

As filed with the Securities and Exchange Commission on November 15, 2024.

Registration Statement No. 333-

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM F-1**

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

**XORTX THERAPEUTICS INC.**

(Exact name of registrant as specified in its charter)

**British Columbia**  
(State or other jurisdiction of  
incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**N/A**  
(I.R.S. Employer  
Identification No.)

**3710 – 33rd Street NW  
Calgary, Alberta, Canada T2L 2M1  
(403) 455-7727**

(Address, including zip code and telephone number, including area code, of registrant's principal executive offices)

**C T Corporation  
28 Liberty Street  
New York, NY 10005  
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(Name, address, including zip code, and telephone number, including area code, of agent for service)

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**Approximate date of commencement of proposed sale to the public:** As soon as practicable after this Registration Statement is declared effective.

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 of 1933, 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, please 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 an emerging growth company as defined in Rule 405 of the Securities Act.

Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, 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 Commission, acting pursuant to said Section 8(a), may determine.**

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

SUBJECT TO COMPLETION, DATED NOVEMBER 15, 2024

## PRELIMINARY PROSPECTUS

**Up to 810,810 Common Shares Issuable upon  
Exercise of Warrants****XORTX Therapeutics Inc.**

This prospectus relates to the resale by the selling shareholder named in this prospectus (the “Selling Shareholder”) of up to 810,810 common shares that are issuable from time to time to the Selling Shareholder upon the exercise of 810,810 common share purchase warrants (the “Warrants”). The Warrants were offered and sold by us pursuant to a private placement that closed on October 18, 2024. Each Warrant was sold at a price of \$0.001 per Warrant, were immediately exercisable and expire five years from the original date of issuance. No securities are being offered pursuant to this prospectus other than the common shares that will be issued upon the exercise of the Warrants.

Our registration of the common shares covered by this prospectus does not mean that either we or the Selling Shareholder will issue, offer or sell, as applicable, any of the common shares hereby registered. The Selling Shareholder may offer, sell, or distribute all or a portion of the common shares hereby registered publicly or through private transactions at prevailing market prices or at negotiated prices. We will not receive any of the proceeds from such sales of our common shares by the Selling Shareholders pursuant to this prospectus. We will, however, receive the net proceeds of any of the Warrants exercised for cash. We will bear all costs, expenses and fees in connection with the registration of the common shares, including with regard to compliance with state securities or “blue sky” laws. The Selling Shareholder will bear all commissions and discounts, if any, attributable to its resale of the common shares. See “*Plan of Distribution*” beginning on page 34 of this prospectus.

Our common shares are currently traded under the symbol “XRTX” on the TSX Venture Exchange (the “TSXV”) and on the Nasdaq Capital Market (“Nasdaq”).

We are an “emerging growth company” as defined by the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”) and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings. However, we have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act of 1933, as amended, (the “Securities Act”).

**Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 11.**

**We are a “foreign private issuer” as defined under the federal securities laws and, as such, are subject to reduced public company reporting requirements. See “Prospectus Summary — Implications of Being a Foreign Private Issuer.”**

**Neither the Securities and Exchange Commission, Canadian securities commission nor any domestic or international securities body 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.**

Prospectus dated \_\_\_\_\_, 2024

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**The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any state where the offer or sale is not permitted.**

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**ABOUT THIS PROSPECTUS**

This prospectus is part of a registration statement on Form F-1 that we filed with the Securities and Exchange Commission (“SEC”) using the “shelf” registration process. Under this shelf registration process, the Selling Shareholder may, from time to time, sell the common shares offered by it as described in this prospectus. We will not receive any proceeds from the sale by such Selling Shareholders of the common shares offered by them described in this prospectus, except with respect to amounts received by us upon the exercise for cash of the Warrants.

We may also file a prospectus supplement or post-effective amendment to the registration statement of which this prospectus forms a part that may contain material information relating to these offerings. The prospectus supplement or post-effective amendment may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or post-effective amendment, you should rely on the prospectus supplement or post-effective amendment, as applicable. Before purchasing any securities, you should carefully read this prospectus, any post-effective amendment, and any applicable prospectus supplement, together with the additional information described under the heading “*Where You Can Find Additional Information.*”

Neither we, nor the Selling Shareholder, have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any post-effective amendment, or any applicable prospectus supplement prepared by or on behalf of us or to which we have referred you. We and the Selling Shareholder take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the Selling Shareholder will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any post-effective amendment and any applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus contains, and any post-effective amendment or any prospectus supplement may contain, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included in this prospectus, any post-effective amendment or any prospectus supplement may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “*Risk Factors*” contained in this prospectus, any post-effective amendment and the applicable prospectus supplement. Accordingly, investors should not place undue reliance on this information.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under “*Where You Can Find Additional Information.*”

We express all amounts in this prospectus in United States dollars, except where otherwise indicated. References to “\$” are to United States dollars and references to “CAD\$” are to Canadian dollars.

We own or have rights to trademarks, trade names and service marks that we use in connection with the operation of our business. In addition, our name, logos and website name and address are our trademarks or service marks. Solely for convenience, in some cases, the trademarks, trade names and service marks referred to in this prospectus are listed without the applicable ®, ™ and SM symbols, but we will assert, to the fullest extent under applicable law, our rights to these trademarks, trade names and service marks. Other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

Except as otherwise indicated, references in this prospectus to “XORTX,” the “Company,” “we,” “us” and “our” refer to XORTX Therapeutics Inc. and its consolidated subsidiaries.

## PROSPECTUS SUMMARY

*This summary highlights certain information contained elsewhere in this prospectus. This summary does not contain all of the information that may be important to you. You should read and carefully consider the following summary together with the entire prospectus, including all documents incorporated by reference herein. In particular, attention should be directed to the “Risk Factors,” beginning on page 11 of this prospectus and to the sections “Information on the Company,” “Operating and Financial Review and Prospects” and the financial statements and related notes thereto incorporated by reference herein, in our [Annual Report on Form 20-F for the fiscal year ended December 31, 2023](#), before making an investment decision. See also “Cautionary Note Regarding Forward-Looking Statements,” “Incorporation of Certain Information by Reference” and “Where You Can Find Additional Information” in this prospectus.*

### Overview

XORTX is a late-stage clinical pharmaceutical company, focused on developing and potentially commercializing innovative therapies to treat progressive kidney disease modulated by aberrant purine and uric acid metabolism in orphan (rare) disease indications such as autosomal dominant polycystic kidney disease (“ADPKD”) and larger, more prevalent type 2 diabetic nephropathy (“T2DN”) as well as acute kidney injury (“AKI”) associated with respiratory virus infection.

Our focus is on developing three unique therapeutic products to:

1. slow or reverse the progression of chronic kidney disease in patients at risk of end stage kidney failure;
2. address the immediate need of individuals facing AKI associated with respiratory virus infection; and
3. identify other opportunities where our existing and new intellectual property can be leveraged to address health issues.

We believe that our technology is underpinned by well-established research and insights into the underlying biology of aberrant purine metabolism, chronically high serum uric acid and its health consequences. Our aim is to advance novel proprietary formulations of oxypurinol, a uric acid lowering agent that works by effectively inhibiting xanthine oxidase. We are developing product candidates that include new or existing drugs that can be adapted to address different disease indications where aberrant purine metabolism and/or elevated uric acid is a common denominator, including polycystic kidney disease, pre-diabetes, insulin resistance, metabolic syndrome, diabetes, diabetic nephropathy, and infection. We are focused on building a pipeline of assets to address the unmet medical needs for patients with a variety of serious or life-threatening diseases using our innovative formulation of oxypurinol, and our proprietary pipeline-in-a-product strategy supported by our intellectual property, established exclusive manufacturing agreements, and proposed clinical trials with experienced clinicians.

Our three unique product development programs are:

- **XRx-008**, a program for the treatment of ADPKD;
- **XRx-101**, a program to treat AKI associated with respiratory virus infection, AKI and associated health consequences; and
- **XRx- 225**, a program for the treatment of T2DN.

At XORTX, we aim to redefine the treatment of kidney diseases by developing medications to improve the quality of life of patients with life threatening diseases by modulating aberrant purine and uric acid metabolism, including lowering elevated uric acid as a therapy.

### Our Proprietary Therapeutic Platforms

Our expertise and understanding of the pathological effects of aberrant purine metabolism combined with our understanding of uric acid lowering agent structure and function, has enabled the development of our proprietary therapeutic platforms. These are a complementary suite of therapeutic formulations and

new chemical entities designed to provide unique solutions for acute and chronic disease. Our therapeutic platforms can be used alone, or in combination, with synergistic activity to develop a multifunctional tailored approach to a variety of indications that can address disease in multiple body systems through management of chronic or acute hyperuricemia, immune modulation, and metabolic disease. We continue to leverage these therapeutic platforms to expand our pipeline of novel and next generation drug-based product candidates that we believe could represent significant improvements to the standard of care in multiple acute and chronic cardiovascular diseases and specifically kidney disease.

We believe our in-house drug design and formulation capabilities confer a competitive advantage to our therapeutic platforms and are ultimately reflected in our programs. Some of these key advantages are:

#### **Highly Modular and Customizable**

Our platforms can be combined in multiple ways and this synergy can be applied to address acute, intermittent or chronic disease progression. For example, our XRx-101 program for AKI associated with respiratory virus infection is designed to produce rapid suppression of hyperuricemia and then maintain purine metabolism at a low level during viral infection and target management of acute organ injury. Our XRx-008 program is designed for longer term stable chronic oral dosing of xanthine oxidase inhibitors (“**XOI**”). We believe that the capabilities of our formulation technology allow us to manage the unique challenges of cardiovascular and renal disease by modulating purine metabolism, inflammatory and oxidative state.

#### **Fit-for-purpose**

Our platforms can also be utilized to engineer new chemical entities and formulations of those agents that have enhanced properties. For example, our XRx-225 product candidate program, some of the intellectual property for which we license from third parties, represents a potential new class of xanthine oxidase inhibitor(s) with a targeted design to enhance anti-inflammatory activity. The capability of tailoring the potential therapeutic benefit of this class of new agents permits us to identify targets and disease that we wish to exploit and then, through formulation design, optimize those small molecules and proprietary formulations to maximize potentially clinically meaningful therapeutic effect.

#### **Readily Scalable and Transferable**

Our in-house small molecule and formulations design expertise is positioned to create a steady succession of drug product candidates that are scalable, efficient to manufacture (by us or a partner or contract manufacturing organization) and produce large scale and high purity active pharmaceutical drug product. We believe this will provide a competitive advantage, new intellectual property and opportunity to provide first-in-class products that target unmet medical needs and clinically meaningful quality of life.

Our team’s expertise in uric acid lowering agents, specifically in the development and use of xanthine oxidase inhibitors, has enabled the development of our therapeutic product candidates to treat the symptoms of, and potentially delay the progression of ADPKD, AKI associated with respiratory virus infection, and T2DN. We note that there is no guarantee that the United States Food and Drug Administration (“**FDA**”) will approve our proposed uric acid lowering agent product candidates for the treatment of kidney disease or the health consequences of diabetes.

#### **Product Candidate Pipeline**

Our product candidates include XRx-008, XRx-101, and XRx-225. Our lead program, XRx-008, has reported topline results for the XRx-OXY-101 Bridging Pharmacokinetic Study of XORLO™ (the “**XRx-OXY-101 PK Clinical Trial**”) in advance of initiating Phase 3 registration clinical trial testing, the last stage of clinical development before application for FDA approval. Discussions with the FDA have confirmed that a single clinical trial with a one-year treatment period would be sufficient to make this program eligible for accelerated approval once the benefit of XORLO™ on decreasing the rate of decline of glomerular filtration rate was demonstrated. Our reported study XRx-OXY-101 supports both the XRx-008 and XRx-101 programs. Future late-stage clinical studies targeting attenuation or reversal of AKI in

hospitalized individuals with respiratory virus infection are planned. XRx-225 is a non-clinical stage program advancing new chemical entities toward the clinical development stage.

### **Products**

The Company's lead and most advanced development program, XRx-008, is a late clinical stage program focused on demonstrating the potential of our novel product candidate for ADPKD. XRx-008 is the development name given to XORTX's therapeutics program and associated proprietary oral formulation of oxypurinol, XORLO™. XORLO™ has shown increased oral bioavailability compared to a control formulation and demonstrates the potential for an expanded use across a broad therapeutic range. XORTX is also developing a drug product combination therapy that includes both intravenous uric acid lowering therapy combined with an oral anti-hyperuricemic xanthine oxidase inhibitor, XRx-101, for use in treating patients with AKI associated with respiratory virus infection and/or associated co-morbidities including sepsis.

XORLO™ is the working name of XORTX's unique proprietary formulation of oxypurinol being developed for the XRx-008 drug development program for testing in the XRx-OXY-201 and XRx-OXY-301 clinical trials.

XORTX is currently evaluating novel XOI candidates for the XRx-225 program to potentially treat T2DN as well as developing new chemical entities to address other orphan and large market unmet medical need.

### **Patents**

XORTX is the exclusive licensee of two U.S. granted patents with claims to the use of all uric acid lowering agents to treat insulin resistance or diabetic nephropathy, and two U.S. patent applications with similar claims for the treatment of metabolic syndrome, diabetes, and fatty liver disease. Counterparts for some of these patent applications have also been submitted in Europe. In both the US and Europe, XORTX owns composition of matter patent applications for unique proprietary formulations of xanthine oxidase inhibitors — U.S. and European patents have been granted. XORTX has also submitted two patent applications to cover the use of uric acid lowering agents for the treatment of the health consequences of respiratory virus infection. Recently, XORTX filed a third provisional patent application covering formulations and methods of dosing xanthine oxidase inhibitors in individuals with kidney disease.

### **OUR STRATEGY**

The Company's goal is to apply our interdisciplinary expertise and pipeline-in-a-product strategy to further identify, develop and commercialize novel treatments in orphan indications, with an initial focus on renal and significant unmet medical needs.

Our ability to implement our business strategy is subject to numerous risks. These risks include, among others (see "Risk Factors"):

- we will require substantial additional funding, which may not be available to us on acceptable terms, or at all, and, if not available, may require us to alter, delay, scale back, or cease our product development programs or operations;
- we have incurred significant losses since inception and anticipate that we will continue to incur losses for the foreseeable future;
- we have not generated any revenue to date and may never be profitable;
- we have a limited number of product candidates, all of which are still in preclinical or clinical development, and we may fail to obtain regulatory approval or experience significant delays in doing so;
- our product candidates may have undesirable side effects that may delay or prevent marketing approval or, if approved, require them to be taken off the market, require them to include contraindications, warnings and precautions, limitations of use, or otherwise limit their sales;

- we may be unable to obtain regulatory approval for our product candidates under applicable regulatory requirements, and the denial or delay of any such approval would delay commercialization of our product candidates, if approved, and adversely impact our potential to generate revenue, our business and our results of operations;
- security breaches, loss of data and other disruptions could compromise sensitive information related to our business or protected health information or prevent us from accessing critical information and expose us to liability, which could adversely affect our business and our reputation;
- our existing strategic partnerships are important to our business, and future strategic partnerships may also be important to us; if we are unable to maintain any of these strategic partnerships, or if these strategic partnerships are not successful, we may not realize the anticipated benefits of our strategic partnerships and our business could be adversely affected;
- we rely on third parties to monitor, support, conduct and oversee clinical trials of the product candidates that we are developing and, in some cases, to maintain regulatory files for those product candidates;
- our commercial success depends significantly on our ability to operate without infringing the patents and other proprietary rights of third parties;
- our patents covering one or more of our products or product candidates could be found invalid or unenforceable if challenged;
- if we are unable to obtain, maintain and enforce patent and trade secret protection for our product candidates and related technology, our business could be materially harmed; and
- if we are unable to protect the confidentiality of our proprietary information, the value of our technology and products could be adversely affected.

#### **Funding Requirements**

The Company has not generated any revenue from product sales to date and does not expect to do so until such time as XORTX obtains regulatory approval for and commercializes one or more of our product candidates. As the Company is currently in clinical and preclinical stages of development, it will be some time before we expect to achieve this, and it is uncertain that we ever will. We expect that we will continue to increase our operating expenses in connection with ongoing clinical trials and preclinical activities and the development of product candidates in our pipeline. We also expect to continue our strategic partnerships and we continue to seek additional collaboration opportunities. Further, we expect to continue our efforts to pursue additional grants and refundable tax credits from the Canadian government in order to further our research and development. Although it is difficult to predict our funding requirements, based upon our current operating plan, the Company anticipates that our existing cash and cash equivalents as of September 30, 2024, combined with the net proceeds of future financings, will enable us to advance the clinical development of XRx-008 and XRx-101 product candidates. The XRx-008 will receive 98% of funding, subject to available funds. The XRx-101 and XRx-225 programs will not be advanced until sufficient funding is available. Approximately 2% of funding is anticipated for intellectual property development. XORTX may also be eligible to receive certain research, development, and commercial milestone payments in the future. However, because successful development of our product candidates and the achievement of milestones by our strategic partners is uncertain, we are unable to estimate the actual funds we will require to complete the research, development, and commercialization of product candidates.

#### **RECENT DEVELOPMENTS**

##### **Financing Activities**

On October 18, 2024, the Company closed its registered direct offering and concurrent private placement for the purchase and sale of: (i) 320,000 common share units (“Common Share Units”) at a price of \$1.85 per Common Share Unit, with each Common Share Unit consisting of one common share and one warrant (“Warrant”) to purchase one common share; and (ii) 490,810 pre-funded warrant units (“Pre-Funded Units”) at a price of \$1.8499 per Pre-Funded Unit, with each Pre-Funded Unit consisting of one pre-funded warrant (“Pre-Funded Warrant”) to purchase one common share and one Warrant to purchase



one common share. Aggregate gross proceeds amounted to \$1,500,000. The Pre-Funded Warrants have an exercise price of \$0.0001 per share, and will terminate once exercised in full. The Warrants are exercisable at an exercise price of \$2.18 are immediately exercisable and expire five years from issuance. The Company intends to use the net proceeds from the offering for working capital and general corporate purposes.

On February 15 and March 4, 2024, the Company closed two tranches of a non-brokered offering of 899,717 common share units at a price of CAD\$3 per common share unit for aggregate gross proceeds of CAD\$2,699,151. Each common share unit consisted of one common share and one warrant to purchase one common share at CAD\$4.50 per common share for a period of two years. The warrants were immediately exercisable, and may be exercised for two years from the date of issuance, provided, however that, if, the common shares on the TSXV trade at greater than CAD \$6.00 for 10 or more consecutive trading days, the warrants will be accelerated and the warrants will expire on the 30<sup>th</sup> business day following notice. In connection with the non-brokered offering, the Company paid finder's fees of CAD\$132,551, representing a 5% finder's fee on certain subscriptions to qualified finders. On March 25, 2024, 5,000 warrants were exercised at CAD\$4.50 for proceeds of CAD\$22,500.

During the nine months ended September 30, 2024, the Company announced it had received TSXV approval to amend the terms of an aggregate of 1,125,210 outstanding common share purchase warrants as follows:

- 198,333 of the warrants issued pursuant to the private placement that closed on February 9, 2021 and which had an original exercise price of CAD\$42.26 per share (CAD \$0.40 per share, adjusted to reflect the 2021 and 2023 Share Consolidations), the TSXV has approved an amended exercise price of \$5.00.
- 371,322 of the warrants issued pursuant to the prospectus offering that closed on October 15, 2021 and which had an original exercise price of \$42.93 per share (\$4.77 per share, adjusted to reflect the 2023 Share Consolidation), the TSXV has approved an amended exercise price of \$5.00.
- 555,555 of the warrants issued pursuant to the prospectus offering that closed on October 7, 2022 and which had an original exercise price of \$10.98 per share (\$1.22 per share, adjusted to reflect the 2023 Share Consolidation), the TSXV approved an amended exercise price of \$5.00.

If the volume weighted average price for the Company's common shares on TSXV is greater than \$6.50 (approximately CAD \$8.7562) per common share for a period of ten (10) consecutive trading days, then the Company may give notice to the Holders of the Warrant by way of a news release (the "**Notice**") notifying such Holder that the warrants must be exercised within thirty (30) calendar days from the date of delivery of such Notice, otherwise the warrants will expire at 4:30 p.m. (Calgary time) on the 30<sup>th</sup> day after the date of delivery of the Notice (the "**Forced Conversion Right**"). Notwithstanding anything herein to the contrary, the Forced Conversion Right shall only be available to the Company on or after such time in which such forced exercise of the warrants will result in the issuance of free trading shares to the Holder.

#### **Regulatory Advancements**

On January 3, 2024, the Company announced the submission of a new patent for the treatment of chronic kidney disease ("**CKD**"). This patent is designed to protect new discoveries and strategies for the treatment of individuals with varied degrees of kidney function in the setting of CKD.

#### **Changes in Officers and Directors**

On March 27, 2024, the Company announced Dr. Ronald Perrone has joined the Company's Clinical Advisory Board.

On April 8, 2024, the Company announced the appointment of Ms. Abigail Jenkins to the Board of Directors.

#### **FUTURE PLANS AND OUTLOOK**

XORTX intends to grow its business by developing three programs focused on kidney disease.

Recent independent peer-reviewed research that reported that genetic factors are linked to the over-expression of xanthine oxidase (“**XO**”) and play a role in several diseases, including kidney disease, have provided the Company with the opportunity to develop diagnostics that identify specific genetic factors. These diagnostic tools alongside the Company’s expertise at developing unique formulations of uric acid lowering agents and XO inhibitors will permit XORTX to tailor treatments to subpopulations of individuals that have common susceptibility or similar response to a particular drug. The Company will begin evaluating individuals as early as our planned registration clinical trial in patients with ADPKD providing XORTX with an opportunity to better understand the role these genetic factors play in progressive kidney disease.

For the balance of 2024, XORTX will continue to focus on advancing XORLO™ for the XR<sub>x</sub>-008 program for ADPKD into a Phase 2/3 “registration” clinical trial program — XR<sub>x</sub>-OXY-201, ODD in the EU, discussion with the US FDA regarding the XR<sub>x</sub>-OXY-301 clinical trial and possible initiation of special protocol assessment (“SPA”) discussions with the FDA and initiation of commercialization activities, if approved, for XORLO™ as well as advancing research in other kidney disease applications. To achieve these objectives, XORTX’s action plan includes:

1. **Under the XR<sub>x</sub>-008 program, initiate the Pivotal Registration clinical trial named “XR<sub>x</sub>-OXY-201”, to support an application for “Accelerated Approval” of XORLO™ for individuals with ADPKD.** The XR<sub>x</sub>-OXY-201 Clinical Trial is a Phase 2b/3a, Multi-Centre, Double-Blind, Placebo Controlled, Randomized Withdrawal Design Study to Evaluate the Efficacy and Safety of a Novel Oxypurinol Formulation in Patients with Progressing Stage 3-4 ADPKD and Coexistent Hyperuricemia. The XR<sub>x</sub>-OXY-201 Clinical Trial will provide data for future “Accelerated Approval” NDA submissions to the FDA and MAA to the EMA. Subject to available financing, the XR<sub>x</sub>-OXY-201 Clinical Trial is planned to start in the first half of 2025 and enroll individuals with stage 3 or 4 ADPKD and presenting with chronically high uric acid. The objective of the XR<sub>x</sub>-OXY-201 Clinical Trial is to evaluate the ability of XORLO™ to slow rate of decline of glomerular filtration rate and/or the expansion of total kidney volume over a 12-month treatment period. An estimated 150 patients will be enrolled with 120 patients completing the study. (Estimated cost — \$5 million to \$30 million.)
2. **Under the XR<sub>x</sub>-008 program, prepare and communicate with the FDA and EMA regarding a second phase clinical trial named “XR<sub>x</sub>-OXY-301”, a Full Registration trial in ADPKD.** The XR<sub>x</sub>-OXY-301 Clinical Trial is a Phase 3, Multi-Centre, Double-Blind, Placebo Controlled, Randomized Withdrawal Design Study to Evaluate the Efficacy and Safety of a Novel Oxypurinol Formulation in Patients with Progressing Stage 2-4 ADPKD and Coexistent Hyperuricemia with progressing stage 2, 3, or 4 kidney disease. The objective of the XR<sub>x</sub>-OXY-301 Clinical Trial is to evaluate the safety and effectiveness of XORLO™ for the XR<sub>x</sub>-008 program over a 24-month treatment period and obtain “full FDA marketing approval”. The aim of the XR<sub>x</sub>-OXY-301 Clinical Trial is to characterize the ability of XORLO™ to potentially decrease the rate of decline of glomerular filtration rate. An estimated 300 patients will be enrolled. Subject to available financing, the XR<sub>x</sub>-OXY-301 Clinical Trial will not be scheduled or budgeted until XR<sub>x</sub>-OXY-201 is well underway, and may be subject to SPA review by FDA.
3. **Ongoing CMC Work.** In parallel with the XR<sub>x</sub>-OXY-201 and XR<sub>x</sub>-OXY-301 Clinical Trials, XORTX will focus on scale-up, validation and stability testing of clinical drug product supplies of XORLO™ under the Company’s granted IND, as well as building, validating and characterization of stability of future clinical and commercial supplies. All development will be performed according to current GMP methodology. This work will be ongoing throughout 2024 to 2027. (Estimated cost of Clinical and Commercial drug supply — \$5 million to \$15 million.)
4. **Activities Related to Potential Commercial Launch.** In preparation for a possible “Accelerated Approval” NDA filing in 2027 for XORLO™ for XR<sub>x</sub>-008, XORTX will conduct commercialization studies to support in-depth analysis of pricing and/or reimbursement, as well as evaluate product brand name selection and prepare related filings and conduct other launch preparation activities. This work will be ongoing from 2024 to 2027. (Estimated cost — \$500,000 and \$3 million.)
5. **Activities Related to European Registration.** XORTX will continue to work with and seek out guidance from the EMA to facilitate the path to potential approval of XORLO™ in the EU,

including required clinical studies and reimbursement conditions. This work will be ongoing from 2024 through 2027 and will include continued pursuit of orphan drug status. In addition, XORTX is updating an information dossier to support an orphan drug designation from the EMA. (Estimated cost — \$500,000 and \$3 million.)

To achieve the above goals, XORTX will continue to pursue non-dilutive and dilutive funding and expand discussions to partner with major pharma / biotech companies with a global reach. XORTX will also increase financial and healthcare conference participation to further strengthen and expand its investor base.

#### ***Risk Factors***

Our ability to implement our business strategy is subject to numerous risks that you should be aware of before making an investment decision. These risks are described more fully in the sections entitled “*Risk Factors*” in this prospectus and under “Risk Factors Summary” and “Item 3. Key Information — D. Risk Factors” in our [Annual Report on Form 20-F for the year ended December 31, 2023](#), incorporated by reference herein.

#### ***Our Corporate Information***

We were incorporated under the laws of Alberta, Canada on August 24, 2012, under the name ReVasCor Inc. and were continued under the Canada Business Corporations Act on February 27, 2013, under the name of XORTX Pharma Corp. Upon completion of a reverse take-over transaction on January 10, 2018, with APAC Resources Inc., a company incorporated under the laws of British Columbia, we changed our name to “XORTX Therapeutics Inc.” and XORTX Pharma Corp. became a wholly-owned subsidiary.

The Company’s operations and mailing address is 3710 — 33<sup>rd</sup> Street NW, Calgary, Alberta, Canada T2L 2M1 and its registered address is located at 550 Burrard Street, Suite 2900, Vancouver, British Columbia, V6C 0A3 and our telephone number is (403) 455-7727. The Company’s shares trade on the TSX Venture Exchange (“TSXV”), on the Nasdaq Stock Exchange (“Nasdaq”) under the symbol “XRTX”, and on the Börse Frankfurt under the symbol “ANU”. Our website address is [www.xortx.com](http://www.xortx.com). The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

#### **Implications of Being an Emerging Growth Company**

As a company with less than \$1.235 billion in revenue during our last fiscal year, we qualify as an “emerging growth company” as defined in the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other burdens that are otherwise applicable generally to public companies. These provisions include:

- reduced executive compensation disclosure;
- exemptions from the requirement to hold a non-binding advisory vote on executive compensation, including golden parachute compensation; and
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002.

We may take advantage of these provisions until we are no longer an emerging growth company. We would cease to be an emerging growth company upon the earlier to occur of: (1) the last day of our fiscal year following the fifth anniversary of the completion of this offering; (2) the last day of the fiscal year in which we have total annual gross revenue of \$1.235 billion or more; (3) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (4) the date on which we are deemed to be a large accelerated filer under the rules of the SEC. We have elected not to take advantage of the extended transition period allowed for emerging growth companies for complying with new or revised accounting guidance as allowed by Section 107 of the JOBS Act and Section 7(a)(2)(B) of the Securities Act.

We report under the Securities Exchange Act of 1934, as amended (“**Exchange Act**”), as a non-U.S. company with foreign private issuer status. Even after we no longer qualify as an emerging growth company, as long as we continue to qualify as a foreign private issuer under the Exchange Act, we will be exempt from certain provisions of the Exchange Act that are applicable to U.S. domestic public companies, including:

- the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations with respect to a security registered under the Exchange Act;
- the sections of the Exchange Act requiring insiders to file public reports of their share ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and
- the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q containing unaudited financial statements and other specified information, and current reports on Form 8-K upon the occurrence of specified significant events, although we report our results of operations on a quarterly basis under the Canadian securities laws.

Both foreign private issuers and emerging growth companies are also exempt from certain more stringent executive compensation disclosure rules. Thus, even if we no longer qualify as an emerging growth company, but remain a foreign private issuer, we will continue to be exempt from the more stringent compensation disclosures required of companies that are neither an emerging growth company nor a foreign private issuer.

We would cease to be a foreign private issuer at such time as more than 50% of our outstanding voting securities are held by U.S. residents, and any one of the following three circumstances applies: (i) the majority of our executive officers or directors are U.S. citizens or residents, (ii) more than 50% of our assets are located in the United States or (iii) our business is administered principally in the United States.

In this prospectus, we have taken advantage of certain of the reduced reporting requirements as a result of being an emerging growth company and a foreign private issuer. Accordingly, the information contained herein may be different than the information you receive from other public companies in which you hold equity securities.

<b>The Offering</b>	
Issuer:	XORTX Therapeutics Inc.
Securities offered by the Selling Shareholder:	Up to 810,810 common shares, no par value per share (each a “common share”) issuable to the Selling Shareholder upon exercise of the Warrants.
Common shares outstanding prior to this offering:	3,223,565 common shares <sup>1</sup>
Terms of the offering:	The Selling Shareholder will determine when and how it will dispose of the common shares registered under this prospectus for resale.
Use of proceeds	The Selling Shareholder will receive the proceeds from the sale of common shares offered hereby. We will not receive any proceeds from the sale of common shares by the Selling Shareholder. We may receive proceeds from the cash exercise of the Warrants by the Selling Shareholder.
Nasdaq trading symbol	“XRTX”
Risk Factors	Please refer to “Risk Factors” in this prospectus and “Item 3. Key Information — D. Risk factors” in our <a href="#">Annual Report on Form 20-F for the year ended December 31, 2023</a> , incorporated by reference herein, and other information included or incorporated by reference in this prospectus for a discussion of factors you should carefully consider before investing in our common shares.

<sup>1</sup> As of November 15, 2024.

## RISK FACTORS

Any investment in our securities involves a high degree of risk. You should carefully consider the risks described below and in “Risk Factors Summary” and “Item 3. Key Information — D. Risk factors” in our [Annual Report on Form 20-F for the year ended December 31, 2023](#), incorporated by reference herein, and all of the information included or incorporated by reference in this prospectus before deciding whether to purchase our securities. The risks and uncertainties described below are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business operations. If any of the events or circumstances described in the following risk factors actually occur, our business, financial condition and results of operations would suffer. In that event, the price of our common shares could decline, and you may lose all or part of your investment. The risks discussed below also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements. See “Cautionary Note Regarding Forward-Looking Statements.”

***A return on the common shares is not guaranteed.***

There is no guarantee that the common shares will earn any positive return in the short term or long term. Investing in the common shares is speculative and involves a high degree of risk and should be undertaken only by holders whose financial resources are sufficient to enable them to assume such risks and who have no need for immediate liquidity in their investment. Investing in the common shares is appropriate only for holders who have the capacity to absorb a loss of some or all of their holdings.

***Future issuances of securities may result in substantial dilution to the purchasers of our common shares under this offering.***

We may issue or sell additional common shares or other securities that are convertible or exchangeable into common shares in subsequent offerings or may issue additional common shares or other securities to finance future acquisitions. We cannot predict the size or nature of future sales or issuances of securities or the effect, if any, that such future sales and issuances will have on the market price of the common shares. Sales or issuances of substantial numbers of common shares or other securities that are convertible or exchangeable into common shares, or the perception that such sales or issuances could occur, may adversely affect prevailing market prices of the common shares. With any additional sale or issuance of common shares or other securities that are convertible or exchangeable into common shares, purchasers of our common shares in this offering may suffer dilution to their voting power and economic interest in the Company. Furthermore, to the extent holders of our stock options, warrants or other convertible securities convert or exercise their securities and sell the common shares they receive, the trading price of the common shares on the TSXV and on Nasdaq may decrease due to the additional amount of common shares available in the market.

***The market price of our common shares may be volatile.***

The market price of our common shares may be volatile and subject to wide fluctuations in response to numerous factors, many of which are beyond our control. This volatility may affect the ability of holders of common shares to sell their securities at an advantageous price. Market price fluctuations in our common shares may be due to our operating results failing to meet expectations of securities analysts or investors in any period, downward revision in securities analysts’ estimates, adverse changes in general market conditions or economic trends, acquisitions, dispositions or other material public announcements by us or our competitors, along with a variety of additional factors. These broad market fluctuations may adversely affect the market price of the common shares.

Financial markets have periodically at times experienced significant price and volume fluctuations that have particularly affected the market prices of equity securities of companies and that have often been unrelated to the operating performance, underlying asset values or prospects of such companies. Accordingly, the market price of our common shares may decline even if our operating results, underlying asset values or prospects have not changed. Additionally, these factors, as well as other related factors, may cause decreases in asset values that are deemed to be other than temporary, which may result in impairment losses. There can be no assurance that continuing fluctuations in price and volume will not occur. If such increased levels

of volatility and market turmoil continue, our operations could be adversely impacted, and the trading price of our common shares may be materially adversely affected.

***Our management will have broad discretion over the use of proceeds we receive from any exercise of the Warrants (assuming that the selling shareholders do not exercise the warrants on a cashless basis, if and when exercised), and may use them in ways with which you do not agree and in ways that may not enhance our operating results or the market price of our common shares.***

Our management will have broad discretion over the use of proceeds that we receive from any exercise of the Warrants (assuming that the selling shareholders do not exercise the warrants on a cashless basis, if and when exercised) by the Selling Shareholder identified in this prospectus. We may spend or invest those proceeds in ways with which our shareholders disagree or that do not yield a favorable return, if at all. We intend to use the net proceeds from any exercise of the Warrants for cash as described in “Use of Proceeds.” However, our use of any such proceeds may differ substantially from our current plans. Failure by our management to apply these funds effectively could harm our business, results of operations, cash flows, financial condition and/or prospects. Pending use, we may invest the net proceeds from the offering in a manner that does not produce income or that loses value.

***An investment in our securities is speculative, and there can be no assurance of any return on any such investment.***

An investment in our securities is highly speculative, and there is no assurance that investors will obtain any return on their investment. Investors will be subject to substantial risks involved in their investment, including the risk of losing their entire investment.

### CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained in this prospectus constitute forward-looking statements. These statements relate to future events or the Company's (as defined herein) future performance. All statements other than statements of historical fact are forward-looking statements. The use of any of the words "anticipate", "plan", "contemplate", "continue", "estimate", "expect", "intend", "propose", "might", "may", "will", "shall", "project", "should", "could", "would", "believe", "predict", "forecast", "pursue", "potential" and "capable" and similar expressions are intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. No assurance can be given that these expectations will prove to be correct and such forward-looking statements included in this prospectus should not be unduly relied upon. These statements speak only as of the date of this prospectus. In addition, this prospectus may contain forward-looking statements and forward-looking information attributed to third party industry sources.

In particular, forward-looking statements in this prospectus include, but are not limited to, statements about:

- our ability to obtain additional financing;
- the accuracy of our estimates regarding expenses, costs associated with clinical trials, regulatory and commercial activities, future revenues and capital requirements;
- the success and timing of our preclinical studies and clinical trials;
- our ability to obtain and maintain regulatory approval of XRx-008, also sometimes referred to by its trademarked name XORLO™. XORTX's proprietary formulation of oxypurinol, and any other product candidates we may develop, and the labeling under any approval we may obtain;
- regulatory approvals and discussions and other regulatory developments in the United States, the EU and other countries;
- the performance of third-party manufacturers and contract research organizations;
- our plans to develop and commercialize our product candidates, if approved;
- our plans to advance research in other kidney disease applications;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- the successful development of our sales and marketing capabilities;
- the potential markets for our product candidates and our ability to serve those markets;
- the rate and degree of market acceptance of any future products;
- the success of competing drugs that are or become available; and
- the loss of key scientific or management personnel.

All forward-looking statements, including, without limitation, our examination of historical operating trends, are based upon our current expectations and various assumptions. Certain assumptions made in preparing the forward-looking statements include:

- the availability of capital to fund planned expenditures;
- prevailing regulatory, tax and environmental laws and regulations;
- the ability to secure necessary personnel, equipment, supplies and services;
- our ability to manage our growth effectively;
- the absence of material adverse changes in our industry or the global economy;
- trends in our industry and markets;
- our ability to maintain good business relationships with our strategic partners;



- our ability to comply with current and future regulatory standards;
- our ability to protect our intellectual property rights;
- our continued compliance with third-party license terms and the non-infringement of third-party intellectual property rights;
- our ability to manage and integrate acquisitions; and
- our ability to raise sufficient debt or equity financing to support our continued growth.

We believe there is a reasonable basis for our expectations and beliefs, but they are inherently uncertain. We may not realize our expectations, and our beliefs may not prove correct. Actual results could differ materially from those described or implied by such forward-looking statements.

**EXCHANGE RATE DATA**

We express all amounts in this prospectus in United States dollars, except where otherwise indicated. References to "\$" are to United States dollars and references to "CAD\$" are to Canadian dollars. The following table sets forth, for the periods indicated, average rate of exchange for one U.S. dollar, expressed in Canadian dollars, for the years ended December 31, 2023, 2022 and 2021, as supplied by the Bank of Canada:

<b>Year Ended</b>	<b>Average</b>
December 29, 2023	1.3226
December 30, 2022	1.3544
December 31, 2021	1.2678

On September 27, 2024, the Bank of Canada average daily rate of exchange was \$1.00 = CAD\$1.3499.

**MARKET, INDUSTRY AND OTHER DATA**

Unless otherwise indicated, information contained in, and incorporated into, this prospectus concerning our industry and the market in which we operate, including our market position, market opportunity and market size, is based on information from various third-party sources not prepared at the direction of the Company, such as industry publications, and assumptions that we have made based on such data and other similar sources and on our knowledge of the markets for our products. These data involve a number of assumptions and limitations. While we believe that this data is accurate and that its estimates and assumptions are reasonable, we have not independently verified any of the data from third-party sources referred to in, or incorporated into, this prospectus or analyzed or verified the underlying studies or surveys relied upon or referred to by such sources, or ascertained the underlying economic assumptions relied upon or referred to by such sources. We are ultimately responsible for all disclosure included in this prospectus.

#### **USE OF PROCEEDS**

We will not receive any of the proceeds from the sale of our common shares in this offering. The Selling Shareholder will receive all the proceeds from this offering. We will, however, receive the net proceeds of any Warrants exercised for cash. Proceeds, if any, received from the exercise of such Warrants will be used for working capital for general corporate purposes. No assurances can be given that any of such Warrants will be exercised. The Selling Shareholder will pay any underwriting discounts and commissions and expenses incurred by them for brokerage, accounting, tax or legal services or any other expenses incurred by the Selling Shareholder in disposing of the common shares. We will bear all other costs, fees and expenses incurred in effecting the registration of the common shares covered by this prospectus, including all registration and filing fees, and fees and expenses for our counsel and our independent registered public accountants.

#### **DETERMINATION OF THE OFFERING PRICE**

The offering price of the common shares underlying the Warrants is determined by reference to their exercise price of \$2.18 per common share. We would expect to receive approximately \$1,767,565 in gross proceeds assuming the cash exercise of all the Warrants at the applicable exercise price. However, the Warrants may be exercised on a cashless basis. If all the Warrants are so exercised, we would not receive any gross proceeds from the cash exercise of the Warrants. Also, we will not receive any of the proceeds from the disposition and/or resale of the shares of any common shares by the Selling Shareholder or its transferees, including the disposition and/or resale of any shares obtained upon exercise of the Warrants.

We cannot currently determine the price or prices at which shares of common shares may be sold by the Selling Shareholder under this prospectus.

**CAPITALIZATION AND INDEBTEDNESS**

The following table sets forth our cash as well as capitalization as of September 30, 2024:

- on an actual basis;
- on an as adjusted basis to give effect to our issuance of 810,810 common shares offered hereby upon exercise of the Warrants at an exercise price per common share of \$2.18;
- Canadian Dollar amounts have been translated into U.S. Dollars based on the September 27, 2024 daily rate of exchange, which was \$1.00 = CAD\$1.3499 or CAD\$1.00 = \$0.7408 as reported by the Bank of Canada and have been provided solely for the convenience of the reader.

	<u>As of September 30, 2024</u>	
	<u>Actual</u>	<u>Pro forma as adjusted</u>
	<u>(In thousands, except share data)</u>	
Cash	\$ 2,301	\$ 4,068
Equity		
Share capital	\$ 17,871	\$ 19,638
Common shares, unlimited authorized shares, without par value; 2,903,565 shares issued and outstanding, actual; 3,714,375 shares issued and outstanding, pro forma as adjusted		
Share-based payments, warrant reserve and other	\$ 5,581	\$ 5,581
Obligation to Issue Shares	\$ 25	\$ 25
Accumulated other comprehensive (loss) income	\$ (53)	\$ (53)
Deficit	\$(21,291)	\$ (21,291)
Total Equity	\$ 2,133	\$ 3,900
Total Capitalization	\$ 2,133	\$ 3,900

The number of common shares to be outstanding after this offering is based on an aggregate of 2,903,565 shares outstanding as of September 30, 2024. The table above excludes:

- 134,763 common shares issuable upon the exercise of outstanding options to issue common shares, as of September 30, 2024, at a weighted-average exercise price of CAD\$11.67 per share; and
- 2,019,927 common shares issuable upon the exercise of outstanding common share purchase warrants, as of September 30, 2024, at a weighted-average exercise price of \$4.26 per share.
- 50,298 common shares issuable upon the exercise of outstanding finders' and underwriter warrants, as of September 30, 2024, at a weighted-average exercise price of \$23.82 per share.

For additional information regarding our share capital, see "*Description of Share Capital.*"

**DILUTION**

We are registering for resale up to 810,810 common shares issuable upon exercise of the Warrants. Sales of substantial amounts of Common Shares in the public market, or the perception that such sales might occur, could adversely affect the market price of our common shares. We cannot predict if and when the Selling Shareholder may sell such common shares in the public markets, if at all. Furthermore, in the future, we may issue additional common shares or other equity or debt securities convertible into common shares. Any such issuance could result in substantial dilution to our existing shareholders and could cause our share price to decline.

**EXPENSES OF ISSUANCE**

The following is a statement of the expenses (all of which are estimated), other than any fees and expenses reimbursed by us to be incurred in connection with the offering under this prospectus supplement. The amounts set forth below are in United States Dollars. All of the amounts below are estimated, other than SEC registration filing fees and FINRA filing fees (each of which have been prorated for this offering).

SEC Registration Fee	\$ 168
Printing Expenses	\$ 3,000
Legal fees and expenses	\$50,000
Accountants' fees and expenses	\$ 4,500
<b>Total</b>	<b><u>\$57,668</u></b>

**LISTING**

Our common shares are listed on Nasdaq and the TSXV under the symbol "XRTX".

**TRANSFER AGENT, REGISTRAR AND AUDITOR**

The transfer agent and registrar for our common shares is TSX Trust Company at its principal office in Toronto, Canada. Our co-transfer agent is Continental Stock Transfer & Trust Company.

Smythe LLP, located at 1700 — 475 Howe Street, Vancouver, British Columbia, Canada V6C 2B3 is our independent registered public accounting firm and has been appointed as our independent auditor.

**DESCRIPTION OF SHARE CAPITAL****General**

The following is a summary of the material rights of our share capital as contained in our notice of articles and articles and any amendments thereto. This summary is not a complete description of the share rights associated with our capital stock. For more detailed information, please see our notice of articles and articles, which are filed as exhibits to the registration statement of which this prospectus forms a part.

**Common Shares*****Outstanding Shares***

Our authorized share capital consists of an unlimited number of common shares, each without par value.

As of September 30, 2024, we had 105,342 common shares issuable pursuant to exercisable outstanding stock options, 29,421 common shares issuable pursuant to outstanding options that are not currently exercisable, 2,070,225 common shares issuable upon the exercise of outstanding common share warrants, and we had approximately 14 holders of record of our common shares.

***Voting Rights***

Under our articles, the holders of our common shares are entitled to one vote for each common share held on all matters submitted to a vote of the shareholders, including the election of directors. Our notice of articles and articles do not provide for cumulative voting rights. Because of this, the holders of a plurality of the common shares entitled to vote in any election of directors can elect all of the directors standing for election, if they so choose.

***Dividends***

Subject to priority rights that may be applicable to any then outstanding common shares, and the applicable provisions of the Business Corporation Act British Columbia (“BCBCA”), holders of our common shares are entitled to receive dividends, as and when declared by our Board, in their sole discretion as they see fit. For more information, see the section titled “*Dividend Policy*.”

***Liquidation***

In the event of our liquidation, dissolution or winding up, holders of our common shares are entitled to share ratably in the net assets legally available for distribution to shareholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding preferred shares.

***Rights and Preferences***

Our common shares contain no pre-emptive or conversion rights and have no provisions for redemption or repurchase for cancellation, surrender or sinking or purchase funds. There are no provisions in our notice of articles and articles requiring holders of common shares to contribute additional capital. The rights, preferences and privileges of the holders of our common shares are subject to and may be adversely affected by the rights of the holders of any series of new preferred shares that may be created, authorized, designated, and issued in the future.

***Fully Paid and Non-assessable***

All of our outstanding common shares are, and the common shares to be issued pursuant to this Prospectus, when paid for, will be fully paid and non-assessable.



## TAXATION

### Material Canadian Federal Income Tax Considerations

The following is, as of the date of this prospectus, a general summary of the principal Canadian federal income tax considerations generally applicable to the holding and disposition of the common shares issuable upon exercise of the Warrants by a holder who is not, and is not deemed to be, a resident of Canada for the purposes of the *Income Tax Act (Canada)* and *Income Tax Act Regulations* (collectively, the “Canadian Tax Act”), and who (i) acquires and holds the common shares as capital property (ii) does not use or hold the common shares in, or in the course of, carrying on a business, or part of a business, in Canada (a “**Non-Canadian Holder**”). Special rules, which are not discussed in this summary, may apply to a Non-Canadian Holder that is an insurer carrying on business in Canada and elsewhere or that is an “authorized foreign bank” as defined in the Canadian Tax Act. Such a Non-Canadian Holder should consult its own tax advisors.

This summary is based upon the current provisions of the Canadian Tax Act and the current provisions of the Convention Between Canada and the United States of America with Respect to Taxes on Income and on Capital, (1980) as amended (the “**Canada-US Tax Convention**”), in force as of the date hereof and the Company’s understanding of the current published administrative and assessing practices of the Canada Revenue Agency (“**CRA**”). This summary takes into account all specific proposals to amend the Canadian Tax Act publicly announced by or on behalf of the Minister of Finance (Canada) prior to the date hereof, (the “**Tax Proposals**”), and assumes that the Tax Proposals will be enacted in the form proposed, although no assurance can be given that the Tax Proposals will be enacted in their current form or at all. This summary does not otherwise take into account any changes in law or in the administrative policies or assessing practices of the CRA, whether by legislative, governmental or judicial decision or action, nor does it take into account or consider any provincial, territorial or foreign income tax considerations, which considerations may differ significantly from the Canadian federal income tax considerations discussed in this summary.

This summary is of a general nature only, is not exhaustive of all possible Canadian federal income tax considerations and is not intended to be, nor should it be construed to be, legal or tax advice to any particular non-Canadian Holder.

#### ***Dividends***

Dividends on the common shares paid or credited or deemed to be paid or credited to a Non-Canadian Holder will be subject to Canadian withholding tax at the rate of 25% on the gross amount of the dividend unless such rate is reduced by the terms of an applicable tax treaty. Under the Canada-US Tax Convention the rate of withholding tax on dividends paid or credited to a Non-Canadian Holder who is resident in the U.S. for purposes of the Treaty, is entitled to the full benefits under the Canada-US Tax Convention and beneficially owns the dividend is generally limited to 15% of the gross amount of the dividend (or 5% in the case of a Non-Canadian Holder that is a corporation beneficially owning at least 10% of the Company’s voting shares). Not all persons who are residents of the U.S. for purposes of the Canada-US Tax Convention will qualify for the benefits of the Treaty. Non-Canadian Holders that are resident in the U.S. are advised to consult their tax advisors in this regard.

#### ***Dispositions of Common Shares***

A Non-Canadian Holder generally will not be subject to tax under the Canadian Tax Act in respect of a capital gain realized on the disposition or deemed disposition of a common share nor will capital losses arising therefrom be recognized under the Canadian Tax Act, unless the common share constitutes “taxable Canadian property” to the Non-Canadian Holder thereof for purposes of the Canadian Tax Act, and the gain is not exempt from Canadian federal income tax pursuant to the terms of an applicable tax treaty.

Generally the common shares will not be “taxable Canadian property” to a Non-Canadian Holder if the common shares are listed on a “designated stock exchange”, as defined in the Canadian Tax Act (which currently includes Nasdaq) at the time of disposition, unless at any time during the 60-month period

immediately preceding the disposition the following two conditions are met concurrently: (i) the Non-Canadian Holder, persons with whom the Non-Canadian Holder did not deal at arm's length, partnerships in which the Non-Canadian Holder or persons with whom the Non-Canadian Holder did not deal at arm's length held a membership interest (either directly or indirectly through one or more partnerships), or the Non-Canadian Holder together with all such persons, owned 25% or more of the Company's issued shares of any class or series of the Company's shares; and (ii) more than 50% of the fair market value of such shares was derived directly or indirectly from one, or any combination of, real or immovable property situated in Canada, "Canadian resource properties" (as defined in the Canadian Tax Act), "timber resource properties" (as defined in the Canadian Tax Act) or an option, an interest or right in such property, whether or not such property exists. Notwithstanding the foregoing, a common share may otherwise be deemed to be taxable Canadian property to a Non-Canadian Holder for purposes of the Canadian Tax Act.

Even if a common share is considered to be "taxable Canadian property" to a Non-Canadian Holder, the Non-Canadian Holder may be exempt from tax under the Canadian Tax Act if such securities are "treaty-protected property" for the purposes of the Canadian Tax Act. Common shares will generally be "treaty-protected property" if the gain from the disposition of such securities would, because of the Canada-US Tax Convention, be exempt from tax under Part I of the Canadian Tax Act.

**Non-Canadian Holders whose common shares may be taxable Canadian property should consult their own tax advisors.**

### Material U.S. Federal Income Tax Considerations for U.S. Holders

The following is a general summary of certain material U.S. federal income tax considerations applicable to a U.S. Holder (as defined below) arising from and relating to the acquisition, ownership, and disposition of the Company's common shares.

This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax considerations that may apply to a U.S. Holder as a result of the acquisition of common shares pursuant to this prospectus. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder, including, without limitation, specific tax consequences to a U.S. Holder under an applicable income tax treaty. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any U.S. Holder. This summary does not address the U.S. alternative minimum, U.S. federal net investment income, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences to U.S. Holders of the acquisition, ownership, and disposition of the securities. In addition, except as specifically set forth below, this summary does not discuss applicable tax reporting requirements. Each U.S. Holder should consult its own tax advisors regarding the U.S. federal alternative minimum, U.S. federal net investment income, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership, and disposition of the securities.

No legal opinion from legal counsel or ruling from the Internal Revenue Service (the "IRS") has been requested, or will be obtained, regarding the U.S. federal income tax consequences described herein. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, and contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the positions taken in this summary.

#### Scope of this Summary

##### Authorities

This summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations (whether final, temporary, or proposed) promulgated under the Code, published rulings of the IRS, published administrative positions of the IRS, the Convention Between Canada and the United States of America with Respect to Taxes on Income and on Capital, signed September 26, 1980, as amended (the "Canada-U.S. Tax Convention"), and U.S. court decisions, that are applicable, and, in each case, as in effect and available, as of the date of this document. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied retroactively. This summary does not discuss the potential effects, whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive or prospective basis.

##### U.S. Holders

For purposes of this summary, the term "U.S. Holder" means a beneficial owner of Warrant Shares acquired pursuant to this prospectus or Warrants described in this prospectus that is for U.S. federal income tax purposes:

- an individual that is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the U.S. and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

##### U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed

This summary does not address the U.S. federal income tax considerations applicable to U.S. Holders that are subject to special provisions under the Code, including U.S. Holders that: (a) are tax-exempt

organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) are financial institutions, underwriters, insurance companies, real estate investment trusts, or regulated investment companies; (c) are brokers or dealers in securities or currencies or U.S. Holders that are traders in securities that elect to apply a mark-to-market accounting method; (d) have a “functional currency” other than the U.S. dollar; (e) own securities as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other integrated transaction; (f) acquired the securities in connection with the exercise of employee stock options or otherwise as compensation for services; (g) hold the securities other than as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment purposes); (h) are partnerships and other pass-through entities (and investors in such partnerships and entities); (i) are subject to special tax accounting rules; (j) own, have owned or will own (directly, indirectly, or by attribution) 10% or more of the total combined voting power or value of our outstanding shares; (k) are U.S. expatriates or former long-term residents of the U.S.; or (l) are subject to taxing jurisdictions other than, or in addition to, the United States. U.S. Holders that are subject to special provisions under the Code, including U.S. Holders described immediately above, should consult their own tax advisors regarding the U.S. federal, U.S. federal net investment income, U.S. federal alternative minimum, U.S. federal estate and gift, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of the securities.

If an entity or arrangement that is classified as a partnership for U.S. federal income tax purposes holds common shares, the U.S. federal income tax consequences to such entity or arrangement and the owners of such entity or arrangement generally will depend on the activities of such entity or arrangement and the status of such owners. This summary does not address the tax consequences to any such entity or arrangement or owner. Owners of entities or arrangements that are classified as partnerships for U.S. federal income tax purposes should consult their own tax advisor regarding the U.S. federal income tax consequences arising from and relating to the acquisition, ownership and disposition of the securities.

#### **Passive Foreign Investment Company Rules**

If the Company were to constitute a “passive foreign investment company” under the meaning of Section 1297 of the Code (a “PFIC”, as defined below) for any year during a U.S. Holder’s holding period then certain potentially adverse rules would affect the U.S. federal income tax consequences to a U.S. Holder as a result of the acquisition, ownership, and disposition of common shares.

The Company believes that it may have been classified as a PFIC during the taxable year ended December 31, 2023, and based on current business plans and financial expectations, the Company may be a PFIC for the current tax year and or future tax years. No opinion of legal counsel or ruling from the IRS concerning the status of the Company as a PFIC has been obtained or is currently planned to be requested. The determination of whether any corporation was, or will be, a PFIC for a tax year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether any corporation will be a PFIC for any tax year depends on the assets and income of such corporation over the course of each such tax year and, as a result, cannot be predicted with certainty as of the date of this document. Accordingly, there can be no assurance that the IRS will not challenge any PFIC determination made by the Company (or any subsidiary of the Company) concerning its PFIC status. Each U.S. Holder should consult its own tax advisors regarding the PFIC status of the Company and each subsidiary of the Company.

In any year in which the Company is classified as a PFIC, a U.S. Holder will be required to file an annual report with the IRS containing such information as Treasury Regulations and/or other IRS guidance may require. In addition to penalties, a failure to satisfy such reporting requirements may result in an extension of the time period during which the IRS can assess a tax. U.S. Holders should consult their own tax advisors regarding the requirements of filing such information returns under these rules, including the requirement to file an IRS Form 8621 annually.

The Company generally will be a PFIC if, for a tax year, (a) 75% or more of the gross income of the Company is passive income (the “PFIC income test”) or (b) 50% or more of the value of the assets of the Company either produce passive income or are held for the production of passive income, based on the quarterly average of the fair market value of such assets (the “PFIC asset test”). “Gross income” generally includes all sales revenues less the cost of goods sold, plus income from investments and from incidental or

outside operations or sources, and “passive income” generally includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions.

For purposes of the PFIC income test and PFIC asset test described above, if the Company owns, directly or indirectly, 25% or more of the total value of the outstanding shares of another corporation, the Company will be treated as if it (a) held a proportionate share of the assets of such other corporation and (b) received directly a proportionate share of the income of such other corporation. In addition, for purposes of the PFIC income test and PFIC asset test described above, and assuming certain other requirements are met, “passive income” does not include certain interest, dividends, rents, or royalties that are received or accrued by the Company from certain “related persons” (as defined in Section 954(d)(3) of the Code) also organized in Canada, to the extent such items are properly allocable to the income of such related person that is not passive income.

Under certain attribution rules, if the Company is a PFIC, U.S. Holders will generally be deemed to own their proportionate share the Company’s direct or indirect equity interest in any company that is also a PFIC (a “Subsidiary PFIC”), and will generally be subject to U.S. federal income tax on their proportionate share of any (a) any “excess distributions,” as described below, on the stock of a Subsidiary PFIC and (b) a disposition or deemed disposition of the stock of a Subsidiary PFIC by the Company or another Subsidiary PFIC, both as if such U.S. Holders directly held the shares of such Subsidiary PFIC. In addition, U.S. Holders may be subject to U.S. federal income tax on any indirect gain realized on the stock of a Subsidiary PFIC on the sale or disposition of Common Shares. Accordingly, U.S. Holders should be aware that they could be subject to tax under the PFIC rules even if no distributions are received and no redemptions or other dispositions of Warrant Shares are made.

#### Default PFIC Rules Under Section 1291 of the Code

If the Company is a PFIC for any tax year during which a U.S. Holder owns Common Shares, the U.S. federal income tax consequences to such U.S. Holder of the acquisition, ownership, and disposition of common shares will depend on whether and when such U.S. Holder makes a “qualified electing fund” or “QEF” under Section 1295 of the Code (a “QEF Election”) or makes a mark-to-market election under Section 1296 of the Code (a “Mark-to-Market Election”). A U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election will be referred to in this summary as a “Non-Electing U.S. Holder.”

A Non-Electing U.S. Holder will be subject to the rules of Section 1291 of the Code (as described below) with respect to (a) any gain recognized on the sale or other taxable disposition of common shares and (b) any excess distribution received on the common shares. A distribution generally will be an “excess distribution” to the extent that such distribution (together with all other distributions received in the current tax year) exceeds 125% of the average distributions received during the three preceding tax years (or during a U.S. Holder’s holding period for the common shares, if shorter).

Under Section 1291 of the Code, any gain recognized on the sale or other taxable disposition of common shares (including an indirect disposition of the stock of a Subsidiary PFIC), and any “excess distribution” received on such common shares or with respect to the stock of a Subsidiary PFIC, must be ratably allocated to each day in a Non-Electing U.S. Holder’s holding period for the respective common shares. The amount of any such gain or excess distribution allocated to the tax year of disposition or distribution of the excess distribution and to years before the entity became a PFIC, if any, would be taxed as ordinary income (and not eligible for certain preferred rates). The amounts allocated to any other tax year would be subject to U.S. federal income tax at the highest tax rate applicable to ordinary income in each such year, and an interest charge would be imposed on the tax liability for each such year, calculated as if such tax liability had been due in each such year. A Non-Electing U.S. Holder that is not a corporation must treat any such interest paid as “personal interest,” which is not deductible.

If the Company is a PFIC for any tax year during which a Non-Electing U.S. Holder holds common shares, the Company will continue to be treated as a PFIC with respect to such Non-Electing U.S. Holder, regardless of whether the Company ceases to be a PFIC in one or more subsequent tax years. A Non-Electing U.S. Holder may terminate this deemed PFIC status by electing to recognize gain (which will be

taxed under the rules of Section 1291 of the Code discussed above) but not loss, as if such common shares were sold on the last day of the last tax year for which the Company was a PFIC.

#### QEF Election

A U.S. Holder that makes a QEF Election for the first tax year in which its holding period of its common shares begins generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to its common shares. However, a U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such U.S. Holder's pro rata share of (a) the Company's net capital gain, which will be taxed as long-term capital gain to such U.S. Holder, and (b) our ordinary earnings, which will be taxed as ordinary income to such U.S. Holder. Generally, "net capital gain" is the excess of (a) net long-term capital gain over (b) net short-term capital loss, and "ordinary earnings" are the excess of (a) "earnings and profits" over (b) net capital gain. A U.S. Holder that makes a QEF Election will be subject to U.S. federal income tax on such amounts for each tax year in which we are a PFIC, regardless of whether such amounts are actually distributed to such U.S. Holder by us. However, for any tax year in which the Company is a PFIC and have no net income or gain, U.S. Holders that have made a QEF Election would not have any income inclusions as a result of the QEF Election. If a U.S. Holder that made a QEF Election has an income inclusion, such a U.S. Holder may, subject to certain limitations, elect to defer payment of current U.S. federal income tax on such amounts, subject to an interest charge. If such U.S. Holder is not a corporation, any such interest paid will be treated as "personal interest," which is not deductible.

A U.S. Holder that makes a timely QEF Election generally (a) may receive a tax-free distribution from us to the extent that such distribution represents "earnings and profits" that were previously included in income by the U.S. Holder because of such QEF Election and (b) will adjust such U.S. Holder's tax basis in the common shares to reflect the amount included in income or allowed as a tax-free distribution because of such QEF Election. In addition, a U.S. Holder that makes a QEF Election generally will recognize capital gain or loss on the sale or other taxable disposition of common shares.

The procedure for making a QEF Election, and the U.S. federal income tax consequences of making a QEF Election, will depend on whether such QEF Election is timely. A QEF Election will be treated as "timely" for purposes of avoiding the default PFIC rules discussed above if such QEF Election is made for the first year in the U.S. Holder's holding period for the common shares in which the Company was a PFIC. A U.S. Holder may make a timely QEF Election by filing the appropriate QEF Election documents at the time such U.S. Holder files a U.S. federal income tax return for such year.

A QEF Election will apply to the tax year for which such QEF Election is made and to all subsequent tax years, unless such QEF Election is invalidated or terminated or the IRS consents to revocation of such QEF Election. If a U.S. Holder makes a QEF Election and, in a subsequent tax year, the Company ceases to be a PFIC, the QEF Election will remain in effect (although it will not be applicable) during those tax years in which we are not a PFIC. Accordingly, if the Company becomes a PFIC in another subsequent tax year, the QEF Election will be effective and the U.S. Holder will be subject to the QEF rules described above during any subsequent tax year in which we qualify as a PFIC.

U.S. Holders should be aware that, for each tax year, if any, that the Company is a PFIC, the Company can provide no assurances that the Company will satisfy the record keeping requirements of a PFIC, or that the Company will make available to U.S. Holders the information such U.S. Holders require to make a QEF Election with respect to us or any Subsidiary PFIC, and as a result, a QEF Election may not be available to U.S. Holders. U.S. Holders should consult with their own tax advisors regarding the potential application of the PFIC rules to the ownership and disposition of the securities, and the availability of certain U.S. tax elections under the PFIC rules.

A U.S. Holder makes a QEF Election by attaching a completed IRS Form 8621, including a PFIC Annual Information Statement, to a timely filed U.S. federal income tax return. However, if the Company does not provide the required information with regard to the Company or any of its Subsidiary PFICs, U.S. Holders will not be able to make a QEF Election for such entity and will continue to be subject to the rules of Section 1291 of the Code discussed above that apply to Non-Electing U.S. Holders with respect to the taxation of gains and excess distributions.

#### Mark-to-Market Election

A U.S. Holder may make a Mark-to-Market Election with respect to common shares only if the common shares are marketable stock. The common shares generally will be "marketable stock" if the

common shares are regularly traded on (a) a national securities exchange that is registered with the SEC, (b) the national market system established pursuant to Section 11A of the U.S. Exchange Act or (c) a foreign securities exchange that is regulated or supervised by a governmental authority of the country in which the market is located, provided that (i) such foreign exchange has trading volume, listing, financial disclosure, surveillance requirements, and meets other requirements and the laws of the country in which such foreign exchange is located, together with the rules of such foreign exchange, ensure that such requirements are actually enforced and (ii) the rules of such foreign exchange ensure active trading of listed stocks. If such stock is traded on such a qualified exchange or other market, such stock generally will be considered “regularly traded” for any calendar year during which such stock is traded, other than in de minimis quantities, on at least 15 days during each calendar quarter. Provided that the common shares are “regularly traded” as described in the preceding sentence, the common shares are expected to be marketable stock. However, Each U.S. Holder should consult its own tax advisor in this matter.

A U.S. Holder that makes a Mark-to-Market Election with respect to its common shares generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to such common shares. However, if a U.S. Holder does not make a Mark-to-Market Election beginning in the first tax year of such U.S. Holder’s holding period for the common shares for which the Company is a PFIC and such U.S. Holder has not made a timely QEF Election, the rules of Section 1291 of the Code discussed above will apply to certain dispositions of, and distributions on, the common shares.

A U.S. Holder that makes a Mark-to-Market Election will include in ordinary income, for each tax year in which the Company is a PFIC, an amount equal to the excess, if any, of (a) the fair market value of the common shares, as of the close of such tax year over (b) such U.S. Holder’s adjusted tax basis in the common shares. A U.S. Holder that makes a Mark-to-Market Election will be allowed a deduction in an amount equal to the excess, if any, of (i) such U.S. Holder’s adjusted tax basis in the common shares, over (ii) the fair market value of such common shares (but only to the extent of the net amount of previously included income as a result of the Mark-to-Market Election for prior tax years).

A U.S. Holder that makes a Mark-to-Market Election generally also will adjust such U.S. Holder’s tax basis in the common shares to reflect the amount included in gross income or allowed as a deduction because of such Mark-to-Market Election. In addition, upon a sale or other taxable disposition of common shares, a U.S. Holder that makes a Mark-to-Market Election will recognize ordinary income or ordinary loss (not to exceed the excess, if any, of (a) the amount included in ordinary income because of such Mark-to-Market Election for prior tax years over (b) the amount allowed as a deduction because of such Mark-to-Market Election for prior tax years).

A U.S. Holder makes a Mark-to-Market Election by attaching a completed IRS Form 8621 to a timely filed U.S. federal income tax return. Mark-to-Market Election applies to the tax year in which such Mark-to-Market Election is made and to each subsequent tax year, unless the common shares cease to be “marketable stock” or the IRS consents to revocation of such election. Each U.S. Holder should consult its own tax advisors regarding the availability of, and procedure for making, a Mark-to-Market Election.

Although a U.S. Holder may be eligible to make a Mark-to-Market Election with respect to the common shares, no such election may be made with respect to the stock of any Subsidiary PFIC that a U.S. Holder is treated as owning because such stock is not marketable. Hence, the Mark-to-Market Election will not be effective to avoid the application of the default rules of Section 1291 of the Code described above with respect to deemed dispositions of Subsidiary PFIC stock or excess distributions from a Subsidiary PFIC to its shareholder.

#### Other PFIC Rules

Under Section 1291(f) of the Code, the IRS has issued proposed Treasury Regulations that, subject to certain exceptions, would cause a U.S. Holder that had not made a timely QEF Election to recognize gain (but not loss) upon certain transfers of common shares that would otherwise be tax-deferred (e.g., gifts and exchanges pursuant to corporate reorganizations). However, the specific U.S. federal income tax consequences to a U.S. Holder may vary based on the manner in which common shares are transferred.

If finalized in their current form, the proposed Treasury Regulations applicable to PFICs would be effective for transactions occurring on or after April 1, 1992. Because the proposed Treasury Regulations

have not yet been adopted in final form, they are not currently effective, and there is no assurance that they will be adopted in the form and with the effective date proposed. Nevertheless, the IRS has announced that, in the absence of final Treasury Regulations, taxpayers may apply reasonable interpretations of the Code provisions applicable to PFICs and that it considers the rules set forth in the proposed Treasury Regulations to be reasonable interpretations of those Code provisions. The PFIC rules are complex, and the implementation of certain aspects of the PFIC rules requires the issuance of Treasury Regulations which in many instances have not been promulgated and which, when promulgated, may have retroactive effect. U.S. Holders should consult their own tax advisors about the potential applicability of the proposed Treasury Regulations.

Certain additional adverse rules may apply with respect to a U.S. Holder if the Company is a PFIC, regardless of whether such U.S. Holder makes a QEF Election. For example, under Section 1298(b)(6) of the Code, a U.S. Holder that uses common shares as security for a loan will, except as may be provided in Treasury Regulations, be treated as having made a taxable disposition of such common shares.

In addition, a U.S. Holder who acquires common shares from a decedent will not receive a “step up” in tax basis of such common shares to fair market value.

Special rules also apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to such special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. The rules relating to distributions by a PFIC and their eligibility for the foreign tax credit are complicated, and a U.S. Holder should consult with its own tax advisors regarding the availability of the foreign tax credit with respect to distributions by a PFIC.

The PFIC rules are complex, and each U.S. Holder should consult its own tax advisors regarding the PFIC rules and how the PFIC rules may affect the U.S. federal income tax consequences of the acquisition, ownership, and disposition of common shares.

#### **General Rules Applicable to U.S. Federal Income Tax Consequences of the Acquisition, Ownership, and Disposition of Common Shares**

The following discussion describes the general rules applicable to the acquisition, ownership and disposition of the common shares but is subject in its entirety to the special rules described above under the heading “Passive Foreign Investment Company Rules.”

##### **Distributions on Common Shares**

A U.S. Holder that receives a distribution, including a constructive distribution, with respect to a common share will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of the Company’s current and accumulated “earnings and profits”, as computed for U.S. federal income tax purposes. A dividend generally will be taxed to a U.S. Holder at ordinary income tax rates if the Company is a PFIC for the tax year of such distribution or the preceding tax year. To the extent that a distribution exceeds the current and accumulated “earnings and profits” of the Company, such distribution will be treated first as a tax-free return of capital to the extent of a U.S. Holder’s tax basis in the common Shares and thereafter as gain from the sale or exchange of such common shares (see “Sale or Other Taxable Disposition of Common Shares” below). However, the Company may not maintain the calculations of earnings and profits in accordance with U.S. federal income tax principles, and each U.S. Holder may be required to assume that any distribution by the Company with respect to the common shares will constitute ordinary dividend income. Dividends received on common shares by corporate U.S. Holders generally will not be eligible for the “dividends received deduction.” Subject to applicable limitations and provided the Company is eligible for the benefits of the Canada-U.S. Tax Convention, or the common shares are readily tradable on a United States securities market, dividends paid by the Company to non-corporate U.S. Holders, including individuals, generally will be eligible for the preferential tax rates applicable to long-term capital gains for dividends, provided certain holding period and other conditions are satisfied, including that the Company not be classified as a PFIC in the tax year of distribution or in the preceding tax year. The dividend rules are complex, and each U.S. Holder should consult its own tax advisors regarding the application of such rules.



### Sale or Other Taxable Disposition of Common Shares

Upon the sale or other taxable disposition of common shares, a U.S. Holder generally will recognize capital gain or loss in an amount equal to the difference between the U.S. dollar value of cash received plus the fair market value of any property received and such U.S. Holder's tax basis in such common shares sold or otherwise disposed of. A U.S. Holder's tax basis in common shares generally will be such holder's U.S. dollar cost for such common shares. Gain or loss recognized on such sale or other disposition generally will be long-term capital gain or loss if, at the time of the sale or other disposition, the common shares have been held for more than one year.

Preferential tax rates currently apply to long-term capital gain of a U.S. Holder that is an individual, estate, or trust. There are currently no preferential tax rates for long-term capital gain of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

### Additional Tax Considerations

#### Receipt of Foreign Currency

The amount of any distribution paid to a U.S. Holder in foreign currency or on the sale, exchange or other taxable disposition of common shares generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt (regardless of whether such foreign currency is converted into U.S. dollars at that time). If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. Holder will have a tax basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who converts or otherwise disposes of the foreign currency after the date of receipt may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Different rules apply to U.S. Holders who use the accrual method of tax accounting. Each U.S. Holder should consult its own U.S. tax advisors regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

#### Foreign Tax Credit

Subject to the PFIC rules discussed above, a U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends paid on the common shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax paid. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and applies to all foreign taxes paid or accrued (whether directly or through withholding) by a U.S. Holder during a year. The foreign tax credit rules are complex and involve the application of rules that depend on a U.S. Holder's particular circumstances. Accordingly, each U.S. Holder should consult its own U.S. tax advisors regarding the foreign tax credit rules.

#### Backup Withholding and Information Reporting

Under U.S. federal income tax law certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. For example, U.S. return disclosure obligations (and related penalties) are imposed on individuals that are U.S. Holders that hold certain specified foreign financial assets in excess of certain thresholds. The definition of specified foreign financial assets includes not only financial accounts maintained in foreign financial institutions, but also, unless held in accounts maintained by a financial institution, any stock or security issued by a non-U.S. person, any financial instrument or contract held for investment that has an issuer or counterparty other than a U.S. person and any interest in a foreign entity. U.S. Holders may be subject to these reporting requirements unless their common shares are held in an account at certain financial institutions. Penalties for failure to file certain of these information returns are substantial. U.S. Holders should consult with their own tax advisors regarding the requirements of filing information returns, including the requirement to file an IRS Form 8938.

Payments made within the U.S., or by a U.S. payor or U.S. middleman, of dividends on, and proceeds arising from the sale or other taxable disposition of the common shares will generally be subject to

information reporting and backup withholding tax, currently at the rate of 24%, if a U.S. Holder (a) fails to furnish such U.S. Holder's correct U.S. taxpayer identification number (generally on Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that it has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, certain exempt persons, generally are excluded from these information reporting and backup withholding rules. Backup withholding is not an additional tax. Any amounts withheld under the U.S. backup withholding tax rules will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS in a timely manner.

The discussion of reporting requirements set forth above is not intended to constitute a complete description of all reporting requirements that may apply to a U.S. Holder. A failure to satisfy certain reporting requirements may result in an extension of the time period during which the IRS can assess a tax and, under certain circumstances, such an extension may apply to assessments of amounts unrelated to any unsatisfied reporting requirement. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

**THE ABOVE SUMMARY IS NOT INTENDED TO CONSTITUTE A COMPLETE ANALYSIS OF ALL TAX CONSIDERATIONS APPLICABLE TO U.S. HOLDERS WITH RESPECT TO THE ACQUISITION, OWNERSHIP, AND DISPOSITION OF THE SECURITIES. U.S. HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE TAX CONSIDERATIONS APPLICABLE TO THEM IN THEIR OWN PARTICULAR CIRCUMSTANCES.**

## SELLING SHAREHOLDER

This prospectus relates to the resale by the Selling Shareholder from time to time of up to 810,810 of our common shares. The Selling Shareholder may from time to time offer and sell any or all of the common shares set forth below pursuant to this prospectus and any accompanying prospectus supplement. As used in this prospectus, the term “Selling Shareholder” includes the person listed in the table below, together with any additional selling shareholders listed in a subsequent amendment to this prospectus, and their pledgees, donees, transferees, assignees, successors, designees and others who later come to hold any of the Selling Shareholder’s interests in the common shares, other than through a public sale.

Except as set forth in the footnotes below, the following table sets forth, based on written representations from the Selling Shareholder, certain information regarding the beneficial ownership of our common shares by the Selling Shareholder and the common shares being offered by the Selling Shareholder. The applicable percentage ownership of common shares is based on approximately 3,223,565 common shares outstanding as of November 12, 2024. Information with respect to common shares owned beneficially after the offering assumes the sale of all of the common shares registered hereby. The Selling Shareholder may offer and sell some, all or none of its common shares.

Except as set forth in the footnotes below, the Selling Shareholder has never been an officer or director of us or of one of our affiliates. Moreover, the Selling Shareholder has not had a material relationship with us other than as a shareholder at any time within the past three years. The Selling Shareholder has acquired (or will acquire) the common shares to be resold hereunder in the ordinary course of business and, at the time of acquisition, the Selling Shareholder was not, nor was expected to be, a party to any agreement or understanding, directly or indirectly, with any person to distribute the common shares to be resold by such Selling Shareholder under this Registration Statement of which this prospectus forms a part.

Since the Selling Shareholder may sell some or none of the common shares that it holds that are covered by this prospectus, and because the offering contemplated by this prospectus is not underwritten, no estimate can be given as to the number of our common shares that will be held by Selling Shareholder upon the termination of the offering. The information set forth in the following table regarding the beneficial ownership after the resale of shares is based upon the assumption that the Selling Shareholder will acquire (to the extent not currently held) and sell all of the common shares covered by this prospectus.

We have determined beneficial ownership in accordance with the rules of the SEC. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the Selling Shareholder has, or will have, sole voting and investment power with respect to all common shares that they beneficially own, subject to applicable community property laws. Except as otherwise described below, based on the information provided to us by the Selling Shareholder, no Selling Shareholder is a broker-dealer or an affiliate of a broker dealer.

Please see the section titled “*Plan of Distribution*” in this prospectus for further information regarding the Selling Shareholders’ method of distributing these shares.

Name	Common Shares			
	Number Beneficially Owned Prior to Offering <sup>†</sup>	Number Registered for Sale Hereby	Number Beneficially Owned After Offering	Percent Owned After Offering
Armistice Capital, LLC	160,855 <sup>(1)</sup>	810,810 <sup>(2)</sup>	201,315 <sup>(1)</sup>	4.99%

\* Represents less than 1%.

† Beneficial ownership includes common shares as to which a person or group has sole or shared voting power or dispositive power. Common shares registered hereunder, as well as common shares subject to options, warrants or other convertible securities that are exercisable or convertible currently or within 60 days of November 12, 2024, are deemed outstanding for purposes of computing the number of shares beneficially owned and percentage ownership of the person or group holding such shares of common

stock, options, warrants or convertible securities, but are not deemed outstanding for computing the percentage of any other person.

- (1) Armistice Capital Master Fund Ltd., a Cayman Islands exempted company (the “**Master Fund**”), directly holds 121,190 common shares; 490,810 pre-funded warrants; and 1,467,667 warrants. The securities may be deemed to be beneficially owned by: (i) Armistice Capital, LLC (“**Armistice Capital**”), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice Capital. The pre-funded warrants are subject to a beneficial ownership limitation of 9.99% and the warrants are subject to a beneficial ownership limitation of 4.99%, which such limitations restrict the Selling Shareholder from exercising that portion of the pre-funded warrants and warrants that would result in the Selling Shareholder and its affiliates owning, after exercise, a number of common shares in excess of the beneficial ownership limitations. The address of Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, 7th Floor, New York, NY 10022.
- (2) Reflects common shares underlying the Warrants issued to the Selling Shareholder in a private placement.

## PLAN OF DISTRIBUTION

We are registering 810,810 common shares underlying Warrants issued to the Selling Shareholder in connection with a private placement, to permit the resale of these shares by the holders of such shares from time to time after the date of this prospectus. We are registering them pursuant to contractual provisions entered into in connection with the private placement. We will not receive any of the proceeds from the sale by the Selling Shareholder of the common shares. We will bear all fees and expenses incident to our obligation to register the common shares.

The Selling Shareholder may sell all or a portion of the common shares owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the common shares are sold through underwriters or broker-dealers, the Selling Shareholder will be responsible for underwriting discounts or commissions or agent's commissions. The common shares may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. The Selling Shareholder will act independently of us in making decisions with respect to the timing, manner and size of each sale. These sales may be effected in transactions, which may involve crosses or block transactions:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- through the distribution of the common shares by any Selling Shareholder to its partners, members or shareholders;
- through one or more underwritten offerings on a firm commitment or best efforts basis;
- sales pursuant to Rule 144;
- broker-dealers may agree with the Selling Shareholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

If the Selling Shareholder effects such transactions by selling common shares to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the Selling Shareholder or commissions from purchasers of the common shares for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the common shares or otherwise, the Selling Shareholder may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the common shares in the course of hedging in positions they assume. The Selling Shareholder may also sell common shares short and deliver common shares covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Shareholder may also loan or pledge common shares to broker-dealers that in turn may sell such shares.

The Selling Shareholder may pledge or grant a security interest in some or all of the common shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the common shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of Selling Shareholders to include the pledgee, transferee or other successors in interest as Selling Shareholders under this prospectus. The Selling Shareholder also may transfer and donate the common shares in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The Selling Shareholder and any broker-dealer participating in the distribution of the common shares may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the common shares is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of common shares being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the Selling Shareholder and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers. The Selling Shareholder may indemnify any broker-dealer that participates in transactions involving the sale of the common shares against certain liabilities, including liabilities arising under the Securities Act.

Under the securities laws of some states, the common shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the common shares may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any Selling Shareholder will sell any or all of the common shares registered pursuant to the Registration Statement of which this prospectus forms a part.

The Selling Shareholder and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934 and the rules and regulations thereunder, including, without limitation, Regulation M of the Securities Exchange Act of 1934, which may limit the timing of purchases and sales of any of the common shares by the Selling Shareholder and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the common shares to engage in market-making activities with respect to the common shares. All of the foregoing may affect the marketability of the common shares and the ability of any person or entity to engage in market-making activities with respect to the common shares.

We will pay all expenses of the registration of the common shares pursuant to the Registration Statement to which this prospectus forms a part; *provided, however*, that the Selling Shareholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the Selling Shareholder against liabilities, including some liabilities under the Securities Act, in accordance with any registration rights agreement entered into between us and the Selling Shareholder, or the Selling Shareholder will be entitled to contribution. We may be indemnified by the Selling Shareholder against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the Selling Shareholder specifically for use in this prospectus, in accordance with any registration rights agreement entered into between us and the Selling Shareholder, or we may be entitled to contribution.

Once sold under the Registration Statement of which this prospectus forms a part, the common shares will be freely tradable in the hands of persons other than our affiliates.

## LEGAL MATTERS

The validity of the securities being offered by this prospectus and other legal matters concerning this offering relating to Canadian law will be passed upon for us by Fasken Martineau DuMoulin LLP. Certain legal matters in connection with this offering relating to U.S. law will be passed upon for us by Troutman Pepper Hamilton Sanders LLP.

## EXPERTS

The consolidated financial statements of XORTX as of and for the year ended December 31, 2023, have been audited by Smythe LLP, independent registered public accounting firm, as set forth in their report thereon. Smythe LLP is independent with respect to us within the meaning of the Code of Professional Conduct of the Chartered Professional Accountants of British Columbia and under all relevant U.S. professional and regulatory standards, including the Public Company Accounting Oversight Board Rule 3520. We have included our financial statements in this prospectus and in this registration statement in reliance on the report of Smythe LLP given on their authority as experts in accounting and auditing.

## DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission 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 person controlling the registrant 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.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file reports and other information with the securities commissions and similar regulatory authorities in the provinces of Canada (collectively, the “**Commissions**”). These reports and information are available to the public free of charge on SEDAR at [www.sedar.com](http://www.sedar.com).

We are subject to the information requirements of the Exchange Act relating to foreign private issuers and applicable Canadian securities legislation and, in accordance therewith, file reports and other information with the SEC and securities regulatory authorities in Canada. The SEC maintains an internet website at [www.sec.gov](http://www.sec.gov), from which you can electronically access the documents we have filed with the SEC’s Electronic Data Gathering and Retrieval system at [www.sec.gov](http://www.sec.gov), including registration statement of which this prospectus forms a part and its exhibits.

Readers should rely only on information contained or incorporated by reference in this prospectus and any applicable Prospectus Supplement. We have not authorized anyone to provide the reader with different information. We are not making an offer of the Securities in any jurisdiction where the offer is not permitted. Readers should not assume that the information contained in this Prospectus is accurate as of any date other than the date on the front of this Prospectus, unless otherwise noted herein or as required by law. It should be assumed that the information appearing in this Prospectus and the documents incorporated herein by reference are accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with the SEC. This means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is considered to be part of this prospectus.

We incorporate by reference the documents listed below:

- [our Annual Report on Form 20-F for the fiscal year ended December 31, 2023 filed with the SEC on May 10, 2024;](#)
- our Reports on Form 6-K furnished to the SEC on [May 17, 2024](#), [July 1, 2024](#), [August 15, 2024](#), [August 22, 2024](#), [September 13, 2024](#) (two Form 6-K/A reports) [September 13, 2024](#), [September 13, 2024](#), [September 13, 2024](#) and [November 15, 2024](#);
- the description of the securities contained in our Amendment No. 1 to the registration statement on [Form 8-A filed with the SEC on October 4, 2021 \(File No. 001-40858\)](#) pursuant to Section 12 of the Exchange Act, together with all amendments and reports filed for the purpose of updating that description.

We will provide, free of charge upon written or oral request, to each person to whom this prospectus is delivered, including any beneficial owner of the securities, a copy of any or all of the information that has been incorporated by reference into this prospectus, but which has not been delivered with the prospectus. The information contained on or linked to or from our website is not incorporated by reference into this prospectus and should not be considered part of this prospectus. Requests for such information should be made to us at the following address:

3710 – 33rd Street NW Calgary, Alberta, Canada, T2L 2M1  
1 (403) 455-7727  
info@xortx.com

You should assume that the information appearing in this prospectus, as well as the information we previously filed with the SEC and incorporated by reference, is accurate as of the dates on the front cover of those documents only. Our business, financial condition and results of operations and prospects may have changed since those dates.





**810,810 Common Shares Issuable upon  
Exercise of Warrants**

**PROSPECTUS**

, 2024

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**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 6. Indemnification of Directors and Officers**

XORTX is subject to the provisions of Part 5, Division 5 of the Business Corporations Act (British Columbia) (the “BCBCA”). Under Section 160 of the BCBCA, XORTX may, subject to Section 163 of the BCBCA do one or both of the following:

- (a) indemnify an eligible party against all eligible penalties to which the eligible party is or may be liable; or
- (b) after final disposition of an eligible proceeding, pay the expenses actually and reasonably incurred by an eligible party in respect of that proceeding,

where:

- (i) “eligible party” means, in relation to XORTX, means an individual who
  - i. is or was a director or officer of XORTX,
  - ii. is or was a director or officer of another corporation
    - 1. at a time when the corporation is or was an affiliate of XORTX, or
    - 2. at the request of XORTX, or
  - iii. at the request of XORTX, is or was, or holds or held a position equivalent to that of, a director or officer of a partnership, trust, joint venture or other unincorporated entity, and includes, except in the definition of “eligible proceeding” and except in sections 163(1)(c) and (d) and 165 of the BCBCA, the heirs and personal or other legal representatives of that individual;
- (ii) “eligible penalty” means a judgment, penalty or fine awarded or imposed in, or an amount paid in settlement of, an eligible proceeding,
- (iii) “eligible proceeding” means a proceeding in which an eligible party or any of the heirs and personal or other legal representatives of the eligible party, by reason of the eligible party being or having been a director or officer of, or holding or having held a position equivalent to that of a director or officer of, XORTX or an associated corporation
  - i. is or may be joined as a party, or
  - ii. is or may be liable for or in respect of a judgment, penalty or fine in, or expenses related to, the proceeding,
- (iv) “expenses” includes costs, charges and expenses, including legal and other fees, but does not include judgments, penalties, fines or amounts paid in settlement of a proceeding, and
- (v) “proceeding” includes any legal proceeding or investigative action, whether current, threatened, pending or completed.

Under Section 161 of the BCBCA, and subject to Section 163 of the BCBCA, XORTX must, after the final disposition of an eligible proceeding, pay the expenses actually and reasonably incurred by an eligible party in respect of that proceeding if the eligible party (a) has not been reimbursed for those expenses and (b) is wholly successful, on the merits or otherwise, in the outcome of the proceeding or is substantially successful on the merits in the outcome of the proceeding.

Under Section 162 of the BCBCA, and subject to Section 163 of the BCBCA, XORTX may pay, as they are incurred in advance of the final disposition of an eligible proceeding, the expenses actually and reasonably incurred by an eligible party in respect of the proceeding, provided that XORTX must not make

such payments unless it first receives from the eligible party a written undertaking that, if it is ultimately determined that the payment of expenses is prohibited under Section 163 of the BCBCA, the eligible party will repay the amounts advanced.

Under Section 163 of the BCBCA, XORTX must not indemnify an eligible party against eligible penalties to which the eligible party is or may be liable or pay the expenses of an eligible party under Sections 160(b), 161 or 162 of the BCBCA, as the case may be, if any of the following circumstances apply:

- (a) if the indemnity or payment is made under an earlier agreement to indemnify or pay expenses and, at the time that the agreement to indemnify or pay expenses was made, XORTX was prohibited from giving the indemnity or paying the expenses by XORTX's memorandum or Articles;
- (b) if the indemnity or payment is made otherwise than under an earlier agreement to indemnify or pay expenses and, at the time that the indemnity or payment is made, XORTX is prohibited from giving the indemnity or paying the expenses by XORTX's memorandum or Articles;
- (c) if, in relation to the subject matter of the eligible proceeding, the eligible party did not act honestly and in good faith with a view to the best interests of XORTX or the associated corporation, as the case may be; or
- (d) in the case of an eligible proceeding other than a civil proceeding, if the eligible party did not have reasonable grounds for believing that the eligible party's conduct in respect of which the proceeding was brought was lawful.

If an eligible proceeding is brought against an eligible party by or on behalf of XORTX or by or on behalf of an associated corporation, XORTX must not either (a) indemnify the eligible party under Section 160(a) of the BCBCA against eligible penalties to which the eligible party is or may be liable in respect of the proceeding, or pay the expenses of the eligible party under Sections 160(b), 161 or 162 of the BCBCA, as the case may be, in respect of the proceeding.

Under Section 164 of the BCBCA, despite any other provision of Part 5, Division 5 of the BCBCA and whether or not payment of expenses or indemnification has been sought, authorized or declined under Part 5, Division 5 of the BCBCA, on application of XORTX or an eligible party, the court may do one or more of the following:

- (a) order XORTX to indemnify an eligible party against any liability incurred by the eligible party in respect of an eligible proceeding;
- (b) order XORTX to pay some or all of the expenses incurred by an eligible party in respect of an eligible proceeding;
- (c) order the enforcement of, or any payment under, an agreement of indemnification entered into by XORTX;
- (d) order XORTX to pay some or all of the expenses actually and reasonably incurred by any person in obtaining an order under Section 164 of the BCBCA; or
- (e) make any other order the court considers appropriate.

Section 165 of the BCBCA provides that XORTX may purchase and maintain insurance for the benefit of an eligible party or the heirs and personal or other legal representatives of the eligible party against any liability that may be incurred by reason of the eligible party being or having been a director or officer of, or holding or having held a position equivalent to that of a director or officer of, XORTX or an associated corporation.

Under XORTX's articles, and subject to the BCBCA, XORTX must indemnify a director, former director or alternate director and his or her heirs and legal personal representatives against all eligible penalties to which such person is or may be liable, and XORTX must, after the final disposition of an eligible proceeding, pay the expenses actually and reasonably incurred by such person in respect of that proceeding. Each director and alternate director is deemed to have contracted with XORTX on the terms of the indemnity contained in XORTX's articles.

Under XORTX's articles, and subject to the BCBCA, XORTX may agree to indemnify and may indemnify any person (including an eligible party). XORTX has not entered into indemnity agreements with its directors and officers.

Pursuant to XORTX's articles, the failure of a director, alternate director or officer of XORTX to comply with the BCBCA or XORTX's articles does not invalidate any indemnity to which he or she is entitled under XORTX's articles.

Under XORTX's articles, XORTX may purchase and maintain insurance for the benefit of any person (or his or her heirs or legal personal representatives) who:

- is or was a director, alternate director, officer, employee or agent of XORTX;
- is or was a director, alternate director, officer, employee or agent of another corporation at a time when such corporation is or was an affiliate of XORTX;
- at XORTX's request, is or was, a director, alternate director, officer, employee or agent of a corporation or of a partnership, trust, joint venture or other unincorporated entity; or
- at XORTX's request, holds or held a position equivalent to that of, a director, alternate director or officer of a partnership, trust, joint venture or other unincorporated entity,

against any liability incurred by him or her as a director, alternate director, officer, employee or agent or person who holds or held such equivalent position.

XORTX maintains directors' and officers' liability insurance which insures directors and officers for losses as a result of claims against the directors and officers of XORTX in their capacity as directors and officers.

At present, we are not aware of any pending or threatened litigation or proceeding involving any of our directors, officers, employees or agents in which indemnification would be required or permitted.

#### **Item 7. Recent Sales of Unregistered Securities**

Set forth below is information regarding all securities issued by XORTX without registration under the Securities Act during the past three years after giving effect to the Company's 2021 share consolidation that took place in 2021. The information presented below does not give effect to XORTX's corporate reorganization as described in the prospectus forming part of this Registration Statement. XORTX believes that each of such issuances was exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act, Rule 701 and/or Regulation S under the Securities Act. No underwriter or underwriting discount or commission was involved in any of the transactions set forth in this Item 7.

##### ***Common Share Issuances***

- On October 15, 2021 and November 8, 2021, we issued 362,333 of our common shares in connection with the underwritten US IPO Offering (the "**US IPO Offering**"), 322,889 common shares were issued at closing on October 15, 2021 and 39,444 were issued in connection with a partial over-allotment exercise on November 8, 2021) at \$37.17, with each unit consisting of one common share and one warrant (the "**IPO Common Share Purchase Warrant**") for aggregate gross proceeds of \$13,467,930. A.G.P./Alliance Global Partners acted as the representative of the underwriter and the sole book-running manager for the US IPO Offering. The common shares underlying the IPO Common Share Purchase Warrants were registered in this prospectus.
- On October 7, 2022, the Company closed an underwritten public offering of: (i) 155,555 common share units ("**October 2022 Common Share Units**"), with each October 2022 Common Share Unit consisting of one common share, no par value, and one warrant ("**Warrants**") to purchase one common share at a public offering price of \$9.00 per Common Share Unit, and (ii) 400,000 pre-funded warrant units ("**October 2022 Pre-Funded Units**") and together with the Common Share Units, the "**Units**"), with each October 2022 Pre-Funded Unit consisting of one pre-funded warrant ("**October 2022 Pre-Funded Warrant**") to purchase one common share and one Warrant to purchase one common share at a public offering price of \$8.9991 per October 2022 Pre-Funded Unit, for

aggregate gross proceeds of \$4,999,640, prior to deducting underwriting discounts and other offering expenses and excluding any exercise of the underwriters' option to purchase any additional securities as described herein. The common shares and Warrants contained in the Common Share Units and the October 2022 Pre-Funded Warrants and Warrants contained in the October 2022 Pre-Funded Units were immediately separable upon issuance. The Warrants have an initial exercise price of \$10.98 per share, are immediately exercisable, and may be exercised for five years from the date of issuance. The October 2022 Pre-Funded Warrants had an exercise price of \$0.0009 per share, were immediately exercisable, and terminated once exercised in full. As of the date of this Annual Report, all 400,000 October 2022 Pre-Funded Warrants have been exercised. In addition, the Company granted the underwriters of the October 2022 Offering a 45-day option to purchase up to an additional 83,333 common shares and/or warrants ("**October 2022 Compensation Warrants**") to purchase up to an additional 83,333 common shares at the public offering price less the underwriting discounts.

Further to an investment in connection with the October 2022 Offering, the Company entered into an agreement, approved by the TSXV, to reduce the exercise price of certain outstanding US IPO Common Share Purchase Warrants to purchase up to 101,111 shares of common stock issued in the US IPO Offering (the "**Amended IPO Common Share Purchase Warrants**") and held by certain investors in the October 2022 Offering from \$42.93 per share to \$10.53 per share, effective upon the closing of the October 2022 Offering. All other terms of the Certain Prior US IPO Warrants remained the same.

- On December 29, 2022, we issued 71,222 of our common shares pursuant to the exercise of Pre-Funded Warrants, with an exercise price of \$0.0009, for \$64.00.
- On January 19, 2023, we issued 328,777 of our common shares pursuant to the exercise of Pre-Funded Warrants, with exercise price of \$0.0009, for \$296.00.
- On February 15 and March 4, 2024, the Company closed two tranches of a non-brokered offering of 899,717 common share units at a price of CAD\$3 per common share unit for aggregate gross proceeds of CAD\$2,699,151. Each common share unit consisted of one common share and one warrant to purchase one common share at CAD\$4.50 per common share for a period of two years. The warrants were immediately exercisable, and may be exercised for two years from the date of issuance, provided, however that, if, the common shares on the TSXV trade at greater than CAD \$6.00 for 10 or more consecutive trading days, the warrants will be accelerated and the warrants will expire on the 30th business day following notice. In connection with the non-brokered offering, the Company paid finder's fees of CAD\$132,551, representing a 5% finder's fee on certain subscriptions to qualified finders. On March 25, 2024, 5,000 warrants were exercised at CAD\$4.50 for proceeds of CAD\$22,500.

#### ***Stock Option Grants***

- Since January 1, 2019, we have granted our employees, consultants and advisors options to purchase an aggregate of 129,677 options to acquire common shares under our equity compensation plans at exercise prices ranging from CAD\$14.40 to CAD\$52.83 per share.

#### ***Warrants***

- On October 15, 2021, we issued IPO Common Share Purchase Warrants to purchase an aggregate of 371,322 common shares for an exercise price of \$42.93 at the October 15, 2021 per share, in connection with the underwritten US IPO Offering. We issued 322,888 IPO Common Share Purchase Warrants in connection with the U.S. IPO Offering units and an additional 48,433 Common Share Purchase Warrants in connection with A.G.P./Alliance Global Partners' exercise of its option for the purchase of up to 48,433 additional Common Share Purchase Warrants that same day.
- On October 7, 2022, we issued 400,000 October 2022 Pre-Funded Warrants to purchase 400,000 common shares at an exercise price of \$0.0009 per share, and 583,333 Warrants to purchase 583,333 common shares at an exercise price of \$10.98 per share, in connection with the October 2022 Offering.

- On October 7, 2022, in connection with the October 2022 Offering, we amended the exercise price of 101,111 Amended IPO Common Share Purchase Warrants from \$42.93 to \$10.53.
- On October 18, 2024, we issued common warrants to purchase up to 810,810 common shares in a private placement. The common warrants issued pursuant to the concurrent private placement have an exercise price of US\$2.18, were immediately exercisable upon issuance and expire five years from issuance. A.G.P./Alliance Global Partners served as placement agent.

Other than the issuances in connection with the U.S. IPO Offering on October 15, 2021 and the October 2022 Offering on October 7, 2022 or as otherwise noted above, none of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

#### **Item 8. Exhibits and Financial Statement Schedules**

The exhibits listed in the exhibits index, appearing elsewhere in this Registration Statement, have been filed as part of this Registration Statement.

All schedules have been omitted because they are not required, are not applicable or the information is otherwise set forth in the financial statements and related notes thereto.

- 1.1 [Underwriting Agreement dated October 4, 2022 between the Company and A.G.P./Alliance Global Partners as Representative of the Several Underwriters named on Schedule I \(incorporated by reference to exhibit 99.1 of the Company's Form 6-K filed October 6, 2022\).](#)
- 1.2 [Placement Agency Agreement between A.G.P./Alliance Global Partners and XORTX Therapeutics, Inc., dated October 17, 2024 \(incorporated by reference to Exhibit 99.2 to the Company's Form 6-K filed October 18, 2024\)](#)
- 3.1 [Articles and Notice of Articles of the Company \(incorporated by reference to Exhibit 3.1 to the Company's Draft Registration Statement on Form F-1 filed on May 26, 2021\)](#)
- 4.1 [Form of Private Placement Warrant \(incorporated by reference to Exhibit 4.4 of the Company's Amended Registration Statement on Form F-1 filed September 16, 2021\)](#)
- 4.2 [Form of Common Share Purchase Warrant \(IPO Common Share Purchase Warrant\) \(incorporated by reference to Exhibit 4.1 to the Company's Amendment No. 1 to the Registration Statement on Form F-1 filed on September 16, 2021\)](#)
- 4.3 [Form of Amended IPO Common Share Purchase Warrant to be issued to certain investors in the 2021 US IPO Offering that participated in the October 2022 Offering \(incorporated by reference to Exhibit 4.8 of the Company's Post-Effective Amendment to its Registration Statement on Form F-1 filed on September 30, 2022\)](#)
- 4.4 [Form of IPO Compensation Warrant \(incorporated by reference to Exhibit 4.3 to the Company's Amendment No. 1 to the Registration Statement on Form F-1 filed on September 16, 2021\).](#)
- 4.5 [Form of US IPO Underwriting Agreement between XORTX Therapeutics Inc. and A.G.P./Alliance Global Partners as Representatives of the several Underwriters named on Schedule I attached thereto, \(incorporated by reference to Exhibit 1.1 of the Company's Amended Registration Statement on Form F-1 filed September 16, 2021\)](#)
- 4.6 [Form of October 2022 Warrant \(incorporated by reference to Exhibit 4.2 of the Company's Amended Registration Statement on Form F-1 filed on September 12, 2022\)](#)
- 4.7 [Form of October 2022 Pre-Funded Warrant \(incorporated by reference to Exhibit 4.3 of the Company's Amended Registration Statement on Form F-1 filed on September 12, 2022\)](#)
- 4.8 [Form of October 2022 Compensation Warrant \(incorporated by reference to Exhibit 4.4 of the Company's Amended Registration Statement on Form F-1 filed on September 12, 2022\)](#)
- 4.9 [Letter Agreement, dated as of October 7, 2022 between the Company and Armistice Capital Master Fund Ltd. \(incorporated by reference to Exhibit 99.1 to the Company's Form 6-K filed October 7, 2022\)](#)

- 4.10 [Secimen common share certificate \(incorporated by reference to Exhibit 2.1 to the Company's Annual Report on Form 20-F filed on May 3, 2022\)](#)
- 4.11 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 99.4 to the the Company's Form 6-K filed October 18, 2024\)](#)
- 4.12 [Form of Warrant \(incorporated by reference to Exhibit 99.5 to the the Company's Form 6-K filed October 18, 2024\)](#)
- 4.13 [Form of Lock-Up Agreement \(incorporated by reference to Exhibit 99.6 to the the Company's Form 6-K filed October 18, 2024\)](#)
- 5.1\* [Opinion of Fasken Martineau DuMoulin LLP](#)
- 10.2# [Employment Agreement, dated August 1, 2021, by and between the Company and Allen Davidoff \(incorporated by reference to Exhibit 10.2 to the Company's Amendment No. 1 to the Registration Statement on Form F-1 filed on September 16, 2021\)](#)
- 10.4† [Master Service and Technology Agreement, dated February 25, 2019, by and between the Company and Prevail InfoWorks, Inc. \(incorporated by reference to Exhibit 10.6 to the Company's Draft Registration Statement on Form F-1 filed on May 26, 2021\)](#)
- 10.5† [Side Letter to Master Service and Technology Agreement, dated February 24, 2020, by and between the Company and Prevail InfoWorks, Inc. \(incorporated by reference to Exhibit 10.7 to the Company's Draft Registration Statement on Form F-1 filed on May 26, 2021\)](#)
- 10.6† [Subscription Agreement, dated February 28, 2020, by and between the Company and Prevail Partners LLC \(incorporated by reference to Exhibit 10.8 to the Company's Draft Registration Statement on Form F-1 filed on May 26, 2021\)](#)
- 10.7† [Standard Exclusive License Agreement with Know How dated effective as of June 23, 2014, by and between the Company and the University of Florida Research Foundation, Inc. \(incorporated by reference to Exhibit 10.11 to the Company's Registration Statement on Form F-1 Filed on August 12, 2021\)](#)
- 10.8# [Consulting Agreement, dated July 1, 2021, by and between the Company and Haworth Biopharmaceutical Consulting Services Inc. \(incorporated by reference to Exhibit 10.12 to the Company's Amendment No. 1 to the Draft Registration Statement on Form F-1 filed on July 21, 2021\)](#)
- 10.9# [Consulting Amending Agreement, dated as of January 27, 2022, by and between the Company and Stephen Haworth \(incorporated by reference to Exhibit 4.26 to the Company's Form 20-F filed May 3, 2022\)](#)
- 10.10† [Patent Rights Purchase Agreement, dated effective as of December 5, 2012, by and between Dr. Richard Johnson, Dr. Takahiko Nakagawa, and Revascor Inc. \(incorporated by reference to Exhibit 10.13 to the Company's Registration Statement on Form F-1 filed on August 12, 2021\)](#)
- 10.11 [Form of Warrant Agency Agreement with Continental Stock Transfer & Trust Company \(incorporated by reference to Exhibit 10.14 to the Company's Amendment No. 1 to the Registration Statement on Form F-1 filed on September 16, 2021\)](#)
- 10.12 [Form of Warrant Agency Agreement with Continental Stock Transfer & Trust Company, as Warrant Agent \(incorporated by reference to Exhibit 10.14 to the Company's Amendment No. 1 to the Registration Statement on Form F-1 filed on September 16, 2021\)](#)
- 10.15# [Stock Option Plan \(incorporated by reference as Schedule B to Exhibit 99.2 to the Company's Form 6-K filed on November 23, 2021.\)](#)
- 10.19† [Sponsored Research Agreement dated May 27, 2021 between the Regents of the University of Colorado and the Company \(incorporated by reference to Exhibit 4.19 to the Company's Form 20-F filed May 3, 2022\)](#)
- 10.21 [Development and Clinical Manufacturing Services Agreement dated effective August 17, 2021 between the Company and Lonza Ltd. \(incorporated by reference to Exhibit 4.21 to the Company's Form 20-F filed May 3, 2022\)](#)

10.25†	<a href="#">Proposal, dated as of March 29, 2022, by and between the Company and Curia Spain, S.A.U. (incorporated by reference to Exhibit 4.25 to the Company’s Form 20-F filed May 3, 2022)</a>
10.26#	<a href="#">Consulting Agreement dated as of September 1, 2022 between the Company and Stacy Evans, M.D., M.B.A. (incorporated by reference to Exhibit 4.26 of the Company’s Annual Report on Form 20-F filed April 28, 2023)</a>
10.27#	<a href="#">Agreement, dated as of November 1, 2021, by and between the Company and Amar Keshri (incorporated by reference to Exhibit 4.27 to the Company’s Form 20-F filed May 3, 2022)</a>
10.28	<a href="#">Consulting Agreement between the Company and Plutus Bridge Capital Inc. dated January 1, 2024 (incorporated by reference to Exhibit 4.28 to the Company’s Form 20-F filed May 10, 2024)</a>
10.29	<a href="#">Consulting Agreement between the Company and 1282803 Ontario Inc., dated July 3, 2023 (incorporated by reference to Exhibit 4.29 to the Company’s Form 20-F filed May 10, 2024)</a>
10.30	<a href="#">At-The-Market Offering Agreement dated November 29, 2023 between the Company and H.C. Wainwright &amp; Co., LLC (incorporated by reference to Exhibit 4.30 to the Company’s Form 20-F filed May 10, 2024)</a>
10.31	<a href="#">Amended and Restated Consulting Agreement between the Company and Stacy Evans, dated May 1, 2024 (incorporated by reference to Exhibit 4.31 to the Company’s Form 20-F filed May 10, 2024)</a>
10.32	<a href="#">Securities Purchase Agreement between XORTX Therapeutics Inc. and Purchasers, dated October 17, 2024 (incorporated by reference to Exhibit 99.3 to the the Company’s Form 6-K filed October 18, 2024)</a>
21.1	<a href="#">Subsidiaries of the Company (incorporated by reference to Exhibit 21.1 to the Company’s Draft Registration Statement on Form F-1 filed on May 26, 2021)</a>
23.1*	<a href="#">Consent of independent registered public accounting firm (Smythe LLP)</a>
23.2*	<a href="#">Consent of Fasken Martineau DuMoulin LLP (included in Exhibit 5.1)</a>
24.1*	<a href="#">Powers of Attorney (included on signature page to the registration statement)</a>
107*	<a href="#">Filing Fee Table</a>

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\* Filed herewith.

\*\* Previously filed.

# Indicates management contract or compensatory plan.

† Certain information in this exhibit has been excluded from the version of this document filed as an exhibit because it is both not material and the type of information that the Company treats as private or confidential

**Item 9. Undertakings**

The undersigned hereby undertakes:

(a) 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 of 1933;

ii. To reflect in the prospectus any facts or events arising after the effective date of the 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 the registration statement. Notwithstanding the foregoing, any increase or decrease in 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% change in the maximum



aggregate offering price set forth in the “Calculation of Filing Fee Tables,” or “Calculation of Registration Fee” table, as applicable, in the effective registration statement;

iii. To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such 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 that 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) To file a post-effective amendment to the registration statement to include any financial statements required by Item 8.A. of Form 20-F at the start of any delayed offering or throughout a continuous offering. Financial statements and information otherwise required by Section 10(a)(3) of the Act need not be furnished, provided that the registrant includes in the prospectus, by means of a post-effective amendment, financial statements required pursuant to this paragraph (a)(4) and other information necessary to ensure that all other information in the prospectus is at least as current as the date of those financial statements. Notwithstanding the foregoing, with respect to registration statements on Form F-3, a post-effective amendment need not be filed to include financial statements and information required by Section 10(a)(3) of the Act or Rule 3-19 of this chapter if such financial statements and information are contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the Form F-3.

(5) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

i. If the registrant is relying on Rule 430B:

A. 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

B. 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 of 1933 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 of the date of the first contract or 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 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; or

ii. If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. 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 first use, 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 date of first use.

(6) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 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 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.

(b) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the U.S. Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 of whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(c) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act of 1933, 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.

(2) For the purpose of determining any liability under the Securities Act of 1933, 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.

**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form F-1 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Calgary, Province of Alberta, Canada, on November 15, 2024.

**XORTX Therapeutics Inc.**By: /s/ Allen Davidoff

Name: Allen Davidoff

Title: President and Chief Executive Officer

**POWERS OF ATTORNEY**

Each person whose signature appears below constitutes and appoints each of Allen Davidoff, James Fairbairn and Charlotte May as his/her true and lawful attorney-in-fact and agent, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this Registration Statement and to sign any related registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, 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 attorneys-in-fact and agents, each action alone, or his substitute or 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 on Form F-1 has been signed by the following persons in the capacities set forth below on November 15, 2024.

<u>Signatures</u>	<u>Title</u>
<u>/s/ Allen Davidoff</u> Allen Davidoff	President and Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ James Fairbairn</u> James Fairbairn	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)
<u>/s/ William Farley</u> William Farley	Director
<u>/s/ Anthony Giovinazzo</u> Anthony Giovinazzo	Chair of the Board
<u>/s/ Abigail L. Jenkins</u> Abigail L. Jenkins	Director
<u>/s/ Raymond Pratt</u> Raymond Pratt	Director

<u>Signatures</u>	<u>Title</u>
<u>/s/ Patrick Treanor</u> Patrick Treanor	Director
<u>/s/ Paul Van Damme</u> Paul Van Damme	Director

**AUTHORIZED REPRESENTATIVE**

Pursuant to the requirements of the Securities Act of 1933, as amended, the undersigned certifies that it is the duly authorized United States representative of the registrant and has duly caused this Registration Statement on Form F-1 to be signed by the undersigned, thereunto duly authorized, on November 15, 2024.

**PUGLISI & ASSOCIATES**

By: /s/ Donald J. Puglisi

\_\_\_\_\_  
Name: Donald J. Puglisi

Title: Managing Director

# FASKEN

Fasken Martineau DuMoulin LLP  
Barristers and Solicitors  
Patent and Trade-mark Agents

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fasken.com

November 15, 2024

XORTX Therapeutics Inc.  
3710 – 33rd Street NW  
Calgary, Alberta T2L 2M1

**Re: XORTX Therapeutics Inc.  
Registration Statement on Form F-1**

Ladies and Gentlemen:

We have acted as British Columbia counsel to XORTX Therapeutics Inc., a corporation formed under the laws of British Columbia (the "**Corporation**"), in connection with the filing of a Registration Statement on Form F-1, as may be amended from time to time, to which this opinion is filed as Exhibit 5.1 (the "**Registration Statement**") under the United States Securities Act of 1933, as amended (the "**Securities Act**"). The Registration Statement relates to the offer and resale (the "**Offering**"), pursuant to the prospectus contained in the Registration Statement, of an aggregate of up to 810,810 common shares of the Corporation (the "**Common Shares**") to be sold by the selling securityholder named therein (the "**Selling Securityholder**"), consisting of 810,810 Common Shares (the "**Warrant Shares**") issuable upon the due exercise of common share purchase warrants (the "**Warrants**") purchased by the Selling Securityholder.

We have examined and relied upon (a) the Registration Statement, (b) the securities purchase agreement entered into by and among the Corporation and the Selling Securityholder (the "**Securities Purchase Agreement**"), (c) the engagement agreement entered into by and between the Corporation and the Placement Agent (the "**Engagement Agreement**"), (d) the certificates evidencing the Warrants (the "**Warrant Certificates**"), (e) a certificate of an officer of the Corporation dated the date hereof, certifying certain factual matters including, among other things: the constating documents of the Corporation, the incumbency of certain officers and directors of the Corporation, resolutions passed by the directors of the Corporation, resolutions passed by a committee duly created by the directors of the Corporation, approving, among other things, the Offering and other factual matters, (g) a certificate of good standing dated November 15, 2024 issued pursuant to the Business Corporations Act (British Columbia) with respect of the Corporation, and (h) originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below.

In rendering our opinions set forth below, we have assumed: (a) the authenticity of all documents submitted to us as originals, (b) the genuineness of all signatures, (c) the conformity to authentic originals of all documents submitted to us as copies and the authenticity of the originals thereof, (d) that all facts, information, representation and warranties set forth in the records, documents and certificates we have reviewed, including official public records and certificates and other documents supplied by public officials or otherwise conveyed to us by public officials are complete, true and accurate as of, and at all material times prior to, the date of this opinion letter, (f) the legal capacity for all purposes relevant hereto of all persons (other than the Corporation), (g) the power for all purposes relevant hereto of all persons (other than the Corporation) to enter into and perform all obligations under all of the records, documents and certificates we have reviewed, (h) the due authorization by all requisite action, corporate or other, and execution and delivery by any such parties of any such records, documents and certificates, and (i) the validity and binding effect thereof on all such parties.

# FASKEN

As to any facts material to the opinions expressed herein which were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Corporation and others and of public officials. In our capacity as counsel to the Corporation in connection with the registration of the Registration Statement, we are familiar with the proceedings taken and proposed to be taken by the Corporation in connection with the authorization and issuance of the Securities. For purposes of this opinion, we have assumed that such proceedings will be timely and properly completed, in accordance with all requirements of the Applicable Law (as defined below), in the manner presently proposed.

We are qualified to practice law in the Province of British Columbia, and our opinion herein is limited to the statutes and regulations of the Province of British Columbia and the federal laws of Canada applicable therein now in effect (the "**Applicable Law**"). We express no opinion as to whether the laws of any particular jurisdiction other than those identified above are applicable to the subject matter hereof. We assume no obligation to revise or supplement this opinion should any applicable laws be changed subsequent to the date hereof by legislative action, judicial decision or otherwise or if there is a change in any fact or facts after the date hereof. Where our opinion refers to any of the Common Shares as being "fully paid and non-assessable", no opinion is expressed as to actual receipt by the Corporation of the consideration for the issuance of such shares or as to the adequacy of any consideration received.

Based on and subject to the foregoing assumptions and qualifications we are of the opinion that the Corporation has taken all necessary corporate action to authorize, allot and reserve for issuance the Warrant Shares and, upon the due exercise of the Warrants in accordance with the Securities Purchase Agreement and the applicable Warrant Certificate, including receipt by the Corporation of full payment therefor in accordance with the Securities Purchase Agreement and the applicable Warrant Certificate, the Warrant Shares will be validly issued as fully paid and non-assessable common shares of the Corporation.

We hereby consent to the use of our name in, and the filing of this opinion as an exhibit to, the Registration Statement, and to the reference to our firm under the headings "**Legal Matters**" and "**Advisors**" in the prospectus contained in the Registration Statement. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under the Securities Act or the rules and regulations promulgated thereunder. This opinion is expressed as of the date hereof unless otherwise expressly stated, and we disclaim any undertaking to advise you of any subsequent changes of the facts stated or assumed herein or any subsequent changes in Applicable Law.

Yours truly,

**FASKEN MARTINEAU DuMOULIN LLP**

/s/ Fasken Martineau DuMoulin LLP



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the reference to our firm under the caption “Experts” and to the incorporation by reference in this Registration Statement on Form F-1 of XORTX Therapeutics Inc. (the “**Company**”), of our report dated April 1, 2024, on the consolidated statements of financial position of the Company as of December 31, 2023 and 2022 and January 1, 2022, and the related consolidated statements of comprehensive loss, changes in shareholders’ equity and cash flows for the years ended December 31, 2023, 2022 and 2021, and the related notes, included in the Company’s Annual Report on Form 20-F for the year ended December 31, 2023 filed with the Securities and Exchange Commission.

/s/ Smythe LLP

Chartered Professional Accountants

Vancouver, Canada

November 15, 2024

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**Calculation of Filing Fee Tables**  
**FORM F-1**

(Form Type)

**XORTX THERAPEUTICS INC.**

(Exact Name of Registrant as Specified in its Charter)

N/A

(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 <sup>(1)</sup>	Proposed Maximum Offering Price Per Share <sup>(2)</sup>	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee <sup>(3)</sup>
<b>Newly Registered Securities</b>								
Fees to Be Paid	Equity	Common Shares, no par value	457(c)	810,810	1.355	\$1,098,647.55	0.0001531	\$168.20
Fees Previously Paid	-	-	-	-	-	-	-	-
	<b>Total Offering Amounts</b>					\$1,098,647.55		\$168.20
	<b>Total Fees Previously Paid</b>							\$0.00
	<b>Total Fee Offsets</b>							\$0.00
	<b>Net Fee Due</b>							\$168.20

- (1) There are being registered hereunder such indeterminate number of the securities of each identified class being registered as may be sold by the registrant from time to time at indeterminate prices, with the maximum aggregate public offering price not to exceed \$50,000,000.
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) under the U.S. Securities Act of 1933, as amended (the "Securities Act"), based on the average of the high (\$1.41) and low (\$1.30) prices of the registrant's Common Shares as reported on the Nasdaq Stock Market LLC on November 12, 2024.
- (3) The registration fee is calculated in accordance with Rule 457(o) under the Securities Act, based on an estimate of the proposed maximum aggregate offering price.