

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

SECURITIES AND EXCHANGE COMMISSION,

Plaintiff,

v.

RIPPLE LABS INC., BRADLEY
GARLINGHOUSE, and CHRISTIAN A.
LARSEN,

Defendants.

Case No. 20-CV-10832 (AT)

Expert Report of Professor Alan Schwartz

OCTOBER 4, 2021

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I. INTRODUCTION

A. BACKGROUND AND QUALIFICATIONS

1. I am the Sterling Professor of Law at Yale Law School, Professor of Management at the Yale School of Management, and a licensed attorney. I earned a B.S. from Bates College in 1961 and an LL.B. from Yale Law School in 1964.

2. I have taught and written in the fields of contracts, commercial law, corporate finance, mergers and acquisitions, and bankruptcy for more than thirty-five years. I have served as the President of the American Law and Economics Association; Editor of the Journal of Law, Economics, and Organization; a member of the American Law Institute; and chair of the Section on Contracts of the Association of American Law Schools. I am currently a member of the American Academy of Arts and Sciences. I have published articles on contract law in the Yale Law Journal, the Harvard Law Review, the Columbia Law Review, the Stanford Law Review, the Virginia Law Review, and the Journal of Legal Studies, among other law reviews and law journals. I have been identified, by HeinOnline, as one of the fifty most cited law professors (in law reviews) of all time, and by the Institute of Scientific Research as being in the top one-half of 1% of social scientists worldwide for downloaded papers. In addition to my academic pursuits, I have served on the boards of three publicly traded companies for more than twenty-five years. In the course of my corporate career, I have reviewed various contract types, including sales contracts, acquisition agreements, lending agreements, and procurement contracts. Among other things, I have taught the first-year Contracts course at Yale Law School for more than twenty-five years and the Advanced Contracts course several times. I have published articles and book chapters on contract interpretation, the common law of contracts and contractual default rules, third-party beneficiaries, efficient breach of contract, the expectation

remedy, consumer contract disclosures, contractual enforcement mechanisms, and pre-contractual liability and preliminary agreements, among many other contract-related topics, and also statutory interpretation. *See, e.g.*, Alan Schwartz and Joel Watson, *Conceptualizing Contract Interpretation*, 42 J. of Legal Studies 1 (2013); Alan Schwartz and Robert Scott, *Interpretation Redux*, 119 Yale L.J. 926 (2010); Alan Schwartz and Robert Scott, *The Common Law of Contract and the Default Rule Project*, 102 Va. L. Rev. 1523 (2016); Alan Schwartz and Robert Scott, *Third-Party Beneficiaries and Business Networks*, 7 J. of Legal Analysis 325 (2015); Alan Schwartz and Daniel Markovits, *(In)Efficient Breach of Contract*, II The Oxford Handbook of Law and Economics 20-40 (2017); Alan Schwartz and Daniel Markovitz, *The Expectation Remedy Revisited*, 98 Va. L. Rev. 1093 (2012); Alan Schwartz and Ian Ayres, *The No Reading Problem in Consumer Contract Law*, 66 Stan. L. Rev. 545 (2014); Alan Schwartz, *Contractual Enforcement Mechanisms and the Structure of Information*, 164 J. of Institutional and Theoretical Econ. 155 (2008); Alan Schwartz and Robert Scott, *Precontractual Liability and Preliminary Agreements*, 120 Harv. L. Rev. 661 (2007). My curriculum vitae, which contains a complete bibliography, is appended to this Report as Exhibit A.¹

3. Based on my teaching, scholarship, and practical experience with respect to (a) the types, classification, and categories of contracts; (b) the use, purpose, and meaning of contractual provisions; (c) how various contract types help parties achieve their commercial goals; and (d) what makes an agreement a legally enforceable contract, I believe I am qualified, under Federal Rule of Evidence 702, to provide the opinions set forth in this declaration.

¹ In the past four years, I have testified as an expert by deposition in *In re Harborview Mortgage Loan Trust 2005-10*, No. 27-TR-CV-17-32 (Minn. Dist. Ct.), in 2020, and testified at trial in *London in Gruber v. AIG Management France, S.A.* [2018] EWHC (Comm) 3030 (Eng.), in 2018.

4. I have been retained by Kellogg, Hansen, Todd, Figel & Frederick, PLLC, counsel to Ripple Labs Inc. (“Ripple”), to review, analyze, categorize, and describe the various contracts, and contractual provisions, that the Securities and Exchange Commission (“SEC”) has contended comprise part of the alleged offer, sale, and distribution of approximately 14.6 billion units of the digital asset XRP. *See* Am. Compl. ¶ 1. More specifically, I have been asked to identify and categorize the contracts by type and discuss certain provisions, and the absence of provisions, that may be relevant to the court and fact-finder in this case. I am not offering opinion or testimony regarding the ultimate legal interpretation or enforceability of Ripple’s contracts, whether those contracts constitute “investment contracts,” as alleged in the SEC’s First Amended Complaint (the “Complaint”), or whether Ripple has engaged in the violations alleged in the Complaint. Instead, I offer opinions and observations about the specific terms and provisions of contracts, or the absence of terms and provisions, that might assist the jury in deciding the ultimate issues in this case. In preparing this Report, I have been compensated at a rate of \$1,200 per hour. No part of my compensation is contingent on the substance of my opinions or on the outcome of this case.

B. CONTRACT REVIEW PROCESS

5. In connection with the preparation of this declaration, I have reviewed or had others (working at my direction and in accordance with criteria that I established) review more than 1,700 contracts that have been produced in discovery in this litigation.² I understand that these contracts reflect the various transactions and circumstances in which the SEC alleges that

² I understand that a good-faith effort was made to locate all contracts produced in discovery that were entered into by Ripple, and that involved an offer or exchange of XRP, whether by sale, purchase, transfer, or other means. Exhibits C through F to this declaration set forth all of the contracts collected during the course of this review, whether executed or unexecuted, including potentially duplicative documents bearing different Bates numbers. This was done in an attempt to ensure that all relevant contracts produced in discovery are covered in this declaration.

Defendants have, between February 2013 and December 2020, offered and sold XRP as an investment contract in violation of the registration requirements of the federal securities laws. The opinions in this Report are limited to the alleged offers and sales of XRP by Defendant Ripple. The facts and data I have relied on and considered in forming my opinions are disclosed in Exhibit B. I have specifically reviewed: the Complaint to gain an understanding of the SEC's allegations regarding Ripple's sales and distributions of XRP, the Wells Submission on Behalf of Ripple, and, working in consultation with counsel, the contracts identified in Exhibits C through F (hereinafter, when referred to collectively, the "Contracts"). Of those Contracts, I have personally reviewed more than 140 contracts that were exemplars of the categories and subcategories set forth in this declaration.³

6. In reaching and supporting the opinions summarized in this declaration, I first obtained a general understanding of the types of written agreements that Ripple used in connection with the various offers, sales, and distributions of XRP described in the Complaint. I did so by reviewing a selection of contracts that were provided to me by counsel, from which I made a preliminary determination of the types of contracts and the contractual terms that would be relevant to this declaration. Following this initial review, I was provided with access to all of the contracts included in Exhibits C through F. I asked that those contracts be reviewed and categorized based on specific criteria that I identified.⁴

³ For instance, included among the 1,700 contracts are more than 600 summaries of XRP purchase and more than 600 wholesale sales orders. I have reviewed representative samples of these contracts but did not personally review each contract.

⁴ The relevant criteria included (but were not limited to) the nature of the sale or distribution of XRP, as well as the presence or absence of: risk factors, disclaimers of third-party beneficiary rights, disclaimers of warranties, integration clauses, and post-contractual obligations Ripple owed to XRP purchasers.

7. Following this initial categorization, all of the Contracts were available to me for review. I examined some of them to confirm the presence or absence of the specific contractual provisions I identified. Thereafter, I asked that each contract be reviewed and categorized. After further review, the Contracts were listed in the appendices attached as Exhibits C through F to this declaration and described below, with each contract identified by type and Bates numbers. Given the extensive number of Contracts, I have not personally reviewed every Contract. The opinions and observations that follow are based on my extensive knowledge of contracts and contractual provisions, my scholarship and teaching regarding questions of contractual analysis and interpretation, my experience reviewing and interpreting contracts in a variety of commercial and academic contexts, my personal review of many of the Contracts, and the categorization of all Contracts as described below.

C. OBSERVATIONS ABOUT THE CONTRACTS IN *HOWEY*

8. I have reviewed the Supreme Court's decision in *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946) (the only case the SEC's Complaint cites), the materials underlying the Supreme Court's decision in that case (including the specific contracts at issue), the Transcript of Record, *Howey*, 328 U.S. 293 (No. 843), and the district court and court of appeals decisions. *See* 60 F. Supp. 440 (S.D. Fla. 1945), *aff'd*, 151 F.2d 714 (5th Cir. 1945). I will briefly describe some of my observations about the specific contracts at issue in *Howey*. I believe these observations set out a useful framework for my opinion and observations about Ripple's Contracts.

9. The defendant-respondents, W.J. Howey Company and Howey-in-the-Hills Service, Inc. (collectively "Howey"), were separate corporations under common control and management. Howey sold and serviced orange groves in Florida. *See Howey*, 328 U.S. at 294-95. According to the Supreme Court, Howey used two contracts that, when considered together,

constituted an offer of an “investment contract”: (i) a land sale contract with the W.J. Howey Company (the “Land Sale Contract”) and (ii) an “Indenture” contract with Howey-in-the-Hills Services, Inc. (the “Service Contract”). A buyer, under the Land Sale Contract, purchased fee simple title to certain orange groves. *See id.* at 295; *see also* 151 F.2d at 716 n.5 (stating that “[a]ll sales [were] an out-right sale of a definitely identified tract of land”). Additionally, a buyer could purchase the right, by entering into the Service Contract, to have Howey-in-the-Hills “properly maintain, fertilize, spray, cultivate, and otherwise care for the citrus groves” located and growing thereon, 60 F. Supp. at 441, and to pay over to the buyer a specified share of the proceeds from the sale of oranges.⁵

10. The Supreme Court’s conclusion that Howey offered an investment contract was based, in part, on its analysis of the commercial context (or economic substance) of Howey’s offer. The Court observed that the land buyers typically did not live in Florida, and had neither the competence nor the opportunity to farm the orange groves. 328 U.S. at 296. The groves thus were, standing alone, of little commercial value and could not provide a return to the land purchaser. *See id.* at 300. Because the Land Sale Contract required Howey to convey title to a citrus grove, but did not otherwise obligate Howey to do anything, the buyers needed another contract to make their investment potentially profitable. The Service Contract performed this function by legally obligating Howey to manage each individual orange grove as part of a larger “citrus fruit enterprise.” *Id.* at 299. More specifically, Howey agreed to cultivate and care for the citrus grove, harvest and market the orange crop, account for revenues and allocate expenses,

⁵ More specifically, Howey agreed “to pay over . . . the net proceeds of the fruit produced upon the [land owner’s property] after deducting” expenses incurred by Howey in providing its services. Transcript of Record at 17, *Howey*, 328 U.S. 293 (No. 843). The Service Contract further stated that Howey “may at its discretion market the fruit upon [the land owner’s property] in pools with other fruit of like variety and grade controlled or owned by [Howey],” dividing the proceeds proportionately among those contributing to the pools. *Id.* at 17-18.

and distribute profits to the landowner. The two contracts in *Howey* considered together, in the commercial circumstances, provided the factual basis for the Supreme Court’s observation that the *Howey* customers, after they bought land, depended solely on the legal obligation of Howey (or some other service company), as a citrus grove servicer, to protect the customers’ rights and to offer the customers the prospect of an investment return. Thus, the two contracts that Howey *offered* simultaneously to prospective purchasers constituted an “offer” of an investment contract. *See id.* at 300-01.

11. The Contracts that I have reviewed, by which Ripple offered, sold, and transferred XRP, *see* Exhibits C-F, do not include terms that obligate Ripple to perform post-sale actions similar to the ones in *Howey*; indeed, the contracts I have reviewed do not obligate Ripple to perform any relevant post-sale actions at all. Howey offered contracts to sell land *and* to sell services to the same party. Ripple offers contracts to *sell* XRP, but makes contracts to *buy* services relating to XRP, often from firms who are not parties to the sales contracts. I was not able to identify a single Contract that included an express provision that obligated Ripple to perform post-sale duties that could affect the value of XRP or return profits to any person. Under basic contract principles, Ripple could have no such obligations unless (a) an XRP purchaser is a third-party beneficiary of a service contract Ripple entered into with a service provider or (b) the XRP contract itself imposed post-sale obligations on Ripple.

12. I reviewed the Contracts from my perspective about the drafting and operation of service contracts in general: an economic agent – call them C – cannot be a third-party beneficiary of a contract between A and B *unless* the A/B parties intend to grant enforceable rights to C. As described in more detail below, certain of Ripple’s service contracts contain express provisions stating that the contracts create no rights in third persons. *See, e.g., infra* ¶ 41.

In certain circumstances, a court may infer the contract parties' intention to benefit a third party from the words of and circumstances attending the underlying agreement. Based on my experience, none of the service contracts that Ripple used to purchase services from third parties include express provisions that suggest there was an intention to convey third-party rights. The following are examples of contracts where third-party rights might be inferred:

- (i) B promises A that, in return for a consideration running to B, B will pay a debt A owes to C;
- (ii) A writes a master agreement in which suppliers accept duties to third parties. The agreement requires the suppliers to cooperate with each other. Supplier C can enforce a cooperation requirement in an A/B contract;
- (iii) Merchant A promises bank B that issues credit cards that the merchant will exercise care in preventing credit card fraud, but fails to do so. Another bank C that honors requests to pay by bank B's cardholders can sue the merchant A.

The second and third of these contracts apply when several parties are linked in a network or participate in an extended contractual scheme. In contrast, Ripple's business model does not require Ripple to be a member of a network or be a party to a master agreement such as that described in (ii) above. Ripple's return does not depend on, or confer any rights in, a third party. The service contracts it makes thus do not resemble the contract types that sometimes support third-party rights; rather, they are simple promotional, market making, or operational agreements.

13. The SEC claims that Ripple enters into service contracts with third parties "to assist in its efforts to accomplish as widespread a distribution of XRP as possible and to attempt to develop a 'use' for XRP." Am. Compl. ¶ 83. The SEC fails to allege, however, that Ripple's

actions to promote XRP created rights in an XRP holder or purchaser that required Ripple to undertake particular promotional activities or any promotional activities at all. Rather, Ripple's promotional actions are typical of the actions of most merchants who are concerned with the after-market for the products they sell. For instance, DeBeers attempts to protect the value of its diamonds; Rolex attempts to protect the value of its watches; BMW attempts to protect the value of its cars. Some diamond, watch, or car purchasers may believe that these promotional efforts will be ongoing and may, for example, buy a Rolex watch believing that it will hold its value, or even appreciate, over time. But when I analyze contracts and contractual provisions, the issue is not what a buyer may realistically, or probabilistically, expect in fact; the issue is whether DeBeers, Rolex, or BMW intend to confer *on buyers the right to require* the sellers to engage in certain levels or types or frequency of promotional activities. Unlike those buyers, the purchasers of Service Contracts in *Howey* had that right: "For a specified fee . . . the company is given full discretion and authority over the cultivation of the groves and the harvest and marketing of the crops." 328 U.S. at 296. There is no remotely analogous provision in the Ripple Contracts, or in the other examples discussed in this paragraph. A Rolex buyer, for example, cannot demand that Rolex continue to advertise in the New York Times. Ripple presumably also seeks to protect the after-sale value of XRP for its own benefit, *i.e.*, to encourage acceptance of their payment products and services that utilize XRP. But a purchaser of XRP – whether from Ripple or from some other source – has no enforceable rights against Ripple under the service contracts that Ripple buys if Ripple fails to protect the value of XRP in Europe, or pays an inadequate commission to an agent tasked with selling XRP, or makes an inadequate secondary market in XRP. I have been unable to identify any provision that would

make an XRP buyer a third-party beneficiary of the contracts by which Ripple purchases services from other parties.

14. Turning to the sales contracts, I begin with a basic point: the Restatement (Second) of Contracts, Section 1, defines a contract as a promise or set of promises for which the law gives a remedy. Thus, a Ripple contract is constituted by *the set of legally enforceable promises Ripple makes to an XRP buyer*. I have identified no provision of the Ripple sales contracts, unlike the Service Contract in *Howey*, that would obligate Ripple to take any actions affecting the value of XRP at all. To the contrary, the typical sales contract provides that “all title to and risk of loss related to such XRP passes to the customer.” *See, e.g.*, RPLI_SEC 0608975, § 3(c). Ripple also typically disclaims all Uniform Commercial Code (“UCC”) warranties and any liability for incidental or consequential damages. And, the contracts expressly limit the XRP purchaser’s remedies to a refund of the price, which is returned in the event the transaction does not occur. Rather than assume any post-sale obligation to promote and increase the value of XRP, the typical Ripple sales contract warns the customer that the future value of XRP depends on “the continued willingness of market participants to exchange fiat currency for virtual currency.” *See, e.g.*, RPLI_SEC 0668885, § 6(c)(v). The service contracts in *Howey* set forth specific contractually required value-affecting actions *that Howey had the unilateral ability to perform and that were essential* to enable the land purchaser to earn a profit. In contrast, the “continued willingness of market participants to exchange fiat currency for virtual currency” is a factor that is beyond Ripple’s unilateral control. *Id.* To summarize, the XRP sales agreements resemble the typical purchase and sale contract, under which the seller obligates itself to comply with warranties, if made, but do not otherwise require the seller to take post-sale steps to increase the value of goods sold unless the seller assumes such obligations.

15. New York or Delaware law governs many of the Ripple contracts. Those jurisdictions follow the “four corners rule” when interpreting contracts. This rule holds that when a contract is not ambiguous, the court’s search for meaning is restricted to the written document. *See, e.g., Tomhannock, LLC v. Roustabout Resources, LLC*, 128 N.E.3d 674, 675 (N.Y. 2019); *Fletcher v. Feutz*, 246 A.3d 540, 555 (Del. 2021). Ripple sales contracts also contain integration clauses, under which the parties acknowledge that neither of them makes any representations or promises beyond those that the written document contains. Commercial parties often look to New York and Delaware law to enforce integration clauses. It is my view that the Ripple sales contracts are not ambiguous under the interpretive canons that the relevant courts would apply. It would be impossible to find, in those contracts as written, terms or representations that could require Ripple to take post-sale actions that might affect XRP value.⁶

16. As I said above, I do not express an opinion regarding whether Ripple’s contracts, individually or taken together, comprise “investment contracts” under the securities laws. I do, however, teach and write in statutory fields. As examples, the UCC, the Bankruptcy Code, and the Delaware Corporate Code are statutes. Thus, statutory interpretation is within my field of expertise. A standard canon of statutory interpretation holds that when the legislature uses a word that has a common law meaning, but does not define that word, courts take the legislature to have adopted the common law meaning. *See, e.g., Scalia & Garner, Reading Law: The Interpretation of Legal Texts* 320 (2012). Section 2 of the Securities Act of 1933 uses the word “contract,” in the phrase “investment contract,” but does not specify what a contract is. Thus,

⁶ California takes a different approach to the interpretation of integration clauses. I understand that Ripple has asked the SEC through interrogatories and requests for admission to identify relevant provisions of the contracts that impose obligations on Ripple. To my knowledge, no such provisions have been identified. I reserve the right to supplement or amend my declaration based on additional information provided by the SEC.

under the standard interpretive canon, the meaning of the word “contract” in the statutory phrase “investment contract” would be its common law meaning.

17. Under the common law of contract, the “contracts” that Ripple makes are constituted by the promises that an XRP buyer could enforce against Ripple in court. While an XRP buyer could hope that Ripple would attempt to protect and increase XRP value, Ripple’s sales contracts – unlike the contracts in *Howey* – do not contain any express representations or promises that *obligate* Ripple to do so. In contract law terms, Ripple’s contracts therefore could not be the basis of a buyer’s commercially reasonable expectation that Ripple legally bound itself to engage in post-sale value-affecting activities regarding XRP. It would follow that the contracts Ripple uses to market XRP are distinguishable from the contracts *Howey* used to market citrus groves.

II. RIPPLE’S XRP CONTRACTS

18. The Contracts are, for the purposes of my opinion, divisible into four main categories.⁷ The *first category* is comprised of contracts for the sale of XRP, pursuant to which Ripple sold XRP directly to a counterparty (hereinafter the “Sales Contracts”). See Exhibit C. The Sales Contracts fall into two subcategories: those in which the counterparty stated its intent to resell the XRP to third parties (hereinafter the “Wholesale Sales Contracts”)⁸; and those in which the counterparty did not state such an intent (hereinafter the “Direct Sales Contracts”).⁹ The *second category*, after Sales Contracts, includes programmatic contracts, pursuant to which Ripple entered into contracts with, among others, [REDACTED], [REDACTED], and [REDACTED].

⁷ My discussion of each of the categories of contracts and associated exhibits also applies to ancillary agreements executed pursuant to a particular contract.

⁸ The Wholesale Sales Contracts were executed between February 2013 and March 2016, and appear to have been discontinued thereafter.

⁹ Throughout my discussion of the Contracts, I use the term “counterparty” to refer to any party to a Contract other than Ripple and the term “third party” to refer to any other person.

██████ (hereinafter the “Programmatic Contracts”). *See* Exhibit D. These counterparties agreed to sell Ripple’s XRP to third parties on Ripple’s behalf over digital asset exchanges, and remit the sale proceeds to Ripple, less a fee. The *third category* is comprised of contracts with market makers, employees, and other service providers, pursuant to which Ripple paid companies or individuals in XRP to provide various services to Ripple (hereinafter the “Services Contracts”). *See* Exhibit E. The Services Contracts fall into three subcategories: “Market-Making Contracts,” “Product Incentive Contracts,” and “Employee and Executive Compensation Contracts.” The *fourth category* is a smaller set of contracts that fit into none of the foregoing categories (hereinafter the “Other Contracts”). *See* Exhibit F.

A. SALES CONTRACTS

19. In my opinion, the Sales Contracts, identified in Exhibit C, are, in substance, straightforward purchase and sale agreements, pursuant to which Ripple agreed to deliver a specific number of units of XRP to a contractual counterparty that took title to the XRP, in exchange for the receipt of fiat currency from that counterparty, typically U.S. dollars (“XRP Sales Contracts”).

20. I have divided the Sales Contracts into two subcategories: Direct Sales Contracts and Wholesale Sales Contracts. In the Direct Sales Contracts, Ripple sold units of XRP directly to a counterparty for the counterparty’s own use. In the Wholesale Sales Contracts, Ripple sold units of XRP to a counterparty that stated its intent to sell those units to an ultimate third-party purchaser in a transaction to which Ripple was not a party.

21. ***Direct Sales Contracts.*** This subcategory of Service Contracts can be further subdivided into (a) Master Purchase Agreements, (b) Individual Purchase Agreements, (c) Master Commitment to Sell Agreements, and (d) Master Loan to Purchase Agreements.

22. In the Master Purchase Agreements, Ripple and its counterparty would execute a single master agreement containing terms that would apply to all subsequent individual sales of XRP to a specific counterparty. *See, e.g.*, RPLI_SEC 0668885, § 1(a) (stating that “[f]rom time to time, the Parties may enter into transactions . . . governed by this Agreement”). A separate document titled “Summary of XRP Purchase,” a form of which was typically appended to the Master Purchase Agreement, would memorialize each specific sale of XRP made pursuant to the master agreement. The Summary of XRP Purchase set forth, among other things, the total XRP units subject to the transaction, and the total transaction value. *See, e.g., id.* § 1(b) (“Upon agreeing to enter into a Transaction . . . [Ripple] shall promptly deliver to the Customer . . . [a] Summary of XRP Purchase”).

23. In the Individual Purchase Agreements, Ripple and its counterparty agree to exchange a defined quantity of XRP for a defined quantity of U.S. dollars. *See, e.g.*, RPLI_SEC 0000517. These Individual Purchase Agreements are similar in all material respects to the Master Purchase Agreements, except that each Individual Purchase Agreement is a one-time transaction.

24. In the Master Commitment to Sell Agreements, Ripple and its counterparty agree to terms pursuant to which Ripple will transfer units of XRP to a segregated wallet the counterparty maintains, upon the counterparty’s request. The parties thus established a bailment relationship for purposes of “administrative convenience.” *See, e.g.*, RPLI_SEC 0301016, § 1(b) (stating that the transfer of XRP by Ripple to the counterparty “is not a sale or purchase of such XRP by” the counterparty, who “holds such XRP as a bailee”). The counterparty would then purchase units of XRP by withdrawing the units from the segregated wallet. *See, e.g., id.* § 2(a). A separate document, often titled “Summary of XRP Commitment,” would memorialize each

transfer of XRP by Ripple to the segregated wallet. *See, e.g., id.* at Appendix A. These Agreements are similar in all material respects to the Master Purchase Agreements summarized above, except that title passes upon the counterparty's withdrawal of units of XRP from the segregated wallet, rather than upon delivery of units of XRP by Ripple to the segregated wallet maintained by the counterparty.

25. In the Master Loan to Purchase Agreements, Ripple and its counterparty agree that Ripple would transfer units of XRP to a segregated wallet maintained by the counterparty upon the counterparty's request. *See, e.g.,* RPLI_SEC 0609008. As with Master Commitment to Sell Agreements, the counterparty would purchase units of XRP by withdrawing them from the segregated wallet. The principal distinction between Master Loan to Purchase Agreements and Master Commitment to Sell Agreements is that under the former, the counterparty would be required to return any units of XRP transferred to the segregated wallet that the counterparty had not withdrawn (and thus not purchased) by a certain date. A separate document, often titled "Terms of XRP Loan," would memorialize each transfer of XRP by Ripple to the segregated wallet. *See, e.g., id.* at Appendix A.

26. ***Wholesale Sales Contracts.*** This subcategory of Sales Contracts is further divisible into subcategories: Wholesale Sales Orders and Purchase Letters of Intent.

27. In the Wholesale Sales Orders, Ripple would sell units of XRP to a counterparty for resale to third parties. *See, e.g.,* RPLI_SEC 0609563 at Attachment A, § 1.1 (stating that the counterparty "is purchasing the Purchased [XRP] solely to resell or otherwise distribute the [XRP] to Purchasers, and not to use the [XRP] as an End User or for any other purpose"). The counterparty would expressly represent and warrant that it was not purchasing XRP for any investment purpose and would not market, promote, or otherwise offer the purchased units of

XRP as an investment to any other person. *See id.* § 1.4. In all other material respects, the Wholesale Sales Orders resemble Individual Purchase Agreements.

28. In Purchase Letters of Intent, Ripple would agree to sell units of XRP to a counterparty for resale to third parties. *See, e.g.*, RPLI_SEC 0676713. The counterparty would purchase units of XRP from Ripple at market price, and any resale of those units to third parties was required to be at or above the market price at the time of resale. Ripple would pay the counterparty a commission of 10% to 20% on its purchases after the end of every month.

29. The Sales Contracts – both the Direct and Wholesale – are, in material respects, contracts for the sale of goods of a type that are typically governed by Article 2 of the UCC.¹⁰ *See* U.C.C. § 2-301 (stating that “[t]he obligation of the seller is to transfer and deliver [the goods specified in the contract] and that of the buyer is to accept and pay in accordance with the contract”). The governing Sales Contracts typically contain:

- terms under which Ripple and a counterparty purchaser have agreed to exchange XRP for funds, typically U.S. dollars, in a current transaction or in future transactions;
- a provision stating that all title and risk of loss to all purchased units of XRP passes to the purchaser immediately upon delivery;
- an acknowledgement that the purchased units of XRP do not grant the purchaser any right to make any demand on Ripple;
- an acknowledgement that the purchaser is responsible for all issues and claims that relate to future sale or distribution of the purchased units of XRP by the purchaser;

¹⁰ It is unclear whether sales of XRP constitute sales of “goods” within the meaning of the UCC. *See* U.C.C. § 2-105(1) (stating that “[g]oods” means all things (including specially manufactured goods) which are movable at the time of identification to the contract for sale other than the money in which the price is to be paid, investment securities (Article 8) and things in action”). The UCC was completed in 1952 when “goods” actually could be moved. Virtual currency contracts to sell, such as the XRP contracts, seem within the spirit of UCC regulation. My opinion, however, does not turn on whether the UCC governs or not. This is because common law contractual principles concerning the simple sale of an asset are similar to the principles Article 2 of the UCC adopted. *See* U.C.C. § 1-103 cmt. 2 (stating that “[t]he Uniform Commercial Code was drafted against the backdrop of existing bodies of law, including the common law and equity”).

- disclaimers of express and implied warranties;
- a termination clause that allows Ripple, but not the counterparty, to terminate for breach of post-sale obligations;
- a provision stating that the agreement and any subsequent documents related to an individual transaction (*e.g.*, a Summary of XRP Purchase) constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

30. Further, each of the Sales Contracts lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty.

31. Certain of the Sales Contracts include provisions in which Ripple provided custody services – *i.e.*, Ripple agreed, after transferring title to the purchased units of XRP to the purchaser, to retain custody of the purchased units of XRP for administrative convenience. These custody agreements did not impose any duties on Ripple other than to safeguard the custodied units of XRP and to distribute those units in accordance with the purchaser's instructions.

B. PROGRAMMATIC CONTRACTS

32. The Contracts identified in Exhibit D are Programmatic Contracts under which Ripple transfers possessory interests in units of XRP to the counterparty and the counterparty promises to sell those units of XRP to various third parties on one or more digital asset

exchanges.¹¹ *See, e.g.,* RPLI_SEC 0507300. Such counterparties include [REDACTED], [REDACTED] and [REDACTED]. Following such a sale, the counterparty agrees to transfer fiat currency to Ripple in an amount determinable by the provisions of the contract. The difference between the net proceeds of the sale on the exchange and the amount remitted to Ripple reflected Ripple's consideration to the counterparty for its marketing services.

33. The Programmatic Sales Contracts are, in substance, consignment agreements pursuant to which Ripple is the consignor and the counterparty is the consignee. Under contract principles, Ripple transfers to the counterparty possessory interests in the units of XRP for the purpose of selling them. Ripple either disclaims, or the Programmatic Sales Contracts contain no provision under which Ripple agrees to assume, any post-contractual obligations either to the counterparty or any third-party subsequent purchaser.

34. Each of the Programmatic Contracts contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

35. Further, each of the Programmatic Contracts lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to the counterparty with respect to any XRP transferred pursuant to the contract; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty with respect to any XRP transferred pursuant to the contract.

¹¹ Ripple also entered into programmatic contracts that included provisions on market-making services. I address these contracts in the section on Market-Making Contracts.

C. SERVICES CONTRACTS

36. Each of the Services Contracts identified in Exhibit E requires a third party to provide various services to Ripple at a price quoted in XRP. None of the Services Contracts requires Ripple to transfer units of XRP in exchange for U.S. dollars or any other fiat currency. The only consideration provided by the counterparty is its services.

37. I have subdivided the Services Contracts into three subcategories: Market-Making Contracts, Product Incentive Contracts, and Employee and Executive Compensation Contracts.

38. ***Market-Making Contracts.*** One subcategory of the Services Contracts in Exhibit E are Market-Making Contracts, under which Ripple purchases market-making services from various counterparties. The market-making services include, but are not limited to, quoting bid and offer prices for transactions in currency pairs of XRP and various fiat currencies (*e.g.*, U.S. dollar-XRP; Euro-XRP; Yen-XRP). Such counterparties include [REDACTED], [REDACTED], [REDACTED], and [REDACTED]. In certain Market-Making Contracts, Ripple paid for the market maker's services by making grants of units of XRP. *See, e.g.*, RPLI_SEC 0890941. In others, Ripple loaned or leased units of XRP to the market maker, sometimes pursuant to provisions in which the counterparty service provider paid Ripple interest. In these contracts, the counterparty used the loaned or leased units of XRP in its market-making activities; these enabled the market maker to earn revenue from the bid-ask spread. *See, e.g.*, RPLI_SEC 0898919. The terms of the Market-Making Contracts required these service providers to “quote binding bid and offer prices for [agreed-upon] Currency Pairs” in order to “promote liquidity of fiat and crypto currencies.” *See, e.g.*, RPLI_SEC 0890941.

39. ***Product Incentive Contracts.*** Another subcategory of the Services Contracts in Exhibit E are Product Incentive Contracts, pursuant to which Ripple transfers units of XRP to a

counterparty in exchange for the counterparty's agreement to use one or more Ripple products. An example of such a product is Ripple's On Demand Liquidity ("ODL") product. Ripple was also a party to Product Incentive Contracts that transferred XRP for use in third-party products that utilize XRP and the XRP Ledger.

40. ***Employee and Executive Compensation Contracts.*** A final subcategory of the Services Contracts in Exhibit E are Employee and Executive Compensation Contracts, in which Ripple uses units of XRP for employee and executive compensation, including deferred and performance-based bonus compensation.

41. The Services Contracts typically contain:

- a provision stating that the agreement and any related documents constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

42. Further, each of the Services Contracts lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

D. OTHER CONTRACTS

43. In my opinion, the Contracts identified in Exhibit F include various agreements with provisions that differ from the Contracts included in the XRP Sales Contracts, Programmatic Contracts, or Service Contracts categories described above.

44. I have subdivided these Contracts into several subcategories: Master Hosted Services Agreements, Loans and Promissory Notes, Custody Agreements, RippleWorks

Contracts, Settlement Agreements, Xpring Contracts, Joint Venture Contracts, and Miscellaneous Contracts.

45. ***Master Hosted Services Agreements.*** One subcategory of the Contracts in Exhibit F are titled, in substance, “Master Hosted Services Agreements.” Based on my review of a sample of these contracts, as well as other information I have been provided, these are contracts pursuant to which Ripple grants a counterparty permission to access or use Ripple’s software products and other services, including ODL. In addition, I have reviewed a sample of various work orders that were executed pursuant to the terms of the Master Hosted Services Agreements. The work orders identify the specific products and services, including ODL, that Ripple makes available to the counterparty, as well as related support for those products and services.

46. For example, under one Master Hosted Services Agreement, Ripple granted MoneyGram access to the ODL platform. *See* RPLI_SEC 0272291 (“Ripple Master Hosted Services Agreement”); RPLI_SEC 0239684 (“Ripple Work Order #1”); SEC-LIT-EPROD-000077199 (“Amendment #1 to Ripple Master Hosted Services Agreement and Ripple Work Order #1”); MONEYGRAM_SEC_0016678 (“Amended and Restated Ripple Work Order #1”); SEC-LIT-EPROD-000077212 (“Letter Amendment”). Through the work orders and amendments associated with the agreement, Ripple agreed to pay MoneyGram rebates in XRP into a segregated wallet for certain costs incurred as a result of a gap between exchange rates charged on Ripple’s platform and market rates. Ripple also agreed to pay MoneyGram certain market development fees and bonuses in XRP if the transactions executed on Ripple’s platform exceeded specified volume thresholds.

47. ***Loans and Promissory Notes.*** Another subcategory of the Contracts in Exhibit F are loan agreements and promissory notes, setting out the terms of a loan and its repayment.

48. ***Custody Agreements.*** Another subcategory of the Contracts in Exhibit F are contracts in which Ripple agrees to maintain custody of XRP owned by the counterparty.

49. ***RippleWorks Contracts.*** Another subcategory of the Contracts in Exhibit F are contracts in which Ripple transferred units of XRP to the RippleWorks Foundation, a charitable organization that provides grants and other funding to social impact ventures, pursuant to a Master XRP Custody Agreement between the company and the foundation.

50. ***Settlement Agreements.*** Another subcategory of the Contracts in Exhibit F are agreements pursuant to which Ripple and a counterparty agreed to settle a commercial dispute, on terms that included the transfer of XRP.

51. ***Xpring Contracts.*** Another subcategory of the Contracts in Exhibit F are commercial arrangements in which Ripple invests cash or XRP in third parties in exchange for equity or services regarding potential uses of XRP and the XRP Ledger.

52. ***Joint Venture Contracts.*** Another subcategory of the Contracts in Exhibit F relate to the creation of a joint venture company between Ripple and SBI Holdings, Inc.

53. ***Miscellaneous Contracts.*** A final subcategory of the Contracts in Exhibit F are contracts that do not fit into any of the categories above. Specifically, the Miscellaneous Contracts are preliminary agreements between Ripple and a counterparty regarding formation of a private investment fund that I understand was never created.

54. Many of the Other Contracts contain, where appropriate:

- disclaimers of express and implied warranties;
- a provision stating that the agreement and any related documents constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

55. Further, each of the Other Contracts lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

III. ANALYSIS OF RIPPLE'S XRP CONTRACTS

A. SALES CONTRACTS

i. Direct Sales Contracts

56. I have reviewed the Master XRP Purchase Agreement between XRP II, LLC (“XRP II”) and [REDACTED] (“[REDACTED]” dated August 6, 2018 (the “[REDACTED]” produced as RPLI_SEC 0668885, which is a representative example of an XRP Direct Sales Contract.

57. The [REDACTED] Agreement is a relatively straightforward master contract for the sale of an asset in exchange for funds. In substance, the [REDACTED] Agreement sets out terms pursuant to which XRP II and [REDACTED] may enter into individual transactions for the sale of XRP upon the execution of a “Summary of XRP Purchase.” *See id.* § 1(a) (stating that “[f]rom time to time, [XRP II and [REDACTED] may enter into transactions in which [XRP II] . . . will agree to transfer XRP, the digital asset native to the XRP Ledger, to [REDACTED] against the transfer of funds, typically U.S. dollars, by [REDACTED] to [XRP II]”). In this respect, the [REDACTED] Agreement is akin to a requirements contract in which a buyer and seller agree in advance to terms upon which a buyer can make purchases from time to time. Requirement contracts are treated under the UCC, which requires the seller to satisfy the buyer’s reasonable requirements but otherwise imposes only warranty obligations.

58. There are no express provisions or representations in the [REDACTED] Agreement that obligate Ripple to do anything other than deliver the purchased units of XRP. Similarly,

there are no express provisions or representations in the [REDACTED] Agreement in which Ripple assumes any obligation to any third party. In addition, there are several express provisions of the [REDACTED] Agreement that affirmatively state, in substance, that Ripple has no post-delivery obligations to any third party.

59. Section 3(c) of the [REDACTED] Agreement, titled “Risk of Loss,” provides that all title to the units of XRP sold by XRP II passes to [REDACTED] immediately upon delivery of the units to [REDACTED]. *See id.* § 3(c).

60. Section 3(d) of the [REDACTED] Agreement is titled “Purchaser Acknowledgement” and states:

[REDACTED] acknowledges and agrees that (i) the Purchased XRP do not represent a right to make any demand on [Ripple]; (ii) [Ripple] has no obligation to redeem or exchange the Purchased XRP for monetary value, goods, services or any other item; and (iii) [Ripple] is not responsible for any use by [REDACTED] or any third party of the Purchased XRP.

Id. § 3(d). The [REDACTED] Agreement thus includes express provisions in which [REDACTED] expressly acknowledges that [REDACTED] has no right to demand any performance by Ripple – and no expectation of future performance by Ripple – other than what is affirmatively set forth in the Agreement.

61. In addition, Section 3(f) of the [REDACTED] Agreement, titled “Responsibility to Purchaser’s Customers,” states that [REDACTED] “is responsible for all customer service and other issues or claims that relate to [REDACTED] distribution or sale of the Purchased XRP. [REDACTED] shall make no representations or warranties to any other party concerning, or on behalf of, [XRP II].” *Id.* § 3(f).

62. The [REDACTED] Agreement includes a number of disclaimers, warranties, and representations that address Ripple’s (lack of) future obligations to [REDACTED] and other third parties. Section 4(a) of the Agreement provides that:

EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, XRP II MAKES NO REPRESENTATIONS OR WARRANTIES IN RELATION TO THE PURCHASED XRP, THIS AGREEMENT OR ITS PERFORMANCE HEREUNDER, INCLUDING (WITHOUT LIMITATION) IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, OR IMPLIED WARRANTIES ARISING OUT OF COURSE OF DEALING, COURSE OF PERFORMANCE OR USAGE OF TRADE.

Id. § 4(a). Section 4(c) of the Agreement also expressly states that Ripple disclaims liability for all consequential damages. *See id.* § 4(c). These affirmative provisions are routine in commercial transactions.

63. Section 5, titled “Termination,” is also relevant to post-contractual obligations. It provides that, upon delivery of the purchased units of XRP, Ripple – but not [REDACTED] – has termination rights. Section 5(b) allows Ripple, “in its sole discretion, [to] terminate this Agreement immediately upon notice to [REDACTED] if [REDACTED] breaches any of its obligations under this Agreement.” Only Ripple can terminate for breach because Ripple makes no promises that it could breach. The [REDACTED] Agreement does not include any express post-delivery termination rights for [REDACTED]. Provisions of this nature are typically included in commercial agreements when only one party assumes subsequent obligations, as indicated by the provision allowing termination only by the party with no such obligations.

64. The [REDACTED] Agreement includes what is commonly known as an integration clause. Section 1(b) states that each Summary of XRP Purchase, as well as the [REDACTED] Agreement itself, “constitute the terms agreed between [XRP II] and [REDACTED] with respect to

the Transaction to which the Summary of XRP Purchase relates.” *Id.* § 1(b). The Agreement further states that it constitutes the entire agreement between the parties with regard to the subject matter therein and supersedes any other agreements, representations, or understandings between the parties, whether written or oral. *See id.* § 7(c). The Agreement also states that it cannot be modified except by a writing signed by both parties. *See id.* These are standard provisions in commercial agreements.

65. Under Section 6 of the [REDACTED] Agreement, titled “Required Disclosures,” [REDACTED] acknowledges a series of risks associated with virtual currency, including XRP. [REDACTED] acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to Federal Deposit Insurance Corporation [“FDIC”] or Securities Investor Protection Corporation protections.” *Id.* § 6(c)(i).

[REDACTED] also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 6(c)(v).

66. In addition, the [REDACTED] Agreement includes no express provision or other representation that confers any rights on third parties. *See id.* § 7(d) (stating that the “Agreement is not intended to confer any right or benefit on any third party”).

67. My review of this contract did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;

- that entitles [REDACTED] as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to [REDACTED] after delivery of the purchased units of XRP; or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED]

68. I have reviewed the entirety of the [REDACTED] Agreement, including Section 2, which contains terms related to restrictions on transfer of XRP by [REDACTED]. In my opinion, none of those provisions modify in any way, directly or indirectly, the views expressed in the paragraphs above because the provisions impose no post-contractual obligations on Ripple.

69. I have also reviewed several Summaries of XRP Purchase pursuant to the [REDACTED] Agreement. *See, e.g.*, RPLI_SEC 0246828 (Summary of XRP Purchase for purchase of [REDACTED] units of XRP in exchange for [REDACTED] on August 9, 2018). The Summaries of XRP Purchase state that the transactions referenced therein are governed by the terms and conditions of the [REDACTED] Agreement and they do not add any substantive terms to the Agreement other than the number of units of XRP purchased, the U.S. dollar price, and the date of the transaction.

70. In my opinion, the Summaries of XRP Purchase under the [REDACTED] Agreement do not modify in any way, directly or indirectly, the views expressed in the paragraphs above.

71. Based upon my review of a sample of the Direct Sales Contracts in Exhibit C, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar in relevant part to the [REDACTED] Agreement.

Specifically, the governing Direct Sales Contracts typically contain:

- terms under which Ripple and a counterparty purchaser have agreed to exchange XRP for funds, typically U.S. dollars, in a current transaction or in future transactions;
- a provision stating that all title and risk of loss to all purchased units of XRP passes to the purchaser immediately upon delivery;

- an acknowledgement that the purchased units of XRP do not grant the purchaser any right to make any demand on Ripple;
- an acknowledgement that the purchaser is responsible for all issues and claims that relate to future sale or distribution of the purchased units of XRP by the purchaser;
- disclaimers of express and implied warranties;
- a termination clause that allows Ripple, but not the counterparty, to terminate for breach of post-sale obligations;
- a provision stating that the agreement and any subsequent documents related to an individual transaction (*e.g.*, a Summary of XRP Purchase) constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

72. Further, each of the Direct Sales Contracts listed in Exhibit C lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the purchaser, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary duty or similar duty to the purchaser.

73. Based upon the review of the Contracts in Exhibit C, those Contracts also contain various other provisions, including restrictions on transfer and other provisions specific to the particular subcategories of Direct Sales Contracts identified in Section II.A. None of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above because the provisions do not impose any post-contractual obligations on Ripple.

74. I reach the conclusions and opinions set forth above with respect to each of the Direct Sales Contracts identified in Exhibit C. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Direct Sales Contracts in Exhibit C.

ii. Wholesale Sales Contracts

75. I have reviewed the Ripple Currency Wholesale Sales Order between XRP Fund II and [REDACTED]. ([REDACTED] dated November 12, 2013 (the “[REDACTED] Wholesale Order”), produced as RPLI_SEC 0304341, which is a representative example of an XRP Wholesale Sales Contract.

76. The [REDACTED] Wholesale Order and attachments thereto set out terms pursuant to which Ripple sells XRP to [REDACTED] on a wholesale basis for resale to third parties. The [REDACTED] Wholesale Order provides that [REDACTED] purchases [REDACTED] million XRP for approximately [REDACTED].

77. Section 1.1 of Attachment A, titled “Wholesale Purchase Transaction,” states that [REDACTED] “is purchasing the [XRP] solely to resell or otherwise distribute the [XRP] to Purchasers, and not to use the [XRP] as an End User or for any other purpose.” It provides that [REDACTED] is “fully responsible for any use or further distribution” of the purchased XRP.

78. Section 1.2 of Attachment A is titled “Company’s Acknowledgment” and states:

[REDACTED] acknowledges and agrees that: (a) [XRP] [does] not represent a right to make any demand on XRP Fund II[;] (b) [XRP Fund II] has no obligation to redeem or exchange [XRP] for monetary value, goods, services, or any other item, and (c) although XRP Fund II owns, and under this Agreement will transfer[] title to the [XRP] to [REDACTED] XRP Fund II is not the “issuer” of [XRP] and does not set terms of use applicable to End User of [XRP].

79. Section 1.4 of Attachment A is titled “No Investment Purpose” and states:

[REDACTED] represents and warrants that it is not purchasing the [XRP] for any Investment purpose. [REDACTED] shall not: (a) market, promote or otherwise offer the [XRP] as an Investment to any other party, or (b) resell or otherwise distribute the [XRP] to any other party if [REDACTED] has actual or reasonable knowledge that such other party intends to purchase or acquire the [XRP] as an Investment.

80. Section 1.6.2 of Attachment A, titled “Risk of Loss,” provides that upon XRP Fund II’s transmission of the XRP to [REDACTED] title to and risk of loss of the XRP passes to [REDACTED]. [REDACTED] acknowledges and agrees that XRP Fund II has no liability to [REDACTED] or to any third party for any loss, theft or misuse of any transferred XRP.

81. The [REDACTED] Wholesale Order includes a number of disclaimers, warranties, and representations that address Ripple’s (lack of) future obligations to [REDACTED] and other third parties. Section 8.1 of Attachment A provides that:

EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, XRP FUND II MAKES NO REPRESENTATIONS OR WARRANTIES IN RELATION TO THE PURCHASED [XRP], THIS AGREEMENT OR ITS PERFORMANCE HEREUNDER, INCLUDING (WITHOUT LIMITATION) IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, FITNESS FOR A PARTICULAR PURPOSE, OR IMPLIED WARRANTIES ARISING OUT OF COURSE OF DEALING, COURSE OF PERFORMANCE OR USAGE OF TRADE.

Id. § 8.1. Section 4.2 of Attachment A also expressly states that Ripple disclaims liability for all consequential damages. These affirmative provisions are routine in commercial transactions.

82. The [REDACTED] Wholesale Order includes what is commonly known as an integration clause. Section 9.7 of Attachment A states that the agreement represents the entire agreement between the parties with respect to the subject matter and supersedes any previous or contemporaneous oral or written agreements regarding such subject matter. The second paragraph of the [REDACTED] Wholesale Order itself also states that XRP Fund II “will not be bound by, and specifically objects to, any term, condition or other provision that is different from or in addition to the provisions of this Agreement that is submitted by [REDACTED] in any purchase order, receipt, acceptance, confirmation, correspondence, or otherwise, unless XRP Fund II specifically agrees to such provision in a written instrument signed by XRP Fund II.”

83. In addition, Section 9.3 of Attachment A to the [REDACTED] Wholesale Order, titled “No Third Party Beneficiaries,” states that the agreement is not intended to confer any right or benefit on any third party, including any third-party purchaser.

84. My review of the [REDACTED] Wholesale Order did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles [REDACTED] as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to [REDACTED] with respect to any XRP transferred pursuant to the order; or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED] with respect to any XRP transferred pursuant to the order.

85. Based upon my review of a sample of the Wholesale Sales Contracts in Exhibit C, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar to the [REDACTED] Wholesale Order. Specifically, the Wholesale Sales Contracts typically contain:

- terms under which Ripple and a counterparty purchaser have agreed to exchange XRP for funds, typically U.S. dollars, in a current transaction or in future transactions;
- a provision stating that all title and risk of loss to all purchased units of XRP passes to the purchaser immediately upon delivery;
- an acknowledgement that the purchased units of XRP do not grant the purchaser any right to make any demand on Ripple;
- an acknowledgement that the purchaser is responsible for all issues and claims that relate to future sale or distribution of the purchased units of XRP by the purchaser;
- disclaimers of express and implied warranties;

- a provision stating that the agreement constitutes the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

86. Further, each of the Wholesale Sales Contracts listed in Exhibit C lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the purchaser, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to the purchaser or any other person with respect to any XRP transferred pursuant to the contract; or
- that imposes on Ripple any fiduciary or similar duty to the purchaser with respect to any XRP transferred pursuant to the contract.

87. Based on the review of the Wholesale Sales Contracts in Exhibit C, those Contracts also contain various other provisions, including limitations on resale or distribution and other provisions specific to the particular subcategories of Wholesale Sales Contracts identified in Section II.A. None of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above because the provisions do not impose any post-contractual obligations on Ripple.

88. I reach the conclusions and opinions set forth above with respect to each of the Wholesale Sales Contracts identified in Exhibit C. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Wholesale Sales Contracts in Exhibit C.

B. PROGRAMMATIC CONTRACTS

89. I have reviewed the Programmatic Market Activity Agreement between Ripple Markets Inc. and [REDACTED] (“[REDACTED]” dated June 2, 2017 (the “[REDACTED] Agreement”), produced as RPLI_SEC 0507300, which is a representative example of a programmatic contract.

90. The [REDACTED] Agreement is a relatively straightforward contract in which a sales agent markets an owner’s goods in exchange for a commission determined by the sale proceeds. In substance, the [REDACTED] Agreement sets out terms pursuant to which Ripple gives possession of the XRP to [REDACTED] and [REDACTED] agrees to sell the XRP on digital asset exchanges, according to guidelines established by Ripple. In many respects, the [REDACTED] Agreement is similar to a traditional consignment arrangement.

91. Section 2 of the [REDACTED] Agreement, titled “Programmatic Market Activity,” provides that [REDACTED] agrees to transact in XRP according to a programmatic schedule provided by Ripple on a monthly basis in advance of the subject month. Ripple reserves the right to adjust the schedule during the month. *See id.* § 2.

92. The [REDACTED] Agreement provides that [REDACTED] will maintain a segregated wallet or wallets solely to transact according to the programmatic schedule provided by Ripple. The wallet or wallets are to be funded in amounts of XRP at Ripple’s sole discretion. *See id.*

93. Section 3, titled “Remittance of Proceeds to Ripple and Payment to [REDACTED]” provides that Ripple can at any time direct [REDACTED] to remit to Ripple [REDACTED] of the proceeds of the XRP sales made pursuant to the [REDACTED] Agreement, with [REDACTED] of the proceeds to be retained by [REDACTED] as consideration for its efforts in executing sales of XRP. *See id.* § 3.

94. Upon termination of the Agreement, [REDACTED] is required to return to Ripple any XRP that it has not sold pursuant to a programmatic schedule. *See id.* § 5.

95. Section 9, titled “Limitation of Liability,” provides that “IN NO EVENT WILL RIPPLE’S AGGREGATE AND CUMULATIVE LIABILITY FOR ANY LOSSES AND DAMAGES ARISING OUT OF OR RELATED TO THIS AGREEMENT OR THE SUBJECT MATTER THEREOF . . . EXCEED THE TOTAL AMOUNT PAID BY RIPPLE to GSR IN THE PRIOR TWELVE (12) MONTH PERIOD BEFORE THE EVENT GIVING RISE TO THE CLAIM.” *Id.* § 9.

96. Section 10, titled “Warranties,” provides that each party represents to the other that it is a duly organized and registered legal entity and has all necessary power and authority to enter into the agreement and that the [REDACTED] Agreement creates a binding obligation on both parties. Ripple makes no further warranty of merchantability, fitness, or any other kind.

97. Section 11, titled “Relationship of the Parties,” provides that “[n]either party will have the authority to enter into any contract on behalf of the other party or to otherwise bind the other party to any legal obligation.” *Id.* § 11. This provision is typical in commercial agreements, and, as used here, appears to express an acknowledgment between the parties that Ripple will have no relationship, whether in privity or otherwise, with any purchasers of the units of XRP that Ripple transfers to [REDACTED] segregated wallet or wallets.

98. The [REDACTED] Agreement includes what is commonly known as an integration clause. Section 13 provides that the [REDACTED] Agreement constitutes the entire agreement between the parties with respect to the subject matter therein and supersedes all prior representations and understandings, whether oral, written, electronic, or otherwise. *See id.* § 13.

99. My review of the [REDACTED] Agreement did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;

- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles [REDACTED] as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to [REDACTED] or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED]

The only express provisions applicable to Ripple relate to Ripple delivering units of XRP to [REDACTED] pursuant to a programmatic schedule determined at Ripple's sole discretion.

100. I have also reviewed several Amendments to the [REDACTED] Agreement. *See, e.g.,* RPLI_SEC 0537727. None of the Amendments modify in any way, directly or indirectly, the views expressed in the paragraphs above.

101. Based upon my review of a sample of the Programmatic Contracts identified in Exhibit D, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of the Programmatic Contracts is, in substance, similar to the [REDACTED] Agreement. Specifically, each of these Contracts contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

102. Further, each of the agreements listed in Exhibit D lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to the counterparty; or
- that imposes on Ripple any fiduciary duty or similar duty to the purchaser.

103. Based on the review of the Contracts in Exhibit D, those Contracts also contain various other provisions, related to issues such as notice requirements and termination rights. None of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

104. I reach the conclusions and opinions set forth above with respect to each of the Programmatic Contracts identified in Exhibit D. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, with regard each of the Contracts in Exhibit D.

C. SERVICES CONTRACTS

i. Market-Making Contracts

105. I have reviewed the Market-Making Agreement between Ripple Markets, Inc. and [REDACTED] (“[REDACTED] dated January 1, 2015 (the “[REDACTED] Agreement”), produced as [REDACTED] 00010953, which is a representative example of the Market-Making Contracts identified in Exhibit E.

106. In my opinion, the [REDACTED] Agreement is a straightforward contract in which [REDACTED] agrees to provide market-making services in exchange for funds. Ripple, that is, purchases services in exchange for payment. The [REDACTED] Agreement sets out terms pursuant to which Ripple pays [REDACTED] to provide market-making services, in exchange for units of XRP.

107. Section 2 of the [REDACTED] Agreement, titled “Market Making Activity,” provides that [REDACTED] will provide binding bid and offer prices for transactions in pairs of various fiat and crypto currencies, including XRP, within a specified spread. *See id.* § 2.

108. Section 3 of the [REDACTED] Agreement, titled “Consideration for Performance; Return of Consideration,” provides that Ripple will deliver, as specified in Appendix A, [REDACTED] million XRP

for full and timely performance by [REDACTED] of its market-making activity for an initial term, as well as additional specified deliveries of XRP if [REDACTED] elects to extend the term of the [REDACTED] Agreement. *See id.* § 3, Appendix A.

109. Under Section 5 of the [REDACTED] Agreement, titled “Warranties, Representations and Additional Covenants,” each party represents and warrants to the other that at such time as it delivers XRP to the other party, it has conveyed and will convey to the party good title and ownership of the XRP.

110. Section 8 of the Agreement provides that the [REDACTED] Agreement constitutes the entire contract between the parties relating to the subject matter and supersedes all previous agreements and understandings, oral or written.

111. My review of this contract did not identify any express provision or representation:

- pursuant to which Ripple promises to make any efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles [REDACTED] by providing market-making services, to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED] with respect to any XRP transferred pursuant to the contract.

112. Based upon my review of a sample of the Market-Making Contracts identified in Exhibit E, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar in relevant part to the [REDACTED] Agreement. Specifically, each of the Market-Making Contracts contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

113. Further, each of the Market-Making Contracts in Exhibit E lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, by providing market-making services, to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty with respect to any XRP transferred pursuant to the contract.

114. Based on my review of the Market-Making Contracts in Exhibit E, those Contracts also contain various other provisions, related to issues such as concurrent leases or loans, termination fees, and service fees. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

115. I reach the conclusions and opinions set forth above with respect to each of the Market-Making Contracts identified on Exhibit E. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, with respect to each of the Market-Making Contracts in Exhibit E.

ii. Product Incentive Contracts

116. I have reviewed the On Demand Liquidity Incentive #1 Agreement between Ripple and [REDACTED] (“[REDACTED]” dated March 4, 2019 (the “[REDACTED] Agreement”), produced as RPLI_SEC 0899176, which is a representative example of the Product Incentive Contracts identified in Exhibit E.

117. The [REDACTED] Agreement is a service contract, in which Ripple purchases services from [REDACTED] in exchange for payment. The [REDACTED] Agreement obligates Ripple to pay [REDACTED]

in XRP to [REDACTED] in exchange for [REDACTED] satisfaction of an incentive milestone regarding integration and use of Ripple's ODL product. Specifically, under Section 1 of the Agreement, titled "On Demand Liquidity Incentive," [REDACTED] must send ten test transactions using the ODL product into the Philippines, Brazil, and Australia within a specified time frame.

118. The [REDACTED] Agreement includes what is commonly known as an integration clause. Section 6(h) of the Agreement, titled "Entire Agreement; Counterparts," states that the Agreement constitutes the entire agreement between the parties pertaining to its subject matter and supersedes all prior and other contemporaneous agreements, representations, warranties, and understandings of the parties.

119. Section 6(i) of the [REDACTED] Agreement, titled "Third Party Rights," states that a person or entity not party to the [REDACTED] Agreement shall not have any rights to enforce its terms.

120. Exhibit A of the [REDACTED] Agreement is titled "Standard XRP Terms and Conditions." Under Section 4 of Exhibit A, titled "Material Risks," [REDACTED] acknowledges a series of risks associated with virtual currency, including XRP. [REDACTED] acknowledges that "[v]irtual currency is not legal tender, is not backed by any government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections." *Id.* Exhibit A § 4(a). [REDACTED] also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 4(e).

121. Under Section 5 of Exhibit A, titled "Risk of Loss," [REDACTED] acknowledges and agrees that Ripple cannot cancel, reverse, or change any XRP transfer that has been completed.

Id. § 5(a). Section 5 also provides that upon Ripple’s delivery of the XRP incentive to [REDACTED] all title to and risk of loss related to the XRP passes to [REDACTED]. *Id.* § 5(b). [REDACTED] expressly acknowledges and agrees that Ripple has no liability to [REDACTED] or any third party for any loss, theft, or misuse of any XRP that Ripple delivers to [REDACTED] as part of the [REDACTED] Agreement. *Id.*

122. Section 5 further provides that [REDACTED] will have no recourse against Ripple or affiliates for any liability of any type incurred by [REDACTED] as a result of [REDACTED] use, resale, or distribution of XRP. *Id.* § 5(d). [REDACTED] acknowledges and agrees “that XRP does not represent a right to make any demand on Ripple” and that “Ripple has no obligation to redeem or exchange XRP for monetary value, goods, services or any other item.” *Id.*

123. My review of the [REDACTED] Agreement did not identify any express representation or provision:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles [REDACTED] by achieving its incentive, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to [REDACTED] after delivery of the XRP incentive with respect to any XRP transferred pursuant to the Azimo Agreement; or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED] with respect to any XRP transferred pursuant to the [REDACTED] Agreement.

124. Some of the Product Incentive Contracts involve development of third-party products to incentivize the use of XRP. For instance, I have reviewed the [REDACTED] Pilot Agreement between Ripple and [REDACTED] (“[REDACTED]” dated September 19, 2019, produced as RPLI_SEC 0899553. Under the [REDACTED] Pilot Agreement, Ripple agrees to pay [REDACTED] to use its proprietary trading algorithm to purchase and sell XRP for U.S. dollars on

the digital asset exchange Bitstamp. Specifically, Ripple agrees to pay [REDACTED] on a monthly basis [REDACTED] of the aggregate value of XRP purchased or sold by [REDACTED] on Bitstamp using its algorithm.

125. Section 8 of the [REDACTED] Trading Pilot Agreement states that [REDACTED] is responsible “for all matters or issues or claims relating to or in connection with any use, distribution or sale of XRP it receives as payment from Ripple.” *Id.* § 8.

126. Section 9 of the Agreement states that immediately upon Ripple’s transfer of any XRP to [REDACTED] XRP wallet address, all risk of loss related to such XRP passes to [REDACTED]

127. Under Section 10 of the [REDACTED] Trading Pilot Agreement, titled “Material Risks,” [REDACTED] acknowledges a series of risks associated with virtual currency, including XRP. [REDACTED] acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections.” *Id.* § 10(a). [REDACTED] also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 10(e). [REDACTED] further acknowledges that “[t]he volatility and unpredictability of the price of virtual currency relative to fiat currency may result in significant loss over a short period of time.” *Id.* § 10(g).

128. Section 12 of the [REDACTED] Pilot Agreement states that [REDACTED] “shall have no recourse against Ripple . . . as a result of its use, resale or distribution of XRP, including the materialization of any of” the material risks identified in the agreement. *Id.* § 12.

129. Section 14 of the [REDACTED] Pilot Agreement, titled “[REDACTED] XRP Acknowledgments,” states:

██████ acknowledges and agrees that (i) XRP do not represent a right to make any demand on [Ripple;] (ii) [Ripple] has no obligation to redeem or exchange XRP for monetary value, goods, services or any other item; and (iii) [Ripple] is not responsible for any use by Jump or any third party of XRP that Ripple has delivered to Jump under this Agreement.

Id. § 14.

130. My review of the ██████████ Pilot Agreement did not identify any express representation or provision:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles ████████ by achieving its incentive, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to ████████ after delivery of the XRP incentive with respect to any XRP transferred pursuant to the ████████ Trading Pilot Agreement; or
- that imposes on Ripple any fiduciary or similar duty owed to ████████ with respect to any XRP transferred pursuant to the ██████████ Pilot Agreement.

131. Based upon my review of a sample of the Product Incentive Contracts in Exhibit E, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar in relevant part to the ████████ Agreement and the ██████████ Pilot Agreement. Specifically, the Product Incentive Contracts typically contain:

- a provision stating that the agreement and any related documents constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

132. Further, each of the Product Incentive Contracts in Exhibit E lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- that entitles the counterparty, by achieving its incentives, to share in profits earned by Ripple or to receive profits from any other source;
- that creates an ongoing obligation owed by Ripple to the counterparty after delivery of the XRP incentive with respect to any XRP transferred pursuant to the contract; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty with respect to any XRP transferred pursuant to the contract.

133. Based on the review of the Product Incentive Contracts in Exhibit E, those Contracts also contain various other provisions, related to issues such as volume and marketing incentives, rebates, and liquidity promotion. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

134. I reach the conclusions and opinions set forth above with respect to each of the Product Incentive Contracts identified on Exhibit E. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Product Incentive Contracts in Exhibit E.

iii. Employee and Executive Compensation Contracts

135. I have reviewed the Employment Offer Letter between a Ripple employee and Ripple dated November 22, 2019 (the “Offer Letter”), produced as RPLI_SEC 0633406, which is a representative example of the Employee and Executive Compensation Contracts identified in Exhibit E.

136. Section 5 of the Offer Letter, titled “Additional Bonus,” provides that, in addition to cash compensation, a cash sign-on bonus, and an annual cash target bonus, the employee will receive a bonus of XRP in an amount equivalent to [REDACTED] if he continues to be employed by Ripple on the second pay date subsequent to the twelve-month anniversary of his start date.

137. Section 6 of the Offer Letter, titled “Long Term Incentive Scheme,” provides that Ripple will recommend to the company’s board that it grant the employee [REDACTED] restricted stock units in the company, covering Ripple’s Class A common shares, subject to specified vesting conditions.

138. The Offer Letter includes what is commonly known as an integration clause. Section 14 of the Offer Letter, titled “Entire Agreement,” states that the Offer Letter and an agreement relating to proprietary rights between the employee and the company set forth the terms of the employee’s employment and supersede any prior representations or agreements, whether written or oral.

139. My review of the Offer Letter did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

140. Based upon my review of a sample of the Employee and Executive Compensation Contracts in Exhibit E, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar to the Offer Letter discussed above. Specifically, each of the Employee and Executive Compensation Contracts contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

141. Further, each of the Employee and Executive Compensation Contracts in Exhibit E lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

142. Based on the review of the Employee and Executive Compensation Contracts in Exhibit E, those Contracts also contain various other provisions, related to issues such as restrictions on transfer, compensation, incentives, and equity components. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above because the provisions do not impose post-contractual obligations on Ripple.

143. I reach the conclusions and opinions set forth above with respect to each of the Employee and Executive Compensation Contracts identified in Exhibit E. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Contracts in Exhibit E.

D. OTHER CONTRACTS

i. Master Hosted Services Agreements

144. I have reviewed the Ripple Master Hosted Services Agreement between Ripple Services, Inc. and MoneyGram Payment Systems, Inc. (“MoneyGram”) dated June 17, 2019 (the “MoneyGram Agreement”), produced as RPLI_SEC 0272291, which is a representative example of the Master Hosted Services Agreements identified in Exhibit F.

145. In substance, the Agreement sets out terms pursuant to which Ripple grants MoneyGram permission to access and use hosted software services provided by Ripple. The MoneyGram Agreement provides that specific software services will be identified in work orders.

146. I have also reviewed the original work order associated with the MoneyGram Agreement dated June 17, 2019, produced as RPLI_SEC 0239684, which is a representative example of a work order under a Master Hosted Services Agreement. The work order identifies the software service to which MoneyGram is granted access as the Ripple xRapid Platform. The work order states that MoneyGram pays no fees for the services Ripple provides to it.

147. The work order further provides that Ripple will pay MoneyGram rebates in XRP into a segregated wallet for certain costs incurred as a result of a gap between exchange rates charged on Ripple's platform and market rates, as well as certain market development fees and bonuses in XRP if the transactions executed on Ripple's platform exceeds specified volume thresholds.

148. Section 4 of the MoneyGram Agreement, titled "Authorization; Services; Customer Restrictions," provides that Ripple authorizes MoneyGram to access and use Ripple's hosted software services in accordance with conditions and limitations set forth in the Agreement. *See* RPLI_SEC 0272291, § 4(a). Upon delivery of the services, Ripple agrees to provide MoneyGram basic support for the services and make the services available 24 hours a day, 7 days a week.

149. The MoneyGram Agreement provides that MoneyGram will be solely responsible for the data or information submitted to the hosted services and use commercially reasonable efforts to prevent unauthorized access to or use of the services. Ripple reserves all right, title, and interest in and to the hosted services.

150. Section 6 of the MoneyGram Agreement, titled "Security," provides that Ripple will employ security measures to protect MoneyGram's confidential information related to use of

the software services. *See id.* § 6(a). Ripple has no obligation or liability for any harm to customer data that is not caused by Ripple or the hosted services.

151. Section 8 of the MoneyGram Agreement, titled “Intellectual Property,” provides that the parties “have no intent to jointly develop software or other intellectual property under this Agreement.” *Id.* § 8(a). Ripple retains exclusive ownership of all rights, title, and interest in and to the hosted services and its related software in any and all versions made available for MoneyGram’s access. Nothing in the MoneyGram Agreement constitutes a sale or other transfer or conveyance of any right, title, or interest in the software or any of the intellectual property rights upon which the hosted services are related.

152. Section 11 of the MoneyGram Agreement, titled “Representations and Warranties; Disclaimers,” contains warranties by both parties. Ripple warrants that its software services will conform to technical specifications and other written documentation provided to MoneyGram and that it will use commercially reasonable efforts to fix any non-conforming services. The MoneyGram Agreement provides that, aside from the warranties and representations expressly set forth in it, Ripple makes no representation or warranty of any kind, including implied warranties of merchantability, fitness for a particular purposes, and suitability. All such warranties and obligations are expressly disclaimed.

153. The MoneyGram Agreement includes what is commonly known as an integration clause. Section 19 provides that the MoneyGram Agreement and any associated work order constitute the entire agreement between the parties regarding its subject matter and supersedes all prior communications, whether written or oral or express or implied. *See id.* § 19(i). It further provides that no person or entity that is not party to the agreement shall have any rights to enforce any term of it.

154. My review of the MoneyGram Agreement did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles MoneyGram to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to MoneyGram with respect to any XRP transferred pursuant to the Agreement.

155. I have also reviewed several Amendments to the MoneyGram Agreement and associated work order. *See, e.g.*, SEC-LIT-EPROD-000077199 (adjusting incentive payment formula). None of the Amendments modify in any way, directly or indirectly, the views expressed in the paragraphs above.

156. Based upon my review of a sample of the Master Hosted Services Agreements identified in Exhibit F, and a review of the remaining such contracts by counsel acting at my direction, I conclude that each of these contracts is, in substance, similar in relevant part to the MoneyGram Agreement. Specifically, the Master Hosted Services Agreements typically contain:

- disclaimers of express and implied warranties;
- a provision stating that the agreement and any related documents constitute the entire agreement between the parties; and
- a provision stating that the agreement confers no rights on third parties.

157. Further, each of the Master Hosted Services Agreements in Exhibit F lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;

- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty with respect to any XRP transferred pursuant to the contract.

158. Based on the review of the Master Service Hosted Agreements in Exhibit F, those Agreements also contain various other provisions, related to issues such as incentives, rebates, and service fees. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

159. I reach the conclusions and opinions set forth above with respect to each of the Master Service Hosted Agreements identified in Exhibit F. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Agreements in Exhibit F.

ii. Loans and Promissory Notes

160. I have reviewed the Digital Asset Loan Agreement between [REDACTED] (“[REDACTED] and XRP II dated January 4, 2018 (the “Loan Agreement”), produced as RPLI_SEC 0000906. The Loan Agreement is a representative example of the Loans and Promissory Notes identified in Exhibit F.

161. The Loan Agreement sets out terms pursuant to which XRP II agrees to lend [REDACTED] approximately [REDACTED] million units of XRP. The Agreement provides that [REDACTED] will pay interest in U.S. dollars, on a monthly basis, at an annual rate of [REDACTED] %.

162. Section 2(b) of Exhibit B to the Loan Agreement, titled “Risk of Loss,” states that immediately upon XRP II’s delivery of the loaned XRP to [REDACTED] all title to and risk of loss related to XRP passes to [REDACTED]. *See id.* Exhibit B, § 2(b).

163. Section 3 of Exhibit B, titled “Disclaimers, Limitations and Reservations,” states that other than those expressly set forth in the agreement, XRP II makes no representations or warranties of any kind in relation to the loaned XRP.

164. Under Section 5 of Exhibit B, titled “Disclosures,” [REDACTED] acknowledges a series of risks associated with virtual currency, including XRP. [REDACTED] acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections.” *Id.* Exhibit B, § 5(c)(i). [REDACTED] also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. Exhibit B, § 5(c)(v).

165. My review of the Loan Agreement did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles [REDACTED] to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to [REDACTED] with respect to any XRP transferred pursuant to the Agreement.

166. Based upon my review of a sample of the Loans and Promissory Notes identified in Exhibit F, and a review of the remaining such contracts by counsel acting at my direction, each of these contracts is, in substance, similar in relevant part to the Loan Agreement. Each of

the governing Loans and Promissory Notes contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

167. Further, each of the Loans and Promissory Notes in Exhibit F lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty to share in profits earned by Ripple or to receive profits from any other source; or
- that imposes on Ripple any fiduciary or similar duty owed to the counterparty with respect to any XRP transferred pursuant to the contract.

168. Based on the review of the Loans and Promissory Notes in Exhibit F, those Contracts also contain various other provisions, related to issues such as revolver terms, conditions precedent, and default. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

169. I reach the conclusions and opinions set forth above with respect to each of the Loans and Promissory Notes identified in Exhibit F. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, with respect to each of the Loans and Promissory Notes in Exhibit F.

iii. Custody Agreements

170. I have reviewed the Custody Agreement between XRP II and [REDACTED] (“[REDACTED] dated December 4, 2016 (the “[REDACTED] Custody Agreement”), produced as RPLI_SEC 0895307. This is a representative example of the Custody Agreements identified in Exhibit F.

171. In my opinion, the [REDACTED] Custody Agreement is a contract in which one party agrees to maintain custody of an asset owned by the counterparty. In substance, the [REDACTED] Agreement sets

out terms pursuant to which XRP II acts as custodian for XRP that [REDACTED] previously purchased from Ripple. Specifically, XRP II agrees to open and maintain one or more custody accounts to hold XRP received by XRP II from [REDACTED]

172. Section 3 of the [REDACTED] Custody Agreement, titled “Responsibility of Custodian,” states that XRP II’s duties are limited to following instructions from persons authorized by [REDACTED] as to the movements of the XRP to and from the custody account; delivering or transferring the XRP in the event of termination of the agreement; and undertaking reasonable best efforts to secure and safeguard the XRP.

173. The [REDACTED] Custody Agreement includes what is commonly known as an integration clause. Section 14, titled “Entire Agreement,” states that the [REDACTED] Custody Agreement sets forth the entire agreement of the parties thereto with respect to the subject matter thereof and supersedes any prior negotiations, understandings, or arrangements regarding the subject matter thereof.

174. My review of the [REDACTED] Custody Agreement did not identify any express provision or representation:

- pursuant to which XRP II promises to make efforts to increase the price of XRP;
- in which XRP II represents or warrants that the prices or value of XRP will increase; or
- that entitles [REDACTED] to share in profits earned by Ripple or to receive profits from any other source.

175. Based upon my review of a sample of the Custody Agreements in Exhibit F, and a review of the such agreements by counsel acting at my direction, each of these agreements is, in substance, similar to the [REDACTED] Custody Agreement. Specifically, each of the Custody agreements contains a provision stating that the agreement and any related documents constitute the entire agreement between the parties.

176. Further, each of the Custody Agreements listed in Exhibit F lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

177. I reach the conclusions and opinions set forth above with respect to each of the Custody Agreements identified in Exhibit F. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Custody Agreements in Exhibit F.

iv. RippleWorks Contracts

178. I have reviewed the Master XRP Custody Agreement between Ripple and RippleWorks Inc. (“RippleWorks”), a charitable organization that provides grants and other funding to social impact ventures, dated August 28, 2018 (the “Custody Agreement”), produced as RPLI_SEC 0314261. In the Custody Agreement, Ripple agrees to custody XRP owned by the Foundation free of charge.

179. Section 1 of the Custody Agreement, titled “Custody of XRP,” states that Ripple may terminate any custody arrangements under the Agreement at any time with advance notice to RippleWorks. *See id.* § 1(b). It also provides that Ripple will use reasonable efforts to secure and safeguard the private key associated with the custody XRP address. *See id.* § 1(c).

180. Section 3 of the Custody Agreement, titled “Terms and Conditions of the Custodying Services,” provides that immediately upon Ripple’s transfer of XRP under its

custody to RippleWorks, all title to and risk of related to the XRP passes to the Foundation.

Section 3 further states:

[RippleWorks] acknowledges and agrees that (i) XRP do not represent a right to make any demand on [Ripple;] (ii) [Ripple] has no obligation to redeem or exchange XRP for monetary value, goods, services or any other item; and (iii) [Ripple] is not responsible for any use by [RippleWorks] or any third party of XRP.

Id. § 3(b).

181. Section 4 of the Custody Agreement, titled “Disclaimers, Limitations and Reservations,” states that “EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, [RIPPLE] MAKES NO REPRESENTATIONS OR WARRANTIES IN RELATION TO THE CUSTODIED XRP, THIS AGREEMENT OR ITS PERFORMANCE HEREUNDER.”

182. Under Section 6 of the Custody Agreement, titled “Disclosures,” RippleWorks acknowledges a series of material risks associated with virtual currency, including XRP. RippleWorks acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections.” *Id.* § 6(c)(i). RippleWorks also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 6(c)(v). RippleWorks further acknowledges that “[t]he volatility and unpredictability of the price of virtual currency relative to fiat currency may result in significant loss over a short period of time.” *Id.* § 6(c)(vii).

183. Section 7(d) of the Agreement includes what is commonly known as an integration clause. It states that the parties agree that the Agreement constitutes the entire contract between them with regard to the subject matter thereof and supersedes any other agreements, representations, or understandings, whether oral, written, expressed, or implied.

184. Section 7(f) provides that nothing in the Agreement shall be construed or intended to be construed as creating an employer-employee or agency relationship, a partnership, or a joint venture between the parties.

185. My review of the Custody Agreement did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles RippleWorks, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

186. I have also reviewed several XRP Transfer Requests memorializing the transfer of XRP pursuant to the Master XRP Custody Agreement. *See, e.g.*, RPLI_SEC 0265201 (XRP Transfer Request for transfer of 50 million units of XRP no later than April 10, 2019).

187. In my opinion, the XRP Transfer Requests under the Master XRP Custody Agreement do not modify in any way, directly or indirectly, the views expressed the paragraphs above.

v. Settlement Agreements

188. Exhibit F also includes several Settlement Agreements, as well as any antecedent contracts underlying those Agreements, between Ripple and a counterparty. The underlying issues to which the Settlement Agreements are addressed relate to (i) a failed business venture

and associated option contract between Ripple and R3 HoldCo; (ii) a series of business disputes involving Jed McCaleb, a founder of Ripple, as well as [REDACTED]; and (iii) a business arrangement in which [REDACTED] was to provide certain ambassador services to Ripple. Pursuant to each of these respective settlements, Ripple agreed to pay the counterparties a specified amount of XRP – to resolve ongoing, active litigation in the first two, and to wind down the company’s business relationship with [REDACTED] in the third.

189. I have reviewed the Settlement Agreement and Release between R3 HoldCo and Ripple dated September 3, 2018 (the “R3 HoldCo Settlement Agreement”), produced as RPLI_SEC 0576504. The R3 HoldCo Settlement Agreement was entered into to resolve litigation regarding two 2016 agreements – a Technology Provider Agreement dated August 6, 2016, produced as RPLI_SEC 0609230, and an Option to Purchase XRP (the “R3 Option”) dated September 26, 2016, produced as RPLI_SEC 0609222.

190. The Technology Provider Agreement sets out terms pursuant to which the parties agreed to collaborate on the use of Ripple products.

191. The R3 Option sets out terms pursuant to which XRP II grants R3 HoldCo the right to purchase up to 5 billion units of XRP at a per unit price of \$0.0085 according to the terms of the Contract. *See* RPLI_SEC 0609222, § 1(a), (b).

192. In the R3 HoldCo Settlement Agreement, the parties agreed to release each other from all claims relating to the dispute. As part of the settlement, Ripple agreed to pay R3 HoldCo [REDACTED] million. *See* RPLI_SEC 0576504, § II(A).

193. The R3 HoldCo Settlement Agreement includes what is commonly known as an integration clause. Section II(M) of the R3 HoldCo Settlement Agreement states that it

constitutes the entire agreement between the parties and overrides and replaces all prior negotiations and terms proposed or discussed.

194. As part of the R3 HoldCo Settlement Agreement, the parties also agreed to amend the September 2016 R3 Option. I have reviewed the XRP II LLC Amended and Restated Option to Purchase XRP dated September 3, 2018 (the “Amended R3 Option”), produced as RPLI_SEC 0863819. Instead of 5 billion units of XRP, the Amended R3 Option grants R3 HoldCo the right to purchase up to [REDACTED] billion units of XRP, subject to the terms of the Contract. *See id.* § 1(a).

195. There are no express provisions of the Amended R3 Option that impose any obligations from XRP II to R3 HoldCo other than the delivery of XRP after R3 HoldCo’s exercise of its purchase rights under the Amended R3 Option. *See id.* § 3(c). Similarly, there are no express provisions in the Amended R3 Option in which Ripple assumes any obligation to any third party.

196. Section 5 of the Amended R3 Option, titled “Representations, Warranties, Covenants and Acknowledgments of [R3 HoldCo],” states that upon XRP II’s transfer of any XRP to R3 HoldCo or any option assignee, all title and risk of loss related to the XRP passes to the transferee. *Id.* § 5(d). It further states that XRP II has no liability to the transferee or any third party for any loss, theft, or misuse of transferred XRP. *Id.*

197. Section 5(e) of the Amended R3 Option states:

[R3 HoldCo] acknowledges and agrees that (i) XRP does not represent a right to make any demand on [XRP II] or its affiliates, including Ripple[;] (ii) [XRP II] and its affiliates, including Ripple, have no obligation to redeem or exchange the XRP for monetary value, goods, services or any other item; and (iii) [XRP II] and its affiliates, including Ripple, are not responsible for any use or sale by [R3 HoldCo] or any other third party of XRP.

Id. § 5(e). The Amended R3 Option thus includes provisions in which R3 HoldCo expressly acknowledges that it has no right to demand any performance by Ripple – and no expectation of future performance by Ripple – other than what is affirmatively set forth in the Amended R3 Option.

198. Under Section 5(h) of the Amended R3 Option, R3 HoldCo acknowledges a series of material risks associated with virtual currency, including XRP. R3 HoldCo acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections.” *Id.* § 5(h)(i). R3 HoldCo also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 5(h)(v). R3 HoldCo further acknowledges that “[t]he volatility and unpredictability of the price of virtual currency relative to fiat currency may result in significant loss over a short period of time.” *Id.* § 5(h)(vii).

199. The Amended R3 Option also includes an integration clause. Section 18, titled “Entire Agreement; Amendments and Waivers,” states that the Amended R3 Option and any other documents delivered pursuant thereto constitute the full and entire understanding and agreement between the parties with regard to the subjects thereof.

200. Section 21 of the Amended R3 Option, titled “Third Party Beneficiary,” states that Ripple is a third-party beneficiary of the Amended R3 Option and entitled to enforce it on behalf of itself as if a party. *See id.* § 21.

201. My review of the R3 HoldCo Settlement Agreement and Amended R3 Option did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles R3 HoldCo, by exercising its purchase rights, to share in profits earned by Ripple or from any other source;
- that creates an ongoing obligation owed by Ripple to R3 HoldCo or any other person after exercise of the purchase rights; or
- that imposes on Ripple any fiduciary or similar duty owed to R3 HoldCo.

202. I have reviewed the entirety of the R3 HoldCo Settlement Agreement and Amended R3 Option, including Section 8 of the Amended R3 Option, which contains terms related to restrictions on transfer of XRP. In my opinion, none of those provisions modify in any way, directly or indirectly, the views expressed in the paragraphs above because the provisions impose no post-contractual obligations on Ripple.

203. I have also reviewed several Summaries of XRP Purchase pursuant to the Amended R3 Option. *See, e.g.*, RPLI_SEC 0443186. These documents set out the specific terms of the exercise of the Amended R3 Option, including the exercise price and specific units purchased. In my opinion, the Summaries of XRP Purchase under the Amended R3 Option do not modify in any way, directly or indirectly, the views expressed in the paragraphs above because the provisions impose no post-contractual obligations on Ripple.

204. In addition to the R3 HoldCo Settlement Agreement, I have also reviewed a Confidential Binding Letter of Intent to Enter Into Settlement Agreement dated February 11, 2016 between Ripple and [REDACTED] (the “[REDACTED] Settlement Agreement”), produced as RPLI_SEC 0991609. To resolve litigation between the parties, Ripple agreed to grant [REDACTED] an

option to purchase [REDACTED] units of XRP, with [REDACTED] of the [REDACTED] paid in equal portions to [REDACTED] counsel and the remaining [REDACTED] units equally divided between [REDACTED] and [REDACTED]. *See id.* §§ 6-7.

205. Section 10 of the [REDACTED] Settlement Agreement states that “Ripple is not obligated to maintain a market in XRP.” *See id.* § 10.

206. Based on my review of the Settlement Agreements and Contracts discussed above, and a review of the remaining settlement-related agreements in Exhibit F by counsel acting at my direction, each of those agreements lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

207. Based on the review of the Settlement Agreements in Exhibit F, those Contracts also contain various other provisions, including terms related to restrictions on transfer of XRP by a counterparty. *See, e.g.,* RPLI_SEC 0796371. In my opinion, none of these terms modify, in any respect, any of the conclusions expressed in the paragraphs above.

208. I reach the conclusions and opinions set forth above with respect to each of the Settlement Agreements, and each of the agreements associated with each of these settlements, identified in Exhibit F. If asked, I am prepared to testify about each of these Contracts. I reserve the right to testify about the opinions set forth in this section, in greater detail, regarding each of the Contracts in Exhibit F.

vi. Xpring Contracts

209. Exhibit F also includes Contracts regarding investments that Ripple made in preexisting companies through its Xpring program. Under these Contracts, Ripple provided a counterparty cash or XRP in exchange for equity or services regarding potential uses of XRP and the XRP Ledger. Some of the Contracts arising from the Xpring program could have been included in other categories, such as Product Incentive Contracts.

210. As one example of an Xpring Contract, I have reviewed the Development and Integration Agreement between Ripple and [REDACTED]. ([REDACTED] dated November 8, 2018 (the “Development Agreement”), produced as RPLI_SEC 0266000. In the Development Agreement, Ripple agrees to pay [REDACTED] up to [REDACTED] million in XRP in consideration for [REDACTED] promise to use best efforts to develop and integrate XRP, ILP, a protocol for the facilitation of payment interoperability, and [REDACTED] a protocol for open hosting, into [REDACTED] social media-based gaming products. *See id.* § 2.1.

211. Under Section 5 of the Development Agreement, titled “Material Risks,” [REDACTED] acknowledges a series of material risks associated with virtual currency, including XRP. [REDACTED] acknowledges that “[v]irtual currency is not legal tender, is not backed by the government, and accounts and value balances are not subject to [FDIC] or Securities Investor Protection Corporation protections.” *Id.* § 5.1. [REDACTED] also acknowledges the following:

The value of virtual currency may be derived from the continued willingness of market participants to exchange fiat currency for virtual currency, which may result in the potential for permanent and total loss of value of a particular virtual currency should the market for that virtual currency disappear.

Id. § 5.5.

212. The Development Agreement includes what is commonly known as an integration clause. Section 11.5 states that the agreement constitutes the entire agreement of the parties with

respect to the subject matter thereof and supersedes all previous discussions, prior agreements, and understandings concerning the subject matter.

213. My review of the Development Agreement did not identify any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase; or
- that entitles Ripple, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source.

214. Based upon my review of a sample of the Xpring Agreements identified in Exhibit F, and a review of the remaining such agreements by counsel acting at my direction, each of the Xpring Agreements listed in Exhibit F lacks any express provision or representation:

- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source; or
- that creates an ongoing obligation owed by Ripple to the counterparty with respect to any XRP transferred pursuant to the agreement.

215. I reach the conclusions and opinions set forth above with respect to each of the Xpring Agreements identified in Exhibit F. If asked, I am prepared to testify about each of these Agreements. I reserve the right to testify about the opinions set forth in this section, in greater detail, with respect to each of the Xpring Agreements in Exhibit F.

vii. Joint Venture Contracts

216. Exhibit F also includes Contracts related to a joint venture between Ripple and SBI Holdings, Inc. (“SBI”). I have reviewed the Memorandum of Understanding between Ripple and SBI dated January 28, 2016 (the “MOU”), produced as RPLI_SEC 0612004, which sets out the proposed terms for the creation of a joint venture company. I have also reviewed the Joint Venture Agreement dated March 30, 2016 (the “Joint Venture Agreement”), produced as RPLI_SEC 0764387, pursuant to which the parties establish a joint venture company in Japan for the purpose of conducting business identified in the Agreement.

217. Based upon my review of a sample of the foregoing agreements related to the Joint Venture Agreement between Ripple and SBI, and a review of the remaining such agreements by counsel acting at my direction, each of these agreements lacks any express provision or representation:

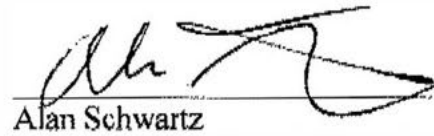
- pursuant to which Ripple promises to make efforts to increase the price of XRP;
- in which Ripple represents or warrants that the price or value of XRP will increase;
- that entitles the counterparty, as a result of holding XRP, to share in profits earned by Ripple or to receive profits from any other source; or
- that creates an ongoing obligation owed by Ripple to the counterparty with respect to any XRP transferred pursuant to the agreement.

218. I reach the conclusions and opinions set forth above with respect to each of the joint venture-related agreements identified in Exhibit F. If asked, I am prepared to testify about each of these Agreements. I reserve the right to testify about the opinions set forth in this section, in greater detail, with respect to each of the Agreements in Exhibit F.

viii. Miscellaneous Contracts

219. Finally, Exhibit F includes Miscellaneous Contracts that do not fit into any of the categories above. I have reviewed preliminary agreements between Ripple and [REDACTED] ([REDACTED] dated January 9, 2015, and August 3, 2015. *See* RPLI_SEC 0676251, RPLI_SEC 0676205. These agreements relate to a contemplated arrangement between Ripple and [REDACTED] under which XRP II would sell XRP to a private investment fund formed by [REDACTED]. The parties contemplated that interests in the fund would be offered and sold in the United States, pursuant to an exemption from registration under the Securities Act. I have been informed by counsel that that the fund was never created.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 4, 2021.



Alan Schwartz

EXHIBIT A – CURRICULUM VITAE

ALAN SCHWARTZ

PERSONAL

Office: Yale Law School, New Haven, Connecticut 06520

Phone: [REDACTED]

Residence: [REDACTED]

Phone: [REDACTED]

EMPLOYMENT

Sterling Professor of Law, Yale Law School

Professor, Yale School of Management

TEACHING EXPERIENCE

Contracts

Commercial Law (sales, secured transactions, negotiable instruments and payment)

Systems

Bankruptcy

Consumer Credit and Consumer Protection

Corporate Finance

Mergers, Acquisitions and Corporate Governance

PROFESSIONAL ACTIVITIES

Current:

Member, American Academy of Arts and Sciences

Member, Editorial Board, The Journal of Financial Abstracts

Member, Editorial Board, The Journal of Law and Economics Abstracts

Member, Editorial Board, The Journal of Law, Economics, and Organization

Member, Advisory Board, The Asian Journal of Law and Economics

Member, Scientific Advisory Board, Toulouse School of Economics

Member, Safra Center for the Study of Law and Ethics, Tel Aviv Law School

Past:

Director, Cliffs Natural Resources, Inc. (1991-2012)

Director, Furniture Brands, International, Inc. (2008-2012)

Director and Board Chair, Rohn Industries (1998-2003)

Editor, The Journal of Law, Economics, and Organization (1993-2001)

President, American Law and Economics Association (1996-1997)

Member, American Law Institute

Member, American Bar Association

Associate Reporter, American Law Institute Project, Enterprise Responsibility for Personal Injury

Member, Editorial Board, Journal of Legal Education

Member, Executive Committee, Section on Business Associations, Association of American Law Schools

Chair, Section on Contracts, Association of American Law Schools

Chair, Section on Law and Economics, Association of American Law Schools

Chair, Section on Commercial, Contract and Related Consumer Law, Association of American Law Schools

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“Products Liability and Judicial Wealth Redistributions,” 51 Indiana L.J. 558 (1976)

“Cure and Revocation for Quality Defects: The Utility of Bargains,” 16 Boston College Industrial and Commercial Law Review 543 (1975)

“Seller Unequal Bargaining Power and the Judicial Process,” 49 Indiana L.J. 367 (1974)

“Optimality and the Cutoff of Defenses Against Financers of Consumer Sales,”
15 Boston College Industrial and Commercial L. Rev. 499 (1974)

“The Private Law Treatment of Defective Products in Sales Situations,” 49 Indiana L.J. 8
(1973)

“Procedural Arbitrability Under Section 301 of the LMRA,” 73 Yale L.J. 1459 (1964)

Book Review: 31 The American Journal of Comparative Law 742 (1983)

Development Note, 35 Journal of Legal Education 597 (1985)

Books

Payment Systems and Credit Instruments (with Clayton Gillette and Robert Scott),
Foundation Press (2nd edition, 2007)

Foundations of Contract Law (with Richard Craswell), Oxford University Press
(2nd Edition, 2007)

Commercial Law: Principles and Policies (with Robert Scott), Foundation Press
(2nd Edition, 1991)

Sales Law and the Contracting Process (with Robert Scott), Foundation Press
(2nd Edition, 1991)

Works in Progress

“Corporate Governance in Weak States” (with Ronald Gilson)

“Rights and Remedies in Private Law” (with Daniel Markovits)

“Contract Remedies for the New Economy” (with Simone Sepe)

Book Projects:

Contract Law and Theory (with Robert Scott);

Bankruptcy Theory: An Introduction

October, 2021.

EXHIBIT B – MATERIALS CONSIDERED

Bates Identified Documents

Documents identified in Exhibits C-F (Personal review of more than 140 of these documents)

Litigation Materials

ECF No. 46 – Feb. 18, 2021 First Amended Complaint

Miscellaneous Materials

Bankruptcy Code, 11 U.S.C. § 101 *et seq.*

Corporate Code, 8 Del. C. § 101 *et seq.*

Fletcher v. Feutz, 246 A.3d 540 (Del. 2021)

In re: Ripple Labs Inc. Wells Submission on Behalf of Ripple Labs Inc.

Restatement (Second) of Contracts (Am. Law Inst. 1981)

Scalia & Garner, Reading Law: The Interpretation of Legal Texts 320 (2012)

SEC v. W.J. Howey Co., 328 U.S. 293 (1946)

SEC v. W.J. Howey Co., 60 F. Supp. 440 (S.D. Fla. 1945)

SEC v. W.J. Howey Co., 151 F.2d 714 (5th Cir. 1945)

Securities Act of 1933, 15 U.S.C. § 77a *et seq.*

Tomhannock, LLC v. Roustabout Res., LLC, 128 N.E.3d 674 (N.Y. 2019)

Uniform Commercial Code (2014)

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Individual Purchase Agreements	6/23/2016	██████ Ripple 0001454	██████ Ripple 0001459
Individual Purchase Agreements	6/9/2016	██████ Ripple 0003156	██████ Ripple 0003161
Individual Purchase Agreements	1/10/2017	RPLI_SEC 0000492	RPLI_SEC 0000497
Individual Purchase Agreements	1/27/2017	RPLI_SEC 0000498	RPLI_SEC 0000503
Individual Purchase Agreements	2/10/2017	RPLI_SEC 0000504	RPLI_SEC 0000509
Individual Purchase Agreements	2/17/2017	RPLI_SEC 0000510	RPLI_SEC 0000515
Individual Purchase Agreements	3/27/2017	RPLI_SEC 0000517	RPLI_SEC 0000522
Individual Purchase Agreements	4/14/2017	RPLI_SEC 0000524	RPLI_SEC 0000531
Individual Purchase Agreements	4/24/2017	RPLI_SEC 0000533	RPLI_SEC 0000540
Individual Purchase Agreements	5/9/2017	RPLI_SEC 0000542	RPLI_SEC 0000549
Individual Purchase Agreements	5/15/2017	RPLI_SEC 0000551	RPLI_SEC 0000558
Individual Purchase Agreements	5/22/2017	RPLI_SEC 0000560	RPLI_SEC 0000567
Individual Purchase Agreements	5/22/2017	RPLI_SEC 0000569	RPLI_SEC 0000576
Individual Purchase Agreements	6/9/2016	RPLI_SEC 0000626	RPLI_SEC 0000631
Individual Purchase Agreements	6/23/2016	RPLI_SEC 0000636	RPLI_SEC 0000641
Individual Purchase Agreements	9/6/2016	RPLI_SEC 0092944	RPLI_SEC 0092949
Individual Purchase Agreements	1/10/2017	RPLI_SEC 0253327	RPLI_SEC 0253332
Individual Purchase Agreements	12/27/2016	RPLI_SEC 0609432	RPLI_SEC 0609437
Individual Purchase Agreements	10/13/2016	RPLI_SEC 0609438	RPLI_SEC 0609443
Individual Purchase Agreements	10/25/2016	RPLI_SEC 0609444	RPLI_SEC 0609449
Individual Purchase Agreements	11/15/2016	RPLI_SEC 0609450	RPLI_SEC 0609455
Individual Purchase Agreements	12/15/2016	RPLI_SEC 0609456	RPLI_SEC 0609461

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Individual Purchase Agreements	5/18/2016	RPLI SEC 0609535	RPLI SEC 0609540
Individual Purchase Agreements	7/12/2016	RPLI SEC 0609541	RPLI SEC 0609546
Individual Purchase Agreements	9/6/2016	RPLI SEC 0609547	RPLI SEC 0609552
Individual Purchase Agreements	3/2/2016	RPLI SEC 0609769	RPLI SEC 0609774
Individual Purchase Agreements	1/10/2017	RPLI SEC 0794886	RPLI SEC 0794891
Individual Purchase Agreements	2/10/2017	RPLI SEC 0794910	RPLI SEC 0794915
Individual Purchase Agreements	10/13/2016	RPLI SEC 0795332	RPLI SEC 0795337
Individual Purchase Agreements	10/13/2016	RPLI SEC 0795338	RPLI SEC 0795343
Individual Purchase Agreements	10/25/2016	RPLI SEC 0795362	RPLI SEC 0795367
Individual Purchase Agreements	3/18/2016	RPLI SEC 0795423	RPLI SEC 0795428
Individual Purchase Agreements	7/4/2016	RPLI SEC 0795429	RPLI SEC 0795434
Individual Purchase Agreements	7/12/2016	RPLI SEC 0795441	RPLI SEC 0795446
Individual Purchase Agreements	10/25/2016	RPLI SEC 0890935	RPLI SEC 0890940
Individual Purchase Agreements	5/18/2016	RPLI SEC 0890976	RPLI SEC 0890981
Individual Purchase Agreements	7/12/2016	RPLI SEC 0890982	RPLI SEC 0890987
Individual Purchase Agreements	9/6/2016	RPLI SEC 0890988	RPLI SEC 0890993
Individual Purchase Agreements	10/13/2016	SEC-LIT-EPROD-000324562	SEC-LIT-EPROD-000324567
Individual Purchase Agreements	1/10/2017	SEC-LIT-EPROD-000484665	SEC-LIT-EPROD-000484670
Individual Purchase Agreements	6/23/2016	SEC-LIT-EPROD-000897913	SEC-LIT-EPROD-000897918
Master Commitment to Sell Agreements	5/1/2020	RPLI SEC 0300993	RPLI SEC 0301007
Master Commitment to Sell Agreements	5/1/2020	RPLI SEC 0300993	RPLI SEC 0301007
Master Commitment to Sell Agreements	5/26/2020	RPLI SEC 0301016	RPLI SEC 0301030

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Commitment to Sell Agreements	9/5/2018	RPLI SEC 0607682	RPLI SEC 0607698
Master Commitment to Sell Agreements	9/17/2018	RPLI SEC 0607705	RPLI SEC 0607721
Master Commitment to Sell Agreements	9/17/2018	RPLI SEC 0670520	RPLI SEC 0670536
Master Commitment to Sell Agreements	12/4/2018	RPLI SEC 0890499	RPLI SEC 0890515
Master Commitment to Sell Agreements	3/7/2019	RPLI SEC 0890522	RPLI SEC 0890534
Master Commitment to Sell Agreements	11/29/2019	RPLI SEC 0890536	RPLI SEC 0890548
Master Commitment to Sell Agreements	1/18/2019	RPLI SEC 0890549	RPLI SEC 0890578
Master Commitment to Sell Agreements	1/8/2019	RPLI SEC 0890591	RPLI SEC 0890608
Master Commitment to Sell Agreements	1/2/2019	RPLI SEC 0890609	RPLI SEC 0890621
Master Commitment to Sell Agreements	10/9/2018	RPLI SEC 0890675	RPLI SEC 0890691
Master Commitment to Sell Agreements	12/10/2020	RPLI SEC 0898839	RPLI SEC 0898840
Master Commitment to Sell Agreements	9/2/2020	RPLI SEC 0898841	RPLI SEC 0898855
Master Commitment to Sell Agreements	5/26/2020	RPLI SEC 0899280	RPLI SEC 0899301
Master Commitment to Sell Agreements	6/5/2020	RPLI SEC 0899331	RPLI SEC 0899333
Master Commitment to Sell Agreements	6/5/2020	RPLI SEC 0899334	RPLI SEC 0899336
Master Commitment to Sell Agreements	1/18/2019	RPLI SEC 0899485	RPLI SEC 0899514
Master Commitment to Sell Agreements	6/5/2020	SEC-LIT-EPROD-000622790	SEC-LIT-EPROD-000622792
Master Commitment to Sell Agreements	5/26/2020	SEC-LIT-EPROD-000635820	SEC-LIT-EPROD-000635834
Master Commitment to Sell Agreements	9/17/2018	SEC-LIT-EPROD-000673241	SEC-LIT-EPROD-000673253
Master Loan to Purchase Agreements	6/22/2018	RPLI SEC 0110054	RPLI SEC 0110068
Master Loan to Purchase Agreements	5/30/2018	RPLI SEC 0609008	RPLI SEC 0609023
Master Loan to Purchase Agreements	3/5/2015	RPLI SEC 0676692	RPLI SEC 0676702

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Loan to Purchase Agreements	6/22/2018	RPLI SEC 0890693	RPLI SEC 0890707
Master Loan to Purchase Agreements	7/2/2018	RPLI SEC 0890772	RPLI SEC 0890786
Master Loan to Purchase Agreements	7/13/2015	RPLI SEC 0891071	RPLI SEC 0891079
Master Loan to Purchase Agreements	3/31/2018	RPLI SEC 0899010	RPLI SEC 0899023
Master Loan to Purchase Agreements	5/30/2018	SEC-LIT-EPROD-000673223	SEC-LIT-EPROD-000673238
Master Purchase Agreements	12/27/2017	RPLI SEC 0000488	RPLI SEC 0000490
Master Purchase Agreements	10/12/2017	RPLI SEC 0000578	RPLI SEC 0000578
Master Purchase Agreements	10/12/2017	RPLI SEC 0000579	RPLI SEC 0000595
Master Purchase Agreements	6/20/2017	RPLI SEC 0000608	RPLI SEC 0000608
Master Purchase Agreements	9/11/2017	RPLI SEC 0000610	RPLI SEC 0000610
Master Purchase Agreements	9/12/2017	RPLI SEC 0000612	RPLI SEC 0000614
Master Purchase Agreements	9/28/2017	RPLI SEC 0000618	RPLI SEC 0000619
Master Purchase Agreements	10/3/2017	RPLI SEC 0000622	RPLI SEC 0000623
Master Purchase Agreements	8/3/2017	RPLI SEC 0000632	RPLI SEC 0000634
Master Purchase Agreements	8/7/2017	RPLI SEC 0000643	RPLI SEC 0000643
Master Purchase Agreements	8/9/2017	RPLI SEC 0000645	RPLI SEC 0000645
Master Purchase Agreements	8/21/2017	RPLI SEC 0000651	RPLI SEC 0000651
Master Purchase Agreements	8/23/2017	RPLI SEC 0000654	RPLI SEC 0000654
Master Purchase Agreements	8/23/2017	RPLI SEC 0000656	RPLI SEC 0000656
Master Purchase Agreements	8/25/2017	RPLI SEC 0000667	RPLI SEC 0000672
Master Purchase Agreements	8/30/2017	RPLI SEC 0000679	RPLI SEC 0000681
Master Purchase Agreements	8/30/2017	RPLI SEC 0000684	RPLI SEC 0000684

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/1/2017	RPLI SEC 0000686	RPLI SEC 0000686
Master Purchase Agreements	9/5/2017	RPLI SEC 0000689	RPLI SEC 0000695
Master Purchase Agreements	9/5/2017	RPLI SEC 0000703	RPLI SEC 0000705
Master Purchase Agreements	9/6/2017	RPLI SEC 0000708	RPLI SEC 0000708
Master Purchase Agreements	9/8/2017	RPLI SEC 0000710	RPLI SEC 0000710
Master Purchase Agreements	9/11/2017	RPLI SEC 0000712	RPLI SEC 0000712
Master Purchase Agreements	9/15/2017	RPLI SEC 0000716	RPLI SEC 0000716
Master Purchase Agreements	9/18/2017	RPLI SEC 0000717	RPLI SEC 0000717
Master Purchase Agreements	9/19/2017	RPLI SEC 0000719	RPLI SEC 0000719
Master Purchase Agreements	9/20/2017	RPLI SEC 0000721	RPLI SEC 0000721
Master Purchase Agreements	9/22/2017	RPLI SEC 0000723	RPLI SEC 0000723
Master Purchase Agreements	9/22/2017	RPLI SEC 0000725	RPLI SEC 0000725
Master Purchase Agreements	9/25/2017	RPLI SEC 0000727	RPLI SEC 0000727
Master Purchase Agreements	9/28/2017	RPLI SEC 0000729	RPLI SEC 0000729
Master Purchase Agreements	10/2/2017	RPLI SEC 0000732	RPLI SEC 0000732
Master Purchase Agreements	10/3/2017	RPLI SEC 0000734	RPLI SEC 0000734
Master Purchase Agreements	10/5/2017	RPLI SEC 0000736	RPLI SEC 0000736
Master Purchase Agreements	10/10/2017	RPLI SEC 0000738	RPLI SEC 0000738
Master Purchase Agreements	10/11/2017	RPLI SEC 0000740	RPLI SEC 0000740
Master Purchase Agreements	10/16/2017	RPLI SEC 0000746	RPLI SEC 0000746
Master Purchase Agreements	10/18/2017	RPLI SEC 0000748	RPLI SEC 0000748
Master Purchase Agreements	10/19/2017	RPLI SEC 0000750	RPLI SEC 0000750

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	10/20/2017	RPLI SEC 0000752	RPLI SEC 0000752
Master Purchase Agreements	10/23/2017	RPLI SEC 0000754	RPLI SEC 0000754
Master Purchase Agreements	11/1/2017	RPLI SEC 0000762	RPLI SEC 0000762
Master Purchase Agreements	11/6/2017	RPLI SEC 0000764	RPLI SEC 0000764
Master Purchase Agreements	11/30/2017	RPLI SEC 0000770	RPLI SEC 0000770
Master Purchase Agreements	12/1/2017	RPLI SEC 0000772	RPLI SEC 0000772
Master Purchase Agreements	12/6/2017	RPLI SEC 0000776	RPLI SEC 0000776
Master Purchase Agreements	12/7/2017	RPLI SEC 0000778	RPLI SEC 0000778
Master Purchase Agreements	12/8/2017	RPLI SEC 0000780	RPLI SEC 0000780
Master Purchase Agreements	12/12/2017	RPLI SEC 0000782	RPLI SEC 0000782
Master Purchase Agreements	10/19/2017	RPLI SEC 0000785	RPLI SEC 0000785
Master Purchase Agreements	11/27/2017	RPLI SEC 0000788	RPLI SEC 0000788
Master Purchase Agreements	12/5/2017	RPLI SEC 0000789	RPLI SEC 0000789
Master Purchase Agreements	8/3/2017	RPLI SEC 0000792	RPLI SEC 0000807
Master Purchase Agreements	9/5/2017	RPLI SEC 0000808	RPLI SEC 0000823
Master Purchase Agreements	4/28/2017	RPLI SEC 0000824	RPLI SEC 0000838
Master Purchase Agreements	6/8/2017	RPLI SEC 0000839	RPLI SEC 0000853
Master Purchase Agreements	9/29/2017	RPLI SEC 0000860	RPLI SEC 0000860
Master Purchase Agreements	9/18/2017	RPLI SEC 0000861	RPLI SEC 0000873
Master Purchase Agreements	1/26/2018	RPLI SEC 0000938	RPLI SEC 0000954
Master Purchase Agreements	4/9/2018	RPLI SEC 0000981	RPLI SEC 0000981
Master Purchase Agreements	1/3/2018	RPLI SEC 0000982	RPLI SEC 0000982

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	1/30/2018	RPLI SEC 0000984	RPLI SEC 0000984
Master Purchase Agreements	1/31/2018	RPLI SEC 0000986	RPLI SEC 0000986
Master Purchase Agreements	2/5/2018	RPLI SEC 0000992	RPLI SEC 0000992
Master Purchase Agreements	3/25/2018	RPLI SEC 0000996	RPLI SEC 0000996
Master Purchase Agreements	3/27/2018	RPLI SEC 0000998	RPLI SEC 0000998
Master Purchase Agreements	4/4/2018	RPLI SEC 0001000	RPLI SEC 0001000
Master Purchase Agreements	4/16/2018	RPLI SEC 0001002	RPLI SEC 0001002
Master Purchase Agreements	2/8/2018	RPLI SEC 0001009	RPLI SEC 0001009
Master Purchase Agreements	2/1/2018	RPLI SEC 0001010	RPLI SEC 0001025
Master Purchase Agreements	2/12/2018	RPLI SEC 0001027	RPLI SEC 0001027
Master Purchase Agreements	4/20/2018	RPLI SEC 0001028	RPLI SEC 0001029
Master Purchase Agreements	9/24/2019	RPLI SEC 0075293	RPLI SEC 0075294
Master Purchase Agreements	4/28/2017	RPLI SEC 0090901	RPLI SEC 0090914
Master Purchase Agreements	4/28/2017	RPLI SEC 0090915	RPLI SEC 0090915
Master Purchase Agreements	5/14/2018	RPLI SEC 0101958	RPLI SEC 0101958
Master Purchase Agreements	4/20/2018	RPLI SEC 0102191	RPLI SEC 0102191
Master Purchase Agreements	4/20/2018	RPLI SEC 0102334	RPLI SEC 0102334
Master Purchase Agreements	4/20/2018	RPLI SEC 0102337	RPLI SEC 0102337
Master Purchase Agreements	4/20/2018	RPLI SEC 0102610	RPLI SEC 0102610
Master Purchase Agreements	6/26/2017	RPLI SEC 0103382	RPLI SEC 0103382
Master Purchase Agreements	5/14/2018	RPLI SEC 0103987	RPLI SEC 0103988
Master Purchase Agreements	5/14/2018	RPLI SEC 0103991	RPLI SEC 0103991

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	4/20/2018	RPLI SEC 0104114	RPLI SEC 0104115
Master Purchase Agreements	4/16/2018	RPLI SEC 0104190	RPLI SEC 0104190
Master Purchase Agreements	2/6/2018	RPLI SEC 0104570	RPLI SEC 0104570
Master Purchase Agreements	1/18/2018	RPLI SEC 0104609	RPLI SEC 0104609
Master Purchase Agreements	2/5/2018	RPLI SEC 0104714	RPLI SEC 0104714
Master Purchase Agreements	2/5/2018	RPLI SEC 0104718	RPLI SEC 0104718
Master Purchase Agreements	12/8/2017	RPLI SEC 0105148	RPLI SEC 0105148
Master Purchase Agreements	11/21/2017	RPLI SEC 0105233	RPLI SEC 0105233
Master Purchase Agreements	12/7/2017	RPLI SEC 0105474	RPLI SEC 0105474
Master Purchase Agreements	11/6/2017	RPLI SEC 0105615	RPLI SEC 0105615
Master Purchase Agreements	10/5/2017	RPLI SEC 0106102	RPLI SEC 0106102
Master Purchase Agreements	10/24/2017	RPLI SEC 0106222	RPLI SEC 0106222
Master Purchase Agreements	9/14/2017	RPLI SEC 0106450	RPLI SEC 0106450
Master Purchase Agreements	9/13/2017	RPLI SEC 0106451	RPLI SEC 0106451
Master Purchase Agreements	9/12/2017	RPLI SEC 0106452	RPLI SEC 0106452
Master Purchase Agreements	9/6/2017	RPLI SEC 0106477	RPLI SEC 0106477
Master Purchase Agreements	9/25/2017	RPLI SEC 0106549	RPLI SEC 0106549
Master Purchase Agreements	9/19/2017	RPLI SEC 0106631	RPLI SEC 0106631
Master Purchase Agreements	9/22/2017	RPLI SEC 0106725	RPLI SEC 0106725
Master Purchase Agreements	9/11/2017	RPLI SEC 0106759	RPLI SEC 0106759
Master Purchase Agreements	9/5/2017	RPLI SEC 0106884	RPLI SEC 0106886
Master Purchase Agreements	9/5/2017	RPLI SEC 0106887	RPLI SEC 0106893

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/1/2017	RPLI SEC 0106997	RPLI SEC 0106997
Master Purchase Agreements	8/30/2017	RPLI SEC 0107034	RPLI SEC 0107034
Master Purchase Agreements	8/30/2017	RPLI SEC 0107058	RPLI SEC 0107060
Master Purchase Agreements	8/25/2017	RPLI SEC 0107074	RPLI SEC 0107078
Master Purchase Agreements	8/25/2017	RPLI SEC 0107079	RPLI SEC 0107079
Master Purchase Agreements	8/23/2017	RPLI SEC 0107120	RPLI SEC 0107120
Master Purchase Agreements	8/21/2017	RPLI SEC 0107171	RPLI SEC 0107171
Master Purchase Agreements	8/14/2017	RPLI SEC 0107200	RPLI SEC 0107200
Master Purchase Agreements	8/16/2017	RPLI SEC 0107228	RPLI SEC 0107228
Master Purchase Agreements	8/24/2017	RPLI SEC 0107378	RPLI SEC 0107381
Master Purchase Agreements	8/23/2017	RPLI SEC 0107387	RPLI SEC 0107388
Master Purchase Agreements	9/11/2017	RPLI SEC 0107393	RPLI SEC 0107393
Master Purchase Agreements	5/14/2018	RPLI SEC 0107669	RPLI SEC 0107669
Master Purchase Agreements	4/16/2018	RPLI SEC 0107722	RPLI SEC 0107722
Master Purchase Agreements	2/12/2018	RPLI SEC 0107801	RPLI SEC 0107801
Master Purchase Agreements	10/26/2017	RPLI SEC 0108271	RPLI SEC 0108271
Master Purchase Agreements	8/3/2017	RPLI SEC 0108634	RPLI SEC 0108649
Master Purchase Agreements	9/10/2018	RPLI SEC 0110507	RPLI SEC 0110507
Master Purchase Agreements	9/10/2018	RPLI SEC 0110513	RPLI SEC 0110513
Master Purchase Agreements	9/19/2018	RPLI SEC 0110516	RPLI SEC 0110516
Master Purchase Agreements	7/31/2018	RPLI SEC 0110650	RPLI SEC 0110650
Master Purchase Agreements	7/2/2018	RPLI SEC 0110707	RPLI SEC 0110707

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	7/2/2018	RPLI SEC 0110813	RPLI SEC 0110813
Master Purchase Agreements	7/2/2018	RPLI SEC 0110823	RPLI SEC 0110823
Master Purchase Agreements	6/23/2018	RPLI SEC 0110833	RPLI SEC 0110833
Master Purchase Agreements	3/19/2019	RPLI SEC 0116729	RPLI SEC 0116729
Master Purchase Agreements	11/28/2018	RPLI SEC 0118011	RPLI SEC 0118014
Master Purchase Agreements	12/19/2018	RPLI SEC 0118124	RPLI SEC 0118125
Master Purchase Agreements	11/7/2018	RPLI SEC 0118225	RPLI SEC 0118226
Master Purchase Agreements	4/25/2019	RPLI SEC 0126691	RPLI SEC 0126691
Master Purchase Agreements	11/14/2018	RPLI SEC 0126761	RPLI SEC 0126762
Master Purchase Agreements	10/8/2018	RPLI SEC 0126865	RPLI SEC 0126866
Master Purchase Agreements	11/7/2018	RPLI SEC 0126888	RPLI SEC 0126888
Master Purchase Agreements	11/6/2018	RPLI SEC 0126932	RPLI SEC 0126933
Master Purchase Agreements	6/23/2018	RPLI SEC 0127007	RPLI SEC 0127007
Master Purchase Agreements	2/25/2019	RPLI SEC 0129451	RPLI SEC 0129451
Master Purchase Agreements	2/25/2019	RPLI SEC 0129455	RPLI SEC 0129455
Master Purchase Agreements	2/21/2019	RPLI SEC 0129502	RPLI SEC 0129502
Master Purchase Agreements	2/21/2019	RPLI SEC 0129518	RPLI SEC 0129518
Master Purchase Agreements	4/15/2019	RPLI SEC 0134578	RPLI SEC 0134579
Master Purchase Agreements	4/15/2019	RPLI SEC 0134596	RPLI SEC 0134597
Master Purchase Agreements	4/25/2019	RPLI SEC 0134865	RPLI SEC 0134865
Master Purchase Agreements	4/5/2019	RPLI SEC 0136992	RPLI SEC 0136992
Master Purchase Agreements	4/5/2019	RPLI SEC 0136998	RPLI SEC 0136998

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	11/1/2018	RPLI SEC 0138209	RPLI SEC 0138209
Master Purchase Agreements	10/30/2018	RPLI SEC 0138259	RPLI SEC 0138259
Master Purchase Agreements	10/30/2018	RPLI SEC 0138271	RPLI SEC 0138271
Master Purchase Agreements	11/26/2018	RPLI SEC 0138306	RPLI SEC 0138306
Master Purchase Agreements	11/26/2018	RPLI SEC 0138332	RPLI SEC 0138332
Master Purchase Agreements	11/1/2018	RPLI SEC 0138636	RPLI SEC 0138636
Master Purchase Agreements	6/20/2017	RPLI SEC 0157399	RPLI SEC 0157399
Master Purchase Agreements	6/20/2017	RPLI SEC 0157406	RPLI SEC 0157406
Master Purchase Agreements	BLANK	RPLI SEC 0168005	RPLI SEC 0168006
Master Purchase Agreements	4/2/2018	RPLI SEC 0172201	RPLI SEC 0172201
Master Purchase Agreements	4/2/2018	RPLI SEC 0172218	RPLI SEC 0172218
Master Purchase Agreements	9/18/2017	RPLI SEC 0172371	RPLI SEC 0172371
Master Purchase Agreements	9/15/2017	RPLI SEC 0172399	RPLI SEC 0172399
Master Purchase Agreements	2/22/2018	RPLI SEC 0173808	RPLI SEC 0173826
Master Purchase Agreements	BLANK	RPLI SEC 0194850	RPLI SEC 0194850
Master Purchase Agreements	11/6/2017	RPLI SEC 0203490	RPLI SEC 0203490
Master Purchase Agreements	9/5/2017	RPLI SEC 0203576	RPLI SEC 0203585
Master Purchase Agreements	9/27/2017	RPLI SEC 0203593	RPLI SEC 0203593
Master Purchase Agreements	8/24/2017	RPLI SEC 0203609	RPLI SEC 0203612
Master Purchase Agreements	4/20/2018	RPLI SEC 0207874	RPLI SEC 0207875
Master Purchase Agreements	4/9/2018	RPLI SEC 0207887	RPLI SEC 0207887
Master Purchase Agreements	3/27/2018	RPLI SEC 0208211	RPLI SEC 0208211

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	1/3/2018	RPLI SEC 0209008	RPLI SEC 0209008
Master Purchase Agreements	12/5/2017	RPLI SEC 0209016	RPLI SEC 0209016
Master Purchase Agreements	12/8/2017	RPLI SEC 0209060	RPLI SEC 0209060
Master Purchase Agreements	10/23/2017	RPLI SEC 0209078	RPLI SEC 0209078
Master Purchase Agreements	10/19/2017	RPLI SEC 0209082	RPLI SEC 0209082
Master Purchase Agreements	10/10/2017	RPLI SEC 0209096	RPLI SEC 0209096
Master Purchase Agreements	10/3/2017	RPLI SEC 0209104	RPLI SEC 0209104
Master Purchase Agreements	8/7/2017	RPLI SEC 0209112	RPLI SEC 0209112
Master Purchase Agreements	8/3/2017	RPLI SEC 0209116	RPLI SEC 0209118
Master Purchase Agreements	8/3/2017	RPLI SEC 0209122	RPLI SEC 0209122
Master Purchase Agreements	9/29/2017	RPLI SEC 0209126	RPLI SEC 0209126
Master Purchase Agreements	9/28/2017	RPLI SEC 0209132	RPLI SEC 0209132
Master Purchase Agreements	9/28/2017	RPLI SEC 0209134	RPLI SEC 0209134
Master Purchase Agreements	9/27/2017	RPLI SEC 0209136	RPLI SEC 0209136
Master Purchase Agreements	8/14/2017	RPLI SEC 0209149	RPLI SEC 0209149
Master Purchase Agreements	8/24/2017	RPLI SEC 0209173	RPLI SEC 0209176
Master Purchase Agreements	6/10/2017	RPLI SEC 0209253	RPLI SEC 0209265
Master Purchase Agreements	3/18/2019	RPLI SEC 0233107	RPLI SEC 0233107
Master Purchase Agreements	3/26/2018	RPLI SEC 0241725	RPLI SEC 0241725
Master Purchase Agreements	2/8/2018	RPLI SEC 0241884	RPLI SEC 0241884
Master Purchase Agreements	3/18/2019	RPLI SEC 0244015	RPLI SEC 0244015
Master Purchase Agreements	3/18/2019	RPLI SEC 0244022	RPLI SEC 0244022

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/19/2018	RPLI SEC 0246810	RPLI SEC 0246810
Master Purchase Agreements	8/9/2018	RPLI SEC 0246828	RPLI SEC 0246829
Master Purchase Agreements	8/9/2018	RPLI SEC 0246830	RPLI SEC 0246831
Master Purchase Agreements	7/2/2018	RPLI SEC 0247017	RPLI SEC 0247017
Master Purchase Agreements	7/2/2018	RPLI SEC 0247031	RPLI SEC 0247031
Master Purchase Agreements	4/20/2018	RPLI SEC 0253447	RPLI SEC 0253447
Master Purchase Agreements	4/20/2018	RPLI SEC 0253448	RPLI SEC 0253448
Master Purchase Agreements	4/20/2018	RPLI SEC 0253449	RPLI SEC 0253449
Master Purchase Agreements	4/20/2018	RPLI SEC 0253450	RPLI SEC 0253450
Master Purchase Agreements	10/5/2017	RPLI SEC 0253906	RPLI SEC 0253915
Master Purchase Agreements	10/25/2017	RPLI SEC 0253964	RPLI SEC 0253964
Master Purchase Agreements	8/24/2017	RPLI SEC 0254154	RPLI SEC 0254157
Master Purchase Agreements	8/3/2017	RPLI SEC 0254179	RPLI SEC 0254179
Master Purchase Agreements	8/3/2017	RPLI SEC 0254180	RPLI SEC 0254180
Master Purchase Agreements	8/9/2017	RPLI SEC 0254196	RPLI SEC 0254196
Master Purchase Agreements	1/25/2019	RPLI SEC 0254877	RPLI SEC 0254878
Master Purchase Agreements	11/14/2018	RPLI SEC 0255842	RPLI SEC 0255843
Master Purchase Agreements	11/7/2018	RPLI SEC 0256027	RPLI SEC 0256027
Master Purchase Agreements	11/6/2018	RPLI SEC 0256041	RPLI SEC 0256042
Master Purchase Agreements	8/10/2018	RPLI SEC 0256473	RPLI SEC 0256474
Master Purchase Agreements	8/10/2018	RPLI SEC 0256475	RPLI SEC 0256476
Master Purchase Agreements	7/31/2018	RPLI SEC 0256509	RPLI SEC 0256509

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	7/6/2018	RPLI SEC 0256542	RPLI SEC 0256542
Master Purchase Agreements	11/29/2014	RPLI SEC 0259585	RPLI SEC 0259593
Master Purchase Agreements	2/8/2018	RPLI SEC 0259898	RPLI SEC 0259898
Master Purchase Agreements	2/6/2018	RPLI SEC 0259904	RPLI SEC 0259904
Master Purchase Agreements	2/1/2018	RPLI SEC 0259975	RPLI SEC 0259990
Master Purchase Agreements	12/20/2018	RPLI SEC 0263043	RPLI SEC 0263043
Master Purchase Agreements	9/11/2018	RPLI SEC 0266574	RPLI SEC 0266574
Master Purchase Agreements	9/10/2018	RPLI SEC 0266580	RPLI SEC 0266580
Master Purchase Agreements	9/10/2018	RPLI SEC 0266581	RPLI SEC 0266581
Master Purchase Agreements	9/5/2018	RPLI SEC 0266598	RPLI SEC 0266598
Master Purchase Agreements	9/4/2018	RPLI SEC 0266601	RPLI SEC 0266601
Master Purchase Agreements	9/4/2018	RPLI SEC 0266602	RPLI SEC 0266602
Master Purchase Agreements	8/28/2018	RPLI SEC 0266605	RPLI SEC 0266605
Master Purchase Agreements	8/28/2018	RPLI SEC 0266606	RPLI SEC 0266606
Master Purchase Agreements	8/28/2018	RPLI SEC 0266607	RPLI SEC 0266607
Master Purchase Agreements	8/27/2018	RPLI SEC 0266610	RPLI SEC 0266610
Master Purchase Agreements	8/24/2018	RPLI SEC 0266620	RPLI SEC 0266621
Master Purchase Agreements	8/23/2018	RPLI SEC 0266629	RPLI SEC 0266629
Master Purchase Agreements	8/8/2018	RPLI SEC 0266659	RPLI SEC 0266660
Master Purchase Agreements	8/7/2018	RPLI SEC 0266663	RPLI SEC 0266664
Master Purchase Agreements	7/3/2020	RPLI SEC 0302125	RPLI SEC 0302141
Master Purchase Agreements	9/8/2017	RPLI SEC 0350217	RPLI SEC 0350217

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/11/2017	RPLI SEC 0350254	RPLI SEC 0350254
Master Purchase Agreements	9/20/2017	RPLI SEC 0350299	RPLI SEC 0350299
Master Purchase Agreements	9/22/2017	RPLI SEC 0350318	RPLI SEC 0350318
Master Purchase Agreements	9/15/2017	RPLI SEC 0350339	RPLI SEC 0350340
Master Purchase Agreements	10/6/2017	RPLI SEC 0373443	RPLI SEC 0373443
Master Purchase Agreements	4/4/2018	RPLI SEC 0373628	RPLI SEC 0373628
Master Purchase Agreements	10/13/2017	RPLI SEC 0373788	RPLI SEC 0373788
Master Purchase Agreements	10/13/2017	RPLI SEC 0373825	RPLI SEC 0373825
Master Purchase Agreements	10/26/2017	RPLI SEC 0374134	RPLI SEC 0374134
Master Purchase Agreements	10/27/2017	RPLI SEC 0374197	RPLI SEC 0374197
Master Purchase Agreements	11/1/2017	RPLI SEC 0374213	RPLI SEC 0374213
Master Purchase Agreements	11/6/2017	RPLI SEC 0374298	RPLI SEC 0374298
Master Purchase Agreements	11/6/2017	RPLI SEC 0374402	RPLI SEC 0374402
Master Purchase Agreements	12/6/2017	RPLI SEC 0374471	RPLI SEC 0374471
Master Purchase Agreements	12/8/2017	RPLI SEC 0374612	RPLI SEC 0374612
Master Purchase Agreements	12/13/2017	RPLI SEC 0374649	RPLI SEC 0374649
Master Purchase Agreements	11/22/2017	RPLI SEC 0374758	RPLI SEC 0374758
Master Purchase Agreements	12/5/2017	RPLI SEC 0374795	RPLI SEC 0374795
Master Purchase Agreements	1/30/2018	RPLI SEC 0374802	RPLI SEC 0374802
Master Purchase Agreements	1/31/2018	RPLI SEC 0374824	RPLI SEC 0374824
Master Purchase Agreements	2/1/2018	RPLI SEC 0374835	RPLI SEC 0374835
Master Purchase Agreements	2/1/2018	RPLI SEC 0374843	RPLI SEC 0374843

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	2/2/2018	RPLI SEC 0374876	RPLI SEC 0374876
Master Purchase Agreements	2/2/2018	RPLI SEC 0374880	RPLI SEC 0374880
Master Purchase Agreements	9/28/2017	RPLI SEC 0374888	RPLI SEC 0374888
Master Purchase Agreements	1/30/2018	RPLI SEC 0383254	RPLI SEC 0383254
Master Purchase Agreements	9/15/2017	RPLI SEC 0384242	RPLI SEC 0384242
Master Purchase Agreements	12/5/2018	RPLI SEC 0440541	RPLI SEC 0440541
Master Purchase Agreements	11/19/2018	RPLI SEC 0440606	RPLI SEC 0440606
Master Purchase Agreements	11/14/2018	RPLI SEC 0544034	RPLI SEC 0544034
Master Purchase Agreements	11/28/2018	RPLI SEC 0544094	RPLI SEC 0544094
Master Purchase Agreements	12/19/2018	RPLI SEC 0544097	RPLI SEC 0544097
Master Purchase Agreements	12/12/2018	RPLI SEC 0544104	RPLI SEC 0544104
Master Purchase Agreements	12/5/2018	RPLI SEC 0545516	RPLI SEC 0545516
Master Purchase Agreements	12/12/2018	RPLI SEC 0571573	RPLI SEC 0571573
Master Purchase Agreements	11/14/2018	RPLI SEC 0571723	RPLI SEC 0571723
Master Purchase Agreements	7/31/2018	RPLI SEC 0607702	RPLI SEC 0607702
Master Purchase Agreements	8/7/2018	RPLI SEC 0607722	RPLI SEC 0607723
Master Purchase Agreements	8/8/2018	RPLI SEC 0607724	RPLI SEC 0607725
Master Purchase Agreements	8/9/2018	RPLI SEC 0607726	RPLI SEC 0607727
Master Purchase Agreements	7/2/2018	RPLI SEC 0608975	RPLI SEC 0608991
Master Purchase Agreements	5/14/2018	RPLI SEC 0608993	RPLI SEC 0608993
Master Purchase Agreements	5/14/2018	RPLI SEC 0608996	RPLI SEC 0608996
Master Purchase Agreements	2/22/2018	RPLI SEC 0609024	RPLI SEC 0609042

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	8/6/2018	RPLI SEC 0668885	RPLI SEC 0668897
Master Purchase Agreements	6/8/2017	RPLI SEC 0675024	RPLI SEC 0675034
Master Purchase Agreements	10/5/2014	RPLI SEC 0676242	RPLI SEC 0676250
Master Purchase Agreements	8/24/2017	RPLI SEC 0678832	RPLI SEC 0678832
Master Purchase Agreements	8/25/2017	RPLI SEC 0678833	RPLI SEC 0678835
Master Purchase Agreements	8/30/2017	RPLI SEC 0678836	RPLI SEC 0678836
Master Purchase Agreements	9/5/2017	RPLI SEC 0678837	RPLI SEC 0678841
Master Purchase Agreements	9/5/2017	RPLI SEC 0678842	RPLI SEC 0678843
Master Purchase Agreements	9/13/2017	RPLI SEC 0678844	RPLI SEC 0678845
Master Purchase Agreements	9/28/2017	RPLI SEC 0678846	RPLI SEC 0678846
Master Purchase Agreements	6/16/2017	RPLI SEC 0794992	RPLI SEC 0795003
Master Purchase Agreements	6/10/2017	RPLI SEC 0795114	RPLI SEC 0795126
Master Purchase Agreements	8/3/2017	RPLI SEC 0796726	RPLI SEC 0796726
Master Purchase Agreements	12/18/2018	RPLI SEC 0890516	RPLI SEC 0890521
Master Purchase Agreements	6/28/2018	RPLI SEC 0890708	RPLI SEC 0890725
Master Purchase Agreements	6/28/2018	RPLI SEC 0890726	RPLI SEC 0890744
Master Purchase Agreements	2/22/2018	RPLI SEC 0890753	RPLI SEC 0890771
Master Purchase Agreements	2/1/2018	RPLI SEC 0890787	RPLI SEC 0890802
Master Purchase Agreements	11/6/2017	RPLI SEC 0890803	RPLI SEC 0890816
Master Purchase Agreements	6/10/2017	RPLI SEC 0890922	RPLI SEC 0890934
Master Purchase Agreements	11/29/2014	RPLI SEC 0892402	RPLI SEC 0892410
Master Purchase Agreements	7/3/2020	RPLI SEC 0899095	RPLI SEC 0899102

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	1/25/2019	RPLI SEC 0899473	RPLI SEC 0899474
Master Purchase Agreements	11/18/2019	RPLI SEC 0899475	RPLI SEC 0899477
Master Purchase Agreements	11/18/2019	RPLI SEC 0899583	RPLI SEC 0899585
Master Purchase Agreements	9/24/2018	RPLI SEC 0899596	RPLI SEC 0899614
Master Purchase Agreements	9/23/2019	RPLI SEC 0899615	RPLI SEC 0899616
Master Purchase Agreements	11/19/2018	RPLI SEC 1055384	RPLI SEC 1055384
Master Purchase Agreements	12/18/2018	SEC-LIT-EPROD-000095980	SEC-LIT-EPROD-000095985
Master Purchase Agreements	1/26/2018	SEC-LIT-EPROD-000096008	SEC-LIT-EPROD-000096024
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000231362	SEC-LIT-EPROD-000231362
Master Purchase Agreements	12/12/2017	SEC-LIT-EPROD-000231430	SEC-LIT-EPROD-000231430
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000231506	SEC-LIT-EPROD-000231506
Master Purchase Agreements	4/20/2018	SEC-LIT-EPROD-000231679	SEC-LIT-EPROD-000231680
Master Purchase Agreements	4/20/2018	SEC-LIT-EPROD-000335476	SEC-LIT-EPROD-000335477
Master Purchase Agreements	2/6/2018	SEC-LIT-EPROD-000335917	SEC-LIT-EPROD-000335917
Master Purchase Agreements	2/5/2018	SEC-LIT-EPROD-000336061	SEC-LIT-EPROD-000336061
Master Purchase Agreements	12/13/2017	SEC-LIT-EPROD-000336160	SEC-LIT-EPROD-000336160
Master Purchase Agreements	12/12/2017	SEC-LIT-EPROD-000336226	SEC-LIT-EPROD-000336226
Master Purchase Agreements	1/3/2018	SEC-LIT-EPROD-000336340	SEC-LIT-EPROD-000336340
Master Purchase Agreements	1/3/2018	SEC-LIT-EPROD-000336359	SEC-LIT-EPROD-000336359
Master Purchase Agreements	12/8/2017	SEC-LIT-EPROD-000336451	SEC-LIT-EPROD-000336451
Master Purchase Agreements	12/7/2017	SEC-LIT-EPROD-000336518	SEC-LIT-EPROD-000336518
Master Purchase Agreements	11/27/2017	SEC-LIT-EPROD-000336527	SEC-LIT-EPROD-000336528

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	11/30/2017	SEC-LIT-EPROD-000336709	SEC-LIT-EPROD-000336709
Master Purchase Agreements	12/5/2017	SEC-LIT-EPROD-000336882	SEC-LIT-EPROD-000336882
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000336962	SEC-LIT-EPROD-000336962
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000337031	SEC-LIT-EPROD-000337031
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000337152	SEC-LIT-EPROD-000337152
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000337181	SEC-LIT-EPROD-000337181
Master Purchase Agreements	10/27/2017	SEC-LIT-EPROD-000337321	SEC-LIT-EPROD-000337321
Master Purchase Agreements	10/24/2017	SEC-LIT-EPROD-000337552	SEC-LIT-EPROD-000337552
Master Purchase Agreements	10/23/2017	SEC-LIT-EPROD-000337585	SEC-LIT-EPROD-000337585
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000337774	SEC-LIT-EPROD-000337774
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000337791	SEC-LIT-EPROD-000337791
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000337847	SEC-LIT-EPROD-000337847
Master Purchase Agreements	9/20/2017	SEC-LIT-EPROD-000337926	SEC-LIT-EPROD-000337926
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000337951	SEC-LIT-EPROD-000337951
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000338082	SEC-LIT-EPROD-000338082
Master Purchase Agreements	9/8/2017	SEC-LIT-EPROD-000338153	SEC-LIT-EPROD-000338153
Master Purchase Agreements	9/5/2017	SEC-LIT-EPROD-000338197	SEC-LIT-EPROD-000338206
Master Purchase Agreements	9/1/2017	SEC-LIT-EPROD-000338338	SEC-LIT-EPROD-000338338
Master Purchase Agreements	8/30/2017	SEC-LIT-EPROD-000338376	SEC-LIT-EPROD-000338376
Master Purchase Agreements	8/25/2017	SEC-LIT-EPROD-000338422	SEC-LIT-EPROD-000338426
Master Purchase Agreements	8/23/2017	SEC-LIT-EPROD-000338466	SEC-LIT-EPROD-000338466
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000338476	SEC-LIT-EPROD-000338478

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	8/7/2017	SEC-LIT-EPROD-000338590	SEC-LIT-EPROD-000338590
Master Purchase Agreements	8/7/2017	SEC-LIT-EPROD-000338596	SEC-LIT-EPROD-000338596
Master Purchase Agreements	2/1/2018	SEC-LIT-EPROD-000338681	SEC-LIT-EPROD-000338681
Master Purchase Agreements	11/21/2017	SEC-LIT-EPROD-000338684	SEC-LIT-EPROD-000338684
Master Purchase Agreements	8/16/2017	SEC-LIT-EPROD-000338707	SEC-LIT-EPROD-000338707
Master Purchase Agreements	8/30/2017	SEC-LIT-EPROD-000338719	SEC-LIT-EPROD-000338721
Master Purchase Agreements	8/24/2017	SEC-LIT-EPROD-000338725	SEC-LIT-EPROD-000338728
Master Purchase Agreements	8/23/2017	SEC-LIT-EPROD-000338734	SEC-LIT-EPROD-000338735
Master Purchase Agreements	5/14/2018	SEC-LIT-EPROD-000339016	SEC-LIT-EPROD-000339016
Master Purchase Agreements	4/16/2018	SEC-LIT-EPROD-000339069	SEC-LIT-EPROD-000339069
Master Purchase Agreements	3/26/2018	SEC-LIT-EPROD-000339074	SEC-LIT-EPROD-000339074
Master Purchase Agreements	4/4/2018	SEC-LIT-EPROD-000339078	SEC-LIT-EPROD-000339078
Master Purchase Agreements	3/27/2018	SEC-LIT-EPROD-000339082	SEC-LIT-EPROD-000339082
Master Purchase Agreements	12/3/2017	SEC-LIT-EPROD-000339479	SEC-LIT-EPROD-000339479
Master Purchase Agreements	11/22/2017	SEC-LIT-EPROD-000339487	SEC-LIT-EPROD-000339487
Master Purchase Agreements	11/1/2017	SEC-LIT-EPROD-000339591	SEC-LIT-EPROD-000339591
Master Purchase Agreements	10/26/2017	SEC-LIT-EPROD-000339618	SEC-LIT-EPROD-000339618
Master Purchase Agreements	10/16/2017	SEC-LIT-EPROD-000339676	SEC-LIT-EPROD-000339676
Master Purchase Agreements	10/11/2017	SEC-LIT-EPROD-000339689	SEC-LIT-EPROD-000339689
Master Purchase Agreements	10/20/2017	SEC-LIT-EPROD-000339736	SEC-LIT-EPROD-000339736
Master Purchase Agreements	10/5/2017	SEC-LIT-EPROD-000339785	SEC-LIT-EPROD-000339785
Master Purchase Agreements	9/25/2017	SEC-LIT-EPROD-000339797	SEC-LIT-EPROD-000339797

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	10/2/2017	SEC-LIT-EPROD-000339820	SEC-LIT-EPROD-000339820
Master Purchase Agreements	9/19/2017	SEC-LIT-EPROD-000339830	SEC-LIT-EPROD-000339830
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000339841	SEC-LIT-EPROD-000339841
Master Purchase Agreements	9/11/2017	SEC-LIT-EPROD-000339912	SEC-LIT-EPROD-000339912
Master Purchase Agreements	8/21/2017	SEC-LIT-EPROD-000339916	SEC-LIT-EPROD-000339916
Master Purchase Agreements	8/14/2017	SEC-LIT-EPROD-000339963	SEC-LIT-EPROD-000339963
Master Purchase Agreements	8/25/2017	SEC-LIT-EPROD-000339967	SEC-LIT-EPROD-000339974
Master Purchase Agreements	8/9/2017	SEC-LIT-EPROD-000340028	SEC-LIT-EPROD-000340028
Master Purchase Agreements	2/25/2019	SEC-LIT-EPROD-000360802	SEC-LIT-EPROD-000360802
Master Purchase Agreements	2/21/2019	SEC-LIT-EPROD-000360865	SEC-LIT-EPROD-000360865
Master Purchase Agreements	4/15/2019	SEC-LIT-EPROD-000365925	SEC-LIT-EPROD-000365926
Master Purchase Agreements	4/25/2019	SEC-LIT-EPROD-000366212	SEC-LIT-EPROD-000366212
Master Purchase Agreements	4/5/2019	SEC-LIT-EPROD-000368345	SEC-LIT-EPROD-000368345
Master Purchase Agreements	10/30/2018	SEC-LIT-EPROD-000369618	SEC-LIT-EPROD-000369618
Master Purchase Agreements	11/26/2018	SEC-LIT-EPROD-000369653	SEC-LIT-EPROD-000369653
Master Purchase Agreements	6/20/2017	SEC-LIT-EPROD-000388727	SEC-LIT-EPROD-000388727
Master Purchase Agreements	9/6/2017	SEC-LIT-EPROD-000403585	SEC-LIT-EPROD-000403585
Master Purchase Agreements	10/24/2017	SEC-LIT-EPROD-000403679	SEC-LIT-EPROD-000403679
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000403734	SEC-LIT-EPROD-000403734
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000403748	SEC-LIT-EPROD-000403748
Master Purchase Agreements	9/18/2017	SEC-LIT-EPROD-000403759	SEC-LIT-EPROD-000403759
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000403767	SEC-LIT-EPROD-000403767

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000434903	SEC-LIT-EPROD-000434903
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000434966	SEC-LIT-EPROD-000434968
Master Purchase Agreements	3/27/2018	SEC-LIT-EPROD-000439547	SEC-LIT-EPROD-000439547
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000440280	SEC-LIT-EPROD-000440280
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000440282	SEC-LIT-EPROD-000440282
Master Purchase Agreements	11/1/2017	SEC-LIT-EPROD-000440284	SEC-LIT-EPROD-000440284
Master Purchase Agreements	1/3/2018	SEC-LIT-EPROD-000440344	SEC-LIT-EPROD-000440344
Master Purchase Agreements	11/22/2017	SEC-LIT-EPROD-000440346	SEC-LIT-EPROD-000440346
Master Purchase Agreements	11/21/2017	SEC-LIT-EPROD-000440348	SEC-LIT-EPROD-000440348
Master Purchase Agreements	12/5/2017	SEC-LIT-EPROD-000440350	SEC-LIT-EPROD-000440350
Master Purchase Agreements	12/5/2017	SEC-LIT-EPROD-000440352	SEC-LIT-EPROD-000440352
Master Purchase Agreements	12/1/2017	SEC-LIT-EPROD-000440373	SEC-LIT-EPROD-000440373
Master Purchase Agreements	11/30/2017	SEC-LIT-EPROD-000440375	SEC-LIT-EPROD-000440375
Master Purchase Agreements	11/27/2017	SEC-LIT-EPROD-000440377	SEC-LIT-EPROD-000440377
Master Purchase Agreements	1/18/2018	SEC-LIT-EPROD-000440379	SEC-LIT-EPROD-000440379
Master Purchase Agreements	12/13/2017	SEC-LIT-EPROD-000440383	SEC-LIT-EPROD-000440383
Master Purchase Agreements	12/12/2017	SEC-LIT-EPROD-000440388	SEC-LIT-EPROD-000440388
Master Purchase Agreements	12/8/2017	SEC-LIT-EPROD-000440390	SEC-LIT-EPROD-000440390
Master Purchase Agreements	12/12/2017	SEC-LIT-EPROD-000440392	SEC-LIT-EPROD-000440392
Master Purchase Agreements	12/7/2017	SEC-LIT-EPROD-000440394	SEC-LIT-EPROD-000440394
Master Purchase Agreements	12/8/2017	SEC-LIT-EPROD-000440396	SEC-LIT-EPROD-000440396
Master Purchase Agreements	12/7/2017	SEC-LIT-EPROD-000440398	SEC-LIT-EPROD-000440398

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	12/6/2017	SEC-LIT-EPROD-000440400	SEC-LIT-EPROD-000440400
Master Purchase Agreements	10/27/2017	SEC-LIT-EPROD-000440402	SEC-LIT-EPROD-000440402
Master Purchase Agreements	10/26/2017	SEC-LIT-EPROD-000440404	SEC-LIT-EPROD-000440404
Master Purchase Agreements	10/24/2017	SEC-LIT-EPROD-000440406	SEC-LIT-EPROD-000440406
Master Purchase Agreements	10/25/2017	SEC-LIT-EPROD-000440408	SEC-LIT-EPROD-000440408
Master Purchase Agreements	10/23/2017	SEC-LIT-EPROD-000440414	SEC-LIT-EPROD-000440414
Master Purchase Agreements	10/19/2017	SEC-LIT-EPROD-000440416	SEC-LIT-EPROD-000440416
Master Purchase Agreements	10/19/2017	SEC-LIT-EPROD-000440418	SEC-LIT-EPROD-000440418
Master Purchase Agreements	10/16/2017	SEC-LIT-EPROD-000440420	SEC-LIT-EPROD-000440420
Master Purchase Agreements	10/18/2017	SEC-LIT-EPROD-000440422	SEC-LIT-EPROD-000440422
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000440424	SEC-LIT-EPROD-000440424
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000440426	SEC-LIT-EPROD-000440426
Master Purchase Agreements	10/11/2017	SEC-LIT-EPROD-000440428	SEC-LIT-EPROD-000440428
Master Purchase Agreements	10/6/2017	SEC-LIT-EPROD-000440430	SEC-LIT-EPROD-000440430
Master Purchase Agreements	10/10/2017	SEC-LIT-EPROD-000440432	SEC-LIT-EPROD-000440432
Master Purchase Agreements	10/5/2017	SEC-LIT-EPROD-000440434	SEC-LIT-EPROD-000440434
Master Purchase Agreements	10/3/2017	SEC-LIT-EPROD-000440436	SEC-LIT-EPROD-000440436
Master Purchase Agreements	10/2/2017	SEC-LIT-EPROD-000440438	SEC-LIT-EPROD-000440438
Master Purchase Agreements	10/3/2017	SEC-LIT-EPROD-000440440	SEC-LIT-EPROD-000440440
Master Purchase Agreements	10/3/2017	SEC-LIT-EPROD-000440442	SEC-LIT-EPROD-000440442
Master Purchase Agreements	8/9/2017	SEC-LIT-EPROD-000440444	SEC-LIT-EPROD-000440444
Master Purchase Agreements	8/16/2017	SEC-LIT-EPROD-000440446	SEC-LIT-EPROD-000440446

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	8/7/2017	SEC-LIT-EPROD-000440448	SEC-LIT-EPROD-000440448
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000440450	SEC-LIT-EPROD-000440450
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000440452	SEC-LIT-EPROD-000440454
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000440456	SEC-LIT-EPROD-000440456
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000440458	SEC-LIT-EPROD-000440458
Master Purchase Agreements	9/29/2017	SEC-LIT-EPROD-000440462	SEC-LIT-EPROD-000440462
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000440464	SEC-LIT-EPROD-000440464
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000440466	SEC-LIT-EPROD-000440466
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000440468	SEC-LIT-EPROD-000440468
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000440470	SEC-LIT-EPROD-000440470
Master Purchase Agreements	9/27/2017	SEC-LIT-EPROD-000440472	SEC-LIT-EPROD-000440472
Master Purchase Agreements	9/25/2017	SEC-LIT-EPROD-000440479	SEC-LIT-EPROD-000440479
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000440481	SEC-LIT-EPROD-000440481
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000440483	SEC-LIT-EPROD-000440483
Master Purchase Agreements	8/14/2017	SEC-LIT-EPROD-000440485	SEC-LIT-EPROD-000440485
Master Purchase Agreements	9/20/2017	SEC-LIT-EPROD-000440487	SEC-LIT-EPROD-000440487
Master Purchase Agreements	9/18/2017	SEC-LIT-EPROD-000440489	SEC-LIT-EPROD-000440489
Master Purchase Agreements	9/1/2017	SEC-LIT-EPROD-000440491	SEC-LIT-EPROD-000440491
Master Purchase Agreements	9/19/2017	SEC-LIT-EPROD-000440493	SEC-LIT-EPROD-000440493
Master Purchase Agreements	8/30/2017	SEC-LIT-EPROD-000440495	SEC-LIT-EPROD-000440495
Master Purchase Agreements	10/30/2017	SEC-LIT-EPROD-000440497	SEC-LIT-EPROD-000440499
Master Purchase Agreements	8/25/2017	SEC-LIT-EPROD-000440501	SEC-LIT-EPROD-000440501

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	8/25/2017	SEC-LIT-EPROD-000440503	SEC-LIT-EPROD-000440507
Master Purchase Agreements	8/24/2017	SEC-LIT-EPROD-000440509	SEC-LIT-EPROD-000440512
Master Purchase Agreements	8/23/2017	SEC-LIT-EPROD-000440514	SEC-LIT-EPROD-000440514
Master Purchase Agreements	8/23/2017	SEC-LIT-EPROD-000440516	SEC-LIT-EPROD-000440516
Master Purchase Agreements	8/21/2017	SEC-LIT-EPROD-000440518	SEC-LIT-EPROD-000440518
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000440520	SEC-LIT-EPROD-000440521
Master Purchase Agreements	9/14/2017	SEC-LIT-EPROD-000440523	SEC-LIT-EPROD-000440523
Master Purchase Agreements	9/13/2017	SEC-LIT-EPROD-000440525	SEC-LIT-EPROD-000440525
Master Purchase Agreements	9/12/2017	SEC-LIT-EPROD-000440527	SEC-LIT-EPROD-000440527
Master Purchase Agreements	9/11/2017	SEC-LIT-EPROD-000440529	SEC-LIT-EPROD-000440529
Master Purchase Agreements	9/11/2017	SEC-LIT-EPROD-000440531	SEC-LIT-EPROD-000440531
Master Purchase Agreements	9/8/2017	SEC-LIT-EPROD-000440533	SEC-LIT-EPROD-000440533
Master Purchase Agreements	9/6/2017	SEC-LIT-EPROD-000440535	SEC-LIT-EPROD-000440535
Master Purchase Agreements	9/5/2017	SEC-LIT-EPROD-000440540	SEC-LIT-EPROD-000440542
Master Purchase Agreements	9/5/2017	SEC-LIT-EPROD-000440557	SEC-LIT-EPROD-000440566
Master Purchase Agreements	9/5/2017	SEC-LIT-EPROD-000440568	SEC-LIT-EPROD-000440574
Master Purchase Agreements	3/18/2019	SEC-LIT-EPROD-000464443	SEC-LIT-EPROD-000464443
Master Purchase Agreements	3/26/2018	SEC-LIT-EPROD-000473063	SEC-LIT-EPROD-000473063
Master Purchase Agreements	8/9/2018	SEC-LIT-EPROD-000478166	SEC-LIT-EPROD-000478167
Master Purchase Agreements	4/28/2017	SEC-LIT-EPROD-000484623	SEC-LIT-EPROD-000484623
Master Purchase Agreements	10/20/2017	SEC-LIT-EPROD-000485441	SEC-LIT-EPROD-000485441
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000485517	SEC-LIT-EPROD-000485517

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	8/10/2018	SEC-LIT-EPROD-000487811	SEC-LIT-EPROD-000487812
Master Purchase Agreements	8/8/2018	SEC-LIT-EPROD-000497997	SEC-LIT-EPROD-000497998
Master Purchase Agreements	8/7/2018	SEC-LIT-EPROD-000498001	SEC-LIT-EPROD-000498002
Master Purchase Agreements	9/4/2018	SEC-LIT-EPROD-000666977	SEC-LIT-EPROD-000666978
Master Purchase Agreements	8/8/2018	SEC-LIT-EPROD-000666979	SEC-LIT-EPROD-000666980
Master Purchase Agreements	8/9/2018	SEC-LIT-EPROD-000666981	SEC-LIT-EPROD-000666984
Master Purchase Agreements	8/10/2018	SEC-LIT-EPROD-000666985	SEC-LIT-EPROD-000666988
Master Purchase Agreements	8/23/2018	SEC-LIT-EPROD-000666989	SEC-LIT-EPROD-000666989
Master Purchase Agreements	8/23/2018	SEC-LIT-EPROD-000666990	SEC-LIT-EPROD-000666990
Master Purchase Agreements	8/24/2018	SEC-LIT-EPROD-000666991	SEC-LIT-EPROD-000666992
Master Purchase Agreements	9/4/2018	SEC-LIT-EPROD-000666993	SEC-LIT-EPROD-000666994
Master Purchase Agreements	9/11/2018	SEC-LIT-EPROD-000666995	SEC-LIT-EPROD-000666995
Master Purchase Agreements	7/3/2020	SEC-LIT-EPROD-000738103	SEC-LIT-EPROD-000738110
Master Purchase Agreements	9/27/2017	SEC-LIT-EPROD-000738395	SEC-LIT-EPROD-000738395
Master Purchase Agreements	9/29/2017	SEC-LIT-EPROD-000738398	SEC-LIT-EPROD-000738398
Master Purchase Agreements	2/8/2018	SEC-LIT-EPROD-000738399	SEC-LIT-EPROD-000738399
Master Purchase Agreements	11/1/2017	SEC-LIT-EPROD-000896647	SEC-LIT-EPROD-000896647
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000896736	SEC-LIT-EPROD-000896736
Master Purchase Agreements	11/6/2017	SEC-LIT-EPROD-000896796	SEC-LIT-EPROD-000896796
Master Purchase Agreements	11/22/2017	SEC-LIT-EPROD-000896878	SEC-LIT-EPROD-000896878
Master Purchase Agreements	11/30/2017	SEC-LIT-EPROD-000896897	SEC-LIT-EPROD-000896897
Master Purchase Agreements	12/5/2017	SEC-LIT-EPROD-000896940	SEC-LIT-EPROD-000896940

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	12/6/2017	SEC-LIT-EPROD-000897006	SEC-LIT-EPROD-000897006
Master Purchase Agreements	12/7/2017	SEC-LIT-EPROD-000897092	SEC-LIT-EPROD-000897092
Master Purchase Agreements	12/8/2017	SEC-LIT-EPROD-000897158	SEC-LIT-EPROD-000897158
Master Purchase Agreements	12/13/2017	SEC-LIT-EPROD-000897290	SEC-LIT-EPROD-000897290
Master Purchase Agreements	1/3/2018	SEC-LIT-EPROD-000897443	SEC-LIT-EPROD-000897443
Master Purchase Agreements	12/12/2017	SEC-LIT-EPROD-000897466	SEC-LIT-EPROD-000897466
Master Purchase Agreements	1/31/2018	SEC-LIT-EPROD-000897647	SEC-LIT-EPROD-000897647
Master Purchase Agreements	2/1/2018	SEC-LIT-EPROD-000897662	SEC-LIT-EPROD-000897662
Master Purchase Agreements	2/2/2018	SEC-LIT-EPROD-000897679	SEC-LIT-EPROD-000897679
Master Purchase Agreements	2/5/2018	SEC-LIT-EPROD-000897693	SEC-LIT-EPROD-000897693
Master Purchase Agreements	2/6/2018	SEC-LIT-EPROD-000897728	SEC-LIT-EPROD-000897728
Master Purchase Agreements	4/4/2018	SEC-LIT-EPROD-000897954	SEC-LIT-EPROD-000897954
Master Purchase Agreements	4/16/2018	SEC-LIT-EPROD-000897979	SEC-LIT-EPROD-000897979
Master Purchase Agreements	5/14/2018	SEC-LIT-EPROD-000898021	SEC-LIT-EPROD-000898021
Master Purchase Agreements	3/26/2018	SEC-LIT-EPROD-000898061	SEC-LIT-EPROD-000898061
Master Purchase Agreements	3/27/2018	SEC-LIT-EPROD-000898086	SEC-LIT-EPROD-000898086
Master Purchase Agreements	10/30/2018	SEC-LIT-EPROD-000898236	SEC-LIT-EPROD-000898236
Master Purchase Agreements	11/26/2018	SEC-LIT-EPROD-000898473	SEC-LIT-EPROD-000898473
Master Purchase Agreements	2/21/2019	SEC-LIT-EPROD-000898735	SEC-LIT-EPROD-000898735
Master Purchase Agreements	2/25/2019	SEC-LIT-EPROD-000898757	SEC-LIT-EPROD-000898757
Master Purchase Agreements	4/5/2019	SEC-LIT-EPROD-000898782	SEC-LIT-EPROD-000898782
Master Purchase Agreements	4/15/2019	SEC-LIT-EPROD-000898803	SEC-LIT-EPROD-000898804

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	4/25/2019	SEC-LIT-EPROD-000898827	SEC-LIT-EPROD-000898827
Master Purchase Agreements	8/7/2017	SEC-LIT-EPROD-000899733	SEC-LIT-EPROD-000899733
Master Purchase Agreements	8/9/2017	SEC-LIT-EPROD-000899747	SEC-LIT-EPROD-000899747
Master Purchase Agreements	8/14/2017	SEC-LIT-EPROD-000899812	SEC-LIT-EPROD-000899812
Master Purchase Agreements	8/16/2017	SEC-LIT-EPROD-000899842	SEC-LIT-EPROD-000899842
Master Purchase Agreements	8/21/2017	SEC-LIT-EPROD-000899928	SEC-LIT-EPROD-000899928
Master Purchase Agreements	8/23/2017	SEC-LIT-EPROD-000899969	SEC-LIT-EPROD-000899970
Master Purchase Agreements	8/24/2017	SEC-LIT-EPROD-000900045	SEC-LIT-EPROD-000900048
Master Purchase Agreements	8/25/2017	SEC-LIT-EPROD-000900093	SEC-LIT-EPROD-000900100
Master Purchase Agreements	8/30/2017	SEC-LIT-EPROD-000900136	SEC-LIT-EPROD-000900138
Master Purchase Agreements	8/30/2017	SEC-LIT-EPROD-000900162	SEC-LIT-EPROD-000900162
Master Purchase Agreements	9/1/2017	SEC-LIT-EPROD-000900213	SEC-LIT-EPROD-000900213
Master Purchase Agreements	9/5/2017	SEC-LIT-EPROD-000900335	SEC-LIT-EPROD-000900344
Master Purchase Agreements	9/6/2017	SEC-LIT-EPROD-000900425	SEC-LIT-EPROD-000900425
Master Purchase Agreements	9/8/2017	SEC-LIT-EPROD-000900465	SEC-LIT-EPROD-000900465
Master Purchase Agreements	9/11/2017	SEC-LIT-EPROD-000900517	SEC-LIT-EPROD-000900517
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000900562	SEC-LIT-EPROD-000900562
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000900568	SEC-LIT-EPROD-000900568
Master Purchase Agreements	9/18/2017	SEC-LIT-EPROD-000900635	SEC-LIT-EPROD-000900635
Master Purchase Agreements	9/19/2017	SEC-LIT-EPROD-000900679	SEC-LIT-EPROD-000900679
Master Purchase Agreements	9/15/2017	SEC-LIT-EPROD-000900702	SEC-LIT-EPROD-000900702
Master Purchase Agreements	9/20/2017	SEC-LIT-EPROD-000900735	SEC-LIT-EPROD-000900735

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Subcategory	Date	Begin Bates	End Bates
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000900769	SEC-LIT-EPROD-000900769
Master Purchase Agreements	9/22/2017	SEC-LIT-EPROD-000900805	SEC-LIT-EPROD-000900805
Master Purchase Agreements	9/25/2017	SEC-LIT-EPROD-000900851	SEC-LIT-EPROD-000900851
Master Purchase Agreements	9/28/2017	SEC-LIT-EPROD-000900912	SEC-LIT-EPROD-000900912
Master Purchase Agreements	10/2/2017	SEC-LIT-EPROD-000900978	SEC-LIT-EPROD-000900978
Master Purchase Agreements	10/5/2017	SEC-LIT-EPROD-000901148	SEC-LIT-EPROD-000901148
Master Purchase Agreements	10/11/2017	SEC-LIT-EPROD-000901257	SEC-LIT-EPROD-000901257
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000901318	SEC-LIT-EPROD-000901318
Master Purchase Agreements	10/13/2017	SEC-LIT-EPROD-000901364	SEC-LIT-EPROD-000901364
Master Purchase Agreements	10/16/2017	SEC-LIT-EPROD-000901424	SEC-LIT-EPROD-000901424
Master Purchase Agreements	10/20/2017	SEC-LIT-EPROD-000901622	SEC-LIT-EPROD-000901622
Master Purchase Agreements	10/23/2017	SEC-LIT-EPROD-000901705	SEC-LIT-EPROD-000901705
Master Purchase Agreements	10/24/2017	SEC-LIT-EPROD-000901769	SEC-LIT-EPROD-000901769
Master Purchase Agreements	10/27/2017	SEC-LIT-EPROD-000901928	SEC-LIT-EPROD-000901928
Master Purchase Agreements	8/3/2017	SEC-LIT-EPROD-000903602	SEC-LIT-EPROD-000903604
Purchase Letters of Intent	5/29/2015	RPLI SEC 0304132	RPLI SEC 0304132
Purchase Letters of Intent	7/21/2014	RPLI SEC 0304361	RPLI SEC 0304361
Purchase Letters of Intent	7/21/2014	RPLI SEC 0304379	RPLI SEC 0304379
Purchase Letters of Intent	9/1/2014	RPLI SEC 0304387	RPLI SEC 0304387
Purchase Letters of Intent	7/21/2014	RPLI SEC 0676713	RPLI SEC 0676713
Purchase Letters of Intent	7/14/2014	RPLI SEC 0676720	RPLI SEC 0676721
Purchase Letters of Intent	7/21/2014	RPLI SEC 0890994	RPLI SEC 0890994

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Subcategory	Date	Begin Bates	End Bates
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891064	RPLI SEC 0891064
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891065	RPLI SEC 0891065
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891066	RPLI SEC 0891066
Purchase Letters of Intent	5/29/2015	RPLI SEC 0891070	RPLI SEC 0891070
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891369	RPLI SEC 0891369
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891370	RPLI SEC 0891370
Purchase Letters of Intent	7/21/2014	RPLI SEC 0891371	RPLI SEC 0891371
Purchase Letters of Intent	10/24/2014	RPLI SEC 0891372	RPLI SEC 0891372
Purchase Letters of Intent	7/21/2014	RPLI SEC 0892156	RPLI SEC 0892156
Purchase Letters of Intent	7/14/2014	RPLI SEC 0892168	RPLI SEC 0892170
Purchase Letters of Intent	7/21/2014	RPLI SEC 0892391	RPLI SEC 0892391
Purchase Letters of Intent	7/21/2014	RPLI SEC 0892399	RPLI SEC 0892399
Purchase Letters of Intent	7/21/2014	RPLI SEC 0899484	RPLI SEC 0899484
Wholesale Sales Orders	10/5/2014	0000001	0000005
Wholesale Sales Orders	9/16/2014	0000006	0000010
Wholesale Sales Orders	9/12/2014	0000011	0000015
Wholesale Sales Orders	9/19/2014	0000016	0000016
Wholesale Sales Orders	9/21/2014	0001494	0001498
Wholesale Sales Orders	10/5/2014	0002300	0002304
Wholesale Sales Orders	9/12/2014	0002312	0002316
Wholesale Sales Orders	3/6/2013	LARSEN-SEC-LIT-00004877	LARSEN-SEC-LIT-00004877
Wholesale Sales Orders	4/19/2015	RPLI SEC 0091833	RPLI SEC 0091837
Wholesale Sales Orders	5/10/2015	RPLI SEC 0091848	RPLI SEC 0091852
Wholesale Sales Orders	5/12/2015	RPLI SEC 0091853	RPLI SEC 0091857
Wholesale Sales Orders	1/13/2015	RPLI SEC 0091923	RPLI SEC 0091927
Wholesale Sales Orders	4/8/2015	RPLI SEC 0091933	RPLI SEC 0091937
Wholesale Sales Orders	4/21/2015	RPLI SEC 0091943	RPLI SEC 0091947
Wholesale Sales Orders	4/2/2015	RPLI SEC 0091948	RPLI SEC 0091952
Wholesale Sales Orders	4/30/2015	RPLI SEC 0091953	RPLI SEC 0091957
Wholesale Sales Orders	4/27/2015	RPLI SEC 0091958	RPLI SEC 0091962

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	4/2/2015	RPLI SEC 0091963	RPLI SEC 0091967
Wholesale Sales Orders	12/9/2014	RPLI SEC 0092487	RPLI SEC 0092491
Wholesale Sales Orders	12/1/2014	RPLI SEC 0092581	RPLI SEC 0092585
Wholesale Sales Orders	11/21/2014	RPLI SEC 0092586	RPLI SEC 0092590
Wholesale Sales Orders	11/22/2014	RPLI SEC 0092591	RPLI SEC 0092595
Wholesale Sales Orders	11/27/2014	RPLI SEC 0092601	RPLI SEC 0092605
Wholesale Sales Orders	11/25/2014	RPLI SEC 0092606	RPLI SEC 0092610
Wholesale Sales Orders	11/27/2014	RPLI SEC 0092611	RPLI SEC 0092615
Wholesale Sales Orders	11/20/2014	RPLI SEC 0092616	RPLI SEC 0092620
Wholesale Sales Orders	11/27/2014	RPLI SEC 0092621	RPLI SEC 0092625
Wholesale Sales Orders	11/24/2014	RPLI SEC 0092626	RPLI SEC 0092630
Wholesale Sales Orders	11/26/2014	RPLI SEC 0092631	RPLI SEC 0092635
Wholesale Sales Orders	12/1/2014	RPLI SEC 0092637	RPLI SEC 0092641
Wholesale Sales Orders	8/16/2014	RPLI SEC 0097666	RPLI SEC 0097670
Wholesale Sales Orders	7/10/2013	RPLI SEC 0097803	RPLI SEC 0097809
Wholesale Sales Orders	10/9/2013	RPLI SEC 0223337	RPLI SEC 0223337
Wholesale Sales Orders	8/4/2013	RPLI SEC 0304134	RPLI SEC 0304134
Wholesale Sales Orders	8/14/2013	RPLI SEC 0304135	RPLI SEC 0304135
Wholesale Sales Orders	8/27/2013	RPLI SEC 0304136	RPLI SEC 0304136
Wholesale Sales Orders	9/11/2013	RPLI SEC 0304137	RPLI SEC 0304137
Wholesale Sales Orders	10/9/2013	RPLI SEC 0304138	RPLI SEC 0304138
Wholesale Sales Orders	11/6/2013	RPLI SEC 0304139	RPLI SEC 0304139
Wholesale Sales Orders	11/22/2013	RPLI SEC 0304140	RPLI SEC 0304150
Wholesale Sales Orders	12/5/2013	RPLI SEC 0304151	RPLI SEC 0304152
Wholesale Sales Orders	12/10/2013	RPLI SEC 0304153	RPLI SEC 0304153
Wholesale Sales Orders	12/19/2013	RPLI SEC 0304154	RPLI SEC 0304180
Wholesale Sales Orders	9/3/2013	RPLI SEC 0304181	RPLI SEC 0304186
Wholesale Sales Orders	9/18/2013	RPLI SEC 0304187	RPLI SEC 0304192
Wholesale Sales Orders	9/25/2013	RPLI SEC 0304193	RPLI SEC 0304198
Wholesale Sales Orders	9/30/2013	RPLI SEC 0304199	RPLI SEC 0304204
Wholesale Sales Orders	9/30/2013	RPLI SEC 0304205	RPLI SEC 0304210
Wholesale Sales Orders	10/29/2013	RPLI SEC 0304211	RPLI SEC 0304215
Wholesale Sales Orders	11/12/2013	RPLI SEC 0304216	RPLI SEC 0304220
Wholesale Sales Orders	11/13/2013	RPLI SEC 0304221	RPLI SEC 0304225
Wholesale Sales Orders	11/27/2013	RPLI SEC 0304226	RPLI SEC 0304230
Wholesale Sales Orders	11/29/2013	RPLI SEC 0304231	RPLI SEC 0304235
Wholesale Sales Orders	11/30/2013	RPLI SEC 0304236	RPLI SEC 0304240
Wholesale Sales Orders	12/2/2013	RPLI SEC 0304241	RPLI SEC 0304245
Wholesale Sales Orders	12/6/2013	RPLI SEC 0304246	RPLI SEC 0304246
Wholesale Sales Orders	12/11/2013	RPLI SEC 0304247	RPLI SEC 0304252
Wholesale Sales Orders	12/11/2013	RPLI SEC 0304253	RPLI SEC 0304258
Wholesale Sales Orders	12/13/2013	RPLI SEC 0304259	RPLI SEC 0304264
Wholesale Sales Orders	12/17/2013	RPLI SEC 0304265	RPLI SEC 0304270

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	12/17/2013	RPLI SEC 0304271	RPLI SEC 0304276
Wholesale Sales Orders	12/17/2013	RPLI SEC 0304271	RPLI SEC 0304276
Wholesale Sales Orders	12/18/2013	RPLI SEC 0304277	RPLI SEC 0304282
Wholesale Sales Orders	12/24/2013	RPLI SEC 0304283	RPLI SEC 0304288
Wholesale Sales Orders	12/26/2013	RPLI SEC 0304289	RPLI SEC 0304294
Wholesale Sales Orders	12/26/2013	RPLI SEC 0304295	RPLI SEC 0304300
Wholesale Sales Orders	12/27/2013	RPLI SEC 0304301	RPLI SEC 0304306
Wholesale Sales Orders	12/27/2013	RPLI SEC 0304307	RPLI SEC 0304312
Wholesale Sales Orders	12/27/2013	RPLI SEC 0304313	RPLI SEC 0304318
Wholesale Sales Orders	12/30/2013	RPLI SEC 0304319	RPLI SEC 0304324
Wholesale Sales Orders	12/30/2013	RPLI SEC 0304325	RPLI SEC 0304330
Wholesale Sales Orders	10/23/2013	RPLI SEC 0304331	RPLI SEC 0304335
Wholesale Sales Orders	11/4/2013	RPLI SEC 0304336	RPLI SEC 0304340
Wholesale Sales Orders	11/12/2013	RPLI SEC 0304341	RPLI SEC 0304345
Wholesale Sales Orders	11/20/2013	RPLI SEC 0304346	RPLI SEC 0304350
Wholesale Sales Orders	11/26/2013	RPLI SEC 0304351	RPLI SEC 0304355
Wholesale Sales Orders	10/31/2013	RPLI SEC 0304356	RPLI SEC 0304360
Wholesale Sales Orders	12/1/2013	RPLI SEC 0304362	RPLI SEC 0304362
Wholesale Sales Orders	12/2/2013	RPLI SEC 0304363	RPLI SEC 0304363
Wholesale Sales Orders	12/11/2013	RPLI SEC 0304364	RPLI SEC 0304364
Wholesale Sales Orders	12/16/2013	RPLI SEC 0304365	RPLI SEC 0304365
Wholesale Sales Orders	12/30/2013	RPLI SEC 0304366	RPLI SEC 0304366
Wholesale Sales Orders	11/20/2013	RPLI SEC 0304367	RPLI SEC 0304367
Wholesale Sales Orders	11/22/2013	RPLI SEC 0304368	RPLI SEC 0304368
Wholesale Sales Orders	11/23/2013	RPLI SEC 0304369	RPLI SEC 0304369
Wholesale Sales Orders	11/26/2013	RPLI SEC 0304370	RPLI SEC 0304370
Wholesale Sales Orders	11/27/2013	RPLI SEC 0304371	RPLI SEC 0304375
Wholesale Sales Orders	11/28/2013	RPLI SEC 0304376	RPLI SEC 0304376
Wholesale Sales Orders	10/30/2013	RPLI SEC 0304377	RPLI SEC 0304377
Wholesale Sales Orders	9/19/2013	RPLI SEC 0304378	RPLI SEC 0304378
Wholesale Sales Orders	11/20/2013	RPLI SEC 0304388	RPLI SEC 0304392
Wholesale Sales Orders	11/21/2013	RPLI SEC 0304393	RPLI SEC 0304397
Wholesale Sales Orders	11/25/2013	RPLI SEC 0304398	RPLI SEC 0304398
Wholesale Sales Orders	11/27/2013	RPLI SEC 0304399	RPLI SEC 0304403
Wholesale Sales Orders	12/30/2013	RPLI SEC 0304404	RPLI SEC 0304408
Wholesale Sales Orders	10/30/2014	RPLI SEC 0323102	RPLI SEC 0323106
Wholesale Sales Orders	10/13/2014	RPLI SEC 0323107	RPLI SEC 0323111
Wholesale Sales Orders	6/29/2015	RPLI SEC 0323122	RPLI SEC 0323126
Wholesale Sales Orders	6/30/2015	RPLI SEC 0323127	RPLI SEC 0323131
Wholesale Sales Orders	9/26/2014	RPLI SEC 0323132	RPLI SEC 0323136
Wholesale Sales Orders	9/19/2014	RPLI SEC 0326579	RPLI SEC 0326583
Wholesale Sales Orders	8/16/2014	RPLI SEC 0326617	RPLI SEC 0326621
Wholesale Sales Orders	BLANK	RPLI SEC 0326643	RPLI SEC 0326647

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	5/21/2014	RPLI SEC 0326708	RPLI SEC 0326712
Wholesale Sales Orders	5/22/2014	RPLI SEC 0326713	RPLI SEC 0326717
Wholesale Sales Orders	5/26/2014	RPLI SEC 0326720	RPLI SEC 0326724
Wholesale Sales Orders	6/2/2014	RPLI SEC 0326733	RPLI SEC 0326737
Wholesale Sales Orders	5/28/2014	RPLI SEC 0326824	RPLI SEC 0326828
Wholesale Sales Orders	5/23/2014	RPLI SEC 0326834	RPLI SEC 0326838
Wholesale Sales Orders	5/23/2014	RPLI SEC 0326861	RPLI SEC 0326865
Wholesale Sales Orders	5/16/2014	RPLI SEC 0326884	RPLI SEC 0326888
Wholesale Sales Orders	5/18/2014	RPLI SEC 0326889	RPLI SEC 0326893
Wholesale Sales Orders	5/19/2014	RPLI SEC 0326894	RPLI SEC 0326898
Wholesale Sales Orders	5/19/2014	RPLI SEC 0326899	RPLI SEC 0326903
Wholesale Sales Orders	5/15/2014	RPLI SEC 0326904	RPLI SEC 0326908
Wholesale Sales Orders	5/14/2014	RPLI SEC 0326998	RPLI SEC 0327002
Wholesale Sales Orders	5/13/2014	RPLI SEC 0327020	RPLI SEC 0327024
Wholesale Sales Orders	5/12/2014	RPLI SEC 0327025	RPLI SEC 0327029
Wholesale Sales Orders	5/11/2014	RPLI SEC 0327035	RPLI SEC 0327039
Wholesale Sales Orders	5/9/2014	RPLI SEC 0327040	RPLI SEC 0327044
Wholesale Sales Orders	5/6/2014	RPLI SEC 0327051	RPLI SEC 0327055
Wholesale Sales Orders	5/7/2014	RPLI SEC 0327056	RPLI SEC 0327060
Wholesale Sales Orders	5/7/2014	RPLI SEC 0327061	RPLI SEC 0327065
Wholesale Sales Orders	4/8/2014	RPLI SEC 0327115	RPLI SEC 0327119
Wholesale Sales Orders	4/8/2014	RPLI SEC 0327120	RPLI SEC 0327124
Wholesale Sales Orders	5/10/2014	RPLI SEC 0327192	RPLI SEC 0327196
Wholesale Sales Orders	4/29/2014	RPLI SEC 0327219	RPLI SEC 0327223
Wholesale Sales Orders	4/17/2014	RPLI SEC 0327257	RPLI SEC 0327261
Wholesale Sales Orders	4/22/2014	RPLI SEC 0327263	RPLI SEC 0327267
Wholesale Sales Orders	4/18/2014	RPLI SEC 0327270	RPLI SEC 0327274
Wholesale Sales Orders	4/13/2014	RPLI SEC 0327277	RPLI SEC 0327281
Wholesale Sales Orders	4/11/2014	RPLI SEC 0327284	RPLI SEC 0327288
Wholesale Sales Orders	4/9/2014	RPLI SEC 0327291	RPLI SEC 0327295
Wholesale Sales Orders	4/10/2014	RPLI SEC 0327301	RPLI SEC 0327305
Wholesale Sales Orders	4/10/2014	RPLI SEC 0327306	RPLI SEC 0327310
Wholesale Sales Orders	4/10/2014	RPLI SEC 0327311	RPLI SEC 0327315
Wholesale Sales Orders	4/15/2014	RPLI SEC 0327322	RPLI SEC 0327326
Wholesale Sales Orders	4/15/2014	RPLI SEC 0327332	RPLI SEC 0327336
Wholesale Sales Orders	4/15/2014	RPLI SEC 0327337	RPLI SEC 0327341
Wholesale Sales Orders	4/30/2014	RPLI SEC 0327348	RPLI SEC 0327352
Wholesale Sales Orders	5/2/2014	RPLI SEC 0327358	RPLI SEC 0327362
Wholesale Sales Orders	5/2/2014	RPLI SEC 0327363	RPLI SEC 0327367
Wholesale Sales Orders	5/7/2014	RPLI SEC 0327370	RPLI SEC 0327374
Wholesale Sales Orders	5/7/2014	RPLI SEC 0327375	RPLI SEC 0327379
Wholesale Sales Orders	4/24/2014	RPLI SEC 0327407	RPLI SEC 0327411
Wholesale Sales Orders	4/26/2014	RPLI SEC 0327412	RPLI SEC 0327416

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	4/27/2014	RPLI SEC 0327417	RPLI SEC 0327421
Wholesale Sales Orders	4/1/2014	RPLI SEC 0327428	RPLI SEC 0327432
Wholesale Sales Orders	4/29/2014	RPLI SEC 0327433	RPLI SEC 0327437
Wholesale Sales Orders	4/1/2014	RPLI SEC 0327438	RPLI SEC 0327442
Wholesale Sales Orders	4/1/2014	RPLI SEC 0327576	RPLI SEC 0327580
Wholesale Sales Orders	4/3/2014	RPLI SEC 0327583	RPLI SEC 0327587
Wholesale Sales Orders	4/5/2014	RPLI SEC 0327589	RPLI SEC 0327593
Wholesale Sales Orders	4/2/2014	RPLI SEC 0327596	RPLI SEC 0327600
Wholesale Sales Orders	4/1/2014	RPLI SEC 0327603	RPLI SEC 0327607
Wholesale Sales Orders	3/16/2014	RPLI SEC 0327619	RPLI SEC 0327623
Wholesale Sales Orders	3/20/2014	RPLI SEC 0327626	RPLI SEC 0327630
Wholesale Sales Orders	3/21/2014	RPLI SEC 0327634	RPLI SEC 0327638
Wholesale Sales Orders	3/19/2014	RPLI SEC 0327642	RPLI SEC 0327646
Wholesale Sales Orders	3/19/2014	RPLI SEC 0327650	RPLI SEC 0327654
Wholesale Sales Orders	3/20/2014	RPLI SEC 0327658	RPLI SEC 0327662
Wholesale Sales Orders	3/20/2014	RPLI SEC 0327665	RPLI SEC 0327669
Wholesale Sales Orders	12/30/2013	RPLI SEC 0327696	RPLI SEC 0327700
Wholesale Sales Orders	11/22/2013	RPLI SEC 0327830	RPLI SEC 0327840
Wholesale Sales Orders	12/10/2013	RPLI SEC 0327841	RPLI SEC 0327841
Wholesale Sales Orders	12/10/2013	RPLI SEC 0327845	RPLI SEC 0327849
Wholesale Sales Orders	11/27/2013	RPLI SEC 0327894	RPLI SEC 0327898
Wholesale Sales Orders	11/25/2013	RPLI SEC 0327922	RPLI SEC 0327926
Wholesale Sales Orders	12/5/2013	RPLI SEC 0327939	RPLI SEC 0327943
Wholesale Sales Orders	12/5/2013	RPLI SEC 0327988	RPLI SEC 0327992
Wholesale Sales Orders	9/29/2013	RPLI SEC 0328449	RPLI SEC 0328453
Wholesale Sales Orders	9/25/2013	RPLI SEC 0328455	RPLI SEC 0328459
Wholesale Sales Orders	10/9/2013	RPLI SEC 0328570	RPLI SEC 0328574
Wholesale Sales Orders	9/22/2013	RPLI SEC 0328583	RPLI SEC 0328587
Wholesale Sales Orders	8/14/2013	RPLI SEC 0328703	RPLI SEC 0328707
Wholesale Sales Orders	4/7/2013	RPLI SEC 0329460	RPLI SEC 0329464
Wholesale Sales Orders	3/18/2013	RPLI SEC 0329680	RPLI SEC 0329684
Wholesale Sales Orders	3/13/2013	RPLI SEC 0329687	RPLI SEC 0329691
Wholesale Sales Orders	3/11/2013	RPLI SEC 0329700	RPLI SEC 0329704
Wholesale Sales Orders	3/1/2013	RPLI SEC 0329728	RPLI SEC 0329732
Wholesale Sales Orders	3/1/2013	RPLI SEC 0329740	RPLI SEC 0329744
Wholesale Sales Orders	3/1/2013	RPLI SEC 0329750	RPLI SEC 0329754
Wholesale Sales Orders	2/26/2013	RPLI SEC 0329829	RPLI SEC 0329833
Wholesale Sales Orders	4/3/2013	RPLI SEC 0330130	RPLI SEC 0330134
Wholesale Sales Orders	5/26/2014	RPLI SEC 0399551	RPLI SEC 0399555
Wholesale Sales Orders	1/5/2014	RPLI SEC 0515512	RPLI SEC 0515516
Wholesale Sales Orders	4/3/2013	RPLI SEC 0578119	RPLI SEC 0578119
Wholesale Sales Orders	3/12/2013	RPLI SEC 0607704	RPLI SEC 0607704
Wholesale Sales Orders	4/2/2015	RPLI SEC 0609553	RPLI SEC 0609557

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	4/21/2015	RPLI SEC 0609558	RPLI SEC 0609562
Wholesale Sales Orders	4/27/2015	RPLI SEC 0609563	RPLI SEC 0609567
Wholesale Sales Orders	5/27/2015	RPLI SEC 0609568	RPLI SEC 0609572
Wholesale Sales Orders	6/2/2015	RPLI SEC 0609573	RPLI SEC 0609577
Wholesale Sales Orders	6/18/2015	RPLI SEC 0609578	RPLI SEC 0609582
Wholesale Sales Orders	9/12/2014	RPLI SEC 0609612	RPLI SEC 0609616
Wholesale Sales Orders	9/16/2014	RPLI SEC 0609617	RPLI SEC 0609621
Wholesale Sales Orders	9/19/2014	RPLI SEC 0609622	RPLI SEC 0609622
Wholesale Sales Orders	9/21/2014	RPLI SEC 0609623	RPLI SEC 0609623
Wholesale Sales Orders	10/5/2014	RPLI SEC 0609624	RPLI SEC 0609624
Wholesale Sales Orders	12/3/2014	RPLI SEC 0609656	RPLI SEC 0609660
Wholesale Sales Orders	12/10/2014	RPLI SEC 0609661	RPLI SEC 0609665
Wholesale Sales Orders	12/12/2014	RPLI SEC 0609666	RPLI SEC 0609670
Wholesale Sales Orders	1/7/2015	RPLI SEC 0609671	RPLI SEC 0609675
Wholesale Sales Orders	1/9/2015	RPLI SEC 0609676	RPLI SEC 0609680
Wholesale Sales Orders	1/12/2015	RPLI SEC 0609681	RPLI SEC 0609685
Wholesale Sales Orders	3/22/2015	RPLI SEC 0609686	RPLI SEC 0609690
Wholesale Sales Orders	5/29/2015	RPLI SEC 0609691	RPLI SEC 0609695
Wholesale Sales Orders	6/19/2015	RPLI SEC 0609696	RPLI SEC 0609700
Wholesale Sales Orders	6/23/2015	RPLI SEC 0609701	RPLI SEC 0609705
Wholesale Sales Orders	6/26/2015	RPLI SEC 0609706	RPLI SEC 0609710
Wholesale Sales Orders	6/29/2015	RPLI SEC 0609711	RPLI SEC 0609715
Wholesale Sales Orders	6/29/2015	RPLI SEC 0609716	RPLI SEC 0609731
Wholesale Sales Orders	8/31/2015	RPLI SEC 0609732	RPLI SEC 0609751
Wholesale Sales Orders	11/10/2015	RPLI SEC 0609752	RPLI SEC 0609768
Wholesale Sales Orders	8/17/2014	RPLI SEC 0609775	RPLI SEC 0609779
Wholesale Sales Orders	8/30/2014	RPLI SEC 0609780	RPLI SEC 0609784
Wholesale Sales Orders	4/4/2013	RPLI SEC 0609785	RPLI SEC 0609789
Wholesale Sales Orders	4/15/2013	RPLI SEC 0609790	RPLI SEC 0609794
Wholesale Sales Orders	4/22/2013	RPLI SEC 0609795	RPLI SEC 0609799
Wholesale Sales Orders	4/10/2013	RPLI SEC 0609800	RPLI SEC 0609804
Wholesale Sales Orders	11/3/2014	RPLI SEC 0609805	RPLI SEC 0609809
Wholesale Sales Orders	11/19/2014	RPLI SEC 0609810	RPLI SEC 0609814
Wholesale Sales Orders	12/19/2013	RPLI SEC 0642487	RPLI SEC 0642513
Wholesale Sales Orders	11/28/2013	RPLI SEC 0642521	RPLI SEC 0642521
Wholesale Sales Orders	12/1/2013	RPLI SEC 0642522	RPLI SEC 0642522
Wholesale Sales Orders	12/2/2013	RPLI SEC 0642523	RPLI SEC 0642523
Wholesale Sales Orders	12/11/2013	RPLI SEC 0642524	RPLI SEC 0642524
Wholesale Sales Orders	12/16/2013	RPLI SEC 0642525	RPLI SEC 0642525
Wholesale Sales Orders	12/30/2013	RPLI SEC 0642526	RPLI SEC 0642526
Wholesale Sales Orders	11/26/2013	RPLI SEC 0642529	RPLI SEC 0642529
Wholesale Sales Orders	11/30/2013	RPLI SEC 0642530	RPLI SEC 0642530
Wholesale Sales Orders	1/27/2014	RPLI SEC 0676453	RPLI SEC 0676454

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	7/6/2014	RPLI SEC 0676565	RPLI SEC 0676569
Wholesale Sales Orders	12/28/2015	RPLI SEC 0676607	RPLI SEC 0676607
Wholesale Sales Orders	8/10/2014	RPLI SEC 0676608	RPLI SEC 0676612
Wholesale Sales Orders	3/5/2014	RPLI SEC 0676613	RPLI SEC 0676613
Wholesale Sales Orders	9/3/2013	RPLI SEC 0676681	RPLI SEC 0676685
Wholesale Sales Orders	10/31/2013	RPLI SEC 0676686	RPLI SEC 0676690
Wholesale Sales Orders	2/6/2014	RPLI SEC 0676691	RPLI SEC 0676691
Wholesale Sales Orders	2/6/2014	RPLI SEC 0676708	RPLI SEC 0676708
Wholesale Sales Orders	4/22/2014	RPLI SEC 0676709	RPLI SEC 0676709
Wholesale Sales Orders	4/29/2014	RPLI SEC 0676710	RPLI SEC 0676710
Wholesale Sales Orders	5/7/2014	RPLI SEC 0676711	RPLI SEC 0676711
Wholesale Sales Orders	6/2/2014	RPLI SEC 0676712	RPLI SEC 0676712
Wholesale Sales Orders	5/28/2014	RPLI SEC 0676728	RPLI SEC 0676732
Wholesale Sales Orders	4/28/2014	RPLI SEC 0692799	RPLI SEC 0692803
Wholesale Sales Orders	4/27/2015	RPLI SEC 0795459	RPLI SEC 0795463
Wholesale Sales Orders	1/6/2016	RPLI SEC 0795498	RPLI SEC 0795502
Wholesale Sales Orders	2/10/2016	RPLI SEC 0795508	RPLI SEC 0795518
Wholesale Sales Orders	1/6/2016	RPLI SEC 0795519	RPLI SEC 0795523
Wholesale Sales Orders	1/6/2016	RPLI SEC 0795529	RPLI SEC 0795533
Wholesale Sales Orders	1/12/2016	RPLI SEC 0795544	RPLI SEC 0795548
Wholesale Sales Orders	1/16/2016	RPLI SEC 0795554	RPLI SEC 0795558
Wholesale Sales Orders	1/20/2016	RPLI SEC 0795564	RPLI SEC 0795568
Wholesale Sales Orders	1/26/2016	RPLI SEC 0795574	RPLI SEC 0795578
Wholesale Sales Orders	2/3/2016	RPLI SEC 0795584	RPLI SEC 0795588
Wholesale Sales Orders	2/10/2016	RPLI SEC 0795594	RPLI SEC 0795598
Wholesale Sales Orders	2/29/2016	RPLI SEC 0795604	RPLI SEC 0795608
Wholesale Sales Orders	3/9/2016	RPLI SEC 0795609	RPLI SEC 0795613
Wholesale Sales Orders	1/12/2016	RPLI SEC 0797982	RPLI SEC 0797982
Wholesale Sales Orders	1/20/2016	RPLI SEC 0797983	RPLI SEC 0797983
Wholesale Sales Orders	1/26/2016	RPLI SEC 0797984	RPLI SEC 0797984
Wholesale Sales Orders	2/3/2016	RPLI SEC 0797985	RPLI SEC 0797985
Wholesale Sales Orders	3/13/2013	RPLI SEC 0799220	RPLI SEC 0799220
Wholesale Sales Orders	BLANK	RPLI SEC 0890965	RPLI SEC 0890965
Wholesale Sales Orders	2/25/2014	RPLI SEC 0890995	RPLI SEC 0890995
Wholesale Sales Orders	2/28/2014	RPLI SEC 0890996	RPLI SEC 0890996
Wholesale Sales Orders	3/7/2014	RPLI SEC 0890997	RPLI SEC 0891003
Wholesale Sales Orders	5/25/2014	RPLI SEC 0891004	RPLI SEC 0891008
Wholesale Sales Orders	4/19/2015	RPLI SEC 0891009	RPLI SEC 0891013
Wholesale Sales Orders	5/10/2015	RPLI SEC 0891014	RPLI SEC 0891018
Wholesale Sales Orders	5/12/2015	RPLI SEC 0891019	RPLI SEC 0891023
Wholesale Sales Orders	5/19/2015	RPLI SEC 0891024	RPLI SEC 0891028
Wholesale Sales Orders	5/19/2015	RPLI SEC 0891029	RPLI SEC 0891033
Wholesale Sales Orders	5/27/2015	RPLI SEC 0891034	RPLI SEC 0891038

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	5/31/2015	RPLI SEC 0891039	RPLI SEC 0891043
Wholesale Sales Orders	6/5/2015	RPLI SEC 0891044	RPLI SEC 0891048
Wholesale Sales Orders	10/1/2014	RPLI SEC 0891052	RPLI SEC 0891052
Wholesale Sales Orders	1/15/2014	RPLI SEC 0891053	RPLI SEC 0891057
Wholesale Sales Orders	1/15/2014	RPLI SEC 0891058	RPLI SEC 0891062
Wholesale Sales Orders	12/20/2013	RPLI SEC 0891063	RPLI SEC 0891063
Wholesale Sales Orders	12/2/2014	RPLI SEC 0891080	RPLI SEC 0891084
Wholesale Sales Orders	12/4/2014	RPLI SEC 0891085	RPLI SEC 0891089
Wholesale Sales Orders	12/7/2014	RPLI SEC 0891090	RPLI SEC 0891095
Wholesale Sales Orders	12/9/2014	RPLI SEC 0891096	RPLI SEC 0891100
Wholesale Sales Orders	12/10/2014	RPLI SEC 0891101	RPLI SEC 0891105
Wholesale Sales Orders	12/11/2014	RPLI SEC 0891106	RPLI SEC 0891110
Wholesale Sales Orders	12/11/2014	RPLI SEC 0891111	RPLI SEC 0891115
Wholesale Sales Orders	12/11/2014	RPLI SEC 0891116	RPLI SEC 0891120
Wholesale Sales Orders	12/12/2014	RPLI SEC 0891121	RPLI SEC 0891125
Wholesale Sales Orders	12/15/2014	RPLI SEC 0891126	RPLI SEC 0891130
Wholesale Sales Orders	12/17/2014	RPLI SEC 0891131	RPLI SEC 0891135
Wholesale Sales Orders	12/17/2014	RPLI SEC 0891136	RPLI SEC 0891140
Wholesale Sales Orders	12/18/2014	RPLI SEC 0891141	RPLI SEC 0891145
Wholesale Sales Orders	12/18/2014	RPLI SEC 0891146	RPLI SEC 0891150
Wholesale Sales Orders	12/19/2014	RPLI SEC 0891151	RPLI SEC 0891155
Wholesale Sales Orders	12/19/2014	RPLI SEC 0891156	RPLI SEC 0891160
Wholesale Sales Orders	12/22/2014	RPLI SEC 0891161	RPLI SEC 0891165
Wholesale Sales Orders	12/24/2014	RPLI SEC 0891166	RPLI SEC 0891170
Wholesale Sales Orders	12/25/2014	RPLI SEC 0891171	RPLI SEC 0891175
Wholesale Sales Orders	12/26/2014	RPLI SEC 0891176	RPLI SEC 0891180
Wholesale Sales Orders	12/26/2014	RPLI SEC 0891181	RPLI SEC 0891185
Wholesale Sales Orders	12/29/2014	RPLI SEC 0891186	RPLI SEC 0891190
Wholesale Sales Orders	12/29/2014	RPLI SEC 0891191	RPLI SEC 0891195
Wholesale Sales Orders	1/4/2015	RPLI SEC 0891196	RPLI SEC 0891200
Wholesale Sales Orders	1/5/2015	RPLI SEC 0891201	RPLI SEC 0891205
Wholesale Sales Orders	1/13/2015	RPLI SEC 0891206	RPLI SEC 0891210
Wholesale Sales Orders	1/14/2015	RPLI SEC 0891211	RPLI SEC 0891215
Wholesale Sales Orders	1/15/2015	RPLI SEC 0891216	RPLI SEC 0891220
Wholesale Sales Orders	1/17/2015	RPLI SEC 0891221	RPLI SEC 0891225
Wholesale Sales Orders	1/25/2015	RPLI SEC 0891226	RPLI SEC 0891230
Wholesale Sales Orders	1/27/2015	RPLI SEC 0891231	RPLI SEC 0891235
Wholesale Sales Orders	1/29/2015	RPLI SEC 0891236	RPLI SEC 0891240
Wholesale Sales Orders	1/30/2015	RPLI SEC 0891241	RPLI SEC 0891245
Wholesale Sales Orders	2/3/2015	RPLI SEC 0891246	RPLI SEC 0891250
Wholesale Sales Orders	2/4/2015	RPLI SEC 0891251	RPLI SEC 0891255
Wholesale Sales Orders	2/18/2015	RPLI SEC 0891256	RPLI SEC 0891260
Wholesale Sales Orders	2/25/2015	RPLI SEC 0891261	RPLI SEC 0891265

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	3/2/2015	RPLI SEC 0891266	RPLI SEC 0891270
Wholesale Sales Orders	4/8/2015	RPLI SEC 0891271	RPLI SEC 0891275
Wholesale Sales Orders	4/30/2015	RPLI SEC 0891276	RPLI SEC 0891280
Wholesale Sales Orders	5/29/2015	RPLI SEC 0891281	RPLI SEC 0891285
Wholesale Sales Orders	5/27/2015	RPLI SEC 0891286	RPLI SEC 0891290
Wholesale Sales Orders	6/2/2015	RPLI SEC 0891291	RPLI SEC 0891295
Wholesale Sales Orders	6/4/2015	RPLI SEC 0891296	RPLI SEC 0891300
Wholesale Sales Orders	6/4/2015	RPLI SEC 0891301	RPLI SEC 0891305
Wholesale Sales Orders	6/12/2015	RPLI SEC 0891306	RPLI SEC 0891310
Wholesale Sales Orders	6/16/2015	RPLI SEC 0891311	RPLI SEC 0891315
Wholesale Sales Orders	6/15/2015	RPLI SEC 0891316	RPLI SEC 0891320
Wholesale Sales Orders	6/18/2015	RPLI SEC 0891321	RPLI SEC 0891325
Wholesale Sales Orders	6/19/2015	RPLI SEC 0891326	RPLI SEC 0891330
Wholesale Sales Orders	6/24/2015	RPLI SEC 0891331	RPLI SEC 0891335
Wholesale Sales Orders	6/25/2015	RPLI SEC 0891336	RPLI SEC 0891340
Wholesale Sales Orders	12/27/2015	RPLI SEC 0891341	RPLI SEC 0891341
Wholesale Sales Orders	12/27/2015	RPLI SEC 0891342	RPLI SEC 0891342
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891343	RPLI SEC 0891347
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891348	RPLI SEC 0891352
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891353	RPLI SEC 0891357
Wholesale Sales Orders	12/19/2013	RPLI SEC 0891379	RPLI SEC 0891405
Wholesale Sales Orders	6/18/2014	RPLI SEC 0891406	RPLI SEC 0891410
Wholesale Sales Orders	9/2/2014	RPLI SEC 0891411	RPLI SEC 0891415
Wholesale Sales Orders	12/5/2013	RPLI SEC 0891416	RPLI SEC 0891420
Wholesale Sales Orders	1/23/2014	RPLI SEC 0891421	RPLI SEC 0891425
Wholesale Sales Orders	1/31/2014	RPLI SEC 0891426	RPLI SEC 0891430
Wholesale Sales Orders	7/7/2014	RPLI SEC 0891431	RPLI SEC 0891435
Wholesale Sales Orders	6/30/2014	RPLI SEC 0891436	RPLI SEC 0891440
Wholesale Sales Orders	11/25/2013	RPLI SEC 0891441	RPLI SEC 0891445
Wholesale Sales Orders	9/12/2014	RPLI SEC 0891446	RPLI SEC 0891450
Wholesale Sales Orders	6/20/2014	RPLI SEC 0891451	RPLI SEC 0891455
Wholesale Sales Orders	6/13/2014	RPLI SEC 0891456	RPLI SEC 0891460
Wholesale Sales Orders	2/21/2014	RPLI SEC 0891461	RPLI SEC 0891465
Wholesale Sales Orders	12/2/2013	RPLI SEC 0891466	RPLI SEC 0891470
Wholesale Sales Orders	6/24/2014	RPLI SEC 0891471	RPLI SEC 0891475
Wholesale Sales Orders	9/30/2014	RPLI SEC 0891476	RPLI SEC 0891480
Wholesale Sales Orders	6/27/2014	RPLI SEC 0891481	RPLI SEC 0891485
Wholesale Sales Orders	2/7/2014	RPLI SEC 0891486	RPLI SEC 0891490
Wholesale Sales Orders	7/14/2014	RPLI SEC 0891491	RPLI SEC 0891495
Wholesale Sales Orders	1/7/2014	RPLI SEC 0891501	RPLI SEC 0891505
Wholesale Sales Orders	1/8/2014	RPLI SEC 0891506	RPLI SEC 0891510
Wholesale Sales Orders	1/16/2014	RPLI SEC 0891511	RPLI SEC 0891515
Wholesale Sales Orders	1/22/2014	RPLI SEC 0891516	RPLI SEC 0891520

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	1/23/2014	RPLI SEC 0891521	RPLI SEC 0891525
Wholesale Sales Orders	1/29/2014	RPLI SEC 0891526	RPLI SEC 0891530
Wholesale Sales Orders	1/31/2014	RPLI SEC 0891531	RPLI SEC 0891535
Wholesale Sales Orders	2/3/2014	RPLI SEC 0891536	RPLI SEC 0891540
Wholesale Sales Orders	2/5/2014	RPLI SEC 0891541	RPLI SEC 0891545
Wholesale Sales Orders	2/5/2014	RPLI SEC 0891546	RPLI SEC 0891550
Wholesale Sales Orders	2/5/2014	RPLI SEC 0891551	RPLI SEC 0891555
Wholesale Sales Orders	2/5/2014	RPLI SEC 0891556	RPLI SEC 0891560
Wholesale Sales Orders	2/5/2014	RPLI SEC 0891561	RPLI SEC 0891565
Wholesale Sales Orders	2/7/2014	RPLI SEC 0891566	RPLI SEC 0891570
Wholesale Sales Orders	2/7/2014	RPLI SEC 0891571	RPLI SEC 0891575
Wholesale Sales Orders	2/14/2014	RPLI SEC 0891576	RPLI SEC 0891580
Wholesale Sales Orders	2/18/2014	RPLI SEC 0891581	RPLI SEC 0891585
Wholesale Sales Orders	2/25/2014	RPLI SEC 0891586	RPLI SEC 0891590
Wholesale Sales Orders	2/28/2014	RPLI SEC 0891591	RPLI SEC 0891595
Wholesale Sales Orders	3/4/2014	RPLI SEC 0891596	RPLI SEC 0891600
Wholesale Sales Orders	3/7/2014	RPLI SEC 0891601	RPLI SEC 0891605
Wholesale Sales Orders	3/7/2014	RPLI SEC 0891606	RPLI SEC 0891610
Wholesale Sales Orders	3/11/2014	RPLI SEC 0891611	RPLI SEC 0891615
Wholesale Sales Orders	3/11/2014	RPLI SEC 0891616	RPLI SEC 0891620
Wholesale Sales Orders	3/19/2014	RPLI SEC 0891621	RPLI SEC 0891625
Wholesale Sales Orders	4/15/2014	RPLI SEC 0891626	RPLI SEC 0891630
Wholesale Sales Orders	4/25/2014	RPLI SEC 0891631	RPLI SEC 0891635
Wholesale Sales Orders	4/25/2014	RPLI SEC 0891636	RPLI SEC 0891640
Wholesale Sales Orders	4/25/2014	RPLI SEC 0891641	RPLI SEC 0891645
Wholesale Sales Orders	6/10/2014	RPLI SEC 0891646	RPLI SEC 0891650
Wholesale Sales Orders	6/27/2014	RPLI SEC 0891651	RPLI SEC 0891655
Wholesale Sales Orders	7/14/2014	RPLI SEC 0891656	RPLI SEC 0891660
Wholesale Sales Orders	8/14/2013	RPLI SEC 0891661	RPLI SEC 0891665
Wholesale Sales Orders	8/27/2013	RPLI SEC 0891666	RPLI SEC 0891670
Wholesale Sales Orders	9/8/2014	RPLI SEC 0891671	RPLI SEC 0891675
Wholesale Sales Orders	9/9/2014	RPLI SEC 0891676	RPLI SEC 0891680
Wholesale Sales Orders	9/16/2014	RPLI SEC 0891681	RPLI SEC 0891685
Wholesale Sales Orders	10/9/2013	RPLI SEC 0891686	RPLI SEC 0891690
Wholesale Sales Orders	12/11/2013	RPLI SEC 0891691	RPLI SEC 0891695
Wholesale Sales Orders	12/17/2013	RPLI SEC 0891696	RPLI SEC 0891700
Wholesale Sales Orders	12/26/2013	RPLI SEC 0891701	RPLI SEC 0891705
Wholesale Sales Orders	12/27/2013	RPLI SEC 0891706	RPLI SEC 0891710
Wholesale Sales Orders	12/27/2013	RPLI SEC 0891711	RPLI SEC 0891715
Wholesale Sales Orders	12/30/2013	RPLI SEC 0891716	RPLI SEC 0891720
Wholesale Sales Orders	1/27/2014	RPLI SEC 0891721	RPLI SEC 0891725
Wholesale Sales Orders	2/2/2014	RPLI SEC 0891726	RPLI SEC 0891730
Wholesale Sales Orders	3/3/2014	RPLI SEC 0891731	RPLI SEC 0891735

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	10/23/2013	RPLI SEC 0891736	RPLI SEC 0891740
Wholesale Sales Orders	11/4/2013	RPLI SEC 0891741	RPLI SEC 0891745
Wholesale Sales Orders	11/12/2013	RPLI SEC 0891746	RPLI SEC 0891750
Wholesale Sales Orders	11/20/2013	RPLI SEC 0891751	RPLI SEC 0891755
Wholesale Sales Orders	11/26/2013	RPLI SEC 0891756	RPLI SEC 0891760
Wholesale Sales Orders	4/30/2014	RPLI SEC 0891761	RPLI SEC 0891765
Wholesale Sales Orders	4/28/2014	RPLI SEC 0891766	RPLI SEC 0891770
Wholesale Sales Orders	5/8/2014	RPLI SEC 0891771	RPLI SEC 0891775
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891776	RPLI SEC 0891780
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891781	RPLI SEC 0891785
Wholesale Sales Orders	6/12/2014	RPLI SEC 0891786	RPLI SEC 0891790
Wholesale Sales Orders	6/20/2014	RPLI SEC 0891791	RPLI SEC 0891795
Wholesale Sales Orders	6/4/2014	RPLI SEC 0891796	RPLI SEC 0891800
Wholesale Sales Orders	6/29/2014	RPLI SEC 0891801	RPLI SEC 0891805
Wholesale Sales Orders	12/20/2013	RPLI SEC 0891806	RPLI SEC 0891810
Wholesale Sales Orders	4/24/2014	RPLI SEC 0891811	RPLI SEC 0891815
Wholesale Sales Orders	2/3/2014	RPLI SEC 0891816	RPLI SEC 0891820
Wholesale Sales Orders	2/4/2014	RPLI SEC 0891821	RPLI SEC 0891825
Wholesale Sales Orders	1/30/2014	RPLI SEC 0891826	RPLI SEC 0891830
Wholesale Sales Orders	9/5/2014	RPLI SEC 0891831	RPLI SEC 0891835
Wholesale Sales Orders	9/3/2014	RPLI SEC 0891836	RPLI SEC 0891840
Wholesale Sales Orders	9/6/2014	RPLI SEC 0891841	RPLI SEC 0891845
Wholesale Sales Orders	12/1/2013	RPLI SEC 0891846	RPLI SEC 0891850
Wholesale Sales Orders	12/2/2013	RPLI SEC 0891851	RPLI SEC 0891855
Wholesale Sales Orders	12/11/2013	RPLI SEC 0891856	RPLI SEC 0891860
Wholesale Sales Orders	12/16/2013	RPLI SEC 0891861	RPLI SEC 0891865
Wholesale Sales Orders	12/30/2013	RPLI SEC 0891866	RPLI SEC 0891870
Wholesale Sales Orders	11/26/2013	RPLI SEC 0891871	RPLI SEC 0891875
Wholesale Sales Orders	11/28/2013	RPLI SEC 0891876	RPLI SEC 0891880
Wholesale Sales Orders	11/30/2013	RPLI SEC 0891881	RPLI SEC 0891885
Wholesale Sales Orders	2/20/2014	RPLI SEC 0891886	RPLI SEC 0891890
Wholesale Sales Orders	4/4/2014	RPLI SEC 0891891	RPLI SEC 0891895
Wholesale Sales Orders	4/5/2014	RPLI SEC 0891896	RPLI SEC 0891900
Wholesale Sales Orders	4/5/2014	RPLI SEC 0891901	RPLI SEC 0891905
Wholesale Sales Orders	4/6/2014	RPLI SEC 0891906	RPLI SEC 0891910
Wholesale Sales Orders	4/7/2014	RPLI SEC 0891911	RPLI SEC 0891915
Wholesale Sales Orders	4/7/2014	RPLI SEC 0891916	RPLI SEC 0891920
Wholesale Sales Orders	4/8/2014	RPLI SEC 0891921	RPLI SEC 0891925
Wholesale Sales Orders	4/8/2014	RPLI SEC 0891926	RPLI SEC 0891930
Wholesale Sales Orders	4/9/2014	RPLI SEC 0891931	RPLI SEC 0891935
Wholesale Sales Orders	4/9/2014	RPLI SEC 0891936	RPLI SEC 0891940
Wholesale Sales Orders	4/12/2014	RPLI SEC 0891941	RPLI SEC 0891945
Wholesale Sales Orders	4/14/2014	RPLI SEC 0891946	RPLI SEC 0891950

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	4/20/2014	RPLI SEC 0891951	RPLI SEC 0891955
Wholesale Sales Orders	4/21/2014	RPLI SEC 0891956	RPLI SEC 0891960
Wholesale Sales Orders	4/22/2014	RPLI SEC 0891961	RPLI SEC 0891965
Wholesale Sales Orders	4/23/2014	RPLI SEC 0891966	RPLI SEC 0891970
Wholesale Sales Orders	8/4/2014	RPLI SEC 0891971	RPLI SEC 0891975
Wholesale Sales Orders	8/6/2014	RPLI SEC 0891976	RPLI SEC 0891980
Wholesale Sales Orders	8/6/2014	RPLI SEC 0891981	RPLI SEC 0891985
Wholesale Sales Orders	8/9/2014	RPLI SEC 0891986	RPLI SEC 0891990
Wholesale Sales Orders	8/10/2014	RPLI SEC 0891991	RPLI SEC 0891995
Wholesale Sales Orders	8/11/2014	RPLI SEC 0891996	RPLI SEC 0892000
Wholesale Sales Orders	8/12/2014	RPLI SEC 0892001	RPLI SEC 0892005
Wholesale Sales Orders	8/13/2014	RPLI SEC 0892006	RPLI SEC 0892010
Wholesale Sales Orders	8/13/2014	RPLI SEC 0892011	RPLI SEC 0892015
Wholesale Sales Orders	8/14/2014	RPLI SEC 0892016	RPLI SEC 0892020
Wholesale Sales Orders	8/17/2014	RPLI SEC 0892021	RPLI SEC 0892025
Wholesale Sales Orders	8/21/2014	RPLI SEC 0892026	RPLI SEC 0892030
Wholesale Sales Orders	8/22/2014	RPLI SEC 0892031	RPLI SEC 0892035
Wholesale Sales Orders	8/26/2014	RPLI SEC 0892036	RPLI SEC 0892040
Wholesale Sales Orders	8/24/2014	RPLI SEC 0892041	RPLI SEC 0892045
Wholesale Sales Orders	8/24/2014	RPLI SEC 0892046	RPLI SEC 0892050
Wholesale Sales Orders	8/27/2014	RPLI SEC 0892051	RPLI SEC 0892055
Wholesale Sales Orders	8/28/2014	RPLI SEC 0892056	RPLI SEC 0892060
Wholesale Sales Orders	8/29/2014	RPLI SEC 0892061	RPLI SEC 0892065
Wholesale Sales Orders	8/31/2014	RPLI SEC 0892066	RPLI SEC 0892070
Wholesale Sales Orders	6/24/2014	RPLI SEC 0892071	RPLI SEC 0892075
Wholesale Sales Orders	6/26/2014	RPLI SEC 0892076	RPLI SEC 0892080
Wholesale Sales Orders	5/2/2014	RPLI SEC 0892081	RPLI SEC 0892085
Wholesale Sales Orders	5/8/2014	RPLI SEC 0892086	RPLI SEC 0892090
Wholesale Sales Orders	5/14/2014	RPLI SEC 0892091	RPLI SEC 0892095
Wholesale Sales Orders	5/19/2014	RPLI SEC 0892096	RPLI SEC 0892100
Wholesale Sales Orders	5/21/2014	RPLI SEC 0892101	RPLI SEC 0892105
Wholesale Sales Orders	5/21/2014	RPLI SEC 0892106	RPLI SEC 0892110
Wholesale Sales Orders	5/22/2014	RPLI SEC 0892111	RPLI SEC 0892115
Wholesale Sales Orders	5/22/2014	RPLI SEC 0892116	RPLI SEC 0892120
Wholesale Sales Orders	5/8/2014	RPLI SEC 0892121	RPLI SEC 0892125
Wholesale Sales Orders	1/15/2014	RPLI SEC 0892126	RPLI SEC 0892130
Wholesale Sales Orders	2/5/2014	RPLI SEC 0892131	RPLI SEC 0892135
Wholesale Sales Orders	3/11/2014	RPLI SEC 0892136	RPLI SEC 0892140
Wholesale Sales Orders	4/25/2014	RPLI SEC 0892141	RPLI SEC 0892145
Wholesale Sales Orders	5/13/2014	RPLI SEC 0892146	RPLI SEC 0892150
Wholesale Sales Orders	4/10/2013	RPLI SEC 0892151	RPLI SEC 0892155
Wholesale Sales Orders	2/4/2014	RPLI SEC 0892157	RPLI SEC 0892161
Wholesale Sales Orders	4/5/2014	RPLI SEC 0892162	RPLI SEC 0892162

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	5/7/2014	RPLI SEC 0892163	RPLI SEC 0892163
Wholesale Sales Orders	5/20/2014	RPLI SEC 0892164	RPLI SEC 0892164
Wholesale Sales Orders	5/23/2014	RPLI SEC 0892165	RPLI SEC 0892165
Wholesale Sales Orders	5/26/2014	RPLI SEC 0892166	RPLI SEC 0892166
Wholesale Sales Orders	3/17/2014	RPLI SEC 0892195	RPLI SEC 0892199
Wholesale Sales Orders	4/9/2014	RPLI SEC 0892200	RPLI SEC 0892204
Wholesale Sales Orders	4/10/2014	RPLI SEC 0892205	RPLI SEC 0892209
Wholesale Sales Orders	4/10/2014	RPLI SEC 0892210	RPLI SEC 0892214
Wholesale Sales Orders	4/10/2014	RPLI SEC 0892215	RPLI SEC 0892219
Wholesale Sales Orders	4/11/2014	RPLI SEC 0892220	RPLI SEC 0892224
Wholesale Sales Orders	4/13/2014	RPLI SEC 0892225	RPLI SEC 0892229
Wholesale Sales Orders	4/15/2014	RPLI SEC 0892230	RPLI SEC 0892234
Wholesale Sales Orders	4/15/2014	RPLI SEC 0892235	RPLI SEC 0892239
Wholesale Sales Orders	4/15/2014	RPLI SEC 0892240	RPLI SEC 0892244
Wholesale Sales Orders	4/15/2014	RPLI SEC 0892245	RPLI SEC 0892249
Wholesale Sales Orders	4/16/2014	RPLI SEC 0892250	RPLI SEC 0892254
Wholesale Sales Orders	4/16/2014	RPLI SEC 0892255	RPLI SEC 0892259
Wholesale Sales Orders	4/17/2014	RPLI SEC 0892260	RPLI SEC 0892264
Wholesale Sales Orders	4/18/2014	RPLI SEC 0892265	RPLI SEC 0892269
Wholesale Sales Orders	4/24/2014	RPLI SEC 0892270	RPLI SEC 0892274
Wholesale Sales Orders	4/26/2014	RPLI SEC 0892275	RPLI SEC 0892279
Wholesale Sales Orders	4/27/2014	RPLI SEC 0892280	RPLI SEC 0892284
Wholesale Sales Orders	4/29/2014	RPLI SEC 0892285	RPLI SEC 0892289
Wholesale Sales Orders	4/30/2014	RPLI SEC 0892290	RPLI SEC 0892294
Wholesale Sales Orders	5/1/2014	RPLI SEC 0892295	RPLI SEC 0892299
Wholesale Sales Orders	5/1/2014	RPLI SEC 0892300	RPLI SEC 0892304
Wholesale Sales Orders	5/2/2014	RPLI SEC 0892305	RPLI SEC 0892309
Wholesale Sales Orders	5/2/2014	RPLI SEC 0892310	RPLI SEC 0892314
Wholesale Sales Orders	5/6/2014	RPLI SEC 0892315	RPLI SEC 0892319
Wholesale Sales Orders	5/7/2014	RPLI SEC 0892320	RPLI SEC 0892324
Wholesale Sales Orders	5/7/2014	RPLI SEC 0892325	RPLI SEC 0892329
Wholesale Sales Orders	5/9/2014	RPLI SEC 0892330	RPLI SEC 0892334
Wholesale Sales Orders	5/10/2014	RPLI SEC 0892335	RPLI SEC 0892339
Wholesale Sales Orders	5/11/2014	RPLI SEC 0892340	RPLI SEC 0892344
Wholesale Sales Orders	5/12/2014	RPLI SEC 0892345	RPLI SEC 0892349
Wholesale Sales Orders	5/13/2014	RPLI SEC 0892350	RPLI SEC 0892354
Wholesale Sales Orders	5/14/2014	RPLI SEC 0892355	RPLI SEC 0892359
Wholesale Sales Orders	5/15/2014	RPLI SEC 0892360	RPLI SEC 0892364
Wholesale Sales Orders	5/16/2014	RPLI SEC 0892365	RPLI SEC 0892369
Wholesale Sales Orders	5/18/2014	RPLI SEC 0892370	RPLI SEC 0892374
Wholesale Sales Orders	5/19/2014	RPLI SEC 0892375	RPLI SEC 0892379
Wholesale Sales Orders	6/11/2014	RPLI SEC 0892380	RPLI SEC 0892384
Wholesale Sales Orders	6/11/2014	RPLI SEC 0892385	RPLI SEC 0892389

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	5/23/2014	RPLI SEC 0892390	RPLI SEC 0892390
Wholesale Sales Orders	9/2/2014	RPLI SEC 0892394	RPLI SEC 0892398
Wholesale Sales Orders	8/4/2013	RPLI SEC 0892411	RPLI SEC 0892414
Wholesale Sales Orders	7/1/2014	RPLI SEC 0892415	RPLI SEC 0892419
Wholesale Sales Orders	7/1/2014	RPLI SEC 0892420	RPLI SEC 0892424
Wholesale Sales Orders	7/2/2014	RPLI SEC 0892425	RPLI SEC 0892429
Wholesale Sales Orders	7/3/2014	RPLI SEC 0892430	RPLI SEC 0892434
Wholesale Sales Orders	7/3/2014	RPLI SEC 0892435	RPLI SEC 0892439
Wholesale Sales Orders	7/7/2014	RPLI SEC 0892440	RPLI SEC 0892444
Wholesale Sales Orders	7/7/2014	RPLI SEC 0892445	RPLI SEC 0892449
Wholesale Sales Orders	7/8/2014	RPLI SEC 0892450	RPLI SEC 0892454
Wholesale Sales Orders	7/10/2014	RPLI SEC 0892455	RPLI SEC 0892459
Wholesale Sales Orders	7/12/2014	RPLI SEC 0892460	RPLI SEC 0892464
Wholesale Sales Orders	7/13/2014	RPLI SEC 0892465	RPLI SEC 0892469
Wholesale Sales Orders	7/13/2014	RPLI SEC 0892470	RPLI SEC 0892474
Wholesale Sales Orders	7/16/2014	RPLI SEC 0892475	RPLI SEC 0892479
Wholesale Sales Orders	7/16/2014	RPLI SEC 0892480	RPLI SEC 0892484
Wholesale Sales Orders	7/16/2014	RPLI SEC 0892485	RPLI SEC 0892489
Wholesale Sales Orders	7/16/2014	RPLI SEC 0892490	RPLI SEC 0892494
Wholesale Sales Orders	7/18/2014	RPLI SEC 0892495	RPLI SEC 0892499
Wholesale Sales Orders	7/22/2014	RPLI SEC 0892500	RPLI SEC 0892504
Wholesale Sales Orders	7/23/2014	RPLI SEC 0892505	RPLI SEC 0892509
Wholesale Sales Orders	7/24/2014	RPLI SEC 0892510	RPLI SEC 0892514
Wholesale Sales Orders	7/24/2014	RPLI SEC 0892515	RPLI SEC 0892519
Wholesale Sales Orders	7/24/2014	RPLI SEC 0892520	RPLI SEC 0892524
Wholesale Sales Orders	7/25/2014	RPLI SEC 0892525	RPLI SEC 0892529
Wholesale Sales Orders	7/28/2014	RPLI SEC 0892530	RPLI SEC 0892534
Wholesale Sales Orders	7/30/2014	RPLI SEC 0892535	RPLI SEC 0892539
Wholesale Sales Orders	6/9/2014	RPLI SEC 0892540	RPLI SEC 0892544
Wholesale Sales Orders	6/11/2014	RPLI SEC 0892545	RPLI SEC 0892549
Wholesale Sales Orders	6/11/2014	RPLI SEC 0892550	RPLI SEC 0892554
Wholesale Sales Orders	6/12/2014	RPLI SEC 0892555	RPLI SEC 0892559
Wholesale Sales Orders	6/13/2014	RPLI SEC 0892560	RPLI SEC 0892564
Wholesale Sales Orders	6/13/2014	RPLI SEC 0892565	RPLI SEC 0892569
Wholesale Sales Orders	6/14/2014	RPLI SEC 0892570	RPLI SEC 0892574
Wholesale Sales Orders	6/15/2014	RPLI SEC 0892575	RPLI SEC 0892579
Wholesale Sales Orders	6/17/2014	RPLI SEC 0892580	RPLI SEC 0892584
Wholesale Sales Orders	6/17/2014	RPLI SEC 0892585	RPLI SEC 0892589
Wholesale Sales Orders	6/18/2014	RPLI SEC 0892590	RPLI SEC 0892594
Wholesale Sales Orders	6/20/2014	RPLI SEC 0892595	RPLI SEC 0892599
Wholesale Sales Orders	6/20/2014	RPLI SEC 0892600	RPLI SEC 0892604
Wholesale Sales Orders	6/20/2014	RPLI SEC 0892605	RPLI SEC 0892609
Wholesale Sales Orders	6/20/2014	RPLI SEC 0892610	RPLI SEC 0892614

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Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	6/24/2014	RPLI SEC 0892615	RPLI SEC 0892619
Wholesale Sales Orders	6/26/2014	RPLI SEC 0892620	RPLI SEC 0892624
Wholesale Sales Orders	6/24/2014	RPLI SEC 0892625	RPLI SEC 0892629
Wholesale Sales Orders	6/24/2014	RPLI SEC 0892630	RPLI SEC 0892634
Wholesale Sales Orders	6/30/2014	RPLI SEC 0892635	RPLI SEC 0892639
Wholesale Sales Orders	6/30/2014	RPLI SEC 0892640	RPLI SEC 0892644
Wholesale Sales Orders	6/30/2014	RPLI SEC 0892645	RPLI SEC 0892649
Wholesale Sales Orders	3/6/2013	RPLI SEC 0895550	RPLI SEC 0895554
Wholesale Sales Orders	4/10/2013	RPLI SEC 0898829	RPLI SEC 0898833
Wholesale Sales Orders	4/10/2013	RPLI SEC 0898834	RPLI SEC 0898838
Wholesale Sales Orders	11/21/2013	RPLI SEC 0899670	RPLI SEC 0899674
Wholesale Sales Orders	3/6/2013	RPLI SEC 0899675	RPLI SEC 0899675
Wholesale Sales Orders	10/31/2013	RPLI SEC 0907870	RPLI SEC 0907874
Wholesale Sales Orders	2/26/2013	RPLI SEC 0957702	RPLI SEC 0957718
Wholesale Sales Orders	4/21/2015	SEC-LIT-EPROD-000323270	SEC-LIT-EPROD-000323274
Wholesale Sales Orders	12/18/2014	SEC-LIT-EPROD-000323782	SEC-LIT-EPROD-000323786
Wholesale Sales Orders	12/17/2014	SEC-LIT-EPROD-000323787	SEC-LIT-EPROD-000323791
Wholesale Sales Orders	12/17/2014	SEC-LIT-EPROD-000323792	SEC-LIT-EPROD-000323796
Wholesale Sales Orders	12/15/2014	SEC-LIT-EPROD-000323797	SEC-LIT-EPROD-000323801
Wholesale Sales Orders	12/19/2014	SEC-LIT-EPROD-000323802	SEC-LIT-EPROD-000323806
Wholesale Sales Orders	12/18/2014	SEC-LIT-EPROD-000323807	SEC-LIT-EPROD-000323811
Wholesale Sales Orders	12/19/2014	SEC-LIT-EPROD-000323812	SEC-LIT-EPROD-000323816
Wholesale Sales Orders	12/11/2014	SEC-LIT-EPROD-000323818	SEC-LIT-EPROD-000323822
Wholesale Sales Orders	12/12/2014	SEC-LIT-EPROD-000323824	SEC-LIT-EPROD-000323828
Wholesale Sales Orders	12/9/2014	SEC-LIT-EPROD-000323829	SEC-LIT-EPROD-000323833
Wholesale Sales Orders	12/10/2014	SEC-LIT-EPROD-000323834	SEC-LIT-EPROD-000323838
Wholesale Sales Orders	12/12/2014	SEC-LIT-EPROD-000323839	SEC-LIT-EPROD-000323843
Wholesale Sales Orders	12/9/2014	SEC-LIT-EPROD-000323844	SEC-LIT-EPROD-000323848
Wholesale Sales Orders	12/10/2014	SEC-LIT-EPROD-000323849	SEC-LIT-EPROD-000323853

EXHIBIT C – SALES CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Wholesale Sales Orders	12/27/2014	SEC-LIT-EPROD-000323927	SEC-LIT-EPROD-000323931
Wholesale Sales Orders	11/26/2014	SEC-LIT-EPROD-000323932	SEC-LIT-EPROD-000323936
Wholesale Sales Orders	11/27/2014	SEC-LIT-EPROD-000323937	SEC-LIT-EPROD-000323941
Wholesale Sales Orders	12/1/2014	SEC-LIT-EPROD-000323943	SEC-LIT-EPROD-000323947
Wholesale Sales Orders	11/25/2014	SEC-LIT-EPROD-000323948	SEC-LIT-EPROD-000323952
Wholesale Sales Orders	12/1/2014	SEC-LIT-EPROD-000323953	SEC-LIT-EPROD-000323957
Wholesale Sales Orders	11/24/2014	SEC-LIT-EPROD-000323958	SEC-LIT-EPROD-000323962
Wholesale Sales Orders	11/27/2014	SEC-LIT-EPROD-000323963	SEC-LIT-EPROD-000323967
Wholesale Sales Orders	11/21/2014	SEC-LIT-EPROD-000323968	SEC-LIT-EPROD-000323972
Wholesale Sales Orders	11/20/2014	SEC-LIT-EPROD-000323973	SEC-LIT-EPROD-000323977
Wholesale Sales Orders	11/22/2014	SEC-LIT-EPROD-000323979	SEC-LIT-EPROD-000323983
Wholesale Sales Orders	12/4/2014	SEC-LIT-EPROD-000323984	SEC-LIT-EPROD-000323988
Wholesale Sales Orders	9/16/2014	SEC-LIT-EPROD-000328625	SEC-LIT-EPROD-000328629
Wholesale Sales Orders	12/28/2015	SEC-LIT-EPROD-000429245	SEC-LIT-EPROD-000429245
Wholesale Sales Orders	12/28/2015	SEC-LIT-EPROD-000435162	SEC-LIT-EPROD-000435162
Wholesale Sales Orders	4/28/2014	SEC-LIT-EPROD-000436931	SEC-LIT-EPROD-000436935
Wholesale Sales Orders	10/9/2013	SEC-LIT-EPROD-000454673	SEC-LIT-EPROD-000454673
Wholesale Sales Orders	10/5/2014	SEC-LIT-EPROD-000701078	SEC-LIT-EPROD-000701082
Wholesale Sales Orders	9/16/2014	SEC-LIT-EPROD-000701083	SEC-LIT-EPROD-000701087
Wholesale Sales Orders	9/12/2014	SEC-LIT-EPROD-000701088	SEC-LIT-EPROD-000701092
Wholesale Sales Orders	9/21/2014	SEC-LIT-EPROD-000701094	SEC-LIT-EPROD-000701094

EXHIBIT D – PROGRAMMATIC CONTRACTS

Date	Begin Bates	End Bates
6/2/2017	00017429	00017435
3/1/2018	00018580	00018581
6/2/2017	RPLI SEC 0507300	RPLI SEC 0507306
8/23/2017	RPLI SEC 0537703	RPLI SEC 0537713
3/1/2018	RPLI SEC 0537724	RPLI SEC 0537726
3/1/2018	RPLI SEC 0537727	RPLI SEC 0537728
3/1/2018	RPLI SEC 0899302	RPLI SEC 0899304
8/23/2017	RPLI SEC 0899313	RPLI SEC 0899323
3/1/2018	RPLI SEC 0899324	RPLI SEC 0899326

EXHIBIT E – SERVICE CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Employee and Executive Compensation Contracts	10/12/2017	RPLI SEC 0397607	RPLI SEC 0397610
Employee and Executive Compensation Contracts	5/9/2018	RPLI SEC 0431814	RPLI SEC 0431817
Employee and Executive Compensation Contracts	5/8/2018	RPLI SEC 0449365	RPLI SEC 0449370
Employee and Executive Compensation Contracts	8/7/2018	RPLI SEC 0511705	RPLI SEC 0511708
Employee and Executive Compensation Contracts	9/20/2017	RPLI SEC 0514315	RPLI SEC 0514318
Employee and Executive Compensation Contracts	5/1/2018	RPLI SEC 0514603	RPLI SEC 0514606
Employee and Executive Compensation Contracts	11/12/2017	RPLI SEC 0539660	RPLI SEC 0539663
Employee and Executive Compensation Contracts	5/17/2019	RPLI SEC 0547108	RPLI SEC 0547122
Employee and Executive Compensation Contracts	9/12/2019	RPLI SEC 0547739	RPLI SEC 0547752
Employee and Executive Compensation Contracts	8/8/2019	RPLI SEC 0547795	RPLI SEC 0547808
Employee and Executive Compensation Contracts	4/26/2019	RPLI SEC 0547824	RPLI SEC 0547836
Employee and Executive Compensation Contracts	6/19/2019	RPLI SEC 0547870	RPLI SEC 0547882
Employee and Executive Compensation Contracts	10/1/2018	RPLI SEC 0569727	RPLI SEC 0569730
Employee and Executive Compensation Contracts	3/3/2020	RPLI SEC 0629960	RPLI SEC 0629964
Employee and Executive Compensation Contracts	11/6/2020	RPLI SEC 0632196	RPLI SEC 0632209
Employee and Executive Compensation Contracts	11/22/2019	RPLI SEC 0633406	RPLI SEC 0633419
Employee and Executive Compensation Contracts	8/13/2020	RPLI SEC 0633554	RPLI SEC 0633567
Employee and Executive Compensation Contracts	11/21/2017	RPLI SEC 0633692	RPLI SEC 0633695
Employee and Executive Compensation Contracts	6/7/2018	RPLI SEC 0633779	RPLI SEC 0633782
Employee and Executive Compensation Contracts	11/20/2018	RPLI SEC 0650235	RPLI SEC 0650248
Employee and Executive Compensation Contracts	12/15/2017	RPLI SEC 0650347	RPLI SEC 0650350
Employee and Executive Compensation Contracts	9/20/2017	RPLI SEC 0764198	RPLI SEC 0764201

EXHIBIT E – SERVICE CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Employee and Executive Compensation Contracts	5/8/2018	RPLI SEC 0764317	RPLI SEC 0764322
Employee and Executive Compensation Contracts	1/31/2019	RPLI SEC 0765213	RPLI SEC 0765227
Employee and Executive Compensation Contracts	4/26/2019	RPLI SEC 0765649	RPLI SEC 0765662
Employee and Executive Compensation Contracts	9/19/2018	RPLI SEC 0766757	RPLI SEC 0766761
Employee and Executive Compensation Contracts	5/7/2019	RPLI SEC 0770941	RPLI SEC 0770956
Employee and Executive Compensation Contracts	6/4/2019	RPLI SEC 0779727	RPLI SEC 0779740
Employee and Executive Compensation Contracts	11/22/2019	RPLI SEC 0845328	RPLI SEC 0845341
Employee and Executive Compensation Contracts	2/26/2015	RPLI SEC 0895266	RPLI SEC 0895273
Employee and Executive Compensation Contracts	9/30/2017	RPLI SEC 0909949	RPLI SEC 0909952
Employee and Executive Compensation Contracts	9/29/2017	RPLI SEC 0910090	RPLI SEC 0910093
Employee and Executive Compensation Contracts	9/20/2017	RPLI SEC 0910446	RPLI SEC 0910449
Employee and Executive Compensation Contracts	9/20/2017	RPLI SEC 0910504	RPLI SEC 0910507
Employee and Executive Compensation Contracts	9/19/2017	RPLI SEC 0910844	RPLI SEC 0910847
Employee and Executive Compensation Contracts	10/28/2019	RPLI SEC 0931851	RPLI SEC 0931864
Market-Making Contracts	6/17/2020	00000505	00000508
Market-Making Contracts	12/15/2020	00000513	00000513
Market-Making Contracts	BLANK	00000639	00000639
Market-Making Contracts	9/9/2019	00000640	00000656
Market-Making Contracts	7/1/2019	00000988	00001002
Market-Making Contracts	1/1/2015	00007322	00007331
Market-Making Contracts	1/1/2015	00010953	00010962
Market-Making Contracts	11/1/2019	00012105	00012105
Market-Making Contracts	11/21/2017	RPLI SEC 0000449	RPLI SEC 0000459
Market-Making Contracts	3/19/2018	RPLI SEC 0000889	RPLI SEC 0000890
Market-Making Contracts	2/8/2018	RPLI SEC 0000924	RPLI SEC 0000937
Market-Making Contracts	4/19/2018	RPLI SEC 0000962	RPLI SEC 0000973
Market-Making Contracts	6/24/2019	RPLI SEC 0187337	RPLI SEC 0187348
Market-Making Contracts	1/1/2015	RPLI SEC 0203977	RPLI SEC 0203986
Market-Making Contracts	3/31/2014	RPLI SEC 0259541	RPLI SEC 0259549

EXHIBIT E – SERVICE CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Market-Making Contracts	11/21/2019	RPLI SEC 0423532	RPLI SEC 0423545
Market-Making Contracts	8/21/2019	RPLI SEC 0423601	RPLI SEC 0423602
Market-Making Contracts	7/9/2019	RPLI SEC 0423634	RPLI SEC 0423653
Market-Making Contracts	1/30/2020	RPLI SEC 0423655	RPLI SEC 0423656
Market-Making Contracts	2/6/2020	RPLI SEC 0423806	RPLI SEC 0423806
Market-Making Contracts	2/14/2017	RPLI SEC 0507307	RPLI SEC 0507313
Market-Making Contracts	2/14/2017	RPLI SEC 0507307	RPLI SEC 0507313
Market-Making Contracts	8/25/2016	RPLI SEC 0507314	RPLI SEC 0507319
Market-Making Contracts	2/7/2014	RPLI SEC 0507336	RPLI SEC 0507344
Market-Making Contracts	3/1/2018	RPLI SEC 0537696	RPLI SEC 0537702
Market-Making Contracts	5/29/2020	RPLI SEC 0573903	RPLI SEC 0573906
Market-Making Contracts	BLANK	RPLI SEC 0799292	RPLI SEC 0799304
Market-Making Contracts	7/1/2019	RPLI SEC 0809256	RPLI SEC 0809270
Market-Making Contracts	5/29/2020	RPLI SEC 0820932	RPLI SEC 0820935
Market-Making Contracts	6/1/2020	RPLI SEC 0820936	RPLI SEC 0820936
Market-Making Contracts	9/3/2019	RPLI SEC 0820937	RPLI SEC 0820949
Market-Making Contracts	5/29/2020	RPLI SEC 0841484	RPLI SEC 0841487
Market-Making Contracts	8/1/2018	RPLI SEC 0890579	RPLI SEC 0890589
Market-Making Contracts	12/19/2018	RPLI SEC 0890664	RPLI SEC 0890674
Market-Making Contracts	3/8/2017	RPLI SEC 0890860	RPLI SEC 0890860
Market-Making Contracts	6/26/2014	RPLI SEC 0890941	RPLI SEC 0890956
Market-Making Contracts	7/13/2015	RPLI SEC 0891071	RPLI SEC 0891079
Market-Making Contracts	6/17/2020	RPLI SEC 0896536	RPLI SEC 0896539
Market-Making Contracts	11/1/2019	RPLI SEC 0896540	RPLI SEC 0896540
Market-Making Contracts	BLANK	RPLI SEC 0896541	RPLI SEC 0896541
Market-Making Contracts	7/9/2019	RPLI SEC 0896542	RPLI SEC 0896561
Market-Making Contracts	BLANK	RPLI SEC 0896562	RPLI SEC 0896563
Market-Making Contracts	BLANK	RPLI SEC 0898506	RPLI SEC 0898506
Market-Making Contracts	8/10/2019	RPLI SEC 0898507	RPLI SEC 0898522
Market-Making Contracts	BLANK	RPLI SEC 0898744	RPLI SEC 0898744
Market-Making Contracts	6/24/2019	RPLI SEC 0898863	RPLI SEC 0898874
Market-Making Contracts	6/24/2019	RPLI SEC 0898875	RPLI SEC 0898886
Market-Making Contracts	5/19/2020	RPLI SEC 0898887	RPLI SEC 0898902
Market-Making Contracts	9/3/2019	RPLI SEC 0898919	RPLI SEC 0898931
Market-Making Contracts	9/9/2019	RPLI SEC 0898932	RPLI SEC 0898948
Market-Making Contracts	10/21/2020	RPLI SEC 0898949	RPLI SEC 0898968
Market-Making Contracts	6/4/2020	RPLI SEC 0898969	RPLI SEC 0898979

EXHIBIT E – SERVICE CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Market-Making Contracts	3/26/2018	RPLI SEC 0898996	RPLI SEC 0899004
Market-Making Contracts	12/15/2020	RPLI SEC 0899077	RPLI SEC 0899077
Market-Making Contracts	10/29/2019	RPLI SEC 0899088	RPLI SEC 0899088
Market-Making Contracts	8/21/2019	RPLI SEC 0899089	RPLI SEC 0899089
Market-Making Contracts	BLANK	RPLI SEC 0899092	RPLI SEC 0899092
Market-Making Contracts	7/1/2019	RPLI SEC 0899129	RPLI SEC 0899143
Market-Making Contracts	11/1/2019	RPLI SEC 0899144	RPLI SEC 0899144
Market-Making Contracts	2/14/2017	RPLI SEC 0899145	RPLI SEC 0899151
Market-Making Contracts	6/17/2020	RPLI SEC 0899152	RPLI SEC 0899155
Market-Making Contracts	12/15/2020	RPLI SEC 0899156	RPLI SEC 0899156
Market-Making Contracts	5/29/2020	RPLI SEC 0899160	RPLI SEC 0899163
Market-Making Contracts	BLANK	RPLI SEC 0899166	RPLI SEC 0899166
Market-Making Contracts	8/21/2019	RPLI SEC 0899167	RPLI SEC 0899167
Market-Making Contracts	3/8/2017	RPLI SEC 0899305	RPLI SEC 0899305
Market-Making Contracts	3/1/2018	RPLI SEC 0899306	RPLI SEC 0899312
Market-Making Contracts	5/21/2020	RPLI SEC 0899478	RPLI SEC 0899481
Market-Making Contracts	8/21/2019	RPLI SEC 0899515	RPLI SEC 0899516
Market-Making Contracts	7/29/2019	RPLI SEC 0899563	RPLI SEC 0899578
Market-Making Contracts	1/1/2015	RPLI SEC 1047651	RPLI SEC 1047660
Market-Making Contracts	3/31/2014	SEC-LIT-EPROD-000070622	SEC-LIT-EPROD-000070630
Market-Making Contracts	7/29/2019	SEC-LIT-EPROD-000534536	SEC-LIT-EPROD-000534551
Market-Making Contracts	11/1/2019	SEC-LIT-EPROD-001008812	SEC-LIT-EPROD-001008812
Product Incentive Contracts	5/16/2018	RPLI SEC 0074787	RPLI SEC 0074794
Product Incentive Contracts	12/1/2018	RPLI SEC 0112615	RPLI SEC 0112616
Product Incentive Contracts	5/24/2019	RPLI SEC 0273727	RPLI SEC 0273735
Product Incentive Contracts	11/3/2014	RPLI SEC 0304380	RPLI SEC 0304386
Product Incentive Contracts	6/2/2017	RPLI SEC 0346552	RPLI SEC 0346555
Product Incentive Contracts	5/18/2017	RPLI SEC 0507292	RPLI SEC 0507295
Product Incentive Contracts	5/17/2017	RPLI SEC 0581494	RPLI SEC 0581498
Product Incentive Contracts	9/25/2013	RPLI SEC 0891376	RPLI SEC 0891378
Product Incentive Contracts	9/24/2018	RPLI SEC 0894629	RPLI SEC 0894636
Product Incentive Contracts	5/20/2019	RPLI SEC 0894637	RPLI SEC 0894637
Product Incentive Contracts	1/24/2019	RPLI SEC 0894667	RPLI SEC 0894668
Product Incentive Contracts	9/19/2019	RPLI SEC 0899553	RPLI SEC 0899562
Product Incentive Contracts	5/10/2019	RPLI SEC 0899586	RPLI SEC 0899595

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Custody Agreements	1/4/2018	██████ 0003339	██████ 0003339
Custody Agreements	1/4/2018	RPLI SEC 0209006	RPLI SEC 0209006
Custody Agreements	1/3/2017	RPLI SEC 0237248	RPLI SEC 0237248
Custody Agreements	1/4/2018	RPLI SEC 0237326	RPLI SEC 0237326
Custody Agreements	1/3/2017	RPLI SEC 0253729	RPLI SEC 0253729
Custody Agreements	1/3/2017	RPLI SEC 0253734	RPLI SEC 0253734
Custody Agreements	7/21/2015	RPLI SEC 0610409	RPLI SEC 0610415
Custody Agreements	8/3/2015	RPLI SEC 0890957	RPLI SEC 0890962
Custody Agreements	12/4/2016	RPLI SEC 0895307	RPLI SEC 0895313
Custody Agreements	1/3/2018	RPLI SEC 0938715	RPLI SEC 0938715
Joint Venture	1/28/2016	RPLI SEC 0355534	RPLI SEC 0355542
Joint Venture	5/27/2016	RPLI SEC 0357972	RPLI SEC 0357978
Joint Venture	1/28/2016	RPLI SEC 0612004	RPLI SEC 0612012
Joint Venture	3/30/2016	RPLI SEC 0764387	RPLI SEC 0764408
Joint Venture	11/28/2016	RPLI SEC 0893566	RPLI SEC 0893583
Joint Venture	9/24/2018	RPLI SEC 0894689	RPLI SEC 0894710
Loans and Promissory Notes	4/28/2020	██████ 00009409	██████ 00009409
Loans and Promissory Notes	1/4/2018	RPLI SEC 0000906	RPLI SEC 0000917
Loans and Promissory Notes	2/16/2018	RPLI SEC 0000960	RPLI SEC 0000960
Loans and Promissory Notes	1/30/2018	RPLI SEC 0000961	RPLI SEC 0000961
Loans and Promissory Notes	12/28/2015	RPLI SEC 0258812	RPLI SEC 0258819
Loans and Promissory Notes	12/30/2019	RPLI SEC 0318399	RPLI SEC 0318400
Loans and Promissory Notes	12/28/2015	RPLI SEC 0609645	RPLI SEC 0609652
Loans and Promissory Notes	2/6/2014	RPLI SEC 0676747	RPLI SEC 0676747
Loans and Promissory Notes	8/17/2018	RPLI SEC 0890692	RPLI SEC 0890692
Loans and Promissory Notes	3/30/2016	RPLI SEC 0890966	RPLI SEC 0890973
Loans and Promissory Notes	6/25/2015	RPLI SEC 0892171	RPLI SEC 0892194
Loans and Promissory Notes	5/14/2014	RPLI SEC 0892392	RPLI SEC 0892392
Loans and Promissory Notes	5/21/2014	RPLI SEC 0892401	RPLI SEC 0892401
Loans and Promissory Notes	5/8/2020	RPLI SEC 0898749	RPLI SEC 0898779
Loans and Promissory Notes	5/8/2020	RPLI SEC 0898780	RPLI SEC 0898801
Loans and Promissory Notes	BLANK	RPLI SEC 0899024	RPLI SEC 0899060
Loans and Promissory Notes	6/30/2020	RPLI SEC 0899061	RPLI SEC 0899066
Loans and Promissory Notes	6/30/2020	RPLI SEC 0899067	RPLI SEC 0899070
Loans and Promissory Notes	6/30/2020	RPLI SEC 0899071	RPLI SEC 0899076
Loans and Promissory Notes	12/30/2019	RPLI SEC 0899327	RPLI SEC 0899327
Loans and Promissory Notes	4/30/2020	RPLI SEC 0899337	RPLI SEC 0899337
Loans and Promissory Notes	4/28/2020	RPLI SEC 0899338	RPLI SEC 0899338
Loans and Promissory Notes	12/30/2019	RPLI SEC 0899339	RPLI SEC 0899339
Loans and Promissory Notes	12/30/2019	RPLI SEC 0899340	RPLI SEC 0899341
Loans and Promissory Notes	3/31/2020	RPLI SEC 0899342	RPLI SEC 0899342
Loans and Promissory Notes	3/31/2010	RPLI SEC 0899343	RPLI SEC 0899343
Loans and Promissory Notes	11/22/2019	RPLI SEC 0899353	RPLI SEC 0899360

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Loans and Promissory Notes	8/26/2019	RPLI SEC 0899361	RPLI SEC 0899368
Loans and Promissory Notes	2/26/2020	RPLI SEC 0899369	RPLI SEC 0899376
Loans and Promissory Notes	10/28/2019	RPLI SEC 0899377	RPLI SEC 0899384
Loans and Promissory Notes	11/25/2019	RPLI SEC 0899385	RPLI SEC 0899393
Loans and Promissory Notes	10/28/2019	RPLI SEC 0899394	RPLI SEC 0899402
Loans and Promissory Notes	9/5/2019	RPLI SEC 0899403	RPLI SEC 0899411
Loans and Promissory Notes	1/31/2020	RPLI SEC 0899432	RPLI SEC 0899432
Loans and Promissory Notes	1/31/2020	RPLI SEC 0899433	RPLI SEC 0899433
Loans and Promissory Notes	1/31/2020	RPLI SEC 0899434	RPLI SEC 0899434
Loans and Promissory Notes	6/14/2020	RPLI SEC 0899435	RPLI SEC 0899435
Loans and Promissory Notes	5/29/2020	RPLI SEC 0899436	RPLI SEC 0899436
Loans and Promissory Notes	2/28/2020	RPLI SEC 0899437	RPLI SEC 0899437
Loans and Promissory Notes	2/28/2020	RPLI SEC 0899438	RPLI SEC 0899438
Loans and Promissory Notes	2/28/2020	RPLI SEC 0899439	RPLI SEC 0899439
Loans and Promissory Notes	2/28/2020	RPLI SEC 0899440	RPLI SEC 0899440
Loans and Promissory Notes	3/30/2016	RPLI SEC 0899441	RPLI SEC 0899448
Loans and Promissory Notes	6/12/2020	RPLI SEC 0899517	RPLI SEC 0899520
Loans and Promissory Notes	6/12/2020	RPLI SEC 0899521	RPLI SEC 0899545
Master Hosted Services Agreements	12/31/2019	MONEYGRAM_SEC_0016678	MONEYGRAM_SEC_0016701
Master Hosted Services Agreements	12/31/2019	MONEYGRAM_SEC_0016803	MONEYGRAM_SEC_0016826
Master Hosted Services Agreements	2/23/2019	RPLI SEC 0074795	RPLI SEC 0074828
Master Hosted Services Agreements	4/1/2019	RPLI SEC 0074864	RPLI SEC 0074866
Master Hosted Services Agreements	6/28/2019	RPLI SEC 0074891	RPLI SEC 0074907
Master Hosted Services Agreements	6/28/2019	RPLI SEC 0075005	RPLI SEC 0075009
Master Hosted Services Agreements	10/18/2018	RPLI SEC 0075010	RPLI SEC 0075015
Master Hosted Services Agreements	7/22/2019	RPLI SEC 0075029	RPLI SEC 0075030
Master Hosted Services Agreements	3/27/2019	RPLI SEC 0075053	RPLI SEC 0075059
Master Hosted Services Agreements	12/31/2018	RPLI SEC 0075060	RPLI SEC 0075075
Master Hosted Services Agreements	4/23/2019	RPLI SEC 0075076	RPLI SEC 0075079
Master Hosted Services Agreements	12/31/2018	RPLI SEC 0075080	RPLI SEC 0075086
Master Hosted Services Agreements	3/20/2019	RPLI SEC 0075110	RPLI SEC 0075113

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Hosted Services Agreements	9/26/2018	RPLI SEC 0075128	RPLI SEC 0075135
Master Hosted Services Agreements	1/10/2018	RPLI SEC 0075143	RPLI SEC 0075145
Master Hosted Services Agreements	12/20/2018	RPLI SEC 0075251	RPLI SEC 0075264
Master Hosted Services Agreements	12/20/2018	RPLI SEC 0075265	RPLI SEC 0075292
Master Hosted Services Agreements	10/19/2018	RPLI SEC 0075296	RPLI SEC 0075297
Master Hosted Services Agreements	3/22/2019	RPLI SEC 0075376	RPLI SEC 0075382
Master Hosted Services Agreements	3/22/2019	RPLI SEC 0075426	RPLI SEC 0075431
Master Hosted Services Agreements	12/31/2018	RPLI SEC 0075464	RPLI SEC 0075478
Master Hosted Services Agreements	12/31/2018	RPLI SEC 0075479	RPLI SEC 0075484
Master Hosted Services Agreements	5/16/2019	RPLI SEC 0078639	RPLI SEC 0078645
Master Hosted Services Agreements	6/3/2019	RPLI SEC 0140419	RPLI SEC 0140440
Master Hosted Services Agreements	9/11/2019	RPLI SEC 0180025	RPLI SEC 0180042
Master Hosted Services Agreements	12/31/2018	RPLI SEC 0195777	RPLI SEC 0195779
Master Hosted Services Agreements	5/9/2019	RPLI SEC 0232982	RPLI SEC 0232988
Master Hosted Services Agreements	5/9/2019	RPLI SEC 0233015	RPLI SEC 0233019
Master Hosted Services Agreements	11/30/2018	RPLI SEC 0233390	RPLI SEC 0233393
Master Hosted Services Agreements	9/4/2018	RPLI SEC 0233510	RPLI SEC 0233516
Master Hosted Services Agreements	9/13/2018	RPLI SEC 0233518	RPLI SEC 0233524
Master Hosted Services Agreements	6/7/2019	RPLI SEC 0239684	RPLI SEC 0239698
Master Hosted Services Agreements	8/14/2019	RPLI SEC 0256610	RPLI SEC 0256613
Master Hosted Services Agreements	3/31/2018	RPLI SEC 0264538	RPLI SEC 0264541
Master Hosted Services Agreements	6/27/2019	RPLI SEC 0264904	RPLI SEC 0264908

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Hosted Services Agreements	6/27/2019	RPLI SEC 0268692	RPLI SEC 0268697
Master Hosted Services Agreements	3/4/2019	RPLI SEC 0269072	RPLI SEC 0269075
Master Hosted Services Agreements	12/26/2018	RPLI SEC 0269623	RPLI SEC 0269643
Master Hosted Services Agreements	6/17/2019	RPLI SEC 0272291	RPLI SEC 0272333
Master Hosted Services Agreements	12/12/2017	RPLI SEC 0503128	RPLI SEC 0503129
Master Hosted Services Agreements	3/4/2019	RPLI SEC 0503130	RPLI SEC 0503150
Master Hosted Services Agreements	1/1/2020	RPLI SEC 0503168	RPLI SEC 0503173
Master Hosted Services Agreements	3/4/2019	RPLI SEC 0503182	RPLI SEC 0503183
Master Hosted Services Agreements	12/6/2019	RPLI SEC 0503184	RPLI SEC 0503185
Master Hosted Services Agreements	12/12/2017	RPLI SEC 0503186	RPLI SEC 0503199
Master Hosted Services Agreements	12/6/2019	RPLI SEC 0806470	RPLI SEC 0806471
Master Hosted Services Agreements	12/20/2018	RPLI SEC 0890622	RPLI SEC 0890635
Master Hosted Services Agreements	12/19/2018	RPLI SEC 0890636	RPLI SEC 0890663
Master Hosted Services Agreements	7/7/2020	RPLI SEC 0898856	RPLI SEC 0898860
Master Hosted Services Agreements	5/1/2020	RPLI SEC 0899173	RPLI SEC 0899175
Master Hosted Services Agreements	12/4/2019	RPLI SEC 0899176	RPLI SEC 0899183
Master Hosted Services Agreements	1/1/2020	RPLI SEC 0899184	RPLI SEC 0899189
Master Hosted Services Agreements	3/4/2019	RPLI SEC 0899190	RPLI SEC 0899210
Master Hosted Services Agreements	3/4/2019	RPLI SEC 0899211	RPLI SEC 0899212
Master Hosted Services Agreements	5/16/2019	RPLI SEC 0899213	RPLI SEC 0899219
Master Hosted Services Agreements	9/2/2020	RPLI SEC 0899220	RPLI SEC 0899226
Master Hosted Services Agreements	9/11/2020	RPLI SEC 0899227	RPLI SEC 0899229

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Hosted Services Agreements	12/17/2019	RPLI SEC 0899230	RPLI SEC 0899233
Master Hosted Services Agreements	6/27/2019	RPLI SEC 0899234	RPLI SEC 0899234
Master Hosted Services Agreements	6/27/2019	RPLI SEC 0899235	RPLI SEC 0899249
Master Hosted Services Agreements	9/11/2020	RPLI SEC 0899250	RPLI SEC 0899279
Master Hosted Services Agreements	3/9/2020	RPLI SEC 0899344	RPLI SEC 0899347
Master Hosted Services Agreements	2/10/2020	RPLI SEC 0899348	RPLI SEC 0899352
Master Hosted Services Agreements	12/17/2019	RPLI SEC 0899412	RPLI SEC 0899414
Master Hosted Services Agreements	6/26/2019	RPLI SEC 0899415	RPLI SEC 0899431
Master Hosted Services Agreements	9/2/2020	RPLI SEC 0899581	RPLI SEC 0899581
Master Hosted Services Agreements	11/4/2019	RPLI SEC 0899582	RPLI SEC 0899582
Master Hosted Services Agreements	9/2/2020	RPLI SEC 0899678	RPLI SEC 0899690
Master Hosted Services Agreements	5/23/2018	RPLI SEC 0899691	RPLI SEC 0899691
Master Hosted Services Agreements	12/31/2019	SEC-LIT-EPROD-000072045	SEC-LIT-EPROD-000072068
Master Hosted Services Agreements	9/25/2019	SEC-LIT-EPROD-000077199	SEC-LIT-EPROD-000077199
Master Hosted Services Agreements	9/25/2019	SEC-LIT-EPROD-000077199	SEC-LIT-EPROD-000077199
Master Hosted Services Agreements	6/8/2020	SEC-LIT-EPROD-000077212	SEC-LIT-EPROD-000077213
Master Hosted Services Agreements	6/27/2019	SEC-LIT-EPROD-000622409	SEC-LIT-EPROD-000622423
Master Hosted Services Agreements	6/27/2019	SEC-LIT-EPROD-000622497	SEC-LIT-EPROD-000622497
Master Hosted Services Agreements	6/27/2019	SEC-LIT-EPROD-000622498	SEC-LIT-EPROD-000622514
Master Hosted Services Agreements	12/22/2017	SEC-LIT-EPROD-000631390	SEC-LIT-EPROD-000631392
Master Hosted Services Agreements	12/22/2017	SEC-LIT-EPROD-000631393	SEC-LIT-EPROD-000631404
Master Hosted Services Agreements	12/18/2019	SEC-LIT-EPROD-000633771	SEC-LIT-EPROD-000633774

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Master Hosted Services Agreements	1/21/2020	SEC-LIT-EPROD-000764948	SEC-LIT-EPROD-000764952
Master Hosted Services Agreements	4/9/2020	SEC-LIT-EPROD-000764982	SEC-LIT-EPROD-000764982
Master Hosted Services Agreements	5/16/2019	SEC-LIT-EPROD-000765008	SEC-LIT-EPROD-000765014
Master Hosted Services Agreements	9/4/2018	SEC-LIT-EPROD-000771968	SEC-LIT-EPROD-000771975
Master Hosted Services Agreements	11/10/2019	SEC-LIT-EPROD-000917527	SEC-LIT-EPROD-000917528
Master Hosted Services Agreements	3/19/2020	SEC-LIT-EPROD-000918499	SEC-LIT-EPROD-000918502
Master Hosted Services Agreements	6/21/2019	SEC-LIT-EPROD-000928287	SEC-LIT-EPROD-000928287
Miscellaneous Contracts	8/3/2015	RPLI SEC 0676205	RPLI SEC 0676212
Miscellaneous Contracts	1/9/2015	RPLI SEC 0676251	RPLI SEC 0676253
Rippleworks	11/17/2016	RPLI SEC 0036987	RPLI SEC 0036987
Rippleworks	11/17/2016	RPLI SEC 0259269	RPLI SEC 0259273
Rippleworks	11/17/2016	RPLI SEC 0259274	RPLI SEC 0259274
Rippleworks	4/8/2019	RPLI SEC 0265201	RPLI SEC 0265201
Rippleworks	2/7/2019	RPLI SEC 0265454	RPLI SEC 0265454
Rippleworks	8/28/2018	RPLI SEC 0314261	RPLI SEC 0314270
Rippleworks	5/17/2019	RPLI SEC 0411307	RPLI SEC 0411307
Rippleworks	3/15/2019	RPLI SEC 0411345	RPLI SEC 0411345
Rippleworks	12/26/2018	RPLI SEC 0411455	RPLI SEC 0411455
Rippleworks	11/27/2018	RPLI SEC 0411512	RPLI SEC 0411512
Rippleworks	8/14/2020	RPLI SEC 0590597	RPLI SEC 0590597
Rippleworks	11/25/2020	RPLI SEC 0631125	RPLI SEC 0631125
Rippleworks	10/27/2020	RPLI SEC 0632136	RPLI SEC 0632136
Settlement Agreements	10/24/2017	RPLI SEC 0000466	RPLI SEC 0000475
Settlement Agreements	1/3/2018	RPLI SEC 0001726	RPLI SEC 0001732
Settlement Agreements	2/1/2018	RPLI SEC 0001736	RPLI SEC 0001745
Settlement Agreements	3/1/2018	RPLI SEC 0001758	RPLI SEC 0001767
Settlement Agreements	BLANK	RPLI SEC 0198717	RPLI SEC 0198722
Settlement Agreements	5/2/2018	RPLI SEC 0207803	RPLI SEC 0207839
Settlement Agreements	5/2/2018	RPLI SEC 0207850	RPLI SEC 0207859
Settlement Agreements	3/23/2018	RPLI SEC 0208136	RPLI SEC 0208141
Settlement Agreements	1/29/2018	RPLI SEC 0208227	RPLI SEC 0208234
Settlement Agreements	4/1/2018	RPLI SEC 0237000	RPLI SEC 0237005
Settlement Agreements	4/1/2018	RPLI SEC 0237017	RPLI SEC 0237022
Settlement Agreements	11/29/2017	RPLI SEC 0237576	RPLI SEC 0237581
Settlement Agreements	10/24/2017	RPLI SEC 0237749	RPLI SEC 0237754
Settlement Agreements	9/3/2019	RPLI SEC 0238479	RPLI SEC 0238487
Settlement Agreements	1/29/2018	RPLI SEC 0241909	RPLI SEC 0241915

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Subcategory	Date	Begin Bates	End Bates
Settlement Agreements	7/22/2019	RPLI SEC 0242282	RPLI SEC 0242291
Settlement Agreements	7/8/2019	RPLI SEC 0242388	RPLI SEC 0242393
Settlement Agreements	3/1/2019	RPLI SEC 0244053	RPLI SEC 0244060
Settlement Agreements	8/21/2018	RPLI SEC 0246859	RPLI SEC 0246868
Settlement Agreements	8/21/2018	RPLI SEC 0246892	RPLI SEC 0246901
Settlement Agreements	7/2/2018	RPLI SEC 0247054	RPLI SEC 0247065
Settlement Agreements	1/3/2018	RPLI SEC 0251640	RPLI SEC 0251645
Settlement Agreements	6/1/2018	RPLI SEC 0253016	RPLI SEC 0253023
Settlement Agreements	5/1/2018	RPLI SEC 0253401	RPLI SEC 0253412
Settlement Agreements	5/1/2018	RPLI SEC 0253414	RPLI SEC 0253425
Settlement Agreements	4/1/2018	RPLI SEC 0253571	RPLI SEC 0253576
Settlement Agreements	11/29/2017	RPLI SEC 0253840	RPLI SEC 0253845
Settlement Agreements	12/4/2017	RPLI SEC 0253869	RPLI SEC 0253878
Settlement Agreements	12/4/2017	RPLI SEC 0253884	RPLI SEC 0253893
Settlement Agreements	10/24/2017	RPLI SEC 0253982	RPLI SEC 0253991
Settlement Agreements	10/3/2017	RPLI SEC 0254007	RPLI SEC 0254007
Settlement Agreements	10/3/2017	RPLI SEC 0254014	RPLI SEC 0254024
Settlement Agreements	10/3/2017	RPLI SEC 0254032	RPLI SEC 0254042
Settlement Agreements	7/22/2019	RPLI SEC 0256744	RPLI SEC 0256753
Settlement Agreements	3/1/2018	RPLI SEC 0259806	RPLI SEC 0259811
Settlement Agreements	3/1/2018	RPLI SEC 0259824	RPLI SEC 0259829
Settlement Agreements	2/1/2018	RPLI SEC 0259939	RPLI SEC 0259948
Settlement Agreements	9/3/2019	RPLI SEC 0264478	RPLI SEC 0264485
Settlement Agreements	8/1/2019	RPLI SEC 0264549	RPLI SEC 0264557
Settlement Agreements	8/1/2019	RPLI SEC 0264559	RPLI SEC 0264566
Settlement Agreements	7/1/2019	RPLI SEC 0264746	RPLI SEC 0264754
Settlement Agreements	7/1/2019	RPLI SEC 0264767	RPLI SEC 0264774
Settlement Agreements	6/28/2019	RPLI SEC 0264827	RPLI SEC 0264832
Settlement Agreements	5/1/2019	RPLI SEC 0265145	RPLI SEC 0265152
Settlement Agreements	3/1/2019	RPLI SEC 0265373	RPLI SEC 0265380
Settlement Agreements	9/5/2018	RPLI SEC 0266588	RPLI SEC 0266595
Settlement Agreements	8/1/2018	RPLI SEC 0266721	RPLI SEC 0266728
Settlement Agreements	1/1/2014	RPLI SEC 0288626	RPLI SEC 0288634
Settlement Agreements	10/16/2017	RPLI SEC 0289103	RPLI SEC 0289109
Settlement Agreements	11/29/2017	RPLI SEC 0290298	RPLI SEC 0290303
Settlement Agreements	1/1/2014	RPLI SEC 0325539	RPLI SEC 0325544
Settlement Agreements	4/1/2018	RPLI SEC 0380638	RPLI SEC 0380643
Settlement Agreements	6/10/2019	RPLI SEC 0443186	RPLI SEC 0443190
Settlement Agreements	5/13/2019	RPLI SEC 0443325	RPLI SEC 0443329
Settlement Agreements	4/23/2019	RPLI SEC 0443455	RPLI SEC 0443459
Settlement Agreements	4/3/2019	RPLI SEC 0443652	RPLI SEC 0443656
Settlement Agreements	3/7/2019	RPLI SEC 0443966	RPLI SEC 0443970
Settlement Agreements	11/29/2018	RPLI SEC 0444086	RPLI SEC 0444090

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Subcategory	Date	Begin Bates	End Bates
Settlement Agreements	11/29/2018	RPLI SEC 0444101	RPLI SEC 0444105
Settlement Agreements	11/26/2018	RPLI SEC 0444250	RPLI SEC 0444254
Settlement Agreements	11/26/2018	RPLI SEC 0444256	RPLI SEC 0444260
Settlement Agreements	11/2/2018	RPLI SEC 0444456	RPLI SEC 0444460
Settlement Agreements	9/25/2018	RPLI SEC 0444570	RPLI SEC 0444575
Settlement Agreements	9/25/2018	RPLI SEC 0444576	RPLI SEC 0444581
Settlement Agreements	9/27/2018	RPLI SEC 0444593	RPLI SEC 0444597
Settlement Agreements	9/28/2018	RPLI SEC 0444696	RPLI SEC 0444700
Settlement Agreements	9/28/2018	RPLI SEC 0444701	RPLI SEC 0444706
Settlement Agreements	9/28/2018	RPLI SEC 0444770	RPLI SEC 0444775
Settlement Agreements	10/2/2018	RPLI SEC 0444840	RPLI SEC 0444844
Settlement Agreements	10/2/2018	RPLI SEC 0444857	RPLI SEC 0444861
Settlement Agreements	10/2/2018	RPLI SEC 0444863	RPLI SEC 0444867
Settlement Agreements	8/16/2019	RPLI SEC 0465451	RPLI SEC 0465455
Settlement Agreements	6/27/2019	RPLI SEC 0465888	RPLI SEC 0465892
Settlement Agreements	10/4/2017	RPLI SEC 0507226	RPLI SEC 0507236
Settlement Agreements	12/8/2017	RPLI SEC 0510667	RPLI SEC 0510676
Settlement Agreements	11/21/2017	RPLI SEC 0537657	RPLI SEC 0537666
Settlement Agreements	3/23/2018	RPLI SEC 0537680	RPLI SEC 0537685
Settlement Agreements	9/3/2018	RPLI SEC 0576504	RPLI SEC 0576574
Settlement Agreements	9/25/2018	RPLI SEC 0579323	RPLI SEC 0579328
Settlement Agreements	9/25/2018	RPLI SEC 0579330	RPLI SEC 0579335
Settlement Agreements	5/23/2016	RPLI SEC 0609208	RPLI SEC 0609216
Settlement Agreements	9/26/2016	RPLI SEC 0609222	RPLI SEC 0609229
Settlement Agreements	8/16/2016	RPLI SEC 0609230	RPLI SEC 0609258
Settlement Agreements	8/23/2019	RPLI SEC 0626012	RPLI SEC 0626016
Settlement Agreements	7/17/2019	RPLI SEC 0626025	RPLI SEC 0626029
Settlement Agreements	5/20/2019	RPLI SEC 0626110	RPLI SEC 0626110
Settlement Agreements	12/18/2018	RPLI SEC 0626286	RPLI SEC 0626290
Settlement Agreements	12/7/2020	RPLI SEC 0629833	RPLI SEC 0629850
Settlement Agreements	12/7/2020	RPLI SEC 0631620	RPLI SEC 0631635
Settlement Agreements	11/1/2020	RPLI SEC 0632181	RPLI SEC 0632187
Settlement Agreements	10/1/2020	RPLI SEC 0632298	RPLI SEC 0632304
Settlement Agreements	9/1/2017	RPLI SEC 0796371	RPLI SEC 0796389
Settlement Agreements	1/1/2014	RPLI SEC 0798794	RPLI SEC 0798799
Settlement Agreements	9/3/2018	RPLI SEC 0863819	RPLI SEC 0863871
Settlement Agreements	7/17/2019	RPLI SEC 0870920	RPLI SEC 0870924
Settlement Agreements	5/20/2019	RPLI SEC 0870998	RPLI SEC 0871002
Settlement Agreements	4/3/2019	RPLI SEC 0871038	RPLI SEC 0871042
Settlement Agreements	1/30/2019	RPLI SEC 0871204	RPLI SEC 0871208
Settlement Agreements	10/2/2018	RPLI SEC 0871447	RPLI SEC 0871451
Settlement Agreements	2/11/2016	RPLI SEC 0895305	RPLI SEC 0895306
Settlement Agreements	2/14/2015	RPLI SEC 0895476	RPLI SEC 0895483

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Settlement Agreements	9/14/2016	RPLI SEC 0895555	RPLI SEC 0895562
Settlement Agreements	6/28/2019	RPLI SEC 0899449	RPLI SEC 0899454
Settlement Agreements	7/22/2019	RPLI SEC 0899455	RPLI SEC 0899464
Settlement Agreements	12/17/2019	RPLI SEC 0899465	RPLI SEC 0899470
Settlement Agreements	12/20/2018	RPLI SEC 0899471	RPLI SEC 0899472
Settlement Agreements	5/2/2018	RPLI SEC 0899920	RPLI SEC 0899925
Settlement Agreements	1/30/2019	RPLI SEC 0904181	RPLI SEC 0904185
Settlement Agreements	9/14/2016	RPLI SEC 0937420	RPLI SEC 0937427
Settlement Agreements	2/12/2016	RPLI SEC 0942425	RPLI SEC 0942430
Settlement Agreements	6/27/2019	RPLI SEC 0965235	RPLI SEC 0965239
Settlement Agreements	6/10/2019	RPLI SEC 0965280	RPLI SEC 0965284
Settlement Agreements	5/20/2019	RPLI SEC 0965377	RPLI SEC 0965381
Settlement Agreements	5/13/2019	RPLI SEC 0965436	RPLI SEC 0965440
Settlement Agreements	4/23/2019	RPLI SEC 0965639	RPLI SEC 0965643
Settlement Agreements	4/3/2019	RPLI SEC 0965815	RPLI SEC 0965819
Settlement Agreements	3/7/2019	RPLI SEC 0965995	RPLI SEC 0965999
Settlement Agreements	12/18/2018	RPLI SEC 0966195	RPLI SEC 0966199
Settlement Agreements	11/2/2018	RPLI SEC 0966425	RPLI SEC 0966429
Settlement Agreements	9/27/2018	RPLI SEC 0966714	RPLI SEC 0966718
Settlement Agreements	5/2/2018	RPLI SEC 0966815	RPLI SEC 0966864
Settlement Agreements	2/11/2016	RPLI SEC 0991609	RPLI SEC 0991610
Settlement Agreements	9/21/2018	RPLI SEC 1029780	RPLI SEC 1029784
Settlement Agreements	9/21/2018	RPLI SEC 1029785	RPLI SEC 1029789
Settlement Agreements	12/8/2017	RPLI SEC 1032932	RPLI SEC 1032941
Settlement Agreements	4/1/2018	SEC-LIT-EPROD-000232400	SEC-LIT-EPROD-000232405
Settlement Agreements	1/29/2018	SEC-LIT-EPROD-000439563	SEC-LIT-EPROD-000439570
Settlement Agreements	5/1/2018	SEC-LIT-EPROD-000484752	SEC-LIT-EPROD-000484763
Settlement Agreements	1/3/2018	SEC-LIT-EPROD-000485107	SEC-LIT-EPROD-000485113
Settlement Agreements	11/29/2017	SEC-LIT-EPROD-000485178	SEC-LIT-EPROD-000485183
Settlement Agreements	10/3/2017	SEC-LIT-EPROD-000485345	SEC-LIT-EPROD-000485345
Xpring Contracts	7/30/2018	RPLI SEC 0073915	RPLI SEC 0073940
Xpring Contracts	1/31/2019	RPLI SEC 0074234	RPLI SEC 0074244
Xpring Contracts	BLANK	RPLI SEC 0243659	RPLI SEC 0243695
Xpring Contracts	11/8/2018	RPLI SEC 0266000	RPLI SEC 0266021
Xpring Contracts	7/10/2019	RPLI SEC 0273002	RPLI SEC 0273019
Xpring Contracts	7/17/2019	RPLI SEC 0275429	RPLI SEC 0275433
Xpring Contracts	7/25/2019	RPLI SEC 0275715	RPLI SEC 0275728
Xpring Contracts	10/1/2017	RPLI SEC 0300285	RPLI SEC 0300333

EXHIBIT F – OTHER CONTRACTS

Subcategory	Date	Begin Bates	End Bates
Xpring Contracts	12/18/2017	RPLI SEC 0866649	RPLI SEC 0866660
Xpring Contracts	9/16/2019	RPLI SEC 0929139	RPLI SEC 0929151
Xpring Contracts	7/30/2018	RPLI SEC 0972934	RPLI SEC 0972948
Xpring Contracts	11/1/2018	RPLI SEC 0973141	RPLI SEC 0973153
Xpring Contracts	11/8/2018	SEC-LIT-EPROD-000685829	SEC-LIT-EPROD-000685845

Exhibit 10

SEC v Ripple
EXHIBIT

AS-5

A. Schwartz 2.11.2022

EXHIBIT

AS-5

TRANSCRIPT OF RECORD

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1945

720

No. 843

SECURITIES AND EXCHANGE COMMISSION,
PETITIONER

vs.

W. J. HOWEY COMPANY AND HOWEY-IN-THE-HILLS
SERVICE, INC.

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT
OF APPEALS FOR THE FIFTH CIRCUIT

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Case No. 220 Orlando Civil.

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Philadelphia, 3, Pa.
Wm. A. McClain, Attorney,
415 Palmer Bldg.,
Atlanta, 3, Ga.

Defts. Attorneys:

C. E. Duncan,
Tavares, Fla.
George C. Bedell,
Bisbee Bldg.,
Jacksonville, 2, Fla.

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COMPLAINT.

Filed May 16, 1944.

UNITED STATES DISTRICT COURT, SOUTHERN DIS-
TRICT OF FLORIDA.

Civil Action, File No. 220 Orl. Civ.

SECURITIES AND EXCHANGE COMMISSION,
Plaintiff,

v.

W. J. HOWEY COMPANY, and HOWEY-IN-THE-HILLS
SERVICE, INC.,
Defendants.

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1. It appears to the plaintiff that the defendants are engaged and are about to engage in acts and practices which constitute and will constitute violations of Section 5 (a) of the Securities Act of 1933, 15 U. S. C. 77 (e) (a); and plaintiff, pursuant to Section 20 (b) of the Act, 15 U. S. C. 77 t (b), brings this action to enjoin such acts and practices.

2. This action arises under Section 22 (a) of the Securities Act of 1933, 15 U. S. C. 77 v (a).

3. Since on and prior to January 1, 1936, the defendants have been and are now selling securities evidenced in part by warranty deeds and development contracts in connection with the sale of land planted to citrus trees in Lake County, Florida, and in the sale of such securities have been and are now directly and indirectly using the mails and means and instruments of transportation and communication in interstate commerce and have been and are now directly and indirectly carrying such securities and causing them to be carried through the mails and in interstate commerce, by means and instruments of transportation, for the purpose of sale and for delivery after sale.

4. No registration statement with respect to such securities has been or is now in effect with the Securities and Exchange Commission.

5. The defendants will, unless enjoined, continue to engage in the acts and practices set forth in this complaint.

Wherefore, the plaintiff demands a preliminary and final injunction enjoining the defendants, their officers, servants, agents, employees, successors and assigns, and each of them, from:

(a) Directly or indirectly

(1) Making use of any means or instrument of transportation or communication in interstate commerce, or of the mails, to offer or sell securities evidenced in part by warranty deeds and development contracts in connection with the sale of land planted to citrus trees in Lake County, Florida, or any other security related to the sale and cultivation of citrus groves, through the use or medium of any prospectus or otherwise;

(2) Carrying such securities or causing them to be carried through the mails or in interstate commerce, by any means or instrument of transportation, for the purpose of sale or for delivery after sale; unless and until a registration statement is in effect with the Securities and Exchange Commission as to such securities; provided that the foregoing shall not apply to any security or transaction which is exempt from the registration provisions of Section 5 of the Securities Act of 1933.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McCLAIN,
(William A. McClain)
Attorney.

SECURITIES AND EXCHANGE
COMMISSION.

415 Palmer Building,
Atlanta, Georgia.

State of Florida,
County of Duval.

I, William A. McClain, one of the attorneys for the plaintiff, make oath that the facts alleged in this Complaint

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are true to the best of my knowledge and belief.

WILLIAM A. McCLAIN.

(William A. McClain)

Sworn and subscribed to before me this 16th day of
May, 1944.

(Seal)

EDWIN R. WILLIAMS,

Clerk, U. S. District Court,
Jacksonville, Florida.

By OCTAVIA MOORE,
Deputy Clerk.

THE ANSWER OF W. J. HOWEY COMPANY AND
HOWEY-IN-THE-HILLS SERVICE, INC., TO THE
COMPLAINT OF SECURITIES AND EXCHANGE
COMMISSION.

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Filed May 20, 1944.

(Title Omitted.)

The defendants are without knowledge that the plaintiff has ever determined that defendants are engaged or about to engage in acts and practices which constitute or will constitute violations of any provision of the Securities Act of 1933, and on the contrary allege the fact to be that the plaintiff and defendants have agreed to submit for determination of this Court the question as to whether the business conducted by the defendants is subject to the said Act upon a Stipulation, which Stipulation has been entered into between plaintiff and defendants, and is ready to be filed with this Answer. And these defendants say that they are advised and believe and upon information and belief allege the fact to be that their business is not

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subject to the said Act. And these defendants say it is untrue that on or prior to January 1, 1936, or at any other time, defendants have been selling securities as in Paragraph "3" of the Complaint alleged, and it is untrue that in the sale of securities defendants have been or are now directly or indirectly using the mails or means or instruments of transportation or communication, or directly or indirectly carrying or causing to be carried securities for the purpose of sale or delivery after sale, as in said paragraph "3" alleged. And it is untrue that these defendants, or either of them, has any purpose so to do.

C. E. DUNCAN,

Per GEORGE C. BEDELL,

Tavares, Florida.

GEORGE C. BEDELL,

(George C. Bedell)

Attorneys for defendants.

703 Bisbee Building,
Jacksonville, Florida.

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STIPULATION.

Filed May 20, 1944.

(Title Omitted.)

1. It is Hereby stipulated and agreed by and between the Securities and Exchange Commission, Plaintiff, by its undersigned attorney, J. Cecil Penland, and W. J. Howey Company and Howey in the Hills Service, Inc., defendants, by their undersigned attorney, George C. Bedell, as follows:

2. The W. J. Howey Company, hereinafter referred to as the Howey Company, is a corporation organized under

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the laws of the State of Florida in 1922 with its principal place of business at Howey-in-the-Hills, Florida.

3. Howey-in-the-Hills Service Inc., hereinafter referred to as the Service Company, is a corporation organized under the laws of the State of Florida, in 1932, with its principal place of business at Howey-in-the-Hills, Florida.

4. The officers and directors of the Howey Company and the Service Company are the same, namely:

C. V. Griffin, President and Treasurer and Director.

Dodge Taylor, Vice President and Director.

R. W. Holsclaw, Secretary and Director.

5. The stockholders of the Howey Company and the Service Company are substantially the same, namely:

	Howey Company	Service Company
C. V. Griffin	510 shares	510 shares
Dodge Taylor	228 shares	229 shares
R. W. Holsclaw	1 shares	0 shares
C. M. Pinkerton	1 shares	1 shares
Howey-in-the-Hills Investment Corp.	260 shares	260 shares
	<hr/>	<hr/>
	1000	1000

6. The Howey Company and the Service Company share the same offices and utilize the same facilities and personnel.

7. The Howey Company and the Service Company are under direct common control.

8. The Howey Company is the owner of large tracts of land in Lake County, Florida, which it is now and for more than twenty years has been planting to citrus trees and selling to various purchasers for development into citrus groves as hereinafter described. Form of contract, Exhibit A, made a part hereof, has been the standard form of land sales contract used by the Howey Company since 1935. In occasional instances modifications are used to meet the requirements of the individual purchaser.

9. The prices charged for the land, which vary according to the number of years it has been planted to citrus trees before it is sold, are as follows:

One year old groves \$675 per acre.

Two year old groves \$750 per acre.

Upon full payment of the purchase price the land is conveyed to the purchaser by a warranty deed. If the purchaser fails to pay the required installments, the Howey Company may foreclose the contract in the same manner as it would foreclose a mortgage under Florida laws.

10. The Service Company is now and since its organization has been engaged in the business of cultivating and developing citrus groves on land in Lake County, Florida. A copy of Form 1-B, the form of agreement used in said cultivation and development of citrus groves, is attached hereto as Exhibit B and made a part hereof. This form of contract has been the standard form of service contract used by the Service Company since 1935. In occasional instances modifications are used to suit the requirement of the owner.

11. By such service contract the Service Company undertakes to properly maintain, fertilize, spray and cultivate and otherwise care for the citrus groves growing on the land for a specified period for the following service fees:

For the first five years \$40 per acre, per year.

For bearing groves \$30 per acre, per year.

In addition to the stipulated fees, the owner of the land agrees to pay taxes as and when they become due, the market price delivered at the described property of pruning, dusting material, spraying, spraying material, special treatment, seed for cover crop, sowing of same, fertilizer, replacement of any trees which may die, and watering trees when and as performed or applied in accordance with the best judgment of the Service Company, all as set forth in Exhibit B; and as set forth in said Exhibit B, the purchaser grants full and complete possession of the premises to the Service Company which agrees to pay the purchaser a nominal rental and marketing of the fruit by the Service Company is therein provided for.

12. The Howey Company maintains the Floridan Country Club, a resort hotel owned by the Howey Company. While tourists and vacationists who patronize the Club are being escorted around the golf course, through the bridge paths and over the lakes, their attention is directed to the citrus groves adjoining these attractions. They are informed that young groves are for sale and if they show an interest in purchasing a grove the respective operations of the Howey Company and the Service Company are explained. Attached hereto and made part hereof as

Exhibit B-1 is a typical sales talk employed by representatives acting for the two companies in effectuating sales. A circular describing the entertainment offered by the Club, entitled "Play in Florida at Howey-in-the-Hills" is attached as Exhibit C and made a part hereof.

13. The acreage sold by the Howey Company and groves cared for by the Service Company are within a radius of eight to ten miles of Howey-in-the-Hills, Florida. About 90% of all transactions are closed at the office of the two companies, at Howey-in-the-Hills, Florida. Generally, where the Howey Company is selling the acreage and the Service Company is entering into a contract for its care, the agreements on Forms 1 and 1-B, Exhibits A and B, are executed simultaneously.

14. The customers are for the most part residents of states other than Florida. They do not possess the knowledge, skill and equipment necessary for the care and cultivation of citrus groves. In numerous instances the purchasers have acquired homes in the vicinity, or spend a portion of each year in the vicinity, and rely on the Service Company or some other service concern to care for the grove and market the fruit, frequently inquiring and making suggestions both with respect to care of the grove and marketing of the fruit.

15. The Howey Company will sell acreage to persons who do not intend to use the Service Company as their caretaker. Moreover, the Service Company will develop groves on land not purchased from the Howey Company and solicits service contracts from others than purchasers from the Howey Company. Sales of acreage by the Howey Company are not conditioned upon the purchasers entering into service agreements with the Service Company

and the caretaking agreements are not conditioned upon the purchase of acreage from the Howey Company.

16. Prospective customers have an opportunity to learn that six to eight competing service companies operate in the same vicinity of Howey-in-the-Hills, Florida. In the first place, said competitors post signs by the groves serviced by them which are visible from the highways, and in the second place, they send advertisements to grove owners. Moreover, the officers of the Howey Company and the Service Company acquaint prospective purchasers with the existence of competitors.

17. The agreement to purchase land planted to young citrus trees and the development agreement are customarily offered to prospective customers at the same time. The purchaser is encouraged to enter into a caretaking agreement with the Service Company. He is, of course, informed that the Service Company's competency and efficiency in caring for citrus groves exceed those of its competitors.

18. During the year ended May 31, 1941, the Howey Company sold 10 groves involving 14.51 acres; and the Service Company is caring for 8 of these groves involving 12.69 acres. During the year ended May 31, 1942, the Howey Company sold 21 groves, involving 117.78 acres; and the Service Company is caring for 16 of these groves involving 99.31 acres. During the year ended May 31, 1943, the Howey Company sold 20 groves involving 62.97 acres; and the Service Company is caring for 18 of these groves involving 54.54 acres. Thus, of the 195.26 acres sold by the Howey Company during the three year period, 166.54 acres are being cared for by the Service Company, or 85%. A schedule showing the sales made by the Howey Company during the three year period

ended May 31, 1943, together with a brief description of the service agreement entered into by the Service Company, where applicable, is attached as Exhibit D and made a part herof. Of a total of 2487.36 acres of groves under cultivation by the Service Company in March, 1944, more than 1400 acres are of groves more than ten years old.

19. The mails and instruments of transportation and communication in interstate commerce are now and for sometime have been used in the sale of said agreements, Forms 1 and 1-B, and they are and for sometime have been, carried through the mails and in interstate commerce by means and instruments of transportation for the purpose of sale and for the delivery after sale.

20. At no time has a registration statement been in effect with this Commission under the Securities Act of 1933 with respect to these agreements, Form 1 and Form 1-B.

21. Photographs, Exhibits E, F, G, and H, show respectively a grove 1 year from planting, a grove 3 years from planting, a grove 7 years from planting, and a grove 20 years from planting.

C. E. DUNCAN,
 GEORGE C. BEDELL,
 Attorneys for Defendants.
 WM. A. McCLAIN,
 Attorney Sec. & Exchange
 Comm., Plaintiff.

Amount paid at time of purchase \$.

W. J. Howey Company,
Howey-in-the-Hills, Florida.

Gentlemen: I hereby apply for the purchase of the following described property, to-wit:

.
Section Township South, Range East, in
Lake County, Florida, containing acres, more or less,
subject to Government survey and subject to twenty (20)
feet for roadways on two sides of each forty acres, as
well as to all roadways now vested in the County of Lake
or in the State of Florida. The price of the land as now
developed is \$. All payments other than cash
or its equivalent to be evidenced by promissory notes of
even date herewith, bearing interest from date thereon at
six per cent. per annum, interest payable annually.

Summary of all payments follows:

1. Cash	\$.	
2. Note due .. months after date ..	\$.	
3. Note due .. months after date ..	\$.	
4. Note due .. months after date ..	\$.	
5. Note due .. months after date ..	\$.	
Total	\$.	\$.

Upon the full payment of the total consideration herein-
above set forth, said W. J. Howey Company agrees to
deliver, or cause to be delivered, a warranty deed con-
veying merchantable title. W. J. Howey Company further
agrees to pay all taxes due to the date of this contract,
purchaser to pay all subsequent taxes; provided, however
that the W. J. Howey Company shall have the right to pay
all subsequent taxes on behalf of the purchaser, and in

such event the taxes so paid shall be charged to the purchaser, together with interest at six per cent. per annum thereon from date of payments, and the said warranty deed embracing the said land, as aforesaid, shall not be delivered until such taxes and interest are paid.

The purchaser his heirs or assigns, agrees to purchase said property upon the terms and conditions herein set forth, and make all payments promptly when and as the same severally fall due.

It is understood that, from the date of the acceptance of this application by W. J. Howey Company, the purchaser shall have the right to use and occupy the foregoing premises and shall have full title to all rents and profits therefrom, excepting the fruit crop for the citrus marketing season of 19.. to 19...

The purchaser, however, promises and hereby agrees that the W. J. Howey Company does have a lien for money due hereunder upon all rents and profits, including returns from the sale of any fruit, from said premises from the date of the acceptance of this application until all sums due hereunder have been paid to W. J. Howey Company, and it is further agreed that such sums accruing by reason of such rents and profits from said premises shall be paid to W. J. Howey company and applied first on interest and then on principal sums last falling due under the terms hereof. This contract, upon its acceptance, shall constitute a notice and direction to any third party, whether an individual or corporation, having in its possession any money accruing from such rents and profits from the premises to pay the same to W. J. Howey Company to be applied according to the terms hereof whenever accompanied by presentation to such third party of a statement of the monies due hereunder, sworn to by an officer of the W. J. Howey Company.

If any of the said sums of money referred to be not promptly and fully paid within thirty days next after the same severally becomes due and payable, or if each and every the stipulations, agreements, conditions and covenants to be performed by the purchaser as set forth in said promissory notes and this contract, or either, are not duly performed, complied with and abided by, the said aggregate sum mentioned in this contract, remaining unpaid, either evidenced by promissory notes herein or otherwise, shall become due and payable forthwith or thereafter at the option of the W. J. Howey Company, its successors or assigns, as fully and completely as if the total consideration was originally stipulated to be paid on such day, anything in said promissory notes or in this agreement to the contrary notwithstanding; in which event the W. J. Howey Company shall have the option to foreclose this contract upon the premises hereinabove described and upon any citrus crop growing or to be grown upon the said premises, or either of them, in the same manner as the foreclosure of a mortgage or lien under the laws of the State of Florida, and in case of foreclosure the purchaser covenants and agrees to pay all Court costs, including a reasonable attorney's fee, for the foreclosure thereof. Provided further that, in the event the purchaser shall fail to pay any of said sums of money in this contract referred to within thirty days next after the same become severally due and payable, or if each and every the stipulations, agreements, conditions and covenants to be performed by the purchaser as set forth in said promissory notes and this contract, or either, are not duly performed, complied with and abided by, all sums of money then paid shall at any time after such default, at the option of said W. J. Howey Company, be forfeited to it as rent and liquidated damages, and all rights and interest in and to said described lands and appurtenances thereunto belonging as acquired by the purchaser herein shall

be forfeited as rents and liquidated damages to the said W. J. Howey Company, and this purchase agreement canceled; and in the event this latter option is exercised by the W. J. Howey Company, it shall return to the purchaser all unpaid notes, duly canceled. Time being the essence of this contract. All remittances must be made payable to the order of W. J. Howey Company.

This application shall not become a contract of purchase until accepted by said W. J. Howey Company at its office at Howey-in-the-Hills, Florida.

Name and address of purchaser's bank
.....
Address.
.....
Purchaser.
.....
Purchaser.
.....
Address.

Accepted at Howey-in-the-Hills, Florida
19.....
W. J. HOWEY COMPANY,
By

14 EXHIBIT "B".

This Indenture, Made and Entered into this day of, A. D. 19... Between hereinafter called party of the first part, and Howey-in-the-Hills Service, Inc., a corporation organized and existing under the laws of the State of Florida, hereinafter called party of the second part.

Whereas, First party now owns the land hereinafter more particularly described and second party is and has been for some time engaged in the business of cultivating and building citrus groves and is properly equipped for such purpose, Witnesseth,

That for and in consideration of the mutual and dependent covenants hereinafter made, the parties to this indenture have agreed and do agree as follows:

First: (a) First party does hereby grant full and complete possession to second party for a period of years (from the date hereof) (from the date of the planting to citrus) of the following described property, to-wit:
Section, Twp. South, Range East, in Lake County, Florida, containing acres, more or less.

(b) First party does hereby agree to pay to second party the following sums:

(1) The sum of \$..... per acre per year, said yearly payment to be divided into twelve (12) equal monthly installments, the first of which shall be payable on the first day of the month succeeding the date on which this indenture begins to operate.

(2) The market price delivered at the above described property of pruning, dusting, dusting material, spraying, spraying material, special treatment, seed for cover crop, sowing of same, fertilizer, replacement of any trees which may die, and watering trees when and as performed or applied in accordance with the best judgment of second party, such sums to be payable upon demand.

(3) First party shall pay taxes when and as they become due and, in the event first party fails to pay the

taxes as aforesaid, second party shall have the right to pay same and charge the amount so paid to first party, which shall then be considered part of the sums due under this indenture, and shall be payable upon demand.

Second: (a) Second party does this day pay unto the first party the sum of \$..... as rental, the receipt of which is hereby acknowledged.

(b) Second party does hereby covenant that it will properly maintain, fertilize, spray, cultivate and otherwise care for the above described property and the citrus grove located and growing thereon for the full term hereof, according to its best judgment.

(c) Second party further covenants and agrees to pay over to said first party the net proceeds of the fruit produced upon the above described lands after deducting therefrom any cost or charge incurred by second party in the gathering, packing, marketing and selling of each crop of fruit during the life of this indenture, as well as any of the sums which may be accrued to second party under the terms of paragraph First: (b) (1) through (b) (3) hereinabove set forth, regardless of whether or not the same may then be due. Such processes of harvesting and sale shall be performed by second party at the time and in the manner which in its judgment seem best. It is further mutually agreed upon and understood that second party may at its discretion market the fruit upon the property above described in pools with other fruit of like variety and grade controlled or owned by second party and, if marketed in a pool, the proceeds of any and all shipments shall be pooled with the proceeds of other fruit of like variety and grade so marketed by second party as aforesaid and then the net proceeds of each pool shall be proportioned equally and paid to each member of such

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pool, in accordance with the number of standard boxes contributed by each member of such pool. The pooling provision of this section shall not apply to fruit sold on the tree.

(d) In the event it is mutually agreed upon in writing between the parties hereto and provided there are no moneys accrued under the terms of this indenture from first party to second party at the time any specific crop is harvested, the first party shall thereupon own said specific crop of fruit and shall have the right of entry in the above described premises to dispose of the same in any manner whatsoever he may desire.

Third: It is fully understood and agreed by the parties hereto that the consideration for this lease and agreement herein entered into by second party to maintain the grove and to pay over to first party the net proceeds from the sale of fruit therefrom based upon the nominal terms hereinabove set forth, and first party therefore enters into this present agreement to pay the sums above specified in paragraphs First: (b) (1), (2) and (3).

Fourth: The first party hereby assumes the risk of natural conditions and governmental rules and regulations, as well as market conditions, which may operate to prevent the production of a crop or the realization of net proceeds therefrom.

Fifth: In the event second party shall extend the time of payment of any of the sums due or to become due from first party under the terms of paragraphs First: (b), (1), (2) and (3) above by the acceptance of a note or other evidence of indebtedness, such instrument shall not be construed as payment, but shall be merely the evidence of

the indebtedness, and shall be secured by this contract as though originally incorporated herein.

Sixth: (a) It is further agreed that first party, his heirs and assigns, does hereby grant to second party whatever title or interest first party, his heirs or assigns, now owns, or shall hereafter acquire, in the premises hereinabove described, and the crops grown or to be grown thereon, and either of them to hold the same as security for all payments due from first party to second party under the terms of this indenture, and that in the event first party, his heirs or assigns, shall be in default for a period of thirty days in the payment of any of the sums so falling due, then second party shall immediately have the option to foreclose the lien hereby granted upon the premises and crops above described for the amounts then due under this indenture. In the event it shall become necessary to place said claim or lien in the hands of an attorney for collection, then first party hereby covenants to pay a reasonable attorney's fee for the collection thereof, together with all costs and in addition thereto covenants and agrees to pay second party, its successors or assigns, all sums falling due according to the terms of this indenture from the date of such default to the time that final decree may be entered for the amount due.

(b) It is understood that all payments falling due under the terms of this indenture from first party to second party shall be based upon the fiscal year as described in paragraph First: (b) (1) and that these payments shall not be allocated in any manner whatsoever so as to apply to any particular crop; it being the intention of this instrument that all of the covenants herein contained are mutual and dependent during the life of this indenture and are not to operate independently or severally.

(c) The exercising of the option to foreclose shall not operate as a breach or rescission of this indenture, or any of the terms hereof, on the part of second party, but in the event that final decree is secured by said second party, then this indenture shall terminate in all respects.

Seventh: This agreement is executed in duplicate and is binding upon the parties hereto, their heirs, successors and assigns, and it expressly agreed upon that the covenants and conditions of this indenture shall run with the land and with the reversion.

Executed at Howey-in-the-Hills, Lake County, Florida, on the day and year first above written.

(Seal)

.....

Party of the First Part.

(Seal)

.....

Party of the First Part.

HOWEY-IN-THE-HILLS SERVICE, INC.,

By:

Vice-President, Party of the Second Part.

Signed, sealed and delivered in the presence of:

.....

.....

.....

.....

The development of what is known as "Howey-in-the-Hills" was started by Mr. W. J. Howey in 1915 when he purchased a large tract of land, approximately 100,000

acres in extent. Of this area, about 40,000 acres is water and waste land, and the balance is good citrus land. There has been developed about 10,000 acres of grove which is now in bearing and about 2,000 acres of young groves which will be bearing in another four or five years.

Mr. Howey died in 1938 and Mr. Griffin and I bought the stock in the operating companies in 1940. We have been trying to build up the property as a tourist resort, and have renovated the hotel building, and made various improvements in it, such as the bathing beach, the stables, and the golf course. We are also developing as rapidly as we can the remaining citrus acreage, and during the last three years we have planted about 500 acres of grove annually. We are both primarily in the citrus business and expect to continue to be all our lives. Each year we set aside half or more of the newly planted groves to keep, and these are not for sale. The balance of the newly planted groves we do offer for sale to help us finance additional development.

The Howey tract is one of the most favored citrus areas. It lies immediately south of several large lakes, such as Lake Harris, Lake Griffin, Lake Eustis, and Lake Yale. There are between two and three hundred smaller lakes interspersed through the property. These lakes, coupled with the rolling topography of the land, give the area remarkable resistance to frost, as the lakes tend to warm any cold air which may descend on us from the north. In addition, cold air tends to drain down the hillsides into the valleys. In the history of this property the principal damage to the trees from cold has come in the pockets from which there is no air drainage, and we have removed all the trees from such areas.

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The entire area is also underlaid with a red clay sub-soil, such as you see on these roads. A citrus tree has a long tap root through which it absorbs its moisture. This tap root customarily grows until it reaches moisture, which in this country is this clay sub-soil. Because this clay holds moisture just like a blotter, we have here a remarkable resistance to drought. In case of dry weather, trees here will show no signs of distress long after trees on the low lands show wilt.

In choosing the varieties of fruit which we are going to grow, we are guided entirely by commercial considerations. For that reason we don't propagate nor grow any varieties except those with a ready market acceptance. It takes two or three years in the nursery and another five years in the grove to get a tree ready to bear, and so we want to know that we're going to have fruit we can sell before we begin to grow a tree.

In some of the earlier plantings, there are Duncan grapefruit and Pineapple oranges. These are fine varieties of fruit, but they have the market disadvantage of being seeded fruit and of coming on the market in mid-season, when the great bulk of the citrus crop moves. Plantings in later years were almost exclusively Marsh seedless grapefruit and Valencia oranges. These are both late varieties, coming on the market in March, April, and May, or, in some cases, as late as June. Because they move after the larger volume of citrus is off the market and because they are seedless, they have ready market acceptance, and almost always bring preferred prices. In fact, these two varieties have for some years been the money crops of Florida citrus. Yet they do have certain disadvantages. All grapefruit varieties are fast growing, heavy bearing trees, but there have been some seasons, particularly during the depression, when grapefruit was hard to sell

Valencias, while they almost always bring good prices, are a relatively slow growing tree and relatively light bearers. The fruit on both varieties, because they mature late in the season, must be carried on the tree through the winter, which means that there is some element of frost risk in them.

It is to overcome these disadvantages that we have largely confined our plantings in the last three years to the Hamlin orange. This tree and the fruit seemingly possess every essential advantage for citrus. It is a fast growing, prolific bearing tree. The fruit, properly grown, is of exceptionally fine quality. It has smooth texture, thin skin, and is practically seedless. It matures in October or early November and is the first Florida fruit on the market. Because it comes on the market by itself, it always brings a preferred price. The price may not be quite as high as Valencias bring later in the season, but because the production is greater the revenue from each tree is more than from a Valencia. The early maturity practically eliminates the frost risk, and also any loss from a fall drought which we quite often have. Because the fruit is off the trees early, the trees can be cultivated and fertilized in the fall and winter with no other idea than to produce the next crop of fruit, and without having to safeguard the quality of the crop on the trees, as we must do with Valencias. While we have groves planted to all the standard varieties, we think the Hamlin orange is the finest of all of them, and if anyone wanted a small grove of one variety, we think this is the one he should choose.

Our cultural practices on young groves are intensive cultivation and fertilization for nine months of the year. The tree rows are worked every ten days or two weeks during that period and the trees are fertilized every sixty days. In December, January and February we keep the

trees as dormant as we can, because it is in those three months we will get cold weather if we're going to have any. Pruning on young trees is mainly confined to cutting off lemon sprouts coming out below the bud. There is practically no spraying on young trees, although this fall we did give all the one and two-year-old trees a nutritional spray to kill scale, which seemed to be generally present in minor quantities.

It costs about \$50 per acre per year on an average to take care of a young grove in this manner. It could be done cheaper, but our methods produce a heavy, lush growth and get a bearing tree quicker than the cheaper methods. And that is what we're after—to get a bearing tree as quickly as we can. We continue with these methods until the tree is about five years old, when we let it bear its first crop. Then we radically change our cultural methods to produce fruit rather than tree growth.

In a bearing grove, we fertilize rather heavily twice a year, once in May and again in December or January. A Grapefruit tree the size of most of our bearing trees gets 20 to 25 pounds in each application, and an orange tree, 15 to 20 pounds. The trees are also sprayed several times a year. Early in the spring we put on a strong lime sulphur solution, or what is called a "dormant spray" to protect the bloom from thrips. Then about May we use a "Bordeaux" spray, which is a mixture of copper and lime to control melanose. In the summer and fall we use an oil emulsion spray for scale, or a lime sulphur spray for rust mite as the groves may need them. We try to produce good, clean fruit, free from blemishes, and to do this we have to fertilize and spray in the quantities and at the time we should.

We aren't particularly interested in what it costs to take care of an acre of grove, but we are very much interested in what it costs to produce a box of fruit. Last year, costs on bearing groves averaged about \$75 per acre. We produced grapefruit for about 20 cents per box and oranges for about 40 cents per box. This year labor costs are considerably higher, and consequently production costs will be somewhat increased.

Bearing groves are only cultivated during the winter. In the summer we allow either leguminous cover crops or the natural grasses to grow in the middles. In the fall we disc or plow these middles, and break the grass into the soil. This adds a certain amount of humus or organic matter to the soil.

There is some necessity for pruning. After the crop is taken from the trees, some dead wood shows up, but we don't do nearly as much pruning as we used to. It is an expensive operation to remove all this fine dead wood, and we have found that it gradually falls off anyway. So now we confine most of our pruning to large dead limbs.

We never prune off any live wood nor attempt to direct the growth of a bearing tree through pruning. Our object in growing these trees is to get a large tree with plenty of bearing surface. The inside as well as the outside of the tree bears fruit, and we want all that good wood in there to get the largest possible crops. The larger crops we can produce, the greater the return and the lower the production costs, and consequently the more profitable the grove. We're trying to produce this fruit at a low enough cost, so there is a good profit in it, even when prices are lower than they are now.

In fertilizing a grove, the principal constituents of a fertilizer mixture are ammonia, phosphoric acid and potash. We want at least 25% of the mixture to be organic substances which are slow feeding. In addition, we must

give attention to the so-called minor elements, magnesium, manganese, copper, and zinc. The U. S. Department of Agriculture has conducted experiments over the years, which show that trees obtaining all of these minor elements produce larger and better quality of crops, are more resistant to disease and the natural hazards of frost and drought. We apply these minor elements both in fertilizer and in spray solutions.

All of these trees here are budded trees, as opposed to trees grown direct from the seed. We bud the variety of citrus fruit we want on a rough lemon seedling about two years old. There are two common root stocks in Florida the sour orange and the rough lemon. The sour orange is a slow growing stock and is somewhat more resistant to cold damage than the rough lemon. It is particularly suited to low lands with a heavy soil, where it is apt to be colder than in this section, and where there is a good deal of nutriment in the soil. In these sand hills, however, it would take nearly fifteen years to get a tree on sour orange stock, and, with out natural protection against cold, we don't need the hardier stock. Trees on a rough lemon root system are, therefore, the only practical ones for this locality. We are doing some work now with trees on Cleopatra Mandarin stock, which is a trifle slower growing and somewhat hardier than the rough lemon.

As in any other thing in which nature is a factor, the production of citrus trees varies somewhat from season to season. In general we expect the range of production on grapefruit trees, the age of these bearing trees we have here, to be from 8 to 10 boxes per tree and on orange trees around 4 or 5 boxes per tree. On the Hamlin orange we will be able to get larger production than on Valencias, and on Hamlin trees of comparable age the production should be 6 or 7 boxes per tree. The trees are planted on 30-foot centers, which makes 48 trees per acre.

Prices for fruit also vary from season to season. We usually sell our fruit on-the-tree to outside buyers, who do the picking and packing and pay us for each day's picking as it is completed. We like this method of sale, because it relieves us of all responsibility except checking the amount of fruit picked, and enables us to settle with our growers within about two weeks from the time the fruit is picked. We keep a checker with each picking crew, and a separate count is made of the fruit belonging to each individual grower.

This year we have already sold all our Hamlins for \$2.00 per box on-the-tree. All of our Pineapples for \$1.85 per box on-the-tree and some of our Duncan grapefruit for \$1.00 per box on-the-tree. These prices now are pretty well established by the ceiling price, and are about as much as the grower can get under the ceiling. These prices aren't unusually high due to the war, because the ceiling price was based on the average price over the several years immediately preceding the war. I have seen several seasons in which prices were as high or higher than those we are now getting.

Last season most groves made profits after production costs of about \$200 per acre, although many groves did better than that. This year, based on our estimated crops and the prices we are getting, the general level of profits will probably be a little higher. However, I wouldn't want anyone who bought a grove to expect to average over the next ten years, or over the first ten years of bearing if they bought a young grove, much more than \$100 per acre profit. There are going to be bad years with the good, and the productivity of a grove should be judged over a period of years.

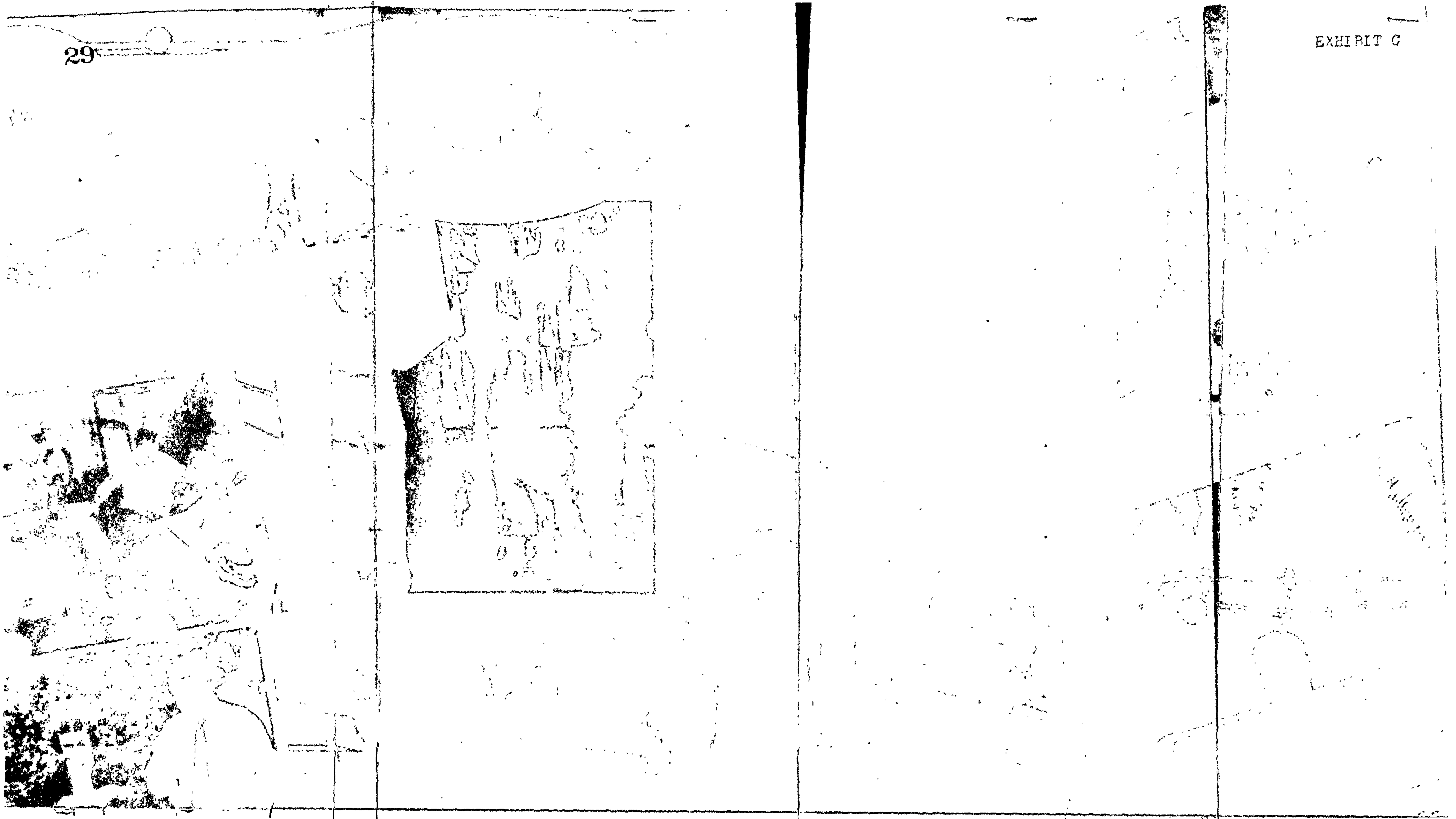
The citrus industry has been the basic industry of this section of Florida since its settlement right after the Civil War. There are trees in this immediate vicinity that were

planted around 1865 which are still producing large crops of fruit. I am told that there are trees in Spain and Italy which are 200 and 300 years old.

During the twenty years I have been here, I have seen the production of citrus fruit in Florida increase from about 25,000,000 boxes to about 60,000,000 boxes last season. Demand and consumption for that greatly increased volume has been built up and sustained and the fruit is still being sold at good prices. There will, of course, be further increases in production, but the area still remaining in the State which is good citrus land is limited. Meanwhile, improved methods of canning and the new dehydration processes being worked out by the Government to ship fruit juices to the armed forces abroad will undoubtedly lead to still further increases in demand and consumption. Such processes will, too, probably result in economies in handling, so that fruit or fruit juices can be sold very reasonably and still leave the grower about the same price that he is now getting.

Don't buy a grove unless you are prepared to take good care of it. Nothing responds so quickly to care or lack of care as a citrus tree, and a grove will be of no value to you unless you look after it. If you do buy a grove, you buy a specific piece of land to which you hold title, and it is yours to do with as you like.

The growing of citrus fruit is an old established business in Florida in which a large number of people are engaged, and we don't claim to be the only people who know how to do it right. Naturally, if you buy a grove we would like to look after it for you, and we think we could satisfy you as we have hundreds of others. But, if you don't want our care, you are at liberty to employ anyone you wish, or to look after it yourself.





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EXHIBIT D.

Schedule Reflecting Sales of Land by the Howey Company and Corresponding Caretaking
Contracts of the Service Company during Three Year Period Ended May 31, 1943.

Purchasers have been assigned identifying numbers to avoid making public their names
addresses.

Fiscal year ended May 31, 1941.

Date 1941	Purchaser Number	Number of Acres	Purchase Price	Description of Service Contract
2/12	1	1.	\$ 700.00	Ten-year service contract.
2/12	2	.91	910.00	No service contract in force.
2/18	3	.91	910.00	No service contract in force.
2/19	4	1.25	1,250.00	Ten-year service contract.
2/22	5	1.12	1,120.00	Ten-year service contract.
2/25	6	4.	2,800.00	Ten-year service contract.
2/26	7	.83	830.00	Ten-year service contract.
4/25	8	1.66	1,660.00	Ten-year service contract.
5/ 2	9	.83	830.00	Ten-year service contract.
5/29	10	2.	2,000.00	Ten-year service contract.
		<u>14.51</u>	<u>13,010.00</u>	

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Fiscal year ended May 31, 1942.

Date	Purchaser Number	Number of Acres	Purchase Price	Description of Service Contract
1941				
10/21	8	5.	\$ 5,000.00	Ten-year service contract.
1942				
1/23	8	.83	830.00	Ten-year service contract.
2/10	11	2.	2,000.00	Ten-year service contract.
2/24	12	2.	2,000.00	Ten-year service contract.
2/27	13	1.	1,000.00	Ten-year service contract.
2/28	14	.91	910.00	Ten-year service contract.
3/ 7	15	1.35	1,350.00	Ten-year service contract.
3/18	16	68.6	52,805.00	Ten-year service contract with privilege of annual cancellation to either party.
3/20	17	.73	730.00	Ten-year service contract.
3/27	18	5.81	5,810.00	Ten-year service contract.
3/27	18	1.39	1,390.00	No service contract in force.
4/ 7	19	.73	730.00	No service contract in force.
4/ 7	20	.73	730.00	Ten-year service contract.
4/17	21	2.64	2,640.00	Ten-year service contract.
4/20	22	1.39	1,390.00	Ten-year service contract.
4/22	23	1.35	1,350.00	No service contract in force.

4/24	24	1.35	1,350.00	Ten-year service contract.
4/24	25	1.35	1,350.00	Ten-year service contract.
4/28	26	10.	10,600.00	No service contract in force.
4/28	27	5.	5,000.00	No service contract in force.
4/ 9	28	3.62	1,629.00	Ten-year service contract.
		<hr/>	<hr/>	
		117.78	100,594.00	

Fiscal year ended May 31, 1943.

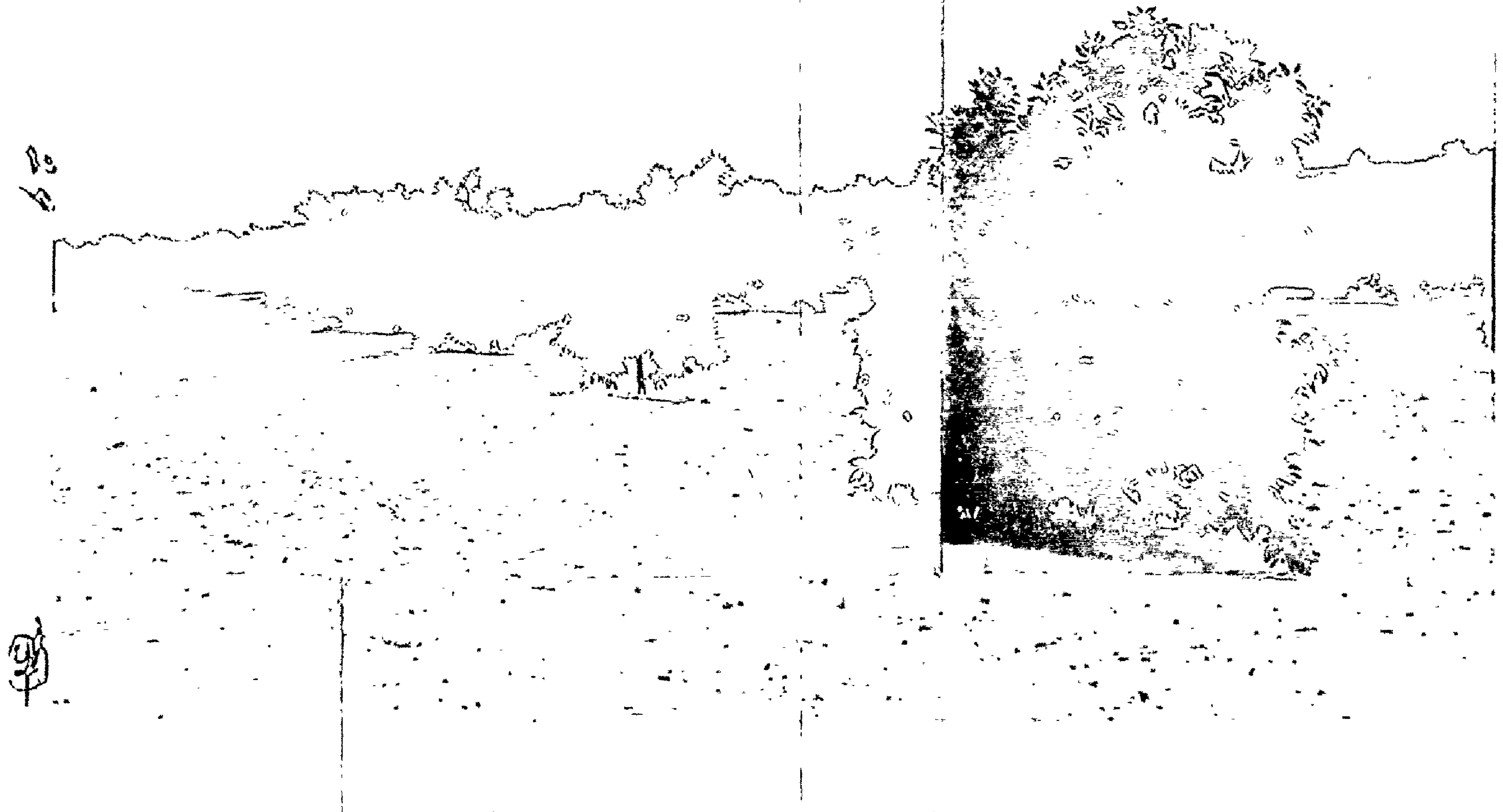
Date	Purchaser Number	Number of Acres	Purchase Price	Description of Service Contract
1942				
6/ 9	29	2.66	\$ 2,660.00	Ten-year service contract.
6/12	26	7.68	3,072.00	No service contract in force.
6/16	30	1.8	1,800.00	Ten-year service contract.
7/ 1	8	2.5	2,500.00	Ten-year service contract.
10/20	22	.73	730.00	Ten-year service contract.
1943				
1/12	31	11.49	8,617.50	Ten-year service contract.
2/17	28	1.68	840.00	Ten-year service contract.
2/14	16	2.5	2,500.00	Ten-year service contract with privilege of annual cancellation to either party.
2/26	32	.7	840.00	Ten-year service contract.

Date	Purchaser Number	Number of Acres	Purchase Price	Description of Service Contract
3/ 2	33	2.79	3,348.00	Ten-year service contract.
3/ 3	34	8.89	8,769.00	Ten-year service contract with privilege of annual cancellation to either party.
3/ 5	35	5.67	2,550.00	Ten-year service contract.
3/15	36	.91	1,092.00	Ten-year service contract.
3/16	37	1.35	1,620.00	Ten-year service contract.
3/20	38	.75	900.00,	No service contract in force.
3/26	39	1.	1,200.00	Ten-year service contract.
4/ 5	40	.91	1,092.00	Ten-year service contract.
5/21	41	.65	780.00	Ten-year service contract.
5/21	29	3.17	3,804.00	Ten-year service contract.
5/25	42	5.14	3,469.50	Ten-year service contract.
		<u>62.97</u>	<u>\$52,184.00</u>	
<u>Totals</u>		<u>195.26</u>	<u>\$165,788.00</u>	

EXHIBIT E



EXHIBIT 2



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EXHIBIT G



EXHIBIT H

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MOTION FOR SUMMARY JUDGMENT IN FAVOR OF PLAINTIFF.

Filed May 31, 1944.

(Title Omitted.)

Plaintiff, Securities and Exchange Commission, moves the Court as follows: That a summary judgment, pursuant to Rule 56 of the Federal Rules of Civil Procedure, be entered in its favor for the relief demanded in the Bill of Complaint on the ground that there is no genuine issue as to any material fact to be presented to this Court, the facts being stipulated, and that the plaintiff is entitled to a final judgment as a matter of law.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McCLAIN,
(William A. McClain)
Attorney.

SECURITIES AND EXCHANGE
COMMISSION.

415 Palmer Building,
Atlanta, Georgia.

Filed Jan. 3, 1945.

(Title Omitted.)

1. The plaintiff, Securities and Exchange Commission; filed with this Court on June 10, 1944, a motion for sum-

mary judgment pursuant to rule 56 of the Federal Rules of Civil Procedure, upon the assumption that there was no genuine issue of material fact presented to this Court.

2. It now appears that the stipulation of facts previously filed should be amended or in lieu thereof additional evidence submitted to this Court.

Wherefore, plaintiff moves the Court that the motion for summary judgment previously filed be withdrawn and that it be permitted to submit additional evidence through stipulation or otherwise.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McCLAIN,
(William A. McClain)
Attorney.

SECURITIES AND EXCHANGE
COMMISSION.

415 Palmer Building,
Atlanta, Georgia.

ORDER.

Orl. C. O. B. 3-112.

The foregoing motion read and considered, it is ordered that the motion for summary judgment previously filed by the plaintiff in this matter be and the same is hereby withdrawn and the parties hereto are authorized to sub-

mit to the Court additional evidence which in their judgment they deem relevant to the issues herein.

This 2 day of January, 1945.

DOZIER A. DeVANE,
U. S. D. C. Judge, Sou. D.
of Fla.

34 TRANSCRIPT OF PROCEEDINGS.

Received Feb. 3, 1945.

Filed Jun. 22, 1945.

Received Feb. 7, 1945, Lit. Docket Unit, Sec. & Exch.
Comm.

Testimony and Proceedings.

(Title Omitted.)

Before his Honor, Dozier A. DeVane, Judge of the above Court, sitting in chambers, upon the petition of the plaintiff, commencing at ten o'clock in the forenoon, Tuesday, January 30, 1945.

Appearances:

William A. McClain, Esquire, appearing on behalf of
the Plaintiff.

George C. Bedell, Esquire, and C. E. Duncan, Esquire,
appearing on behalf of the Defendants.

Reporter: V. F. Halter.

The Court:

Proceed, gentlemen.

Mr. McClain:

If your Honor please, I think this hearing was called after several conferences in which we were unable to get together on a specific stipulation. Both of us had some ideas as to what evidence should be submitted to the Court, and we feel it would be advisable to offer just the oral testimony and see if that would not be, possibly, the quickest solution.

Mr. Bedell:

Now, do we mutually understand that the stipulation that has been filed here, is in evidence in this case?

Mr. McClain:

That is correct. This is supplemental to the stipulation already offered.

If your Honor please, I would like to be sworn and make a statement in this case. We have been extremely shorthanded in personnel with the result that I have made, personally—although being an attorney on the case—an inspection down at Howey-in-the-Hills, and I obtained certain facts, firsthand, which I would like to make a statement on, to that effect, and offer myself as a witness, if there be any question. I think there is probably a little dispute about the facts which I will testify to, but they are mainly the facts which I feel should go into the stipulation from the standpoint of the government.

The Court:

All right, just be sworn.

MR. WILLIAM A. McCLAIN, having been produced and first duly sworn as a witness on behalf of the plaintiff, testified as follows:

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Direct Statement.

By Mr. McClain:

I am an attorney, employed by the Securities and Exchange Commission, and directed to handle the legal affairs of this present proceedings.

On two occasions, I went to Howey-in-the-Hills, Florida, for the purpose of obtaining information concerning the operation of the company and the development and so forth, and there I talked with Mr. Taylor, and with his attorney, Mr. Duncan, who were kind enough to show me every detail that I thought was necessary and that would be helpful in arriving at a solution of this problem.

We discussed the activities of both the Howey Company and its subsidiary, Howey-in-the-Hills Service Company. I was shown certain records and maps and taken over the properties and shown the development of the Howey Company the activities of the Service Company and explained the present management and the previous management,—that is, prior to a change when Mr. Taylor and his partner, Mr. Griffin, took over the affairs of the present W. J. Howey Company.

According to the information I received, there have been about 55 sales of the lands to about 45 persons during the past two or three years. Believe that is since February 1, 1941. The Howey Company maintains also an up-to-date, modern hotel, which I likewise had the pleasure of visiting. At this hotel, a great number of persons come and spend vacations—

Mr. Bedell:

One moment. Are you testifying of your own knowledge now, as to these people that come and go?

A. Well, except for what I was told by Mr. Taylor, who was one of the officers of the defendant.

The Court:

That would not be hearsay, if Mr. Taylor told you.

A. This is, every bit—I have, very carefully, as far as possible, confined what I shall say to what I saw, and my conversation with Mr. Taylor. Now, at any point where there is any dispute as to that, I would be glad to change it.

During the year, persons come to the hotel and a bus is operated for a portion of the year between Howey and Orlando. These persons are taken, from time to time, on tours of the properties; that is, they are shown the developments of the citrus industry, and the development, and I believe the original stipulation is, as near as can be said, a typical sales talk, which was stipulated to, and is exactly what is generally told these people during the course of the tour, or, to prospective purchasers.

At various intervals, these persons are given an opportunity, some of them, at least, to purchase land, and all of this land that has been sold, with the exception of a few sales, is sold at approximately \$1000.00 an acre. That is, in the past, and that is all, the \$1000.00 acre land, producing citrus trees. That is, trees which are more than five years old, it being my understanding that the policy of the Howey Company and the Service Company is not to permit the citrus trees to bear under a five-year period. I understand that is true, and that it is done so that it may not be injurious to the trees.

The Service Company, being a subsidiary of the Howey Company, has at this time approximately 215 contracts for the care of the groves, and about 42 or 43 relate to the acreage I mention above, which has been sold since the first of February, 1941. These purchasers reside in various states, 23 in number, including the District of Columbia, and I believe, maybe one or two from Canada.

The Howey Company maintains, or, rather, I suppose that would be the Service Company, a substantial amount of equipment, including 75 tractors, sprayer wagons, fertilizer trucks, and other machinery used in cultivating citrus trees. The work of the Service Company has been substantial, and it is necessary, in order to care for the properties, to maintain a substantial amount of equipment, which is more than a pittance, I mean, the Service Company is not a fly-by-night company. It is a substantial service company.

There is also maintained, which is in use at times, a cannery and a packing plant. It was explained to me that the cannery, while not operating in the last two years, is there in case they wish to use it, and it is sort of an insurance against a very low price in citrus fruits.

Fertilizer is purchased at various intervals in the year, in substantial quantities, and the customers are billed, along with their services, for fertilizer consumed during the year, and most of these contracts, by the way, as I understand, are on sort of a monthly basis. That is, the customer is billed for the service and he is billed for the amount of fertilizer or for the amount of spraying, whatever that may be, as it develops, although, in a few instances, it may accumulate. The company bills them, but the charges are accumulated, perhaps, until the harvesting season, in some instances. All the planting which is done by the defendant is done in 40-acre tracts, these tracts being approximately 1320 feet square. They are approximately—allowing, of course, for low spots or what

we call cold spots and lakes and so forth—done in rows; the trees are planted in rows of approximately 48 to the acre. On two sides of the 40-acres tracts, are usually 20-foot spaces or areaways whereby the tracts may be more accessible for the purpose of gathering fruit or caring for the trees.

Insofar as possible, these tracts are laid out and sold on sort of a row basis; that is, if it is possible to do so, an acre would include a row of trees or 48 feet, I mean, 48 trees, and in so far as is possible, the person, of course, owning one row of 48 trees, or one acre, thereby would have a plat approximately 30 feet in frontage, because these trees are planted, as I understand it, on a 30-foot center. Is that a correct statement, Mr. Taylor?

Mr. Taylor:

That is correct, yes, sir.

Mr. McLain:

Very few of these tracts are in fact fenced, but they are identified by stakes which are facing on an areaway, and, on both sides of the cross bar they have printed on them letters and numerals. For example, it may have on it, number 40, A B and C, 10 rows. That is then recorded back into a plat book. That refers, then, to number 40 in the plat book, and to the investor or to the purchaser, A B and C who own ten rows of trees. That is, A may own two rows and B four rows, and C four rows. It would not mean that A B and C own the entire tract or an undivided portion of that tract. They would own specific rows themselves. And, that was also the purpose in servicing, because right next to that may be another tract of several rows of trees which would not necessarily be serviced by the service company but by some others, Fosgate; or Plymouth, I believe is another one.

That may be shown also from the pictures which are attached to the original stipulation.

This development covers a substantial area of land, as you look across over this developed area, you may see citrus trees as far as the eye will carry. I mean, it is no small project. It is one of substantial size, and, over a period of years. For example, I was shown some trees as much as 95 years old, which are still in excellent production, and, as I understand it, it is properly accepted that there is no known age of a citrus tree, as long as they are properly taken care of. Is that correct, Mr. Taylor?

Mr. Taylor:

That is correct.

Mr. McClain:

It was also explained to me that generally, the fruit from the groves is marketed in two ways. One, the crops are sold, or the fruit is sold on the trees, to buyers who enter into a contract with the company to buy all the fruit of a certain variety on certain trees, owned by or under the care of the defendant. That is, that plan is what is known as the sale of the fruit on the tree itself, and the buyer, of course, has the expense of picking it and taking it away, and the defendants send into that area where picking is going on, what is known as a checker, and that checker counts the number of baskets or boxes, whatever it may be, and reports back to the Howey Company, or to the office, the number of baskets taken from each particular owner's trees. As I understand it, that is what is known as tree sales. Is that correct, Mr. Taylor?

Mr. Taylor:

That is correct.

Mr. McClain:

At this time, I should like to offer I believe it would be exhibit J—a copy of the usual agreement entered into for the sale of fruit. (Tending counsel paper.)

Said contract is one which was given to me by the defendants.

Mr. Bedell:

We have no objection.

The Court:

Let it be received as defendant's exhibit J.

. . . The instrument last above referred to was received and filed in evidence and marked plaintiff's exhibit J.

Mr. McClain:

When settlement is made by the buyer, it is made on a specific number of boxes picked, whereas the contract is, of necessity, on an estimated basis. That is, they estimate the number of baskets of fruit that will come from a particular tract, and then that is, of course, subject to the figures of the checker. And, when settlement is made by the buyer with the defendants, which I understand is by settlement of all of the fruit covered by the contract, a check is sent in at various intervals, that is, weekly, or even monthly. That check in turn is distributed or divided among the various persons who have service contracts with the defendants.

Now, the second method employed is one which is provided by the contract itself, and that is simply a plan under which all of the fruit is picked and taken to the cannery or packing house where it is processed and packed. The fruit is then sold by the defendants in what the contract speaks of as pools. I won't attempt to elaborate on that, because I am not sure, myself, except as to the use

of the term in the contract of service. The fruit is then sold by the defendant in pools with other fruit of like variety and grade which is under the control, or is owned by the defendants, and the net proceeds of each pool is proportioned equally and paid to each member of the pool in accordance with the number of boxes contributed by each member.

Now, I will be glad to read in the exact contract provision, if you think it would clarify it any. I have it here before me.

The Court:

I do not believe that would be necessary. I think I understand that procedure whereby the fruit is pooled.

Mr. McClain:

The Howey Company owns at this time approximately 400 acres of bearing citrus trees. About 1000 acres of trees which are less than five years old, or what we call non-bearing, in addition to a substantial amount, purportedly, twelve or fifteen thousand acres of undeveloped land, much of which would be suitable for citrus planting.

The area developed by the defendants is generally served by, I believe, one or two main highways, as well as some graded roads. Some of the areaways, of course, are a little bit more than graded paths, but are accessible from the standpoint of servicing the various tracts on the contract.

The Court:

Right at this point: Are these 45 sales that you have already referred to, all sales of bearing acreage?

A. Most of them are, There are a few. I think not more than two or three are trees less than three or five years old. Is that correct, Mr. Taylor?

Mr. Taylor:

I haven't looked that up from that standpoint, Mac. I can tell very easily from the stipulation. (Examining stipulation.)

Mr. McClain:

There appear to be about six or seven, according to my count.

Mr. Taylor:

I counted nine, and it would be a larger proportion of that in dollar volume of sales.

The Court:

State that again. You can stipulate as to that fact if you are on agreement on it. What are the facts with reference to that?

Mr. Taylor:

Well, let us find out.

The Court:

With respect to the ages of the trees that are sold.

Mr. McClain:

According to exhibit D, which includes all of the sales up to the filing of the original stipulation—I beg your pardon; up until May 31st, 1943; and there have been some sales since, the totals of which I do not have the information on, but there were eight sales of non-producing trees, or, 103.21 acres, which were sold for \$73,933.00. That is, of the non-producing.

The Court:

And how many were there of producing properties? Do you have your total sales? And your total acreage?

Mr. McClain:

I don't believe we have the number of the sales.

Mr. Taylor:

I believe it is summarized in the stipulation. Paragraph 18 of the stipulation.

Mr. McClain:

There were about 43 sales which were producing trees. According to the stipulation, there were 51 sales altogether, eight of which were non-producing.

The Court:

And the acreage of the eight is what?

A. The acreage of the eight is 103.21.

The Court:

What was the acreage of the 43 sales?

A. 195.26 less 103.21, which leaves 92.05 for the number of acres of producing. That would be \$91,855.00.

The Court:

Ninety-one thousand dollars?

Mr. Bedell:

Dollars, are you talking about?

Mr. McClain:

I was talking about dollars, there, yes.

The Court:

You are talking about dollars, now, for the 92.05 acres?

A. Wait. What's wrong? That is wrong somewhere.

. . . Discussion was had off the record.

The Court:

Can you determine that?

A. Yes, the non-bearing groves were approximately \$73,933.00 and the bearing groves were approximately \$91,855.00.

The Court:

Now, is there any way that we can determine the age of the groves, the non-bearing groves, at the time of the sales? The approximate age?

A. Your Honor, I frankly did not ask that question. I more or less broke it down into bearing and non-bearing. Now, anything that I would say would be more or less of a recollection and I suppose Mr. Taylor's statement on that matter would be better than mine.

The Court:

All right. We will have Mr. Taylor sworn and let him make that statement. What I am interested in is whether or not these trees,—that the land is cleared and the trees are planted and they have a year or two growth before they are sold?

A. Your Honor, I believe that the land is cleared and the trees planted before they are sold. It occurs to me that Mr. Taylor said that that was the general rule. If there was any difference there, I just don't recall it.

The Court:

We will come to that later. Now, go ahead with your statement.

A. I think, your Honor, that about concludes my statement. I would be glad to answer any questions that Mr. Bedell would care to ask.

Cross Examination.

By Mr. Bedell:

Q. I wish you would state again the manner and mode of distribution of proceeds where the sale is made directly of fruit on the trees. Either I misunderstood you, or I think you stated it not clearly. Will you just state it again as you know it to be?

A. My understanding is that when the fruit is sold on the tree, a buyer enters into the contract, most of the time, similar to the one that has been introduced in evidence, exhibit J. The fruit is estimated, and, he agrees to pay at a certain rate per basket or box, whatever that may be. When he starts to pick the fruit, on which he bears all the expense, the defendants put in a man called a checker who checks the number of baskets or boxes on the trees of each customer or purchaser.

Q. Now, when you say each purchaser or customer, do you mean each individual owner?

A. Correct.

Q. All right. That is good enough.

A. And then that is reported back to the offices of the company.

The Court:

A strict count is kept of the fruit purchased from each owner's land?

A. I presume that, as far as possible, that is true, yes. Because, he reports back, You see, all of these tracts which are under service agreement, are referred back to by numbers in a large plat book, a record book in the

office. It is cared for as a number. But, that number relates back to the plat book where the original owner's or purchaser's name appears. They also maintain a couple of accounts for each individual purchaser, showing the amount paid to him and the amounts he owes. It's an individual accounting process.

Now, after the fruit is marketed, or after it is picked, a check is sent in weekly by the buyer of the fruit to the defendants. Just one check. It may be a thousand, or it may be ten thousand dollars, and then they have got to go back and check their records to determine who is entitled to what part of that, and that is then credited to the account of each individual purchaser, and he is sent a check for the amount of the fruit, less, of course, any amount which he may owe. In the majority of the cases they may or may not owe some on the servicing agreement. In a few instances the servicing agreement had not been taken care of for several months or a year, in which event that amount would be taken from the check, and he would be sent a check for the difference. In many other instances, the individual owner would pay servicing charges on the fertilizing and spraying on a monthly basis or tri-monthly basis or semi-annually.

The Court:

But, so far as your investigation is concerned, you became satisfied that both in the care of the property and the spraying and the fertilizing operations and the marketing of the fruit, that the defendant and the service company would make an individual accounting as far as each owner is concerned?

A. So far as I could find out, I think that is correct.

The Court:

Are there any further questions of this witness?

Mr. Bedell:

Q. Mr. McClain, when you went to Howey, you made known to these gentlemen your official connection with Securities and Exchange Commission?

A. That is correct, sir.

Q. They opened up to you any records that were there and facilitated your examination as best they could, do you think?

A. They were very cooperative.

Mr. Bedell:

That is all.

The Court:

All right, Mr. McClain, you may come down.

(Witness excused.)

The Court:

Have you any other witness?

Mr. McClain:

I think that that concludes, at this time,—I might possibly have a rebuttal witness, but, on the direct testimony I think that is all, because that covers, I think, the points which I had felt pertinent to a further amendment of the stipulation.

The Court:

Have you any witnesses, Mr. Bedell?

Mr. Bedell:

Yes, I think we want to go into some little matters.

I wish to read in evidence from the 16th census of the United States, of 1940, title, "Annual, Volume 1, Part 3; Page 782", a statement entitled "Citrus Production in Lake County."

Now, your Honor, to read over these figures, I think, would perhaps only tend to confusion, but I have here an excerpt that was taken from the Official record in the Public Library in Jacksonville, and it was carefully checked, and I have furnished Mr. McClain with a copy, but, the reporter need not take this down. I am going to turn over a typewritten duplicate of this one. I want to call your Honor's attention to this fact.

On the farms reporting citrus fruit trees, there were 1721 in Lake County.

And, of the oranges, which included satsumas, tangerines, and mandarines, there were 1681.

Of the trees planted but not of bearing age, there were 367,222 reported.

Of the trees of bearing age, there were 1,017,203 trees. Now, I will not go into these—

Mr. McClain:

Your Honor, may I interrupt at this point?

The Court:

Yes.

Mr. McClain:

I have seen a copy of this purported summary and I make no objection that it is not correct, in so far as the document is concerned, and I have no objection to using this summary which Mr. Bedell says that he took it from and can state that it is correct, but what I do object to is the particular relevancy of this information. I mean, the record just becomes further cluttered up. And I attempted to find out, as far as I could, that it is a citrus bearing area. There is no dispute of that. That they are raising citrus trees; that they are in the citrus business also. I think there is really one issue here, and that is whether or not the particular instruments, the contracts which

are sold, are securities. Now, I am wondering what the relevancy is, or how that would, in any way, assist the Court in coming to a conclusion as to whether or not the two documents—you have a service agreement and deed coupled together, which, according to the government, constitutes a security—whether or not it is a security.

The Court:

Since your objection merely goes to the relevancy, we will let it come in as part of the record. Mr. Bedell thinks it is relevant and the Court will determine its relevancy in connection with the entire case. Proceed, Mr. Bedell.

Mr. McClain:

I have one more further objection, and that is the same objection to the statement, on the last page, a little paragraph entitled, "Trees, Fruits, Nuts and Grapes", which appear to relate, as I read it, to the individual farm where fruit trees are only incidental parts. I think there is no evidence here whatsoever that it is anything other than a citrus planting and that the complete area and the complete acreage sold is covered with citrus trees or planted in citrus trees, and it seems to me that is likewise both irrelevant and an immaterial issue, completely, and disassociated from the statistical question.

The Court:

Your objection goes to its relevancy and your first objection relates to that as well as the other, and it will be received subject to its relevancy. Treat it as an exhibit, either way you want to, but, let it be received as an exhibit and the objections to it are overruled.

Mr. Bedell:

The only relevancy, I understand, in its introduction,

is that it shows how this thing is made up. It is very short. It reads:

“On many farms there are a few fruit or planted nut trees, or grape vines, which are not a part of a well-defined orchard or vineyard. In many cases such reports were secured for the number of trees, with or without production, but no acreage was shown. An acreage was supplied when there was enough trees or plants, at normal planting distances, to make two acres.”

It just shows how they went about putting up the information that they had there.

Now, will your Honor excuse me a moment? I would like to confer with Mr. Duncan and Mr. Taylor on this matter.

The Court:

Yes, we will take a short recess.

. . . And thereupon an informal recess was had, thereafter the following further proceedings were had:

MR. DODGE TAYLOR, having been produced and first duly sworn as a witness on behalf of the defendant testified as follows:

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Direct Examination.

By Mr. Duncan:

Q. Mr. Taylor, will you please state your name and connection with the defendants?

A. My name is Dodge Taylor and I am Vice-President of the two defendant companies.

Q. How long have you been associated with the two defendant companies?

A. Since 1923.

Q. Mr. Taylor, are you thoroughly familiar with all of the lands which have been cleared and planted by the defendant, W. J. Howey Company—?

A. Yes.

Q. —and their present status?

A. I am.

Q. Mr. Taylor, I show you a paper which purports to be a map. Will you explain what that is?

A. That is a map which I prepared, of the lands which are now owned and which have been heretofore developed by the Howey Company and I prepared it from the records of the company and my personal knowledge of the land. It shows the lands covered by the stipulation in the present case, the lands owned by other people and under care of the defendants, which are not covered by the stipulation. The lands planted by the defendants, now owned by other people and under care by other operators. The citrus groves owned by the defendants and the unimproved citrus lands owned by the defendants.

Q. Under what circumstances was this map prepared?

A. It was prepared at Mr. McClain's request.

Q. Was that map prepared in his presence?

A. It was, yes, sir.

Mr. Duncan:

The defendant offers this map in evidence to indicate the properties included in the stipulation as well as properties owned by others and cared for by others.

The Court:

Any objection, Mr. McClain?

Mr. McClain:

Yes. I have no objection to the map in so far as it relates to the properties covered by the stipulation, but I do object to it, in so far as it relates to properties which have

been developed and which may have, from time to time, been cared for by the defendants, but which are not cared for at this time. It seems to me that that would inject into this case, the activities and operations of the defendant companies in previous years and for all of the lands which have not been covered by the stipulation, and, furthermore, that the map relates to lands which were serviced by the defendant companies under an entirely separate and distinct service agreement and not the service agreement which we have here. I mean, that I think it covers a period for lands which is immaterial to this case, and irrelevant, and I think that the map as it now stands and is constituted is misleading to one reading it without a further knowledge of previous activities of the old company.

In so far as the lands covered,—the green lands covered by the stipulation—I have no objection to the map on that score, as to that land, but I do think it injects a different issue.

The Court:

Have you a map prepared that contains just the information that you want shown on it?

Mr. McClain:

I have not one that shows just the green, because there was a difference of opinion when we got through with this, as to what the map would show, but the trouble is, we haven't another map. We had only one copy.

The Court:

Does that map show the property, the acreage, that is set to groves, owned by the defendant company?

Mr. Taylor:

It does.

Mr. Duncan:

Yes, it does.

The Court:

And does it show the acreage that is set to groves that the defendant company has sold since they have been involved in this litigation?

Mr. Taylor:

It does.

The Court:

Then, that is information that I indicated at the first hearing that I desired, myself. I am going to permit the map to be introduced in evidence. That map, or that part of it has no relevancy in the case, will be disregarded in disposing of the matter. The rest of the information I think I can get off of the map. Any information that is not relevant, it will not cause me any trouble, I do not think.

Mr. McClain:

What I had in mind, I don't want to inject into it, the map, as it related to property covered by the blue pencil.

The Court:

We won't inject that into it. We will receive it and hold as pertinent, only that matter shown on the map that relates to the litigation. You can mark it as an exhibit.

. . . The instrument last above referred to, being the map, was received and filed in evidence and marked defendants exhibit number 2.

The Court:

Are you through with it? Do you want to ask some more questions about it?

Mr. Duncan:

I want to ask some questions about it, but he can do that without the map.

The Court:

All right.

Mr. Duncan:

Q. Mr. Taylor, do you own any of those properties in that area, personally?

A. I, personally, yes, sir.

Q. Will you state the approximate acreage?

A. About 100 acres.

Mr. Bedell:

Q. Bearing groves?

A. Yes, sir.

Mr. Duncan:

Q. Mr. Griffin is also connected with the company, and he is also a property owner in the area, is he not?

A. Correct, yes, sir.

Q. Does he own any bearing citrus in that area?

A. Yes, sir, he does.

Q. Can you state approximately the number of bearing citrus trees or acres that he owns?

A. Around 350.

Q. How long have you owned—what is the oldest grove that you own in that area?

A. It is 22 years old.

Mr. Duncan:

That is all. You may inquire, Mr. McClain.

By the Court:

Will you come around here and point out to me on this map, the citrus land, the sales that are involved in this litigation?

Mr. Duncan:

That is in green. Right here. (Indicating on the map.)

The Court:

The part in green?

Mr. Duncan:

The part in green. See, there are some here and down here there in an area, and, right here and right here.

The Court:

All right.

Mr. McClain:

May I proceed?

The Court:

You may proceed.

Cross Examination.

By Mr. McClain:

Q. Mr. Taylor, the area that is colored green refers to the property covered by the stipulation in this case, does it not?

A. That is correct, yes, sir.

Q. And the property colored blue relates to property, all of which was planted by these companies in various years?

A. It relates to that, but it is further defined as land owned by or owned and under care by other operators.

Q. It was planted by—

A. It was planted originally by the defendants, yes, sir.

Q. And that property, parts of it, has been in and out, under service agreements?

A. That is correct. New service contracts every year.

Q. Now, at the time of this organization, Mrs. Howey owner or was granted a substantial amount of acreage, was she not?

A. She owned approximately a thousand acres, personally, at that time.

Q. And her present acreage is covered by the blue?

A. That is correct.

Q. The hotel which is operated by the defendant, is in the town of Howey-in-the-Hills, is it not?

A. Yes.

Q. And that hotel has been there for some years?

A. It was built in the winter of 1923—1924.

Q. It was started out, was it not, only as a winter resort?

A. Mr. Howey's original idea of it was to use it to house prospects for the purchase of land. Since 1940 we have operated it only as a tourist hotel. We have done general tourist advertising and attracted the general public, which was a departure from the plan under which Mr. Howey operated.

Q. Is that hotel operated as a year-around project?

A. Yes, sir, that is correct.

Q. You have guests at various seasons of the year, do you not?

A. Every month.

Q. Now, do you still maintain a bus schedule into St. Petersburg as well as Orlando?

A. No, sir.

Q. Only to Orlando?

A. We do not maintain any bus schedule into Orlando. The Orlando Transit Company runs a regular bus, one of its regular scheduled buses, back and forth, but we have no buses of our own that operate to Orlando.

Q. Is there any way that you can estimate the number of persons who visit the hotel during the twelve months period, or, a year?

A. The account I have kept, we opened in the winter of 1940-41 and I believe there have been approximately six thousand people stayed at the hotel since the fall of 1940 when it was opened on its present basis.

Q. And has your patronage increased or decreased during the past year?

A. It has increased.

Q. How long have you been in this business, Mr. Taylor?

A. Since May 15, 1923.

Q. And your business is also to keep familiarized with the care of citrus trees and the development trees, is it not?

A. My personal work has been more along that line than any other, yes, sir.

Q. Has your care and fertilization, in the spraying, and that sort of thing, in citrus trees, changed materially in the last ten or fifteen years?

A. Now, you are asking for a dissertation on citrus culture?

Q. I don't want to get into that.

A. Well, it has been backwards and forwards. I think most of it, in recent years, has come back to the old practices which probably Judge DeVane knew as a child when he was raised around Plant City. We have had a lot of so called scientific and new notions during the depression, but most of us have come back to the fact of good fertilization, good spraying, and good cultivation.

Q. In order to maintain the groves which you have under care, as well as your own property, how many men do you employ in that, normally?

A. Our standard is one man to each 100 acres, Mr. McClain.

Q. One man to each 100 acres?

A. Yes. That is, for actual field operations. Of course, we run a machine shop and keep mechanics. It is particularly important, now, that we can't get the repair parts and new machinery.

Q. Do you fertilize these trees several times a year?

A. Bearing trees, we fertilize twice a year and younger ones, every 60 days for nine months of the year.

Q. And what about spraying?

A. Well, your spray program on bearing trees was include treatment at times, and in making a lime sulphur spray during the summer and fall, just as necessary.

Q. Is there any more cost, for example, in fertilizing and caring for a tree five years old and a tree 50 years old?

A. The converse would be true. There is more cost to a tree 50 years old than to a tree 5 years old.

Q. As the trees grow older, the actual cost of servicing is a little bit more expensive?

A. It increases. It takes more fertilizer per tree to sustain it. The heavier costs. We have considerable more foliage to keep clean with the spray program. Costs certainly tend to increase with increased age and size of the tree.

Q. Now, in addition to the facts that you have mentioned, I suppose you have a certain amount of pruning to do, or not?

A. We do very little pruning now. The only pruning we would do would be in case of something that would cause heavy dead wood.

Q. You try to keep out the dead wood?

A. We do no pruning of good wood, and very little pruning of dead wood that appears in the center of the tree. That's an expensive operation and in our opinion does very little good to get it off.

Q. Is it necessary to water during a drouth or anything of that kind at any time?

A. We are exceptionally well located. There is a clay sub-soil which underlies that area and we have a remarkable resistance to the drouth. We haven't found it necessary to water trees over one year old in a great many years.

Q. Do you know, personally, a great many of the persons who own trees that you take care of?

A. Yes, sir. I see pretty nearly all of them once a year.

Q. They come around to look over their property?

A. Yes, sir, they do.

Q. Are most of these persons business men and women?

A. Yes, sir.

Q. Do you know the types of business they are engaged in? Any of them?

A. Lawyers, bankers, doctors, manufacturers. You can name any kind of business you want, and we possibly have one.

Q. When you get ready to enter into your contracts for the sale of fruit, or sell the fruit, do you use your discretion in determining where you can get the most, or a more advantageous contract?

A. I don't know as I understand your question, Mr. McClain.

Q. When you get ready to sell the fruits, do you contract or communicate with more than one person with respect to the sale of it, or is it usually sold to only one? I mean, using your own discretion?

A. The large volume of fruit we have, we couldn't sell it on the tree to one purchaser and get any advantageous picking dates. If we decide we are going to sell a certain variety of fruit on the tree, we divide that up among the eligible purchasers. We naturally try to do business with people of reputable and financial means to avoid a credit risk, and we deal, so far as possible, with people whose agreement on picking dates is satisfactory.

Q. Would you say that maintenance of the service company is a direct benefit to these persons who belong?

A. Well, that calls for an opinion on which I am probably prejudiced.

The Court:

I think he is right about that, Mr. McClain. I think it calls for his opinion.

Mr. McClain:

I will withdraw it.

The Court:

If you will put it this way. The services have to be rendered. There is no question about that.

Mr. McClain:

That is right.

The Court:

And it is a question of whether or not his company is of more benefit to the owners than the Fosgate Company or the Plymouth Association, for example. Is that the object of your question?

Mr. McClain:

Well, it was in a way. From my observation, I am pretty well satisfied with the answer, generally, to that ques-

tion, but what I had in mind was the fact that the advantage was to a small purchaser in having his land serviced rather than to have to do it himself. It seems to me it is a virtual impossibility—

The Court:

Oh, well, I suppose there will be no controversy between you gentlemen that is necessary for the small purchaser to have the land serviced. He can't own the equipment to service his own property. You do not deny that.

Mr. McClain:

No, sir, I should think that would be so, from my observation.

The Court:

I may be talking on a fact I know too much about, that we ought to have in the record.

Mr. McClain:

It seems to me it would be foolish for a man to buy a grove and not have it serviced.

The Court:

Is it, or is it not, essential for a small owner to have a service company take care of his grove?

A. Yes, sir.

The Court:

It is essential?

A. Yes, sir.

The Court:

In the servicing of these groves, there are numerous

companies of high standing in or near Lake County, is that correct?

A. That is correct, yes, sir. There are at least a dozen that operate in this immediate area.

The Court:

Q. And the owners of a property, grove property, in that vicinity are not limited to your company to service that property?

A. No, sir, they are not.

The Court:

Q. You have the Plymouth Citrus Association; you have the Fosgate Association. You have Bill Peters and his association, and the Roper Brothers and their association. I could go along with a long list of them.

A. Yes, sir, that is correct.

The Court:

Q. Those are all well recognized companies?

A. Yes, sir.

The Court:

Q. As to whether or not you are better than they are, that is just a matter of personal opinion?

A. Yes, sir.

The Court:

Is there anything further, Mr. McClain?

Mr. McClain:

I was just going to refresh my recollection. If you will give me just a moment. Yes, there is one more question.

By Mr. McClain:

Q. Mr. Taylor, over the past four or five years, what percentage, would you say, of persons who buy land, enter into service agreements with the service company?

A. I think we concluded it,—or, it is computed in the stipulation as being 85%. Paragraph 18.

Mr. McClain:

I believe that is all.

The Court:

Mr. Taylor, it has already been agreed to on this record, that eight sales were made during the period covered by this suit, representing a total of 103.21 acres of land on which the trees were non-bearing. Had this land been cleared and all of the trees been planted to the land before the sales were made?

A. Yes, sir.

Q. Can you give us any idea as to the age of those trees at the time of sale?

A. They were one year old or older, Judge. I think most of them were about two years old at the time they were sold.

Q. They were one year old or older?

A. Yes, sir.

Q. And your opinion is that the majority were two years old?

A. Yes, sir.

Q. Does your company engage in the sale of land itself, out there, for citrus development under this same plan?

A. I don't know as I understand your question, Judge.

Q. Do you engage in the sale of raw land out there for development by your companies, under this same plan?

A. We have made an occasional contract of that nature, yes, sir.

Q. Where you would sell a small acreage of land?

A. No, that would be a large acreage. An extremely large acreage. This sale would be 50 40 acres or more in area. D. A. D.

Q. Now, are those involved in this case?

A. None come within the period of time covered by this litigation.

The Court:

That is all.

Mr. McClain:

That is all I have.

Mr. Duncan:

I have three or four more questions.

Re-Direct Examination.

By Mr. Duncan:

Q. Mr. Taylor, has your company at any time ever sold any grove property in undivided interests to two or more persons?

A. No, sir.

Q. Has a sale been made, each sale been made individually to each purchaser?

A. Well, there has probably been some time during the time we have been in business that two people came in together and said they wanted to buy a ten-acre grove together. That was a partnership which they themselves created.

Q. You have never offered any property in undivided interests?

A. No, sir.

Mr. McClain:

Now, I think we ought to have a little explanation of what we are talking about. Is that an undivided interest as used by the Federal law, or a term used by this industry?

The Court:

I think so, too. I think what the Court would be interested in is whether or not you sell an undivided interest in any acreage in which the company retains an undivided interest.

A. No, sir.

Q. You are in partnership with none of these people to whom sales are made?

A. That is correct, yes, sir.

Q. It is an outright 100% sale in each case?

A. The sale of a specific tract of land.

The Court:

That is the only partnership that it seems to me would be pertinent here.

Mr. Duncan:

Q. Is it your practice to sell any of this land to persons unless they have inspected it?

A. No, sir, we have never done that.

Q. You are willing to state, then, that in every case the purchaser has personally inspected the property?

A. That is correct.

Mr. Duncan:

That is all.

Re-Cross Examination.

By Mr. McClain:

Q. You say that there is no contractual or partnership agreement, Mr. Taylor, between yourself and the companies or the purchasers?

A. I didn't say any contractual arrangement. I said no partnership arrangement.

Q. That would be subject, however, to some interpretation of the service agreement, would it not?

Mr. Bedell:

Well, your Honor, it seems to me that the Court is probably capable of determining that question without Mr. Taylor's expert advice.

Mr. McClain:

Well, what I am leading up to is to show under the terms of the service agreement—it is a legal conclusion, I agree. We have heard testimony here that there is not such, when, as a matter of fact, the contract might make it such. Let the records show that I am not subscribing to any legal principle here or attempting to interpret the service agreement.

The Court:

The only thing the Court attempted to develop from the witness was whether or not in the actual sale of the property, as a sale, there were any sales made in which the purchaser acquired only a part interest in the land and the company retained a part interest in the land. Any legal deduction that might be made as between the owner of the land and the service company is a result of the service contract, and is an entirely different question.

Mr. McClain:

I just wanted to make that point, because the service contract to me, is the crux of this matter.

The Court:

The question did not go to the effect of the legal prin-

ciples of the service contract, and I do not think Mr. Taylor could answer that question.

Mr. McClain:

I agree.

The Court:

There is, however, no controversy, and you do not dispute in any way Mr. Taylor's statement to the effect that in the actual sales, that they do not sell only a partial interest in the land to the purchasers and the company retains title to—?

Mr. McClain:

Subject to any legal interpretation which may be drawn from the service contract. There are several legal interpretations, I think, that might be drawn from that.

The Court:

Then, that is all the testimony you have?

Mr. Bedell:

Yes, that is all.

Mr. McClain:

That is all.

(Witness excused.)

The Court:

Gentlemen, I do not consider that it is necessary for you to file briefs in this matter or for you to argue the case. I have carefully considered the stipulation that you entered into and filed in the case at first hearing and the testimony that you have submitted this morning merely goes to the clarification of certain aspects of the stipulation, of the facts covered by the original stipulation filed in the case.

In deciding this case, I desire to let the record in this case show that I adhere to the legal principles and interpretations of the Securities Act as announced by Judge Strum in Securities Exchange Commission vs. Bailey et al., 41 Federal Supplement, Page 647. I find from the testimony introduced in this case, that this case does not fall within the same category as that case, and that under the facts as shown by the record of this case, the defendants are not selling securities as that word is defined in the Securities Act, and that the government is not entitled to receive the relief sought in this particular suit.

The difficult question that confronts me in the case, is what should be done with the case despite that conclusion. While I find and now hold that the defendants are not violating the Securities Act, and the government is not entitled to the relief sought in this suit, that does not mean that the defendants could not begin, tomorrow, to expand their activities in such a way as to come within the Securities Act and fall within the precise principles announced by Judge Strum in the Securities Exchange Commission vs. Bailey referred to above.

Now, the question is, what should we do with this case? I would like to hear your statement on that, Mr. McClain. Shall we retain jurisdiction of this case, or, will the Securities Exchange Commission continue its watchful observation of this company to see that it does not violate the act? Of course, you are interested only primarily in the companies that are subject to the act—.

Mr. McClain:

That is right.

The Court:

And you are supposed not to have anything to do with companies that are not subject to the act.

Mr. McClain:

I suppose that is correct.

The Court:

The Court has not the machinery to see that this company continues to conduct its business in such a manner as not to violate the act, and I assume that it would be a duty and obligation upon the Securities and Exchange Commission under the Securities Act, to come into this Court again in case they ever find this company violating the act.

Mr. Bedell:

May I say a word on this thing, your Honor?

The Court:

Yes, sir.

Mr. Bedell:

My acquaintance with the Howey enterprise is a pretty old one. I would have to go back through my books to see when it started. I have no hesitation in just saying on my own responsibility that the records of that company are an open book, and, whenever the Securities and Exchange Commission wants to inform itself as to what is going on in that company, I think they will be treated just like they were treated here. Courteously, and a full disclosure will be made.

Now, my thought in this case is that there was an application here for a restraint. The Securities Exchange Commission has certainly made out no case of fraud. They have made out no case of selling shares. They have made out no case against securities offered for sale. I submit the proper decree here is a dismissal of this

bill, and, of course, the Securities Exchange Commission isn't abolished by a decree dismissing this bill, but the record here is a clear record, and I think we are entitled to a dismissal of the bill on that record.

Mr. McClain:

If your Honor please, I think that the case, as it now stands, as Mr. Bedell says, is on application for injunction. If that injunction is denied and the matter dismissed, then it occurs to me that we would like the necessary findings of fact and conclusions of law which would permit an appeal to the Circuit Court. I think it is a matter we would have to consider very carefully before we would appeal. I think that is indicated in counsel for the Commission's advice, from Philadelphia. We have a job to do that is an over all proposition. If it were one individual case, that would be one thing, but, you have to coordinate your opinions on your interpretations, and if that case merits it, I think that we would like to consider the right of appeal, and it seems to me the best way would be for your Honor to make whatever findings of fact and conclusions of law your Honor feels should be drawn in the case, and deny the injunction dismissing the case, giving the right hereafter to appeal.

The Court:

All right. I will endeavor to, in my findings of fact and conclusions of law, reserve to the Securities and Exchange Commission the right to bring another suit, should they ever find that this compnay is guilty of the practices shown in this Bailey case or in any other similar situation, but the thing that I had in mind was this: In case that fall into this class, the Court sometimes gets itself into technical trouble when it dismisses a bill, even though the government fails to prevail in the

particular issue that is raised and tried in the case, and I just wondered if this happened to be one of those cases. I suppose it is not.

Mr. Bedell:

It could hardly be res adjudicata because the bill would be based on the circumstances of the particular case that is presented by the bill.

Mr. McClain:

As I understand it, this is a hearing on a temporary injunction rather than a final injunction.

The Court:

No, sir, my understanding was that it went to trial on both.

Mr. McClain:

On both?

The Court:

On both. That was what you gentlemen announced to me at the outset.

Mr. McClain:

That is all right. I just wanted to have the record clear.

The Court:

Will you, Mr. Bedell, and your associates there, draw findings of fact and conclusions of law and let me have it, and let Mr. McClain have a copy of it so he can suggest anything he might want incorporated in there, and, from the two suggestions, I will endeavor to prepare my own findings of fact and conclusions of law in the case, and will you also prepare a draft of final decree or order to be entered?

Mr. Bedell:

Of course, the findings of fact are very greatly simplified by this twenty-one paragraph stipulation that we have here. And, if the government decides to go to the Court of Appeals on it, it would make a very short record anyway.

The Court:

You have in mind the provisions of this rule with reference to the injunction suit?

Mr. Bedell:

Yes, sir.

The Court:

Well, let me have those matters, gentlemen.

....And thereupon the proceedings having been concluded, the hearing adjourned.

77 PROPOSED FINDINGS OF FACT.

Filed Feb. 27, 1945.

(Title Omitted.)

To The Honorable Dozier A. DeVane, Judge, United States District Court For The Southern District of Florida:

The plaintiff, Securities and Exchange Commission, by its attorneys moves the Court that it adopt the proposed findings of fact attached hereto.

This 23rd day of February, 1945.

EDWARD H. CASHION,
(Edward H. Cashion).
Counsel.

WILLIAM GREEN,
(William Green).
Attorney.

WILLIAM A. McCLAIN,
(William A. McClain).
Attorney.

SECURITIES AND EX-
CHANGE COMMISSION,

415 Palmer Building,
Atlanta, Georgia.

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FINDINGS OF FACT.

1. The W. J. Howey Company and the Howey-In-The-Hills Service, Inc., hereinafter referred to as the Howey Company and the Service Company, respectively, are corporations organized under the laws of the State of Florida. S-2&3

2. The officers and directors of the Howey Company and the Service Company are the same, namely:

C. V. Griffin, President, Treasurer and Director.

Dodge Taylor, Vice President and Director.

R. W. Holsclaw, Secretary and Director. S-4.

3. The stockholders of the Howey Company and the Service Company are substantially the same, namely:

	Howey Company	Service Company	
C. V. Griffin	510 shares	510 shares	
Dodge Taylor	228 shares	229 shares	
R. W. Holsclaw	1 shares	0 shares	
C. M. Pinkerton	1 shares	1 shares	
Howey-In-The-Hills In-			
vestment Corp.	260 shares	260 shares	
	<hr/>	<hr/>	
	1000	1000	S-5

4. The Howey Company and the Service Company have been under direct common control at least since 1940 when C. V. Griffin and Dodge Taylor purchased the stock set forth in paragraph 3. S-7, ST-2.

5. The Howey Company and the Service Company share the same offices and utilize the same facilities and personnel, their principal place of business being located at Howey-In-The-Hills, Florida. S-6, 2 & 3.

6. The Howey Company is the owner of large tracts of land in Lake County, Florida, and since prior to 1940 has been and is now engaged in the business of selling such land planted to citrus trees. S-3, ST-1.

7. The Service Company since prior to 1940 has been engaged in the business of cultivating and developing citrus groves in Lake County, Florida.

8. The Howey Company owns and operates at Howey-In-The-Hills, Florida, a resort hotel known as the Floridan Country Club. The following statements appear in one of the advertising circulars used by the Howey Company to attract patronage to the hotel:

A. "Almost any form of outdoor recreation is available to club members and their guests in a background of beautiful hills and lakes and the world's finest citrus groves."

B. "Here you may break a round of golf by picking tempting tree-ripened oranges and tangerines from groves adjoining the golf course."

Since the Fall of 1940 approximately 6,000 people have stayed at the hotel. There is a regular bus service by the Orlando Transit Company between Howey-In-The-Hills and the City of Orlando, Florida. No bus service is maintained by the defendants. S-12, EX-C, R-26.

9. While tourists and vacationists who patronize the club are being escorted around the golf course, through the bridle paths and over the lakes, their attention is directed to citrus groves adjoining these attractions. When vacationists evince an interest in the groves, they are informed that some of the acreage is for sale. They are told that they can purchase a grove and that the Service Company will undertake to develop the grove and harvest and market the crops. S-12, 13.

10. Vacationists are informed that profits during the 1943-1944 season amounted to about 20 per cent, although in some instances the return was greater; that based upon the estimated crop and the prices being secured for the season 1944-1945, the general level of profits would probably be a little higher than 20 per cent for the 1944-1945 season. They are told, however, that if they purchase groves and have the Service Company service the groves for them, they should not expect to receive more than 10 percent profit per year over the next ten years on a grove already in bearing

at the time of purchase, or over the first ten years of bearing if they buy a young grove, since there will be bad years with the good. ST-8.

11. It is a matter of common knowledge that a citrus tree properly cared for continues in bearing for many years, reputedly approaching the century mark. Vacationists are informed that there are trees in the vicinity of Howey-In-The-Hills, Florida which were planted around 1865 and are still producing large crops of fruit. R-8, ST-3.

12. Potential customers are for the most part residents of states other than Florida and the actual purchasers reside in various states, 23 in number, including the District of Columbia, and one or two reside in Canada. Purchasers are predominately professional and business people, such as lawyers, bankers, doctors, manufacturers, etc. S-14, R-5, 29.

13. The purchasers do not possess the knowledge, skill or equipment necessary for the care and cultivation of citrus trees. It would be completely unfeasible and uneconomical for a small owner to take care of his property and therefore he must rely on a service company to do this work. S-14, R-31.

14. The purchaser is encouraged to enter into a caretaking agreement with the Service Company and he is told that its competency and efficiency in caring for citrus trees exceed that of its competitors. A land sales contract and the service contract are customarily offered to investors simultaneously. S-13 & 17.

15. Between the period February 1, 1941 and May 31, 1943, 85% of the investors who purchased citrus acre-

age from the Howey Company simultaneously entered into service contracts with the Service Company. S-18.

16. Between February 1, 1941 and May 31, 1943, the Howey Company made 51 sales to 42 persons involving a total of 195.26 acres for \$165,783. Eight of these sales were of non-bearing trees totaling 103.21 acres and 43 were sales of bearing trees totaling 92.05 acres. Of the 42 persons, 31 purchased tracts less than 5 acres. The average holding of these persons is 1.33 acres. All but one of these small purchasers made only a single purchase, whereas the 11 purchasers of more than 5 acres purchased their holdings in 19 transactions. Sales of as little as .65 of an acre, .7 of an acre, .73 of an acre were made by the Howey Company. Of the acreage sold, 166.54 acres (85%) are being cared for by the Service Company. R-11 & 12.

17. The Standard service contract used by the Service Company grants full and complete possession of the premises to the Service Company which agrees to pay a nominal rental to the owner of the land therefor. In its usual service contract, the Service Company undertakes properly to maintain, fertilize, spray and cultivate and otherwise care for the citrus trees growing on the land for a specified period. Ex-B.

18. The standard service contract provides that the Service Company shall market the crop and pay over to the owner the net proceeds of the fruit produced after deducting therefrom any charge incurred in the gathering, packing, marketing and selling of such fruit. Ex-B.

19. Under the standard service contract the owner of the land does not own a specific crop of fruit or have the right of entry to his property to dispose of the crop

unless it is mutually agreed upon in writing by the owner and the Service Company, and provided there are no monies owing to the latter. Ex-B.

20. The fruit is marketed by the Service Company in two ways. One, the fruit is sold on the trees to buyers who enter into a contract with the Service Company to buy all of the fruit of a certain variety on certain trees, owned by or under the care of the defendants. The fruit of each individual owner as picked is checked and accounted for by the Service Company to that individual owner. The second method employed is where all of the fruit is packed and taken to the cannery or packing house where it is processed or packed. The fruit of the individual owner is then pooled with fruit of like variety and grade and the net proceeds of the sale thereof are apportioned equally and paid to each individual owner in accordance with the number of boxes of fruit contributed by him. R-8, 9, 10.

21. In its usual service contract, the Service Company charges the following service fees:

For non-bearing trees \$40 per acre per year.

For bearing trees \$30 per acre per year.

In addition to the stipulated fees, the owner of the land agrees to pay taxes as and when they become due, the market price delivered at the described property, of pruning, dusting, dusting material, spraying, spraying material, special treatment, need for cover crop, sewing of same, fertilizer, replacement of any trees which may die, and watering trees when and as performed or applied in accordance with the best judgment of the Service Company. The term of the usual service contract covers a ten-year period; in some in-

stances there is a privilege of annual cancellation by either party. S-11, Ex-B.

22. The lands of the Howey Company are planted in 40-acre tracts approximately 1320 feet square and the trees are planted in rows of approximately 48 to an acre, set on 30-foot centers. Insofar as possible plats are laid out and sold on a row basis. A person purchasing one acre would thus ordinarily acquire a single row of 48 trees with a 30 foot frontage. On two sides of the 40-acre tracts are open ways, approximately 20 feet wide. The tracts are not fenced but are staked with marks referring to a plat book record whereby the owners of the specific rows of trees in the tract may be definitely identified. For example: a single plat located in a 40-acre tract might contain 10 rows of trees comprising 10 acres, being identified by a stake bearing the symbols "Number 40. A, B and C. 10 rows." This refers to a number 40 in the plat book, which shows that investor A owns two rows, investor B owns 4 rows, and investor C owns 4 rows. R-6, 7.

23. The prices charged for the land, which vary according to the number of years it has been planted with citrus trees, are as follows:

One year old trees \$675 per acre.

Two year old trees \$750 per acre.

Bearing trees (five years old or older) approximately \$1000 per acre. S-9.

24. Upon full payment of the purchase price the land is conveyed to the purchaser by a warranty deed. If the purchaser fails to pay the installments required by the contract, the Howey Company may foreclose the contract in the same manner as it would foreclose a mortgage under Florida laws. S-9.

25. All sales have been an outright sale of a definitely identified tract of land. In no instance has there been a sale of a right to share with others in the profits of land held in common with the defendant Companies or others. R-34, 35.

26. No sales have been made by the Howey Company to any purchaser who has not personally inspected the property. In numerous instances the purchasers have acquired homes in the vicinity or spend a portion of each year in the vicinity, frequently inquiring and making suggestions with respect to care of their land and marketing of the fruit. The standard service agreement provides that the developing of the property and the harvesting and sale of the crop shall be done in accordance with the best judgment of the Service Company. A considerable number of the purchasers visit their property at least once a year. R-35, S-14, Ex. B, R-29.

27. The Howey Company will sell acreage to persons who do not intend to use the Service Company as their caretaker. The Service Company will service trees on land not purchased from the Howey Company and solicits service contracts from others than purchasers of the Howey Company. Sales of acreage by the Howey Company are not conditioned upon the purchasers entering into service agreements with the Service Company, and the caretaking agreements are not conditioned upon the purchase of acreage from the Howey Company. Prospective customers have an opportunity to learn that there are numerous competing service companies of high standing operating in the vicinity of Howey-In-The-Hills whose business is to service property owned by others. Such competitors post signs by the land serviced by them which are visible from the highways, and they send advertisements to land owners. Moreover, officers of the Howey

Company and the Service Company acquaint prospective purchasers with the existence of competitors. Of course, prospective customers are informed by them that the Service Company's competency and efficiency exceed that of its competitors, with the success indicated in paragraph 15 above. S-15, 16, R-31, 32.

28. The defendant Service Company maintains 75 tractors, sprayer wagons, fertilizer trucks, and other machinery used in cultivating citrus trees, a machine shop and force of mechanics. The company maintains a cannery and packing plant and a force of about one man to each 100 acres of land. R-5, R-27, 28.

29. In the care of the grove, as in the yield of the fruit, the cost of the care and the proceeds of the fruit may be, and are, definitely and distinctly accounted for with respect to the specific row or rows owned by the individual. R-7, 8, 9, R-10, 14.

30. Of the defendants, the W. J. Howey Company owns approximately 400 acres of bearing citrus trees. The Vice President of the two Companies, associated with them since 1923, is the owner of approximately 100 acres of bearing groves, the oldest of which is 22 years old. Mr. Griffin, connected with the Company, owns approximately 350 acres of bearing groves. R-10, 20, R-23 24.

31. The citrus industry is an established industry in Lake County, Florida, and according to the United States Census of 1940 there were of farms reporting two acres or more of citrus trees, 1721, with more than a million trees of bearing age. R-16.

32. The mails and instruments of transportation and communication in interstate commerce are now and for

some time have been used in the sale of said land and service contracts, and land sales contracts, warranty deeds, and service contracts are now being and for some time have been carried through the mails and in interstate commerce by means and instruments of transportation for the purpose of sale and for delivery after sale. S-19.

33. At no time has a registration statement been in effect with this Commission under the Securities Act of 1933 with respect to these contracts. S-20.

FINDINGS OF FACT AND CONCLUSIONS OF LAW.

Filed Jul. 14, 1945 as of Feb. 27, 1945.

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(Title Omitted.)

There is no controversy with respect to the facts in this case. The parties by written stipulation in twenty-one numbered paragraphs filed May 20, 1944, with numerous exhibits therein referred to, have agreed on the principal facts, and that stipulation with the above mentioned exhibits will be taken as part of these Findings of Fact.

(1) At the trial of the cause the parties offered oral and documentary evidence which was admitted and considered by the Court, and supplemental to the agreed facts set forth in the above mentioned stipulation and exhibits, the Court finds that there have been about 55 sales of lands to about 45 persons since about February 1, 1941, at a price with few exceptions of approximately \$1,000.00 an acre for groves containing citrus trees more than 5 years old and the Service Company has at this time approximately 215 contracts for care of groves of which ap-

proximately 42 or 43 cover acreage sold since the 1st of February, 1941. These purchasers reside in various states, 23 in number, including the District of Columbia and one or two in Canada. (R. 3, 5.) Of the eight sales representing a total of one hundred three and a fraction acres of non-bearing trees, the trees were all one year old or older, and in a few instances where there was sale of undeveloped land the average would be 40 acres or more, but there were none during the period of time covered by this litigation. (R. 33, 34.) No sales have been made to any purchaser who has not personally inspected the property. (R. 3, 5, 35.) The purchasers, or a considerable number of them, visit their property at least once a year (R. 29), and the purchasers are made up principally of business and professional people (R. 29). The Company operates a tourist hotel (The Floridan Country Club, mentioned in the stipulation) as a year-round project and there is a regular bus service by the Orlando Transit Company between Howey-In-The-Hills and the City of Orlando. No bus service is maintained by defendants. (R. 26.) Since the present management took over the Company (winter of 1940-41) approximately 6000 people have stayed at the hotel (R. 26).

(2) The lands are planted in forty-acre tracts approximately 1320 feet square, and the trees are planted in rows of approximately 48 to an acre. On two sides of the forty-acre tracts are open ways, approximately 20 feet wide, and each acre would ordinarily include a row of 48 trees and the owner would have approximately 30 feet of frontage. The tracts are not fenced but staked with marks referring to a plat book record whereby the owner of the specific property, whether it contained 1, 2 or more rows may be definitely identified. (R. 7.) In the care of the grove, as in the yield of fruit, the cost of the care and the proceeds of the fruit may be, and are, definitely and dis-

tinctly accounted for with respect to the specific row or rows owned by the individual. (R. 7, 8, 9, 10, 14.)

(3) All sales have been an out-right sale of a definitely identified tract of land. In no instance has there been a sale of a right to share with others in the profits of land held in common with the defendant Companies or others. (R. 34, 35.)

(4) Where fruit is sold on the tree the fruit of each individual owner as picked is checked and accounted for by defendant Service Company to that individual owner, and where the fruit is processed or canned the fruit of the individual owner is pooled with fruit of like variety and grade and the net proceeds apportioned equally and paid to each individual owner in accordance with the number of boxes of fruit contributed by him. (R. 9, 10.)

(5) The citrus industry is an established industry in Lake County, Florida, and according to the United States Census of 1940 there were of farms reporting two acres or more of citrus trees, 1721, with more than a million trees of bearing age. (R. 16.)

(6) It is a matter of common knowledge that a citrus tree properly cared for continued in bearing for many years, reputedly approaching the century mark. (R. 8.) Of the defendants, The W. J. Howey Company owns approximately 400 acres of bearing citrus trees (R. 10). The Vice-president of the two companies, associated with them since 1923 is the owner of approximately 100 acres of bearing groves, the oldest of which is 22 years old. (R. 20, 23, 24.) Mr. Griffin, connected with the company, owns approximately 350 acres of bearing groves. (R. 23, 24.)

(7) It is matter of common knowledge and a matter not in dispute (R. 31) that the care of a grove requires equipment and force beyond the means of the owner of a small tract (R. 31), and there are numerous companies of good standing whose business it is to service groves owned by others. (R. 31, 32.) Approximately 85% of the purchasers within recent years have arrangements with the defendant Service Company for care, but many of the purchasers during past years are now having their groves cared for by others than the defendant Service Company (see map).

(8) The defendant Service Company maintains some 75 tractors, sprayer wagons, fertilizer trucks, and other machinery used in cultivating citrus trees, and a machine shop and force of mechanics. (R. 28.) The Company maintains a cannery and packing plant (R. 5) and a force of about one man to each 100 acres of grove (R. 27).

Conclusions of Law.

In deciding this case, I desire to let the record in this case show that I adhere to the legal principles and interpretations of the Securities Act as announced by Judge Strum in *Securities Exchange Commission v. Bailey, et al.*, 41 Fed. Supp., 647. I find from the testimony introduced in this case, that this case does not fall within the same category as that case, and that under the facts as shown by the record of this case, the defendants are not selling securities as that word is defined in the Securities Act, and that the government is not entitled to receive the relief sought in this particular suit.

And the Clerk of the Court is hereby directed to enter in the records of the Court its judgment entitled in the above styled cause and in these words: "This cause com-

ing on to be heard upon final hearing, and the parties having submitted their proofs, and the Court having heard counsel for the respective parties, it is now upon consideration thereof, Ordered, Adjudged, and Decreed by the Court that the injunction prayed for be denied and that the complaint be and the same is hereby dismissed.

Done and Ordered this day of 1945.

.....
Judge.

FINDINGS OF FACT AND CONCLUSIONS OF LAW.

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Filed Apr. 18, 1945.

(Title Omitted.)

The above entitled cause coming on to be heard upon the complaint filed herein, the answer thereto, the stipulation of the parties as to the facts, the oral and documentary evidence offered at the hearing and the Court having considered the pleadings, the stipulation of the parties as to the Facts, the oral and documentary evidence submitted, and heard arguments of counsel for the respective parties and being fully advised in the premises makes the following findings of fact and conclusions of law.

1. The W. J. Howey Company and the Howey-in-the-Hills Service, Inc., hereinafter referred to as the Howey Company and the Service Company, respectively, are corporations organized under the laws of the State of Florida. The Howey Company was organized in 1922 and the Service Company was organized in 1932.

2. The officers and directors of the Howey Company and the Service Company are the same, namely:

C. V. Griffin, President, Treasurer & Director.

Dodge Taylor, Vice-President and Director.

R. W. Holsclaw, Secretary and Director.

3. The stockholders of the Howey Company and the Service Company are substantially the same, namely:

	Howey Company	Service Company
C. V. Griffin	510 shares	510 shares
Dodge Taylor	228 shares	229 shares
R. W. Holsclaw	1 share	0 shares
C. M. Pinkerton	1 share	1 share
Howey-in-the-Hills Investment Corp.	260 shares	260 shares

4. The Howey Company and the Service Company share the same offices and both companies are under direct common control, utilizing the same facilities and personnel, their principal place of business being located at Howey-in-the-Hills, Florida.

5. The Howey Company is the owner of large tracts of land in Lake County, Florida and for more than twenty years has been and is now engaged in the business of selling such land planted to citrus trees.

6. The Service Company, since its organization in 1932, has been engaged in the business of cultivating and developing citrus groves in Lake County, Florida.

7. The Howey Company owns and operates at Howey-in-the-Hills, Florida, a resort hotel known as the Floridan Country Club. Since the Fall of 1940 approximately 6,000 people have stayed at the hotel. There is a regular bus service by the Orlando Transit Company between Howey-in-the-Hills and the City of Orlando, Florida. No bus service is maintained by the defendants.

8. While tourists and vacationists who patronize the club are being escorted around the golf course, through the bridle paths and over the lakes, their attention is directed to citrus groves adjoining these attractions. When vacationists evince an interest in the groves, they are informed that some of the acreage is for sale.

9. Vacationists are informed that profits during the 1943-1944 season amounted to about 20 percent, although in some instances the return was greater; that based upon the estimated crop and the prices being secured for the season 1943-1944, the general level of profits would probably be a little higher than 20 percent for the 1944-1945 season. They are told, however, that if they purchase groves and have the Service Company service the groves for them, they should not expect to receive more than 10 percent profit per year over the next ten years on a grove already in bearing at the time of purchase, or over the first ten years of bearing if they buy a young grove, since there will be bad years with the good.

10. It is a matter of common knowledge that a citrus tree properly cared for continues in bearing for many years, reputedly approaching the century mark. Vacationists are informed of the fact that there are trees in the vicinity of Howey-in-the-Hills, Florida which were planted around 1865 and are still producing large crops of fruit.

11. Potential customers are for the most part residents of states other than the State of Florida and the actual purchasers reside in various states, 23 in number, including the District of Columbia, and one or two reside in Canada. Purchasers are predominately professional and business people, such as lawyers, bankers, doctors, manufacturers, etc.

12. The purchasers do not possess the knowledge, skill or equipment necessary for the care and cultivation of citrus trees. It would be completely unfeasible and uneconomical for a small owner to take care of his property and therefore he must rely on a service company to do this work. A land sales contract and the service contract therefore are customarily offered to potential customers simultaneously.

13. Between the period of February 1941 and May 31, 1943, 85% of the investors who purchased citrus acreage from the Howey Company simultaneously entered into service contracts with the Service Company.

14. Between February 1, 1941 and May 31, 1943, the Howey Company made 51 sales to 42 persons involving a total of 195.26 acres for \$165,788. Eight of these sales were of non-bearing trees totaling 103.21 acres and 43 were sales of bearing trees totaling 92.05 acres. Of the 42 persons, 31 purchased tracts less than 5 acres. The average holding of these persons is 1.33 acres. All but one of these small purchasers made only a single purchase, whereas the 11 purchasers of more than 5 acres purchased their holdings in 19 transactions. Sales of as little as .65 acre, .7 acre, .73 acre were made by the Howey Company. Of the acreage sold 166.54 acres (85%) are being cared for by the Service Company.

15. In its usual service contract, the Service Company undertakes properly to maintain, fertilize, spray and cultivate and otherwise care for the citrus trees growing on the land for a specified period. The Service Company also agrees to market the crop and pay over to the owner the net proceeds of the fruit produced after deducting therefrom any charge incurred in the gathering, packing, marketing and selling of such fruit.

16. The fruit is marketed by the Service Company in two ways. One, the fruit is sold on the trees to buyers who enter into a contract with the Service Company to buy all of the fruit of a certain variety on certain trees, owned by or under the care of the defendants. The fruit of each individual owner as picked is checked and accounted for by the Service Company to that individual owner. The second method employed is where all of the fruit is picked and taken to the cannery or packing house where it is processed or packed. The fruit of the individual owner is then pooled with fruit of like variety and grade and the net proceeds of the sale thereof are apportioned equally and paid to each individual owner in accordance with the number of boxes of fruit contributed by him.

17. In its usual service contract, the Service Company charges the following service fees:

For non-bearing trees \$40 per acre per year.

For bearing trees \$30 per acre per year.

In addition to the stipulated fees, the owner of the land agrees to pay taxes as and when they become due, the market price delivered at the described property, of pruning, dusting, dusting material, spraying, spray material,

special treatment, seed for cover crop, sowing of same, fertilizer, replacement of any trees which may die, and watering trees when and as performed or applied in accordance with the best judgment of the Service Company. The term of the usual service contract covers a ten-year period; in some instances there is a privilege of annual cancellation by either party.

18. The lands of the Howey Company are planted in 40-acre tracts approximately 1320 feet square and the trees are planted in rows of approximately 48 to an acre, set on 30-foot centers. Insofar as possible plats are laid out and sold on a row basis. A person purchasing one acre would thus ordinarily acquire a single row of 48 trees with a 30-foot frontage. On two sides of the 40-acre tracts are open ways, approximately 20 feet wide. The tracts are not fenced but are staked with marks referring to a plat book record whereby the owners of the specific rows of trees in the tract may be definitely identified. For example: a single plat located in a 40-acre tract might contain 10 rows of trees comprising 10 acres, being identified by a stake bearing the symbols "Number 40. A, B, and C. 10 rows." This refers to a number 40 in the plat book, which shows that investor A owns two rows, investor B owns 4 rows and investor C owns 4 rows.

19. The prices charged for the land, which vary according to the number of years it has been planted with citrus trees, are as follows:

One year old trees \$675 per acre.

Two year old trees \$750 per acre.

Bearing trees (five years old or older) approximately \$1000 per acre.

20. Upon full payment of the purchase price the land is conveyed to the purchaser by warranty deed. If the purchaser fails to pay the installments required by the Contract, the Howey Company may foreclose the contract in the same manner as it would foreclose a mortgage under Florida laws.

21. All sales have been an out-right sale of a definitely identified tract of land. In no instance has there been a sale of a right to share with others in the profits of land held in common with the defendant Companies or others.

22. No sales have been made by the Howey Company to any purchaser who has not personally inspected the property. In numerous instances the purchasers have acquired homes in the vicinity or spend a portion of each year in the vicinity, frequently inquiring and making suggestions with respect to care of their land and marketing of the fruit. The standard service agreement provides that the development of the property and the harvesting and sale of the crop shall be done in accordance with the best judgment of the Service Company. A considerable number of the purchasers visit their property at least once a year.

23. The Howey Company sells acreage to persons who do not use the Service Company as their caretaker. The Service Company services trees on land not purchased from the Howey Company and solicits service contracts from others than purchasers of the Howey Company. Sales of acreage by the Howey Company are not conditioned upon the purchasers entering into service agreements with the Service Company, and the caretaking agreements are not conditioned upon the purchase of acreage from the Howey Company. Prospective customers have an opportunity to learn that there are numerous

competing service companies of high standing operating in the vicinity of Howey-in-the-Hills whose business is to service property owned by others. Such competitors post signs by the land serviced by them which are visible from the highways, and they send advertisements to land owners. Moreover, officers of the Howey Company and the Service Company acquaint prospective purchasers with the existence of competitors. Of course, prospective customers are informed by them that the Service Company's competency and efficiency exceed that of its competitors.

24. The defendant Service Company was servicing 2,-487.36 acres of citrus groves in March, 1944 and maintains 75 tractors, sprayer wagons, fertilizer trucks, and other machinery used in cultivating these citrus groves, a machine shop and force of mechanics. The company also maintains a cannery and packing plant and a force of about one man to each 100 acres of land.

25. In the care of each grove, as in the yield of the fruit, the cost of the care and the proceeds of the fruit may be, and are, definitely and distinctly accounted for with respect to the specific property owned by the individual.

26. Of the defendants, the W. J. Howey Company owns approximately 400 acres of bearing citrus trees. The Vice-President of the two Companies, associated with them since 1923, is the owner of approximately 100 acres of bearing groves, the oldest of which is 22 years old. Mr. Griffin, connected with the Company, owns approximately 350 acres of bearing groves.

27. The citrus industry is an established industry in Lake County, Florida, and according to the United States Census of 1940 there were of the farms reporting two acres

or more of citrus trees, 1721, with more than a million trees of bearing age.

28. The mails and instruments of transportation and communication in interstate commerce are now and for some time have been used in the sale of said land and service contracts, and land sales contracts, warranty deeds, and service contracts are now being and for some time have been carried through the mails and in interstate commerce by means and instruments of transportation for the purpose of sale and for delivery after sale.

29. At no time has a registration statement been in effect with Securities and Exchange Commission under the Securities Act 1933, with respect to these contracts.

Conclusions of Law.

1. The Court has jurisdiction of the parties and of the subject matter of this suit.

2. Under the facts as shown by the record of this case the defendants are not selling securities as that word is defined in the Securities Act and the Government is not entitled to the relief sought in this suit.

3. An Order will be entered denying the injunction prayed for and dismissing the Complaint.

Dated at Orlando, Florida, this 18th day of April, 1945.

DOZIER A. DeVANE,
United States District Judge.

MEMORANDUM OPINION.

Filed Apr. 18, 1945.

(Title Omitted.)

There is no controversy with respect to the facts in this case. The parties, by written stipulation filed May 20, 1944, have agreed upon the principal facts. In addition, the parties offered oral and documentary evidence at a Hearing subsequently held at the direction of the Court for the purpose of supplying certain additional information desired by the Court.

The record shows that the W. J. Howey Company, hereafter referred to as the Howey Company, is a corporation, organized under the laws of the State of Florida in 1922, with its principal place of business at Howey-in-the-Hills, Florida. Howey-in-the-Hills Service, Inc., hereafter referred to as the Service Company, is a corporation organized under the laws of the State of Florida in 1932, with its principal place of business at Howey-in-the-Hills, Florida. G. W. Griffin is President and Dodge Taylor is Vice-President of both companies. The Howey Company and the Service Company share the same offices and utilize the same personnel and both companies are under direct common control.

The Howey Company is the owner of large tracts of land in Lake County, Florida, which it is now and for more than twenty-years has been planting to citrus trees and selling at various stages of development, after the trees have reached one year old or older. The prices charged vary according to the number of years the land has been planted to citrus trees. The price generally received for land where the trees are one year old is \$675.00 per acre; for two year old trees, \$750.00 per acre; and bearing trees, five years or older, approximately \$1,000.00 per acre.

The Service Company is now and since its organization has been engaged in the business of cultivating and caring for citrus groves sold by the Howey Company to others where its services were desired by the purchaser. It has, since 1935, used a standard form of Service Contract. In occasional instances modification of this Contract is made to suit the requirements of a particular owner. By such Service Contract the Service Company undertakes to properly maintain, fertilize, spray, cultivate, and otherwise care for the citrus groves, for a specified service charge of \$40.00 per acre per year for trees under five years old, and \$30.00 per acre, per year, for bearing groves more than five years old.

In addition to the service charge the owner of the land agrees to pay for pruning, dusting and dusting material, spraying and spray material, special treatment, seed for cover crop, sowing of same, fertilizer, replacement of any trees which may die, and watering of trees when necessary. The Service Company acts as the Agent of the owner of the property for the purpose of marketing the fruit, if that service is desired.

During the three year period ended May 31, 1943—being the period involved in this case—The Howey Company sold fifty-one (51) parcels of land comprising 195.26 acres of grove property. Of the fifty-one purchasers forty-two entered into the Service Contract with the Service Company for the care of their properties. The contracts covered 166.54 acres, or 85% of the acreage sold by the Howey Company during that period.

The Service Company is also engaged in the general business of servicing citrus groves and services many grove properties. It maintains 75 tractors, spray wagons, fertilizer trucks and other machinery used in the cultivation of citrus trees; a machine shop with mechanics and a force of about one man to each 100 acres of grove property. The record does not disclose the total acreage being cared

for by the Service Company on May 31, 1943, but it does disclose that in March, 1944, it was servicing 2,487.36 acres of citrus grove. The 166.54 acres covered by the contracts mentioned above, constitutes less than 7% of the total acreage under service agreements with the Service Company.

The citrus industry is an established industry in central and southern Florida and according to United States Census of 1940 there were 1721 farms reporting two (2) acres or more of citrus trees in Lake County, with more than one million trees of bearing age. It is a matter of common knowledge in the citrus section of Florida, and the record discloses, that the care of citrus groves requires equipment and a force beyond the means of the owner of a small tract of citrus property and there are numerous companies of good standing in the State, whose business is to service groves owned by others. There are at least seven such companies operating in the area in which the Service Company operates.

Plaintiff contends that the activities of the Howey Company and the Service Company in the sale of grove properties and in the care of same, constitute a violation of Section 5(a) of the Securities Act of 1933—15 U. S. C. 77 (a) (e), and by this suit seeks to enjoin such acts and practices. The specific charge is that the entry into service contracts by the Service Company, with purchasers of land from the Howey Company constitutes the sale of securities and as no registration statement, with respect to such activities has been or is now in effect with the Securities and Exchange Commission, that the defendants should be enjoined from continuation of their present practices until registration statements have been filed and approved according to the requirements of the Securities Act of 1933.

In deciding this case I desire to let the record show that I adhere to the legal principle and interpretation of the

Securities Act, as announced by Judge Strum, in Securities and Exchange Commission vs. Vailey, et al., 41 Fed. Supp. 647. I find from the testimony introduced in this case that this case does not fall within the same category as that case and under facts shown by the record in this case, the defendants are not selling securities as that word is defined in the Securities Act and that the Government is not entitled to the relief sought in this particular suit.

In Securities and Exchange Commission vs. Bailey, et al., Supra, the two companies there involved were the owners of large tracts of land in Marion County, Florida, said to be peculiarly adapted for growing tung trees. These companies were engaged in selling these lands to the public in small tracts for development and cultivation of tung oil producing trees. Currently with or shortly after execution of a "sales" contract, a separate "development" contract was executed between the purchaser and development company, or an individual identified with the companies owning the land. An extensive advertising campaign was carried on and the raw land was sold, sight unseen, to the purchaser. The tung oil industry was a new untried and undeveloped industry in Florida. Little was known about it, but glowing pictures were painted of the prospects. The fact that the Securities Act reaches out to stop such activities is a blessing to our gullible and unsuspecting public.

As pointed out above, the citrus industry is an established industry in Florida. Its beginning ante-dates the building of railroads in the State and its progress has been such that it is the largest single farming activity in the State today. Moreover, the record in this case shows that not a single sale of citrus grove property was made by the Howey Company during the period involved in this suit, except to purchasers who actually inspected the property before purchasing the same. The record further dis-

closes that no purchaser is required to engage the Service Company to care for his property and that of the fifty-one purchasers acquiring citrus property during this period, only forty-two entered into contracts with the Service Company for the care of the property. The competition between service companies is keen. The services offered by the Howey Company through the Service Company to the purchasers of citrus properties from the Howey Company is more in the nature of a guarantee to such purchasers that their properties will be well cared for, than anything else. The Service Company could not long exist if it depended altogether upon the business secured from the sales made by the Howey Company. Moreover, the purchasers of these small tracts of citrus property could not safely acquire same unless they did, at the same time, secure the services of some reliable service company to care for their properties. The employment of the Service Company by the purchasers of property from the Howey Company in no way constitutes a violation of the Securities Act of 1933.

Findings of Fact and Conclusions of Law will be prepared in conformity with this Memorandum Opinion.

Dated at Orlando, Florida, this 17th day of April, 1945.

DOZIER A. DeVANE,

United States District Judge.

100

FINAL JUDGMENT.

Filed Apr. 18, 1945.

In the United States District Court in and for the Southern District of Florida, Orlando Division.

Securities and Exchange Commission, Plaintiff

vs.

W. J. Howey Company and Howey-in-the-Hills Service, Inc., Defendants.

Case No. 220 Orl. Civ.

Orl. C. O. B. 3-251.

This cause coming on to be heard upon final hearing and the parties having submitted their proof and the Court having heard counsel for the respective parties and having prepared and filed a Memorandum Opinion and Findings of Fact and Conclusions of Law herein, it is now upon consideration thereof,

Ordered And Adjudged by the Court that the Injunction prayed for by the Plaintiff be denied and that the Complaint be and the same is hereby dismissed.

Done And Ordered in Chambers at Orlando, Florida, this 18th day of April, 1945.

DOZIER A. DeVANE,
United States District Judge.

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NOTICE OF APPEAL.

Filed May 14, 1945.

In the United States District Court for the Southern District of Florida, Orlando Division.

Securities and Exchange Commission, Plaintiff,

vs.

W. J. Howey Company and Howey-in-the-Hills Service, Inc., Defendants.

Civil Action (Orlando) No. 220.

Notice Is Given That The Securities And Exchange Commission, plaintiff above named, hereby appeals to the United States Circuit Court of Appeals for the Fifth Circuit from the final judgment entered in this action on the 18th day of April, 1945.

Dated this 12th day of May 1945.

ROGER S. FOSTER,
(Roger S. Foster)
Solicitor.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

18th and Locust Sts.,
Philadelphia, 3, Pa.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McLAIN,
(William A. McLain)
(Attorneys for Plaintiff, Securities and Exchange Commission.

415 Palmer Bldg.,
Forsyth and Marietta Sts.,
Atlanta 3, Ga.

102

STATEMENT OF POINTS.

Filed Jun. 22, 1945, Orlando, Fla.

(Title Omitted.)

In its appeal, appellant Securities and Exchange Commission, plaintiff in the above-entitled action, intends to rely solely upon the point that the District Court erred in concluding that the defendants were not engaged in the sale and in the offering for sale of a "security" within the meaning of Section 2(1) of the Securities Act of 1933, as amended (15 U. S. C. § 77 b (1)).

Dated, June 21, 1945.

ROGER S. FOSTER,
(Roger S. Foster)
Solicitor.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

18th and Locust Streets,
Philadelphia 3, Pennsylvania.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McCLAIN,
(William A. McClain)
Attorneys for Plaintiff, Securities and Exchange Commission.

415 Palmer Building,
Forsyth and Marietta Streets,
Atlanta 3, Georgia.

111.

Copy served upon George C. Bedell and Carl E. Duncan, attorneys for defendants, W. J. Howey Company and Howey-in-the-Hills Service, Inc., June 21, 1945.

WILLIAM A. McCLAIN.

103

DESIGNATION OF RECORD.

Filed June 22, 1945.

(Title Omitted.)

Appellant Securities and Exchange Commission, plaintiff in the above-entitled action, designates the following portions of the record, proceedings and evidence to be contained in the record on appeal in the above-entitled action:

1. Complaint for preliminary and final injunction, filed on May 16, 1944.
2. Answer of defendants, filed on May 20, 1944.
3. Stipulation of the parties, filed on May 20, 1944.
4. Motion for summary judgment, filed on June 1, 1944.
5. Petition and order to withdraw motion for summary judgment, filed on January 3, 1945.
6. Transcript of proceedings' dated January 30, 1945.
7. Plaintiff's proposed findings of fact, submitted February 27, 1945, and filed June, 1945.

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8. Defendants' proposed findings of fact, submitted February 27, 1945, and filed June, 1945.

9. Findings of Fact and Conclusions of Law, dated April 18, 1945.

10. Memorandum opinion, dated April 17, 1945.

11. Final Judgment, dated April 18, 1945.

12. Notice of Appeal, filed May 14, 1945.

13. Statement of points to be relied upon by plaintiff in its appeal.

14. This designation of record.

Dated: June 21, 1945.

ROGER S. FOSTER,
(Roger S. Foster)
Solicitor.

EDWARD H. CASHION,
(Edward H. Cashion)
Counsel.

18th and Locust Streets,
Philadelphia 3, Pennsylvania.

WILLIAM GREEN,
(William Green)
Regional Administrator.

WILLIAM A. McCLAIN,
(William A. McClain)
Attorneys for Plaintiff, Se-
curities and Exchange
Commission.

415 Palmer Building,
Forsyth and Marietta Streets,
Atlanta 3, Georgia.

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Copy served upon George C. Bedell and Carl E. Duncan, attorneys for defendants, W. J. Howey Company and Howey-in-the-Hills Service, Inc., June 21, 1945.

WM. A. McCLAIN.

105

DESIGNATION OF RECORD.

Filed Jun. 25, 1945.

(Title Omitted.)

The defendants in the above styled cause designate additional portions of the record, proceedings and evidence to be included in the transcript upon the appeal taken by plaintiff in the above styled cause, as follows:

Each and every of the Exhibits admitted in evidence at the trial of the cause, including: The several Exhibits to the Stipulation of the Parties filed in the cause, and the several other Exhibits filed in evidence at the trial of the cause, including: Form of Agreement, Exhibit J (referred to on Page 9 of the transcript of proceedings); Excerpt from the United States Census of 1940 (referred to on Page 18 of the transcript of proceedings); and the map (referred to on Page 22 of the transcript of proceedings).

C. E. DUNCAN,

GEORGE C. BEDELL,

Attorneys for Defendants.

45 West Forsyth Street,

Jacksonville (2), Florida.

DEF. EXHIBIT 1.

S. E. C. vs Howey.

Filed in Evidence 1-30, 1945.

Citrus Production in Lake County.

Citrus fruit trees, 1940, and production, Season			
1939-40 (from bloom of 1939)	Farms reporting	1,721	
Oranges (satsumas, tangerines, mandarins, etc.)	Farms reporting	1,681	
Trees not of bearing age	Number	367,222	
Trees of bearing age	Number	1,417,203	
Quantity harvested	Farms reporting	1,349	
	Field boxes	2,839,002	
Satsumas	Farms reporting	69	
Trees of bearing age	Number	653	
Quantity harvested	Number	9,443	
Trees not of bearing age	Field boxes	27,776	
Tangerines and mandarines	Farms reporting	722	
Trees not of bearing age	Number	7,743	
Trees of bearing age	Number	130,443	
Quantity harvested	Field boxes	234,584	

Other early and mid-season oranges	Farms reporting	1,516
Trees not of bearing age	Number	232,640
Trees of bearing age	Number	826,048
Quantity harvested	Field boxes	1,890,496
Valencia and other late oranges	Farms reporting	1,055
Trees not of bearing age	Number	126,186
Trees of bearing age	Number	451,269
Quantity harvested	Field boxes	686,146
Grapefruit (all varieties)	Farms reporting	1,166
Trees not of bearing age	Number	34,462
Trees of bearing age	Number	469,519
Quantity harvested	Field boxes	1,144,855
Seedless	Farms reporting	666
Trees not of bearing age	Number	20,503
Trees of bearing age	Number	256,931
Quantity harvested	Field boxes	626,664
All other	Farms reporting	827
Trees not of bearing age	Number	13,959
Trees of bearing age	Number	212,588
Quantity harvested	Field boxes	518,191

Lemons	Farms reporting	73	116
Trees not of bearing age	Number	276	
Trees of bearing age	Number	560	
Quantity harvested	Farms reporting	27	
	Field boxes	348	
Limes	Farms reporting	58	
Trees not of bearing age	Number	3,581	
Trees of bearing age	Number	1,525	
Quantity harvested	Farms reporting	12	
	Pounds	33,598	
Kumquats	Farms reporting	16	
Trees not of bearing age	Number	58	
Trees of bearing age	Number	555	
Quantity harvested	Farms reporting	4	
	Pounds	1,515	
Tangeloes	Farms reporting	4	
Trees not of bearing age	Number	100	
Trees of bearing age	Number	2,034	
Quantity harvested	Farms reporting	2	
	Field boxes	10,347	

Sixteenth Census of the United States, 1940. Agriculture, Vol. 1, Part 3, p. 782.

From Introduction Page XIV.

"Trees, Fruits, Nuts and Grapes.

On many farms there are a few fruit or planted nut trees, or grapevines, which are not a part of a well-defined orchard or vineyard. In many such cases reports were secured for the number of trees, with or without production, but no acreage was shown. An acreage was supplied when there were enough trees or plants, at normal planting distances, to make two acres."

106-B

PLTF. EXHIBIT J.

#220 Orl. Civ. S. E. C. vs. Howey. Filed in Evidence
1/30/1945. Edwin R. Williams, Clerk.

Original.

This Agreement made and entered into this day of
..... A. D. 19...., between W. J. Howey Com-
pany, a Florida corporation, hereinafter called the seller
and of hereinafter
called the buyer.

Witnesseth, that for and in consideration of the mutual
covenants hereinafter set forth the seller agrees to sell
and the buyer agrees to buy approximately:

..... boxes of,

..... boxes of,

being all of the crop of citrus fruit of said varieties of
the season 19....-19...., now on the trees in the groves

under control of the seller, and known and designated by the seller as groves numbered:

 said groves being located near Howey-in-the-Hills, Lake County, Florida, on the following terms and conditions:

(1) It is agreed that the price for said citrus fruit on-the-tree shall be as hereafter specified per standard field box, and that the buyer shall have up to and including the dates hereafter specified within which to remove said fruit:

\$..... per standard field box of
 to be removed by

\$..... per standard field box of
 to be removed by

(2) The buyer agrees to pay herewith the sum of \$..... on account of said sale of fruit, the receipt of which is hereby acknowledged, as part of the purchase price above specified, and to pay to the seller at the close of each day of picking the full consideration for the number of boxes picked during that day, the deposit to apply on the fruit last moved.

(3) It is agreed that the buyers shall pay the state advertising tax as assessed by the state of Florida on all citrus fruits and any other State or Federal government charges or taxes whatsoever, and the buyer shall and does hereby relieve the seller of all liability therefor.

(4) The seller warrants that it has full right and authority to sell the fruit covered by this contract. It is, however, understood and agreed that the seller controls a portion of said fruit by virtue of certain contracts and

agreements with the legal owners of said lands; that in the event the seller's authority to sell said crops of fruit, or any part thereof, is terminated by virtue of agreement, exercise of option, or authority of law, or by reason of said fruit having been removed from said land by means beyond the control of the seller, buyer does hereby agree that the seller will be relieved of all obligation to deliver such fruit.

(5) It is further agreed by the parties hereto that in the event buyer fails to comply with any of the terms hereof in the manner and at the time prescribed hereby, and that such default shall continue for a period of three days, the seller shall and does hereby have the right immediately to cancel this agreement and to treat same as null and void; that upon such default the seller shall have immediate right to dispose of the balance of the fruit covered by this contract in such reasonable manner as to the seller may seem best; that thereupon the buyer will immediately pay to seller the difference between the consideration for such fruit named by this contract and the price secured by the seller after such default. Time shall be the essence of this contract.

Executed and delivered in the county of Lake and state of Florida by the parties hereto on the day and year first above written.

W. J. HOWEY COMPANY,
 By

 By

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ORDER.

Filed Jun. 25, 1945.

(Title Omitted.)

Orl. C. O. B. 3-307.

It appearing to the Court that the large colored map admitted in evidence at the trial and referred to on Page 61 of the Transcript of Proceedings should be inspected by the Appellate Court, it it now,

Ordered that the said map be transmitted to the United States Circuit Court of Appeals for the Fifth Circuit along with the record on appeal.

Done And Ordered at Orlando, Florida, this 25th day of June, 1945.

DOZIER A. DeVANE,
Judge.

ORDER DIRECTING FILING OF PLAINTIFF'S AND
DEFENDANTS' PROPOSED FINDINGS OF FACT.

108

Filed June 25, 1945.

(Title Omitted.)

Orl. C. O. B. 3-307.

In Consideration of plaintiff's Motion for an Order by this Court directing that its Proposed Findings be made a part of the record in the appeal from the final judgment in this cause entered on April 18, 1945;

It Is Ordered And Directed by this Court that plaintiff's and defendants' proposed Findings of Fact, heretofore submitted to this Court in Chambers on February 27, 1945, be filed of record in the office of the Clerk of this Court as of the original date of submission.

Done And Ordered in Chambers at Orlando, Florida, this 25th day of June, 1945.

DOZIER A. DeVANE,
United States District Judge.

United States of America,
Southern District of Florida, ss.

I, EDWIN R. WILLIAMS, Clerk of the United States District Court in and for the Southern District of Florida, do hereby certify that the annexed and foregoing is a true and correct copy of the original instruments filed in the case of Securities and Exchange Commission, plaintiff, vs. W. J. Howey Company and Howey-in-the-Hills Service Company, defendants, No. 220 Orlando Civil, which is set forth as items 1 through 14 inclusive in plaintiffs designation and exhibits required in defendants designation of Contents and being pages numbered 1 to 106 herein inclusive, prepared according to the directions of the attorneys and now remaining among the records of the said Court in my office.

In testimony whereof, I have hereunto subscribed my name and affixed the seal of the aforesaid Court at Orlando, Florida, this 17th day of July, 1945, A. D.

(Seal)

EDWIN R. WILLIAMS,
Clerk.

By EDNA P. HARMON,
Deputy Clerk.

That thereafter the following proceedings were had in said cause, in the United States Circuit Court of Appeals for the Fifth Circuit, viz:

ARGUMENT AND SUBMISSION

Extract from the Minutes of October 17, 1945

No. 11421

SECURITIES AND EXCHANGE COMMISSION

vs.

W. J. HOWEY COMPANY AND HOWEY-IN-THE-HILLS SERVICE, INC.

On this day this cause was called, and, after argument by Milton V. Freeman, Esq., Assistant Solicitor, Securities & Exchange Commission, for appellant, and C. E. Duncan, Esq., and George C. Bedell, Esq., for appellees, was submitted to the Court.

Opinion of the Court Filed—November 13, 1945

UNITED STATES CIRCUIT COURT OF APPEALS FOR
THE FIFTH CIRCUIT

No. 11421

SECURITIES AND EXCHANGE COMMISSION, APPELLANT

vs.

W. J. HOWEY COMPANY AND HOWEY-IN-THE-HILLS SERVICE, INC.,
APPELLEES

Appeal from the District Court of the United States for the
Southern District of Florida

(November 13, 1945)

Before HUTCHESON, WALLER, and LEE, *Circuit Judges*

HUTCHESON, *Circuit Judge*: The suit against W. J. Howey Company¹ and Howey-In-The-Hills Service, Inc.² was for an in-

¹ This company is the owner of large tracts of land in Lake County, Florida. For more than 20 years it has been planting citrus trees and, after the trees have reached one year or older, selling to various purchasers various size groves at various stages of development, the price varying according to the number of years the land has been planted to citrus trees. It also owns and operates the Floridan Country Club at Howey-In-The-Hills, a resort hotel frequented by tourists and vacationists. These are shown citrus groves owned by the company, are informed that young groves are for sale, and, if any interest is shown, this is followed up with an effort to make sales.

² This company has since its organization in 1932 been engaged in cultivating and developing citrus groves for their owners, generally under a standard form of service contract used by it since 1935, with occasional modifications to suit particular requirements of particular owners.

junction under Section 20 (b) of the Securities Act of 1933.³ The claim in general was that the defendants, without filing with the Securities and Exchange Commission a registration statement with respect thereto have been, and are now, using the mails and interstate commerce to sell securities, to-wit, investment contracts,⁴ evidenced by warranty deeds and development contracts given in connection with, and as a part of, the sale of citrus groves in violation of Section 5 (a) Securities Act of 1933, Sec. 77 (e), 15 U. S. C.

Particularized, the claim was: that the two companies under the same common control, with the same officers, facilities, and personnel, and substantially the same stockholders, were engaged in carrying on an investment business, to-wit, the growth and cultivation of citrus trees and the marketing and sale of fruit therefrom; that by the device of deeds from the Howey Company to the groves, and cultivation and management contracts from the Service Company, they were in substance and effect selling investment contracts to customers in that, though the purchasers of groves paid their money in form as purchasers of specific tracts of land, they were in fact investors with the Howey Companies in a citrus growing and marketing enterprise, the profits from their purchases to be derived not from their own skill and efforts but from the skill and efforts of others.

The defendants denied the charges of the complaint that they were jointly selling investment contracts. As to the Howey Company, they insisted that it was selling specific groves and executing deeds carrying full title to them, that its contract was complete when the terms of sale were agreed on, and the sale was completed when the deed was delivered. As to the Service Company, the insistence was that it was engaged not in selling securities or investment contracts but in selling its services in caring for, cultivating and managing groves. Finally, pointing out that there was no requirement on the part of the Howey Company that its purchasers would have their groves served by the Service Company, and no obligation on the part of such purchasers to have this done, they insisted that it could not reasonably be claimed that a purchaser of a grove from the Howey Company was not purchasing merely a grove and looking to its growth and fruiting for a return on, and an increase in, value of his investment, but

³ 15 U. S. C. Sec. 77t (b).

⁴ "The term 'security' means any note, stock, treasury stock, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, pre-organization certificates or subscription, transferable share, investment contract, voting-trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or other mineral rights, or, in general, any interest or instrument commonly known as a 'security' or any certificate of interest or participation in, temporary or interim certificate for, receipt for, guarantee of, or warrant, or right to subscribe to or purchase any of the foregoing." Sec. 2 (1) Securities Act 1933, 15 U. S. C. Sec. 77 (b) (1).

was in reality purchasing an interest in an investment enterprise being carried on by the two Howey Companies, looking to their work and efforts for a return on this investment and an increase in its value.

The district judge, upon facts⁵ stipulated and testified to without conflict, found with the defendants that they were not, as charged, selling securities, to-wit, investment contracts, but that the Howey Company was selling groves, and the Service Company was contracting for a cultivating, managing and marketing

⁵ The citrus industry is an established industry in central and southern Florida. Its beginning antedates the building of railroads into the state, and its progress has been such that it is the largest single farming industry in the State. According to United States Census of 1940 there were 1,721 farms reporting two (2) acres or more of citrus trees in Lake County, with more than one million trees of bearing age. It is a matter of common knowledge in the citrus section of Florida, and the record discloses, that the care of citrus groves requires equipment and a force beyond the means of the owner of a small tract of citrus property and there are numerous companies of good standing in the State, whose business is to service groves owned by others. There are at least seven such companies operating in the area in which the Service Company operates.

The prices charged for the land, which vary according to the number of years it has been planted with citrus trees, are as follows:

One year old trees \$675 per acre;

Two year old trees \$750 per acre;

Bearing trees (five years old or older) approximately \$1,000 per acre.

Upon full payment of the purchase price the land is conveyed to the purchaser by warranty deed. If the purchaser fails to pay the installments required by the Contract, the Howey Company may foreclose the contract in the same manner as it would foreclose a mortgage under Florida laws.

All sales have been an out-right sale of a definitely identified tract of land. In no instance has there been a sale of a right to share with others in the profits of land held in common with the defendant Companies or others.

No sales have been made by the Howey Company to any purchaser who has not personally inspected the property. In numerous instances the purchasers have acquired homes in the vicinity or spend a portion of each year in the vicinity, frequently inquiring and making suggestions with respect to care of their land and marketing of the fruit. The standard service agreement provides that the development of the property and the harvesting and sale of the crop shall be done in accordance with the best judgment of the Service Company. A considerable number of the purchasers visit their property at least once a year.

The Howey Company sells acreage to persons who do not use the Service Company as their caretaker. The Service Company services trees on land not purchased from the Howey Company and solicits service contracts from others than purchasers of the Howey Company. Sales of acreage by the Howey Company are not conditioned upon the purchasers entering into service agreements with the Service Company, and the caretaking agreements are not conditioned upon the purchase of acreage from the Howey Company. Prospective customers have an opportunity to learn that there are numerous competing service companies of high standing operating in the vicinity of Howey-In-The-Hills whose business is to service property owned by others. Such competitors post signs by the land serviced by them which are visible from the highways, and they send advertisements to land owners. Moreover, officers of the Howey Company and the Service Company acquaint prospective purchasers with the existence of competitors. Of course, prospective customers are informed by them that the Service Company's competency and efficiency exceed that of its competitors.

The defendant Service Company was servicing 2,487.36 acres of citrus groves in March, 1944, including therein 166.40 acres purchased from Howey Company since 1941, and maintains 75 tractors, sprayer wagons, fertilizer trucks, and other machinery used in cultivating these citrus groves, a machine shop and force of mechanics. The company also maintains a cannery and packing plant and a force of about one man to each 100 acres of land.

In the care of each grove, as in the yield of the fruit, the cost of the care and the proceeds of the fruit may be, and are, definitely and distinctly accounted for with respect to the specific property owned by the individual.

The purchasers do not possess the knowledge, skill or equipment necessary for the care and cultivation of citrus trees. It would be completely unfeasible and uneconomical for a small owner to take care of his property and therefore he must rely on a service company to do this work. A land sales contract and the service contract therefore are customarily offered to potential customers simultaneously.

Between the period of February 1941 and May 31, 1943, 85% of the investors who purchased citrus acreage from the Howey Company simultaneously entered into service contracts with the Service Company.

Between February 1, 1941 and May 31, 1943, the Howey Company made 51 sales to 42 persons involving a total of 195.26 acres for \$165,788. Eight of these sales were

service. Pointing out that the Joiner case,⁶ so strongly relied on by plaintiff, as well as those dealing with rabbit, fox, and tung tree culture, had to do with speculative promotions where the thing sold was valueless except as the prospect of a successful promotion gave it value, while here the transactions were not at all promotional but were sales of specific orange groves having an established value and specific contracts for their servicing, he concluded, we think, correctly, that those cases were not at all in point.

He thought, as we do, that the facts that orange groves need cultivating and servicing and that individual owners of small groves are not equipped to do this for themselves but must contract with service companies or others for its being done, were without significance in making the primary determination here. This is whether what Howey sold was a particular grove and what the Service Company sold was a particular service contract, or whether what was done, the sale of the grove and the issuance of the contract, was in effect one transaction, the sale of an interest in a general enterprise of grove cultivation and marketing. He, therefore, correctly concluded that the facts so strongly relied on by the plaintiff: that nearly all of the purchasers were residents of other states who did not expect to, and could not, personally cultivate their groves; that some of the groves were very small in extent; and that the Howey Company in connection with the sale of a grove did emphasize the advantage to the purchaser of contracting with its subsidiary, the Service Company, for its servicing; could not convert what it was in law and in fact the purchase in fee simple of a designated and described grove, and the making of a separate contract for servicing it, into the purchase of a security, to-wit, an investment contract under which the purchaser acquired not a grove with a separate contract to service it, but an interest in Howey & Company's business of developing, selling and servicing orange groves.

We, of course, agree with plaintiff that the protection of the invoked statute and the jurisdiction of the commission extend equally to securities of established businesses as to those of new businesses, to non-speculative as well as to speculative investments, and that the fact that an activity or pursuit has passed out of the promotional or experimental stage does not at all exempt it from the Act. But it may not be doubted that in close

of non-bearing trees totaling 103.21 acres and 43 were sales of bearing trees totaling 92.05 acres. Of the 42 persons, 31 purchased tracts less than 5 acres. The average holding of these persons is 1.33 acres. All but one of these small purchasers made only a single purchase, whereas the 11 purchasers of more than 5 acres purchased their holdings in 19 transactions. Sales of as little as .65 acre, .7 acre, .73 acre were made by the Howey Company. Of the acreage sold 166.54 acres (85%) are being cared for by the Service Company.

⁶ S. E. C. v. Joiner, 320 U. S. 344.

cases, like Joiner's was, the fact that an activity is purely promotional and speculative does have weight in answering the critical question, whether in fact the purchase was of a specific thing having specific value in itself or was of a thing having no value unless the enterprise as a whole should succeed. Where, in short, the seller is not conducting a speculative enterprise, and the thing sold has a specific and definite value apart from the success of the activity which sells it, it is exceedingly difficult to make out such a *nexus* between the sale and the enterprise sufficient to make the purchase not one of a specific thing but of an interest in the enterprise. On the other hand, when the enterprise is speculative and promotional in character and the thing sold has value only if the enterprise as a whole succeeds, the *nexus* between purchase and enterprise, which makes them one in the sense that the purchase is really not of a specific thing but of an interest in the enterprise, at once meets the eye of the judge and informs his judgment in the case.

We cannot agree, therefore, with appellant that the line of demarcation between the purchase of a specific thing and of an interest in an enterprise is to be drawn according to whether the purchaser manages the thing purchased or contracts with others for its management. Such a test would make every purchase of a thing, the management of which was to be conducted through agents, the purchase not of a thing but of an investment contract. Such a test, in the light of the established fact that a great number of properties, especially agricultural properties, are now run not by, but for, their owners under service contracts; is a completely unreal one. Here it is quite clear that each purchaser looked for the income from his investment to the fruitage of his own grove and not to the fruitage of the groves as a whole. It is quite clear, too, that each purchaser's income was in no sense dependent upon the purchase or development of other tracts than his own except in the sense that as grove owners generally prospered, each owner of a grove would. To say that because a purchaser of a farm or a building, at the time and in connection with the purchase, secured the services of another, whether the seller, someone connected with him, or someone entirely independent of him, to manage it, he became a purchaser not of property but of a security, an investment contract, is to stretch beyond the breaking point the analogy of the Joiner case. It is, indeed, to run a good principle into the ground. The judgment was right. It is

Affirmed.

Judgment

Extract from the Minutes of November 13, 1945
No. 11421

SECURITIES AND EXCHANGE COMMISSION

vs.

W. J. HOWEY COMPANY, AND HOWEY-IN-THE-HILLS SERVICE, INC.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Southern District of Florida, and was argued by counsel;

On consideration whereof, It is now here ordered, adjudged and decreed by this Court that the judgment of the said District Court in this cause be, and the same is hereby, affirmed.

Clerk's certificate

UNITED STATES OF AMERICA,

United States Circuit Court of Appeals, Fifth Circuit.

I, Oakley F. Dodd, Clerk of the United States Circuit Court of Appeals for the Fifth Circuit, do hereby certify that the pages numbered from 123 to 131 next preceding this certificate contain full, true and complete copies of all the pleadings, record entries and proceedings, including the opinion of the United States Circuit Court of Appeals for the Fifth Circuit, in a certain cause in said Court, numbered 11421, wherein Securities and Exchange Commission is appellant, and W. J. Howey Company, and Howey-In-The-Hills Service, Inc., are appellees, as full, true and complete as the originals of the same now remain in my office.

I further certify that the pages of the printed record numbered from 1 to 122 are identical with the printed record upon which said cause was heard and decided in the said Circuit Court of Appeals.

In testimony whereof, I hereunto subscribe my name and affix the seal of the said United States Circuit Court of Appeals, at my office in the City of New Orleans, Louisiana, in the Fifth Circuit, this 2nd day of February, A. D. 1946.

[SEAL]

(S) OAKLEY F. DODD,
*Clerk of the United States Circuit
Court of Appeals, Fifth Circuit.*

Supreme Court of the United States

Order allowing certiorari

Filed March 25, 1946

The petition herein for a writ of certiorari to the United States Circuit Court of Appeals for the Fifth Circuit is granted.

And it is further ordered that the duly certified copy of the transcript of the proceedings below which accompanied the petition shall be treated as though filed in response to such writ.

Mr. Justice JACKSON took no part in the consideration or decision of this application.

Securities and Exchange Commission v. W. J. Howey Co., 328 U.S. 293 (1946). Transcript of Record. 20 May 1944. The Making of Modern Law: U.S. Supreme Court Records and Briefs, 1832–1978, link.gale.com/apps/doc/DW0108423063/SCRB?u=usscl&sid=bookmark-SCRB&xid=51c97a1c&pg=1. Accessed 14 Oct. 2021.

Exhibit 11

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

SECURITIES AND EXCHANGE COMMISSION,

Plaintiff,

v.

RIPPLE LABS INC., BRADLEY GARLINGHOUSE, and
CHRISTIAN A. LARSEN,

Defendants.

20-cv-10832 (AT)

EXPERT REPORT OF PETER ADRIAENS

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I. Introduction

A. Relevant Expertise in Blockchain Technology and Entrepreneurship in Digital Industries

1. I, Peter Adriaens, am a Professor of Engineering, Finance and Entrepreneurship at The University of Michigan (1992-current). I hold appointments in Civil and Environmental Engineering at the Ross School of Business and the School of Environment and Sustainability. I am a member of the American Academy of Environmental Engineering, and a member of the National Academy of Engineering in Belgium. I have held distinguished professorships in Entrepreneurship and Finance at Sichuan University (China; 2006-2016), and a Finnish Distinguished Professorship at the Research Institute of the Finnish Economy (Helsinki; 2013-2016).

2. I am an engineer and scientist by training with an undergraduate (1984) and master's (1986) degree from the University of Gent, Belgium, a doctorate (1989) from the University of California, Riverside, and postdoctoral training (1992) at Stanford University. I have devoted a substantial portion of my career – both in and outside the classroom – to two fields: blockchain technology and entrepreneurship in digital industries.

3. Since 2006, I have worked in the area of finance and entrepreneurship as a faculty member at the Ross School of Business through the Zell-Lurie Institute for Entrepreneurial Studies. As one of the leading Professors of Entrepreneurship at the University of Michigan, I developed and have taught courses on Entrepreneurial Business Fundamentals, CleanTech Entrepreneurship, and Business Model Design for business (MBA) and engineering domain expert students. Over 1,200 students have participated in my entrepreneurship courses. Course work covers entrepreneurial strategy, marketing, financing and valuation of startups, and business model design. Students are expected to engage with a wide range of startups, including

in digital finance. I have developed and have taught courses on Engineering Economics and Finance, Infrastructure Project Finance, Environmental Finance, and Blockchain Finance.

4. Since 2015, my expertise has focused on financial technology (“fintech”) applications, financial modeling, and blockchain tokenization of infrastructure assets. My research and teaching focus on digital business and finance models for infrastructure, blockchain applications for “smart cities” infrastructure, and artificial intelligence/machine learning models for pricing of sustainability premiums in the fixed income (corporate and municipal bonds) and equities markets. This work is done in collaboration with – and sponsorship from – financial, corporate, and high-tech startup clients seeking to differentiate in the digitization of real assets and application of cryptocurrencies for infrastructure financing.

5. Since 2016, I have directed the Center for Smart Infrastructure Finance¹ and associated namesake Master of Engineering program² at the University of Michigan. The Center focuses on efficient (data-driven) financing mechanisms for public and private infrastructure systems such as water, energy, waste, transportation, and mobility. This includes blockchain tokenization models and other digital asset monetization structures. The Center is a cofounder of the University of Michigan FinTech Collaboratory, along with the FinTech Initiative³ in the University of Michigan Ross School of Business and the Center on Finance, Law & Policy⁴ in the University of Michigan Ford School for Public Policy.

¹ *Center for Smart Infrastructure Finance*, University of Michigan, <https://www.difin.io>.

² *Smart Infrastructure Finance MEng*, University of Michigan, <https://masters.engin.umich.edu/degree/smart-infrastructure-finance-meng/>.

³ *Michigan Ross FinTech Initiative*, University of Michigan, <https://michiganross.umich.edu/faculty-research/institutes-centers-initiatives/fintech-initiative>.

⁴ *Center on Finance, Law & Policy*, University of Michigan, <https://fordschool.umich.edu/research-center/center-finance-law-policy>.

6. I also supervise a research group at the University of Michigan, funded by research grants from government agencies and corporate contracts. The team consists (time variable) of around 6 undergraduate and 10 graduate (Master's and PhD-level) students, as well as a postdoctoral researcher, who work on a wide range of fintech projects. The group's work is not narrowly limited to blockchain and cryptocurrency research, but includes the broader application of digital models in finance. Examples include infrastructure asset tokenization, a blockchain application for digital delivery of construction projects, and blockchain platforms for integration of financial and impact (environmental, social, and governance) for resilient infrastructure. This work has been presented at academic risk management meetings (e.g. International Risk Management in Banking and Finance), Asian Development Bank/European Investment Bank (ADB/EIB) conferences on blockchain financing of infrastructure assets in emerging and developing countries, and National Science Foundation-funded conferences for mathematical societies. In addition, I serve on the editorial review board of the Journal of Blockchain Research, a leading, if fairly new, peer-reviewed journal in this area.

7. I also serve as a faculty mentor to Blockchain@Michigan,⁵ a student group engaged in peer-to-peer training modules for smart contract coding and decentralized application (dapp) development with a wide range of industry partners. These industry partners include public corporations, financial institutions, and technology companies.

8. Setting aside my teaching and research, I also have substantial practical experience from which I derive expertise in blockchain technology and entrepreneurship. During the past 15 years, I was an advisory board member of the Wolverine Venture Fund⁶ and the Lurie

⁵ *Blockchain at Michigan*, <https://www.michiganblockchain.org>.

⁶ *Wolverine Venture Fund*, University of Michigan, <http://zli.umich.edu/wolverine-venture-fund>.

Commercialization Fund, focused on investments in technology companies, including increasingly digital innovations and cryptoassets. As an advisor to the funds, my role was to identify early-stage companies for potential (seed or A round) investment, work with the analyst teams on due diligence analysis to assess the company's attractiveness for equity investment, and participate in the ultimate recommendations for financing.

9. From 2013-2016, I worked as Director on the financial research program at the Research Institute of the Finnish Economy. I focused on economic transitioning under climate risk constraints, and oversaw a team of 15 experts in finance, digital assets, and business models. A substantial fraction of this work emphasized algorithmic financial decision-making in startups and lending to corporations, culminating in a book I co-authored with a colleague at the Institute on "Financial Technology for Industrial Renewal."⁷ The research program focused on the development of a new type of multi-asset investment model structure to enable systemic economic development. The investment models were piloted in the energy, transportation mobility, and green chemistry industry sectors. Multi-asset means that the model sought to blend investments in thematic publicly traded indexes, equity investment funds, and business loan portfolios. The decision tool to select companies for investment – and to assess which type of investment was most appropriate – was a digital, rules-based algorithm, rendering this an attractive value proposition for a blockchain application. At the time of the program, blockchain and cryptocurrencies were still incipient, but the premise of an open ledger was considered and discussed among the team's partners.

10. I serve and have served on several advisory boards for companies and organizations that are focused on advancing the blockchain and cryptocurrency industry, and new applications with

⁷ *Financial Technology for Industrial Renewal*, ETLA, <https://www.etla.fi/en/publications/financial-technology-for-industrial-renewal/>.

societal and financial value. These include, for example, Detroit FinTech Bay (DFB), a for-profit startup incubator with emphasis on attracting leading technology companies in the payments and enterprise software space, in partnership with commercial banks seeking fintech solutions. I am engaged as a partner and advisory board member with Blockchain Triangle, a fintech platform and issuer of digital assets that focuses on the integration of environmental, social, and governance (ESG) criteria in financial investments using blockchain tokens.⁸

11. I also am cofounder of and investor in two startups. The first is Corymbus Asset Management, which was financed through client contracts (as opposed to venture capital or other forms of equity financing). The second is Equarius Risk Analytics (ERA)⁹, which is currently in the seed/A round-financing stages. ERA is a fintech firm focused on using mathematical algorithms that price the impact of water risk (water availability, droughts, floods) in share price volatility and investment returns. These insights are then used to build indexes that can be licensed to investment managers. Recently, the company has focused on tracking financially-material water risk across corporate facility portfolios for Nikkei 225 and S&P 500 companies. The distributed allocation risk from a single listed corporation to its portfolio of facilities and operations renders this an attractive application for blockchain technology, which allows for tracking financial and water risk metrics across a network of facilities (nodes) in a wide range of geographies.

B. Relationship to Ripple Through UBRI

12. Ripple Labs Inc. (“Ripple”) funds what is known as the University Blockchain Research Initiative (“UBRI”). UBRI brings together dozens of global universities in the U.S., Europe, and

⁸ *Blockchain Triangle*, <http://www.bctrangle.com>. The company is a registered member of the Bermuda Business Development Agency under its new Digital Asset Business regulatory regime. *See Digital Assets Supervision and Regulation in Bermuda*, Bermuda Monetary Authority, <https://www.bma.bm/digital-assets-supervision-regulation>.

⁹ *Equarius Risk Analytics*, <https://www.equariusrisk.com>.

Asia to “support and accelerate academic research, technical development and innovation in blockchain, cryptocurrency and digital payments.”¹⁰ While the FinTech Collaboratory (an initiative across three schools, as mentioned in ¶ 5) is funded in part by a gift from UBRI, the Center for Smart Infrastructure Finance I direct (mentioned in ¶ 5, and a member of the Collaboratory) has multiple other sources of funding, including from Nuveen, Blockchain Triangle, and Ford, as well as gifts from other alumni in the financial services industry. This gift arrangement came about through Asheesh Birla, then Ripple’s Head of Product and now the General Manager of RippleNet. Mr. Birla is a University of Michigan alumnus and was until the first half 2018 our Ripple lead contact for UBRI; he reached out to inquire about the University of Michigan’s strengths in blockchain and interest to join UBRI. His inquiry brought the University of Michigan Engineering, Business, and Policy Schools together under the current UBRI gift program. I have not had contact with Mr. Birla since the University joined UBRI, because (as I explain below) his role as Manager of University Partnerships at Ripple was taken over by Lauren Weymouth, who became Director of University Partnerships in August 2018. As part of UBRI, the University of Michigan maintains a validator node on the XRP Ledger (which I describe in greater detail below), but the University of Michigan has not actively participated in voting on the XRP Ledger because of University policies governing services under corporate gift agreements.

13. The original gift agreement with the University of Michigan was \$1 million and was executed in December 2018 for a period of 2 years, with a possibility of extension and refunding. That original gift was paid out in two installments (half in 2019, half in 2020). The funds were allocated between the Center for Infrastructure Finance in the College of Engineering, the Center

¹⁰ *University Blockchain Research Initiative*, Ripple, <https://ubri.ripple.com/>.

on Finance Law and Policy in the Ford School for Public Policy, and the FinTech Initiative at the Ross School of Business. In April 2021, the gift was extended for another two years with funding of \$250,000 per year, again split between the three schools mentioned in the original gift agreement.

14. As an UBRI member, I engage with faculty colleagues and students in research and community outreach projects, as well as in teaching and mentoring, and participate in the annual UBRI conference which brings together all of the global universities that have received funding under this partnership program. I attended the first UBRI conference gathering at the University of California, Berkeley in 2019, which provided further insights in the diversity of underlying technologies behind the XRP Ledger, its commercial uses and business models, challenges with product deployment, and development of business cases. The conference is structured such that it facilitates discussions of research and teaching activities with colleagues worldwide on topics such as security, decentralized finance (“DeFi”), “blockchain for good,” and blockchain policy. The second conference was held virtually in 2020.

15. There is no commercial or contractual pay-for-service relationship between myself or the University of Michigan on the one hand and Ripple or UBRI on the other. Pursuant to University of Michigan gift and donations policies,¹¹ the UBRI gift serves to advance research and teaching objectives of the recipient University of Michigan schools without interference or undue influence; it does not have specific expectations or deliverables from University of Michigan (or other university) recipients of these gifts or the faculty members associated with UBRI initiatives. My communications with Ripple since December 2018 regarding UBRI have been limited to Ms. Weymouth, Director of University Partnerships at Ripple (manager of the

¹¹ University of Michigan, *Standard Practice Guide Policies: Gift Acceptance*, <https://spg.umich.edu/policy/602.02>.

UBRI network). These interactions pertain to the use of the gift funds at the University of Michigan, and our participation in the annual UBRI conference. While the Defendants speak at the conference, the conversations between them and the participants are limited to research needs and opportunities.

16. Aside from my work in this matter and what I have described here, I have no relationship with Ripple. I have no relationship with Chris Larsen or Brad Garlinghouse and have never met or spoken with either of them. Further, I own no XRP and am not a shareholder in Ripple.

17. The opinions and views presented in this work are independent and entirely based on my business and digital innovation expertise.

C. Summary of Opinions

18. My assignment in this case is to offer testimony concerning certain topics that draw on my expertise in blockchain technology and entrepreneurship regarding Ripple, the XRP Ledger and XRP. In particular, my opinions are as follows:

19. **Opinion 1. The XRP Ledger and its native currency, XRP, represented an important innovation in blockchain technology.** Blockchain technology has the potential to transform many sectors of the economy, and has already begun to do so. The XRP Ledger, and consequently XRP, represent an important innovation in the application of blockchain technology to payment systems. In particular, when the XRP Ledger was launched, blockchain ledgers required mining to close and validate transactions involving cryptocurrencies such as Bitcoin and Litecoin – a process that takes at least 10 minutes to confirm a transaction and entails detrimental environmental effects. The XRP Ledger was only the second ledger (after bitcoin), and was the first ledger on which transactions were to be validated using a consensus mechanism that did not rely on mining. As a result, the XRP Ledger offered one of the fastest and cheapest blockchain technologies with negligible energy consumption, and therefore

introduced and continues to have a value proposition that addresses some of the inefficiencies and externalities of prior proof of work validation mechanisms.

20. **Opinion 2. Ripple’s iterative development of its business model and products is consistent with start-up practice in high-technology industries.** It is typical for a technology startup to pivot multiple times on product and business models as it encounters technical challenges, receives market feedback from partners for target applications, responds to regulatory changes, or adjusts value propositions in reaction to societal forces. Issues of security, confidentiality, trust, and reactions from incumbents or market makers result in a new articulation of the value proposition and scalable commercial product with broad adoption potential. The development of applications leveraging blockchain technologies in general, and Ripple’s business model in particular, required a similar iterative process of developing applications leveraging the open-source XRP Ledger that would satisfy market demand (here, for blockchain-based global settlements).

21. **Opinion 3. The XRP Ledger and its native currency, XRP, have commercial utility that third parties have leveraged in the creation or advancement of their business models, demonstrating the decentralized nature of the XRP Ledger.** Ripple’s vision was to allow money to move as easily as information by creating a global blockchain-based payments system that could compete with Society for Worldwide Financial Telecommunications (“SWIFT”) messaging and intermediary bank transfer fees, by using the native currency of the XRP Ledger, XRP, as a bridge currency. As is typical for startup companies that articulate a bold vision, the path to that market has required Ripple to demonstrate that value proposition using targeted use cases and products with specific partners. Ripple did precisely that, as illustrated by its own product-portfolio buildout. As a platform-software services company, Ripple has aspired to

develop its own proprietary software products that utilize the XRP Ledger while also engaging an ecosystem of developers for new business applications through Xpring and RippleX, as discussed further below.

22. Moreover, as an open-source blockchain, the XRP Ledger is an innovative technology that other developers can and do use to build novel applications, which may or may not use the native currency XRP. Setting aside Ripple's vision to encourage adoption of its software products, others – various payment processors, micropayment platforms, non-profits, and other companies – have built application use cases leveraging the XRP Ledger or supporting XRP, which demonstrate these innovative uses and commercial value of these technologies.

23. I explain these opinions as follows. As background, I first address the nature of blockchain technology (in Part II) and of the cryptocurrency industry (in Part III). I then explain the evolution of Ripple's business model and the utility of the XRP Ledger and XRP in light of that background (in Parts IV and V, respectively).

24. My curriculum vitae, which includes a list of my publications and all other cases in which, during the past four years, I testified as an expert at trial or by deposition, is attached as Appendix A. The facts and data I have relied on and considered in forming my opinions are disclosed in the report or in Appendix B. In preparing this report, I have been compensated at a rate of \$750 per hour for all services except for testimony during a deposition, at trial, or at any hearings, for which I will be compensated at a rate of \$950 per hour. No part of my compensation is contingent on the substance of my opinions or on the outcome of this case. 25. My opinions are based on the information available to me as of the date of this report. Should additional relevant documents or information be made available to me, I may adjust or supplement my opinions as appropriate.

II. Blockchain Innovations Have Revolutionized Numerous Fields

A. Blockchain Technology is an Innovative Way To Regulate and Maintain Administrative Control Over Contracts, Transactions, and Their Records

26. Blockchain technology addresses inefficiencies in historical methods for administering contracts, transactions, and their records. Contracts are (of course) among the defining structures in our economic, legal, and political systems. They protect assets and set organizational boundaries and responsibilities; they establish and verify identities and chronicle events; they govern interactions among nations, organizations, communities, and individuals; and they guide managerial and social action. But in certain respects, contracts and the bureaucracies formed to manage them have not kept up with the economy's digital transformation. In particular, parties looking to complete a transaction and verify that that transaction was completed traditionally had to enlist the services of central validating and verifying authorities, such as banks for financial transactions, to serve as intermediaries.

27. Blockchain technology provides an innovative way to regulate and maintain administrative control over contracts, transactions, and their records. A blockchain is an open, distributed ledger that can record transactions between two parties efficiently, and in a verifiable and permanent manner that does not require the presence of intermediaries and central validating and verifying authorities. In particular, contracts are embedded in digital code and stored in transparent, shared databases, where they are cryptographically protected from deletion, tampering, and revision. Every agreement, every process, every task, and every payment has a digital record and signature (identification or ID) that can be identified, validated, stored, and shared. Ideally, blockchains enable individuals, organizations, machines, and algorithms to freely transact and interact with one another with limited friction. Five principles generally govern how the blockchain technology innovation works:

- (1) Distributed (Decentralized) Database. This means that each party on a blockchain has access to the entire database and its complete history. No single party controls the data or the information. Every party can verify the records of its transaction partners directly, without an intermediary.
- (2) Peer-to-Peer. Communication occurs directly between peers who plan to engage in a transaction, instead of through a central node. Each node stores and forwards information to all other nodes.
- (3) Transparency and Anonymity. Every transaction and its associated quantity of cryptocurrency are visible to anyone with access to the system. Each node, or user, on a blockchain has a unique alphanumeric address that identifies it. This unique address key is pseudonymous. Users can choose to remain anonymous or provide proof of their identity to others. Transactions occur between blockchain addresses. Blockchains can be permissionless (open) or permissioned (closed to anyone not invited to have access), and multiple variations thereof, depending on the contractual problem being solved.
- (4) Irreversibility of Records. Once a transaction is entered in the database and the accounts are updated, the records cannot be altered, because they are linked to every transaction record that came before them (hence the term “chain”). Various computational algorithms and approaches are deployed to ensure that the recording on the database is permanent, chronologically ordered, and available to all others with access to the ledger.
- (5) Computational Logic. The digital nature of the ledgers means that blockchain transactions can be tied to computational logic and therefore can be programmed. This allows for businesses and other organizations to set up algorithms and rules that automatically trigger transactions between nodes (users of the blockchain).

28. Since blockchain transactions require unique encrypted keys or access codes, this information needs to be securely stored. This is typically done via digital wallets (or “e-wallets”). A digital wallet is a software-based system that stores users’ payment information and passwords for numerous payment methods and websites. By using a digital wallet, users can complete purchases easily and quickly, and keep track of their blockchain-based transactions.

Though there are plenty of wallet programs and hardware to choose from, they generally fall under two main types: hot and cold wallets. They vary in levels of security, accessibility, and other features. A hot wallet can also be called a software wallet because it is connected to a web server, and it initiates cryptocurrency transactions via browser-based webpages.¹² Its key role is to sign and authorize financial transactions digitally between the owner and end-users. A collection of private keys stored on a program connected to the internet is used to store and send different currencies. A cold wallet, on the other hand, is a hardware wallet or cold storage, a physical device that keeps the generation and storage of cryptocurrency completely offline.¹³ Many look like USB drives. Most exchanges and brokers will have a large part of their cryptocurrency in cold wallets. This makes it impossible for hackers to steal the cryptocurrency from the wallets, because of the need to be physically at this location. To start transactions, cold wallets will have to be turned on and connected to the internet.¹⁴ Given the security trade-offs when using either type of crypto wallet, a combination of cold and hot wallets is usually ideal.

29. Digital wallets can be used in conjunction with mobile payment systems, which allow customers to pay for purchases with their smartphones. Digital interactions are executed using near-field communication technology, a set of communication protocols between two electronic devices over less than two inches in distance.

¹² *What is a Hot Wallet?* Corporate Finance Institute, <https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/hot-wallet/>.

¹³ Luke Conway, *What are the Safest Ways to Store Bitcoin?* (Feb. 28, 2021), Investopedia, <https://www.investopedia.com/news/bitcoin-safe-storage-cold-wallet/>.

¹⁴ Cryptomedia Staff, *Hot Wallets vs. Cold Wallets* (July 4, 2021), Cryptomedia, <https://www.gemini.com/cryptopedia/crypto-wallets-hot-cold#section-hot-wallets-pros-and-cons>.

30. Chart 1 explains how a typical transaction on the blockchain works:

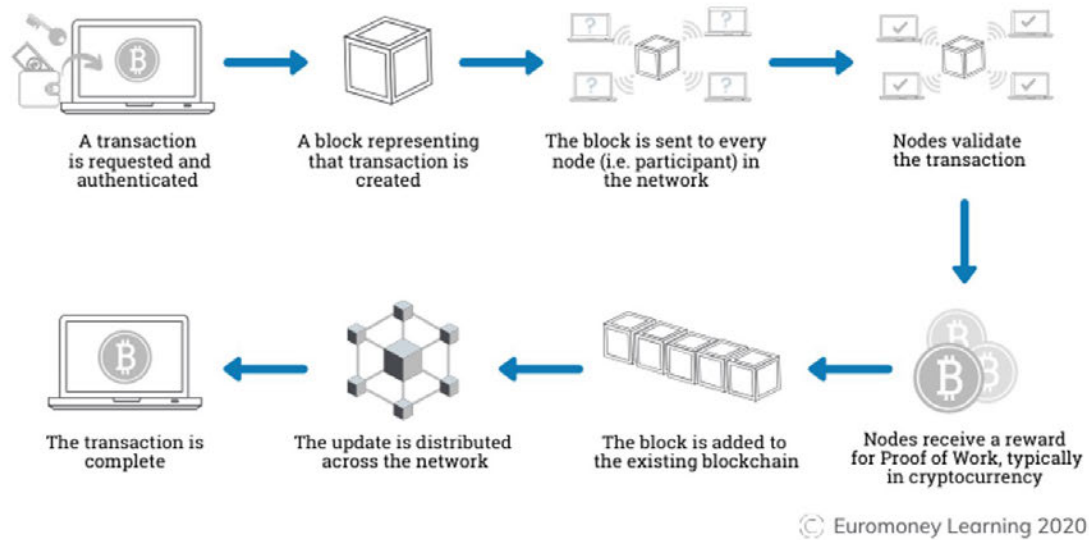


Chart 1. Typical Cryptocurrency Transaction through Digital Wallets
(Source: Euromoney Learning 2020.¹⁵)

31. Blockchain-ledger software can be designed to address many different challenges and use cases. Typically, these designs result from code modifications in the blockchain’s open-source software source code, including in how transactions are validated.¹⁶ In the latter case, this change results in what is known as a “fork” in the blockchain. That fork becomes independent of the original blockchain, and it can result in a software upgrade or even a new currency.¹⁷ Forks

¹⁵ *How does a transaction get into the blockchain*, Euromoney, <https://www.euromoney.com/learning/blockchain-explained/how-transactions-get-into-the-blockchain>. This chart illustrates a typical transaction for a ledger that uses a proof-of-work (“PoW”) consensus mechanism, like bitcoin or ether. As described below, the XRP Ledger uses a different consensus mechanism (not proof of work reward system), but the sequence illustrated here of how transactions occur over the XRP Ledger blockchain is otherwise the same.

¹⁶ *What is “Open Source” and Why Is It Important?*, Coin center, <https://www.coincenter.org/education/advanced-topics/open-source/>.

¹⁷ Nate Maddrey, *Blockchain Forks Explained*, <https://medium.com/digitalassetresearch/blockchain-forks-explained-8ccf304b97c8>.

that are incompatible with older versions of the blockchain software are called “hard forks”; they typically result from changes in consensus rules (a concept on which I elaborate in Part II.B.2) that make previous versions of the software incompatible. A hard fork can be effectuated either by the original developer of the blockchain software or a third party. Chart 2 illustrates how a fork occurs:

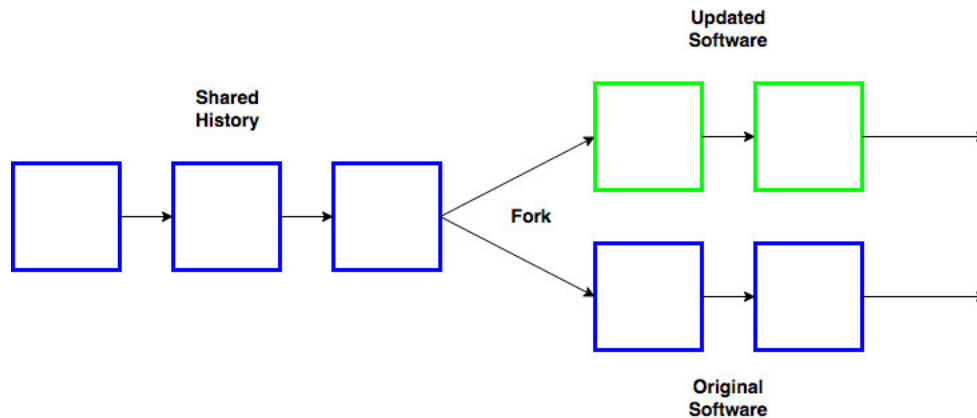


Chart 2. Hard fork on a blockchain (Source: Digital Asset Research¹⁸)

B. Cryptocurrency Represents a Particularly Successful Application of Blockchain Technology

1. Bitcoin Was the First Successful Cryptocurrency

32. Blockchain technology enables (among other things) a novel medium of exchange known as cryptocurrency.¹⁹ The concept of a cryptocurrency was first introduced in 2008 via a white paper published under the pseudonym Satoshi Nakamoto.²⁰ The document proposed an electronic payments network that does not require the trust of a third-party financial institution. The following year, Nakamoto launched the open-source Bitcoin network (“Bitcoin”) in collaboration with a group of online cryptography developers.²¹

¹⁸ *Id.*

¹⁹ I use the term “cryptocurrency” interchangeably with the term “virtual currency.”

²⁰ *Bitcoin: A Peer-to-Peer Electronic Cash System*, bitcoin, <https://bitcoin.org/bitcoin.pdf>.

²¹ “Bitcoin” (with a capital “B”) refers to the blockchain; “bitcoin” (with a lower-case “b”) refers to the cryptocurrency used by that blockchain; “BTC,” pronounced “bitcoins,” likewise refers to the cryptocurrency.

33. The primary purpose of Bitcoin was to securely store value in a public, decentralized, and self-sustained system. It achieved this using a blockchain that served as a series of records cryptographically chained together and maintained by a network of distributed computers. Each user had one or more 34-character public keys that served as a unique Bitcoin address, as well as a 64-character private key that functioned as a password. These keys were encrypted, backed up, and stored offline to prevent hackers from sending or withdrawing unauthorized funds. When a user sends bitcoin, the transaction is bundled in a block with 1,000 to 2,500 other transactions and published to the network. Transaction data include the bitcoin amount, sender and recipient public keys, transaction fee, and time stamps, as well as a unique identifier called a hash. Once a block is confirmed by the network, it is added to the Bitcoin blockchain.

34. To join the Bitcoin network, users needed to install the Bitcoin open-source software on a computer. Once installed, the computer then connects to the rest of the nodes on the network and downloads the latest Bitcoin blockchain. The computer then serves as a node on the network and allows users to send and receive digital coins called BTC (“bitcoins”).

35. The Bitcoin blockchain therefore enabled the ongoing maintenance of a public ledger with irreversible records that could not be taken down or changed by a central governing body. The Bitcoin blockchain was and remains highly successful: Current estimates suggest there are over 700,000 blocks on the Bitcoin blockchain.

2. *Alternative Cryptocurrencies – Many Built Atop Alternative Means of Validating Transactions – Have Since Emerged To Rival Bitcoin*

36. As Bitcoin increased in popularity and the idea of decentralized and encrypted currencies caught on, the first alternative cryptocurrencies appeared. Sometimes known as “altcoins,” these cryptocurrencies generally tried to improve on the original Bitcoin design by offering greater speed, anonymity, or other advantages (such as energy requirements for validation). According

to crypto market capitalization aggregators, as of May 2021, there were 10,115 different cryptocurrencies listed, with that number rising daily, across over 20,000 different types of markets.²² Among the earliest cryptocurrencies were Namecoin (launched in 2011), XRP (launched in 2012), and ether (launched in 2015). (The latter is now the second-largest cryptocurrency in market capitalization after bitcoin.)

37. One factor that differentiates some blockchain ledgers from others is how they validate transactions. There are thousands of digital currencies (including, for example, Einsteinium, Litecoin, Dash, Zcash, and Novacoin) that use the Bitcoin blockchain codebase, with developers changing a few minor details. But some other ledgers, (including, as I will explain, the XRP Ledger) began to introduce new standards and methods for validating transactions.

38. Bitcoin and Ethereum (the blockchain for which ether is the native currency) use the **proof-of-work** (PoW) method to incentivize nodes on the network to validate transactions and to enter new BTC or ether in circulation. This means that nodes on the network, also referred to as “miners,” validate a transaction by referencing the historical records on the blockchain to assure the sender has sufficient funds. Validated transactions are bundled into a block and added to a public record: the blockchain. Nodes then maintain records of those blocks so that they can be verified into the future. In blockchains that use PoW, to then determine which miner published the latest block, the nodes (I will use Bitcoin nodes here for illustrative purposes, though the same process is used for Ethereum) utilize computer processing power to solve a complex numerical problem. By solving computational math problems, Bitcoin miners make the bitcoin payment network more trustworthy and secure by verifying its transaction information. The first node to complete the problem publishes the next block to the blockchain and is rewarded new

²² *What Are Altcoins and Why Are There Over 5,000 of Them?*, Bitcoin.com, <https://news.bitcoin.com/altcoins-why-over-5000/>.

BTC as well as any associated transaction fees. This creates a competition for processing power. On average, it takes the fastest miners 10 minutes to solve the problem, resulting in an approximately 10-minute confirmation time. A Bitcoin transaction is considered finalized after six confirmations, hence a 60-minute transaction time. A limitation of the Bitcoin blockchain is its throughput of seven transactions per second. At the beginning, miners received an award of 50 BTC per block. By design, the reward halves after 210,000 new blocks, or about every four years, until reaching the maximum supply of 21 million coins. In May 2020, the block reward was halved for a third time to 6.25 BTC. Unlike Bitcoin, which is designed with a maximum cap, Ethereum has no limit on the total number of ether coins that can be minted. Ether follows the same principles as bitcoin in that its rewards and distribution are regulated on a yearly basis.

39. Because new BTC are created through a computationally intensive process, the Bitcoin network – from its inception until now – is a massive draw on the world’s energy resources. Until May 2021, half of all BTC were mined in China, accounting for 140 terawatts of energy. Following China’s decision to expel miners, the U.S. has become the new haven for bitcoin mining, with miners seeking to draw on stranded renewable resources.²³ Still, PoW validations draw the equivalent of 70 terawatt hours of energy per year, or 0.33% of the world’s total electricity production. This is roughly equivalent to the annual energy draw of countries like Bangladesh and Chile. In other words, the production of just one bitcoin consumes as much energy as 18 American or more than 1,500 Nigerian citizens per year. Currently, a single Ethereum transaction consumes as much electricity as an average U.S. household uses in a workweek, and has a carbon footprint equivalent to 140,893 Visa credit card transactions or

²³ MacKenzie Sigalos, *How the U.S. Became the World’s New Bitcoin Mining Hub*, CNBC (July 17, 2021), <https://www.cnbc.com/2021/07/17/bitcoin-miners-moving-to-us-carbon-footprint.html>.

10,595 hours of watching YouTube.²⁴ Because of PoW dependence on energy generation, alternative methods of transaction validation have been developed.

40. Over the years, many alternatives to PoW have emerged.²⁵ Despite having similar goals, these validation mechanisms ensure consensus with different approaches that have evolved to meet emerging needs. No dominant validation mechanism yet exists, and it is difficult to predict which validation mechanisms will become the standard with broad adoption because blockchain technology itself remains fairly new.

3. *The XRP Ledger Represented a Substantial Innovation in Blockchain Technology (a “better bitcoin”)*

41. For present purposes, I focus on the innovations underlying the second ledger to be created: the XRP Ledger.²⁶ The XRP Ledger was designed to improve on the promise of the Bitcoin ledger while simultaneously addressing certain of its inherent problems, including its energy consumption. Three improvements are particularly relevant: Speed of transactions, security, and environmental impact. These were enabled by features such as a decentralized

²⁴ Adam Bluestein, Ethereum risks it all on going green (July 29, 2021), Fortune Magazine, <https://fortune.com/2021/07/29/ethereum-going-green-ether-crypto-carbon-footprint/#:~:text=Currently%2C%20a%20single%20Ethereum%20transaction,10%2C595%20hours%20of%20watching%20YouTube>.

²⁵ These include (among others) proof of stake, *see* Emanuel Coen, *Everything You Need to Know About Ethereum 2.0 and Proof-of-Stake*, Cryptotesters, <https://cryptotesters.com/blog/ethereum-staking-explained>; proof of capacity, *see Proof of capacity (PoC)*, Consensus, <https://tokens-economy.gitbook.io/consensus/chain-based-proof-of-capacity-space/proof-of-capacity-poc>; and proof of activity, *see* Steve Walters, *Proof of Activity Explained: A Hybrid Consensus Algorithm*, CoinBureau, <https://www.coinbureau.com/blockchain/proof-of-activity-explained-hybrid-consensus-algorithm/>.

²⁶ In describing the XRP Ledger, XRP, and Ripple throughout this report, in addition to the cited sources, I am relying on my personal dealings with Ripple in connection with UBRI and developing the gift to the University of Michigan; my experience as an expert in blockchain technology; a business case I teach in my entrepreneurship courses on “*Ripple: The Business of Crypto*,” authored by David B. Yoffie and George Gonzalez from the Harvard Business School (Feb. 18, 2020); Ripple’s Wells Submission; and public sources including (i) Ripple, *Our Story*, <https://ripple.com/company>, (ii) Ripple, *XRP, Digital Asset for Real-Time Global Payments*, <https://ripple.com/xrp/>, (iii) XRPL.org, *XRPL Overview*, <https://xrpl.org/xrp-ledger-overview.html>, (iv) XRPL.org, *History*, <https://xrpl.org/history.html>, and (v) XRPL.org, *Decentralized Exchange*, <https://xrpl.org/decentralized-exchange.html>.

exchange, decentralized validation, and a unique consensus network protocol, as will be discussed hereafter.

42. Decentralized exchange. A notable feature of the XRP Ledger – which represented a significant innovation over Bitcoin, the only other ledger in existence at the time of its creation – is that the XRP Ledger contains a fully-functional decentralized exchange, called the “Dex.” The Dex allows users to trade currencies or other real-world commodities for XRP, or for each other. The Dex contains “autobridging” technology, which automatically connects order books using XRP as an intermediary when it reduces costs. It was this Dex technology that enabled, for example, the creation of a Bullion Exchange in 2014, which used the XRP Ledger to convert gold and precious metals into any currency (discussed in greater detail, below).

43. Decentralized validation. In blockchain, decentralization refers to the transfer of control and decision-making from a centralized entity (individual, organization, or group thereof) to a distributed network. Decentralized networks strive to reduce the level of trust (and thus dependence) that participants must place in each other and deter their ability to exert authority or control over one another in ways that degrade the functionality of the network. In other words, the purpose of decentralized validation is to avoid one party having outsized control over another to make a network decision (to validate a transaction).

44. Since there is no central authority present to validate and verify the transactions, and every transaction in a blockchain is considered completely secured and verified, consensus protocols are a core part of any blockchain network. A consensus mechanism is a fault-tolerant mechanism that is used in computer and blockchain systems to achieve an agreement on a single data value or a single state of the network among distributed processes or multi-agent systems, such as cryptocurrencies. A consensus algorithm is used for all the peers of the blockchain

network to reach a common agreement about the present state of the distributed ledger. In this way, consensus algorithms achieve reliability in the network and establish trust between unknown peers (i.e. distributed validation) in a distributed computing environment. Essentially, the consensus protocol makes sure that every new block that is added to the blockchain is the one and only version of the truth that is agreed upon by all the nodes in the blockchain. While there are different consensus algorithms based on specific objectives such as coming to an agreement, collaboration, co-operation, equal rights to every node, and mandatory participation of each node in the consensus process, they all aim at finding a common agreement that is a win for the entire network.

45. The XRP Ledger’s consensus network protocol. To process transactions, the XRP Ledger uses a consensus network of validators. The ledger is standardized with regard to protocols (objectives in the consensus algorithm) and acceptance of validators onto the network, and it is decentralized with respect to how transactions are validated. The latter is the key requirement of the decentralized validation proposition of a blockchain. In addition, Ripple releases a recommended Unique Node List (“UNL”) of trusted and verified validators. XRP Ledger users are not required to use these validators for transactions. In addition, validators operate independently without needing to check in with a central system before updating their ledger.

46. The XRP Ledger’s consensus protocol breaks up the common notion of a shared set of validator nodes. Rather, it lets every node declare other nodes it subjectively trusts in a UNL. A validator respects only the opinions of nodes in its UNL for validating transactions. Unlike Bitcoin mining, where a single node (by being the fastest miner to solve a numerical problem) wins the right to publish the next block, the entire XRP Ledger “consensus network” participates

in updating the Ledger. The XRP Ledger's network protocol is designed to agree on groups of transactions that are executed as a single unit every four seconds. The number of validators has grown to 150 around the world, including clients, users, and company servers; notable validators include Microsoft and Massachusetts Institute of Technology (MIT).

47. Not all XRP Ledger validators participate in the consensus process all the time. In fact, a smaller subset of validators consistently is responsible for approval of transactions, and serves three functions: it connects to a network of peers, relays cryptographically signed transactions, and maintains a local copy of the complete shared global ledger. What makes an XRP Ledger validator different from other consensus validation protocols is that the validator also issues validation messages, which are sets of candidate transactions for evaluation by the XRP Ledger network during the consensus process.

48. Improved speed of transactions. The features of decentralized validation and the XRP Ledger's consensus protocol enabled an increase in the speed with which it can validate transactions, and make settlement of the transaction faster than traditional payment rails. Further, those transactions can be done not only quickly and cheaply, but also securely given the features implemented on the XRP Ledger. The XRP Ledger can process 1,500 transactions per second with an average ledger settlement (approval time) of 3-5 seconds. This is in comparison to ether, which takes an average of 13 seconds, and bitcoin, which can take around 10 minutes. This speed makes XRP a practical currency for instant transactions in comparison to other leading cryptocurrencies.²⁷

49. Improved security. A consensus protocol in a blockchain network must satisfy safety and liveness. Safety means that nothing "bad" ever happens: the ledger does not fork and malicious

²⁷ *What is the Difference Between Ripple XRP & Other Cryptocurrencies?*, Plus500, <https://www.plus500.com/en-US/Instruments/XRPUSD/Difference-Between-Ripple-XRP-Other-Cryptocurrencies~3>.

participants cannot double-spend a token. Liveness means that something “good” happens over and over again, so that the network continues to process transactions and makes progress.

Violating either property creates trouble for all participants in the network. This has to be a condition for Bitcoin as it is for Ethereum or XRP Ledger or any other blockchain. To prevent malicious activity, each XRP Ledger validator must maintain and have approved a list of trusted servers (the Unique Node List or UNL) with which it compares candidate transactions. The network is designed to rely on trusted validator parties that grow organically, while pushing out dishonest nodes. While validators are not financially rewarded, they are able to vote on updates and have an interest in the success of the network. As a different mechanism from mining, the consensus validator protocol needed to be designed to protect against security vulnerabilities, to instill confidence from users and exchanges. However, what makes the XRP Ledger attractive from a speed and cost perspective also makes it potentially vulnerable if protocol conditions such as the need for synchronized clocks, timely message delivery, the presence of a fault-free network, and an a-priori agreement on common trusted nodes with the UNL are violated. As I will discuss later, the XRP Ledger addressed this security vulnerability using features such as invariant checking to assess incorrect transactions by checking on invalid or corrupt data on the XRP Ledger, as I describe hereafter.

50. Similar to the PoW validation for bitcoin transactions, the XRP Ledger is dependent on the honesty of the majority of the validators, as the system only makes forward progress when a super-majority of the validators each node trusts agree on the state of the Ledger. The concern is what is referred to as the “51% attack scenario,” in which a single entity or organization is able to control the majority of the hash rate, potentially causing a network disruption (such as intentionally excluding or modifying the ordering of transactions). Controlling so much of the

network, however, would be expensive and impractical and devalue the currency. Moreover, security issues arising from malicious activity in the XRP Ledger are minimal because hackers would have to simultaneously take control over the majority of nodes on the consensus network – a major challenge given the distribution of over 100 nodes across various organizations and geographical locations.

51. A second security improvement over prior blockchain technology concerns how potential software bugs are treated. The source code for the XRP Ledger is complicated, consisting of many lines. Hence, there is a potential for code to incorrectly execute a transaction.²⁸ Further (and similar to Bitcoin and other protocols), bugs in the code can be exploited by hackers.

52. The XRP Ledger has an innovative way to address software bugs: a second layer of code, the “invariant checker,” runs automatically in real-time after each transaction with the aim to find bugs before they cause any problems in the XRP Ledger. Before a transaction’s results are committed to the XRP Ledger, the invariant checker examines those changes for correctness. If the transaction’s results break one of the XRP Ledger’s strict execution rules, such as creating more XRP (a transaction should only destroy XRP), the invariant checker rejects the transaction. In other words, when the Ledger executes a transaction, it doesn’t actually approve a transaction until it runs the invariance checker on a scratchpad that will sum how much XRP disappears and appears. If more XRP appears than disappears, the invariance checker will throw the scratchpad away and create a new scratchpad that basically says the transaction violated a system invariant. The rejected transactions are preserved in the ledger as a permanent record.

53. Environmental improvements. In theory, digital assets and cryptocurrencies were meant to avoid some of the environmental consequences of fiat currencies and their production.

²⁸ Brad Chase Ethan MacBrough, *Analysis of the XRP Ledger Consensus Protocol*, arXiv:1802.07242v1 [cs.DC] (Feb. 20, 2018).

However, depending on the cryptocurrency and its production and validation protocols, long-term environmental impacts from its energy use are significant. Energy consumption is a critical side effect of blockchain, and as greater adoption and usage of this new technology across a wide range of use cases is expected to scale the need for rapid validation of transactions, the more energy-efficient blockchain technologies have a competitive edge.

54. The XRP Ledger's validation mechanism gives it a competitive edge over Bitcoin and Ethereum. The validation mechanism used by Bitcoin and Ethereum – PoW – is an energy-intensive process to solve computational puzzles. As these puzzles grow more complex, and the price of bitcoin or ether increases due to more demand, the computational power and energy required to solve them increases. The XRP Ledger, in contrast, confirms transactions through a unique consensus mechanism that consumes negligible energy. All XRP that ever will exist is already in existence; as a consequence (and unlike Bitcoin and Ethereum), no unsustainable mining practices or additional energy are ever required to produce more XRP.

55. This is no mere abstraction. A recent comparison report²⁹ indicated that for every 1 million transactions, the XRP Ledger could power 79,000 lightbulb hours, while Bitcoin could power 4.51 billion lightbulb hours. This means that the energy consumption of XRP is 57,000x more efficient than bitcoin. In these respects, XRP is, as compared to its rivals, an inherently green cryptocurrency.

4. *Certain Characteristics Reliably Distinguish Successful Cryptocurrencies From Unsuccessful Cryptocurrencies*

56. Since 2009, over 2,000 tokens and coins have disappeared,³⁰ according to Coinopsy.

Moreover, most of the thousands of existing cryptocurrencies have very little value and unclear

²⁹ Cambridge Bitcoin Electricity Consumption Index, <https://cbeci.org/cbeci/comparisons>.

³⁰ John Wanguba, *How Many Cryptocurrencies Have Failed In 2021?*, E-Crypto News, <https://e-cryptonews.com/how-many-cryptocurrencies-have-failed/>.

potential, and are illiquid (not being traded on exchanges). Some have even been promoted using fraudulent activity. Although this class of assets is relatively new, some factors nevertheless distinguish successful cryptocurrencies from unsuccessful cryptocurrencies. Largely, the criteria align with the strength of the business case that can be made for the coin. 57. For cryptocurrencies to be useful and compete effectively with fiat currencies, platforms must have transaction speeds at least as fast as current systems such as Paypal, Venmo, and Visa. They must also be ready to further scale transaction speeds, and an increase in demand and users. Other characteristics include:

- Value proposition. A cryptocurrency is more likely to achieve wide adoption if it solves a well-understood problem and is coupled to a transparent business model, so the marketplace understands how the cryptocurrency is used and how it creates value.
- Usability and breadth of applicability. A cryptocurrency is more likely to achieve wide adoption if it is easy to use. Cryptocurrencies become easier to use if they are part of a well-developed ecosystem enabling broad applicability – for example, exchanges, ATMs, e-commerce applications, and financial institutions.
- Design. A cryptocurrency is more likely to achieve wide adoption if its design improves on existing currency or a derivative use of that currency. For example, many cryptocurrencies are created in bitcoin's image, but with various adaptations to make them function a little better or worse for different uses. If a given currency's attributes lend itself to being handpicked depending on user priorities (such as security, privacy, anonymity, or speed), it is more likely to succeed.
- Liquidity. Liquidity is typically defined as the ability to trade a large size quickly, and at a low cost. A liquid market is important for trading assets including cryptocurrencies.

- Security Risk. According to the U.S. Federal Trade Commission, in the period from October 2020 through May 17, 2020, “nearly 7,000 people report[ed] losses of more than \$80 million on [cryptocurrency] scams.”³¹

58. I illustrate the application of these characteristics to bitcoin, ether, and XRP in Table 1:

Table 1. Comparison of features/attributes of top successful cryptocurrencies

Attributes	Bitcoin/bitcoin	Ethereum/ether	XRP Ledger/XRP
Value proposition	Peer-to-peer money transfer; low cost and censorship-proof electronic cash system ³²	Smart contracts for decentralized applications, including in finance (DeFi) ³³	Digital payment network and protocol, functioning as a payment settlement, asset exchange, and remittance system ³⁴
Usability & breadth of applicability	Mature	Mature	Mature
Design	Store of value and retail payments on a decentralized blockchain	Open decentralized blockchain-based computing platform ether (native currency) is used to pay for transaction fees and computational services	Open decentralized, public blockchain XRP (native currency) is used as a store of value and for payment settlement, asset exchange, and remittance systems
Liquidity	High	High	High
Security risk	Potential transaction malleability vulnerability ³⁵	Potential reentrancy (double-spend) vulnerability ³⁶	Potential vulnerability from attacks on specific nodes due to openness and liquidity of system ³⁷

³¹ Emma Fletcher, *Cryptocurrency Buzz Drives Record Investment Scam Losses*, FTC, <https://www.ftc.gov/news-events/blogs/data-spotlight/2021/05/cryptocurrency-buzz-drives-record-investment-scam-losses>.

³² *Bitcoin's Unique Value Proposition*, BitMEX, https://blog.bitmex.com/value_proposition/.

³³ *The Ethereum investment Case October, 2021* (June 19, 2020), Ethereumprice, <https://ethereumprice.org/guides/article/ethereum-investment-case/>.

³⁴ *6 Popular Altcoins and Their Value propositions*, Finance Monthly, <https://www.finance-monthly.com/2021/04/6-popular-altcoins-and-their-value-propositions/>.

³⁵ *Securing Your Wallet*, Bitcoin, <https://bitcoin.org/en/secure-your-wallet>.

³⁶ Noama Fatima Samreen & Manar H. Alafi, *Reentrancy Vulnerability Identification in Ethereum Smart Contracts*, <https://arxiv.org/pdf/2105.02881.pdf>.

³⁷ MIT Technology Review, *Here's the Biggest Security Threat to the World's Third-Largest Cryptocurrency* (June 16, 2017), <https://www.technologyreview.com/2017/06/16/151164/first-large-scale-analysis-of-the-ripple-cryptocurrency-network/>.

C. The Cryptocurrency Industry Is Composed of Exchanges, Institutional and Retail Users, and E-Commerce Providers

59. The cryptocurrency industry is composed of custodial and non-custodial stakeholders.³⁸

Coin issuers, exchanges, corporate users, and retail users are considered custodial: they store and transact on behalf of themselves or third parties. On the other hand, miners, validators, wallet creators, and protocol developers are considered non-custodial: they are responsible for and provide services effectuating transfers of digital assets.

60. I focus here on custodial actors. As stated before, what makes cryptocurrencies effective and successful is that they have high usability (many and scalable use cases with easy access to the currency), as well as that they are becoming a standard in the industry. Much like Bitcoin became the digital peer-to-peer money transfer standard, XRP became a digital standard for currency exchange, asset settlement, and remittances. Usability and standardization require the cryptocurrency to have well-functioning custodial actors, including exchanges, institutional investors such as hedge funds, and e-commerce with viable scalable use cases. Given that the value of cryptocurrencies reflects high usability and increasing standardization, I examine each in turn.

1. Exchanges Facilitate Market Liquidity, Allowing Customers To Trade Cryptocurrencies for Other Assets

61. Cryptocurrency exchanges, also known as “digital currency exchanges” or “crypto exchanges,” are essentially businesses that allow customers to trade cryptocurrencies for other assets including conventional fiat money or different digital currencies. They can also be market makers that take bid-ask spreads as transaction commissions for their services or charge fees as a matching platform.

³⁸ Csilla Brimer, *Response: Custody Rule and Digital Assets*, U.S. Securities and Exchange Commission, <https://www.sec.gov/investment/csilla-brimer-response-custody-rule-digital-assets>.

62. Cryptocurrency exchanges have become integral to the crypto-asset industry.

Cryptocurrency exchanges differ in a number of different ways, including accessibility (licensing and regulation), security (insurance against hacking or fraud, assets held off-line in storage), exchange fees (buyer, seller, currency), liquidity (trading volume), coins offered (top-traded or deep portfolio), educational tools (videos, quizzes, white papers), storage options (exchange instead of wallet), and availability of tax information. Kraken, CoinEgg, Gemini, and Binance are examples of cryptocurrency exchanges or digital marketplaces where market participants can buy and trade crypto. Some, like Coinbase, have been around since the early days of Bitcoin; others, like Robinhood and PayPal, are better-known for other services, and have only recently allowed customers to trade cryptocurrencies within their existing accounts.

63. The importance of liquidity and trading volume on exchanges cannot be overstated.

Liquidity attracts users and is a key underpinning of the value of a cryptocurrency.

64. The year 2017 is often regarded as the inflection point for new alternative cryptocurrencies, because the growth, maturity, and security of crypto exchanges facilitated cryptocurrency trading, thus creating liquidity in the market.³⁹ As of 2017, the top three [cryptocurrency exchanges globally] were Binance (founded 2017), Huobi (founded 2013), and OKEX (founded 2017). While others existed earlier, including Kraken (founded 2011), Coinbase (founded 2012), and bitfinex (founded 2012), most of those earlier exchanges did not report basic information such as the names of the owners, financial data, or even the location of the business, as they were small and privately held. A large crypto exchange, MtGox, had suspended trading and went into bankruptcy proceedings after losses of Bitcoin due to theft, fraud, and mismanagement. Exchanges, which are essentially software platforms, continued to

³⁹ *A Brief History of Cryptocurrency Exchanges*, <https://medium.com/the-capital/a-brief-history-of-cryptocurrency-exchanges-2b48d4531918>.

improve their security processes after the MtGox collapse to build confidence in the market and create liquidity. The market capitalization of BTC grew to around \$300 billion in 2017. As reported on CryptoCompare as of late September 2021, bitcoin's current market capitalization exceeded \$800 billion.

2. *High-Volume Trading by Institutional and Retail Users Also Drives Liquidity in the Cryptocurrency Industry*

65. Liquidity in crypto exchanges depends on high-volume trading by institutional and retail users alike.

66. To start, institutional investors such as hedge funds, mutual funds, and pension funds who invest on behalf of others long have been and remain key elements of the cryptocurrency market. As noted above, early in the industry's development, few exchanges existed, and very few institutional funds were willing to allocate capital to cryptocurrencies. Early on (before 2017, when exchange-based trading started maturing), crypto asset providers therefore needed to provide incentives to exchanges and guarantees to fund managers as part of their market development strategies.

67. Hedge funds were an early attractive institutional investor in digital assets. Hedge funds have invested in cryptocurrencies since the beginning, and remain a substantial part of the industry: according to one recent estimate, "there are currently between 150 and 200 active crypto hedge funds."⁴⁰

68. Many institutional investors have recently increased their investment in digital assets during the economic effects of the Covid-19 pandemic. In particular, as central banks engage in economic stimulus and lower interest rates, some began to view cryptocurrencies as a good

⁴⁰ PricewaterhouseCooper, *3rd Annual Global Crypto Hedge Fund Report 2021* at 8, [https://www.pwc.com/gx/en/financial-services/pdf/3rd-annual-pwc-elwood-aima-crypto-hedge-fund-report-\(may-2021\).pdf](https://www.pwc.com/gx/en/financial-services/pdf/3rd-annual-pwc-elwood-aima-crypto-hedge-fund-report-(may-2021).pdf).

hedge against corresponding inflation. For example, according to Finoa,⁴¹ a European Union-based digital assets platform, institutional investor growth in cryptocurrencies grew significantly in 2020 and early 2021 (Chart 3):

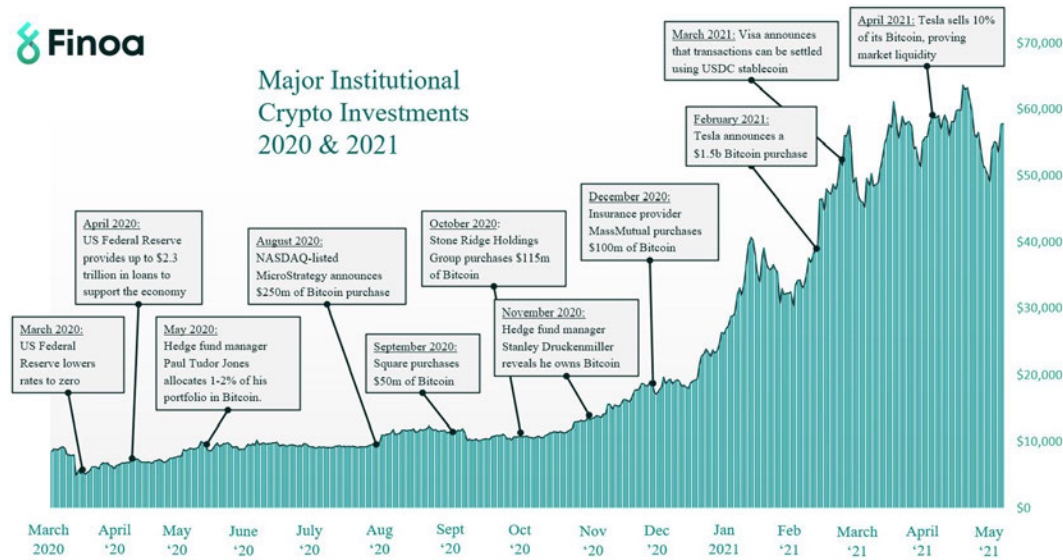


Chart 3. Recent institutional investor growth in cryptoassets

A September 2021 report of a survey of institutional investors from Fidelity Digital Assets found that “52% of investors surveyed globally have an investment in digital assets, with Asia and Europe seeing higher rates of investments than in the U.S.”⁴²

69. Hedge funds are not the only means by which institutions invest in cryptocurrency-related assets. For example, several crypto-backed Exchange Traded Products (ETPs) are now trading on stock exchanges in Canada and Europe. Further, although the U.S. Securities and Exchange Commission (SEC) has yet to approve a crypto Exchange Traded Fund (ETF), digital

⁴¹ Finoa, *Crypto Space is Developing and Institutional Investors are Getting Involved* (May 27, 2021), <https://medium.com/finoa-banking/the-evolution-of-institutional-crypto-investing-43b7289b8528>.

⁴² Fidelity Digital Assets, *The Institutional Investor Digital Assets Study* at 7 (Sept. 2021), https://www.fidelitydigitalassets.com/bin-public/060_www_fidelity_com/documents/FDAS/2021-digital-asset-study.pdf. “As in previous years, the survey spanned a variety of high-net-worth individuals and institutional investor segments, including financial advisors, family offices, crypto hedge and venture funds, traditional hedge funds, endowments and foundations, as well as pension funds and defined benefit plans.” *Id.* at 4.

currency asset managers such as Grayscale have provided an investment avenue for U.S. institutional investors via a trust structure.

70. Retail users, for their part, have increasing options to purchase stock in cryptocurrency companies. Coinbase, one of the largest brokerage exchanges in the space, went public on the NASDAQ via a direct listing in April 2021. Other notable public crypto companies include the crypto miners Canaan and Riot Blockchain, the ETP provider Coinshares, and the holding company Galaxy Digital. Retail users also contribute to liquidity, as a simple statistic from Coinbase illustrates: Although individual purchasers made up just 36% of the exchange's volume during the quarter ending Dec. 31, more than 90% of Coinbase's revenue came from retail trades.⁴³

71. In summary, increased involvement of institutional and retail users benefits the liquidity of cryptocurrencies on exchanges and, in turn, increases business opportunities for new startups and corporate use cases. It is important to a given cryptocurrency that both institutional and retail market participants can take advantage of the benefit of liquidity, which is one of the key value propositions of integrating such a cryptocurrency in current and new use case applications.

3. *The Existence of Viable, Scalable Use Cases Also Drives Usage of a Cryptocurrency*

72. Aside from exchanges and institutional/retail users, the existence of use cases⁴⁴ is a key driver for a cryptocurrency to gain traction in the market and become a go-to means to enable payments, a gateway for currency exchange settlements, or other use cases.

⁴³ Katherine Greifeld & Vildana Harjic, *Plumber Buying Doge Shows Retail Investors' Power in Crypto* (Apr. 18, 2021), <https://www.bloomberg.com/news/articles/2021-04-19/plumber-going-all-in-shows-retail-investors-rule-crypto-trading>.

⁴⁴ Sam Daley, *35 Blockchain Applications and Real-World Use Cases Disrupting the Status Quo* (updated Sept. 16, 2021), Built In, <https://builtin.com/blockchain/blockchain-applications>.

73. These applications go far beyond the originally envisioned use of a given cryptocurrency and use blockchain technology's ability to create more transparency and fairness in a decentralized way across a wide range of sectors. For example, IBM's Blockchain Platform⁴⁵ allows business clients to join an existing blockchain network or work with a client company to create a new blockchain application. With a strong focus on supply chain transparency and intellectual property management, the IBM core applications emphasize industry efficiency use cases.

74. On the other hand, companies such as STL Partners⁴⁶ emphasize the design and application of blockchains for digital health applications such as insurance settlements, electronic health records updating, and remote monitoring. The blockchain value in this case is for end-users to reclaim decentralized recordkeeping at a time when technology companies such as Google have been aggregating information.

75. On top of giving end-users more visibility and control over their data, a blockchain's built-in payment mechanisms can enable end-users to sell information in exchange for crypto tokens. To make all this work efficiently and autonomously, artificial intelligence (AI) is integrated on top of the blockchain tracking ledger to curate valuable data sets and match sellers with buyers. Companies such as Fetch.ai, which is traded on Coinbase, are examples of start-ups working on hybrid blockchain systems that integrate recordkeeping with payment mechanisms and artificial intelligence.⁴⁷

⁴⁵ *Blockchain Use Cases*, IBM, <https://www.ibm.com/blockchain/use-cases/>.

⁴⁶ *5 Blockchain Healthcare Use Cases in Digital Health*, STL Partners, https://stlpartners.com/digital_health/5-blockchain-healthcare-use-cases/.

⁴⁷ Toby Simpson et al., *Fetch.AI: Token Overview* (Feb. 2019), <https://fetch.ai/wp-content/uploads/2019/10/Fetch.AI-Token-Overview.pdf>.

76. These are but a few of the myriad examples of commercial uses of cryptocurrencies. Below (Table 2) shows an example classification of a number of commercial uses of cryptocurrencies based on their primary applications. While there is no standardization in the categorization of cryptocurrency applications, the representation captures in my opinion key primary applications intuitively. This is not intended to be advanced as a gold standard, but rather as a broadly used organization of applications.

Table 2. Example Descriptions and Examples of Primary Cryptocurrency Applications

Primary Application	Description	Examples
Payments	Acts as digital cash for e-commerce retailers	Bitcoin, Stellar, XRP
Store of value	Currencies and networks used as a new form of scarce native currency and as a means of settlement	Bitcoin, Litecoin, XRP
Programmable money	Customizable computer code can be designed for specific financial rules and uses	Bitcoin, Bitcoin cash, Litecoin
Stablecoins	Crypto version of fiat currencies tied to the value of an external resource (e.g. \$US or gold)	TruUSD, Paxos, Dai, Sologenic
Privacy	Private (anonymous) digital transactions	Monero, Verge, Zcash
Digital ownership	Reframing how we handle, store and monetize data	Bat, Sia, Golem
Decentralized utilities	Crypto-enabled networks, services and products capable of exchanging between the assets issued on the network (predictive markets, currency exchanges, settlements)	Ethereum (decentralized internet); NEO (smart contracts); XRP (bridge currency)
Alternative finance	Crypto assets such as collectibles, commodities, and tokenization of securities	Cryptokitties, Tiberius, Reitium

The fundamental point is this: viable business models that can take advantage of blockchain technology's core characteristics continue to evolve as the open-source software platforms of the major currencies have allowed for uncovering new and potentially successful commercial uses.⁴⁸

D. The Cryptocurrency Industry Is Massive and Dynamic

77. The cryptocurrency industry is today a massive component of the global economy.

The valuation of the entire cryptocurrency market recently exceeded \$2 trillion.⁴⁹ On April 4, 2021, bitcoin alone accounted for \$1.1 trillion, but if currencies and applications based on the bitcoin technology such as Bitcoin Cash and Wrapped Bitcoin are included in the market capitalization, the total increases to nearly \$1.2 trillion.⁵⁰ The remainder of the cryptocurrency market size (capitalization) on April 4th was based on other codebases such as Ethereum (\$224 bn.) and the XRP Ledger (\$29 bn.).⁵¹

78. The valuation, liquidity, and supply of cryptocurrencies changes significantly over time. For example, the fifth, sixth, and seventh entities listed on a September 16, 2021 snapshot from Cryptocompare.com's list of the top 10 coins by market capitalization⁵² (Chart 4) are recent entrants.

- Solana is a high-performance blockchain founded by former Qualcomm, Intel, and Dropbox engineers that uses a delegated Proof-of-Stake (dPoS) consensus algorithm.

⁴⁸ *The Rise of Using Cryptocurrency in Business*, Deloitte, <https://www2.deloitte.com/us/en/pages/audit/articles/corporates-using-crypto.html>; see also *Blockchain Use Cases and Applications by Industry*, Consensys, <https://consensys.net/blockchain-use-cases/> (categorizing 17 other use cases that make use of "Blockchain technology's core characteristics[:] decentralization, transparency, immutability, and automation").

⁴⁹ Arjun Kharpal, *Cryptocurrency Market Value Tops \$2 Trillion For the First Time as Ethereum Hits Record High* (Apr. 6, 2021), <https://www.cnbc.com/2021/04/06/cryptocurrency-market-cap-tops-2-trillion-for-the-first-time.html>.

⁵⁰ Gertrude Chavez-Dreyfuss, *Crypto market cap surges to record \$2 trillion, bitcoin at \$1.1 trillion* (Apr. 5, 2021), <https://www.reuters.com/article/us-crypto-currency-marketcap/crypto-market-cap-surges-to-record-2-trillion-bitcoin-at-1-1-trillion-idUSKBN2BS1I7>.

⁵¹ Historical Snapshot (Apr. 4, 2021), <https://coinmarketcap.com/historical/20210404/>.

⁵² *Cryptocurrency Prices, Portfolio, Forum, Rankings*, CryptoCompare, <https://www.cryptocompare.com/>.

The network's value proposition is that it orders transactions to significantly improve their speed and throughput.

- Avalanche is an open-source platform for decentralized finance applications and enterprise blockchain deployments in one interoperable, highly scalable ecosystem. The value proposition for developers who build on Avalanche is to easily create new applications and custom blockchain networks with complex rulesets or build on existing private or public subnets.
- Polkadot has a value proposition to users in that it enables cross-blockchain transfers of any type of data or asset, not just tokens. Connecting to Polkadot gives users the ability to interoperate with a wide variety of blockchains in its network. Hence, governance is a major use, as well as staking (holding or locking cryptocurrencies to support the security and operations of a blockchain network).











#	Coin	Price	Direct Vol ⓘ	Total Vol	Top Tier Vol ⓘ	Market Cap ⓘ ⓘ	Last 7 Days	24h
1	 Bitcoin BTC	\$ 47,639.36	\$ 638.20 M	\$ 7.85 B	\$ 7.85 B	\$ 896.60 B	B+	-1.21%
2	 Ethereum ETH	\$ 3,368.92	\$ 676.57 M	\$ 5.29 B	\$ 5.23 B	\$ 396.15 B	A-	-2.17%
3	 Solana SOL	\$ 157.46	\$ 840.53 M	\$ 2.53 B	\$ 2.53 B	\$ 79.44 B	C	-2.45%
4	 Cosmos ATOM	\$ 43.67	\$ 77.89 M	\$ 1.61 B	\$ 1.61 B	\$ 11.72 B	C+	11.15%
5	 Avalanche AVAX	\$ 75.28	\$ 4.12 M	\$ 1.36 B	\$ 1.36 B	\$ 29.44 B		7.50%
6	 Polkadot DOT	\$ 34.13	\$ 89.07 M	\$ 785.34 M	\$ 785.34 M	\$ 37.95 B	B	-1.78%
7	 XRP XRP	\$ 1.069	\$ 25.84 M	\$ 748.90 M	\$ 748.62 M	\$ 106.89 B	C+	-0.83%
8	 Cardano ADA	\$ 2.355	\$ 60.02 M	\$ 748.83 M	\$ 746.04 M	\$ 76.24 B	B-	-0.88%
9	 OMG Network OMG	\$ 9.924	\$ 65.70 M	\$ 698.75 M	\$ 698.75 M	\$ 1.39 B	D+	14.38%
10	 BUSD BUSD	\$ 1.000	\$ 1.76 M	\$ 631.21 M	\$ 631.21 M	\$ 12.83 B		0.00%

Chart 4. Snapshot of cryptocurrency market value characteristics
(Cryptocompare.com, September 16, 2021)

III. Ripple’s Business Model Development Is Consistent With That of a Startup in a High Technology Industry

A. Business Innovation in High Technology Industries Entails an Iterative Process

1. *Innovative Applications of Blockchain Technology are Being Developed Iteratively*

79. Blockchain technology – that is, the notion of distributed/decentralized ledger technology – has the potential to create new foundations for our economic and social systems. Often referred to as Web 3.0, it represents a decentralized, anonymized, and still-being-defined notion of a future in which “a more semantically intelligent web” leverages data that “will be used by algorithms to improve user experience and make the web more personalized and familiar,” and in which users will no longer have to “rely on network and cellular providers that surveil the information going through their systems.”⁵³ For these reasons, it is a technology platform on which new disruptive technologies will be built.

80. But the precise ways blockchain technology will be applied for business purposes are emerging only over time. That is so because the process of adoption – and of developing use cases built on it – is gradual, and necessitates overcoming technological, governance, organizational, and societal barriers.

81. An analogy to the adoption of the protocol that laid the groundwork for the development of the internet, known as TCP/IP (for transmission control protocol/internet protocol), illustrates the point. The TCP/IP protocol first gained traction in around 1983 for a single use (just like blockchain did with Bitcoin): as the basis for e-mail among the researchers on ARPAnet, the precursor to the commercial internet. But a more fundamental feature of the TCP/IP protocol –

⁵³ USDJ, Cryptocurrency Enforcement Framework, Report of the Attorney General’s Cyber Digital Task Force (Oct. 2020), <https://www.justice.gov/cryptoreport>.

that it permitted users to transmit information digitally by breaking it up into very small packets (each including address information) between nodes in a network – proved to allow for innumerable other, unforeseen commercial applications. Put another way, no one back in 1983 foresaw the degree to which the Internet would become a common way to stream television shows or meet people to date socially. That disruption and innovation of many industries flowed from the “TCP/IP” protocol, a significant technological innovation of years earlier. Many applications of the technology developed only over time, by a trial-and-error process of building scale and adoption sufficient to overcome the incumbent networks and service providers of the day.

82. Once the basic infrastructure of the web gained critical mass, however, a new generation of tech companies took advantage of low-cost connectivity by creating internet services that were compelling substitutes for existing businesses. Many companies failed during the first few decades, until sustainable businesses with good business models were built. Ultimately, it took more than 30 years for TCP/IP to move through all the phases – from a single use case to broader disruptive business models leading substitution of existing businesses, to the transformation of how companies create and capture value – by which it reshaped the economy.

83. Blockchain technology is in the early stages of that same process. In the case of blockchain, the principal incumbent networks are those of banks and other contractual validation parties that have overseen business-to-business, business-to-consumer, and peer-to-peer transactions (in some cases, for centuries). Successful high-tech companies building applications for blockchain technology have to contend with structural, cultural, and governance barriers like those that Internet TCP/IP-based companies had to contend with when they were building scale and adoption. But the low cost, high speed, automated validation promise of blockchain

technology is leading to all the applications/use cases we now call the blockchain/cryptocurrency/digital asset industry. Further, the technology companies that are driving innovation in the blockchain-technology space tend to move through an iterative innovation cycle familiar from companies that drove innovation during the internet era. I address that cycle next.

2. *A High-Tech Business's Initial Value Proposition Will Change Over Time in Response to Customer (Market) Input*

84. Building a high-tech business is risky. An organization's success depends on its ability to innovate – either to stay in the market, gain competitive advantage, gain market share, or ultimately generate revenue. Many new products fail long before launch for technical reasons or for not finding the right value proposition for the intended users or market segments. Within a firm, the process flow of innovation tends to result in significant attrition: according to one estimate, for every 7 new product ideas, about 4 enter development, and 1.5 are launched.⁵⁴ Once launched in the market, the product attrition rate is even higher. One study has shown that out of approximately 30,000 products introduced each year, 95% fail, because of lack of (among others) scalability of product adoption, competition from incumbents, or from other startups.⁵⁵ Another study has shown that it will require on average four to six iterations on business model and product offerings for a startup to establish a toe-hold in the market and be able to scale through customer adoption.⁵⁶

⁵⁴ *7 Reasons Why Innovation Fails in Organizations*, IdeaPoke, <https://www.ideapoke.com/growthleader/reasons-innovation-fails/#:~:text=According%20to%20process%20expert%2C%20Robert,the%20product%20success%20rate%20is.>

⁵⁵ Marc Emmer, *95 Percent of New Products Fail. Here Are 6 Steps to Make Sure Yours Don't* (July 6, 2018), Inc., <https://www.inc.com/marc-emmer/95-percent-of-new-products-fail-here-are-6-steps-to-make-sure-yours-dont.html>.

⁵⁶ Scott Shane, *The Illusions of Entrepreneurship: The Costly Myths that Entrepreneurs, Investors and Policy Makers Live by* (Yale University Press 2008).

85. Since the 1970s, there have been numerous studies into why certain high-tech businesses succeed while others fail. Needless to say, fulfilling basic functional and utilitarian needs is the minimal requirement of any product. On occasion, considerations such as whether a product can enhance the buyer's reputation or reduce risks play a large role in some business-to-business (B2B) purchases. But the number one reason for success is delivering a superior value proposition to the customer – in other words, a product or service that delivers a superior benefit over the incumbent solution.

86. One fundamental challenge for a great high-tech company is to anticipate future customer needs that the customer itself may not know it has better than the competition. This is challenging because typical consumers, being limited by their own experience, often cannot imagine what they don't know about emerging technologies and how those technologies might create novel solutions to problems consumers might not know they have.

87. For these reasons, a truly disruptive high-tech company (particularly one that sells technology-driven products) often focuses on acquiring significant input from early and influential users. This requires proactive engagement with new customers through innovative marketing strategies. Those strategies might include selling products at 100% discount, or by reaching out to different types of customers to have them try the product. I will discuss these strategies in more detail in Part III.D.

88. Having received consumer input in this way, high-tech companies often go through many iterations to try and meet the user or customer's objectives. To succeed, the firm must clearly define and articulate its product's value proposition and ensure that customers recognize it as such. For example, although Facebook was launched in early 2004, it introduced Facebook Ads

three years later, in 2007;⁵⁷ today, virtually all of its revenue comes from advertising sales. For another example, Salesforce started in 1999 as an internet company for customer relationship management, a value proposition that was easy to copy in the early dot com days. The company therefore grew as quickly as possible to establish itself as a first mover (signing on many clients and partners), then shifted from a software to an on-demand services firm.^{58,59} This allowed it to offer an AppExchange for third parties to build applications for Salesforce clients.⁶⁰

3. *A High-Technology Startup's Business and Revenue Model Also Will Change Over Time, Often Over Several Years*

89. Many startups initially are not sure where the revenue for their business is going to come from. They may have a hypothesis in a business plan, but if the value proposition is unclear, and the required partnership needs of the business ecosystem either don't yet exist or are strong incumbent companies, a lot of the business is done "at risk" (i.e. without being paid).

90. This is particularly the case for high tech businesses. Their products are highly dependent on continued investment in innovation research and development. This investment allows the companies to integrate the latest technologies or algorithms and fight off competition, while seeking to deploy software-as-a-service (SaaS) business models common to the fintech and other high-tech space. Service or license fees alone may not cover costs, requiring companies to constantly search for new revenue streams as they build out their product portfolio. In the

⁵⁷ See Facebook Unveils Facebook Ads (Nov. 6, 2007), Facebook, <https://about.fb.com/news/2007/11/facebook-unveils-facebook-ads/>.

⁵⁸ David B. Yoffie, Alison Berkley Wagonfeld (2005). *Oracle vs. salesforce.com*. Harvard Business School case. The case explores the phenomenon of software becoming a service as Salesforce.com leads customer relationship management (CRM) solutions as a Web-based service.

⁵⁹ Antonio Davila and Jeffrey Eisen (2003). *Salesforce.com. The Evolution of Marketing Systems*. Stanford Graduate School of Business Case E-145. The case discusses how Salesforce.com evolved from a fledgling start-up to a leader in the provision of Web-based management systems.

⁶⁰ *SalesForce What is Appexchange?*, https://developer.salesforce.com/docs/atlas.en-us.appExchangeInstallGuide/meta/appExchangeInstallGuide/appexchange_install_whatism.htm.

technology and market de-risking phases of a company's life cycle, a combination of equity investor capital and customer purchases of product are often used to "pay the bills."

91. Several examples prove the point. Twitter revenue derives most of its revenue today from the sale of advertising services.⁶¹ However, initially the company had no advertising platform, and had to cover its costs to build this asset by deploying capital from its investors. The impact of this product development cycle, and building its advertising revenue model,⁶² is that Twitter, founded in 2007, was not profitable until 2019, 12 years later.⁶³ Square, a financial services and online payments company founded in 2009,⁶⁴ generates revenue through its CashApp and software licenses and only recently turned a profit.⁶⁵ Tesla's business model, based on selling cars or energy storage devices with associated services, did not turn a profit until it started selling carbon offsets from its electric vehicles and storage to other carbon-intensive companies.⁶⁶ After July 21, 2021, the company turned a profit even without the emission credits. Common to all these tech company business and revenue models is that they did not become profitable (revenue did not cover costs) until recently: 18 years after Tesla's incorporation, 12 years after Twitter's founding, and 12 years after Square was launched.

92. It should not be expected that digital asset companies are quickly profitable either. The history of other high-tech businesses shows there would be nothing unusual about a digital asset

⁶¹ Mansoor Iqbal, *Twitter Revenue and Usage Statistics (2021)* (July 5, 2021), <https://www.businessofapps.com/data/twitter-statistics/>.

⁶² Jack Marshall and Yoree Koh, *The Problem With Twitter Ads* (Apr. 30, 2015), <https://www.wsj.com/articles/the-problem-with-twitter-ads-the-problem-with-twitter-ads-1430438275>.

⁶³ Seth Fliegerman, *Twitter records its first annual profit, but it is losing millions of users* (Feb. 7, 2019), CNN Business News, <https://www.cnn.com/2019/02/07/tech/twitter-earnings-q4/index.html>.

⁶⁴ *How Square Became a \$30 Billion Company by Reimagining Payments*, <https://producthabits.com/how-square-became-a-30-billion-company-by-reimagining-payments/>.

⁶⁵ Nathan Reiff, *How Square Makes Money* (Feb. 26, 2021), Investopedia, <https://www.investopedia.com/how-square-makes-money-4801197>.

⁶⁶ Jay Ramey, *Tesla Made More Money Selling Credits and Bitcoin Than Cars* (Apr. 7, 2021), <https://www.autoweek.com/news/green-cars/a36266393/tesla-made-more-money-selling-credits-and-bitcoin-than-cars/>.

firm's technology development cycle being out of synch with scalability of market adoption, or about that condition continuing for a decade or longer.

4. *A High-Technology Startup Must Adopt Entrepreneurial Market Practices To Overcome Technological, Governance, Organizational, and Even Societal Barriers to Scale*

93. A key characteristic of a high-technology company's lifecycle is the need for rapid growth for adoption of its product. The reason is that technology innovation cycles are short, and competition is fierce to displace the innovation. Thus, tech companies will deploy aggressive product marketing and pricing strategies for optimal and rapid scaling, and adoption, of their product.

94. Product pricing, like a value proposition and identification of the customer's reason to buy or engage, starts with a hypothesis. The more educated and research-backed it is, the more likely it will be valid. Even then, it is as much an art as a science.⁶⁷ The perceived value from a product simply answers how much value the customer feels a product delivers for the price they pay in comparison to the competition. A tech company's product is perceived to be valuable if the value the customer perceives is higher than the price they would pay.

95. The bigger the difference, the more valuable a product appears.⁶⁸ In theory, this can mean three things. The company can either lower the price, or increase the value, or do both. In most cases, the company should be focused on figuring out what in the product the customer feels is important and is worth the investment such that it becomes a buying decision they cannot refuse, even at a higher price.

⁶⁷ The Art and Science of Pricing, <https://bus-ex.com/article/art-and-science-pricing>.

⁶⁸ Abdo Riani, *How To Price Your Early Stage Startup Product* (July 29, 2020), Forbes, <https://www.forbes.com/sites/abdoriani/2020/07/29/how-to-price-your-early-stage-startup-product/?sh=7a3a8ca5203e>.

96. *Acquisition of customers is expensive.* As part of price discovery, tech companies offer major discounts to get traction in the market, including paying clients to try out a product. For example, in software product offerings, it is common to use multiple strategies including pricing at a discount relative to competition, offering the product for free, providing grandfathered pricing for long-time customers or providing exclusive benefits, and making customers pay only if the company delivers value.⁶⁹ Often this is referred to as influence spreading by providing discounts to customers, particularly if users are connected in a network, in the hope of maximizing the influence spread.⁷⁰ Well-known tech companies that have deployed one or more of these discounting strategies before they became established, and their value proposition became accepted by the market, include Netflix, Lending Club, LinkedIn and others.

97. These discounting practices also yield information the business may find useful in deciding what it can charge for its products. Initially, a business cannot know what price a given product (an iPhone, a Tesla, a LinkedIn subscription, or Twitter advertising) can command because its perceived value is not known, and many different types of customers value different attributes. A Tesla buyer who wants the car as a differentiated tech toy that few other people can afford will pay \$120,000, while a Tesla buyer who focuses on the environmental value will pay \$35,000. Square Free licenses are free for single locations, and Square Plus cost \$60 for advanced inventory services per location. Twitter advertising costs depend on ad type, which includes promoted tweets, promoted accounts, and promoted trends. Promoted tweets cost \$0.50 to \$2.00 for each action. Promoted accounts cost \$2 to \$4 for each follow. Promoted trends cost \$200,000 per day. Pricing strategy therefore emerges as part of the iterative business-model

⁶⁹ *5 Tips to transition From A Free To A Paid Service* (June 13, 2010), TechCrunch, <https://techcrunch.com/2010/06/13/free-to-paid-tips/>.

⁷⁰ Yu Yang et al., *Continuous Influence Maximization: What Discounts Should We Offer to Social Network Users?*, SIGMOD'16, June 26-July 01, 2016, San Francisco, CA, USA DOI, <http://dx.doi.org/10.1145/2882903.2882961>.

development process I described above: Incentivizing potential buyers with discounts and maximizing influence spread to other customers ultimately helps stabilize the price.

98. It is critical to understand that whether a product's price covers its development costs is initially a secondary consideration for technology startups. Acquisition of customers and users, and investment in the buildout of an ecosystem of operations are the primary goals. It is for this reason that most startup companies – while revenue-positive – are not profitable until years after their founding, once sufficient customers or users have been acquired. So it is not expected for a tech startup's revenue to cover its operational costs until a decade after starting operations.

99. The fintech industry is no different. Most of the top fintech companies – including Stripe, Tink, and Klarna – were not overnight successes, but were founded in the early 2010s. Since then, through discounted product offerings and other customer acquisition strategies detailed earlier, they are only now starting to become profitable.⁷¹

B. Ripple's Funding and Development of a Commercial Application for XRP and the XRP Ledger Are Consistent with That of a Startup in a High-Technology Industry

1. Ripple's Vision To Transform Transaction Settlements with an Innovation That Leverages XRP and the XRP Ledger

100. Company Vision. The initial target market of Ripple was to develop a global payments network for international currency transfers and settlements. This was part of a broader vision to develop an "Internet of Value," rethinking the cultural value of money.⁷² Value should be exchanged as easily as information. Although information moves around the world instantly, a single payment from one country to another is slow, expensive, and unreliable.

⁷¹ *Investment in Fintech Booms as Upstarts Go Mainstream* (July 15, 2021), The Economist, <https://www.economist.com/finance-and-economics/2021/07/15/investment-in-fintech-booms-as-upstarts-go-mainstream>.

⁷² Ludovico Rella, *Steps towards an ecology of money infrastructures: materiality and cultures of Ripple*, Journal of Cultural Economy, Vol. 13, No. 2, 236-249 (Jan. 8, 2020), <https://doi.org/10.1080/17530350.2020.1711532>.

101. Worldwide, cross-border payments are expected to reach \$156 trillion in 2022, with a combined cost of nearly \$10 trillion a year (assuming the global average cost of 6.5% to send funds) – so called “friction cost” between parties, counterparties and intermediaries.⁷³ The process of international settlements can take as many as 14 independent steps and the time frame for clearing and settlement of a transaction is generally referred to as “T+3” – that is, three days after the trade (T), the transaction is settled. However, some transactions involve so much friction that they can take weeks to settle.⁷⁴ Ripple sought to reduce these friction costs by enabling participants to message, clear, and settle transactions at low cost and high speed. With the Internet of Value, a value transaction such as a foreign currency payment, can happen instantly, just as how people have been sharing words, images, and videos online for decades.

102. The Innovation. Before the launch of Ripple’s products, which were built leveraging the open-source XRP Ledger and its native currency, XRP, sending money globally traditionally involved using SWIFT, a service that allows banks to send messages with payment information. Once the payment is confirmed, manual input is required to transfer the funds. If the transacting banks do not have an existing relationship, the funds are routed through intermediary banks. Since each intermediary charges fees for its transaction services, the costs of an international settlement can have unexpected fees and delays.

103. A blockchain transaction settlement solution securely and transparently combines the two-step process of messaging and fund transfer in one transaction and reduces the friction costs of intermediaries. This type of digital innovation for global settlements between banks – for

⁷³ Suman Bhattacharyya, *Fintechs attack cross-border business payments as banks and legacy players rush to innovate* (May 25, 2021), PaymentsDive, <https://www.paymentsdive.com/news/fintech-cross-border-banks-coopetition-american-express-ripple-zelle-venmo/600729/>.

⁷⁴ Florian Seeh, *How new entrants are redefining cross-border payments* (Feb. 23, 2021), EY, https://www.ey.com/en_us/banking-capital-markets/how-new-entrants-are-redefining-cross-border-payments.

business-to-business transactions – is much like Bitcoin’s blockchain technology for business-to-customer and customer-to-customer payments by replacing banks as trusted verifiers.

2. *Ripple’s Funding by Equity Investment Rounds Based on Ripple’s Vision*

104. To contextualize how Ripple acted on the foregoing vision, it is useful to consider first Ripple’s early equity investment rounds. The objective of equity investments is to (i) build and scale companies into platformizable solutions that can compete with and replace incumbents, while at the same time (ii) increase the valuation of the invested companies over multiple rounds, resulting in high returns from exits. On average, equity investors invest in one out of 200 businesses they receive proposals from, because they seek high-value exits (such as acquisitions or Initial Public Offerings (IPOs)). That in mind, the type of investor syndicate that values and invests in companies is informative: such syndicates bring experience, strategic management direction, and access to clients or partners. Further, equity investment (particularly from well-recognized funds) can indicate marketplace perceptions of the value of the vision of the company – often based on a robust understanding of the industry.

105. As Chart 5 shows, Ripple participated in multiple investment rounds since 2013 from syndicates of well-recognized and successful venture capital and growth equity investors:

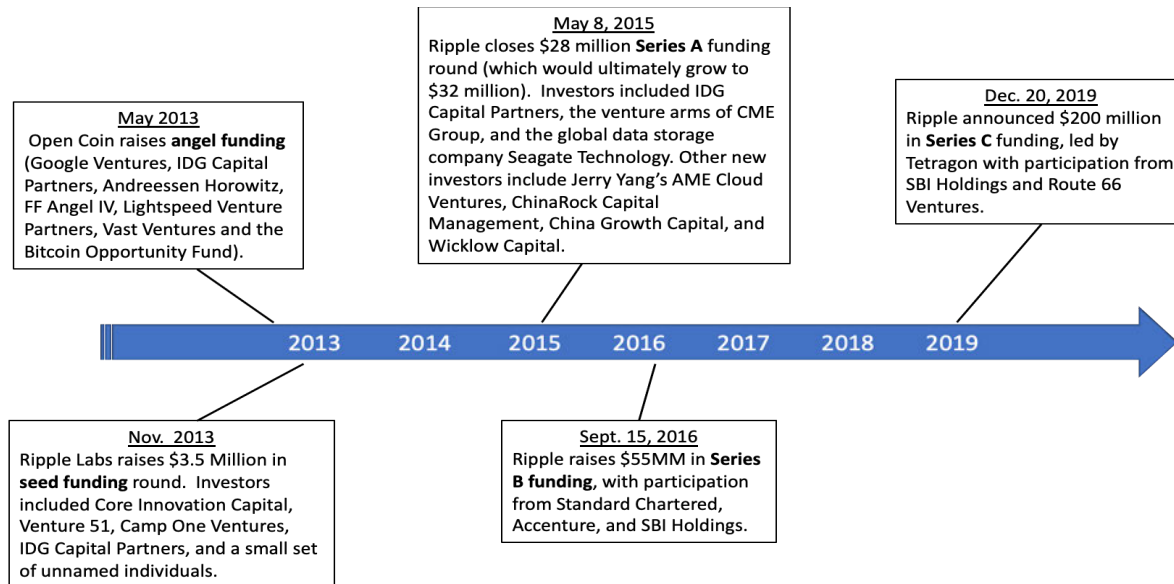


Chart 5. Equity investment rounds in Open Coin/Ripple⁷⁵

That Ripple received investments from the entities set forth in Chart 5 indicates that the marketplace viewed Ripple's vision to build a global payments settlement platform on the blockchain, using a cryptocurrency that could serve as a bridge currency, as a high-value opportunity. Since the business model of SWIFT and the fee structure of banking intermediaries in global settlements was known to face speed and efficiency challenges, the future valuation of Ripple, if successful, was viewed to become a high multiple of the equity investment committed to the company.

⁷⁵ Shirley Siluk, *Google Ventures Invests in Bitcoin Competitor OpenCoin* (May 14, 2013), CoinDesk, <https://www.coindesk.com/google-ventures-invests-in-bitcoin-competitor-opencoin>; Monica Long, *Ripple Labs Raises \$3.5 Million in New Investment Round* (Nov. 12, 2013), <https://ripple.com/insights/ripple-labs-raises-3-5-million-in-new-investment-round/>; Team Ripple, *Ripple Labs Closes \$28 Million Series A Funding Round* (May 18, 2015), https://ripple.com/ripple_press/ripple-labs-closes-28-million-series-a-funding-round/; Jeff John Roberts, *Ripple Just Raised \$55 Million and Signed on These Major Bank Partners* (Sept. 15, 2016), Fortune, <https://fortune.com/2016/09/15/ripple-raises-55m-adds-major-bank-partners-as-blockchain-gains-ground/>; *Ripple Caps Record Year With \$200 Million Series C Funding* (Dec. 20, 2019), Ripple, <https://ripple.com/insights/ripple-caps-record-year-with-200-million-series-c-funding/>.

106. The investments included (but were not limited to) two unpriced early-stage investment rounds and three priced rounds.⁷⁶ Unpriced rounds, typically used when the company is pre-revenue, are often structured as convertible notes. These equity instruments are contractually set up to convert to stock for investors at a discount on the valuation given at the time of the next priced round. I indicate this in Table 3 below, where the 2013 seed round converts to equity once a revenue target is reached (in this case \$1 million). The early-stage unpriced round investments convert to equity at a 50% discount on the share price as compared to the price of the A round valuation (\$1.78/share).

107. Since Ripple is an equity-invested company, product development and market adoption strategies are central to the expectation of increasing market valuation. As is typical of equity investment rounds, each priced round will have milestone expectations associated with the investment. These are intended to make sure the company makes progress in securing market validation of its business hypothesis and vision and is well-positioned to acquire users or customers for its growth expansion. Design, development, product iteration or pivoting, and testing of products under real-world conditions are traditional investor expectations, as are growth strategies to acquire and scale customers.

108. The milestones Ripple was to meet are consistent with these expectations. I provide examples of these expectations in Table 3, along with the share price at the time of each of these rounds:

⁷⁶ I have focused on these dimensions of Ripple's funding because they are reflected in its Consolidated Financial Statements, as addressed in Table 3.

Table 3. Ripple investment rounds, investor expectations and share prices⁷⁷

	Amount, \$ MM	Milestone Expectations	Share Price, \$
Unpriced early-stage round (2013)	NA	NA	Par value (0.0001)
Unpriced early-stage round (2013)	3.5	Notes convert to equity once \$1M in revenue is reached	0.92
A Round (2015)	32	Completion of the “design, development and testing of the Product” and the distribution of sales and marketing materials for the product At least one financial institution client; real customer data	1.78
B Round (2016)	55	Amendment of Series A milestones to two financial institution clients using certain Ripple technology in a live environment by April 30, 2016	3.81
C Round (2019)	200	Not disclosed in consolidated financial statements	61.48

109. The escalation (increase) in price indicates that Ripple met or exceeded investor expectations and that market validation of the value proposition was yielding results. The share price doubled between the A and B rounds and commanded a 16x multiple between the B and C rounds. These share prices are not based on free trading since the company is private but are the result of negotiations among the investor syndicates and founders between rounds, comparisons

⁷⁷ Milestone expectations and share price data from Ripple Labs Inc. Consolidated Financial Statements for fiscal years ending in 2014, 2015, 2016, 2017, 2018, 2019, and 2020 referred to in Materials Considered (Appendix B); Dan Illett, *Meet the money behind bitcoin competitor OpenCoin* (Apr. 16, 2013), CoinDesk, <https://www.coindesk.com/markets/2013/04/16/meet-the-money-behind-bitcoin-competitor-opencoin/>; Monica Long, *Ripple Labs Raises \$3.5 Million in New Investment Round* (Nov. 12, 2013), Ripple Insights, <https://ripple.com/insights/ripple-labs-raises-3-5-million-in-new-investment-round/>; Team Ripple, *Ripple Labs Closes \$28 Million Series A Funding Round* (May 18, 2015), Ripple, https://ripple.com/ripple_press/ripple-labs-closes-28-million-series-a-funding-round/; Jeff John Roberts, *Ripple Just Raised \$55 Million and Signed on These Major Bank Partners* (Sept. 15, 2016), Fortune, <https://fortune.com/2016/09/15/ripple-raises-55m-adds-major-bank-partners-as-blockchain-gains-ground/>; Team Ripple, *Ripple Caps Record Year With \$200 Million Series C Funding* (Dec. 20, 2019), Ripple Insights, <https://ripple.com/insights/ripple-caps-record-year-with-200-million-series-c-funding/>.

to public proxy companies, as well as anticipated valuations in upcoming rounds and at the time of exit.⁷⁸

110. Separate from its equity investment, I understand that Ripple distributed XRP to an array of counterparties with the goal of increasing liquidity in the market.⁷⁹ Such distributions are fully consistent with the methods of product adoption of high-technology companies identified above and the milestone expectations of Ripple's equity investments. For Ripple to fully capitalize on the XRP Ledger's capabilities to undergird a blockchain-based solution to settle international transactions – and so to deliver on the expectations of its equity investors – it was necessary for there to exist sufficient liquidity to support those transactions.⁸⁰ From the point of view of high-technology entrepreneurship, Ripple's distributions of XRP for the purpose of building liquidity are therefore helpfully understood as the blockchain-context equivalent of distributions (sales) of inventory as a means to promote product adoption, as I describe in paragraph 111. As explained above in Part III.A, innumerable other technology firms have employed that strategy to great success.

111. I further understand that Ripple at times sold XRP at a discount from prevailing market prices. As explained above, however, that is also consistent with common marketing strategy for startups in high-technology industries looking to encourage adoption of their products. The practice of selling inventory (here: XRP) to support a healthy market for Ripple's products (here: international settlements), and sometimes doing this at a discount, is analogous to loss leader pricing or penetration pricing market strategies. These strategies are championed by many

⁷⁸ Staff writer, *Managing Risk Through the Use of Milestone-Based Conversion Rate Adjustments* (May 1, 2004), Venture Capital Journal, <https://www.venturecapitaljournal.com/managing-risk-through-the-use-of-milestone-based-conversion-rate-adjustments/>.

⁷⁹ In re: Ripple Labs Inc. Wells Submission on Behalf of Ripple Labs Inc.

⁸⁰ D.B. Yoffie and G. Gonzales, *Ripple: The Business of Crypto* (Feb. 18, 2020), Harvard Business School.

early-stage startups or companies to build a vital user base for the core product (here: use of XRP to settle transactions) and attract a few high-profile users and win business transactions on a larger scale.⁸¹ By this practice, the purpose of XRP sales and making attractive price adjustments for certain market participants is to draw new users to secure recurring revenue in the future for Ripple's global transaction settlement products, which use XRP to function on the ledger. Hence, Ripple had to adopt a penetration market sales strategy to enable the liquidity to scale and address the global settlements market opportunity. Examples we are all familiar with include Google's offering of free Gmail to remove barriers to customers adopting the entire Google G Suite. Or Disney offering Disney+ at discounted rates to customers to compete against Netflix, but in the process draw viewers to Hulu and ESPN+. Similarly, cell phones are priced attractively, while telecommunications companies scale their revenue on data plans.

3. *Ripple's Iterative Development of Software Products Using the XRP Ledger and XRP Exemplifies How High-Technology Companies Develop Products Using Innovative Technologies*

112. The history of Ripple's product design and rollout to the market reflects a go-to-market roadmap influenced by technological innovation, market feedback, and societal change and trust in the use of digital solutions. In particular, as noted above, technology startups such as fintech companies need to show their equity investors a path to market for the new technology and a viable business model that can generate revenue for the company and result in increased valuations. Therefore, Ripple benefitted from an iterative process by which it experimented with means that would demonstrate the utility of its technology in service of its broader business premise.

⁸¹ *Loss Leader Pricing: A Comprehensive Review for Startups* (Feb. 3, 2020), Brex, <https://www.brex.com/blog/loss-leader-pricing/>.

113. I show examples of Ripple’s product rollout and marketing strategies in Chart 6.⁸² The Chart illustrates the timeline of Ripple’s product-portfolio buildout, from software distribution to marketing of cross-currency protocols, and release to clients of the multi-functional RippleNet Product Suite, including the On-Demand Liquidity product.

⁸² Danny Bradbury, *Ripple Labs now taking cash payments following deal with ZipZap and SnapSwap* (Oct. 8, 2013), CoinDesk, <https://www.coindesk.com/ripple-labs-now-taking-cash-payments-zipzap-snapswap>; Monica Long, *RippleCharts Revamp* (Feb. 10, 2014), Ripple Insights, <https://ripple.com/insights/ripplecharts-revamp/>; Team Ripple, *Introducing the New Ripple Trade Client* (July 7, 2014), Ripple Insights, <https://ripple.com/insights/introducing-the-new-ripple-trade-client/>; Team Ripple, *A New Chapter for Ripple* (Oct. 6, 2015), Ripple Insights, <https://ripple.com/insights/a-new-chapter-for-ripple/>; Monica Long, *New Ripple Settlement and FX Solutions Lower the Total Cost of Settlement for Banks and Their Customers* (Oct. 6, 2015), Ripple, https://ripple.com/ripple_press/new-ripple-settlement-and-fx-solutions-lower-the-total-cost-of-settlement-for-banks-and-their-customers/; Team Ripple, *Ripple Strikes Multi-National Deal with SBI Holdings to Meet Growing Demand for Ripple Solutions Across Asia* (Jan. 28, 2016), Ripple Press, https://ripple.com/ripple_press/ripple-strikes-multi-national-deal-with-sbi-holdings-to-meet-growing-demand-for-ripple-solutions-across-asia; Asheesh Birla, *Ripple’s Product Suite is Growing* (July 31, 2017), Ripple Insights, <https://ripple.com/insights/ripples-product-suite-growing/>; HODL Daily Staff, *Confirmed: Ripple Says Major Rebranding Underway, XRP-Powered xRapid Transforming to On-Demand Liquidity* (Oct. 11, 2019), The Daily HODL, <https://dailyhodl.com/2019/10/11/confirmed-ripple-says-major-rebranding-underway-xrp-powered-xrapid-transforming-to-on-demand-liquidity>.

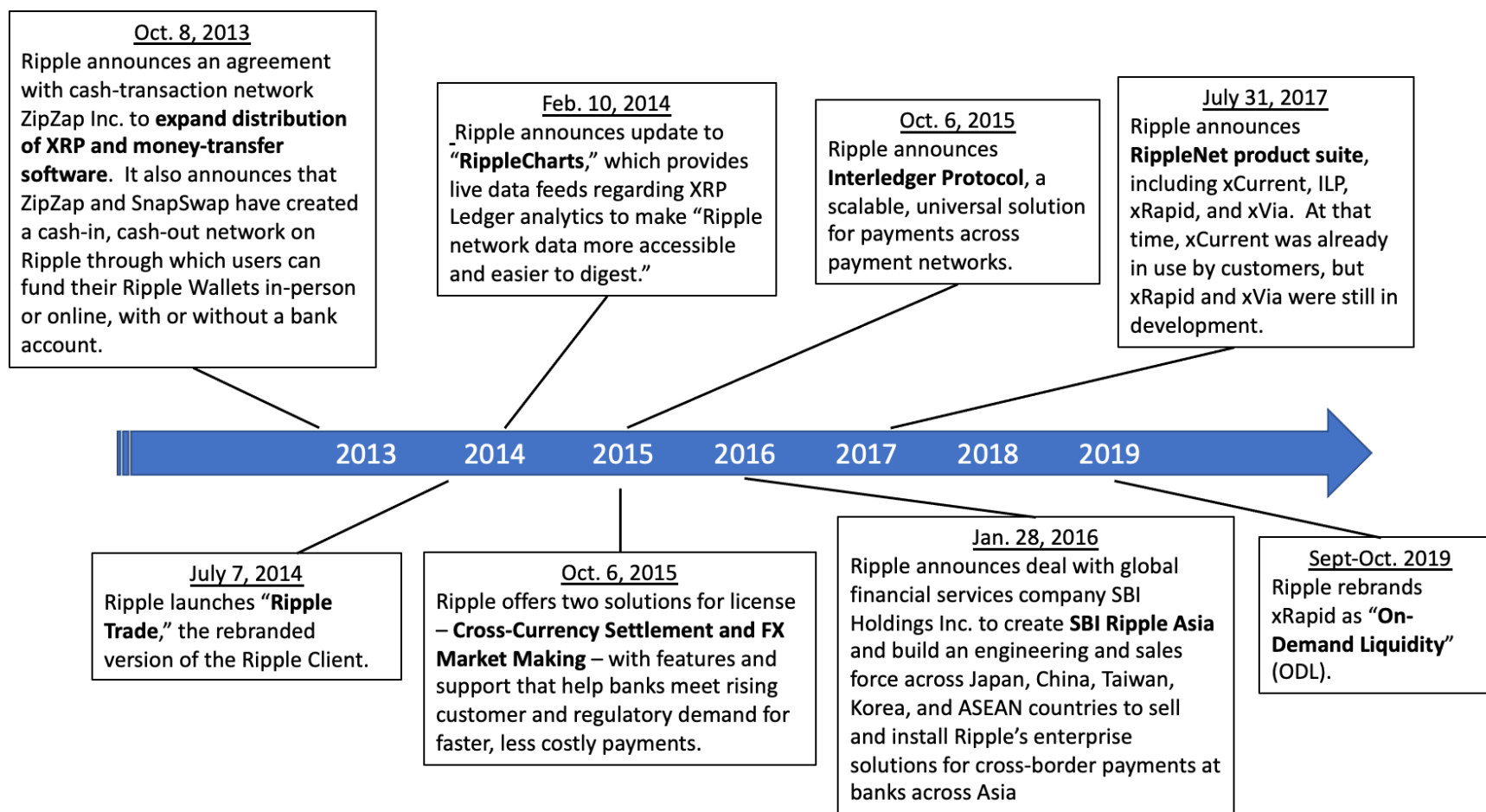


Chart 6. Timeline history of product design and rollout to the markets

114. Further, in Chart 7, I show a timeline of examples⁸³ of the history of commercial adoption of Ripple's products, with new partners and customers as the product portfolio evolves.

⁸³ Danny Bradbury, *Ripple Labs now taking cash payments following deal with ZipZap and SnapSwap* (Oct. 8, 2013), CoinDesk, <https://www.coindesk.com/ripple-labs-now-taking-cash-payments-zipzap-snapswap>; Jon Southurst, *Bullion Exchange Brings Ripple into the Physical World* (Jan. 31, 2014), Coindesk, <https://www.coindesk.com/bullion-exchange-brings-ripple-physical-world>; Pete Rizzo, *Fidor Becomes First Bank to Use Ripple Payment Protocol*, (May 4, 2014), CoinDesk, <https://www.coindesk.com/markets/2014/05/05/fidor-becomes-first-bank-to-use-ripple-payment-protocol/>; Team Ripple, *A Debit Card Powered by Ripple* (Aug. 13, 2014), Ripple Insights, <https://ripple.com/insights/a-debit-card-powered-by-ripple/>; Team Ripple, *Ripple Labs and Earthport Announce Global Partnership* (Dec. 3, 2014), Ripple Insights, <https://ripple.com/insights/ripple-labs-earthport-announce-global-partnership/>; Team Ripple, *Seven Leading Banks Join Ripple's Global Network* (June 22, 2016), Ripple Insights, <https://ripple.com/insights/seven-leading-banks-join-ripples-global-network/>; Team Ripple, *American Express Joins RippleNet – Giving Visibility and Speed to Global Commercial Payments* (Nov. 16, 2017), Ripple Insights, <https://ripple.com/insights/american-express-joins-ripplenet-giving-visibility-and-speed-to-global-commercial-payments/>; MoneyGram, *MoneyGram Announces Strategic Partnership with Ripple* (June 17, 2019), MoneyGram, <https://ir.moneygram.com/news-releases/news-release-details/moneygram-announces-strategic-partnership-ripple>; Nikhilesh De, *Euro Exim Bank Taps Ripple's xRapid for Cross-Border Settlements* (Jan. 8, 2019), CoinDesk, <https://www.coindesk.com/euro-exim-bank-taps-ripples-xrapid-for-cross-border-settlements>.

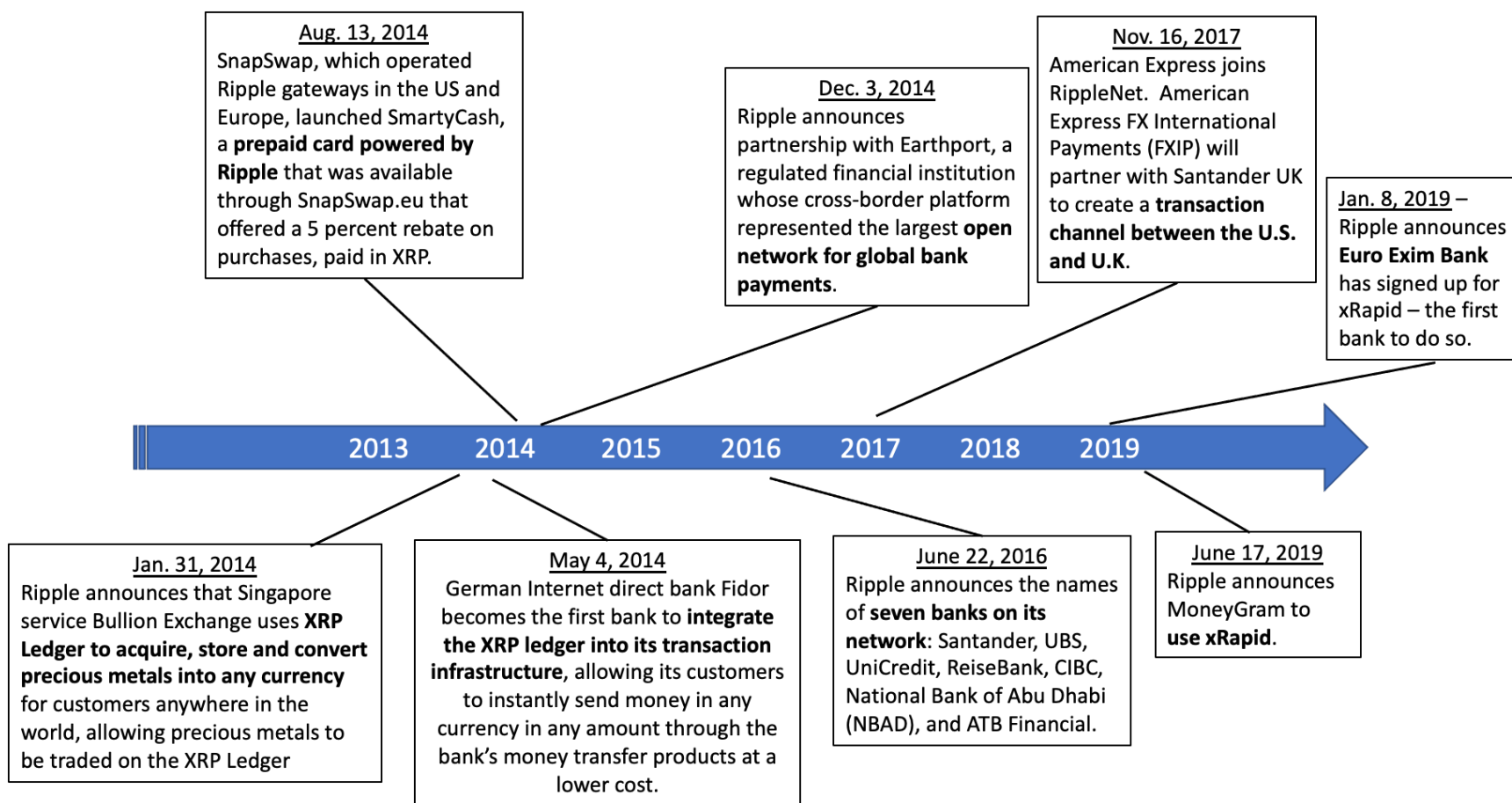


Chart 7. Timeline history of product adoption (use case examples) by market participants

115. By 2013, the XRP Ledger already had 12 gateways (payment systems), or on-ramps and off-ramps to the XRP Ledger that allowed funds to enter and exit the Ledger using fiat currencies. Building on its original vision of creating a payments network, Ripple then experimented with the best ways to build use cases leveraging the XRP Ledger and XRP. For example, Ripple entered into a partnership with ZipZap and SnapSwap to build a means for people to complete online transactions by paying in cash at selected locations, rather than by requiring bank accounts to buy and sell XRP.⁸⁴ In 2014, the partnership with SnapSwap resulted in the launch of a pilot program debit card, SmartyCash, that offered a 5 percent rebate on purchases, paid in XRP.⁸⁵ This early product pilot validated the value proposition of disintermediation of payments, and Ripple as a digital payments company.

116. By 2014, a new use case (service) was launched by Bullion Exchange, a Singaporean entity, in which gateways to the XRP Ledger could be used to convert gold and precious metals into any currency.⁸⁶ Users maintained a balance in an XRP Ledger wallet (similar to a bitcoin wallet), while the bullion itself was vaulted in Singapore. Users were then able to use that balance to pay anyone instantly in any currency available on the XRP Ledger, or trade the bullion itself. The use case demonstrated that the XRP Ledger was not only useful for digital payments, but also could be used to support digital transactions of physical goods.

⁸⁴ Danny Bradbury, *Ripple Labs Now Taking Cash Payments Following Deal with ZipZap and SnapSwap* (Oct. 8, 2013), CoinDesk, <https://www.coindesk.com/markets/2013/10/08/ripple-labs-now-taking-cash-payments-following-deal-with-zipzap-and-snapswap/>.

⁸⁵ A Debit Card Powered by Ripple (Aug. 13, 2014), Ripple, <https://ripple.com/insights/a-debit-card-powered-by-ripple/>.

⁸⁶ Jon Southurst, *Bullion Exchange Brings Ripple into the Physical World* (Jan. 31, 2014), CoinDesk, <https://www.coindesk.com/markets/2014/01/31/bullion-exchange-brings-ripple-into-the-physical-world/>.

117. Starting in 2015, Ripple started announcing partnerships with global banks to facilitate currency exchange and cross-border settlements, around the time of its A round investment.⁸⁷

The involvement of banks as investors in Ripple sends a signal that Ripple was seen as an important solutions provider in the global payments market and that fintech had become a scalable disruptive innovation as early as 2015. The announcement of two licensed products for banks, cross-currency settlement and foreign exchange market making,⁸⁸ as well as a partnership with Earthport, a regulated financial institution with a platform representing the largest open network for global bank payments, represented major entries in the global settlements space.⁸⁹ Many additional banking transaction channels and Ripple partnerships with global banks and major financial corporations followed in 2016 and continue until today as trust in fintech integration in banking transactions has developed and software solutions have become more broadly accepted.

118. Importantly, it is not necessary for the development of Ripple's business that all, or even any, of these specific applications have proved commercially successful. Again, as I explained above, it is routine for high-technology businesses seeking to capitalize on novel technology to proceed through numerous iterations of their products as they seek the appropriate market niche. Ripple's development is fully consistent with that pattern.

⁸⁷ Monica Long, *Ripple Adds Santander InnoVentures Fund as Series A Investor* (Oct. 6, 2015), https://ripple.com/ripple_press/ripple-adds-santander-innoventures-fund-as-series-a-investor/.

⁸⁸ Monica Long, *New Ripple Settlement and FX Solutions Lower the Total Cost of Settlement for Banks and Their Customers* (Oct. 6, 2015), Ripple, https://ripple.com/ripple_press/new-ripple-settlement-and-fx-solutions-lower-the-total-cost-of-settlement-for-banks-and-their-customers/.

⁸⁹ *Ripple Labs and EarthPort Announce Global Partnership* (Dec. 3, 2014), Ripple, <https://ripple.com/insights/ripple-labs-earthport-announce-global-partnership/>.

IV. The Ecosystem of the XRP Ledger and XRP Is Decentralized, and Has Many Different Uses and Potential Uses

119. Ripple has built and catalyzed a wide range of use cases leveraging open-source distributed ledger technology for payments without a trusted third party. While cross-border payments and bank settlements are a target market for Ripple, the vision was to enable a broader internet of value. This internet of value does not only pertain to the movement of money, but to enable the exchange of any asset that is of value to someone, including stocks, votes, frequent flyer points, securities, intellectual property, music, scientific discoveries, and more. Some use cases are developed or enabled directly by Ripple; others result from third-party developers.

A. Products Developed by Ripple

120. During its product development, Ripple has enabled several important use cases related to payment services, cross-currency settlements, and FX (foreign exchange) solutions.⁹⁰ While not exhaustive, some key use cases are shown in Charts 6 and 7, predominantly focused on institutional users such as banks and financial institutions. Ripple's products in service of its global-settlements use cases include:⁹¹

- RippleNet is a payment platform, powered by the XRP Ledger, that is Ripple's flagship product suite for financial institutions. The purpose of RippleNet is to facilitate cross-border payments. It can leverage blockchain technology to process transaction information in mere seconds and, through its On-Demand Liquidity (ODL) feature, allows customers to send value across certain fiat currency pairs in a matter of minutes using XRP as a bridge currency.
- RippleNet comprises three main products formerly referred to as xCurrent, xVia, and xRapid.

⁹⁰ Monica Long, *New Ripple Settlement and FX Solutions Lower the Total Cost of Settlement for Banks and Their Customers* (Oct. 6, 2015), https://ripple.com/ripple_press/new-ripple-settlement-and-fx-solutions-lower-the-total-cost-of-settlement-for-banks-and-their-customers/.

⁹¹ Pedro Febrero, *A Guide to the Ripple Product Suite* (Feb. 21, 2019), Coin Rivet, <https://coinrivet.com/guides/altcoins/a-guide-to-the-ripple-product-suite/>.

- xCurrent is a global real-time gross settlement system that enables participants to message, clear, and settle transactions. Gross settlement means that transactions are handled and settled individually, rather than bundled together. If two banks have made nostro/vostro (one bank keeps money at another bank) arrangements, xCurrent can change balances on both ends in seconds. Since xCurrent is built on top of the Interledger Protocol (or “ILP,” described in more detail below), users can exchange foreign currency rates in real time, and it is not dependent on XRP.
- xVia is a software solution used by businesses to plug into RippleNet to send payments.
- ODL, formerly known as xRapid, is a liquidity solution for banks that uses XRP as a bridge currency to eliminate delays in global payments while also lowering their cost, thus making cross-border payments instant and inexpensive. It eliminates the need for foreign-currency accounts. A financial institution can also use RippleNet without its on-demand liquidity feature. In that case, the main advantages are settlement speed, accuracy, and end-to-end traceability.
- Ripple products also make use of ILP,⁹² an open protocol suite for sending payments across different ledgers, most often cited by third-party developers as a key differentiator for adopting XRP or use of the XRP Ledger. Much like the internet, connectors route packets of money across independent networks. The open architecture and minimal protocol enable interoperability for any value transfer system.⁹³ Traditional payment networks operate independently from each other. Sending value is easy only if the sender and recipient have accounts on the same network, but it can be slow and expensive if they have accounts on different networks. Interledger makes it easy to transact in whatever currency or payment network you choose, because it is not tied to any one company, blockchain, or currency. Using ILP, XRP can be sent to someone who wants to receive

⁹² Dalmas Ngetich, *Ripple's Interledger Protocol (ILP) is what the internet of value needs to thrive* (Apr. 5, 2019), EthereumWorldNews, <https://ethereumworldnews.com/ripples-interledger-protocol-ilp-is-what-the-internet-of-value-needs-to-thrive/>.

⁹³ Interledger Foundation, *The Interledger Protocol*, <https://interledger.org/developer-tools/get-started/overview/>.

ether, or you can send U.S. Dollars to someone who wants to receive Euros. In June 2017, Ripple open-sourced the first bitcoin plugin for ILP, which would help users carry out transactions across multiple ledgers, not just the XRP Ledger, but also including private blockchains, public networks, a traditional payment channel, and a centralized ledger.

121. Ripple is a leading fintech company in an increasingly scalable and robust cryptocurrency ecosystem. Accolades from leading media such as FastCompany⁹⁴, Forbes FinTech 50,⁹⁵ CBInsights FinTech 250,⁹⁶ the World Economic Forum,⁹⁷ and American Banker⁹⁸ have recognized the commercial value of the company in its product development and market growth path. Further, the Consumer Financial Protection Bureau (CFPB) recognized the promise of Ripple's technology to provide transparency to consumers regarding cost of cross border remittances.⁹⁹ In addition, the International Monetary Fund (IMF) indicated that "new non-bank

⁹⁴ Morgan Clendaniel, *World Changing Ideas 2019: All the winners, finalists, and honorable mentions* (Apr. 8, 2019), Fast Company, <https://www.fastcompany.com/90329244/world-changing-ideas-2019-all-the-winners-finalists-and-honorable-mentions>.

⁹⁵ Michael del Castillo, *Blockchain 50: Billion Dollar Babies* (Apr. 16, 2019), Forbes, <https://www.forbes.com/sites/michaeldelcastillo/2019/04/16/blockchain-50-billion-dollar-babies/?sh=4647f85a57cc>.

⁹⁶ BusinessWire, *CB Insights Reveals the Fintech 250 List at Future of Fintech* (June 19, 2017), Bloomberg, <https://www.bloomberg.com/press-releases/2017-06-29/cb-insights-reveals-the-fintech-250-list-at-future-of-fintech>.

⁹⁷ *Ripple Labs Awarded as Technology Pioneer by World Economic Forum* (Aug. 5, 2015), Ripple, https://ripple.com/ripple_press/ripple-labs-awarded-as-technology-pioneer-by-world-economic-forum/.

⁹⁸ *20 Fintech Companies to Watch* (Oct. 12, 2015), American Banker, <https://www.americanbanker.com/slideshow/20-fintech-companies-to-watch>.

⁹⁹ Remittance Transfers under the Electronic Fund Transfer Act (Regulation E), 85 Fed. Reg. 34870, 34880 (June 5, 2020), <https://www.govinfo.gov/content/pkg/FR-2020-06-05/pdf/2020-10278.pdf>.

players [such as Ripple] are entering the payments space offering innovative services to regulated financial institutions and to consumers and merchants.”¹⁰⁰

B. Products Enabled by Ripple

122. The XRP Ledger and XRP are used in software products beyond those developed and commercially offered by Ripple. In that regard, Ripple’s developer tools and their partnerships, investments, and acquisitions have led to important use cases that increase the liquidity of XRP and technical innovations in the use of XRP and the XRP Ledger, thus benefitting Ripple’s own products:

- RippleX hosts an open payment developer platform¹⁰¹ that provides infrastructure, tools, services, programs, and support for creation of new applications on the XRP Ledger. An open community of developers, including those associated with UBRI, can advance solutions and innovations needed to allow businesses, consumers, institutions, and governments to grow applications in the digital economy. RippleX is built on the principle that the success of blockchain in realizing the Internet of Value hinges on how easily new technology integrates with or displaces incumbent solutions. For example, the platform offers a software development kit (SDK) that allows crypto and non-crypto developers to integrate payments into any mobile application.
- RippleX also builds infrastructure and helps innovative blockchain projects grow through investments in emerging companies, acquisitions, and new partnerships. For example, RippleX partners with a major global blockchain payments provider (BitPay), a cryptocurrency wallet (BRD Wallet), a blockchain analysis company (Chainalysis), and a digital asset custody platform (Anchorage) to enable the development of new products and services. Further, several examples of RippleX’s investments and acquisitions include:

¹⁰⁰ International Monetary Fund, *Technical Note on Supervision of Financial Market Infrastructures, Resilience of Central Counterparties and Innovative Technologies*, United States: Financial Sector Assessment Program, Country Report No. 20/249 (Aug. 2020).

¹⁰¹ *RippleX Open Developer Global Payment Platform*, Ripple, <https://ripple.com/rippleX/>.

- The acquisition (really an acqui-hire) of crypto-trading company *Algrim* focused on developing foreign exchange algorithms.
- The acquisition of *Logos*, a turnkey payments solution focused on scale and sustainability, has been integrated in the development of a decentralized finance (DeFi) system built on the XRP Ledger. The focus on DeFi will allow the XRP Ledger to compete with Ethereum in this space.
- The acquisition of *Strata*,¹⁰² focused on developing and operating node infrastructure and services for the ILP network has enabled some of the first truly internet-native micropayments, with more than 10 billion transactions flowing on the ILP network for applications such as Coil¹⁰³ and Stronghold.¹⁰⁴ Coil is a content monetization platform that allows creators, developers, companies, and nonprofits to receive compensation in XRP for their content. Stronghold is a company that creates virtual payment networks to enable instant settlement and interoperability between legacy and new payment networks. The proprietary code from Strata's infrastructure will be opened to allow all developers to use it for their own projects and make the ILP network more accessible.

C. Other Products and Use Cases

123. Further, a plethora of new products/services and use cases leveraging the XRP Ledger or XRP have been developed by other individuals and companies. Aside from multiple e-commerce companies using the XRP Ledger because of its speed and cost benefits, payment processors, micropayment platforms, and non-profits have built application use cases that demonstrate the breadth and depth of the commercial value of the XRP Ledger and XRP.

¹⁰² *Welcoming Strata Labs*, Coil, <https://coil.com/p/xpring/Welcoming-Strata-Labs/cArrz5jdt>.

¹⁰³ *See Coil – A New Way to Enjoy Content*, <https://coil.com/>.

¹⁰⁴ *See Stronghold, Providing Financial Services For All*, <https://stronghold.co/>.

124. To assess the value and impact of these use cases, and to identify a subset useful for illustrative purposes, I evaluated an initial list of 660 use cases for XRP or the XRP Ledger, supplied by counsel and attached as Appendix C, against three criteria:

- First, I cross-referenced this list against Crunchbase¹⁰⁵ to assess whether these companies had received equity investment, as of June 2021. This step indicates whether the use cases were perceived by the investment community as growth companies with the capacity to scale. I rely on Crunchbase because it is a leading firm that, in my experience as an expert in this space, is a reliable source of information regarding whether particularly innovative firms received equity funding.
- Second, I determined, using the same databases, the founding date of the companies behind those use cases. This step identifies and eliminates companies that could not have been started as the result of adopting the XRP Ledger or XRP. However, some companies founded prior to this cutoff date may have implemented some use case for XRP or the XRP Ledger. Thus, the actual population of companies using XRP and the XRP Ledger could be much larger than the population examined.
- Third, I examined the applications for the remaining use cases. The purpose of this step was to understand which innovations are being powered by the XRP Ledger or which support the cryptocurrency XRP for payments or other commercial uses.

¹⁰⁵ Crunchbase, <https://www.crunchbase.com>.

125. Out of the 660 use cases initially identified, 153 companies were founded after Ripple's incorporation (2012). Of those 153, I identified 91 use cases with equity investment data.¹⁰⁶

Chart 8 reports on those data:

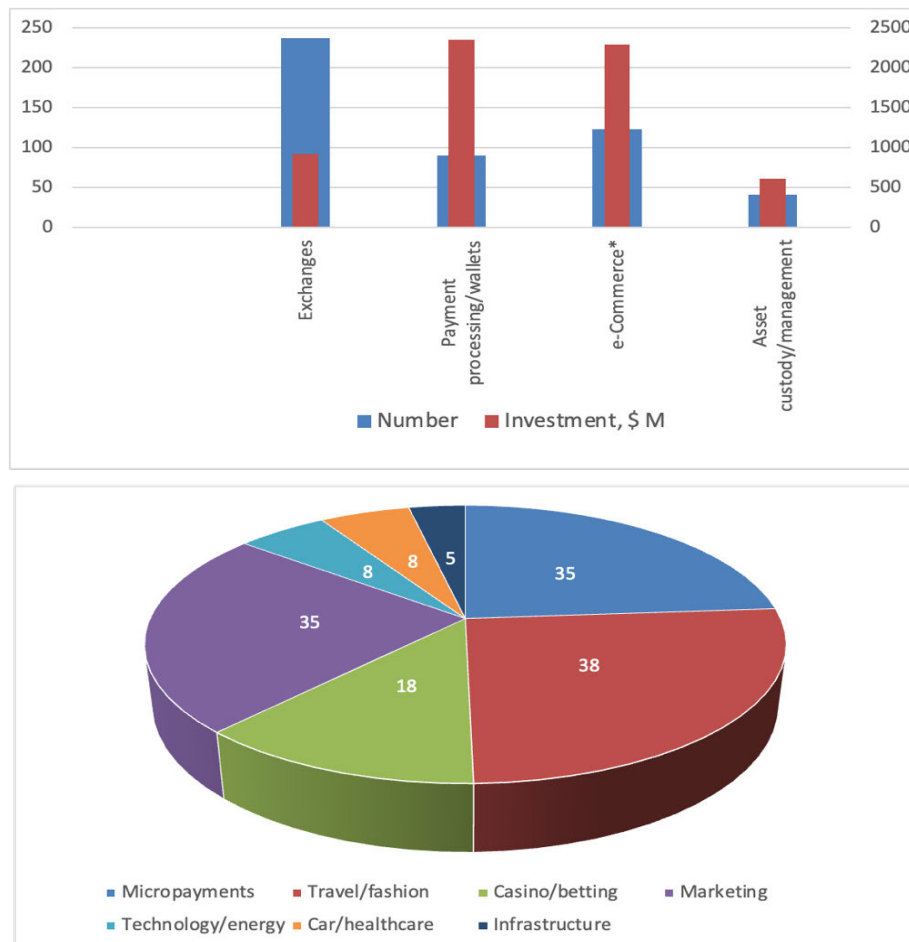


Chart 8. Distribution of use cases leveraging XRP or XRPL technology

126. Several features of Chart 8 merit explication. First, this chart indicates that venture capital invested over \$6 billion in these 91 companies. Most of the financing was for payment processing/digital wallets and e-commerce companies (indicated by the number of companies). E-commerce use cases, in turn, were dominated by micropayments, marketing, and

¹⁰⁶ See Appendix D.

travel/fashion companies seeking to use XRP as a means to monetize data or to transact contractual agreements and payments. This data is updated as of June 2021.¹⁰⁷

127. I have also identified particular use cases that I believe represent a spectrum of applications leveraging either XRP and the XRP Ledger, and which provide information on the value proposition of these technologies.

128. **Stablecoins.** The Estonian company CoinField introduced “Sologenic” – built on the XRP Ledger to issue stock and fiat-backed stablecoins.¹⁰⁸ “SOLO” coins are issued on the XRP Ledger, allowing liquidity to be moved in a matter of seconds. This creates a dynamic bridge between crypto assets and non-blockchain-based assets by being paired directly with fiat currency as collateral to settle with third-party brokerage firms. SOLO is available for trading on CoinField’s existing exchange, CoinField’s upcoming DEX, and major global crypto exchanges. According to CoinMarketCap,¹⁰⁹ the live market cap of Sologenic is \$167,033,890 USD. It has a circulating supply of 200,001,808 SOLO coins and a maximum supply of 400,000,000 SOLO coins, which trade at \$0.85.

129. **Micropayments.** Coil is a platform that provides an alternative method for gaming, video, and blog creators to monetize their content online.¹¹⁰ As subscribing fans consume content, the platform uses an open API called Web Monetization to stream micropayments to creators instantaneously. The Coil application is built on the Interledger Protocol, and it supports

¹⁰⁷ Because this information is necessarily dynamic, I reserve the right to update my analysis if necessary before trial.

¹⁰⁸ *CoinField Introduces “SOLOGENIC” - built on XRP ledger to issue stock and fiat backed stablecoins* (Oct. 15, 2019), Coinfield, <https://www.globenewswire.com/en/news-release/2019/10/15/1929657/0/en/CoinField-introduces-SOLOGENIC-built-on-XRP-ledger-to-issue-stock-and-fiat-backed-stablecoins.html>.

¹⁰⁹ *Sologenic*, CoinMarketCap, <https://coinmarketcap.com/currencies/sologenic/>.

¹¹⁰ Cory Johnson, *Full Court WordPress: Coil Deal Boosts Functional Blockchain — And XRP* (May 19, 2020), Forbes, <https://www.forbes.com/sites/coryjohnson/2020/05/19/full-court-wordpress-coil-deal-boosts-functional-blockchain---and-xrp/?sh=96f0ba8283ed>.

XRP payments in real time thanks to a partnership with the XRP Ledger wallet provider GateHub.¹¹¹ A recent seed investment of Coil in Cinnamon, a video streaming app, will allow for XRP micropayments to reward content creators on YouTube.¹¹² Similarly, Audiotarky uses Coil's web monetization micropayment platform – built on the Interledger Protocol to pay musicians for content by using XRP.¹¹³ RippleX (then Xpring) participated in Coil's \$4 million seed round and provided a 1 billion XRP grant to the platform, worth roughly \$265 million at the time.¹¹⁴ The Coil application has 300 million users, a market capitalization of nearly \$1M, and a coin circulation of 1,014,094.00 COIL, which trade at \$0.95.¹¹⁵

130. **Travel.** TapJets is a private jet chartering service that accepts multiple cryptocurrencies, including (until recently) XRP, to settle transactions. It offers instant on-demand private jet booking for private jet charters in the U.S. and worldwide by focusing on the entire user experience of private travel. TapJets offers a Rewards Program and a dedicated 24x7 concierge staff for each trip. TapJets decided to accept XRP for payments after conducting a poll of its customer base on Twitter.¹¹⁶

131. **Video Gaming.** Forte is a video game development company enabled by blockchain with a strong focus on gaming.¹¹⁷ The company is leveraging the open-source ILP to seamlessly

¹¹¹ Marie Huillet, *Ripple-Backed Web Monetization Platform Coil Now Supports XRP* (Oct. 2, 2019), CoinTelegraph, <https://cointelegraph.com/news/ripple-backed-web-monetization-platform-coil-now-supports-xrp>.

¹¹² Gerelyn Terzo, *Cinnamon Spices Up Video Streaming With Ripple Tech* (Feb. 22, 2019), <https://cryptobriefing.com/cinnamon-spices-video-ripple-tech/>.

¹¹³ Fans Manual, AudioTarky, [https://www.audiotarky.com/\\$/manual/fans](https://www.audiotarky.com/$/manual/fans).

¹¹⁴ *Ripple's Xpring Invests \$260 Million in Coil Content Platform* (Aug. 15, 2019), Ledger Insights, <https://www.ledgerinsights.com/xrp-ripple-xpring-invests-260-million-coil-content/>.

¹¹⁵ *Coil*, CoinMarketCap, <https://coinmarketcap.com/currencies/coil/>.

¹¹⁶ TapJets – Instant, Private, Safe and Simple (@TapJets), Twitter (May 15, 2018), <https://mobile.twitter.com/tapjets/status/996402253195079682>.

¹¹⁷ Darryn Pollock, *Ripple Partner Forte Teaming Up With Game Developers to Integrate Blockchain* (Mar. 24, 2020), <https://www.forbes.com/sites/darrynpollock/2020/03/24/ripple-partner-forte-teaming-up-with-game-developers-to-integrate-blockchain/?sh=201614da1435>.

facilitate cross-blockchain transactions in its platform, and using the ILP to connect the XRP Ledger with other ledgers.¹¹⁸ This directly benefits game developers by allowing them to focus on creating great experiences instead of worrying about a particular technology or the need to become an expert in blockchain. The company has recently partnered with a host of well-regarded game developers to try and implement blockchain and unlock never-before-possible revenue streams in traditional game designs, while being versatile enough to serve as the economic and creative foundation for blockchain-native experiences. Its gaming partners include Hi-Rez Studios, Netmarble, Magmic, nWay, and DECA Games, as well as Disruptor Beam, Other Ocean, and Kongregate. XRP will serve as the settlement currency, following a backing by Ripple with a \$100M fund.¹¹⁹

132. **Data Privacy.** Data443 is global data privacy management company focused on the distribution, protection, and stewardship of data that runs five validators on the XRP Ledger.¹²⁰ Data443 data classification, e-discovery, and European Union’s Global Data Protection Regulation (“GDPR”) compliance tools are integrated with the XRP Ledger.¹²¹ The GDPR governs data protection and privacy as well as data transfers outside of the European Union. Data443 chose to work with Ripple’s technology because the XRP Ledger is enterprise-focused with a level of maturity and capability in the blockchain realm. Data443 works with some of the

¹¹⁸ Danny Aranda, *Partnering with Forte* (Mar. 12, 2019), Xpring, <https://medium.com/xpring/partnering-with-forte-44b6d3304bbb>.

¹¹⁹ *Ripple-Backed Startup Pushing to Bring XRP to \$140 Billion Gaming Industry Announces Slew of Partnerships* (Nov. 23, 2020), The Daily Hodl, <https://dailyhodl.com/2020/11/23/ripple-backed-startup-pushing-to-bring-xrp-to-140-billion-gaming-industry-announces-slew-of-partnerships/>.

¹²⁰ *DATA443 (OTCPK:LDSR) Contributes to Ripple* (Feb. 1, 2018), Intrado GlobeNeswire, <https://www.globe.newswire.com/news-release/2018/02/01/1330179/0/en/DATA443-OTCPK-LDSR-Contributes-to-Ripple.html>.

¹²¹ *Data443 Classification, eDiscovery and GDPR Compliance Now Available for Use with Ripple Blockchain* (May 24, 2018), GlobeNewsWire, <https://data443.com/data443-classification-ediscovery-and-gdpr-compliance-now-available-for-use-with-ripple-blockchain/>.

world's largest data and cybersecurity companies to develop and market its services, including Microsoft, Citrix, and CyberArk.¹²²

133. **Payment Processing.** NOWPayments is a crypto payment gateway that lets businesses accept XRP payments and donations for consumer goods and services. The company chooses to deploy payment processing on the XRP Ledger because transactions are characterized by extraordinary speed and near-zero fees, as well as a high level of security.¹²³ Cryptocurrencies including XRP, Bitcoin, and ether allow for payments for a wide range of applications, including payroll¹²⁴ to send salaries or bonuses in crypto, or for any business dealing with payouts on a regular basis. The company has restaurants, freelance, and commission-based companies in its client base.

134. The development of these use cases – those built by Ripple, those invested or enabled by Ripple, and those developed by third parties – undermines any suggestion that the XRP Ledger or XRP lack inherent commercial utility. Rather, the XRP Ledger is an innovative technology, which facilitated XRP becoming one of a top tier of the largest cryptocurrencies. Both of these technologies have found uses in a wide variety of use cases. Although the primary application for Ripple's products was aimed at payments, these derivative applications are in payment services, micropayments, data security, and other uses that are not related to institutional settlements. In many cases, new businesses leverage XRP and the XRP Ledger to build scalable services in the digital economy that form the basis of new value transfer applications in

¹²² *Associations & Partners*, Data443, https://data443.com/our_partners/.

¹²³ *Accept XRP Payments*, NowPayments, <https://nowpayments.io/supported-coins/xrp-payments>.

¹²⁴ *NOWPayments introduces cryptocurrency salary payments solution for employers* (Mar. 16, 2021), https://thepayers.com/cryptocurrencies/nowpayments-introduces-cryptocurrency-salary-payments-solution-for-employers--1247802?utm_source=dlvr.it&utm_medium=twitter.

industries well beyond Ripple's primary use case for XRP as a bridge currency for cross-border settlements.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on October 4, 2021

A handwritten signature in black ink, appearing to read 'Peter Adriaens', written over a horizontal line.

Peter Adriaens

Appendix A - Curriculum Vitae

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<https://www.difin.io>

CURRICULUM VITAE FOR PETER ADRIAENS, PhD, PE, BCEEM, NAE¹

Director, Center for Smart Infrastructure Finance, The University of Michigan
Professor (tenured), Department of Civil and Environmental Engineering, The University of Michigan
Professor of Entrepreneurship (without tenure), Ross School of Business, The University of Michigan (2006-16)
Professor (without tenure), School for Natural Resources and the Environment, The University of Michigan
Finnish Distinguished Professor, Research Institute of the Finnish Economy, Helsinki, Finland (2013-16)
Distinguished Prof. of Entrepreneurship, Sichuan Univ., Suzhou Higher Education Innovation Park, China (2006-16)

Education:

Postdoctoral Scholar: Environmental Engineering Science - Stanford University (1990-1992)
Ph.D.: Environmental Sciences, Univ. of Calif., Riverside (1989)
M.S.: Environmental Biotechnology and Bioengineering, Univ. of Gent, Belgium (1986)
B.S.: Agricultural Engineering, Univ. of Gent, Belgium (1984)

Academic and Professional Positions:

Professor, Civil and Environmental Engineering (since 1992), The University of Michigan; Professor of Entrepreneurship and Strategy, Ross School of Business (since 2006); Finnish Distinguished Professor, Helsinki, Finland (2014-2016); Chair, Foundation of the Association of Environmental Engineering and Science Professors (2017-2020); Vice-President, President-Elect and President, Association of Environmental Engineering and Science Professors (AEESP; 2007-2009); Distinguished Professor of Entrepreneurship, Sichuan University, China (current).

Nonacademic Positions

CTO and co-founder, Equarius Risk Analytics (2013 - current); Co-Founder, Corymbus Asset Management (2016 – 2017); President, Global CleanTech LLC (2007 - current); CEO, KeyStone Compact Group Ltd, (2009-2014) and KeyStone Compact UK, Ltd (2014-2016); Co-Founder, Global CleanTech Cluster Association, a Swiss foundation (2010 – 2017); Academic-in-Residence and Director for Asian Operations, LimnoTech (2006-2013).

Research Interests:

Environmental Engineering (1991-2006): Technology development for natural and engineered microbial systems; Risk and uncertainty management for site characterization and technology implementation; Microbial sensing in complex environmental systems; Green infrastructure design
Entrepreneurship and Digital Finance (2006-current): Financial network theory models; Smart infrastructure finance; Blockchain finance.

Teaching Experience:

Environmental Engineering: Environmental Bioengineering (1992-2002); Civil and Environmental Engineering Capstone Design Course (2004-2006); Case Studies in Sustainability (2009-2011)
Entrepreneurship and Finance: Entrepreneurial Business Fundamentals (2006-current); CleanTech Entrepreneurship (2007-current); CleanTech Venture Assessment (2007-2014); Introduction to Business Models (2009-2011); Environmental Finance (2015-current); Water Risk in the Capital Markets (2016-2019); Infrastructure Project Finance (2019-current); Engineering Economics and Finance (2020-current).

Project Management Experience:

PI, Nuveen-UM municipal bond program; Program PI, Digital Financing of Agriculture; Program PI, Design and validation of Multi-Asset Renewal Funds to for transitioning to low-carbon economies (Finland; 2013-2016); Great Lakes and St. Lawrence Blue Growth Fund Advisory Board (2016 - current); Low Carbon Technology Team Expert, Asia Development Bank (2013-2016); Project Director or Co-PI for in excess of \$22M in national and international research grants since 1994, involving multiple institutions; Responsibility for financial and technical reporting; Interviewing, hiring and releasing of project staff

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members, students and postdocs; Facilities design and remodeling for project-specific requirements; Laboratory quality, data management, and financial compliance with external audits (EPA, NSF, NIH).

Administrative Experience:

Director, Center for Smart Infrastructure Finance and co-director UM-FinTech Collaboratory, University of Michigan; Program Director, Master of Engineering in Smart Infrastructure Finance, Civil and Environmental Engineering, The University of Michigan; International project management (GCCA, Research Institute of Finnish Economy); Member and co-chair, Chair, Scholastic Standing Committee (2017-2019); Alumni Development Committee, CEE (2012-2016); Member, Search Committee, Executive Director Zell Lurie Institute for Entrepreneurial Studies (2012-2013); Chair, COE Nomination Committee (2008-2011); President/President-Elect/Vice President, Association of Environmental Engineering and Science Professors (2007-2010); Chair, COE Nomination Committee (2008-2011); Member, Innovation Committee, Pfizer Facility Expansion (2009-10); Chair, Internal Assessment Committee, Taubman School of Architecture and Urban Planning; Founding Member, Center for Entrepreneurship, College of Engineering, The University of Michigan; Member, Faculty Senate Assembly, University of Michigan (2006-08); Member, Dean Search Advisory Committee, College of Engineering (2005-06); Program Director, Environmental Technology Council, College of Engineering (2001-2006); Environmental Faculty Steering Committee, 2001-2004; Acting Director, EPA/DOD National Center for Integrated Bioremediation Research and Development (NCIBRD), Oscoda, Michigan, 7/31/02-8/31/03; Associate Director, Institute for Environmental Science, Engineering and Technology (IESET), 09/01/00-8/31/02; Co-Director, Initiative in Sustainable Aqueous Systems (iSAS), 2001-2004; Member, CEE Executive Committee, 2002-2004; Chair, College of Engineering Honors and Awards Committee (01-02); Member, *ad hoc* Committee for Infrastructure Initiative (2001); COE Awards Committee Member, 09/00-8/01; Department Executive Committee, 1998-01 and 02-03; Chair, Promotion Committees PRS Dr. Jiasong Fang and Dr. Andrei Barkovskii; Curriculum Committee, Dept. Civil & Environ. Eng., 1994-1995, 1996-97; Research Committee, Dept. Civil & Environ. Eng., 1995-1996; Departmental Awards Committee, 1996-98; Grant Management/Budgeting, 1992-present.

National and International Service (last 20 years):

National Science Foundation site review committee, ReNUWit (Reinventing Urban Water Infrastructure) ERC Center (Stanford-Berkeley-Colorado School of Mines) 2013-2017; Member, AEESP Foundation (2010-2013); Co-Chair (with Gregory Characklis, University of North Carolina, Chapel Hill), NSF Workshop on "Integrating Economic and Financial Principles into Environmental Engineering Research and Education", Washington DC (January 26-28, 2011); President, Association of Environmental Engineering and Science Professors (AEESP), 2009-2010; President-Elect, AEESP, 2008-2009; Vice President, AEESP, 2007-2008; International Advisory Board, Center for Environmental Science and Engineering – Dalian, China (Since 2006); Member, NSF CLEANER Program sensor development committee (2005-2007); Chair – Membership Committee, Association of Environmental Engineering and Science Professors (AEESP); International Advisory Board, Program on Sustainable Land Use, German National Environmental Laboratory, Leipzig, Germany (2003-2008); Member, Sustainable Water Resources Management Group, Mexico City (Director: Prof. Vaca Mier, Autonomous University of Mexico), since 2000; External Appraisal Team, Ontario Council on Graduate Studies, Department of Chemical Engineering and Applied Chemistry, University of Toronto, May 13-15, 2002; Principal Editor, Bioavailability and Bioremediation Domain, TheScientificWorld, Inc., 2001-2004; Member, Review committee, Swedish Environmental Research Foundation – Cold Climate Bioremediation Research Program, 11/01, Stockholm, Sweden; Founding Member, Environmental Science and Technology Magazine Advisory Board, 2001-2004; International Advisory Board and Scientific Committee, International Symposium for Environmental Biotechnology (ISEB 2002), Veracruz City (Mexico); International Advisory Board, Biosorption and Bioremediation Conferences, Prague, Czech Republic (since 2000); Associate Editor, J. Contaminant Hydrology (1999-2003); Science Advisory Committee, South & Southwest Hazardous Substance Research Center (1998-2002).

Innovation and Commercialization Activities (since 2000):

CEO, KeyStone Compact Group, Ltd dba Corymbus Asset Management (Ann Arbor – London, UK – Singapore – Zurich, Switzerland); CEO, Equarius Risk Analytics, LLC, Ann Arbor, MI; Co-Founder and

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<https://www.difin.io>

Global Head Judge, Global CleanTech Cluster Association (since 2010); Panel moderator, Global CleanTech Investment, Cleantech Venture Day, Lahti, Finland (4/12); Invited Speaker, Low Carbon Investment Conference, London, UK (11/11); Co-Organizer and Panel Moderator, Enterprise Ireland CleanTech Investment Conference, Dublin, Ireland (11/11); Invited Speaker, Asia-Pacific Business Leaders Sustainability Conference, Sentosa Island, Singapore (10/11); Panel Moderator and Speaker, Asia-Pacific CleanTech Investment Forum, Singapore (7/11); Conference Co-Chair, Global CleanTech Cluster Association EcoCities Investment Conference, Montreal, QC, Canada (2011); Head Judge, Global CleanTech Cluster Association (<http://www.globalcleantech.org/>, since 2011); Advisory Board, OnGreen (<http://www.ongreen.com/>, since 2010); CleanTech Advisor, Frankel Commercialization Fund and Wolverine Venture Fund (since 2007); Co-Advisor (with Tom Lyon, Dow Professor of Sustainable Science, Technology and Commerce and Director, Erb Institute of Global Sustainable Enterprise), The Ben Franklin Project: Structuring Agreements for Chinese Investment in US CleanTech Startups (2010-2011); Project Director: Water Footprints and Business Water Risk: Investment in Risk Management Strategies (2011-2012); Member, World Resources Institute, Aqueduct Alliance for Business Water Risk (2010-2013); Conference Chair, Michigan-China Clean Tech: Collaboration and Competition in Energy, Smart Grid, Green Cities and Transportation, Ann Arbor MI (2010); Panelist, West Coast CleanTech Forum, Vancouver, BC, Canada (2010); Keynote Speaker (closing session), Societal value Creation from Biotechnology, International Symposium for Environmental Biotechnology, Italy (2010); Co-Chair, Cleantech Investment and Policy Conference, Ann Arbor MI (2009); Technical Advisor, CTSI Clean Technology and Sustainable Industries Conference and Trade Show (2008-2010); Chair, CleanTech Venture Opportunities Conference, Ann Arbor MI (2007); Chair, Emerging CleanTech Opportunities workshop, CleanTech Venture Conference, Toronto, ON, Canada (2007); Consultant to Africa Stockpiles Program (World Bank), Geneva, Switzerland (11/06-1/08); Roundtable on Entrepreneurship Education (participant), Stanford University, CA (10/06); Sustainable Water Resources Round Table (Department of Interior) Workshop on Multi-Stakeholder Use of the Great Lakes (Co-chair with Paul Freedman, Limno-Tech, and Robert Goldstein, Electric Power Research Institute), Ann Arbor, MI (April, 2005); SERDP/ESTCP Workgroup on Sediment Remediation Strategies, Charlottesville, VA (8/04); Technology Benchmarking Workshop for Remediation of Dioxin-Contaminated Sediments and Floodplains, Ann Arbor, MI (3/04); Technology transfer – Bioremediation in Cold Climates, Lund, Sweden (plenary lecturer); Remediation Technologies Development Forum (Sediments group), Seattle, WA; 11/02; 220 participants, Plenary lecturer; University of Michigan Great Lakes Symposium: Our Challenging Future (hosted by Michigan Sea Grant, the School for Natural Resources and the Environment, and the Center for Sustainable Systems), Ann Arbor, MI; 11/02; 150 participants, session leader and key-note speaker (Sediment Contamination, Toxicity, and Beneficial Re-Use); International Roundtable – Intelligent Infrastructure for Sustainable Potable Water, International Symposium for Environmental Biotechnology, Cleaner Bioprocesses, and Sustainable Development, Veracruz, Mexico; 6/02; Organizer, International Advisory Committee, and Plenary lecturer; Department of Environmental Quality-Emergency Response Division, Innovative Technology Seminar, East Lansing, MI; 5/02; 120 participants; key-note speaker; Technology Transfer for Contaminated Sediments, The Housatonic Valley Association and Housatonic River work group, Utica, New York, 2/02. Lecturer; Michigan Environmental Health Association Ground Water Conference, Thompsonville, MI; 10/01; 300 participants; key-note speaker; The CWC Group, Investing in the Future of the Global Water Industry, Financing Mechanisms and Technological Needs of the Water Company of the Future, London, UK; 11/27-28 2000; 90 participants, panel member; Mexico Autonomous University, 2nd Symposium Workshop and Short Course on Sustainable Water: Issues and Technologies, Mexico City, Mexico, 11/8-11/11, 2000; Key-note speaker and lecturer; World Association of Industrial and Technological Research Organizations, Knowledge Transfer in RTOs, The Hague, The Netherlands; 10/11-10/13, 2000; Participant; Michigan Department of Environmental Quality (M-DEQ), Celebration 2000 DEQ Workshop, Roscommon, MI; 07/00; Key-Note Speaker, National Workshop on Natural Attenuation, University of Tuebingen, Stuttgart, Germany; 01/00.

Invention Disclosures/Patents

Adriaens, U.S. Provisional Application; Application No.: 62/656,627 Title: waterBeta: Evaluating Asset Risk In View Of Water Exposure (2017); Trademark for Corymbus, a cluster-based investment framework; Adriaens, Anand and Zielinski (2017): Mobi-Platform, an on-line repository for global mobility

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innovations; Adriaens, Tahvanainen and Haeuselmann (2016): Multi-Asset Renewal Funds (2017); Adriaens (2014): Equarius Risk Analytics™ and Equarius Risk™; Adriaens and Faley, 2011: Keystone Compact™ – a data-driven business design and positioning tool; Adriaens and Faley, 2012: Building KeyStone Companies™; KeyStone Score™; Adriaens, Freedman, Marr, 2013: waterBeta™; waterVaR™; Adriaens & LimnoTech: NanoCap – Method for Design of in Situ Reactive Sediment Caps (D); Vanella & Adriaens, 2010: DNAzyme-based Nanosensors for Mercury and Arsenic (USPTO # 7,709,619); Adriaens & Chang: Multicomponent Droplet Packaging into Single Microchannel (D); Adriaens & Chang: FlowGenomics (D); Adriaens & Limno-Tech: H2-GRID-A Novel Geotextile for Sediment Remediation (D); Adriaens & Chang: Parallel High Throughput and Ultrasensitive Single Molecular Detection Platform (D); Adriaens & Dolney: Reusable Microbial Fuel Cells (D).

Professional Societies/Organizations:

Academy of Management (since 2012: Entrepreneurship, Technology & Innovation Management, Organizations and the Natural Environment); American Academy of Environmental Engineers (since 2010); U.S. Association of Small Business and Entrepreneurship (since 2008); CleanTech Network (since 2006); American Society for Engineering Education – Entrepreneurship Division (since 2006); International Water Association (2003-2008); International Society for Environmental Biotechnology (2000-2006); Association of Environmental Engineering and Science Professors (since 2002); Remediation Technologies Development Forum (since 1995); American Geophysical Union (1998-2008); European Geophysical Society (1998-2007); Society for Environmental Toxicology and Chemistry (1998-2004); American Chemical Society (1990-1998); American Society for the Advancement of Science (since 1990); The Honor Society of Agriculture (1989-1992); American Society Microbiology (1988-2004); Registered Professional Engineer, Belgium (1986).

Languages:

Mother tongue: Dutch; Reading, Writing and Conversational Fluency in English, French and German.

Honors and Awards:

Finnish Distinguished Professor (2013-2016); Top-5% Global CleanTech Expert; Member, Belgian Royal Academy of Applied Sciences (2012); Member-by-Eminence, American Academy of Environmental Engineers (2009); Distinguished Professor of Entrepreneurship, Sichuan University (Suzhou Campus), China (2007-2012); Round Table on Entrepreneurship Education (REE), 2009, Best Paper Award on "Teaching CleanTech in Global Economies"; Hong Kong, China; Mayor of Dalian (China) Service Excellence Award for contributions to the City of Dalian (2009); COE Service Excellence Award (2009); George J. Huebner Research Excellence Award, University of Michigan (2007); Adjunct Professor, Eberhard-Karls University, Tuebingen, Germany (2001-2008); 2003 CH2MHill/AEESP and Parsons Engineering Doctoral Thesis Award (Student: Dr. Michael McCormick); American Chemical Society, 2000 Best Student Paper Award; Student: Alexa N. Rihana.; American Geophysical Union (Hydrology Section) Spring 1998 Best Student Paper (Alexa N. Rihana); American Chemical Society 1998 Best Student Paper Award (John M. Lendvay); American Chemical Society 1998 Graduate Student Award in Environmental Chemistry (Angela Lindner); Civil and Environmental Engineering Outstanding Research Award, 1997.

Staff and Student Mentoring:

Staff Supervision

Field research staff, 2004-2006.

Mr. Timothy Towey, Engineering Research Associate IV, 04-07; senior engineer, LimnoTech (Ann Arbor)

Dr. Shu Chi Chang, postdoc 2005-2006, Professor, National Cheng-Kung University, Taichung, Taiwan.

Dr. Mihaela Gavril, postdoc 2004-2007, currently eMBA, Trent University, Ontario, Canada.

Dr. Raveender Vannela, postdoc, 2004-2008, Assoc. Research Scientist, University of Arizona, Tempe AZ

Dr. Noemi Barabas, postdoc 2003-2004, currently senior engineer, LimnoTech, Inc. (Ann Arbor)

Dr. Cyndee Gruden, postdoc (01-03), currently Assistant Professor, University of Toledo

Ms. Anna Khijniak, M.D., assistant research scientist, 7/01-8/03, currently medical intern, UCSD.

Dr. Michael McCormick, postdoc (01-02), currently Assistant Professor, Hamilton College, NY

Mr. Charles 'Lee' Major ('96-02), field manager, national Center for Integrated Bioremediation Research and Development, Oscoda, MI

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https://www.researchgate.net/profile/Peter_Adriaens2
<https://www.difin.io>

Dr. Alexa N. Rihana, postdoc (00-02), currently Associate professor, Department of Civil and Environmental Engineering, Wayne State U.
 Ms. Annemarie Lucas, admin. support staff/GSSA, 1999-2000
 Dr. Karen Skubal, postdoc 1999-2000, Mayer Assistant Prof. of Urban and Environmental Studies, Case Western Reserve U.; senior research scientist, Argonne National Laboratory.
 Dr. Babu Fathepure, associate research professor, 1995-1999, currently Associate Professor, Department of Microbiology and Molecular Genetics, Oklahoma State U.
 Dr. Elizabeth Carraway, postdoc 1992-93, currently Associate Professor, Department of Civil and Environmental Engineering, Clemson University
 Dr. Andrei Barkovskii, assistant research professor 1994-98, 4-8/01, currently Associate Professor, Department of Environmental Sciences, Georgia State University and College.
 Dr. Iris Albrecht, visiting assistant prof. 1996-1997, stay-at-home mother/independent business owner
 Dr. Mary Lynam, research technician 1994-1997

Master's and MBA Project Mentoring (sampling of last 10 years)

Ms. Jingyi Wang: "*Design of NanoCap Material for Sediment Remediation: Technology Integration*". Collaboration with LimnoTech and International Water Technologies (China)
 Ms. Xiaoliu Zhao: "*Design of NanoCap Material for Sediment Remediation: Business Development*". Collaboration with LimnoTech and International Water Technologies (China)
 Mr. Timothy Slusser: "*Design and Feasibility of an After-Market Business for Li-Batteries*". Collaboration with the Michigan Economic Development Corporation and Sandia National Laboratories.
 Mr. Hao Niu; "*Scaling of Cost-Benefit Analysis for Green Roof Deployment: Application to Washington, DC*"; Co-Chair with Prof. Jiti Zhou, Dalian Institute of Technology, (Dalian, China.)
 Dr. Roya Gitiafroz; "*Anaerobic Bioremediation of Benzene*"; Chair, Elizabeth Edwards, Univ. Toronto.
 Mr. John Rice, Erb Student (SNRE/Ross School of Business); "*Real Options Analysis Financial Modeling for Investment in Hybrid Cooling Technology for the Power Industry*"; Co-Chair; with Michael Moore, SNRE, and Gautam Kaul, Ross School of Business).
 Dr. Robert Levine, PhD student ChemE; "*Value Chain Analysis and Life Cycle Assessment of Algae Biodiesel: An Entrepreneurial Perspective*".
 Ms. Amy Oberlin, UG ChemE; "*Value Chain Analysis and Life Cycle Assessment of Algae Biodiesel: An Entrepreneurial Perspective*".
 Ms. Yi Zhang, Mathematical Finance; "*Value-at-Risk (VaR) Analytics for Stocks and Portfolios Exposed to Water Risk: Method Development*"; Collaboration with Equarius Risk Analytics LLC.
 Ms. Christine Sun, Mathematical Finance; "*waterVaR Analytics for MSCI Steel, Precious Metals and Electric Utilities Companies*"; Collaboration with Equarius Risk Analytics LLC
 Ms. Chenchen Ouyang, Natural Resources and Economics; "*Operational Risk Analytics for Water-Exposed Companies: Financial and Sustainability Disclosures*"; Collaboration with Equarius Risk Analytics LLC.
 Ms. Ran Gao, Environmental Engineering; "*Quantifying Operational and Financial Risk in Portfolio Companies*"; Collaboration with Equarius Risk Analytics LLC.
 Ms. Yuan Liu, Statistics and Finance; "*Development of Exchange Traded Funds and Indices for Emerging Industry Sectors*"; Collaboration Equarius Risk Analytics and Research Institute of the Finnish Economy.
 Mr. Alexandre Mercier, Environmental Engineering and Finance; "*Value Capture and Investment Grade of Public Firms Renewing in Smart Mobility and Smart Grid*".
 Ms. Weidi Sun, Environmental Engineering and Natural Resource Management; "*Value Capture and Investment Grade of Private Growth Firms in Smart Grid*"; Collaboration with KeyStone Compact Group Ltd and Research Institute for the Finnish Economy.
 Ms. Nicole Bette, Biomedical Engineering; "*Value Capture and Investment Grade of Private Growth Firms in Smart Mobility*"; Collaboration with the Research Institute of the Finnish Economy.
 Mr. Nic Miller, Environmental Engineering and Business; "*Development of Storyboard Video for Multi-Asset Renewal Funds*"; Collaboration with Research Institute of the Finnish Economy.
 Mr. Viktor Passinsky, MBA, Ross School of Business: "*Strategic Financial Risk Management of Business Water Risk*"; Collaboration with Equarius Risk Analytics LLC.

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<https://www.difin.io>

Mr. Edward Grubb, MBA, Ross School of Business: *"Strategic Financial Risk Management of Business Water Risk"*; Collaboration with Equarius Risk Analytics LLC.

Ms. Allison Shapiro, MBA Ross School of Business: *"Loan Covenant Structures for Corporations and Projects with Water Risk"*. Collaboration with LimnoTech, Inc.

Mr. Vinayak Manchanda, MBA Ross School of Business: *"Business Value of Water Footprints: A Value Chain and Financial Risk Perspective"*. Collaboration with LimnoTech, Inc.

Ms. Rachel Smeak, MBA Ross School of Business: *"Business Risk Analytics in Water-Constrained Environments"*, Collaboration with LimnoTech, Inc.

Mr. Satish Katpally, MBA Ross School of Business: *"Loan Covenant Structures for Corporations and Projects with Water Risk"*. Collaboration with LimnoTech, Inc.

Mr. Cameron Smith, Ross School of Business: *"Structuring Business Development in China: The LimnoTech Inc Case"*. A Ross-LimnoTech project.

Ms. Elizabeth Uhlhorn, Ross School of Business: *"Business Water Risk Opportunity Development"*. Collaboration with LimnoTech Inc.

Ryan Moya, SEAS and Ross School of Business: *"Industry clustering for the new mobility"*, MCube collaboration with University of Michigan Department of Transportation and IOE.

Anthony Arnold, SEAS and CEE: *"Development and application of waterBeta, a financial framework for water risk pricing in equities"*.

Doctoral (Chair-listed) students:

Dr. Erik Petrovskis (1995); Director of Sustainability, Meier Stores (Grand Rapids)

Dr. Hildegard Selig (1997); Faculty, Baker College, Lansing, MI

Dr. Angela Lindner (1998); Professor and Associate Dean, U. Florida - Gainesville

Dr. Jack Lendvay (1999); Associate Professor and Department Chair, University of San Francisco

Dr. Karen Skubal (1999); U.S. Department of Energy (DOE) Office of Environmental Management (EM)

Dr. Q. Shiang Fu (2000); Research Associate, Stanford U. and Entrepreneur, US/China

Dr. Alexa N. Rihana (2000); Associate Professor (University of Detroit-Mercy.)

Dr. Michael McCormick (2001); Associate Professor, Hamilton College (New York)

Dr. Noemi Barabas (2002); Senior Associate, LimnoTech, Inc. (Ann Arbor)

Dr. Hirotaka Saito (2002); Associate Professor at Tokyo University of Agriculture and Technology

Dr. Shu Chi Chang (2005); Professor; Dept. Environmental Engrg; National Chung Hsing University

Dr. Ke (Betty) Li (2007; with Linda Abriola, Tufts University): Dupont, Philadelphia.

Dr. Corrie Clark (2007; with F. Brian Talbot, Business): Congressional Review Office, Washington DC.

Dr. Meng-ying Li (2008; with Anna Michalak, Stanford University): Assistant Professor, Taiwan

Dr. Hoa Trinh (2009; with Christian Lastoskie, Civil & Environ. Eng.): Environ. Defense Fund, Vietnam

Dr. Niu Hao (2010; with Prof. Zhou, Dalian U. of Technology): Environmental Management, Beijing, China

Dr. Hua Cai (2015; with Prof. Ming Xu, School for Environment and Sustainability): Prof., Purdue U.

Dr. Dimitris Assanis (2016; with Prof. Margaret Wooldridge, Mechanical Eng.), Postdoc, U. Delaware

Ms. Ping Chen (with Prof. Ming Xu, School for Natural Resources & Environment; 2018)

Lt Col Dennis Sugrue (Expected graduation 2021)

Ms. Mingyan Tian (Expected graduation 2023)

Mr. Kenneth Chung (Expected graduation 2023)

Ms. Dan Li (Expected graduation 2024)

Visiting Research Scientists:

Damborsky, Jiri (6/96-8/96): "Molecular Descriptors for Dioxin Dechlorination Activity". Visiting from the Laboratory for Molecular Computations, Masaryk University, Brno, Czech Republic

Kuty, Michal (6/96-8/96): "Molecular Descriptors for Dioxin Dechlorination Activity". Visiting from the Laboratory for Molecular Computations, Masaryk University, Brno, Czech Republic

Lendvay, John (5/00-8/00 and 5/01-6/01): "Field Implementation of a Halorespiration Barrier at the Bachman Road Residential Wells Site" Visiting from the University of San Francisco, Department of Environmental Science.

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Deborah de Lange (2013-14): "Industry ecosystems for smart grid deployment", Visiting from Ryerson University (Toronto, Canada) – Ted Rogers School of Management.

Antti Tahvanainen (2014-15): "Financial Technology for Industrial Renewal", Visiting from the Research Institute of the Finnish Economy, Helsinki, Finland.

Short Courses:

Smart Infrastructure and Data-Driven Financing Models, Exec Ed. Course, Aalto University, London, UK (April 2019)

Design of Green Investment Funds and Endowment for the Great Lakes Basin, Conference of Great Lakes and St. Lawrence Governors and Premiers, Evanston, IL (July 2016)

Green Industry Clusters for Economic Development, Taipei, Taiwan (2016; 30 attendees)

CleanTech Entrepreneurship Executive Education Program, Collaboration with Aalto University (Helsinki, Finland) and UMORE (Shanghai, China), Zhangjiang Hi-Tech Park, Shanghai, China (May 2016)

Financial Innovation Academy: Multi-Asset Renewal Fund (MARF), Research Institute for the Finnish Economy and Aalto University, Helsinki, Finland (2015)

Michigan Green Technology Entrepreneurship Academy (M-GTEA), Grand Rapids, MI (2011-2012).

Business of Sustainability and CleanTech Entrepreneurship, Suzhou Institute of Sichuan University, Suzhou, China ('09: 30 students; '10: 70 students)

International Summer School "Biomonitoring, bioavailability and microbial transformation of pollutants in sediments and approaches to stimulate their biodegradation", Genoa, Italy (9/12/05-9/14/05)

Biological Processes for Sustainable Water Use, Veracruz, Mexico (8/11/05-8/14/05), Lecturer

Soil and Sediment Sampling Design and Methods, Ann Arbor, MI (5/10/04-5/14/04), Course Director

3rd Sustainable Potable Water Short course, Aut. University Mexico, Mexico City, 9/02, Plenary lecturer.

NSF Pan-American Advanced Study Institute, Rio de Janeiro, Brasil, July 22-August 2, 2002 (co-PI and lecturer; Danny Reible, LSU, PI)

NATO Advanced Study Institute, Prague, Czech Republic (2001) (lecturer; Danny Reible, LSU, PI)

International Applied Environmental Geochemistry (AEG) Masters Course (20-35 students), University of Tuebingen (Germany), Microbiology I Module: April 14-18, 2000, Microbiology II Module: November 17-

21, 2000, Microbiology I Module: April 18-20, 2001, Microbiology II Module: November 26-29, 2001.,

Microbiology II Module: 11/02, 11/03, 02/05, 11/05, 11/06.

Environmental Microbiology: Fundamentals and Applications (30 participants), Czech Academy of Sciences; Prague, Czech Republic; June 6-13, 1998 (organizer and lecturer)

Research Grants and Contracts

Current and Pending:

ERC Preproposal (NSF). Smart Infrastructure Design to enable Equity, Wellness, Accessibility, Liquidity and the A.I. Knowledge economy (with Stanford University, University of Central Florida, Illinois Institute of Technology). (UM co-PIs: Jerry Lynch and Mingyan Liu; Stanford co-PI: Nicole Ardoin; UCF co-PI: Debra Reinhard). Pending

LEAP-HI (NSF). Design Metrics and Data Valuation Strategies to Scale Financing of Intelligent Infrastructure Systems (with Jerome Lynch, Branko Kerkez and Andrew Wu UM; Matthew Dixon, IIT).

Pending

Ford URP. Business Models for Autonomous Vehicles and Infrastructure, \$200K (with Yafeng Yin), 01/01/21-06/30/22.

Great Lakes Protection Fund. Financial Mechanisms and the Conditioning of Lending and Capital Flows in Agriculture Supply Chains for Farm-Based Nutrient Performance, \$150K (with Jon Allan and Ravi Anupindi, UM; David LeZaks, Croatan Institute)

Nuveen. Smart Infrastructure Finance Center Partnership Fixed Income Products ESG Strategy, \$150K (with LimnoTech, subcontract), 9/1/20-8/31/21.

Ripple. UM – FinTech Collaboratory and Center for Smart Infrastructure Finance (\$1M, PI, 2 Co-PIs), 01/01/19-12/31/20.

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Completed:

REFRESH: Researching Fresh Solutions to the Energy/Water/Food Challenge in Resource-Constrained Environment. Phase II. (co-PI, Other PIs: Schwank (ChE); Barteau (ChE); Savage (ChE); Huang-Saad (BME, CfE); Fisher (ChE); Miller (SNRE); Scavia (Graham Institute); Hoffman (RSB, SNRE); Hill (Architecture and Urban Planning); \$3 M.; Start/End: 05/01/13-10/31/16

The Ford Motor Company, New Mobility Industry Value System Analysis (\$100K; with Sue Zielinski), 01/01/14-06/30/17.

The Ford Motor Company, Design of a Global Mobility Databank: Deal Sourcing and Use Case Design (\$100K; with Sue Zielinski), 01/01/14-06/30/17.

Finnish Innovation Fund (Helsinki, Finland). Financial Innovation for Industrial Renewal: Multi-Asset Fund Structuring and Design. \$ 2.0 MM, 01/01/14-09/30/16.

American Jobs Project (sponsor: JPB Foundation, New York). Design of CleanTech Clusters in 10 Manufacturing States (PI: Jennifer Granholm); \$500K (\$20K, Adriaens); Start/End: 05/15/15-11/15/15.

National Collegiate Inventors and Innovators Association (NCIIA). SMART E-Team Course: Reverse Innovation Ventures in New Mobility (with Sue Zielinski, UM), 7/31/13-12/31/14. \$35K.

NSF Workshop. Integrating Economic and Financial Principles into Environmental Engineering Research and Education, Co-PI (with G. Characklis, UNC), 10/01/10-06/30/13; \$50K., Current.

The Dow Chemical Company. Michigan Dioxin Exposure Study, 3/1/04-12/31/10, Co-PI \$15 M. (\$ 2.7M to co-PI)

MEDC/Sakti: Sustainable Supply and Recycling of Electric Vehicle Battery Constituent Metals (with Christian Lastoskie), \$500,000.

SERDP. Integrating Uncertainty Analysis in Risk Assessment for In Place Contaminated Sediment Strategies, \$1,427,000 (1/1/05-12/31/08), PI (Co-PIs: LimnoTech, Inc., Steven Wright).

SERDP. Optimization of iron sulfide –based reactive barriers. Co-PI (PI: Hayes; Co-PIs: Abriola, Olsen, Demond), \$1,100,000.

EPA-STAR. Development of Re-Usable Fuel Cells, 9/1/2004-12/31/2007, PI \$150,516.

Michigan Tri-Corridor Fund. Development of a prototype micro-integrated flow cytometer, \$400,000; 9/1/04-8/31/06; Co-PI and consultant (with Steven Skerlos, ME, Jennifer Beard, Accuri Cytometers).

The Dow Chemical Company. Technology Benchmarking Workshop for Remediation of Dioxin-Contaminated Sediments, 1/1/04-8/31/04, PI, \$65,000.

U.S.EPA/Navy: "Pearl Harbor Dioxin and PCB-Contaminated Sediments: Technology Demonstration", 10/1/02-12/31/03; \$650,000, co-PI (with LimnoTech, Inc. Ann Arbor, MI); UM portion \$162K.

Chlorine Chemistry Council: "Quantification of dioxin dechlorination and outgassing fluxes in urban waterways", 5/1/00, gift for dioxin research; \$ 50,000 PI (with Prof. K. Jones, Lancaster University, UK).

NOAA-Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET): "Technology Development for Contaminated Coastal and Estuarine Environments: Hydrogen-Enhanced Remediation of Capped and Natural Sediments"; 9/1/01-8/31/03; \$200,030; PI (Co-PI: Cyndee Gruden, CEE, and John Hull, Aquablok, Ltd.).

Taiwan Government, NSF, UM, Ford: "Sensing, Control and Optimization of Metalworking Fluids Recycling: Microbiological Component (with Steven Skerlos, Mechanical Engineering; Kim Hayes, CEE; Richard Brown, Electrical Engineering and Computer Science); > \$ 1 m. (3 years); Co-PI.

Michigan Department of Environmental Quality (MDEQ), "Remediation of Chlorinated Solvents at the Bachman Road Site Using Innovative Technologies: Surfactant Enhanced Remediation and Halorespiration, Phases II and III-Adjustment", 1/1/99-9/30/02; \$ 350,000, PI (Co-PIs: Linda Abriola, Mike Barcelona, Babu Fathepure, Kim Hayes, James Tiedje, Frank Loeffler, Kurt D. Pennell, Erik Petrovskis, and Robert Hickey).

NSF: "Propagation of Uncertainty in the Field Extrapolation of Laboratory Experiments: Application to Dioxin-Contaminated Sediments", 9/1/99 - 8/31/02; TDC: \$233,851, IDC: 101,813, Total: \$335,664 Co-PI (PI Pierre Goovaerts)

ONR, "Effect of Hydrogen on Microbial Community Structure and Dechlorination Potential of Marine and Estuarine Sediments", 3/1/99-10/28/02, \$350,000 (PI).

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<https://www.difin.io>

USEPA/DOE/NSF/ONR, Assessment of Biotic and Abiotic Processes Controlling the Fate of Chlorinated Solvents in Mixed Waste Under Iron and Sulfate Reducing Conditions Using Laboratory and Field Microcosms, 1/1/98-12/31/01; 97-2463; \$ 499,988; Co-PI with Kim Hayes and Michael Barcelona.

Michigan Department of Environmental Quality (MDEQ), "Remediation of Chlorinated Solvents at the Bachman Road Site Using Innovative Technologies: Surfactant Enhanced Remediation and Halorespiration, Phases II and III", 1/1/99-12/31/99; \$ 1,549,538, PI (Co-PIs: Linda Abriola, Mike Barcelona, Babu Fathepure, Kim Hayes, James Tiedje, Frank Loeffler, Kurt D. Pennell, Erik Petrovskis, and Robert Hickey).

National Science Foundation - Center for Microbial Ecology (MSU; James Tiedje, Director): "Ecological and Kinetic Distribution of Soil Microbial Communities"; 8/1/92-4/30/99; \$ 120,000, PI.

NIH (National Institutes of Health): "Cellular Biotechnology Training Program"; 7/1/96-6/30/01; \$ 3,260,219; Co-I, David Friedman (UM, PI).

Office of Naval Research, "Natural and Enhanced Transformation of Polychlorinated Dibenzo-p-Dioxins in Estuarine and Marine Sediments", 1/1/96-2/28/99; \$ 185,000; PI, Andrei Barkovskii (Co-PI).

Michigan Department of Environmental Quality (MDEQ), "Remediation of Chlorinated Solvents at the Bachman Road Site Using Innovative Technologies: Surfactant Enhanced Remediation and Halorespiration", 3/1/96-12/31/98; \$ 850,000, PI, Babu Fathepure (Co-PI).

National Council of the Pulp and Paper Industry for Air and Stream Improvement (NCASI): "Natural and Enhanced Dechlorination of 2,3,7,8-Tetrachlorinated Dioxins and Dibenzofurans in Biological Solids", 2/1/98-7/31/98; \$ 30,000, PI.

EPA-Great Lakes Mid Atlantic Hazardous Substance Research Center and DoD: "Investigations of Abiotic and Biotic Reductive Dechlorination Processes in Anaerobic Subsurface Systems", 6/1/96-5/31/98; \$158,000; PI, Kim F. Hayes (Co-PI).

EPA-Great Lakes Mid Atlantic Hazardous Substance Research Center: "Metabolic and Cometary Biodegradation Kinetics Under Variably Saturated Conditions: Correlations with Water Potential and Moisture Content", 6/1/97-5/17/98; \$ 118,718; PI.

University of Michigan, Program to Promote International Partnerships: "Development of Molecular Descriptors for Dioxin Dechlorination Activity", 1997-98; \$ 5,000; with Masaryk University, Czech Republic, PI.

U.S. Army Corps of Engineers Waterways Experiment Station, "Effects of Polycyclic Aromatic Hydrocarbons (PAH) on Reductive Transformation of Polychlorinated Dibenzo-p-Dioxins (PCDD) in Dredged Sediments", 4/1/96-1/31/97; \$ 58,000; PI.

U.S. EPA, "Anaerobic Transformations of Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans as a Bioremediation Strategy for Passaic River Sediments", 6/1/95-5/30/96; \$ 92,105. PI.

U.S. EPA, "Intrinsic Bioremediation at the Aquifer-Surface Water Interface (St. Joseph, MI)", 11/1/93-5/17/95; \$ 131,579; PI, Nikolaos Katopodes (Co-PI).

EPA-Great Lakes Mid Atlantic Hazardous Substance Research Center /DoD "Intrinsic Bioremediation of Chlorinated Solvents at an Aquifer-Surface Water Interface (St. Joseph, MI)", 6/1/95-5/17/97; \$ 140,680; PI.

EPA-Region II Superfund Research: "Anaerobic Transformation of Highly Chlorinated Dibenzo-p-Dioxins and Dibenzofurans", 10/1/93-9/30/94; \$ 91,500; PI.

U.S. EPA-SERDP (Strategic Environmental Research and Development Program) "Phase I of Bioremediation Field Initiative at Wurtsmith Air Force Base"; 6/1/93-5/31/95; \$690,482; Co-PI, Walter J. Weber, Jr. (PI), and Linda M. Abriola (Co-PI).

US-EPA, "Intrinsic Bioremediation at Fire Training Area FT-2 (Wurtsmith AFB, MI)"; 5/18/95-8/31/96, \$ 60,000; PI.

U.S. EPA-SERDP, "Monitoring and Predicting In Situ Bioremediation Using Microbial and Geochemical Indicators", 5/1/95-4/30/97; \$ 216,000; Co-PI, Larry Forney (MSU, PI), Frank Chapelle and Sheridan Haack (U.S. Geological Survey, Co-PIs).

U.S. EPA-Great Lakes Mid Atlantic Hazardous Substance Research Center: "Fundamentals of Bioavailability. Sub-project: The Effect of Water Potential on Biodegradation in the Unsaturated Zone"; 6/1/95-5/15/97; \$ 72,000; PI.

U.S. EPA. "A Computer Program to Model Bioventing of Organic Contaminants in Unsaturated Geological Material"; 9/1/93-9/1/95; \$200,000; Co-PI, Linda M. Abriola (PI).

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<https://www.difin.io>

U.S. EPA-Great Lakes Mid Atlantic Hazardous Substance Research Center; "Fundamentals of Bioventing", 6/1/94-5/17/95; \$ 35,000. PI.
NIEHS (National Institute of Environmental Health Sciences); "The Mechanism of Reductive Dechlorination"; 4/1/92-3/31/95; \$320,732; PI.
NIEHS; "Health Hazards from Groundwater Contamination-UM Trainee core"; 4/1/92-3/31/95; \$ 97,640; Co-I (P.I.: Lawrence Fisher, MSU).

Invited Presentations and Activities:

1. Asset Tokenization: A Blockchain Solution to Financing Infrastructure in Emerging Markets and Developing Economies (with Yifeng Tian, UF). Fintech To Enable Development, Investment, Financial Inclusion, And Sustainability. Singapore/Philippines, September 22, 2020.
2. Pricing Water Risk: Analytics of Interest to Institutional Investors and Their Holdings, Water and Long-Term Value Conference, San Francisco, CA, December 10, 2020.
3. Assessing Water Risk: Institutional Investment in Water Management Innovations. Water and Long-Term Value Conference, San Francisco, CA, December 10, 2019.
4. Understanding natural capital risk assessments in portfolio analysis, Key-note Lecture, Natural Capital Conference, London, UK, November 24-25, 2019
5. Digital Financing of Smart Infrastructure, CECE Distinguished Lecture, Texas Tech, November 4, 2019
6. Digital Financing Models for Transportation Infrastructure and Beyond, Bermuda Tech Week, Bermuda (10/19).
7. Ripple University Blockchain Research Initiative (UBRI), UC Berkeley, October 2-4, 2019
8. InfraTech: Blockchain-Based Financing Solutions for Cyber-Physical Infrastructure Systems. SAMSI Workshop on Foundations for Blockchain Data Analytics, October 6-7, 2019
9. Capital Markets Risk Signaling: Linking Financial Asset Risk Pricing to Water Risk Exposures, Financial Risk Accounting Perspectives, Helsinki, Finland (09/19)
10. waterBeta: An asset management approach for water risk in equities, CSR Investment Conference, S-Network Global Indexes, New York, NY (07/19)
11. A 'Moneyball' Approach to Closing the \$2 Trillion Infrastructure Finance Gap: InfraTech, Data, and Financial Innovation, Stanford University (07/19)
12. Infrastructure Innovation Tour Roundtable Discussion, University Research Consortium, Wayne State University, Detroit (06/19)
13. Smart Infrastructure Finance: Opportunities for Municipalities, Plante Moran/OHM Meeting on municipal investment. Livonia, MI (06/19)
14. Efficient Financing of Smart Infrastructure: Will Digital Finance Open the Floodgates?, AEESP, University of Arizona, Tempe AZ (05/19)
15. Data-Driven Financing Models for Mobility, Deloitte-World Economic Forum meeting, Detroit (10/18)
16. Smart Infrastructure Finance, University of Central Florida (11/18), Stanford University (12/18), Illinois Institute of Technology (12/18)
17. Private Investment in Public Infrastructure. Center on Finance, Law and Policy (10/18)
18. Data-Driven Business Models in CleanTech. Evening seminar and discussion for the student investment members of the Wolverine Venture Fund and Lurie Commercialization Fund, Ross School of Business (03/18)
19. Smart Infrastructure: The Case for Data Monetization. Brown bag seminar, Center for Finance, Law and Policy, Law School (02/18)
20. FinTech - Not Just About Bitcoin. Seminar to the University of Michigan Student FinTech Club, Ross School of Business (01/18) Smart Infrastructure Finance: Finance and Business Models in the Data Economy. University of Toronto, Ontario, Canada (01/18)
21. Financing sustainable cities: Plenty of money - lack of investment models. Keynote presentation at the UN-DESA High Level Finance Conference on the Implementation of the 2030 Agenda for Sustainable Development, Doha, Qatar (11/17)
22. Business Water Risk: Ripple Effects from Watersheds to Capital Markets, ESEP Seminar (EWRE) (01/17)
23. Multi-Asset Funds to Finance Sustainability, GLOBE Capital 2017, Toronto, ON (04/17)

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24. Capital Markets Risk Signaling for Water Risk, Ceres17 Annual Conference “Sustainability is the Bottom Line”, San Francisco, CA (04/17)
25. Financial Innovation as a green growth policy instrument, University of Michigan Center for Finance, Law and Policy (01/17)
26. Global Sustainability Summit and P80 Foundation; Little Rock, AR (12/16) ZurichRe and swisscleantech; FinTech meets CleanTech, Zurich, Switzerland (11/16)
27. Taiwan Green Trade Office and Think Tank (invitation from Finance Minister Chen); Rapid Identification and Allocation of Assets for a Green Economy, Taipei, Taiwan (05/16)
28. Association of Environmental Engineering and Science Professors, Grand Challenges Workshop, Rice University, Houston, TX (05/16)
29. Multi-Asset Renewal Fund Structuring and Risk Assessment: Case Studies for Greening Economies. Global CleanTech Cluster Association (GCCA) and Taiwan Green Trade Conference, Taipei, Taiwan (11/15).
30. Positioning Growth Firms in the Green Chemistry Industry Ecosystem: The Antwerp-Ruhr-Rhein Chemical Megacenter. Brussels Sustainable Development Summit, Belgium (10/15).
31. Emerging Industry Ecosystem Structure: A Bloomberg View of Smart Grid and New Mobility. Global CleanTech Summit, Helsinki, Finland (09/15). With Antti Tahvanainen, Research Institute for the Finnish Economy.
32. Design of Multi-Asset Funds for Industrial Renewal: Tools and Use Cases. Global CleanTech Summit, Helsinki, Finland (09/15). With Antti Tahvanainen, Research Institute of the Finnish Economy.
33. Business Water Risk: Leading Indicator for ESG-Based Investment Allocations, NASDAQ ESG meeting, New York, NY (06/15)
34. Multi-Asset Renewal Funds for Green Growth: A New Long-Term Investment Fund Approach? KBC Wealth Management, Brussels, Belgium (05/15)
35. Innovation in an Unbundling Economy, M-TRAC Program, East Lansing, MI (03/15)
36. Multi-Asset Renewal Funds for Green Growth, Global CleanTech Cluster Association Conference, Lausanne, Switzerland (12/14)
37. Positioning Companies for Value Capture and Investability, CleanTech Roundtable, Singapore (10/14)
38. Investment Typology for Companies: KeyStone Compact Assessment Platform, Industry & Innovative Sustainable Production (iSUP), Antwerp, Belgium (09/14)
39. Bridging Physical and Financial Risk from Water: A Portfolio Perspective. Argonne National Laboratory (Technology Policy Office), Washington, DC (04/14)
40. Scaling Regional CleanTech, KeyNote at State Department Conference on ‘Global Solutions’ (04/14)
41. KeyStone presentation/workshop, Flemish CleanTech Association, Antwerp, Belgium (02/14)
42. Evolutions in Sustainability Finance, GLOBE 2014, Vancouver, CA (03/14)
43. Scandinavia CleanTech Open, Malmoe, Sweden (03/14)
44. KeyStone presentation and workshop, Flemish CleanTech Association, Antwerp, Belgium (02/14)
45. SouthEast Michigan Economic Forum, Ann Arbor, MI. (11/13)
46. KeyStone Compact workshop, Singapore CleanTech MarketPlace, Singapore (09/13)
47. KeyStone Compact keynote, CleanTech Venture Day, Malmoe, Sweden (05/13)
48. TEDx talk on “Reverse Innovation”, CleanTech Forum Bilbao (04/13)
49. Global CleanTech Cluster Managers Ministerial Meeting (Dublin, Ireland) “Scaling Cleantech: Investing in Global Value Chains” (04/13)
50. Panel moderator, CleanTech Venture Day, Lahti, Finland (04/12)
51. UM-Ben Gurion University (Israel) Solar Workshop (02/12)
52. Keynote (with B. Taube, BLT Energy, Atlanta GA), CleanTech Clusters, Melbourne, Australia (2/12)
53. Keynote lecture ‘Business Water Risk’, Gordon Research Conference, New Hampshire (06/12)
54. The Berkeley Roundtable on the International Economy (BRIE), Berkeley, CA (04/12)
55. Value Chain Investing, CleanTech Venture Day, Espoo/Lahti, Finland (04/12)
56. Solar-Water Nexus Workshop, Ben Gurion University of the Negev, Israel (02/12)
57. CleanTech Investment Forum (Terrapin), Melbourne, Australia (02/12)
58. University of Gent, Department of Agricultural and BioEngineering, Belgium (11/11)

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59. Low Carbon Investment Conference, London, UK (11/11)
60. Dublin CleanTech Forum, Enterprise Ireland (11/11)
61. EcoCities Investment Conference, Montreal, Canada (08/11)
62. Asia-Pacific Investment CleanTech Investment Conference (07/11)
63. Asia Business Leaders Sustainability Conference, Singapore (10/11)
64. School of Civil, Environmental & Transportation Eng., University of Florida, Gainesville (04/11)
65. Dalian University of Technology, Dalian, China (03/11)
66. National Chung Hsing University, Taichung, China (10/10)
67. International Symposium for Environmental Biotechnology, Rimini, Italy (09/10)
68. Dalian Institute of Technology, Key-Note Lecture for Friendship Prize, Dalian (12/09)
69. Roundtable on Entrepreneurship Education, Chinese University of Hong Kong, China (10/09)
70. World Resources Institute, Beijing, China (08/09)
71. World Bank Mission, Manila, Philippines (06/09)
72. World Bank, Environment Sector Unit, Washington DC (05/09)
73. Taihu Basin Authority, Shanghai, China (05/08)
74. Suzhou Institute of Sichuan University, Suzhou, China (10/08, 12/08, 03/08)
75. Suzhou-Singapore Technology Park, Suzhou, China (08/08)
76. CleanTech Investment Conference and Trade Show, Boston, MA (05/08)
77. Ontario Center for Research and Innovation, Ottawa, ONT, Canada (06/08)
78. Arizona State University, Tempe, AZ (2/08)
79. University of California Riverside, Riverside CA (2/08)
80. CleanTech Venture Investment Conference, Toronto, ONT, Canada (9/07)
81. Key-Note Presentation, Environmental Nanotechnology, Taiwan National University, Taiwan (5/07).
82. Swiss Federal Water Research Institute (EAWAG), Zuerich, Switzerland (11/06)
83. UNEP Africa Stockpile Program, Rolle, Switzerland (11/06)
84. Department Civil and Environmental Engineering – UCLA, Los Angeles, CA Seminar on Microbial Sensing: Micro- to Macro-Scale Application (12/06)
85. Applied Research Center, Florida International University, Miami, FL (10/06)
86. Dalian Institute of Technology, Dalian, China, Key-note lecture (9/06).
87. International Symposium on Environmental Biotechnology (ISEB), Leipzig, Germany, Key-note: "Micro-Integrated Flow Cytometry: Application for Groundwater Characterization." (7/06).
88. Brookhaven National Laboratory, New York, NY (2/06)
89. Great Lakes Environmental Research Laboratory, Ann Arbor, MI (11/05)
90. East Coast Conference on Contaminated Soils and Sediments, American Society for Environmental Health Science (AEHS), Amherst, MA (10/05).
91. Public Broadcasting Documentary on Green Roof Technology and Policy, Washington, DC (4/05)
92. Department of Civil and Environmental Engineering, Rice University, Houston, TX (3/05)
93. Dioxin 2004 – Environmental Exposure Assessment/Fate and Transport, Berlin, Germany (9/04)
94. SERDP/ESTCP Workshop on Contaminated Sediments, Charlottesville, VA (8/04)
95. International Symposium for Environmental Biotechnology (ISEB), Chicago, IL (6/04)
96. Brominated Flame Retardants (BFR) 2004 – Risk Characterization and Communication, Toronto, Ontario, CANADA (6/04)
97. CONCARIBE 2004 – Helping Caribbean Nations Towards Sustainable Development, Cartagena, Colombia (5/04)
98. Remediation Technologies Development Forum (RTDF) on Sediments, Baltimore, MD (2/04).
99. School of Civil and Environmental Engineering, Purdue University, West Lafayette, IN (12/03).
100. East Coast Conference on Contaminated Soils and Sediments, American Society for Environmental Health Science (AEHS), San Diego, CA (10/03).
101. Key-Note, RISV-International Society for Environmental Biotechnology, Rimini, Italy (9/03).
102. Department of Applied Microbiology and Biotechnology, State University of Gent, Belgium (7/03).
103. Industrial Key-Note, West Coast Conference on Contaminated Soils and Sediments, American Society for Environmental Health Science (AEHS), San Diego, CA (3/03).
104. Cold Climate Bioremediation Program, University of Lund, Sweden, 1/03, Key-note.
105. Department of Geology, The University of Michigan (10/02).

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106. NSF Center for Micro Electro-Mechanical Systems, Guest Lecture on "Clean Water: Access, Use, and Sustainable Exploitation", The University of Michigan, 9/02.
107. Remediation Technologies Development Forum on Contaminated Sediments and Groundwater-Surface Water Interfaces, Seattle, WA (10/02). Key-Note.
108. International Symposium for Subsurface Microbiology (ISSM), Copenhagen, Denmark, (9/02), Key-Note Presentation: "Miniaturization of Flow Cytometric Applications for Microbial Characterization in Complex Environmental Systems".
109. 3rd International Symposium for Bioremediation and Biodeterioration, Prague, Czech Republic (7/02), Key-Note: "Characterization of Microbial Activities in Complex Systems".
110. Lawrence Livermore National Laboratories, Environmental and Bioinformatics Divisions, Livermore, CA (6/02), Seminar "Micro-Integrated Flow Cytometry: Current Status and Applications".
111. West Coast Conference on Contaminated Soils and Sediments, American Society for Environmental Health Science (AEHS), San Diego, CA (3/02).
112. Groundwater Research Institute, Technical University of Denmark, Lyngby, Denmark (11/01)
113. Departments of Civil and Environmental Engineering, Geological Sciences, and Plant and Soil Sciences, Michigan State University (1/01)
114. Industry-sponsored Key-Note Lecture, International Symposium for Environmental Biotechnology (ISEB)-2000, Kyoto, Japan (7/2000).
115. Department of Civil and Mechanical Engineering, McGill University, Montreal, Canada (7/2000)
116. Center for Biocatalysis, University of Iowa, Iowa City (3/2000)
117. Department of Environmental Science, Ohio State University, Columbus, OH (2/2000)
118. Keynote Lecture, Dechema Symposium on Natural Attenuation, Frankfurt am Main, Germany (10/99)
119. Swiss Federal Institute of Environmental Science and Technology, Department of Engineering, Duebendorf, Switzerland (9/99).
120. Lancaster University, Division of Environmental Science, Lancaster, U.K. (9/99).
121. Swiss Federal Institute of Technology, Institute of Soil and Water Management, Lausanne, Switzerland (4/99)
122. Swiss Federal Institute of Environmental Science and Technology, Department of Microbiology, Duebendorf, Switzerland (4/99).
123. The University of Bayreuth, Department of Microbiology, Bayreuth, Germany (3/99).
124. Swiss Federal Institute of Environmental Science and Technology, Department of Chemistry, Duebendorf, Switzerland (2/99).
125. University of California - Riverside, Department of Soil Science and Environmental Toxicology Program (10/98)
126. Stanford University, Department of Civil Engineering, Stanford, CA (9/98)
127. Institute for Geosciences, The University of Tuebingen, Tuebingen, Germany (7/98)
128. Second Conference on Biosorption and Bioremediation, Prague, Czech Republic (7/98)
129. Michigan Department of Environmental Quality - Annu. Mtg., Lansing, MI (5/98)
130. 3d Int. Symposium on Environmental Chemistry "Warszawa '98", Warsaw, Poland (4/98).
131. Society for Industrial Microbiology, Reno, NV (8/97).
132. International Symposium for Environmental Biotechnology (ISEB), Ostend, Belgium (4/97).
133. Medical University of South Carolina, Charleston, S.C. (10/96).
134. Charles University/Institute of Chemical Technology, Prague, Czech Republic (5/96).
135. Masaryk University, Department of Environmental Sciences, Brno, Czech Republic (5/96).
136. Key-Note Speaker, International NATO Workshop on Quantitative Structure-Activity Relationships (QSBRII), Luhacovice, Czech Republic (5/96).
137. University of Stuttgart and Fraunhofer Institute for Microbiology (12/95)
138. Swiss Federal Institute for Water Science Technology (EAWAG), Zuerich, Switzerland (12/95).
139. Rhone-Poulenc Organisation, Lyon France (12/95).
140. University of Amsterdam, Dept. Environ. Toxicology and Chemistry, The Netherlands (12/95).
141. National Environmental Research Institute (NERI), Roskilde, Denmark (12/95).
142. International Conference on Biosorption and Bioremediation. Prague, Czech Republic (10/95).

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143. Chair, Session on "Bioremediation of Chlorinated Aromatic Compounds", 15th International Dioxin Conference, Edmonton, Alberta, Canada (8/95).
144. 8th International C₁ Symposium, San Diego, California (8/95)
145. Oxychem Research and Development, Grand Island, NY (1995)
146. Michigan Biotechnology Institute, Lansing, MI (3/95)
147. Dow Chemical, Midland, MI. (1995)
148. 5th International Symposium on Environmental Research Topics (hosted by Dr. F.W. Karasek, Univ. of Waterloo), Phoenix, Arizona (1994)
149. US-EPA Bioremediation Risk Assessment Workshop, Duluth, Minnesota (1993)
150. Universität für Bodenkultur (University for Soil Sciences) - Vienna, Austria (1993).
151. DECHEMA Int. Symposium on "Soil Decontamination using Biological Processes", Karlsruhe, Germany (1992).
152. Dehalogenation Conf., "Anaerobic Dehalogenation and its Environmental Implications", Athens, Georgia (1992).
153. Institut für Mikrobiologie, Universität Stuttgart, Germany (1990).
154. GBF, Gesellschaft für Biotechnologische Forschung, Braunschweig, Germany (1990).
155. Annual Forum for Applied Biotechnology, Gent, Belgium (1990).

Journal Publications (submitted, in review):

1. Mogosanu, I., C. Jiang, C. Liao, T. Slaweki and P. Adriaens. 2019. Capital Markets Risk Signaling: Linking Financial Asset Risk Pricing to Water Risk Exposures. J. of Indexing, Submitted.
2. Adriaens, P., R. Moya, S. Chen, and R. Hampshire. 2019. Data commodity swaps and pooled derivatives: Impact of data supply chains on monetization models in the smart mobility industry. Int. J. Production Economics. In Review.
3. Arnold, A., Jiang, C., Adriaens, P., Sinha, S. and Teener, A. 2020. A Capital Markets-Based Water Risk Assessment of Key Industrial Water Users in the Great Lakes Region: Indicators for Portfolio Managers. Available at SSRN: <https://ssrn.com/abstract=> In Preparation for J. Sustainability.
4. Kotiranta, A., A. Tahvanainen, M. Ritola, and P. Adriaens. 2019. Leveraging Physical Assets for Value Creation Through Cleanweb Firms: The Finnish Cleantech Space in Transition. Ross School of Business Paper No. 1279. Available at SSRN: <http://ssrn.com/abstract=2611231>. In preparation for submission to California Management Review.
5. Adriaens, P., K. Sun, C. Ouyang and R. Gao. 2019. Bridging Physical and Financial Business Water Risk: waterVar and waterbeta Metrics for Equity and Portfolio Risk Assessment. Ross School of Business Paper No. 1237. Available at SSRN: <http://ssrn.com/abstract=2445580>. Int. J. Business Economics, Re-write.

Journal Publications (published):

1. Sugrue, D.P. and P. Adriaens. 2021. Maritime Transport Efficiency to Inform Demand-Driven User Fees for Harbor Infrastructure. Journal of Waterway, Port, Coastal, and Ocean Engineering. Accepted for publication.
2. Sugrue, D., and P. Adriaens. 2021. A data fusion approach to predict shipping efficiency for bulk carriers. Transportation Research Part E: Logistics and Transportation Review 149, 102326
3. Brand, M., K. Quesnel, P. Saksa, N. Ulibarri, A. Bomblies, L. Mandle, M. Allaire, O. Wing, J. Tobin-de la Puente, E.A. Parker, J. Nay, B. F. Sanders, D. Rosowsky, J. Lee, K. Johnson, N. Gudino-Elizondo, N. Ajami, N. Wobbrock, P. Adriaens, S.B. Grant, S. Wright, T. Gartner, Z. Knight, J. P. Gibbons. 2021. Environmental Impact Bonds: a common framework and looking ahead. Environmental Research: Infrastructure and Sustainability 1 (2), 023001.
4. Adriaens, P. and N. Ajami. 2021. Infrastructure and the Digital Economy: Impacts of Data on our Role in the Design, Financing, and Governance of Essential Services for Society. Journal of Environmental Engineering 147 (5), 02521001.
5. Tian, Y., P. Adriaens, R.E. Minchin, Z. Lu and C. Qi (2021). Asset Tokenization: A Blockchain Solution to Financing Infrastructure in Emerging Markets and Developing Economies. ADB-IGF Special Working Paper Series "Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3837703.

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6. Tian, Y., Z. Lu, P. Adriaens, R. E. Minchin, Y. Zhang, A. Caithness, and J. Woo. 2020. Financing Infrastructure Through Blockchain-Based Tokenization. *Frontiers of Engineering Management* 7 (4), 485-499.
7. Sugrue, D., A. Martin and P. Adriaens. 2020. Financial Network Analysis to Value Water Resource Risk Exposure of the Great Lakes Steel Industry. *J. Infrastructure Systems, Journal of Infrastructure Systems* 27 (1), 05020010.
8. Cai, H. X. Wang, P. Adriaens, and M. Xu. 2019. Environmental benefits of taxi ride sharing in Beijing. *Energy* 174, pp. 503-508.
9. Chen, Q. X. Jiang, E. Hedgeman, K. Knutson, B. Gillespie, B. Hong, J. M. Lepkowski, A. Franzblau, O. Jolliet, P. Adriaens, A. H. Demond, and D. H. Garabrant. 2013. Estimation of age- and sex-specific background human serum concentrations of PCDDs, PCDFs, and PCBs in the UMDES and NHANES populations. *Chemosphere* 91 (6), pp. 817–823.
10. Adriaens, P., B. Taube, and S. Lesser. 2012. The case for clustering. *Global Environmental Politics*, issue 3.
11. Towey, T.P., N. Barabas, A. Demond, A. Franzblau, D. H. Garabrant, B. W. Gillespie, J. Lepkowski, and P. Adriaens. 2012. Polytopic Vector Analysis of Soil, Dust, and Serum Samples To Evaluate Exposure Sources of PCDD/Fs. *Environ. Toxicol. Chem.* 31 (10), pp. 2191–2200.
12. Larson, W.L., P.L. Freedman, V. Passinsky, E. Grubb and P Adriaens. 2012. Mitigating Corporate Water Risk: Financial Market Tools and Supply Management Strategies. *Water Alternatives* 5(3): 582-602.
13. Characklis, G. W., P. Adriaens, J. B. Braden, J. Davis, B. Hamilton, J. B. Hughes, M. J. Small, and J. Wolfe. 2011. Increasing the Role of Economics in Environmental Research (or Moving beyond the Mindset That Economics = Accounting), *Environ. Sci. Technol.* 45, pp. 6235-6236.
14. Demond, A., A. Franzblau, D. Garabrant, X. Jiang, P. Adriaens, Q. Chen, B. Gillespie, W. Hao, B. Hong, O. Jolliet, J. Lepkowski. 2011. Human Exposure from Dioxins in Soil. *Environ. Sci. Technol.*, 46 (3), pp 1296–1302.
15. Hao., N., C.E. Clark, J. Zhou, and P. Adriaens. 2010. Scaling of Economic Benefits from Green Roof Implementation in Washington DC. *Environ. Sci. Technol.*, 4 (11), pp 4302–4308.
16. Hao., N., C.E. Clark, J. Zhou, and P. Adriaens. 2012. Impact of Cap and Trade Uncertainties on Green Roof Potential as an Energy Efficiency Technology. *Energy Policy*, In Review.
17. Demond, A., Towey, T., Adriaens, P., Zhong, X., Knutson, K., Chen, Q., Hong, B., Gillespie, B., Chang, S.-C., Franzblau, A., Garabrant, D., Lepkowski, J., Luksemburg, W., Maier, M. 2010. Relationship between polychlorinated dibenzo-p-dioxin, polychlorinated dibenzofuran, and dioxin-like polychlorinated biphenyl concentrations in vegetation and soil on residential properties. *Environ. Toxicol. Chem.* 29(12): 2660-8.
18. Franzblau A., Hedgeman E., Jolliet O., Knutson K., Towey T., Chen Q., Hong B., Adriaens P., Demond A., Garabrant D., Gillespie B., Lepkowski J. 2010. The University of Michigan Dioxin Exposure Study: A Follow-Up Investigation of a Case With High Serum Concentration of 2,3,4,7,8-Pentachlorobenzofuran. *Environ. Health Pers.* 118(9): 1313-1317.
19. Gillespie, B., Q. Chen, H. Reichert, A. Franzblau, E. Hedgeman, J. Lepkowski, P. Adriaens, A. Demond, W. Luksemburg, and D. Garabrant, 2010, Estimating population distributions when some data are below a limit of detection by using a reverse Kaplan-Meier estimator. *Epidemiology*, 21(4): S64-S70.
20. Franzblau, A., L. Zwica, K. Knutson, Q. Chen, S.-Y. Lee, B. Hong, P. Adriaens, A. Demond, D. Garabrant, B. Gillespie, J. Lepkowski, W. Luksemburg, M. Maier, T. Towey. 2009. An Investigation of Homes with High Concentrations of PCDDs, PCDFs, and/or Dioxin-Like PCBs in House Dust. *J. Occup. Environ. Hygiene* 6:3,188-199.
21. Chen, Q., D. Garabrant, E. Hedgeman, R. Little, M. Elliott, B. Gillespie, B. Hong, S.-Y. Lee, J. Lepkowski, A. Franzblau, P. Adriaens, A. Demond, and D. Paterson, 2010. Estimation of Background Serum 2,3,7,8-TCDD Concentrations by Using Quantile Regression in the UMDES and NHANES Populations. *Epidemiology*, 21(4): S51-S57.
22. Towey, T., Chang, S-C, , Demond, A, Wright, D, Barabas, N, Chen, Q, Franzblau, A, Garabrant D, Gillespie, B, Lepkowski, J, Hedgeman E, Knutson, K, Zwica, L, Luksemburg W, Maier M , and P. Adriaens. 2010. Hierarchical Cluster Analysis of Dioxins and Furans in Michigan Soils:

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- Differentiation of Industrial and Background Congener Profiles. *Environ. Toxicol. Chem.*, Vol. 29, No. 1, pp. 64–72.
23. Franzblau, A., L. Zwica, K. Knutson, Q. Chen, S.-Y. Lee, B. Hong, P. Adriaens, A. Demond, D. Garabrant, B. Gillespie, J. Lepkowski, W. Luksemburg, M. Maier, T. Towey. 2009. An Investigation of Homes with High Concentrations of PCDDs, PCDFs, and/or Dioxin-Like PCBs in House Dust. *J. Occup. Environ. Hygiene* 6:3,188-199.
 24. Garabrant, D.H., A. Franzblau, J. Lepkowski, B. W. Gillespie, P. Adriaens, A. Demond, B. Ward, K. LaDronka, E. Hedgeman, K. Knutson, L. Zwica, K. Olson, T. Towey, Q. Chen and B. Hong. 2009. The University of Michigan Dioxin Exposure Study: Methods for an Environmental Exposure Study of Polychlorinated Dioxins, Furans and Biphenyls. *Environ. Health. Perspect.* 117 (5): 803-810.
 25. Garabrant, D.H., A. Franzblau, J. Lepkowski, B. W. Gillespie, P. Adriaens, A. Demond, E. Hedgeman, K. Knutson, L. Zwica, K. Olson, T. Towey, Q. Chen, B. Hong, C.-W. Chang, S.-Y. Lee, B. Ward, K. LaDronka, W. Luksemburg and M. Maier. 2009. The University of Michigan Dioxin Exposure Study: Predictors of Human Serum Dioxin Concentrations in Midland and Saginaw, Michigan. *Environ. Health. Perspect.* 117 (5): 818-824.
 26. Hedgeman E., C. Q. Hong B, Chang CW, Olson K, LaDronka K, Ward B, Adriaens P, Demond A, Gillespie BW, Lepkowski J, Franzblau A, Garabrant DH. 2009. The University of Michigan Dioxin Exposure Study: Population Survey Results and Serum Concentrations for Polychlorinated Dioxins, Furans and Biphenyls *Environ Health Perspect.* 117 (5): 811-817.
 27. Franzblau, A., A. Demond, T. Towey, P. Adriaens, S.-C. Chang, W. Luksemburg, M. Maier, D. Garabrant, B. Gillespie, J Lepkowski, C.-W. Chang, Q. Chen, B. Hong. 2009. Residences with Anomalous Soil Concentrations of Dioxin-Like Compounds in Two Communities in Michigan, USA: A Case Study. *Chemosphere*, 74 (3): 395-403.
 28. Garabrant, D.H., B. Hong, Q. Chen, C.-W Chang, X. Jiang, A. Franzblau, J. Lepkowski, P. Adriaens, A. Demond, E. Hedgeman, K. Knutson, T. Towey, and B. W. Gillespie. 2008. Factors that Predict Serum PCB, PCDD, and PCDF Concentrations in Michigan, USA. *Epidemiology*. 16(5), S265, November Supplement
 29. Knutson, K., B. Hong, Q. Chen, C.-W. Chang, E. Hedgeman, T. Towey, O. Jolliet, B. W. Gillespie, A. Franzblau, J. Lepkowski, P. Adriaens, A. Demond, and D. H. Garabrant. 2008. The Relationship Between Blood Serum Dioxin Levels and Breast Feeding. *Epidemiology*. 16(5), S179, November Supplement.
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Editorial Activities

California Management Review (CMR); Journal of Contaminant Hydrology (2000-2003)

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Review 6-8 manuscripts (Applied and Environmental Microbiology, Environmental Science and Technology, Applied Microbiology and Biotechnology, Water Resources Research, Environmental Toxicology and Chemistry, Bioremediation Journal), and 3-5 proposals (EPA, USDA, NSF, Michigan Great Lakes Protection Fund) per semester.

Litigation Expert Witness Work

Clark Hill/Strassburger, Houston, TX (2020): Patent Infringement and Interference
Gibson, Dunn & Crutcher LLP, Washington, DC (2013-2016): Patent Infringement and Interference
Baker & Hostettler LLP, Washington, DC (2013): Environmental Liability Assignment
Sive, Paget & Riesel LLP, New York, NY (2011-2015): Environmental Liability Assignment
Latham & Watkins LLP, San Francisco, CA (2007-2011): Environmental and Public Exposure Liability
King & Spalding LLP, Atlanta GA (2008-2012): Patent Infringement and Interference
Varnum, Riddering, Schmidt & Howlett, Attorneys-At-Law (Grand Rapids, MI), 1992-1996

Appendix B - Materials Considered

Bates Identified Documents

RPLI_SEC0026658	RPLI_SEC0302366
RPLI_SEC0090938	RPLI_SEC0509804
RPLI_SEC0265036	RPLI_SEC0541809
RPLI_SEC0296631	RPLI_SEC0546274
RPLI_SEC0301113	RPLI_SEC0554278
RPLI_SEC0302332	RPLI_SEC0555975
RPLI_SEC0302336	RPLI_SEC0574082

Litigation Materials

Plaintiff's First Set of Requests for Admission to Defendant Ripple Labs, Inc.

Plaintiff's Responses and Objections to Defendant Ripple Labs, Inc.'s First Set of Interrogatories

ECF No. 45 – Feb. 15, 2021 Joint Letter to Hon. Judge Analisa Torres

ECF No. 46 – First Amended Complaint

ECF No. 51 – Answer of Defendant Ripple Labs, Inc. to Plaintiff's First Amended Complaint

ECF No. 53 – Stipulation and Protective Order

ECF 123 - Memorandum Of Law In Support of Motion to Intervene

ECF 124-13 Exhibit M - XRP Ecosystem companies and applications

ECF No. 152 – Defendants' Response to Intervenor-Defendants' Motion to Intervene

ECF No. 153 – Plaintiff Securities and Exchange Commission's Memorandum of Law in Opposition to the Motion to Intervene

Deposition Materials

May 26, 2021 Deposition Transcript of David Schwartz

D. Schwartz Deposition Exhibit 9

D. Schwartz Deposition Exhibit 13

D. Schwartz Deposition Exhibit 14

Deposition Materials – cont.

D. Schwartz Deposition Exhibit 15

D. Schwartz Deposition Exhibit 18

D. Schwartz Deposition Exhibit 25

D. Schwartz Deposition Exhibit 27

D. Schwartz Deposition Exhibit 46

D. Schwartz Deposition Exhibit 77

June 23, 2021 Deposition Transcript of Asheesh Birla

Miscellaneous Materials

In re: Ripple Labs Inc. Wells Submission on Behalf of Ripple Labs Inc.

XRP Use Cases Spreadsheet (attached as Appendix C)

List of Third Party Use Cases Receiving Venture Capital and Founded after Ripple's
Founding (attached as Appendix D)

Timeline of Ripple Products, Fundraising Rounds, and Accolades (attached as Appendix E)

Appendix C - XRP Use Cases Spreadsheet

List of XRP Use Cases		
Entity Name	Category	Website
000Webhost	Hosting Provider	https://www.000webhost.com/
1xBet	Casino/Online Betting	https://1xbet.com/
1xBit	Casino/Online Betting	https://1xbet.com/
24paybank	Cryptocurrency Exchange	https://24paybank.net/
2sync	Hosting Provider	https://www.2sync.co/
4ange	Cryptocurrency Exchange	https://4ange.me/
60cek	Cryptocurrency Exchange	https://60cek.org/
AavePay	Bill Payments	https://aave.com/
ABCC	Digital Asset Platform	https://abcc.com/en
Abucoins	Cryptocurrency Exchange	https://abucoins.com
Action Factory Inc. (d/b/a Stronghold)	Payment Gateways	https://stronghold.co/
AdvCash (Advanced Cash)	Payment Gateways	https://www.advcash.com/
AEX.com	Cryptocurrency Exchange	https://www.aex.com/
Agoric Systems LLC	Smart Contracts	https://agoric.com/
AGRsicurezza	Consultancy	https://www.agrsicurezza.it/
AH Metal construction	Unclear	https://www.ahmetallbau.com/
AirVPN	VPN Hosting	https://airvpn.org/
ALFAcashier	Cryptocurrency Exchange	https://www.alfa.cash/
ALFAcoins	Payment Gateways	https://www.alfacoins.com/
alfatop	Mobile top-up	https://alfa.top/
All.Cash	Cryptocurrency Exchange	https://all.cash/direct/sberbank_rub-bitcoin_btc
Alphacat	Robo-advisor Marketplace	https://alphacat.io/
Alquicoche	Rental car booking site	https://www.alquicoche.es/
Alt 5 Sigma, Inc.	Cryptocurrency Exchange	https://alt5sigma.com/
Altcointrader	Cryptocurrency Exchange	https://www.altcointrader.co.za/
Alterdice	Cryptocurrency Exchange	https://alterdice.com/
Alternative Airlines	Air travel booking site	https://www.alternativeairlines.com/
AlysDax	Investments	https://alysdax.ltd/
AMLBot	AML support	https://amlbot.com/#~np1
Amun	Crypto ETP	https://amun.com/
Anchorage	Custody	https://www.anchorage.com/
Antalya Homes	Real Estate	https://www.antalyahomes.com/
ANX Pro	Wallet/Exchange	https://anxpro.com/
AnyCoin	Cryptocurrency Exchange	https://anycoindirect.eu/
Anypay	Payment App	https://anypayinc.com/
Arrington XRP capital	Digital asset management	http://arringtonxrpcapital.com/
As You Wish Bodywork LTD	Massage	https://www.messagebook.com/Denver~Massage~AsYouWishBodywork?utm_source=cryptwerk
AsiaMTM Group	Manufacturing, Trading, Marketing	https://asiamtm.com/
AstroPay	Payment Gateways	https://www.astropay.com/
Atomic Wallet	Payment Gateways	https://atomicwallet.io/
Autohaus-seidl.at	Physical car dealer	https://www.autohaus-seidl.at/
Azimo (ODL)	Money Transfer	https://azimo.com/
B1X	Micropayments	https://www.b1x.app/?v=7516fd43adaa
B2BinPay	Payment Gateways	https://b2binpay.com/
B2BX	Cryptocurrency Exchange	https://www.b2bx.exchange/
BaksMan	Cryptocurrency Exchange	https://baksman.org/
Balance	Custody	https://www.balancenow.ca/
Bank Frick	Custody, Trading	https://www.bankfrick.li/en/
Bankcomat	Cryptocurrency Exchange	https://bankcomat.org/en
BC Vault Hardware Wallet	Payment Gateways	https://bc-vault.com/
BC.Game	Casino/Online Betting	https://bc.game/home
BCB Group	Broker and Custodian	https://bcbgroup.io/
bcex	Digital Asset Platform	https://www.bcex.online/
BCHLX	Blockchain applications	https://bchlx.com/
Bcremit	Money Transfer	https://www.bcremit.com/
Beachhead	Game	https://beachhead.com/
Beeders	Payments	https://beeders.com/en/
BeeTech (ODL)	Money Transfer	https://www.beetech.global/
Belarusbank	Cryptocurrency Exchange	https://whitebird.io/
BelcoBTM	ATMs	https://belcobtm.com/

Beliani	Furniture	https://www.beliani.co.uk/
Beschriftungsprofi	Marketing services (lettering, etc.)	https://www.beschriftungsprofi.at/
BetcoinAG	Casino/Online Betting	https://www.betcoin.ag/
BetOnline.ag	Casino/Online Betting	mobile.betonline.ag
Bexpress pro	Payment Gateways	https://www.bexpro.ph/
Bgogo	Cryptocurrency Exchange	https://bgogo.com/
BHEX	Cryptocurrency Exchange	https://www.bhex.com/
bibox	Cryptocurrency Exchange	https://www.bibox.com/en
Bichip	Microchip	https://www.bichip.com/
Bidali	Purchase/Gift Card	https://www.bidali.com/
BigONE	Cryptocurrency Exchange	https://big.one/en
BiKi Exchange	Cryptocurrency Exchange; Crypto Backed Loans	https://www.biki.com/en_US/
Binance	Cryptocurrency Exchange	https://www.binance.com/en
Birake	Cryptocurrency Exchange	https://birake.com/
bit.Trade	Cryptocurrency Exchange	https://www.bit.trade/
BitAsset	Cryptocurrency Exchange	https://www.bitasset.com/
Bitbank	Cryptocurrency Exchange	https://bitbank.cc/en
Bitbay	Cryptocurrency Exchange	https://bitbay.net/en
Bitberry	Payment Gateways	https://bitberry.app/
Bitblinx	Cryptocurrency Exchange	https://bitblinx.com/
Bitbns	Cryptocurrency Exchange	https://bitbns.com/
BitBounce	Paid email service	https://bitbounce.com/
Bitcasino.io	Casino/Online Betting	https://bitcasino.io/
Bitcoin Suisse	Institutional-grade storage and exchange	https://www.bitcoinsuisse.com/
Bitcoin Superstore	Marketplace	https://bitcoinsuperstore.us/
bitcoin.co.id	Cryptocurrency Exchange	https://www.bitcoin.co.id/
Bitcoin.co.th	Cryptocurrency Exchange	https://www.bitcoin.co.th/
Bitcoin.travel	Travel booking site	https://bitcoin.travel/
Bitcoinbank	Cryptocurrency Exchange	https://bitcoinbank.co.jp/en
BitcoinTrade	Cryptocurrency Exchange	https://www.bitcointrade.com.br/pt-BR/
Bitex	Cryptocurrency Exchange	https://bitex.com/
BitExchanger	Cryptocurrency Exchange	https://bitexchanger.live/
Bitfi	Wallet	https://bitfi.com/
Bitfinex	Cryptocurrency Exchange	https://www.bitfinex.com/
BitFlip	Cryptocurrency Exchange	https://bitflip.li
bitflyer	Cryptocurrency Exchange	https://bitflyer.com/
bitforex	Cryptocurrency Exchange	https://www.bitforex.com/
Bitgild	Precious metals Marketplace	https://www.bitgild.com/
BitGo	Payment Gateways	https://www.bitgo.com/
Bithumb	Cryptocurrency Exchange	https://en.bithumb.com/
Bithunter	Cryptocurrency Exchange	https://bithunter.io/
BitInka	Cryptocurrency Exchange	https://www.bitinka.com/uk/bitinka/home
BitKeep	Wallet	https://bitkeep.org/
BitKiks	Purchase/Fashion Apparel	https://www.bitkiks.com/
Bitlish	Cryptocurrency Exchange	https://bitlish.com/
BitMarket	Cryptocurrency Exchange	https://BitMarket.pl
Bitmart	Cryptocurrency Exchange	https://www.bitmart.com/
Bitmax (AscendEX)	Cryptocurrency Exchange	https://bitmax.io/
BitMEX	Cryptocurrency Exchange	https://www.bitmex.com/
Bitnaru	Cryptocurrency Exchange	https://www.bitnaru.com/
Bitnovo	Payment Gateways	https://www.bitnovo.com/
BitOasis	Cryptocurrency Exchange	https://bitoasis.net/en/home
BITODDS	Casino/Online Betting	https://bitodds.io/home
Bitpanda	Cryptocurrency Exchange	https://www.bitpanda.com/en
BitPay	Payment Gateways	https://bitpay.com/
BitPrime	Cryptocurrency Exchange	https://www.bitprime.co.nz/
Bitrabbitt	Cryptocurrency Exchange	https://bitrabbitt.com/
Bitrue	Cryptocurrency Exchange	https://www.bitrue.com/
Bitsane	Cryptocurrency Exchange	https://Bitsane.com
Bitsblockchain	Cryptocurrency Exchange	https://bitsblockchain.net/
Bitsdaq	Cryptocurrency Exchange	https://bq.net/
Bitsler	Casino/Online Betting	https://www.bitsler.com/

Bitso	ODL Exchange	https://bitso.com/
Bitstamp	ODL Exchange	https://www.bitstamp.net/
BitStickers	Marketplace	https://bitstickers.net/
BitSure	Payments	https://bitsure.co/
Bittrex	ODL Exchange	https://bittrex.com/
Bittylicious	Cryptocurrency Exchange	https://bittylicious.com/
Bitvavo	Cryptocurrency Exchange	https://bitvavo.com/en
Bitvolo	Payment Gateways	http://bitvolo.com/
bitz	Cryptocurrency Exchange	https://www.bitz.com/
Bixter	Cryptocurrency Exchange	https://bixter.org/
Black Cactus Global, Inc.	Advisory Firm	https://www.blgi.net/
blacksmith Unkelhäuser	Blacksmith	https://hufschmiede-unkelhaeusser.sta.io/
Blockchain Coffee	Purchase/Coffee	https://www.blockchaincoffee.space/home
Blockdaemon	Networking	https://blockdaemon.com/
Blockscart	Marketplace	https://blockscart.eu/
Bluzelle	Technology	https://bluzelle.com/
Boatsters Black	Yachts for Charter	https://boatstersblack.com/
Bolt Labs, Inc.	Cryptocurrency Exchange	https://boltlabs.tech/
BookcoinShop	Marketplace	https://bookcoinshop.com/
Booking.com	Hotel booking site	https://www.booking.com/
BookMauritiusHotels	Hotel Booking	https://www.bookmauritiushotels.com/
Bpay	Payments	https://bpay.com.au/
Bravsy	Travel agency	https://bravsy.com/
Braziliex	Cryptocurrency Exchange	https://braziliex.com/
BRD	Wallet	https://brd.com/
Bridge21	Cryptocurrency Exchange	https://bridge21.com/
Bronn Travel	Travel Agency	https://bronntravel.com.ua/
BTC38	Cryptocurrency Exchange	https://www.btc38.com/
BTC-Alpha	Cryptocurrency Exchange	https://btc-alpha.com/en/
btcbx	Cryptocurrency Exchange	https://www.btcbx.co.jp/
BTCC	Cryptocurrency Exchange	https://www.btcc.com/
BTC-E	Cryptocurrency Exchange	https://btc-e.nz
btcm Markets	Cryptocurrency Exchange	https://www.btcm Markets.net/
btc-trade	Cryptocurrency Exchange	https://btc-trade.com.ua/index.html
Btcturks	Cryptocurrency Exchange	https://www.btcturk.com/
BTCXIndia	Cryptocurrency Exchange	https://btcxindia.com/
Bullion79	Precious metals Marketplace	https://bullion79.com/
BuyBitcoin	Cryptocurrency Exchange	https://www.buybitcoin.ph
BuyUcoin	Cryptocurrency Exchange	https://www.buyucoin.com/
BuyWithCoins	Marketplace	https://www.buywithcoins.online/
BW.com	Cryptocurrency Exchange	https://www.bw.com/
bx.in	Cryptocurrency Exchange	https://bx.in.th
C2CX	Cryptocurrency Exchange	https://www.c2cx.com/
Cambridge Global Payments	Money Transfer	https://www.cambridgefx.com/home/
Cashaa	Cryptocurrency Exchange	https://cashaa.com/
Cashierest	Cryptocurrency Exchange	https://www.cashierest.com/
Cat.Ex	Cryptocurrency Exchange	https://www.catex.io/?load=1
Catalyst Corporate Federal Credit Union (ODL)	Financial Institution	https://www.catalystcorp.org/
CBX	Cryptocurrency Exchange	https://www.cbx.one/
CCXCanada	Cryptocurrency Exchange	http://ccxcanada.com/
Celsius Network	Lending	https://celsius.network/
Celtic Gold	Precious metals Marketplace	https://www.celticgold.eu/en/
CenterServ	Networking and Cloud management	https://www.centerserv.com/
cex.io	Cryptocurrency Exchange	https://cex.io/
Chainalysis	Blockchain Analysis	https://www.chainalysis.com/
Chainfront	API	https://medium.com/chainfront
Change Invest	Cryptocurrency Exchange	https://www.changeinvest.com/
ChangeHero	Cryptocurrency Exchange	https://changehero.io/
Changelly	Cryptocurrency Exchange	https://changelly.com/
ChangeNOW	Cryptocurrency Exchange	https://changenow.io/
Cinnamon	Micropayments/Tips	https://cinnamon.video/
Circle Internet Financial, Inc.	Cryptocurrency Exchange	https://www.circle.com/en/

Club Turismo	Travel agency	https://www.clubeturismo.com.br/
CME	Cryptocurrency Exchange	https://www.cmegroup.com/markets/cryptocurrencies.html
Cobo	Payment Gateways	https://cobo.com/
Codius	Smart Contracts	https://codius.org/
Coil	Micropayments/Tips	https://coil.com/about
Coin Cloud	ATMs	https://www.coincloudatm.com/
Coin Island	Payment platform	https://www.coin-island.com/
Coin Monster Store	Purchase/Fashion Apparel	https://coinmonster.store/
coin.z	Cryptocurrency Exchange	https://coin.z.com/jp/
Coinall	Cryptocurrency Exchange	https://www.coinall.com/
Coinbase	Cryptocurrency Exchange	https://www.coinbase.com/
Coinbene	Cryptocurrency Exchange	https://www.coinbene.com/
Coincheck	Cryptocurrency Exchange	https://coincheck.com/
CoinCorner	Payment Gateways	https://www.coincorner.com/
Coindeal	Cryptocurrency Exchange	https://coindeal.com/
CoinEgg	Cryptocurrency Exchange	https://www.coinegg.fun/
CoinEX	Cryptocurrency Exchange	https://www.coinex.com/
Coinfalcon	Cryptocurrency Exchange	https://coinfalcon.com/en/
CoinField	Cryptocurrency Exchange	https://www.coinfield.com/
CoinGate	Payment Gateways	https://coingate.com/
Coinhako	Cryptocurrency Exchange	https://www.coinhako.com/
Coinify	Payment Gateways	https://www.coinify.com/
CoinJar	Cryptocurrency Exchange	https://www.coinjar.com/
CoinLoan	Lending	https://coinloan.io/earn-interest/
Coinmate	Cryptocurrency Exchange	https://coinmate.io/home
CoinMe	Financial Services	https://coinme.com/
CoinMetro	Cryptocurrency Exchange	https://coinmetro.com/
Coinomi	Payment Gateways	https://www.coinomi.com/en/
Coinone	Cryptocurrency Exchange	https://coinone.co.kr/
CoinPayments	Payment Gateways	https://www.coinpayments.net/
Coinrail	Cryptocurrency Exchange	https://m.coinrail.co.kr/intro
Coins.ph	Payment Gateways	https://coins.ph/
Coinseed	Investments	https://www.coinseed.co/
CoinsPaid	Payment Gateways	https://coinspaid.com/
CoinSpot	Cryptocurrency Exchange	https://www.coinspot.com.au/
Coinsquare	Cryptocurrency Exchange	https://coinsquare.com/
Coinstart	Cryptocurrency Exchange	https://coinstart.nl/
coinsuper	Cryptocurrency Exchange	https://www.coinsuper.com/
CoinSwitch	Cryptocurrency Exchange	https://coinswitch.co/
Cointelegraph	Cryptocurrency news website	https://cointelegraph.com/
CoinTiger	Cryptocurrency Exchange	https://www.cointiger.com/en-us/
Cointopay	Payment Gateways	https://cointopay.com/
Cointree	Payment/Trading	https://www.cointree.com/
CoolWallet	Payment Gateways	https://www.coolwallet.io/
Corde Settler	Money Transfer	https://www.corda.net/
COSS	Cryptocurrency Exchange	https://www.coss.io/
Coworking Space Toronto	Coworking Space	website not working; cryptwerk only thing I'm finding online
Creative Click	Video/animation Productions	https://www.creativeclick.co/
Cred	Lending	https://mycred.io/what-is-xrp/
CROSS	Cryptocurrency Exchange	https://www.crossexchange.io/cross/home
Crumbs App	App	https://www.crumbsapp.com/
Crypterium	Wallet	https://wallet.crypterium.com/
Crypto Coffee	Marketplace	https://crypto-coffee.com/
Crypto Cove	Purchase/Fashion Apparel	https://cryptocove.io/
Crypto Emporium	Purchase/Fashion Apparel, Cars, Electronics	https://cryptoemporium.eu
Crypto Posters	Poster store	https://www.cryptocurrencyposters.com/
Crypto Shopper	Purchase/Fashion Apparel	https://cryptoshopper.store/
Crypto Voucher	Buy vouchers	https://cryptovoucher.io/
Crypto Whale Clothing	Marketplace	https://cryptowhaleclothing.com/
Crypto.com	Payment Gateways	https://crypto.com/en/pay.html
CryptoBox Trading	Cryptocurrency Exchange	https://cryptoboxtrading.com/

Cryptocurrency Checkout	Payment Gateways	https://cryptocurrencycheckout.com/
Cryptofacilities	Cryptocurrency Exchange	https://www.cryptofacilities.com/
Cryptoholic Shop	Purchase/Fashion Apparel	https://www.cryptoholicshop.com
Cryptojaunt	Travel Booking Platform	https://www.cryptojaunt.com/
Cryptolife	Marketplace	https://cryptolife-store.com/
Cryptomate	Cryptocurrency Exchange	https://cryptomate.co.uk/
Cryptonator	Payment Gateways	https://www.cryptonator.com/
cryptonex	Cryptocurrency Exchange	https://cryptonex.org/
Cryptopay	Wallet/Card	https://cryptopay.me/
Cryptopet	Marketplace	http://cryptopet.com/
Cryptosa	Advisory Firm	https://cryptosa.org/
CryptoSystems	Cryptocurrency Exchange	https://www.crypto-systems.com/
Cryptoworth	Advisory Firm	https://cryptoworth.app/
Cuallix (ODL)	Money Transfer	https://www.cuallix.com/en/
Cumberland	Cryptocurrency Exchange	https://cumberland.io/
DBS	Cryptocurrency Exchange	https://www.dbs.com/newsroom/dbs_digital_exchange
DCEX	Cryptocurrency Exchange	https://dcex.com/
Dcoin	Cryptocurrency Exchange	https://www.dcoin.com/
Deel	Payment Gateways	https://www.letsdeel.com/
Delphin hotel	Hotel	https://delphinhotel.com/
DEV	Online community	https://dev.to/
dex.openledger	Cryptocurrency exchange	https://openledger.info/portfolio/dex/
Diaz Plascencia y Asociados	Legal services	http://diazplascencia.com/
Digifinex	Cryptocurrency exchange	https://www.digifinex.com/en-ww/
Digital Currency Group	Blockchain investment group	https://dcg.co/
Digitec	Marketplace	https://www.digitec.ch/
Do You Space	Architecture firm	http://www.doyouspace.net/about-3/
DOBI	Cryptocurrency exchange	https://www.dobiexchange.com
Dokter Online	Online pharmacy	https://www.dokteronline.com/en/
Domitai	Payment Gateways	https://domitai.com/
DuckDice	Casino/Online Betting	https://duckdice.io/
Dunamu	Cryptocurrency exchange	https://dunamu.com/
Dynasty Goddess Hair	Hair extension shop	https://www.dynastygoddess.com/
Eat Me Clothing	Purchase/Fashion Apparel	https://eatmeclothing.com/
Ecstatic	Purchase/Fashion Apparel	https://ecstaticstore.com/
Ecwid	E-commerce hosting	https://www.ecwid.com/
Edge	Payment Gateways	https://edge.app/
eGifter	Purchase/Gift Card	https://www.egifter.com/buy-gift-cards-with-xrp
ElectroCat	Marketplace	https://www.electrocatstore.com/
Electrocoin	Payment Gateways	https://electrocoin.hr/en
Elite Card	Wallet/Card	https://elitecard.io/
Ellipal	Wallet	https://www.ellipal.com/
EnterBillions	Spam Blocker	https://enterbillions.co/
EO.Finance	Cryptocurrency Exchange	https://eo.finance/
Equilibrium Labs	Technology	https://equilibrium.co/
Eroscain	Payment Gateway	https://eroscoin.org/
eToro	Cryptocurrency Exchange	https://www.etero.com/en-us/
Euro Exim Bank (ODL)	Bank	https://www.euroeximbank.com/
Evident Proof	Data Verification/Proof Service	https://evident-proof.com/
Exarpy	Wallet	https://exarpy.com/
Exmo	Cryptocurrency Exchange	https://exmo.com/en
Exodus	Wallet	https://www.exodus.com/
Expedia	Travel booking site	www.expedia.com
Exrates	Cryptocurrency Exchange	https://exrates.me/
Extratherm	Construction services	http://www.extratherm.at/2018/
Exx	Cryptocurrency Exchange	https://www.exx.com/
FAMprint	Printing	https://www.fam-print.ch/
Fatbtc	Cryptocurrency Exchange	https://www.fatbtc.com/
fcce.jp	Cryptocurrency Exchange	https://zaif.jp/
Ferrum Network	Interconnectivity Network	https://ferrum.network/
Fetch Portraits	Photographer	https://www.fetchportraits.com/
FinFreeOTC	P2P Cryptocurrency Marketplace	https://finfreeotc.com/
FinNexus	Tokenization of assets	https://www.finnexus.io/

Flare Finance / Flare Networks	Smart Contracts	https://flare.xyz/
FlashFX (ODL)	Money Transfer	https://www.flash-fx.com/
Fliqpay	Payment Gateway	https://www.fliqpay.com/
Folgory	Cryptocurrency Exchange	https://folgory.com/
Fopay	Payment Gateways	https://fopay.io/
Forte	Gaming	https://forte.io
Frank and Beans	Purchase/Fashion Apparel	https://www.frankandbeans.com.au/
Free Wallet	Payment Gateways	https://freewallet.org/
Gala	Gaming	https://app.gala.games/
Galaxus	Marketplace	https://www.galaxus.ch/
Galaxy	Financial services	https://www.galaxydigital.io/
Galois Capital	Financial services	https://galois.capital/
Game Servers Today	Game server hosting	https://gameservers.today/
GamesOnly	Gaming	http://www.gamesonly.com/
Gas Aces	Gas and heat repairs	https://www.gasaces.com/
Gate.io	Cryptocurrency Exchange	https://www.gate.io/
Gatehub	Payment Gateways	https://gatehub.net/
GBI	Bullion store	https://www.bullioninternational.com/
GCBIB	Crypto Bank	https://www.gcbib.com/
Gemini	Cryptocurrency Exchange	https://www.gemini.com/
General Bytes	ATMs	https://www.generalbytes.com/en/
Genesis	Broker	https://genesistrading.com/
Genoa Institute	Online education website	https://genoainstitute.com/
Giacobbe & Co.	Jewelery	https://giacobbeandco.com/
Gigabet	Casino/Online Betting	https://www.gigabet.com/
Ginco	Payment Gateways	https://ginco.io/en/
Glance Bay Luxury Shuttle	Rental car company	https://hankcooper.com/shuttle
Globee	Payment Gateways	https://globee.com/
Gobbill	Payment Gateways	https://www.cointree.com/trade/pay-bills-with-cryptocurrency
Godex	Cryptocurrency Exchange	https://godex.io/
GogoCoins	Cryptocurrency Exchange	https://trade.gogocoins.io/
Gokumarket	Cryptocurrency Exchange	https://gokumarket.com/
GoLance (ODL)	Online Workforce Platform	https://golance.com/
GoPax	Cryptocurrency Exchange	https://www.gopax.com/
Greitai	Travel booking site	https://www.greitai.lt/
Grupo Laguna	Real Estate investment group	http://orchidgarden.website/grupo-laguna.html
Grupo Terramovil del Mediterraneo SL	Car dealer	https://criptocoches.com/
GSR	Financial services	https://www.gsr.io/
Guarda	Payment Gateways	https://guarda.com/
Hacker Noon	Publication	https://hackernoon.com/
Hanbitco	Cryptocurrency Exchange	https://hanbitco.com/
Harbor	Wallet	https://harbor.com/
Hard Protocol/Kava Labs	Lending	https://www.kava.io/
Harmonie im Garten	Garden goods	https://www.harmonie-im-garten.at/
Hauer 1a	Contractor	https://www.hauer1a.at/
Haus Irene	Accommodations	https://www.ferienwohnungen-irene.de/
hbus	Cryptocurrency Exchange	https://www.huobi.us/
Helio Lending	Crypto Backed Loans	https://heliolending.io/
Henley Audtio	A/V services for events	https://henleyaudio.com/
Hide.me	VPN	https://hide.me/en/
Hitbtc	Cryptocurrency Exchange	https://hitbtc.com/
Hodl Boutique	Purchase/Fashion Apparel	https://hodl.boutique/
Hodl Finance	Crypto Backed Loans	https://hodlfinance.io/
Hoo	Cryptocurrency Exchange	https://hoo.com/
HostBlock	Web Hosting Provider	https://www.hostblock.io/
Hostería Encantó del Lolog	Accommodations	https://encantodellolog.com/
Hostiso	Hosting Provider	https://hostiso.com/
Hostsailer	Technology	https://hostsailor.com/how-to-pay-with-cryptocurrencies/
Hostwinds	Web Hosting Provider	https://www.hostwinds.com/
Hotel Ploberger	Accommodations	https://www.hotel-ploberger.at/de/
Hotel Vienna	Accommodations	https://www.hotelvienna.at/

Hubert Staudinger	Electronic services	http://www.elektro-staudinger.com/
HubrisOne	Wallet/Payments	https://www.hubrisone.com/
Huobi	Cryptocurrency Exchange	https://www.huobi.com/en-us/
Ice3x	Cryptocurrency Exchange	https://ice3x.co.za
IDT (ODL)	Money Transfer	https://www.idt.net/
imove	Wallet	https://imove.io/index
InCore Bank AG	Custody, Trading	https://www.sobaco-incore.com/en/sobaco-group/incore-bank-ltd
Independent Reserve	Payment Gateways	https://www.independentreserve.com/
IndoDax	Cryptocurrency Exchange	https://indodax.com/en/
Indybudmarv2	3D printing and design	https://www.budmarv2.com/
InkaPay	Payment Gateways	https://www.inkapay.com/inka/home
instantbitex	Cryptocurrency Exchange	http://instantbitex.com/
Instimatch	Interbank Trading	https://www.instimatch.ch/
Interbank (ODL)	Bank	https://interbank.pe/
Intergiro (ODL)	Money Transfer	https://intergiro.com/
Intermex (ODL)	Money Transfer	https://corporate.intermexonline.com/en/
itbit	Cryptocurrency Exchange	https://www.paxos.com/itbit/
itlawyers.gr LLC	Legal services	https://www.itlawyers.gr/
JNFX (ODL)	Money Transfer	https://jn-fx.com/
Jubi	Cryptocurrency Exchange	https://www.jbex.com/
KAZARTT	Purchase/Fashion Apparel	https://www.kazartt.com/
Keep SECZ	Private Ethereum container	https://keep.network/
KeepKey	Hardware wallet	https://shapeshift.com/keepkey
Keyless Technologies	Authentication software	https://keyless.io/
Keys4coins	Marketplace	https://www.keys4coins.com/
KinkyBoots & Bits	Purchase/Fashion Apparel	https://www.kinkyboots.com.au/
Kiss Shoes	Purchase/Fashion Apparel	https://www.kisshoes.ch/en/
Koinex	Cryptocurrency Exchange	https://koinex.in/
Korbit	Cryptocurrency Exchange	https://www.korbit.co.kr/
Kraken	Cryptocurrency Exchange	https://www.kraken.com/en-us/
Kreuzerhof	Unclear; family farm?	https://www.kreuzerhof.at/
Kristina Rybaltchenko	Purchase/Fashion Apparel	https://rybaltchenko.com/
Kryptohotel Vienna	Accommodations	https://www.kryptohotel.at/
kryptono	Cryptocurrency Exchange	https://kryptono.exchange/
Kun Koro	Counseling	https://kunkoro.kiwi/indexeng.html#
Kuna.io	Cryptocurrency Exchange	https://kuna.io/
Laferla	Insurance company	https://www.laferla.com.mt/
Lakebtc	Cryptocurrency Exchange	https://www.lakebtc.com/
LATOKEN	Cryptocurrency Exchange	https://latoken.com/
LavaVPS	VPN Hosting	https://www.lavavps.lt/en/
lbank	Cryptocurrency Exchange	https://www.lbank.info/
Ledger	Payment Gateways	https://www.ledger.com/
LidiaPay	Software	https://lidiapay.com/
LiteBit	Cryptocurrency Exchange	https://www.litebit.eu/en
Living Room of Satoshi	Payment Gateways	https://www.livingroomofsatoshi.com/
London Block Exchange (LBX)	Cryptocurrency Exchange	http://www.lbx.com/
Lord	Purchase/Fashion Apparel	https://www.lord.gr/en/
Luckbox	E-sports betting	https://luckbox.com/
Luckyfish	Casino/Online Betting	https://luckyfish.io/
Luckygames	Casino/Online Betting	https://luckygames.io/
Luno	Cryptocurrency Exchange	https://www.luno.com/en/
Mader Reisen	Travel agency	https://www.maderreisen.at/Home/
Maerki Baumann & Co. AG	Custody, Trading	https://www.maerki-baumann.ch/en
MaicoIn	Cryptocurrency Exchange	https://www.maicoIn.com/
Marketing Empire	Digital Marketing Agency	https://marketingempire.co.uk/
MBAex	Cryptocurrency Exchange	https://www.mbaex.com/#/index
Mental Market	Marketplace	http://mentalmarketing.com/
Mercadobitcoin	Cryptocurrency Exchange	https://www.mercadobitcoin.com.br/
MercuryFX (ODL)	Money Transfer	https://www.mercury-fx.com/
Metal Pay	Payments	https://www.metaltpay.com/
Mileata	Watch manufacturer	https://mileata.com/
MinedTrade	Cryptocurrency Exchange	https://minedtrade.com/en/
Mixort	Tech	https://mixort.com/

MMOGA	Gaming	https://www.mmoga.com/
Mobi	Payments/Wallet	https://www.mobiapp.cn/
Moneygram (ODL)	Money Transfer	http://global.moneygram.com/
MoneyMatch	International Money Transfers	https://transfer.moneymatch.co/
MoneyMessage	Extension/AddIn	http://moneymessage.radynamics.com/moneymessage_www/?
MoneyTap	International Money Transfers	https://moneytap.jp/
Moneytoken	Lending	https://moneytoken.eu/
Mopesa Car Rental	Rental car service	https://www.facebook.com/mopesacarrentalkoronadal/
Morph	Wallet	https://morphwallet.com/
Mr-Ripple	Cryptocurrency Exchange	https://ee.mr.exchange/
Mudrex	Cryptocurrency Exchange	https://mudrex.com/
Multichange	Cryptocurrency Exchange	https://multichange.net/en
MVIS and ITI Fund	Crypto Fund	https://www.mvis-indices.com/indices/digital-assets/mvis-cryptocompare-digital-assets-10
MXC	Cryptocurrency Exchange	https://www.mxc.com/auth/signup?inviteCode=15ZDa
MyCryptoCard	Card/Wallet	https://mycryptowallet.com.au/
MyCryptoCheckout	Payment Gateways	https://mycryptocheckout.com/
Nebeus	Wallet	https://nebeus.com/
Net Cents	Payment Gateways	https://net-cents.com/
Neteller	E-money transfer service	https://www.neteller.com/en
Nexo	Lending	https://nexo.io/
NiceChange	Cryptocurrency Exchange	https://nicechange.net/en
Nium (ODL) Former Instarem	Money Transfer	https://www.nium.com/
No Middle Man Crypto	Payment Gateways	https://nomiddlemancrypto.io/
NordVPN	Technology	https://nordvpn.com/
Now Payments	Payment Gateways	https://nowpayments.io/
NYDIG	Custody	https://nydig.com/
Oanda	Cryptocurrency Exchange	https://www.oanda.com/us-en/
ObmenMoney	Cryptocurrency Exchange	https://obmen.money/
OceanEx	Cryptocurrency Exchange	https://oceanex.pro/m/
Oex.com	Cryptocurrency Exchange	https://oex.com/#/
OffshoreDedicated	Hosting Provider	https://offshorededicated.net/
Okcoin	Cryptocurrency Exchange	https://www.okcoin.com/en
Okex	Cryptocurrency Exchange	https://www.okex.com/
Omgserv	Minecraft Server	https://www.omgserve.com/en/
Omni Projects	Software	omnigroup.com
Opu Labs	Healthcare e-commerce	https://www.opulabs.com/
Orionx	Cryptocurrency Exchange	https://www.orionx.com/en/
OS Limited	Cryptocurrency brokerage/exchange	https://osl.com/en/
Otcbtc	Cryptocurrency Exchange	https://otcbtc.com/
Oveit	Event/venue payments	https://oveit.com/
Paid By Coins	Bill Payments	https://paidbycoins.com/
Paritex	Cryptocurrency Exchange	https://www.paritex.com/
Paybis	Card	https://paybis.com/
Payburner	Payment Gateways	https://www.payburner.com/
PayC	Payments	http://www.payc.io/
Paycent	Payment platform	https://paycent.com/
PAYCRYPTO	Payment Gateways	https://paycrypto.co.kr/
Payeer	Payment Gateways	https://payeer.com/
PayGlobal	Money Transfer	https://payglobal.me/
PayKassa	Payment Gateways	https://paykassa.pro/en/
Payza	Cryptocurrency Exchange	https://www.payza.org/
PexPeppers	Marketplace	https://pexpeppers.com/
PlasmaPay	Payments	https://plasmapay.com/
Plus500	Cryptocurrency Exchange	https://www.plus500.com/
Pocket Network	Cryptocurrency Exchange	https://www.pokt.network/
Poloniex	Cryptocurrency Exchange	https://poloniex.com/
Polysign	Custody	https://www.polysign.io/
PPC Protect	Fraud Prevention	https://ppcprotect.com/
PrestigeTime	Online luxury watch store	https://www.prestigetime.com/

Primedice	Casino/Online Betting	https://primedice.com/
Print Ted	Purchase/Fashion Apparel	https://print-ted.com/
ProBit	Cryptocurrency Exchange	https://www.probit.com/en-us/
Propy	Marketplace	https://propy.com/browse/
Prostocash	Cryptocurrency Exchange	https://prostocash.com/
Puma Technologies	Browser	https://www.pumabrowser.com/
PumaPay	Payments	https://pumapay.io/
Qeeq	Rental car service	https://www.qeeq.com/
Qryptos (Liquid)	Cryptocurrency Exchange	https://www.liquid.com/
Quadrigacx	Cryptocurrency Exchange	https://quadrigacx.com
Quantoz (Nexus)	Transaction processing	https://quantoz.com/solutions/cryptocurrency-services/
Quoine	Cryptocurrency exchange [redirects to liquid.com]	https://www.quoise.com/?lang=en [redirects to liquid.com]
Quoinex	Cryptocurrency exchange	https://quoise.zendesk.com/hc/en-us
R3	Software	https://www.r3.com/
Raised In Space	Investment	https://raisedinspace.com/
RealSologenic	Cryptocurrency Exchange	https://www.sologenic.com/
Rebit	Cryptocurrency Exchange	https://rebit.org.in/
Refundo	Tax refund	https://refundo.com/
Revolut	Payment Gateways	https://www.revolut.com/en-US
RightBTC	Cryptocurrency Exchange	https://rightbtc.com/
Rights	Digital Market	https://rights-dapp.io/
Ripio	Cryptocurrency Exchange	https://www.ripio.com/ar/
RippleFox	Cryptocurrency Exchange	https://ripplefox.com/
Robot Ventures	Investor	https://robvc.com/
Royal.Cash	Cryptocurrency Exchange	https://royal.cash/en
SADAD (ODL)	Money Transfer	https://www.sadad.com/en/pages/home.aspx
SafePal	Wallet	https://www.safepal.io/
Salamantex	Payment Gateways	https://www.salamantex.com/en/
Salt Lending	Lending	https://saltlending.com/
Satang Pro	Crypto backed loans	https://satang.pro/
SatoWallet	Multi-acctet exchange/wallet	https://www.satowallet.com/app/
SBI Ven Capital	Private Equity Firm	https://www.sbivencapital.com.sg/
sbivc	Cryptocurrency Exchange	https://sbivc.jp/#/login
sci.ph	Cryptocurrency Exchange	https://sci.ph/
Search Candy	Digital Marketing	https://www.searchcandy.uk/
Secalot	Wallet	https://www.secalot.com/
Secure Trading Group	Payments	https://www.trustpayments.com/
Securitize, Inc.	Financial services	https://www.securitize.io/
Selly	E-Commerce	https://selly.io/
SendFriend (ODL)	Money Transfer	https://www.sendfriend.io/
Sesocio	Investment platform	https://sesocio.com.ar/
SFOX	Cryptocurrency Exchange	https://www.sfox.com/
Shapeshift	Cryptocurrency Exchange	https://shapeshift.com/
Shopify	Marketplace	https://www.shopify.com/
Silicon Valley community foundation	Nonprofit advisor	https://www.siliconvalleycf.org/
simex	Cryptocurrency Exchange	https://simex.global/en
SimpleSwap	Cryptocurrency Exchange	https://simpleswap.io/
Sistemkoin	Cryptocurrency Exchange	https://sistemkoin.com/
Skrill	Online Payments/Money Transfer	https://www.skrill.com/en/
Snapswap	Financial services	https://www.snapswap.eu/
Snel.com	Technology	https://www.snel.com/
Sologenic	Tokenization	https://www.sologenic.com/
Sony CSL	Wallet	https://www.sonycs1.co.jp/
Sotados	Financial services	https://www.sotados.com/
Soulful Essence	Marketplace	https://soulfulnessence.com/
Spend	Wallet/Card	https://www.spend.com/
SpendAcoin	Marketplace	https://spendacoin.com/
SportsBetting.ag	Casino/Online Betting	https://www.sportsbetting.ag/
SpotOn	Payment Processing Services	https://www.spoton.com/

SSL Dragon	SSL Certificate Marketplace	https://www.ssldragon.com/
Stake	Casino/Online Betting	https://stake.com/
Standing Ovation	Event Service Provider	https://standingovation.ch/en/
Stark Payments	Payments	https://starkpayments.com/
Starting Point Mental Health	Therapy	https://www.therapydelandfl.com/
Stats Autos Spa	Auto detailing	https://stats-auto-spa.com/
Staxe	Tokenization	https://staxe.io/
Stellarport	Cryptocurrency Exchange	https://stellarport.io/
Stellarterm	Cryptocurrency exchange	https://stellarterm.com/
Stone Ridge	Asset management	stoneridgeam.com
Stratum	Payment Gateways	https://stratum.bt/home
STYRA Technologies	Interledger gateway provider	https://www.styra.com/
SubscribeStar	Crowdfunding	https://www.subscribestar.com/
Sugi	Payment Gateways	https://sugi.io/pages/wallets
Suisse Gold	Precious metals Marketplace	https://www.suissegold.eu/en/
Swapcoins	Cryptocurrency Exchange	https://www.swapcoins.com/
Swipe	Wallet	https://www.swipe.io/
Swiss Crypto Vault	Crypto storage	https://swisscryptovault.ch/
Swissquote	Cryptocurrency Exchange	https://en.swissquote.com/crypto-assets/products/cryptocurrencies
Switchere	Cryptocurrency Exchange	https://switchere.com/
Sygnum Bank	Custody, Trading	https://www.sygnum.com/
Talizi Hair Transplantation Clinic	Hair transplants	https://tsilosani.com/en/
TapJets	Travel	https://www.tapjets.com/
techbureau	Cryptocurrency Exchange	https://techbureau.jp/
Tegiwa	Imports	https://www.tegiwaimports.com/
Ternio	Crypto Card	https://ternio.io/
Therocktrading	Cryptocurrency Exchange	https://www.therocktrading.com/en/
ti&m	IT service provider	https://www.ti8m.com/
TMD STUDIO LTD.	Architecture	https://www.tmd.studio/
Toast Wallet	Payment Gateways	https://toastwallet.com/
Toca Coffee	Marketplace	https://www.tocacoffee.com/
TokenAd	Advertising	https://token.ad/
TokenKart	Cryptocurrency Exchange	https://www.tokenkart.com/
TOKOK	Cryptocurrency Exchange	https://www.tokok.com/
topbtc	Cryptocurrency Exchange	https://www.topbtc.com/
TorGuard	Technology	https://torguard.net
Tower.bet	Casino/Online Betting	https://tower.bet/
Towo Labs AB (formerly xrptoolkit)	Custody	https://www.towolabs.com/
Tra Mente e Corpo	Beauty saloon	https://www.tramenteecorpo.com/
Trachtenhans	Purchase/Fashion Apparel	https://www.trachtenhans.com/
Trade Satoshi	Cryptocurrency Exchange	http://tradesatoshi.com/
Transfer4cheap	Travel	https://www.transfer4cheap.com/en
TransferGo (ODL)	International Money Transfers	https://www.transfergo.com/en-gb
Transpaygo (ODL)	Money Transfer	https://transpaygo.com/
Trastra	Payment Gateways	https://wallet.trastra.com/
Travala	Purchase/Travel	https://www.travala.com/payment/xrp
Travolier Hoteliermart	Loyalty program	https://travolier.com/
Trezor	Payment Gateways	https://trezor.io/
Trip.io	Travel booking site	www.trip.io * Website not operational
Trippki	Purchase/Travel	https://trippki.com/
Triv Pro	Cryptocurrency Exchange	https://tpro.co.id/
Tron Network Store	Merchandise store	https://tronnetwork.store/
Trust Payments	Payment platform	https://www.trustpayments.com/
Trust Wallet	Payment Gateways	https://trustwallet.com/
TruViewz	Photographer	https://truviewz.com/
Two Rivers	Investment management firm	http://2rcc.com/
uConektPAY	Payments processor	https://uconekt-pay.com/
Uex.com	Cryptocurrency Exchange	http://uex.com/
Uptimez	Web Design	https://ultimez.com/
Unicef	Charity	https://www.unicef.fr/
Unocoin	Cryptocurrency exchange	https://www.unocoin.com/in
Upbit	Cryptocurrency exchange	https://sg.upbit.com/home
Uphold	Cryptocurrency Exchange	https://uphold.com/en-us/

Upvotes Club	Marketplace	https://upvotes.club/
Varle.It	Online marketplace	https://www.varle.it/
VeePN	VPN	https://veepn.com/
Vega Protocol	Financial services software	https://vega.xyz/
Velic	Cryptocurrency exchange	https://www.velic.io/
Velocity Markets Inc	Marketplace	https://www.velocitymkt.com/
Venus	Lending	https://venus.io/
ViaBTC	Cryptocurrency mining service	https://www.viabtc.com/
Viamerica (ODL)	Money Transfer	https://corporate.viamerica.com/
Victory Rentals	Outdoor equipment rental	https://www.victory-rentals.com/
Villa Eros Apartments	Accommodations	https://villa-eros.weebly.com/
VinDAX	Cryptocurrency exchange	https://vindax.com/forbidden.html
Volkskraftwerk	Energy technology	https://www.volkskraftwerk.com/
Vontobel Investment Banking	Wealth management, active asset management and investment solutions	https://www.vontobel.com/en-int/
W.Hamond	Jewelry Store	https://whamond.com/
WazirX	Cryptocurrency exchange	https://wazirx.com/
WeCashUp	Payments	https://www.wecashup.com/
WeMakePrice	Mall	https://front.wemakeprice.com/main
WestWallet	Payment Gateways	https://westwallet.io/
Win Dice	Casino/Online Betting	https://windice.io/
Winipple	Purchase/Fashion Apparel	https://winipple.com/shop/
Wirex	Payment Gateways	https://wirexapp.com/
WOLF.BET	Casino/Online Betting	https://wolf.bet/
WooCommerce	E-commerce hosting	https://woocommerce.com/
Worldcore	Online Payment Service Provider	https://worldcore.com/
Wrecky Car Wreckers	Towing service	https://www.wrecky.com.au/
Xago	Payment Gateways	https://xago.io/
XcelTrip	Travel booking site	https://www.xceltrip.com/
xChange.me	Cryptocurrency Exchange	https://xchange.me/
xCryptoCrash	Gambling site	https://xcryptocrash.com/
Xeeda	Wallet	https://xeeda.io/
XRP Charities Metrics Page	Charitable Giving	goodxrp.org
XRP Text	Money Transfer	https://sms.xrptext.com/
XRPL Labs	Development	https://xrpl-labs.com/
XRPTipBot	Social Tipping App	https://www.xrptipbot.com/
xtb.com	Cryptocurrency Exchange	https://www.xtb.com/int
xtremcoin	Cryptocurrency Exchange	https://www.xtremcoin.com/
Xumm Wallet	Payment Gateways	https://xumm.app/
Yacht Break	Yacht Charter	https://theyachtbreak.com/
YChanger	Cryptocurrency Exchange	https://ychanger.net/
Yobit	Cryptocurrency Exchange	https://yobit.net/en/
YouHodler	Lending	https://www.youhodler.com/
Young Platform	Cryptocurrency Exchange	https://youngplatform.com/
YunEx	Cryptocurrency Exchange	https://yunex.io/
ZB	Cryptocurrency Exchange	https://zb.com
ZBG	Cryptocurrency Exchange	https://www.zbg.com/
ZebPay	Cryptocurrency Exchange	https://zebpay.com/
Zwei Fach Vertriebs GmbH	Interior decorating	https://www.zwei-fach.at/

Use Cases with Inactive Websites		
Entity Name	Category	Website
CODEX	Cryptocurrency exchange [domain expired]	https://codex.one/
Coinbe	Cryptocurrency exchange [website down]	http://ww12.coinbe.net/
Coincenter	Collectible trading site [website down]	https://www.coincenter.org/
CoinExmarket	Cryptocurrency Exchange [website down]	http://coinexmarket.io/
coinhub	Cryptocurrency exchange [website down]	https://coinhub.io
Coinlim	Cryptocurrency exchange [website down]	https://www.coinlim.com/
CoinMex	Cryptocurrency exchange [website down]	www.coinmex.com
Coinsecure	Cryptocurrency exchange [website down due to cyberattack]	https://coinsecure.in/
Cointal	Cryptocurrency exchange [website down]	http://www.cointal.com/
Coinverso	Cryptocurrency exchange [website down]	https://coinverso.com
Cryptohub	Cryptocurrency giveaway site [website down]	https://cryptohub.online/
Darb Finance	Cryptocurrency exchange [website down]	https://darbfinance.com
digitalassetcustody (DACC)	Cryptocurrency custodian [website down]	https://digitalassetcustody.com/
dragonex	Cryptocurrency exchange [website down]	https://dragonex.io/en-us/
Fcoin	Cryptocurrency exchange [website down]	www.fcoin.com
Mydicewallet	Cryptocurrency exchange [website down]	https://www.mydicewallet.com/
Octagon Strategy	Financial services [website down]	https://www.octfinancial.com/
ooobtc	Cryptocurrency exchange [website down]	https://www.ooobtc.com/
Vebitcoin	Cryptocurrency exchange [website down]	https://www.vebitcoin.com/
WorldWideMarketsOnline	Cryptocurrency exchange [website down]	http://worldwidemarkets.com/
Xbtce	Cryptocurrency exchange [website down]	https://www.xbtce.com/
XRP Fund	Unknown	No Website
Zamisa IT Solutions	IT service provider [website down]	http://zamisaitolutions.co.za/

Appendix D - List of Third Party Use Cases

List of Third Party Use Cases Receiving Venture Capital and Founded after Ripple's Founding

uConektPAY	Payments processor	https://uconekt-pay.com/	0.011	2015
Cryptonator	Payment Gateways	https://www.cryptonator.com/	0.02	2014
Cryptos (Liquid)	Cryptocurrency Exchange	https://www.liquid.com/	0.05	2013
Harbor	Wallet	https://harbor.com/	0.1	2017
Fliqpay	Payment Gateway	https://www.fliqpay.com/	0.12	2019
Stark Payments	Payments	https://starkpayments.com/	0.12	2018
Cryptosa	Advisory Firm	https://cryptosa.org/	0.17	2018
Crumbs App	App	https://www.crumbsapp.com/	0.175	2017
Staxe	Tokenization	https://staxe.io/	0.234	2018
TapJets	Travel	https://www.tapjets.com/	0.4	2015
Bpay	Payments	https://bpay.com.au/	0.5	2017
Oveit	Event/venue payments	https://oveit.com/	0.6	2016
MoneyMatch	International Money Transfers	https://transfer.moneymatch.co/	0.6	2015
Pocket Network	Cryptocurrency Exchange	https://www.pokt.network/	0.75	2017
CoinPayments	Payment Gateways	https://www.coinpayments.net/	1	2013
Trastra	Payment Gateways	https://wallet.trastra.com/	1	2017
ZebPay	Cryptocurrency Exchange	https://zebpay.com/	1.1	2014
Edge	Payment Gateways	https://edge.app/	1.2	2014
HubrisOne	Wallet/Payments	https://www.hubrisone.com/	1.4	2017
Ellipal	Wallet	https://www.ellipal.com/	1.5	2016
Luckyfish	Casino/Online Betting	https://luckyfish.io/	1.6	2012
PlasmaPay	Payments	https://plasmapay.com/	1.6	2017
SendFriend (ODL)	Money Transfer	https://www.sendfriend.io/	1.7	2017
Travala	Purchase/Travel	https://www.travala.com/payment/xrp	2	2017
PPC Protect	Fraud Prevention	https://ppcprotect.com/	2.9	2016
CoinLoan	Lending	https://coinloan.io/earn-interest/	3.1	2017
Action Factory Inc. (d/b/a Stronghold)	Payment Gateways	https://stronghold.co/	3.3	2017

Luckbox	E-sports betting	https://luckbox.com/	3.8	2016
Agoric Systems LLC	Smart Contracts	https://agoric.com/	4	2018
BCB Group	Broker and Custodian	https://bcbgroup.io/	4.5	2017
Worldcore	Online Payment Service Provider	https://worldcore.com/	5	2014
Viameerica (ODL)	Money Transfer	https://corporate.viameerica.com/	6	1999
Young Platform	Cryptocurrency Exchange	https://youngplatform.com/	6.1	2018
Unocoin	Cryptocurrency exchange	https://www.unocoin.com/in	7	2013
Wirex	Payment Gateways	https://wirexapp.com/	7.9	2014
Keyless Technologies	Authentication software	https://keyless.io/	9.5	2019
Luckygames	Casino/Online Betting	https://luckygames.io/	10	2013
Okcoin	Cryptocurrency Exchange	https://www.okcoin.com/en	10	2013
Vega Protocol	Financial services software	https://vega.xyz/	10	2018
Coins.ph	Payment Gateways	https://coins.ph/	10	2014
Sesocio	Investment platform	https://sesocio.com.ar/	11.4	2017
Bitstamp	ODL Exchange	https://www.bitstamp.net/	12.4	2011
BitBounce	Paid email service	https://bitbounce.com/	12.5	2014
Shapeshift	Cryptocurrency Exchange	https://shapeshift.com/	12.8	2014
ZB	Cryptocurrency Exchange	https://zb.com	13	2004
Coinify	Payment Gateways	https://www.coinify.com/	13.1	2014
Uphold	Cryptocurrency Exchange	https://uphold.com/en-us/	15.5	2014
Trip.io	Travel booking site	www.trip.io * Website not operational	16	2015
Propy	Marketplace	https://propy.com/browse/	16.7	2016
Cryptopay	Wallet/Card	https://cryptopay.me/	18.1	2013
CoinMe	Financial Services	https://coinme.com/	19.1	2014
Cobo	Payment Gateways	https://cobo.com/	20	2017
Bitgild	Precious metals Marketplace	https://www.bitgild.com/	20	2017
techbureau	Cryptocurrency Exchange	https://techbureau.jp/	21.7	2014
Bluzelle	Technology	https://bluzelle.com/	22.3	2014
SFOX	Cryptocurrency Exchange	https://www.sfox.com/	23.1	2014
Crypto.com	Payment Gateways	https://crypto.com/en/pay.html	26.7	2016

ViaBTC	Cryptocurrency mining service	https://www.viabtc.com/	32.9	2016
Blockdaemon	Networking	https://blockdaemon.com/	39.6	2017
Otcbtc	Cryptocurrency Exchange	https://otcbtc.com/	40	2017
MoneyTap	International Money Transfers	https://moneytap.jp/	40.3	2015
Ripio	Cryptocurrency Exchange	https://www.ripio.com/ar/	44.4	2013
Ecwid	E-commerce hosting	https://www.ecwid.com/	48.5	2009
AavePay	Bill Payments	https://aave.com/	49	2017
Bitcoin Suisse	Institutional-grade storage and exchange	https://www.bitcoinsuisse.com/	49	2013
Flare Finance / Flare Networks	Smart Contracts	https://flare.xyz/	50	2015
STYRA Technologies	Interledger gateway provider	https://www.styra.com/	54	2016
BRD	Wallet	https://brd.com/	54.8	2015
Exodus	Wallet	https://www.exodus.com/	60	2015
BitGo	Payment Gateways	https://www.bitgo.com/	69.5	2013
TransferGo (ODL)	International Money Transfers	https://www.transfergo.com/en-gb	69.7	2012
BitPay	Payment Gateways	https://bitpay.com/	72.5	2011
Polysign	Custody	https://www.polysign.io/	74.7	2018
Securitize, Inc.	Financial services	https://www.securitize.io/	87.5	2017
Azimo (ODL)	Money Transfer	https://azimo.com/	88.1	2012
Celsius Network	Lending	https://celsius.network/	93.8	2017
R3	Software	https://www.r3.com/	112	2014
PumaPay	Payments	https://pumapay.io/	117	2017
Shopify	Marketplace	https://www.shopify.com/	122.3	2004
Quoine	Cryptocurrency exchange [redirects to liquid.com]	https://www.quoise.com/?lang=en [redirects to liquid.com]	132.6	2013
Anchorage	Custody	https://www.anchorage.com/	137	2017
Plus500	Cryptocurrency Exchange	https://www.plus500.com/	152	2008
Coil	Micropayments/Tips	https://coil.com/about	269	2018
CoinCorner	Payment Gateways	https://www.coincorner.com/	300	2014
SpotOn	Payment Processing Services	https://www.spoton.com/	315	2017
Chainalysis	Blockchain Analysis	https://www.chainalysis.com/	366.6	2014

Bitso	ODL Exchange	https://bitso.com/	378.4	2014
NYDIG	Custody	https://nydig.com/	405	2017
Ledger	Payment Gateways	https://www.ledger.com/	468	2014
WeMakePrice	Mall	https://front.wemakeprice.com/main	476	2010
Revolut	Payment Gateways	https://www.revolut.com/en-US	905.5	2014

Appendix E

Brief Timeline of Ripple Products, Fundraising Rounds, and Accolades

- **May 2013** – Open Coin raises angel funding from a variety of investors, including Google Ventures, IDG Capital Partners, Andreessen Horowitz, FF Angel IV, Lightspeed Venture Partners, Vast Ventures and the Bitcoin Opportunity Fund.

Source: <https://www.coindesk.com/google-ventures-invests-in-bitcoin-competitor-opencoin>

- **Oct. 8, 2013** – Ripple announces an agreement with cash-transaction network ZipZap Inc. to expand distribution of XRP and money-transfer software. It also announces that ZipZap and SnapSwap have created a cash-in, cash-out network on Ripple through which users can fund their Ripple Wallets in-person or online, with or without a bank account.

Source: <https://www.coindesk.com/ripple-labs-now-taking-cash-payments-zipzap-snapswap>

- **Nov. 12, 2013** – Ripple Labs raises \$3.5 Million in seed funding round. Investors included Core Innovation Capital, Venture 51, Camp One Ventures, IDG Capital Partners, and a small set of unnamed individuals.

Source: <https://ripple.com/insights/ripple-labs-raises-3-5-million-in-new-investment-round/>

- **Jan. 31, 2014** - Ripple announces that Singapore service Bullion Exchange uses Ripple network to acquire, store and convert precious metals into any currency for customers anywhere in the world.

Source: <https://www.coindesk.com/bullion-exchange-brings-ripple-physical-world>

- **Feb. 10, 2014** – Ripple announces update to “RippleCharts,” which provides live data feeds regarding Ripple Network analytics to make “Ripple network data more accessible and easier to digest.”

Source: <https://ripple.com/insights/ripplecharts-revamp/>.

- **Feb. 18, 2014** – Ripple Labs is included on MIT Technology Review’s 2014 “50 Smartest Companies” List

Source: <https://ripple.com/insights/ripple-labs-makes-mit-technology-reviews-2014-50-smartest-companies-list/>

- **Feb. 19, 2014** – Ripple Labs Named a Finalist for a PYMNTS 2014 Innovator Award for Ripple Payments Protocol

Source: <https://www.businesswire.com/news/home/20140219006020/en/Ripple-Labs-Named-a-Finalist-for-a-PYMNTS-2014-Innovator-Award-for-Ripple-Payments-Protocol>

- **May 4, 2014** – German Internet direct bank Fidor becomes the first bank to integrate Ripple’s payment protocol into its transaction infrastructure, allowing its customers to instantly send money in any currency in any amount through the bank’s money transfer products at a lower cost.

Source: <https://www.coindesk.com/fidor-becomes-first-bank-to-use-ripple-payment-protocol>

- **May 12, 2014** – Bitso launches Ripple gateway for the peso to allow remittance capabilities to its customers.

Source: <https://www.coindesk.com/ripple-network-expands-addition-first-peso-issuer>

- **June 12, 2014** – Licensed money services business AstroPay (a payment services provider for companies like Facebook and Disney in Latin America) launches “Ripple LatAm,” connecting seven countries in Latin American market with the digital currency payment provider Ripple Labs’ network partners and gateways in North America, Europe and Asia.

Source: <https://www.paymentssource.com/news/astropay-to-use-ripple-for-digital-payments-in-latin-america>

- **July 7, 2014** – Ripple launches “Ripple Trade,” the rebranded version of the Ripple Client.

Source: <https://ripple.com/insights/introducing-the-new-ripple-trade-client/>

- **Aug. 13, 2014** – SnapSwap, which operates Ripple gateways in the US and Europe, launches SmartyCash, a prepaid card powered by Ripple that is available through SnapSwap.eu that offers a 5 percent rebate on purchases, paid in XRP.

Source: <https://ripple.com/insights/a-debit-card-powered-by-ripple/>

- **Sept. 24, 2014** – Ripple announces the first two U.S. banks to use Ripple network for real-time, cross-border payments: Cross River Bank and CBW Bank.

Source: <https://ripple.com/insights/ripple-labs-signs-first-two-us-banks/>

- **Dec. 3, 2014** – Ripple announces partnership with Earthport, a regulated financial institution whose cross-border platform represents the largest open network for global bank payments.

Source: <https://ripple.com/insights/ripple-labs-earthport-announce-global-partnership/>

- **Feb. 9, 2015** – Ripple Labs Makes Fast Company’s 2015 Most Innovative Companies List “for building a global rail system on the Internet to instantly transfer value without a middleman.”

Source: <https://ripple.com/insights/ripple-labs-makes-fast-companys-2015-most-innovative-company-list/>

- **May 8, 2015** – Ripple closes \$28 million Series A funding round (which would ultimately grow to \$32 million). Investors included IDG Capital Partners, the venture arms of CME Group, and the global data storage company Seagate Technology. Other new investors include Jerry Yang’s AME Cloud Ventures, ChinaRock Capital Management, China Growth Capital, and Wicklow Capital.

Source: https://ripple.com/ripple_press/ripple-labs-closes-28-million-series-a-funding-round/

- **Aug. 5, 2015** – Ripple Labs Awarded as Technology Pioneer by World Economic Forum. The committee based its decisions on “criteria including innovation, potential impact, working prototype, viability and leadership.”

Source: https://ripple.com/ripple_press/ripple-labs-awarded-as-technology-pioneer-by-world-economic-forum/

- **Oct. 6, 2015** – Ripple offers two solutions for license – Cross-Currency Settlement and FX Market Making – with features and support that help banks meet rising customer and regulatory demand for faster, less costly payments. Ripple also announces that Santander InnoVentures had joined Ripple’s Series A funding round as a strategic investor.

Source: https://ripple.com/ripple_press/new-ripple-settlement-and-fx-solutions-lower-the-total-cost-of-settlement-for-banks-and-their-customers/

- **Oct. 6, 2015** – Ripple announces Interledger Protocol, a scalable, universal solution for payments across payment networks.

Source: <https://ripple.com/insights/a-new-chapter-for-ripple/>

- **Oct. 12, 2015** – Ripple is listed in the American Banker’s “20 Fintech Companies to Watch.”

Source: <https://www.americanbanker.com/slideshow/20-fintech-companies-to-watch>

- **Dec. 9, 2015** – Ripple is named to Forbes’ inaugural edition of The Fintech 50

Source: <https://www.forbes.com/sites/samanthasharf/2015/12/09/the-fintech-50-the-complete-list/?sh=65b6c9fe56a5>

- **Jan. 28, 2016** -- Ripple announces deal with global financial services company SBI Holdings Inc. to create SBI Ripple Asia and build an engineering and sales force across Japan, China, Taiwan, Korea, and ASEAN countries to sell and install Ripple’s enterprise solutions for cross-border payments at banks across Asia

Source: https://ripple.com/ripple_press/ripple-strikes-multi-national-deal-with-sbi-holdings-to-meet-growing-demand-for-ripple-solutions-across-asia

- **May 26, 2016** – Santander announces they are the first U.K. bank to introduce Ripple’s blockchain technology to facilitate international payments through a new app. They are rolling it out as a staff pilot, with the intention to expand the technology at a later date.

Source: <https://ripple.com/insights/santander-becomes-first-uk-bank-use-ripple-cross-border-payments/>

- **June 22, 2016** – Ripple announces the names of seven banks on its network: Santander, UBS, UniCredit, ReiseBank, CIBC, National Bank of Abu Dhabi (NBAD), and ATB Financial.

Source: <https://ripple.com/insights/seven-leading-banks-join-ripples-global-network/>

- **June 27, 2016** – Ripple is listed as one of Fortune’s “5 Hottest Companies in Fintech.”

Source: <https://fortune.com/2016/06/27/five-hottest-fintechs/> [*Note: this article is behind a paywall and we can share a PDF if helpful.*]

- **Aug. 19, 2016** -- SBI Ripple Asia announces a consortium of 15 Japanese banks that will use Ripple’s technology for a new payments platform.

Source: <https://asia.nikkei.com/Business/Trends/Japan-banks-to-lay-groundwork-for-24-hour-fund-transfers?page=1>

- **Sept. 15, 2016** – Ripple announces the addition of several more financial institutions to the network. Standard Chartered, National Australia Bank (NAB), Mizuho Financial Group (MHFG), BMO Financial Group, Siam Commercial Bank and Shanghai Huarui Bank are now among the global banks that have adopted Ripple’s settlement technology to improve their cross-border payments and offer their customers improved service.

Source: <https://ripple.com/insights/several-global-banks-join-ripples-growing-network/>

- **Sept. 15, 2016** – Ripple raises \$55MM in Series B funding, with participation from Standard Chartered, Accenture, and SBI Holdings.

Source: <https://fortune.com/2016/09/15/ripple-raises-55m-adds-major-bank-partners-as-blockchain-gains-ground/>

- **Oct. 20, 2016** – Ripple announces “Project “Xenon” results: 12 banks went through trials using XRP as a settlement tool.

Source: <https://ripple.com/insights/ripple-and-r3-team-up-with-12-banks-to-trial-xrp-for-cross-border-payments/>

- **Nov. 7, 2016 – Ripple is named to the Forbes Fintech 50 For 2016**

Source: <https://www.forbes.com/sites/janetnovack/2016/11/07/the-forbes-fintech-50-for-2016/?sh=33aa4b3a1b10>

- **Jun. 27, 2017 – Ripple named to CB Insights Fintech 250 List**

Source: <https://www.prnewswire.com/news-releases/cb-insights-reveals-the-fintech-250-list-at-future-of-fintech-300480303.html>; <https://www.bloomberg.com/press-releases/2017-06-29/cb-insights-reveals-the-fintech-250-list-at-future-of-fintech>

- **July 31, 2017 – Ripple announces RippleNet product suite, including xCurrent, ILP, xRapid, and xVia. At that time, xCurrent was already in use by customers, but xRapid and xVia were still in development.**

Source: <https://ripple.com/insights/ripples-product-suite-growing/>

- **Oct. 2017 – Ripple announces first xRapid pilot with Cullix**

Source: <https://www.cnn.com/2017/10/10/ripple-has-over-100-clients-as-mainstream-finance-warms-to-blockchain.html>

- **Nov. 16, 2017 – American Express joins RippleNet. American Express FX International Payments (FXIP) will partner with Santander UK to create a transaction channel between the U.S. and U.K.**

Source: <https://ripple.com/insights/american-express-joins-rippletnet-giving-visibility-and-speed-to-global-commercial-payments/>

- **Jan. 11, 2018 – Ripple announces MoneyGram to pilot xRapid.**

Source: <https://www.coindesk.com/moneygram-to-pilot-ripples-xrp-token-for-international-payments>

- **Jan. 23, 2018 – In addition to Cullix and MoneyGram, Ripple states IDT Corporation and MercuryFX are piloting xRapid.**

Source: <https://ripple.com/insights/much-ado-much-to-do-part-3/>

- **Feb. 13, 2018 – Ripple named to the Forbes Fintech 50 list for 2018**

Source: <https://www.forbes.com/sites/laurashin/2018/02/13/forbes-fintech-50-2018-the-future-of-blockchain-and-crypto/?sh=546a7e8a1036>

- **Feb. 14, 2018** – Western Union announces xRapid pilot.

Source: <https://fortune.com/2018/02/14/ripple-xrp-western-union-money-transfers/>;
<https://www.financemagnates.com/cryptocurrency/news/rumors-true-western-union-experiments-ripples-xrapid/>

- **Apr. 26, 2018** – Ripple announced five new xVia customers: FairFX, Exchange4Free, RationalFX, UniPAY and MoneyMatch.

Source: <https://www.businesswire.com/news/home/20180426005305/en/Ripple-Grows-Its-Global-Payments-Network-With-Five-New-xVia-Customers>

- **Oct. 1, 2018** – Ripple formally announces the commercial launch of xRapid at its Swell 2018 conference. It also announces that three companies were using xRapid in production: MercuryFX, Cuallix, and Catalyst Corporate Federal Credit Union.

Source: <https://www.cnn.com/2018/10/01/ripple-xrp-cryptocurrency-product-xrapid-goes-live-for-first-time.html>

- **Jan. 8, 2019** – Ripple announces Euro Exim Bank has signed up for xRapid – the first bank to do so.

Source: <https://ripple.com/insights/rippletnet-surpasses-200-customers-worldwide/>;
<https://www.coindesk.com/euro-exim-bank-taps-ripples-xrapid-for-cross-border-settlements>

- **Feb. 4, 2019** – Ripple is named to the Forbes Fintech 50: The Most Innovative Fintech Companies In 2019

Source: <https://www.forbes.com/fintech/2019/#55fad47a2b4c>

- **April 8, 2019** – Ripple’s xRapid product receives an honorable mention in the “developing-world technology” category in Fast Company’s third annual World Changing Ideas Awards

Source: <https://www.fastcompany.com/90329244/world-changing-ideas-2019-all-the-winners-finalists-and-honorable-mentions>

- **April 16, 2019** – Ripple is named to the Forbes Blockchain 50 list for 2019

Source: <https://www.forbes.com/sites/michaeldelcastillo/2019/04/16/blockchain-50-billion-dollar-babies/?sh=4647f85a57cc>

- **June 17, 2019** – Ripple and MoneyGram announces strategic partnership, including two-year xRapid deal.

Source: <https://ir.moneygram.com/news-releases/news-release-details/moneygram-announces-strategic-partnership-ripple>

- **Sept-Oct. 2019** – Ripple rebrands xRapid as “On-Demand Liquidity” (ODL).

Sources: <https://dailyhodl.com/2019/10/11/confirmed-ripple-says-major-rebranding-underway-xrp-powered-xrapid-transforming-to-on-demand-liquidity>

- **Dec. 20, 2019** – Ripple announced \$200 million in Series C funding, led by Tetragon with participation from SBI Holdings and Route 66 Ventures.

Source: <https://ripple.com/insights/ripple-caps-record-year-with-200-million-series-c-funding/>

- **June 16, 2020** – Ripple is listed on the CNBC Disruptors 50 list for 2020.

Source: <https://www.cnbc.com/2020/06/16/ripple-disruptor-50.html>