undertaking for Costs. In any suit for the enforcement of any right or remedy under this Indenture or in any suit against the Trustee for any action taken or omitted by it as a Trustee, a court in its discretion may require the filing by any party litigant in the suit of an undertaking to pay the costs of the suit, and the court in its discretion may assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in the suit, having due regard to the merits and good faith of the claims or defenses made by the party litigant. This Section 6.11 does not apply to a suit by the Trustee, a suit by a Holder pursuant to Section 6.07 or a suit by Holders of more than 10% in principal amount of the outstanding Securities of that series.

ARTICLE VII

TRUSTEE

SECTION 7.01. Duties of Trustee. (a) If an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default: (1) the Trustee need perform only those duties that are specifically set forth in this Indenture or the TIA, and no implied covenants or obligations shall be read into this Indenture against the Trustee and (2) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture. However, in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall examine the certificates and opinions to determine whether or not, on their face, they conform to the requirements of this Indenture.

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct except that: (1) this paragraph does not limit the effect of paragraph (b) of this Section 7.01, (2) the Trustee shall not be liable for any error of judgment made in good faith by a Trust Officer or other officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts and (3) the Trustee shall not be liable with respect to any action it takes or omits to take in good faith in accordance with a direction received by it pursuant to Section 6.05.

(d) Whether or not therein expressly so provided, every provision of this Indenture that in any way relates to the Trustee is subject to paragraphs (a), (b), (c) and (e) of this Section 7.01.

(e) No provision of this Indenture shall require the Trustee to expend or risk its own funds or incur any liability. The Trustee may refuse to perform any duty or exercise any right or power unless it receives indemnity satisfactory to it against any loss, liability, cost or expense (including, without limitation, reasonable fees of counsel).

(f) The Trustee shall not be obligated to pay interest on any money or other assets received by it unless otherwise agreed in writing with the Company. Assets held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

SECTION 7.02. Rights of Trustee. Subject to Section 7.01:

(a) The Trustee may conclusively rely on any document (whether in its original or facsimile form) reasonably believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document. The Trustee shall receive and retain financial reports and statements of the Company as provided herein, but shall have no duty to review or analyze such reports or statements to determine compliance under covenants or other obligations of the Company.

(b) Before the Trustee acts or refrains from acting, it may require an Officers' Certificate and/or an Opinion of Counsel. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on an Officers' Certificate or Opinion of Counsel.

(c) The Trustee may act through its attorneys and agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, unless the Trustee's conduct constitutes willful misconduct or negligence.

(e) The Trustee may consult with counsel of its selection, and the advice or opinion of counsel with respect to legal matters relating to this Indenture and the Securities shall be full and complete authorization and protection from liability in respect of any action taken, omitted or suffered by it hereunder in good faith and in accordance with the advice or opinion of such counsel.

(f) The Trustee shall not be deemed to have notice of any Default or Event of Default unless a Trust Officer of the Trustee has actual knowledge thereof or unless written notice of any event which is in fact such a default is received by the Trustee at the Corporate Trust Office of the Trustee and such notice references the Securities and this Indenture.

(g) The rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and to each agent, custodian and other Person employed to act hereunder.

(h) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request, order or direction of any of the Holders pursuant to the provisions of this Indenture, unless such Holders shall have offered to the Trustee reasonable security or indemnity against the costs, expenses and liabilities which may be incurred therein or thereby.

(i) Whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may request, and in the absence of bad faith or willful misconduct on its part, rely upon an Officers' Certificate and an Opinion of Counsel.

(j) The Trustee may request that the Company deliver an Officers' Certificate setting for the names of individuals and/or titles of officers authorized at such times to take specified actions pursuant to this Indenture, which Officers' Certificate may be signed by any person specified as so authorized in any such certificate previously delivered and not superseded.

SECTION 7.03. Individual Rights of Trustee.

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. However, the Trustee is subject to Sections 7.10 and 7.11.

SECTION 7.04. Trustee's Disclaimer. The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities and it shall not be responsible for any statement in the Securities other than its certificate of authentication.

SECTION 7.05. Notice of Defaults. If a Default or Event of Default with respect to the Securities of any series occurs and is continuing, and if it is known to the Trustee, the Trustee shall mail to Holders a notice of the Default or Event of Default within 90 days after the occurrence thereof. Except in the case of a Default or Event of Default in payment of any such Security, the Trustee may withhold the notice if and so long as it in good faith determines that withholding the notice is in the interests of the Holders.

SECTION 7.06. Reports by Trustee to Holders. The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required by TIA Section 3.13 at the times and in the manner provided by the TIA, which shall initially be not less than every twelve months commencing on and may be dated as of a date up to 75 days prior to such transmission.

A copy of each report at the time of its mailing to Holders shall be filed with the SEC, if required, and each stock exchange, if any, on which the Securities are listed. The Company shall promptly notify the Trustee when the Securities of any series are listed on any stock exchange.

SECTION 7.07. Compensation and Indemnity. The Company shall be liable for paying to the Trustee from time to time reasonable compensation for its acceptance of this Indenture and services hereunder as the Company and the Trustee shall from time to time agree in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall be liable for reimbursing the Trustee upon request for all reasonable out-of-pocket expenses incurred or made by it, including costs of collection, costs of preparing and reviewing reports, certificates and other documents, costs of preparation and mailing of notices to Securityholders and reasonable costs of counsel retained by the Trustee in connection with the delivery of an Opinion of Counsel or otherwise, in addition to the compensation for its services. Such expenses shall include the reasonable compensation and expenses, disbursements and advances of the Trustee's agents, counsel, accountants and experts. The Company shall indemnify the Trustee against any and all loss, liability, damages, claims or expense (including reasonable attorneys' fees and expenses) incurred by it without negligence, bad faith or willful misconduct on its part in connection with the administration of this trust and the performance of its duties hereunder, including the costs and expense of enforcing this Indenture (including this Section 7.07) and of defending itself against any claims (whether asserted by any Securityholder, the Company or otherwise). Failure by the Trustee to so notify the Company shall not relieve the Company of its obligations hereunder. The Company shall defend the claim, and the Trustee shall provide reasonable cooperation at the Company's expense in the defense. The Trustee may have separate counsel and the Company shall pay the fees and expenses of such counsel, provided that the Company shall not be required to pay such fees and expenses if it assumes the Trustee's defense, and, in the reasonable judgment of outside counsel to the Trustee, there is no conflict of interest between the Company and the Trustee in connection with such defense. Notwithstanding the foregoing, the Company need not reimburse any expense or indemnify against any loss, liability or expense which is finally determined by a court of competent jurisdiction to have been incurred by the Trustee through the Trustee's own willful misconduct, negligence or bad faith.

To secure the Company's payment obligations in this Section, the Trustee shall have a lien prior to the Securities on all money or property held or collected by the Trustee other than money or property held in trust to pay principal of and interest on particular Securities. Such lien shall survive the satisfaction and discharge of this Indenture. The Trustee's right to receive payment of any amounts due under this [Section 7.07](#) shall not be subordinate to any other liability or Indebtedness of the Company.

The Company's and the Subsidiary Guarantors' payment obligations pursuant to this Section shall survive the discharge of this Indenture. When the Trustee incurs expenses after the occurrence of an Event of Default specified in clause (iv) or clause (v) of [Section 6.01](#) with respect to the Company, the expenses are intended to constitute expenses of administration under any Bankruptcy Law.

SECTION 7.08. Replacement of Trustee. A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this [Section 7.08](#).

The Trustee may resign and be discharged from the trust hereby created with respect to one or more or all series of Securities by so notifying the Company in writing. The Holders of a majority in principal amount of the then outstanding Securities of any series may remove the Trustee with respect to that series by so notifying the Trustee and the Company in writing. The Company may remove the Trustee with respect to one or more or all series of Securities if: (i) the Trustee fails to comply with [Section 7.10](#) or TIA Section 310; (ii) the Trustee is adjudged a bankrupt or an insolvent or an order for relief is entered with respect to the Trustee under any Bankruptcy Law; (iii) a Custodian or public officer takes charge of the Trustee or its property; or (iv) the Trustee becomes incapable of acting.

If, as to any series of Securities, the Trustee resigns or is removed or if a vacancy exists in the office of the Trustee for any reason, the Company shall promptly appoint a successor Trustee for that series of Securities. The Trustee shall be entitled to payment of its fees and reimbursement of its expenses while acting as Trustee. Within one year after the successor Trustee takes office, the Holders of at least a majority in principal amount of then outstanding Securities of that series may appoint a successor Trustee to replace the successor Trustee appointed by the Company.

Any Holder of Securities of that series may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee if the Trustee fails to comply with [Section 7.10](#).

A successor Trustee as to any series of Securities shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Thereupon the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee under this Indenture. The Company shall mail a notice of the successor Trustee's succession to the Holders. The retiring Trustee shall promptly transfer all property held by it as Trustee to the successor Trustee, subject to the lien provided for in [Section 7.07](#). Notwithstanding replacement of the Trustee pursuant to this [Section 7.08](#), the Company's obligations under [Section 7.07](#) hereof shall continue for the benefit of the retiring Trustee with respect to expenses, losses and liabilities incurred by it prior to such replacement.

In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, the retiring Trustee and each successor Trustee with respect to the Securities of one or more series shall execute and deliver an indenture supplemental hereto wherein each successor Trustee shall accept such appointment and which (1) shall contain such provisions as shall be necessary or desirable to transfer and confirm to, and to vest in, each successor Trustee all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates, (2) shall contain such provisions as shall be necessary or desirable to confirm that all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring shall continue to be vested in the retiring Trustee, and (3) shall add to or change any of the provisions of this Indenture as shall be necessary or desirable to provide for or facilitate the administration of the trusts hereunder by more than one Trustee; provided, however, that nothing herein or in such supplemental indenture shall constitute such Trustees to be co-Trustees of the same trust and that each such Trustee shall be Trustee of a trust hereunder separate and apart from any trust hereunder administered by any other such Trustee.

Upon the execution and delivery of such supplemental indenture the resignation or removal of the retiring Trustee shall become effective to the extent provided therein and each such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates.

SECTION 7.09. Successor Trustee by Merger, Etc. Subject to Section 7.10, if the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business to, another corporation or national banking association, the successor entity without any further act shall be the successor Trustee as to that series of Securities.

SECTION 7.10. Eligibility; Disqualification. Each series of Securities shall always have a Trustee who satisfies the requirements of TIA Section 310(a) (1), (2) and (5). The Trustee as to any series of Securities shall always have a combined capital and surplus of at least \$100 million as set forth in its most recent published annual report of condition. The Trustee is subject to TIA Section 310(b).

SECTION 7.11. Preferential Collection of Claims Against the Company. The Trustee is subject to TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311 (b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated therein.

ARTICLE VIII

DISCHARGE OF INDENTURE

SECTION 8.01. Satisfaction and Discharge of Indenture. This Indenture shall cease to be of further effect (except as to any surviving rights of registration of transfer or exchange of Securities herein expressly provided for), and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when

(a) either

(i) all Securities theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or

(ii) all such Securities not theretofore delivered to the Trustee for cancellation

(1) have become due and payable, or

(2) will become due and payable at their stated maturity within one year, or

(3) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company, or

(4) are deemed paid and discharged pursuant to Section 8.03, as applicable;

and the Company, in the case of (1), (2) or (3) above, has deposited or caused to be deposited with the Trustee as trust funds in trust an amount sufficient for the purpose of paying and discharging the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal and interest to the date of such deposit (in the case of Securities which have become due and payable on or prior to the date of such deposit) or to the stated maturity or redemption date, as the case may be;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07, and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section or if money or obligations shall have been deposited with or received by the Trustee pursuant to Section 8.03, the obligations of the Trustee under Section 8.02 and Section 8.05 shall survive.

SECTION 8.02. Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.05, all money deposited with the Trustee pursuant to Section 8.01, all money and U.S. Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04 and all money received by the Trustee in respect of U.S. Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or to make mandatory sinking fund payments or analogous payments as contemplated by Sections 8.03 and 8.04.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations deposited pursuant to Sections 8.03 or 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon the request of the Company any U.S. Government Obligations or money held by it as provided in Sections 8.03 or 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations held under this Indenture.

SECTION 8.03. Legal Defeasance of Securities of any Series. Unless this Section 8.03 is otherwise specified to be inapplicable to Securities of any series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any such series on the 91st day after the date of the deposit referred to in subparagraph (a) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, upon the request of the Company, execute proper instruments acknowledging the same), except as to:

(i) the rights of Holders of Securities of such series to receive, from the trust funds described in subparagraph (d) hereof, (x) payment of the principal of an each installment of principal of or interest on the outstanding Securities of such series on the stated maturity of such principal of or interest and (y) the benefit of any mandatory sinking fund payments applicable to the Securities of such series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such series;

(ii) the Company's obligations with respect to such Securities of such series under Sections 2.03, 2.06 and 2.07; and

(iii) the rights, powers, trust and immunities of the Trustee hereunder and the duties of the Trustee under Section 8.02 and the duty of the Trustee to authenticate Securities of such series issued on registration of transfer of exchange;

provided that, the following conditions shall have been satisfied:

(a) the Company shall have deposited or caused to be deposited irrevocably with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as Security for and dedicated solely to the benefit of the Holders of such Securities, cash in U.S. Dollars and/or U.S. Government Obligations which through the payment of interest and principal in respect thereof, in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (including mandatory sinking fund or analogous payments) of and interest, if any, on all the Securities of such series on the dates such installments of interest or principal are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture;

(c) no Default or Event of Default with respect to the Securities of such series shall have occurred on the date of such deposit and 91 days shall have passed after the deposit has been made, and, during such 91 day period, no Default specified in Section 6.01(iv) or (v) with respect to the Company occurs which is continuing at the end of such period;

(d) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amount and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(e) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company;

(f) such deposit shall not result in the trust arising from such deposit constituting an investment company (as defined in the Investment Company Act of 1940, as amended), or such trust shall be qualified under such Act or exempt from regulation thereunder; and

(g) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent relating to the defeasance contemplated by this Section have been complied with.

SECTION 8.04. Covenant Defeasance. Unless this Section 8.04 is otherwise inapplicable to Securities of any series, on and after the 91st day after the date of the deposit referred to in subparagraph (a) hereof, the Company may omit to comply with any term, provision or condition set forth under Sections 4.03, 4.04 and 4.05 as well as any additional covenants contained in a supplemental indenture hereto for a particular series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.01 (and the failure to comply with any such provisions shall not constitute a Default or Event of Default under Section 6.01) and the occurrence of any event described in clause (e) of Section 6.01 shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such series, provided that the following conditions shall have been satisfied:

(a) With reference to this Section 8.04, the Company has deposited or caused to be irrevocably deposited (except as provided in Section 8.03) with the Trustee as trust funds in trust, specifically pledged as Security for, and dedicated solely to, the benefit of the Holders of such Securities, cash in U.S. Dollars and/or U.S. Government Obligations which through the payment of interest and principal in respect thereof, in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, to pay principal and interest, if any, on and any mandatory sinking fund in respect of the Securities of such series on the dates such installments of interest or principal are due;

(b) Such deposit will not result in a breach or violation of, or constitute a default under, this Indenture;

(c) No Default or Event of Default with respect to the Securities of such series shall have occurred on the date of such deposit and 91 days shall have passed after the deposit has been made, and, during such 91 day period, no Default specified in Section 6.01(iv) or (v) with respect to the Company occurs which is continuing at the end of such period;

(d) The Company shall have delivered to the Trustee an Opinion of Counsel confirming that Holders of the Securities of such series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such deposit and defeasance had not Occurred;

(e) The Company shall have delivered to the Trustee an Officers' Certificate stating the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company; and

(f) The Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the defeasance contemplated by this Section have been complied with.

SECTION 8.05. Repayment to Company. The Trustee and the Paying Agent shall pay to the Company upon request any money held by them for the payment of principal or interest that remains unclaimed for two years after the date upon which such payment shall have become due. After payment to the Company, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another Person.

ARTICLE IX

AMENDMENTS, SUPPLEMENTS AND WAIVERS

SECTION 9.01. Without Consent of Holders. The Company and the Trustee may amend this Indenture or the Securities without the consent of any Holder: (i) to cure any ambiguity, defect or inconsistency or make any change required to qualify the indenture under the TIA, provided that such change does not adversely affect the rights hereunder of any Holder in any material respect; (ii) to comply with Section 5.01; (iii) to provide for uncertificated Securities in addition to certificated Securities; (iv) to make any change that does not adversely affect in any material respect the rights hereunder of any Holder; (v) to add to, change or eliminate any of the provisions of this Indenture in respect of one or more series of Securities, provided, however, that any such addition, change or elimination (A) shall neither (i) apply to any Security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the holder of any such Security with respect to such provision or (B) shall become effective only when there is no outstanding Security of any series created prior to the execution of such supplemental indenture and entitled to the benefit of such provisions; or (vi) to establish additional series of Securities as permitted by Section 2.01.

SECTION 9.02. With Consent of Holders. The Company and the Trustee as to any series of Securities may amend this Indenture or the Securities of that series or waive compliance in any particular instance with any provision of this Indenture or the Securities of that series, in each case with the written consent of the Holders of at least a majority in principal amount of the then outstanding Securities of that series.

Without the consent of each Holder affected, an amendment or waiver under this Section may not: (i) reduce the principal amount of Securities, whose Holders must consent to an amendment or waiver; (ii) reduce the rate of or change the time for payment of interest on any Security; (iii) change the date on which any Security may be subject to redemption or repurchase, or reduce the redemption or repurchase price therefor; (iv) make any Security payable in currency other than that stated in the Security; or (v) make any change in Section 6.04, 6.07 or this sentence.

It shall not be necessary for the consent of the Holders under this Section to approve the particular form of any proposed amendment or waiver, but it shall be sufficient if such consent approves the substance thereof.

An amendment or waiver under this Section which waives, changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

The Company will mail supplemental indentures to Holders upon request. Any failure of the Company to mail such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

SECTION 9.03. Compliance with Trust Indenture Act. Every amendment to this Indenture or the Securities shall be set forth in a supplemental indenture that complies with the TIA as then in effect.

SECTION 9.04. Revocation and Effect of Consents. Until an amendment or waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security; provided, however, that unless a record date shall have been established pursuant to Section 2.14, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives written notice of revocation before the date the amendment or waiver becomes effective. An amendment or waiver becomes effective on receipt by the Trustee of consents from the Holders of the requisite percentage principal amount of the outstanding Securities of any series, and thereafter shall bind every Holder of Securities of that series.

SECTION 9.05. Notation on or Exchange of Securities. If an amendment or waiver changes the terms of a Security: (a) the Trustee may require the Holder of the Security to deliver such Security to the Trustee, the Trustee may place an appropriate notation on the Security about the changed terms and return it to the Holder and the Trustee may place an appropriate notation on any Security thereafter authenticated; or (b) if the Company or the Trustee so determines, the Company in exchange for the Security shall issue and the Trustee shall authenticate a new Security that reflects the changed terms.

SECTION 9.06. Trustee to Sign Amendment, etc. The Trustee shall sign any amendment authorized pursuant to this Article IX if the amendment does not adversely affect the rights, duties, liabilities or immunities of the Trustee. If it does, the Trustee may, but need not sign it. In signing or refusing to sign such amendment, the Trustee shall be entitled to receive and shall be fully protected in relying upon an Officers' Certificate and an Opinion of Counsel as conclusive evidence that such amendment is authorized or permitted by this Indenture and that such amendment, supplement or waiver is the legal, valid and binding obligation of the Company, enforceable against it in accordance with its terms, subject to customary exceptions, and complies with the provisions hereof (including Section 9.03).

ARTICLE X

MISCELLANEOUS

SECTION 10.01. Trust Indenture Act Controls. This Indenture is subject to the provisions of the TIA which are required to be part of this Indenture, and shall, to the extent applicable, be governed by such provisions.

SECTION 10.02. Notices. Any notice or communication to the Company or the Trustee is duly given if in writing and delivered in person or mailed by first-class mail to the address set forth below:

If to the Company:

SeqLL Inc.
3 Federal Street
Billerica, Massachusetts 01821
Attn: Daniel Jones, Chief Executive Officer
(781) 469-6016

with a copy to:

Pryor Cashman LLP
7 Times Square
New York, New York 10036
Attention: Eric M. Hellige, Esq.

If to the Trustee:

[_____]

Attention: _____

With a copy to:

Attention: _____

The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications.

Any notice or communication to a Holder shall be mailed by first-class mail to his address shown on the register kept by the registrar. Failure to mail a notice or communication to a Holder or any defect in such notice or communication shall not affect its sufficiency with respect to other Holders.

If a notice or communication is mailed or sent in the manner provided above within the time prescribed, it is duly given, whether or not the addressee receives it, except that notice to the Trustee shall only be effective upon receipt thereof by the Trustee.

If the Company mails a notice or communication to Holders, it shall mail a copy to the Trustee and each Agent at the same time.

SECTION 10.03. Communication by Holders with Other Holders. Holders may communicate pursuant to TIA Section 312(b) with other Holders with respect to their rights under this Indenture or the Securities. The Company, the Trustee, the registrar and anyone else shall have the protection of TIA Section 312 (c)

SECTION 10.04. Certificate and Opinion as to Conditions Precedent. Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee: (1) an Officers' Certificate (which shall include the statements set forth in Section 10.05) stating that, in the opinion of the signers, all conditions precedent and covenants, if any, provided for in this Indenture relating to the proposed action have been complied with; and (ii) an Opinion of Counsel (which shall include the statements set forth in Section 10.05) stating that, in the opinion of such counsel, all such conditions precedent and covenants have been complied with.

SECTION 10.05. Statements Required in Certificate or Opinion. Each certificate (other than certificates provided pursuant to Section 4.04) or opinion with respect to compliance with a condition or covenant provided for in this Indenture shall include: (i) a statement that the person making such certificate or opinion has read such covenant or condition; (ii) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based; (iii) a statement that, in the opinion of such person, he or she has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and (iv) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with; provided, however, that with respect to matters of fact, an Opinion of Counsel may rely on an Officers' Certificate or certificate of public officials.

SECTION 10.06. Rules by Trustee and Agents. The Trustee may make reasonable rules for action by or for a meeting of Holders. The Registrar or Paying Agent may make reasonable rules and set reasonable requirements for its functions.

SECTION 10.07. Legal Holidays. A "Legal Holiday" is a Saturday, a Sunday or a day on which banking institutions in the City of New York are not required or authorized to be open. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

SECTION 10.08. Duplicate Originals. The parties may sign any number of copies of this Indenture. One signed copy is enough to prove this Indenture.

SECTION 10.09. Governing Law. The internal laws of the State of New York shall govern this Indenture and the Securities, without regard to the conflicts of Law rules thereof.

SECTION 10.10. No Adverse Interpretation of Other Agreements. This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or any subsidiary. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

SECTION 10.11. Successors. All agreements of the Company in this Indenture and the Securities shall bind their respective successors. All agreements of the Trustee in this Indenture shall bind its successor.

SECTION 10.12. Severability. In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

SECTION 10.13. Counterpart Originals. This Indenture may be signed in one or more counterparts. Each signed copy shall be an original, but all of them together represent the same agreement.

SeqLL Inc.

By: _____
Name: _____
Title: _____

Dated: _____

[_____]

By: _____
Name: _____
Title: _____

Dated: _____

November 10, 2022

SeqLL, Inc.
3 Federal Street
Billerica, MA 01821

Re: **Registration Statement on Form S-3**

Ladies and Gentlemen:

We have acted as counsel to SeqLL, Inc., a Delaware corporation (the “**Company**”), in connection with the registration statement on Form S-3 filed by the Company with the U.S. Securities and Exchange Commission (the “**Commission**”) on the date hereof (the “**Registration Statement**”) under the Securities Act of 1933, as amended (the “**Act**”). The Registration Statement relates to the proposed issuance and sale from time to time of up to \$75,000,000 of one or more of the following securities by the Company pursuant to Rule 415 under the Act: (i) shares of common stock, par value \$0.001 per share, of the Company, which may include shares of common stock that constitute a part of or that are issuable upon the conversion or exercise of other Securities (as defined herein) in the Registration Statement (“**Common Stock**”); (ii) preferred stock, par value \$0.001 per share, of the Company, which may include shares of preferred stock that constitute a part of or that are issuable upon the conversion or exercise of other Securities in the Registration Statement (“**Preferred Stock**” and together with Common Stock, “**Equity Securities**”); (iii) one or more series of debt securities of the Company and/or convertible debt securities of the Company, which may include convertible debt securities of the Company that constitute a part of or that are issuable upon the conversion or exercise of other Securities in the Registration Statement (“**Debt Securities**”); (iv) warrants covering Equity Securities and/or Debt Securities, which may include warrants that constitute a part of or that are issuable upon the conversion or exercise of other Securities in the Registration Statement (“**Warrants**”); (v) rights to purchase shares of Equity Securities, and rights to purchase Debt Securities and/or Units (as defined below) (“**Rights**”); and (vi) units consisting of Equity Securities, Warrants, Debt Securities and/or Rights (“**Units**”). Such Equity Securities, Warrants, Debt Securities, Rights and Units are referred to collectively in this opinion as “**Securities**.”

This opinion is being furnished in accordance with the requirements of Item 16 of Form S-3 and Item 601(b)(5)(i) of Regulation S-K.

In connection with the foregoing, we have relied upon, among other things, our examination of such documents, records of the Company and certificates of its officers and public officials as we deemed necessary for purposes of the opinions expressed below. In our examination of documents for purposes of this opinion, we have assumed, and express no opinion as to, the authenticity and completeness of all documents submitted to us as originals, the conformity to originals and completeness of all documents submitted to us as copies, the legal capacity of all persons or entities executing the same, the genuineness of all signatures, the lack of any undisclosed termination, modification, waiver, or amendment to any document reviewed by us, and the due authorization, execution, and delivery of all documents by the Company’s shareholders where due authorization, execution, and delivery are prerequisites to the effectiveness thereof.

In expressing the opinions set forth below, we also have assumed the following:

(1) Prior to the issuance of (a) any Equity Securities that are not outstanding as of the date hereof or (b) any Warrants covering the Equity Securities, the Company will have available for issuance, under its Restated Certificate of Incorporation, as amended, and as may be further amended from time to time and as in effect at the time thereof, the requisite number of authorized but unissued shares of Common Stock and/or Preferred Stock;

(2) At the time of the issuance, sale, and delivery, as applicable, of any Debt Securities, Warrants, Rights or Units: (a) the indenture, warrant agreement, rights agreement or unit agreement (collectively, the “Documents”), as applicable, and all actions necessary for the issuance of the applicable Securities, and the form and terms thereof, will comply with all requirements and restrictions, if any, applicable to the Company, whether imposed by any agreement or instrument to which the Company is a party or by which it is bound or by any court or other governmental or regulatory body having jurisdiction over the Company; (b) the Company will have duly authorized, executed, and delivered any such Document and will have duly authorized the issuance of any such Security, and none of such authorizations will have been modified or rescinded, and there will not have occurred any change in law affecting the validity, legally binding character, or enforceability thereof; and (c) with respect to any Document executed or to be executed by any party other than the Company, such party has, or will have, duly authorized, executed, and delivered the Documents to which it is a party and each such Document is, or will be, the valid and binding obligation of such party, enforceable against it in accordance with its terms;

(3) The Registration Statement and any additional amendments thereto (including post-effective amendments) will have become effective, will be effective, and will comply with all applicable laws at the time the Securities are offered or issued as contemplated by the Registration Statement;

(4) A prospectus supplement will have been prepared and filed with the Commission describing the Securities offered thereby and will comply with all applicable laws;

(5) Any Securities being offered pursuant to a prospectus supplement will be issued and sold as contemplated in the Registration Statement and such prospectus supplement;

(6) There shall not have occurred any change in law affecting the validity of the Securities; and

(7) The Company will remain duly organized, validly existing, and in good standing under the laws of the State of Delaware.

Based upon and subject to the foregoing and the additional limitations, qualifications, exceptions and assumptions set forth below, it is our opinion that:

(1) With respect to the Equity Securities: (a) when the Company’s board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of Equity Securities at a specified price or pursuant to a specified pricing mechanism; (b) if Equity Securities are to be sold in a firm commitment underwritten offering or in a best efforts placement offering, an underwriting agreement or placement agency agreement with respect to such Equity Securities has been duly authorized, executed, and delivered by the Company and the other parties thereto; (c) any legally required consents, approvals, authorizations and other orders of the Commission and any other regulatory authorities have been obtained; (d) when a Certificate of Amendment to the Company’s Restated Certificate of Incorporation, as amended, relating to any Preferred Stock has been duly executed and filed with the Office of the Secretary of State of the State of Delaware; (e) when certificates representing the Equity Securities have been duly executed by appropriate officers of the Company or appropriate book entries have been made in the records of the Company; (f) when the Equity Securities have been duly and properly sold, paid for, and delivered as contemplated in the Registration Statement, and the prospectus supplement relating thereto and setting forth the terms of any Preferred Stock and, if applicable, in accordance with the applicable underwriting or other purchase agreement; and (g) if applicable, the Equity Securities have been issued against payment therefor in accordance with any applicable agreement governing the issuance of Equity Securities pursuant to the exercise or conversion of any Warrant, Right or Unit, then the Equity Securities will be validly issued, fully paid, and nonassessable.

(2) With respect to the Debt Securities: (a) when the Company's board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of Debt Securities at a specified price or pursuant to a specified pricing mechanism; (b) if the Debt Securities are to be sold in a firm commitment underwritten offering or in a best efforts placement offering, an underwriting agreement or placement agency agreement with respect to such Debt Securities has been duly authorized, executed, and delivered by the Company and the other parties thereto; (c) the Indenture has been duly executed and delivered on behalf of the Company and a trustee qualified to act as such under applicable law and such Indenture has been duly qualified under the Trust Indenture Act of 1939, as amended; (d) all necessary corporate action has been taken by the Company to authorize the form, terms, execution, and delivery of the Debt Securities; (e) any legally required consents, approvals, authorizations and other orders of the Commission and any other regulatory authorities have been obtained; and (f) such Debt Securities have been duly executed by the Company and authenticated by the applicable trustee in accordance with the Indenture and have been duly issued and delivered against payment therefor in accordance with such corporate action and applicable law and as contemplated in the Registration Statement and the prospectus supplement setting forth the terms of the Debt Securities and the plan of distribution, then, upon the happening of such events, such Debt Securities will constitute the valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

(3) With respect to the Warrants: (a) when the Company's board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of Warrants at a specified price or pursuant to a specified pricing mechanism; (b) if the Warrants are to be sold in a firm commitment underwritten offering or in a best efforts placement offering, an underwriting agreement or placement agency agreement with respect to such Warrants has been duly authorized, executed, and delivered by the Company and the other parties thereto; (c) any legally required consents, approvals, authorizations and other orders of the Commission and any other regulatory authorities have been obtained; (d) any shares of Equity Securities or any Debt Securities purchasable upon exercise of the Warrants, as applicable, have been duly and validly authorized and reserved for issuance and sale; (e) when a Certificate of Amendment to the Company's Restated Certificate of Incorporation, as amended, relating to any Preferred Stock has been duly executed and filed with the Office of the Secretary of State of the State of Delaware; and (f) the warrant agreements have been duly executed and the Warrants duly sold by the Company against payment therefor in accordance with any applicable warrant agreement, and in accordance with such corporate action and applicable law and as contemplated in the Registration Statement and the prospectus supplement setting forth the terms of the Warrants and the plan of distribution, then, upon the happening of such events, the Warrants will constitute valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

(4) With respect to the Rights: (a) when the Company's board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of Rights at a specified price or pursuant to a specified pricing mechanism; (b) if the Rights are to be sold in a firm commitment underwritten offering or in a best efforts placement offering, an underwriting agreement or placement agency agreement with respect to such Rights has been duly authorized, executed, and delivered by the Company and the other parties thereto; (c) any legally required consents, approvals, authorizations, and other orders of the Commission and any other regulatory authorities have been obtained; (d) any shares of Equity Securities, and any Debt Securities and/or Units to be issued pursuant to such Rights have been duly and validly authorized and reserved for issuance and sale; and (e) the rights agreements have been duly executed and the Rights duly sold by the Company against payment therefor in accordance with any applicable rights agreement, and in accordance with such corporate action and applicable law and as contemplated in the Registration Statement and the prospectus supplement setting forth the terms of the Rights and the plan of distribution, then, upon the happening of such events, the Rights will constitute the valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

(5) With respect to the Units: (a) when the Company's board of directors or any duly designated committee thereof has adopted resolutions approving the issuance and sale of Units at a specified price or pursuant to a specified pricing mechanism; (b) if the Units are to be sold in a firm commitment underwritten offering or in a best efforts placement offering, an underwriting agreement or placement agency agreement with respect to such Units has been duly authorized, executed, and delivered by the Company and the other parties thereto; (c) any legally required consents, approvals, authorizations, and other orders of the Commission and any other regulatory authorities have been obtained; (d) any shares of Equity Securities, and any Debt Securities, Warrants and/or Rights to be issued pursuant to such Units have been duly and validly authorized and reserved for issuance and sale; and (e) the unit agreements have been duly executed and the Units duly sold by the Company against payment therefor in accordance with the unit agreements, and in accordance with such corporate action and applicable law and as contemplated in the Registration Statement and the prospectus supplement setting forth the terms of the Units and the plan of distribution, then, upon the happening of such events, the Units will constitute the valid and binding obligations of the Company, enforceable against the Company in accordance with their terms, except as enforcement thereof may be limited by applicable bankruptcy, insolvency, reorganization, arrangement, moratorium or other similar laws affecting creditors' rights, and subject to general equity principles and to limitations on availability of equitable relief, including specific performance.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Registration Statement and reference to our firm under the heading "Legal Matters" in the prospectus included therein. In giving this consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Act or the rules and regulations promulgated thereunder by the Commission.

This opinion is intended solely for use in connection with the sale of the Securities subject to the Registration Statement and is not to be relied upon for any other purpose. This opinion is rendered as of the date first written above and based solely on our understanding of facts in existence as of such date after the aforementioned examination.

We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention whether or not such occurrence would affect or modify any of the opinions expressed herein.

We are members of the Bar of the State of New York and the foregoing opinion is limited to the laws of the State of New York.

Very truly yours,

/s/ Pryor Cashman LLP

Pryor Cashman LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Registration Statement on Form S-3 and related Prospectus of SeqLL Inc. of our report dated March 23, 2022, relating to the consolidated financial statements of SeqLL Inc., appearing in the Annual Report on Form 10-K of SeqLL Inc. for the years ended December 31, 2021 and 2020.

We also consent to the reference to our firm under the heading “Experts” in such Prospectus.

/s/ Wolf & Company, P.C.
Boston, Massachusetts
November 10, 2022

Calculation of Filing Fee Tables

S-3
(Form Type)

SeqLL Inc.
(Exact Name of Registrant as Specified in its Charter)

Not Applicable
(Translation of Registrant's Name into English)

Table 1: Newly Registered and Carry Forward Securities

Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee (2)	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial effective date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Newly Registered Securities											
Fees to Be Paid											
Equity	Common Stock, par value \$0.00001 per share (3)	(9)				\$ 0.0001102					
Equity	Preferred Stock, par value \$0.00001 per share (4)					\$ 0.0001102					
Debt	Debt Securities (5)					\$ 0.0001102					
Other	Warrants (6)					\$ 0.0001102					
Other	Rights (7)					\$ 0.0001102					
Other	Units (8)					\$ 0.0001102					
Unallocated (Universal) Shelf	Unallocated (Universal) Shelf	457(p)	(1)	(1)	\$ 75,000,000	\$ 0.0001102	\$ 8,265.00				
Fees Previously Paid											
Carry Forward Securities											
Carry Forward Securities											
	Total Offering Amounts				\$ 75,000,000		\$ 8,265.00				
	Total Fees Previously Paid				—		—				
	Total Fee Offsets						—				
	Net Fee Due						\$ 8,265.00				

Table 2: Fee Offset Claims and Sources

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Rules 457(b) and 0-11(a)(2)											
Fee Offset Claims	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fee Offset Sources	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rule 457(p)											
Fee Offset Claims	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fee Offset Sources	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- (1) The amount to be registered consists of a currently indeterminate amount of common stock, preferred stock, debt securities, warrants, rights and/or units, estimated solely for purposes of computing the registration fee. There is also being registered hereunder such currently indeterminate number of (i) shares of common stock or other securities of the registrant that may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby or (ii) shares of common stock, preferred stock, debt securities, rights and/or units that may be issued upon exercise of warrants or rights registered hereby, as the case may be. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder. The proposed maximum aggregate offering price per unit will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security, pursuant to General Instruction II.D of Form S-3 under the Securities Act. No separate consideration will be received for (i) common stock or other securities of the registrant that may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby or (ii) common stock, preferred stock, debt securities, rights and/ or units that may be issued upon exercise of warrants or rights registered hereby, as the case may be.
- (2) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.
- (3) Including such currently indeterminate amount of common stock as may be issued from time to time at currently indeterminate prices or upon conversion or exchange of debt securities or preferred stock registered hereby, or upon exercise of warrants or rights registered hereby, as the case may be.
- (4) Including such currently indeterminate amount of preferred stock as may be issued from time to time at currently indeterminate prices or upon exercise of warrants or rights registered hereby, as the case may be.
- (5) Including such currently indeterminate principal amount of debt securities as may be issued from time to time at currently indeterminate prices or upon exercise of warrants or rights registered hereby, as the case may be.
- (6) Including such currently indeterminate number of warrants as may be issued from time to time at currently indeterminate prices.
- (7) Including such currently indeterminate number of rights, including share purchase or subscription rights, as may be issued from time to time at currently indeterminate prices.
- (8) Including such currently indeterminate number of units as may be issued from time to time at currently indeterminate prices. Each unit will represent an interest in two or more securities registered hereby, which may or may not be separable from one another.
- (9) Calculated pursuant to Rule 457(o) under the Securities Act.