



August 1, 2023

**Via Federal Express**

Mrs. Jeanette Jackson  
Securities and Exchange Commission  
Division of Trading and Markets  
100 F Street, N.E.  
Mail Stop 6628  
Washington, DC 20549-0001

Re: **Cboe BZX Exchange, Inc.**  
**Form 1 Amendment**

Dear Mrs. Jackson:

On behalf of Cboe BZX Exchange, Inc. (the "Exchange"), and in connection with the Cboe Form 1 that is on file with the Securities and Exchange Commission ("Commission"), enclosed please find one original and two copies of the Execution Page to Form 1 as well as the following exhibit<sup>1</sup>:

- Exhibit M (updated to provide a list of firms currently approved as members or other users of the Exchange)

This amendment is filed in accordance with SEC Rule 6a-2 and is intended to replace Exhibit M currently on file with the Commission. Please do not hesitate to contact me if you have any questions or require anything further.

Sincerely,

A handwritten signature in cursive script that reads "Kyle Murray".

Kyle Murray  
VP, Legal Head of Global Listings  
913-815-7121  
Signature executed at 9:00am on 08/01/23

Enclosure

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<sup>1</sup> See Attachment for a comprehensive list of updates to Exhibit M

## **Attachment**

*Summary of changes made to Exhibit M:*

- Sponsored Access:
  - Electronic Transaction Clearing Inc. (sponsored by Credit Suisse Securities (USA) LLC) was terminated
  - Squarepoint Ops LLC (sponsored by Credit Suisse Securities (USA) LLC) was terminated

**\*Based upon relief from the Commission staff and difficulties arising from COVID-19, we are making this filing without notarization. This document has been signed electronically.**

|   |   |   |                         |
|---|---|---|-------------------------|
| Form 1<br>Page 1<br>Execution Page  | <b>U.S. SECURITIES AND EXCHANGE COMMISSION</b><br><b>WASHINGTON, D.C. 20549</b><br><br><b>APPLICATION FOR, AND AMENDMENTS TO APPLICATION</b><br><b>FOR, REGISTRATION AS A NATIONAL SECURITIES EXCHANGE</b><br><b>OR EXEMPTION FROM REGISTRATION PURSUANT TO</b><br><b>SECTION 5 OF THE EXCHANGE ACT</b> | Date filed<br>(MM/DD/YY)<br><br><b>08/01/23</b> | OFFICIAL<br>USE<br>ONLY |
| WARNING: Failure to keep this form current and to file accurate supplementary information on a timely basis, or the failure to keep accurate books and records or otherwise to comply with the provisions of law applying to the conduct of the applicant would violate the federal securities laws and may result in disciplinary, administrative or criminal action.  |   |   |                         |
| INTENTIONAL MISSTATEMENTS OR OMISSIONS OF FACTS<br>MAY CONSTITUTE CRIMINAL VIOLATIONS   |   |   |                         |
| <input type="checkbox"/> APPLICATION <span style="margin-left: 200px;"><input checked="" type="checkbox"/> AMENDMENT</span>   |   |   |                         |
| 1. State the name of the applicant: <u>Cboe BZX Exchange, Inc.</u>  |   |   |                         |
| 2. Provide the applicant's primary street address (Do not use a P.O. Box):<br><u>433 W Van Buren Steet</u> _____<br><u>Chicago, Illinois 60661</u>  |   |   |                         |
| 3. Provide the applicant's mailing address (if different): <span style="float: right;">23007849</span><br>_____<br>_____  |   |   |                         |
| 4. Provide the business telephone and facsimile number:<br><u>(913) 815-7000</u> <span style="margin-left: 150px;"><u>(913) 815-7119</u></span><br>(Telephone) <span style="margin-left: 150px;">(Facsimile)</span>   |   |   |                         |
| 5. Provide the name, title and telephone number of a contact employee:<br><u>Kyle Murray</u> <span style="margin-left: 20px;">VP, Legal Head of Global Listings,</span> <u>Cboe BZX Exchange, Inc.</u> <span style="margin-left: 20px;"><u>(913) 815-7121</u></span><br>(Name) <span style="margin-left: 100px;">(Title)</span> <span style="margin-left: 100px;">(Telephone Number)</span>   |   |   |                         |
| 6. Provide the name and address of counsel for the applicant:<br><u>Pat Sexton</u><br><u>433 W Van Buren Street</u><br><u>Chicago, IL 60661</u>   |   |   |                         |
| 7. Provide the date that applicant's fiscal year ends: <u>December 31</u>   |   |   |                         |
| 8. Indicate legal status of the applicant: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Partnership <input type="checkbox"/> Partnership<br><input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Other (specify): _____   |   |   |                         |
| If other than a sole proprietor, indicate the date and place where applicant obtained its legal status (e.g. state where incorporated, place where partnership agreement was filed or where applicant entity was formed):<br>(a) Date (MM/DD/YY): <u>11/01/07</u> (b) State/Country of formation: <u>Delaware/United States of America</u><br>(c) Statute under which applicant was organized: <u>General Corporation Law of the State of Delaware</u>  |   |   |                         |
| <b>EXECUTION:</b><br>The applicant consents that service of any civil action brought by, or notice of any proceeding before, the Securities and Exchange Commission in connection with the applicant's activities may be given by registered or certified mail or confirmed telegram to the applicant's contact employee at the main address, or mailing address if different, given in Items 2 and 3. The undersigned, being first duly sworn, deposes and says that he/she has executed this form on behalf of, and with the authority of, said applicant. The undersigned and applicant represent that the information and statement contained herein, including exhibits, schedules, or other documents attached hereto, and other information filed herewith, all of which are made a part hereof, are current, true and complete. |   |   |                         |
| Date: <u>08/01/23</u> <span style="margin-left: 150px;"><u>Cboe BZX Exchange, Inc.</u></span><br>(MM/DD/YY) <span style="margin-left: 150px;">(Name of Applicant)</span>  |   |   |                         |
| By: <u>Kyle Murray</u> [signature executed at 8:00am on 08/01/23] <span style="margin-left: 50px;"><u>Kyle Murray, VP, Legal Head of Global Listings</u></span><br>(Signature) <span style="margin-left: 100px;">(Printed Name and Title)</span>  |   |   |                         |
| Subscribed and sworn before me this <u>see header</u> day of <u>see header</u> , <u>see header</u> by <u>see header</u><br>(Month) (Year) (Notary Public)   |   |   |                         |
| My Commission expires <u>see header</u> County of <u>see header</u> State of <u>see header</u>  |   |   |                         |
| <b>This page must always be completed in full with original, manual signature and notarization.</b><br><b>Affix notary stamp or seal where applicable.</b>  |   |   |                         |

**Exhibit M**

**Exhibit Request:**

Provide an alphabetical list of all members, participants, subscribers or other users, including the following information:

1. Name,
2. Date of election to membership or acceptance as a participant, subscriber or other user,
3. Principal business address and telephone number,
4. If member, participant, subscriber or other user is an individual, the name of the entity with which such individual is associated and the relationship of such individual to the entity (e.g., partner, officer, director, employee, etc.),
5. Describe the type of activities primarily engaged in by the member, participant, subscriber, or other user (e.g., floor broker, specialist, odd lot dealer, other market maker, proprietary trader, non-broker dealer, inactive or other functions). A person shall be “primarily engaged” in an activity or function for purposes of this item when that activity or function is the one in which that person is engaged for the majority of their time. When more than one type of person at an entity engages in any of the six types of activities or functions enumerated in this item, identify each type (e.g., proprietary trader, Registered Competitive Trader and Registered Competitive Market Maker) and state the number of members, participants, subscribers, or other users in each, and
6. The class of membership, participation or subscription or other access.

**Response:**

Attached please find a list of the current Members and Sponsored Participants accepted as Users of the Exchange.

| Company Name                           | BZX Approval Date | BYX Approval Date | EDGA Approval Date | EDGX Approval Date | CBOE Effective Date | C2 Effective Date | Type of User          | Address  | Phone Number    | Primary Activities  |
|--|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|--|-----------------|---|
| 78 North Investments ApS               | 8/24/2020         | 8/24/2020         | 8/24/2020          | 8/24/2020          | NA                  | NA                | Sponsored Participant | Vimmelskaflet 43<br>3rd Floor<br>Copenhagen Denmark 1161                         | 45 88707858     | Proprietary Trading   |
| ABN AMRO Clearing USA LLC              | 10/15/2008        | 10/1/2010         | 5/25/2010          | 5/27/2010          | 5/13/1985           | 9/24/2010         | Member TPH            | 175 W Jackson Boulevard<br>Suite 400<br>Chicago, IL 60604                        | 312-604-8000    | Clearing, Transact Business with the Public, Brokerage                                    |
| ACS Execution Services, LLC            | 1/15/2016         | 1/15/2016         | 1/15/2016          | 1/15/2016          | NA                  | NA                | Member TPH            | 12 Broad Street<br>2nd Floor<br>Red Bank, NJ 07701                               | 732-204-8999    | Proprietary Trading   |
| Akuna Securities LLC                   | 9/15/2015         | NA                | NA                 | 8/14/2017          | 2/2/2012            | 2/12/2015         | Member TPH            | 333 S Wabash Avenue<br>Suite 2600<br>Chicago, IL 60604                           | 312-994-4640    | Market Maker, Proprietary Trading   |
| Alpha Trading, LP                      | 10/24/2017        | 10/24/2017        | 10/24/2017         | 10/24/2017         | NA                  | NA                | Member TPH            | 640 W California Avenue<br>Sunnyvale, CA 94086                                   | 408-990-1940    | Market Maker, Proprietary Trading   |
| Alpha Trading, LP                      | 2/22/2019         | 2/22/2019         | 2/22/2019          | 2/22/2019          | NA                  | NA                | Sponsored Participant | 640 W California Avenue<br>Sunnyvale, CA 94086                                   | 408-990-1940    | Market Maker, Proprietary Trading   |
| Alpine Securities Corporation          | 11/3/2008         | 11/15/2010        | NA                 | NA                 | NA                  | NA                | Member TPH            | 39 Exchange Place<br>Salt Lake City, UT 84111                                    | 801-355-5588    | Agency  |
| Apex Clearing Corporation              | 6/5/2012          | 6/5/2012          | 6/5/2012           | 6/5/2012           | 6/6/2012            | 6/6/2012          | Member TPH            | One Dallas Center<br>350 N St. Paul, Suite 1300<br>Dallas, TX 75201              | 214-765-1055    | Clearing, Transact Business with the Public   |
| Archipelago Securities LLC             | 8/18/2008         | 9/1/2010          | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 353 N Clark Street<br>Suite 3200<br>Chicago, IL 60654                            | 312-836-6700    | Limited Routing Facility of ICE affiliated Exchanges                                      |
| ATM Execution LLC dba Cowen Electronic | 3/15/2012         | 3/15/2012         | 3/21/2012          | 3/21/2012          | NA                  | NA                | Member TPH            | 599 Lexington Avenue<br>21st Floor<br>New York, NY 10022                         | 646-562-1010    | Public Customer Business  |
| Axos Financial LLC                     | 10/15/2009        | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | 1200 Landmark Center<br>1299 Farnam Street Suite 800<br>Omaha, NE 68102          | 402-384-6100    | Clearing Services   |
| Barclays Capital Inc.                  | 8/18/2008         | 10/1/2010         | 5/14/2010          | 5/14/2010          | 9/22/2008           | 10/6/2010         | Member TPH            | 745 7th Avenue<br>New York, NY 10019   | 212-526-7000    | Clearing, Market Maker, Transact Business with the Public, Brokerage, Proprietary Trading |
| BEC Capital, LLC                       | 11/1/2022         | 11/1/2022         | 11/1/2022          | 11/1/2022          | NA                  | NA                | Sponsored Participant | 1811 Silverdale Road<br>Wilmington, DE 19808                                     | 917-662-5577    |   |
| Belvedere Trading LLC                  | 11/1/2011         | NA                | 11/29/2011         | 10/16/2018         | 1/3/2005            | 4/4/2011          | Member TPH            | 10 S Riverside Plaza<br>Suite 2100<br>Chicago, IL 60606                          | 312-893-3750    | Market Maker, Proprietary Trading   |
| BGC Financial, LP                      | 8/17/2009         | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | One Seaport Plaza<br>19th Floor<br>New York, NY 10038                            | 646-346-7000    | Agency  |
| Black Edge Securities LLC              | NA                | NA                | NA                 | NA                 | 10/16/2020          | NA                | Member TPH            | 811 W. Fulton Market<br>400<br>Chicago, IL 60607                                 | 608-213-4825    | Market Maker  |
| Bluefin Capital Management, LLC        | 8/3/2009          | 6/1/2015          | NA                 | NA                 | NA                  | NA                | Member TPH            | 3 Park Avenue<br>37th Floor<br>New York, NY 10016                                | 212-457-9150    | Market Maker, Proprietary Trading   |
| BMO Capital Markets Corp.              | 8/18/2008         | 11/15/2010        | 7/15/2014          | 7/15/2014          | 10/8/2013           | 11/15/2013        | Member TPH            | 3 Times Square<br>New York, NY 10036   | 212-885-4000    | Clearing, Proprietary Trading, Transact Business with the Public, Brokerage               |
| BNP Paribas Securities Corp.           | 8/18/2008         | 9/15/2010         | 5/25/2010          | 5/27/2010          | 1/5/2005            | 10/15/2010        | Member TPH            | 787 7th Avenue<br>New York, NY 10019   | 212-841-2000    | Clearing, Order Flow Provider, Proprietary Trading, Transact Business with the Public     |
| BNY Mellon Capital Markets, LLC        | NA                | NA                | NA                 | 1/17/2017          | NA                  | NA                | Member TPH            | 101 Barclay Street<br>New York, NY 10286   | 212-815-4972    | Market Maker  |
| Boerboel Capital LLC                   | 11/17/2017        | 8/27/2019         | 8/27/2019          | 8/27/2019          | NA                  | NA                | Member TPH            | 300 N LaSalle Street<br>Suite 2060<br>Chicago, IL 60654                          | 708-967-6843    | Market Maker, Proprietary Trading   |
| Boerboel Capital LLC                   | 1/30/2019         | 1/30/2019         | 1/30/2019          | 1/30/2019          | NA                  | NA                | Sponsored Participant | 300 N LaSalle Street<br>Suite 2060<br>Chicago, IL 60654                          | 708-967-6843    | Market Maker  |
| Boerboel Trading LP                    | 10/15/2018        | 10/15/2018        | 10/15/2018         | 10/15/2018         | NA                  | NA                | Sponsored Participant | Maples Corporate Services<br>PO Box 309, Ugland House<br>Cayman Islands KY1-1104 | 44-203-621-0363 | Proprietary Trading   |
| Boerboel Trading LP                    | 5/25/2021         | 5/25/2021         | 5/25/2021          | 5/25/2021          | NA                  | NA                | Sponsored Participant | Maples Corporate Services<br>PO Box 309, Ugland House<br>Cayman Islands KY1-1104 | 44-203-621-0363 | Proprietary Trading   |
| BofA Securities, Inc.                  | 9/19/2018         | 9/19/2018         | 9/19/2018          | 9/19/2018          | 5/13/2019           | 5/13/2019         | Member TPH            | One Bryant Park<br>New York, NY 10036  | 201-671-5685    | Clearing Services, Firm Proprietary Trading, Public Customer Business                     |
| BOLT-X LLC                             | 8/18/2008         | 10/1/2010         | 5/25/2010          | 5/27/2010          | 1/2/2008            | NA                | Member TPH            | 350 N Orleans Street<br>Suite 2N<br>Chicago, IL 60654                            | 312-244-5400    | Order Flow Provider, Transact Business with the Public, Brokerage                         |
| BTIG, LLC                              | 8/18/2008         | 11/15/2010        | 5/25/2010          | 5/27/2010          | 2/10/2022           | NA                | Member TPH            | 600 Montgomery Street<br>6th Floor<br>San Francisco, CA 94111                    | 415-248-2200    | Market Maker  |
| C&C Trading LLC                        | 8/18/2008         | 10/11/2010        | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 71 Arch Street<br>1st Floor<br>Greenwich, CT 06830                               | 212-706-1227    | Proprietary Trading   |
| Canaccord Genuity LLC                  | 10/1/2013         | 10/1/2013         | 6/10/2010          | 6/10/2010          | NA                  | NA                | Member TPH            | 535 Madison Avenue<br>New York, NY 10022   | 212-389-8000    | Market Maker  |
| Canadian Imperial Holdings, Inc.       | 10/15/2008        | 11/15/2010        | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 300 Madison Avenue<br>5th Floor<br>New York, NY 10017                            | 212-856-3877    | Proprietary Trading   |
| Cantor Fitzgerald & Co.                | NA                | 2/13/2015         | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 110 E 59th Street<br>4th Floor<br>New York, NY 10022                             | 212-938-5000    | Agency, Institutional Trading   |
| Capital Institutional Services, Inc.   | 8/18/2008         | NA                | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1700 Pacific Avenue<br>Suite 1100<br>Dallas, TX 75201                            | 214-720-0055    | Agency  |
| Cardinal Capital Management, LLC       | 1/24/2019         | NA                | NA                 | NA                 | 10/1/2007           | NA                | Member TPH            | 141 W Jackson Boulevard<br>Suite 2200A<br>Chicago, IL 60604                      | 312-477-8400    | Market Maker/Proprietary  |
| Casey Securities LLC                   | NA                | NA                | NA                 | 11/11/2021         | NA                  | NA                | Member TPH            | One Montgomery Street<br>2nd Floor<br>San Francisco, CA 94104                    | 415-954-5590    | Electronic Execution, Transact Business with the Public                                   |
| Cboe Trading, Inc.                     | 10/23/2008        | 9/1/2010          | 5/14/2010          | 5/14/2010          | 7/26/2019           | 4/18/2018         | Member TPH            | 8050 Marshall Drive<br>Suite 120<br>Lenexa, KS 66214                             | 913-815-7000    | Limited Routing Facility of Cboe affiliated Exchanges                                     |
| CF Global Trading, LLC                 | 10/23/2008        | 1/3/2011          | NA                 | NA                 | NA                  | NA                | Member TPH            | 60 E 42nd Street<br>Suite 1455<br>New York, NY 10165                             | 212-888-4711    | Market Maker  |
| Charles Schwab & Co., Inc.             | NA                | NA                | NA                 | 4/3/2017           | NA                  | NA                | Member TPH            | 211 Main Street<br>San Francisco, CA 94105                                       | 415-636-7000    | Clearing, Transact Business with the Public   |
| Chimera Securities, LLC                | 11/1/2022         | NA                | NA                 | 11/1/2022          | NA                  | NA                | Sponsored Participant | 27 Union Square West<br>4th Floor<br>New York, NY 10003                          | 646-597-6146    | Proprietary Trading   |
| CIBC World Markets Corp.               | 8/18/2008         | 11/15/2010        | NA                 | NA                 | 2/14/1973           | NA                | Member TPH            | 425 Lexington Avenue<br>New York, NY 10017                                       | 212-856-4000    | Clearing, Transact Business with the Public   |
| Citadel Securities LLC                 | 10/23/2008        | 10/1/2010         | 5/14/2010          | 5/14/2010          | 4/17/2002           | 10/7/2010         | Member TPH            | 131 S Dearborn Street<br>32nd Floor<br>Chicago, IL 60603                         | 312-395-2100    | Market Maker, Order Flow Provider, Brokerage  |
| Citigroup Global Markets Inc.          | 9/24/2008         | 12/15/2010        | 5/25/2010          | 5/27/2010          | 5/2/2011            | 6/3/2019          | Member TPH            | 390-388 Greenwich Street<br>New York, NY 10013                                   | 212-816-6000    | Clearing, Proprietary Trading, Transact Business with the Public                          |
| Clarksons Securities, Inc.             | NA                | NA                | 1/15/2015          | NA                 | NA                  | NA                | Member TPH            | 280 Park Avenue<br>21st Floor<br>New York, NY 10017                              | 212-317-7080    | Public Customer Business  |
| Clear Street LLC                       | 3/21/2023         | 3/21/2023         | 3/21/2023          | 3/21/2023          | NA                  | NA                | Sponsored Participant | 55 Broadway<br>Suite 2102<br>New York, NY 10006                                  | 646-738-4068    | Public Customer Business, Clearing, Proprietary Trading                                   |

| Company Name                                | BZX Approval Date | BYX Approval Date | EDGA Approval Date | EDGX Approval Date | CBOE Effective Date | C2 Effective Date | Type of User          | Address   | Phone Number     | Primary Activities  |
|---|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|---|------------------|---|
| Clear Street Markets, LLC                   | 7/16/2012         | 7/16/2012         | 8/20/2012          | 8/20/2012          | 6/6/2012            | 3/22/2019         | Member TPH            | 55 Broadway Suite 2102 New York, NY 10006                   | 646-738-4066     | Market Maker, Proprietary Trading   |
| Clear Street, LLC                           | 3/18/2019         | 8/14/2019         | 8/14/2019          | 8/14/2019          | NA                  | NA                | Member TPH            | 55 Broadway Suite 2102 New York, NY 10006                   | 646-738-4068     | Public Customer Business, Clearing, Proprietary Trading                                   |
| Clearpool Execution Services, LLC           | 5/15/2014         | 5/15/2014         | 6/16/2014          | 6/16/2014          | NA                  | NA                | Member TPH            | 17 State Street 38h Floor New York, NY 10004                | 212-531-8500     | Public Customer Business  |
| CMT Fund XXV Limited                        | 7/2/2012          | 7/2/2012          | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 500 W Monroe Street Suite 2630 Chicago, IL 60661            | 312-320-7897     | Agency  |
| CODA Markets, Inc.                          | 10/15/2008        | 10/4/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 2624 Patriot Boulevard Glenview, IL 60026                   | 224-521-2700     | ATS   |
| Cognitive Capital, LLC                      | NA                | NA                | NA                 | NA                 | 5/13/2004           | NA                | Member TPH            | 141 W Jackson Boulevard Suite 1620 Chicago, IL 60604        | 312-431-0400     | Proprietary Trading   |
| Comhar Capital Markets, LLC                 | 2/27/2017         | 12/13/2019        | 12/13/2019         | 3/6/2023           | NA                  | NA                | Member TPH            | 311 S Wacker Drive Suite 2280A Chicago, IL 60606            | 872-205-0190     | Proprietary Trading   |
| Consolidated Trading, LLC                   | NA                | NA                | NA                 | NA                 | 1/2/2002            | NA                | Member TPH            | 71 S Wacker Drive Suite 2300 Chicago, IL 60606              | 312-360-7300     | Market Maker  |
| Cowen and Company, LLC                      | 8/18/2008         | 10/7/2010         | 5/14/2010          | 5/14/2010          | NA                  | NA                | Member TPH            | 599 Lexington Avenue 20th Floor New York, NY 10022          | 646-562-1010     | Market Maker  |
| Credit Suisse Securities (USA) LLC          | 9/3/2008          | 10/1/2010         | 5/25/2010          | 5/27/2010          | 8/14/1981           | 10/8/2010         | Member TPH            | 11 Madison Avenue New York, NY 10010                        | 212-325-2000     | Clearing, Proprietary Trading, Transact Business with the Public, Brokerage               |
| CTC, LLC                                    | 3/15/2018         | NA                | NA                 | NA                 | 3/25/1998           | 3/3/2011          | Member TPH            | 440 S LaSalle Street 4th Floor Chicago, IL 60605            | 312-863-8000     | Market Maker  |
| Cutter Group LLC                            | 4/1/2010          | 10/6/2010         | NA                 | 10/16/2015         | 4/5/1999            | 1/18/2023         | Member TPH            | 101 Montgomery Street Suite 700 San Francisco, CA 94104     | 415-293-3956     | Market Maker, Proprietary Trading   |
| Dash Financial Technologies LLC             | 10/23/2008        | 7/2/2012          | 6/9/2010           | 6/9/2010           | 5/19/2000           | 9/30/2010         | Member TPH            | 311 S Wacker Drive Suite 1000 Chicago, IL 60606             | 312-986-2006     | Clearing, Floor Broker, Order Flow Provider, Transact Business with the Public, Brokerage |
| Direct Alpha LLC                            | 10/31/2022        | 10/31/2022        | 10/31/2022         | 10/31/2022         | NA                  | NA                | Sponsored Participant | 533 2nd Street Encinitas, CA 92024                          | 858-947-8650     | Proprietary Trading   |
| DriveWealth Institutional LLC               | 3/30/2022         | 3/30/2022         | 3/30/2022          | 3/30/2022          | NA                  | NA                | Member TPH            | 15 Exchange Place Suite 1110 Jersey City, NJ 11694          | 201-207-1200     | Principal Facilitation/Clearing Services  |
| DRW Commodities LLC                         | 8/6/2020          | 8/6/2020          | 8/6/2020           | 8/6/2020           | NA                  | NA                | Sponsored Participant | 540 W Madison Street Suite 2500 Chicago, IL 60661           | 312-542-1000     | Proprietary Trading   |
| DRW Europe B.V.                             | 12/14/2020        | 12/14/2020        | 12/14/2020         | 12/14/2020         | NA                  | NA                | Sponsored Participant | 540 W Madison Street Suite 2500 Chicago, IL 60661           | 44-207-031-1369  | Proprietary Trading   |
| DRW Execution Services, LLC                 | 11/19/2019        | 11/19/2019        | 11/19/2019         | 11/19/2019         | NA                  | NA                | Member TPH            | 540 W Madison Street Suite 2500 Chicago, IL 60661           | 312-542-1090     | Proprietary Trading   |
| DRW Global Markets Ltd.                     | 2/22/2019         | 2/22/2019         | 4/8/2019           | 4/8/2019           | NA                  | NA                | Sponsored Participant | 540 W. Madison Suite 2500 Chicago, IL 60661                 | 312-542-1193     | Proprietary Trading   |
| DRW Global Markets Ltd.                     | 12/2/2019         | 12/2/2019         | 12/2/2019          | 12/2/2019          | NA                  | NA                | Sponsored Participant | 540 W. Madison Suite 2500 Chicago, IL 60661                 | 312-542-1193     | Proprietary Trading   |
| DRW Investments, LLC                        | 2/18/2021         | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 540 W Madison Street Suite 2500 Chicago, IL 60661           | 312-542-1223     | Proprietary Trading   |
| DRW Securities, LLC                         | 9/1/2009          | 11/1/2010         | 5/25/2010          | 5/27/2010          | 11/23/1998          | 1/22/2016         | Member TPH            | 540 W Madison Street Suite 2500 Chicago, IL 60661           | 312-542-1000     | Market Maker, Proprietary Trading   |
| DRW Singapore Ltd.                          | 10/4/2021         | NA                | NA                 | 10/4/2021          | NA                  | NA                | Sponsored Participant | 8 Marina View Asia Square Tower 1   #32-05 Singapore 018960 | 312-542-1005     | Proprietary Trading   |
| DRW Singapore Ltd.                          | 11/19/2018        | NA                | NA                 | 11/19/2018         | NA                  | NA                | Sponsored Participant | 8 Marina View Asia Square Tower 1   #32-05 Singapore 018960 | 312-542-1005     | Proprietary Trading   |
| DV Equities, LLC                            | NA                | NA                | NA                 | NA                 | 8/30/2021           | NA                | Member TPH            | 216 W. Jackson Blvd. - 3rd Floor; Chicago, IL 60606         | 312-837-0649     | Market Maker, Proprietary Trading   |
| Dynamic Technology Lab Pte. Ltd.            | 11/5/2018         | 11/5/2018         | 11/5/2018          | 11/5/2018          | NA                  | NA                | Sponsored Participant | 07-00, 178 Clemenceau Avenue Singapore 239926               | 656-610-4693     | Proprietary Trading   |
| E*TRADE Securities LLC                      | NA                | NA                | NA                 | 6/10/2010          | NA                  | NA                | Member TPH            | 11 Times Square 32nd Floor New York, NY 10036               | 646-521-4300     | Public Customer Business  |
| Electronic Transaction Clearing, Inc.       | 10/23/2008        | 9/1/2010          | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 660 S Figueroa Street Los Angeles, CA 90017                 | 949-533-1885     | Market Maker  |
| Elequin Securities LLC                      | 12/28/2021        | NA                | NA                 | NA                 | 12/27/2021          | NA                | Member TPH            | 1359 Broadway York, NY 10018                                | New 646-475-6430 | Proprietary Trading   |
| Evercore Group LLC                          | NA                | NA                | 5/10/2017          | NA                 | NA                  | NA                | Member TPH            | 55 E 52nd Street New York, NY 10055                         | 212-857-3100     | Public Customer Business  |
| Flow Traders U.S. Institutional Trading LLC | NA                | NA                | 6/1/2016           | NA                 | NA                  | NA                | Member TPH            | 1114 Avenue of the Americas 4th Floor New York, NY 10036    | 917-210-5000     | Riskless Principal  |
| Flow Traders U.S. LLC                       | 10/1/2009         | 8/1/2012          | 2/28/2014          | 2/28/2014          | NA                  | NA                | Member TPH            | 1114 Avenue of the Americas 4th Floor New York, NY 10036    | 917-210-5000     | Proprietary Trading   |
| Flow Traders U.S. LLC                       | NA                | NA                | NA                 | 10/12/2022         | NA                  | NA                | Sponsored Participant | 1114 Avenue of the Americas 4th Floor New York, NY 10036    | 917-210-5000     | Proprietary Trading   |
| FR Trading LLC                              | NA                | NA                | NA                 | NA                 | 6/1/2023            | NA                | Member TPH            | 225 Liberty Street, 30th Floor New York, NY 10281           | 212-393-1420     | Market Maker, Proprietary Trading   |
| G1 Execution Services, LLC                  | 8/18/2008         | 12/1/2010         | 4/17/2010          | 4/17/2010          | NA                  | NA                | Member TPH            | 175 W Jackson Boulevard Suite 1700 Chicago, IL 60604        | 312-362-0404     | Market Maker  |
| Gelber Securities, LLC                      | NA                | NA                | NA                 | NA                 | 3/19/2021           | NA                | Member TPH            | 350 N. Orleans Suite 7N Chicago, IL 60654                   | 312-408-6659     | Market Maker, Proprietary Trading   |
| Geneva Stock, LLC                           | NA                | NA                | NA                 | NA                 | 4/6/2001            | NA                | Member TPH            | 440 S LaSalle Street Suite 1711 Chicago, IL 60605           | 312-362-4404     | Market Maker  |
| Global Execution Brokers, LP                | 2/1/2010          | 10/5/2010         | 12/1/2015          | 10/15/2015         | 12/23/2003          | 9/24/2010         | Member TPH            | 401 City Avenue Bala Cynwyd, PA 19004                       | 610-617-2600     | Floor Broker, Transact Business with the Public, Brokerage                                |
| Goldman Sachs & Co. LLC                     | 10/23/2008        | 10/12/2010        | 5/14/2010          | 5/14/2010          | 2/21/1973           | 10/8/2010         | Member TPH            | 200 West Street New York, NY 10282                          | 212-902-1000     | Clearing, Market Maker, Proprietary Trading, Transact Business with the Public, Brokerage |
| Gordon, Haskett Capital Corporation         | NA                | NA                | NA                 | 5/2/2016           | NA                  | NA                | Member TPH            | 441 Lexington Avenue 10th Floor New York, NY 10017          | 212-883-0600     | Agency, Institutional Trading   |
| Green Pier Fintech LLC                      | NA                | NA                | NA                 | 8/25/2022          | NA                  | NA                | Member TPH            | 245 Summer Street Boston, MA 02210                          | 617-392-2773     | Public Customer Business  |
| Group One Trading, LP                       | 6/2/2015          | NA                | NA                 | 9/29/2015          | 11/23/1994          | 9/11/2020         | Member TPH            | 425 S Financial Place Suite 3400 Chicago, IL 60605          | 312-347-8864     | Market Maker, Proprietary Trading   |
| GTS Securities LLC                          | 12/17/2013        | 5/1/2012          | 6/2/2014           | 6/2/2014           | 11/29/2019          | 2/25/2020         | Member TPH            | 545 Madison Avenue 15th Floor New York, NY 10022            | 212-715-2830     | Market Maker, Proprietary Trading   |

| Company Name   | BZX Approval Date | BYX Approval Date | EDGA Approval Date | EDGX Approval Date | CBOE Effective Date | C2 Effective Date | Type of User          | Address  | Phone Number    | Primary Activities  |
|--|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|--|-----------------|---|
| GTS Securities LLC   | 10/25/2022        | 10/25/2022        | 10/25/2022         | 10/25/2022         | NA                  | NA                | Sponsored Participant | 545 Madison Avenue<br>15th Floor<br>New York, NY 10022                         | 212-715-2830    | Market Maker, Proprietary Trading   |
| HAP Trading LLC  | 10/1/2009         | 11/15/2010        | NA                 | 6/2/2010           | 3/16/2001           | NA                | Member TPH            | 395 Hudson Street<br>Suite 701<br>New York, NY 10014                           | 212-380-5100    | Market Maker, Proprietary Trading   |
| HAP Trading LLC  | 1/8/2020          | 1/8/2020          | 1/8/2020           | 1/8/2020           | NA                  | NA                | Sponsored Participant | 395 Hudson Street<br>Suite 701<br>New York, NY 10014                           | 212-380-5100    | Proprietary Trading   |
| Headlands Technologies LLC                                     | 10/15/2018        | 10/15/2018        | 10/15/2018         | 10/15/2018         | NA                  | NA                | Sponsored Participant | 155 N. Wacker Drive, Suite 1900<br>Chicago, IL 60606                           | 312-601-8649    | Proprietary Trading   |
| Henning-Carey Proprietary Trading, LLC                         | 8/15/2012         | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 141 W Jackson Boulevard<br>Suite 1801<br>Chicago, IL 60604                     | 312-789-8764    | Proprietary Trading   |
| Highbridge Capital Management, LLC                             | 10/23/2008        | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 9 West 57th Street<br>27th Floor<br>New York, NY 10019                         | 212-287-4900    | Proprietary Trading   |
| HRT Financial LP   | 2/1/2010          | 10/1/2010         | 5/18/2010          | 5/18/2010          | 1/24/2011           | 1/24/2011         | Member TPH            | 3 World Trade Center<br>175 Greenwich Street, 76th Floor<br>New York, NY 10007 | 212-293-1444    | Proprietary Trading   |
| HSBC Securities (USA) Inc.                                     | 4/3/2017          | 4/3/2017          | 4/3/2017           | 4/3/2017           | 11/21/2005          | NA                | Member TPH            | 452 Fifth Avenue<br>New York, NY 10018   | 224-880-7116    | Clearing, Transact Business with the Public   |
| IBKR Securities Services LLC                                   | NA                | NA                | NA                 | NA                 | 12/27/1996          | 12/15/2010        | Member TPH            | One Pickwick Plaza<br>Suite 200<br>Greenwich, CT 06830                         | 203-618-5800    | Clearing, Market Maker  |
| IEX Services LLC   | 10/1/2013         | 10/1/2013         | 9/24/2013          | 9/24/2013          | NA                  | NA                | Member TPH            | 4 World Trade Center<br>44th Floor<br>New York, NY 10007                       | 646-343-2000    | Limited Routing Facility of IEX affiliated Exchanges                                      |
| IMC-Chicago LLC dba IMC Financial Markets                      | 8/18/2008         | 10/1/2010         | 5/25/2010          | 5/27/2010          | 7/5/2000            | 9/24/2010         | Member TPH            | 233 S Wacker Drive<br>Suite 4300<br>Chicago, IL 60606                          | 312-244-3300    | Market Maker, Proprietary Trading   |
| IMC-Chicago LLC dba IMC Financial Markets                      | 11/5/2018         | 11/5/2018         | 11/5/2018          | 11/5/2018          | NA                  | NA                | Sponsored Participant | 233 S Wacker Drive<br>Suite 4300<br>Chicago, IL 60606                          | 312-244-3300    | Market Maker, Proprietary Trading   |
| Industrial and Commercial Bank of China Financial Services LLC | 5/15/2014         | 5/15/2014         | NA                 | NA                 | NA                  | NA                | Member TPH            | 1633 Broadway<br>28th Floor<br>New York, NY 10019                              | 212-993-7300    | Clearing Services   |
| Instinet LLC   | 8/18/2008         | 9/1/2010          | 5/14/2010          | 5/14/2010          | 12/29/2009          | 10/6/2010         | Member TPH            | Worldwide Plaza<br>309 W 49th Street<br>New York, NY 10019                     | 212-310-9500    | Clearing, Transact Business with the Public, Brokerage                                    |
| Interactive Brokers Corp.                                      | NA                | NA                | NA                 | NA                 | 4/21/2009           | 10/6/2010         | Member TPH            | 8 Greenwich Office Park<br>Greenwich, CT 06831                                 | 203-618-5700    | Floor Broker, Brokerage   |
| Interactive Brokers LLC  | 8/18/2008         | 9/15/2010         | 5/25/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | One Pickwick Plaza<br>2nd Floor<br>Greenwich, CT 06830                         | 203-618-5710    | Full Service  |
| J.P. Morgan Securities LLC                                     | 8/18/2008         | 9/15/2010         | 5/14/2010          | 5/14/2010          | 10/29/1985          | 11/18/2010        | Member TPH            | 383 Madison Avenue<br>New York, NY 10179                                       | 212-272-2000    | Clearing, Transact Business with the Public   |
| Jane Street Capital, LLC                                       | 5/1/2009          | 11/15/2010        | 5/14/2010          | 5/14/2010          | 9/4/2012            | 1/2/2019          | Member TPH            | 250 Vesey Street<br>5th Floor<br>New York, NY 10281                            | 646-759-6000    | Market Maker, Proprietary Trading   |
| Jane Street Execution Services LLC                             | 1/24/2019         | 1/24/2019         | 1/24/2019          | 1/24/2019          | NA                  | NA                | Member TPH            | 250 Vesey Street<br>6th Floor<br>New York, NY 10281                            | 646-759-6381    | Proprietary Trading   |
| Jane Street Options, LLC                                       | 4/15/2016         | 12/13/2022        | 12/13/2022         | 11/9/2018          | 5/2/2005            | 1/2/2019          | Member TPH            | 250 Vesey Street<br>5th Floor<br>New York, NY 10281                            | 646-759-6000    | Market Maker  |
| Jefferies Investment Advisers                                  | 7/1/2011          | 7/15/2011         | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 520 Madison Avenue<br>New York, NY 10022                                       | 212-323-3993    | Full Service  |
| Jefferies LLC  | 10/23/2008        | 10/19/2010        | 5/25/2010          | 5/27/2010          | 7/9/2012            | 7/18/2012         | Member TPH            | 520 Madison Avenue<br>New York, NY 10022                                       | 212-284-2300    | Clearing, Proprietary Trading, Transact Business with the Public, Brokerage               |
| JNK Securities Corp.   | 11/17/2008        | 11/15/2010        | NA                 | NA                 | NA                  | NA                | Member TPH            | 140 E 45th Street<br>27th Floor<br>New York, NY 10017                          | 212-885-6300    | Agency  |
| Jump Execution, LLC  | 6/27/2022         | 6/27/2022         | 6/27/2022          | 6/27/2022          | NA                  | NA                | Member TPH            | 600 W Chicago Avenue<br>Suite 600<br>Chicago, IL 60654                         | 312-205-8327    | Market Maker, Proprietary Trading, Agency Execution                                       |
| Jump Trading, LLC  | 8/18/2008         | 10/1/2010         | 5/14/2010          | 5/14/2010          | 4/2/2012            | NA                | Member TPH            | 600 W Chicago Avenue<br>Suite 825<br>Chicago, IL 60654                         | 312-205-8900    | Market Maker, Proprietary Trading   |
| Keefe, Bruyette & Woods, Inc.                                  | 8/18/2008         | 12/1/2010         | 6/8/2010           | 6/8/2010           | NA                  | NA                | Member TPH            | 787 7th Avenue<br>New York, NY 10019   | 212-887-7777    | Agency  |
| Lakeshore Securities, LP                                       | NA                | NA                | NA                 | NA                 | 1/24/1983           | NA                | Member TPH            | 401 S LaSalle Street<br>Suite 1000<br>Chicago, IL 60605                        | 312-663-1307    | Clearing, Floor Broker, Market Maker, Transact Business with the Public                   |
| Lamberson Capital LLC  | NA                | NA                | NA                 | NA                 | 3/23/2016           | NA                | Member TPH            | 71 S Wacker Drive<br>Suite 2300<br>Chicago, IL 60606                           | 312-360-7300    | Market Maker  |
| Lampost Capital LC   | NA                | NA                | NA                 | 1/19/2021          | NA                  | NA                | Member TPH            | 1900 Glades Road<br>Suite 205<br>Boca Raton, FL 33431                          | 561-883-0454    | Wholesale Execution   |
| Latour Trading LLC   | 8/17/2009         | 10/1/2010         | 5/26/2010          | 5/27/2010          | 4/8/2011            | NA                | Member TPH            | 377 Broadway<br>10th Floor<br>New York, NY 10013                               | 917-388-8000    | Proprietary Trading   |
| Lightspeed Financial Services Group LLC                        | 8/18/2008         | 10/1/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1001 Avenue of the Americas<br>16th Floor<br>New York, NY 10018                | 212-824-5000    | Transact Business with the Public   |
| Lime Trading Corp.   | 8/18/2020         | 8/18/2020         | 8/18/2020          | 8/18/2020          | NA                  | NA                | Member TPH            | 1 Penn Plaza, 16th Floor<br>New York, NY 10119                                 | 310-947-9044    | Public Customer Business  |
| Macquarie Capital (USA) Inc.                                   | 12/1/2009         | NA                | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 125 W 55th Street<br>Level 22<br>New York, NY 10019                            | 212-231-1000    | Agency  |
| Marathon Trading Group LLC                                     | 2/13/2015         | NA                | NA                 | NA                 | 1/30/2013           | NA                | Member TPH            | 100 Matsonford Road<br>Building 2, Suite 107<br>Wayne, PA 19087                | 610-254-4890    | Market Maker, Proprietary Trading   |
| Marex Capital Markets Inc.                                     | NA                | NA                | NA                 | NA                 | 3/1/2019            | 6/7/2019          | Member TPH            | 140 E. 45th Street<br>10th Floor<br>New York, NY 10017                         | 212-618-2800    | Clearing, Public Customer Business  |
| Matrix Executions, LLC   | 8/18/2008         | 11/15/2010        | NA                 | 11/12/2015         | 2/1/2008            | 10/26/2010        | Member TPH            | 601 S LaSalle Street<br>Suite 300<br>Chicago, IL 60605                         | 312-334-8000    | Transact Business with the Public, Brokerage  |
| Maven Global Markets Trading LLP                               | NA                | NA                | NA                 | NA                 | 7/18/2022           | NA                | Member TPH            | 353 N. Clark St., Suite 1750<br>Chicago, IL 60654                              | 44 777 615 1645 | Market Maker  |
| MBX Clearing LLC   | NA                | NA                | NA                 | NA                 | 8/15/2022           | NA                | Member TPH            | 38955 Hills Tech Drive<br>Farmington Hills, MI 48331                           | 248-987-7427    | Proprietary Trading   |
| MD Vanilla B.V. dba Maverick Derivatives                       | NA                | NA                | NA                 | NA                 | 9/1/2022            | NA                | Member TPH            | Strawinskylaan 377<br>Amsterdam, 1077XX<br>Netherlands                         | 31 20 238 4192  | Proprietary Trading   |
| Merrill Lynch Professional Clearing Corp.                      | 8/18/2008         | 10/5/2010         | 5/14/2010          | 5/14/2010          | 4/8/1985            | 9/24/2010         | Member TPH            | One Bryant Park, 6th Floor<br>NY1-100-06-01<br>New York, NY 10036              | 646-743-1295    | Clearing, Brokerage, Transact Business with the Public                                    |
| Merrill Lynch, Pierce, Fenner & Smith Incorporated             | 8/18/2008         | 10/4/2010         | 5/14/2010          | 5/14/2010          | 4/25/1973           | NA                | Member TPH            | One Bryant Park<br>New York, NY 10036  | 800-637-7455    | Clearing, Transact Business with the Public, Brokerage, Market Maker, Proprietary Trading |
| Mirae Asset Securities (USA) Inc.                              | 10/12/2022        | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | 810 7th Avenue<br>New York, NY 10019   | 646-968-2035    | Market Maker, Public Customer Business, Clearing Services, Proprietary Trading            |
| Mizuho Securities USA, LLC                                     | 6/1/2010          | 1/3/2011          | NA                 | NA                 | NA                  | NA                | Member TPH            | 320 Park Avenue<br>12th Floor<br>New York, NY 10022                            | 212-209-9300    | Agency  |

| Company Name                           | BZX Approval Date | BYX Approval Date | EDGA Approval Date | EDGX Approval Date | CBOE Effective Date | C2 Effective Date | Type of User          | Address   | Phone Number    | Primary Activities  |
|--|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|---|-----------------|---|
| Morgan Stanley & Co. LLC               | 10/23/2008        | 9/1/2010          | 5/14/2010          | 5/14/2010          | 8/20/1980           | 9/24/2010         | Member TPH            | 1585 Broadway<br>New York, NY 10036                                   | 212-761-4000    | Clearing, Market Maker, Proprietary Trading, Transact Business with the Public, Brokerage |
| Nasdaq Execution Services, LLC         | 8/19/2008         | 9/1/2010          | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | One Liberty Plaza<br>165 Broadway<br>New York, NY 10006               | 212-231-5100    | Limited Routing Facility of Nasdaq affiliated Exchanges                                   |
| National Bank of Canada Financial Inc. | 2/18/2022         | 2/18/2022         | NA                 | NA                 | NA                  | NA                | Member TPH            | The Park Tower<br>65 E. 55th Street, 8th Floor<br>New York, NY 10022  | 212-546-7663    | Proprietary Trading   |
| National Financial Services LLC        | 10/23/2008        | 10/4/2010         | 5/26/2010          | 5/27/2010          | 10/8/1987           | 4/16/2012         | Member TPH            | 200 Seaport Boulevard<br>Boston, MA 02210                             | 617-563-7000    | Clearing, Floor Broker, Transact Business with the Public                                 |
| Needham & Company, LLC                 | 10/23/2008        | 10/1/2010         | NA                 | NA                 | NA                  | NA                | Member TPH            | 445 Park Avenue<br>New York, NY 10022                                 | 212-371-8300    | Market Maker  |
| Nomura Securities International, Inc.  | 10/23/2008        | 10/1/2010         | 5/26/2010          | 5/27/2010          | 9/1/2009            | 11/16/2010        | Member TPH            | Worldwide Plaza<br>309 W 49th Street<br>New York, NY 10019            | 212-667-9000    | Clearing, Transact Business with the Public, Proprietary Trading                          |
| Old Mission Capital, LLC               | 4/16/2012         | 4/16/2012         | 4/25/2012          | 4/25/2012          | 9/27/2017           | NA                | Member TPH            | 314 W Superior<br>Suite 200<br>Chicago, IL 60654                      | 312-260-3031    | Market Maker  |
| Old Mission Markets LLC                | NA                | NA                | 12/13/2019         | NA                 | 4/25/2023           | NA                | Member TPH            | 1 N Dearborn Street<br>8th Floor<br>Chicago, IL 60602                 | 312-260-3044    | Electronic Execution, Transact Business with the Public                                   |
| Oppenheimer & Co. Inc.                 | NA                | NA                | NA                 | NA                 | 5/17/1973           | NA                | Member TPH            | 85 Broad Street<br>22nd, 24th Floors<br>New York, NY 10004            | 212-668-8000    | Clearing, Transact Business with the Public   |
| Optiver US, LLC                        | 6/15/2009         | NA                | NA                 | 5/30/2018          | 6/1/2005            | 9/24/2010         | Member TPH            | 130 E Randolph Street<br>14th Floor<br>Chicago, IL 60601              | 312-821-9500    | Market Maker  |
| Oscar Gruss & Son Incorporated         | 8/7/2017          | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | 430 Park Avenue<br>6th Floor<br>New York, NY 10022                    | 212-419-4000    | Agency  |
| PEAK6 Capital Management LLC           | 8/1/2014          | NA                | NA                 | 2/1/2016           | 12/2/1997           | NA                | Member TPH            | 141 W Jackson Boulevard<br>Suite 500<br>Chicago, IL 60604             | 312-444-8000    | Proprietary Trading   |
| Pershing LLC                           | 8/18/2008         | 9/15/2010         | 5/26/2010          | 5/27/2010          | 2/21/1973           | 9/28/2010         | Member TPH            | One Pershing Plaza<br>Jersey City, NJ 07399                           | 201-413-2000    | Clearing, Transact Business with the Public   |
| Phillip Capital Inc.                   | NA                | NA                | NA                 | 11/27/2017         | NA                  | NA                | Member TPH            | 141 W Jackson Boulevard<br>Suite 3050<br>Chicago, IL 60604            | 312-356-9001    | Clearing Services   |
| Pictet Overseas Inc.                   | 6/1/2015          | 6/1/2015          | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1000 de la Gauchetiere West<br>Suite 3100<br>Montreal, Quebec H3B 4W5 | 514-288-8161    | Agency  |
| Piper Sandler & Co.                    | 10/15/2008        | 11/15/2012        | 5/14/2010          | 5/14/2010          | NA                  | NA                | Member TPH            | 800 Nicollet Mall<br>Minneapolis, MN 55402                            | 612-303-6000    | Market Maker  |
| Prime Capital Markets LLC              | NA                | NA                | NA                 | NA                 | 4/15/2021           | NA                | Member TPH            | 111 W Jackson Boulevard<br>Suite 1310<br>Chicago, IL 60604            | 312-986-7430    | Proprietary Trading   |
| Puma Capital, LLC                      | NA                | NA                | 6/15/2016          | 6/15/2016          | NA                  | NA                | Member TPH            | 287 Bowman Avenue<br>3rd Floor<br>Purchase, NY 10577                  | 212-269-4100    | Market Maker, Proprietary Trading   |
| Pundion LLC                            | 2/27/2017         | 2/27/2017         | 2/27/2017          | 2/27/2017          | NA                  | NA                | Member TPH            | 230 Park Avenue<br>10th Floor<br>New York, NY 10169                   | 718-618-4929    | Proprietary Trading   |
| Pundion LLC                            | 10/15/2018        | 10/15/2018        | 10/15/2018         | 10/15/2018         | NA                  | NA                | Sponsored Participant | 230 Park Avenue<br>10th Floor<br>New York, NY 10169                   | 718-618-4929    | Proprietary Trading   |
| QTrade Capital Partners LLC            | 7/12/2022         | 7/12/2022         | 7/12/2022          | 7/12/2022          | NA                  | NA                | Sponsored Participant | 240 North Avenue West, Suite 301<br>Westfield, NJ 07090               | 908-232-5692    | Proprietary Trading   |
| Quantbot Technologies LP               | 3/27/2018         | 3/27/2018         | 3/27/2018          | 3/27/2018          | NA                  | NA                | Sponsored Participant | 369 Lexington Avenue<br>New York, NY 10017                            | 212-622-6510    | Proprietary Trading   |
| Quantlab Brokerage, LLC                | 12/9/2019         | 12/9/2019         | 12/9/2019          | 12/9/2019          | NA                  | NA                | Member TPH            | 3 Greenway Plaza<br>Suite 200<br>Houston, TX 77046                    | 713-333-3704    | Public Customer Business  |
| Qube Research & Technologies Limited   | 7/8/2022          | 7/8/2022          | 12/13/2022         | 12/13/2022         | NA                  | NA                | Sponsored Participant | 21 Palmer Street<br>7th Floor<br>London SW1H 0AD                      | 44-20-7072-2960 |   |
| Radix Trading LLC                      | 11/5/2018         | 11/5/2018         | 11/5/2018          | 11/5/2018          | NA                  | NA                | Sponsored Participant | 353 N Clark Street<br>Suite 3200<br>Chicago, IL 60654                 | 773-377-8080    | Research Firm   |
| RBC Capital Markets, LLC               | 9/18/2008         | 10/14/2010        | 5/14/2010          | 5/14/2010          | 11/24/1993          | 10/19/2010        | Member TPH            | 3 World Financial Center<br>200 Vesey Street<br>New York, NY 10281    | 212-858-7000    | Clearing, Proprietary Trading, Transact Business with the Public                          |
| RFA Securities LLC                     |                   |                   |                    |                    | 9/1/2022            |                   | Member TPH            | 2929 Walnut Street, 8th Floor<br>Philadelphia, PA 19104               | 212-634-9365    | Floor Broker  |
| Robert W. Baird & Co. Incorporated     | 10/23/2008        | 1/3/2011          | NA                 | NA                 | NA                  | NA                | Member TPH            | 777 E Wisconsin Avenue<br>Milwaukee, WI 53202                         | 414-765-3500    | Market Maker  |
| Rosenblatt Securities Inc.             | 8/18/2008         | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | 40 Wall Street<br>59th Floor<br>New York, NY 10005                    | 212-607-3100    | Agency  |
| Roth Capital Partners, LLC             | 8/18/2008         | NA                | NA                 | NA                 | NA                  | NA                | Member TPH            | 888 San Clemente<br>Suite 400<br>Newport Beach, CA 92660              | 949-720-5700    | Market Maker  |
| RQD* Clearing, LLC                     | 6/15/2011         | NA                | NA                 | 10/1/2015          | 4/12/2005           | 9/24/2010         | Member TPH            | 111 W Jackson Boulevard<br>20th Floor<br>Chicago, IL 60604            | 312-692-5000    | Clearing, Brokerage   |
| Safra Securities LLC                   | NA                | NA                | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 546 5th Avenue<br>New York, NY 10036                                  | 212-704-5500    | Market Maker  |
| SageTrader, LLC                        | 3/1/2016          | 6/5/2017          | 6/5/2017           | 6/1/2016           | NA                  | NA                | Member TPH            | 340 Pine Street<br>Suite 501<br>San Francisco, CA 94104               | 415-293-3894    | Public Customer Business  |
| SAL Equity Trading, GP                 | 9/3/2008          | 10/5/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 401 City Avenue<br>Suite 220<br>Bala Cynwyd, PA 19004                 | 610-617-3000    | Agency, Institutional Trading   |
| Sanford C. Bernstein & Co, LLC         | 9/10/2008         | 10/21/2010        | 5/26/2010          | 5/27/2010          | 8/13/2013           | NA                | Member TPH            | 1345 Avenue of the Americas<br>New York, NY 10105                     | 212-969-1000    | Clearing, Proprietary Trading, Transact Business with the Public                          |
| Scientech Master Fund, Ltd.            | 4/21/2021         | 4/21/2021         | 4/21/2021          | 4/21/2021          | NA                  | NA                | Sponsored Participant | 101 Hudson Street<br>Suite 2177<br>Jersey City, NJ 07302              | 201-253-5141    | Proprietary Trading   |
| Scotia Capital (USA) Inc.              | 3/2/2009          | 9/15/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 250 Vesey Street<br>New York, NY 10281                                | 212-225-6500    | Institutional Trading   |
| Sea Otter Securities Group LLC         | 10/9/2018         | 10/9/2018         | NA                 | 10/9/2018          | NA                  | NA                | Sponsored Participant | 107 Grand Street<br>7th Floor<br>New York, NY 10013                   | 646-762-9972    | Proprietary Trading   |
| SG Americas Securities, LLC            | 9/17/2008         | 11/15/2011        | 5/14/2010          | 5/14/2010          | 4/23/2004           | 1/2/2015          | Member TPH            | 245 Park Avenue<br>New York, NY 10167                                 | 212-278-6000    | Clearing, Proprietary Trading, Transact Business with the Public, Brokerage               |
| Simplex Trading, LLC                   | 3/16/2015         | NA                | NA                 | 4/13/2017          | 8/12/2010           | 3/1/2017          | Member TPH            | 230 S LaSalle Street<br>Suite 4-100<br>Chicago, IL 60604              | 312-360-2440    | Market Maker, Proprietary Trading   |
| Simplex Trading, LLC                   | 9/26/2022         | 7/12/2022         | 9/26/2022          | 9/26/2022          | NA                  | NA                | Sponsored Participant | 230 S LaSalle Street<br>Suite 4-100<br>Chicago, IL 60604              | 312-360-2440    | Market Maker, Proprietary Trading   |
| SMBC Nikko Securities America, Inc.    | 8/7/2017          | 8/7/2017          | 8/7/2017           | 8/7/2017           | NA                  | NA                | Member TPH            | 277 Park Avenue<br>5th Floor<br>New York, NY 10172                    | 212-224-5039    | Institutional Trading   |
| SogoTrade, Inc.                        | NA                | NA                | NA                 | 6/19/2017          | NA                  | NA                | Member TPH            | 11 Broadway<br>Suite 514<br>New York, NY 10004                        | 646-885-6486    | Public Customer Business  |

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|---|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|-----------------------|---|---------------|--|
| SpeedTrader Inc.                            | NA                | NA                | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1717 Route 6<br>Suite 102<br>Carmel, NY 10512                                 | 800-874-3039  | Agency   |
| Squarepoint Ops LLC                         | 1/23/2023         | 1/23/2023         | 1/23/2023          | 1/23/2023          | NA                  | NA                | Sponsored Participant | 250 W 55th Street<br>32nd Floor<br>New York, NY 10019                         | 646-868-1508  | Proprietary Trading  |
| SRT Securities LLC                          | NA                | 5/18/2020         | NA                 | NA                 | 10/27/1995          | NA                | Member TPH            | 666 5th Avenue<br>14th Floor<br>New York, NY 10103                            | 212-841-4567  | Floor Broker, Transact Business with the Public, Brokerage                             |
| Stifel, Nicolaus & Company, Incorporated    | 8/18/2008         | NA                | 6/2/2010           | 6/2/2010           | NA                  | NA                | Member TPH            | 501 N Broadway<br>St. Louis, MO 63102   | 314-342-2000  | Agency   |
| Sumo Capital, LLC                           | NA                | NA                | NA                 | NA                 | 3/3/2008            | NA                | Member TPH            | 440 S LaSalle Street<br>Suite 2101<br>Chicago, IL 60605                       | 312-324-0326  | Market Maker, Proprietary Trading  |
| Susquehanna Financial Group, LLLP           | 9/3/2008          | 10/5/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 401 City Avenue<br>Suite 220<br>Bala Cynwyd, PA 19004                         | 800-825-9550  | Agency, Institutional Trading  |
| Susquehanna Investment Group                | NA                | NA                | NA                 | NA                 | 5/1/1987            | NA                | Member TPH            | 401 City Avenue<br>Suite 220<br>Bala Cynwyd, PA 19004                         | 610-617-2600  | Market Maker   |
| Susquehanna Securities, LLC                 | 10/15/2014        | 10/15/2014        | 10/15/2014         | 10/15/2014         | 4/4/1994            | 9/24/2010         | Member TPH            | 401 City Avenue<br>Suite 220<br>Bala Cynwyd, PA 19004                         | 610-617-2600  | Market Maker, Proprietary Trading  |
| SVB Securities LLC                          | 8/18/2008         | 10/5/2010         | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1 Federal Street<br>37th Floor<br>Boston, MA 02110                            | 617-918-4900  | Agency   |
| TD Ameritrade Clearing, Inc.                | NA                | NA                | NA                 | 5/27/2010          | NA                  | NA                | Member TPH            | 200 S 108th Avenue<br>Omaha, NE 68154   | 800-669-3900  | Public Customer Business, Clearing Services  |
| Telsey Advisory Group, LLC                  | 1/24/2011         | 8/15/2014         | NA                 | NA                 | NA                  | NA                | Member TPH            | 555 5th Avenue<br>7th Floor<br>New York, NY 10017                             | 212-973-9700  | Public Customer Business   |
| Tewksbury Investment Fund, Ltd.             | 10/23/2008        | 11/15/2010        | NA                 | NA                 | NA                  | NA                | Sponsored Participant | Washington Mall I<br>20th Church Street, 4th Floor<br>Hamilton, HM 11 Bermuda | 212-310-7076  | Proprietary Trading  |
| Themis Trading LLC                          | 8/18/2008         | 10/1/2010         | NA                 | NA                 | NA                  | NA                | Member TPH            | 10 Town Square<br>Suite 100<br>Chatham, NJ 07928                              | 973-665-9600  | Agency   |
| TJM Investments, LLC                        | NA                | NA                | NA                 | NA                 | 3/11/2013           | NA                | Member TPH            | 318 W Adams Street<br>9th Floor<br>Chicago, IL 60606                          | 312-432-5100  | Floor Broker, Transact Business with the Public  |
| TOR Brokerage LLC                           | 8/23/2021         | 8/23/2021         | 8/23/2021          | 8/23/2021          | NA                  | NA                | Member TPH            | 9019 Old River Road<br>North Bergen, NJ 07047                                 | 201-941-0002  | ATS  |
| Tradebot Systems, Inc.                      | 8/18/2008         | 9/1/2010          | 5/26/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 1251 NW Briarcliff Parkway<br>Suite 700<br>Kansas City, MO 64116              | 816-285-6400  | Proprietary Trading  |
| TradePro Securities Inc.                    | 2/19/2020         | 2/19/2020         | 2/19/2020          | 2/19/2020          | NA                  | NA                | Member TPH            | 2307 Douglas Road, Suite 301<br>Miami, FL 33145                               | 631-804-0396  | Public Customer Business   |
| TradeStation Securities, Inc.               | 8/18/2008         | 9/1/2010          | 5/25/2010          | 5/25/2010          | NA                  | NA                | Member TPH            | 8050 SW 10th Street<br>Suite 2000<br>Plantation, FL 33324                     | 954-652-7900  | Market Maker   |
| TradeUp Securities Inc.                     | NA                | NA                | NA                 | 2/6/2023           | NA                  | NA                | Member TPH            | 101 Eisenhower Parkway<br>Roseland, NJ 07068                                  | 973-228-9871  | Trading and execution for clients  |
| TradeZero America Inc.                      | NA                | NA                | NA                 | 9/14/2021          | NA                  | NA                | Member TPH            | 68 34th Street, #B513<br>Brooklyn, NY 11232                                   | 718-7409-4925 | Public Customer Business   |
| TRC Helepolis, Ltd.                         | 12/11/2009        | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 377 Broadway<br>11th Floor<br>New York, NY 10013                              | 646-472-1792  | Proprietary Trading  |
| TRC Markets LLC                             | 4/13/2017         | 4/13/2017         | 4/13/2017          | 4/13/2017          | 11/16/2022          | NA                | Member TPH            | 710 Johnnie Dodds Boulevard<br>Suite 300<br>Mt. Pleasant, SC 29464            | 917-388-8644  | Agency; Electronic Execution, Transact Business with the Public                        |
| Tudor, Pickering, Holt & Co. Securities LLC | 8/18/2008         | 10/17/2011        | NA                 | NA                 | NA                  | NA                | Member TPH            | 1111 Bagby<br>Suite 4900<br>Houston, TX 77002                                 | 713-333-7100  | Agency   |
| Two Sigma Investments, LLC                  | 9/1/2009          | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 100 Avenue of the Americas<br>4th Floor<br>New York, NY 10013                 | 212-775-6678  | Proprietary Trading  |
| Two Sigma Partners Master Fund, Ltd.        | 3/2/2009          | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 100 Avenue of the Americas<br>4th Floor<br>New York, NY 10013                 | 212-775-6678  | Proprietary Trading  |
| Two Sigma Securities, LLC                   | 7/1/2009          | NA                | NA                 | NA                 | NA                  | NA                | Sponsored Participant | 100 Avenue of the Americas<br>4th Floor<br>New York, NY 10013                 | 646-292-6643  | Proprietary Trading  |
| Two Sigma Securities, LLC                   | 10/1/2009         | 10/5/2010         | 5/27/2010          | 5/27/2010          | 9/15/2017           | 7/18/2018         | Member TPH            | 100 Avenue of the Americas<br>19th Floor<br>New York, NY 10013                | 212-625-5700  | Market Maker, Broker   |
| UBS Financial Services Inc.                 | NA                | NA                | NA                 | NA                 | 12/11/1972          | NA                | Member TPH            | 1200 Harbor Boulevard<br>Weehawken, NJ 07086                                  | 201-352-3000  | Clearing, Transact Business with the Public  |
| UBS Securities LLC                          | 10/15/2008        | 10/1/2010         | 4/12/2010          | 4/12/2010          | 10/1/1998           | 10/8/2010         | Member TPH            | 1285 Avenue of the Americas<br>New York, NY 10019                             | 203-719-3000  | Clearing, Proprietary Trading, Transact Business with the Public                       |
| Ultraviolet Securities LLC                  | 6/17/2019         | 6/17/2019         | 6/17/2019          | 6/17/2019          | NA                  | NA                | Sponsored Participant | 151 Bodman Place<br>Suite 301<br>Red Bank, NJ 07701                           | 732-450-7462  | Proprietary Trading  |
| Ultraviolet Securities LLC                  | 10/24/2019        | 10/24/2019        | 10/24/2019         | 10/24/2019         | NA                  | NA                | Sponsored Participant | 151 Bodman Place<br>Suite 301<br>Red Bank, NJ 07701                           | 732-450-7462  | Proprietary Trading  |
| Vanaheim Securities, LLC                    | NA                | NA                | NA                 | NA                 | 6/1/2022            | NA                | Member TPH            | 425 S Financial Place<br>Suite 3200<br>Chicago, IL 60605                      | 312-379-0202  | Market Maker   |
| Velocity Capital, LLC                       | NA                | NA                | NA                 | NA                 | 11/5/2021           | NA                | Member TPH            | 100 Wall Street<br>Suite 502<br>New York, NY 10005                            | 646-568-2855  | Clearing, Proprietary Trading  |
| Velocity Clearing, LLC                      | 10/3/2011         | 12/27/2011        | 5/17/2011          | 5/17/2011          | 10/3/2022           | NA                | Member TPH            | 1301 Route 36, Suite 109<br>Hazlet, NJ 07730                                  | 929-489-8845  | Clearing, Electronic Execution, Proprietary Trading, Transact Business with the Public |
| Velox Clearing LLC                          | 9/5/2019          | 9/5/2019          | 9/5/2019           | 9/5/2019           | NA                  | NA                | Member TPH            | 2400 E. Katella Ave<br>Suite 725<br>Anaheim, CA 92806                         | 949-352-4694  | Clearing Services  |
| Verition Fund Management LLC                | 10/21/2019        | 10/21/2019        | 10/21/2019         | 10/21/2019         | NA                  | NA                | Sponsored Participant | 1 American Lane<br>Greenwich, CT 06831  | 203-742-7711  | Proprietary Trading  |
| ViewTrade Securities, Inc.                  | 8/18/2008         | 11/15/2010        | 6/10/2010          | 6/10/2010          | NA                  | NA                | Member TPH            | 7280 W Palmetto Park Road<br>Suite 310<br>Boca Raton, FL 33433                | 561-620-0306  | Agency   |
| Virtu Americas LLC                          | 9/15/2009         | 10/14/2010        | 1/3/2011           | 1/3/2011           | 9/18/2009           | 3/17/2011         | Member TPH            | 300 Vesey Street<br>New York, NY 10282  | 646-682-6000  | Clearing, Proprietary Trading, Transact Business with the Public, Brokerage            |
| Vision Financial Markets LLC                | 4/1/2009          | 11/15/2010        | 7/13/2012          | 7/13/2012          | 12/11/2006          | NA                | Member TPH            | 120 Long Ridge Road<br>3 North<br>Stamford, CT 06902                          | 203-388-2700  | Clearing, Transact Business with the Public  |
| Volant Liquidity, LLC                       | 4/15/2011         | NA                | NA                 | 5/27/2010          | 2/1/2010            | NA                | Member TPH            | 250 Vesey Street<br>Suite 2601<br>New York, NY 10281                          | 646-804-7900  | Market Maker, Order Flow Provider, Brokerage   |
| Wall Street Access                          | 11/3/2008         | 10/17/2011        | 5/27/2010          | 5/27/2010          | NA                  | NA                | Member TPH            | 17 Battery Place<br>11th Floor<br>New York, NY 10004                          | 212-709-9400  | Agency   |
| Walleye Trading LLC                         | 12/1/2008         | 11/12/2010        | NA                 | 4/17/2018          | 6/1/2006            | 7/12/2021         | Member TPH            | 2800 Niagara Lane North<br>Plymouth, MN 55447                                 | 952-345-6623  | Proprietary Trading, Market Maker  |
| Webull Financial LLC                        | NA                | NA                | NA                 | 3/1/2021           | NA                  | NA                | Member TPH            | 44 Wall Street, Suite 501<br>New York, NY 10005                               | 917-725-2408  | Public Customer Business   |

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|------------------------------------|-------------------|-------------------|--------------------|--------------------|---------------------|-------------------|---------------|---|--------------|--|
| Wedbush Securities Inc.            | 8/18/2008         | 9/1/2010          | 5/27/2010          | 5/27/2010          | 2/23/2012           | 3/8/2012          | Member<br>TPH | 1000 Wilshire Boulevard<br>Suite 900<br>Los Angeles, CA 90017         | 213-688-8090 | Clearing   |
| Wells Fargo Clearing Services, LLC | 7/1/2016          | NA                | NA                 | NA                 | 11/14/2016          | NA                | Member<br>TPH | One N Jefferson Avenue<br>Mail Code: H0004-050<br>St. Louis, MO 63103 | 314-875-3000 | Clearing, Transact Business with the Public                          |
| Wells Fargo Securities, LLC        | 8/18/2008         | 10/11/2010        | 6/9/2010           | 6/9/2010           | 4/1/2014            | 4/1/2014          | Member<br>TPH | 550 S Tryon Street, 6th Floor<br>D1086-060<br>Charlotte, NC 28202     | 704-410-1913 | Clearing, Proprietary Trading  |
| Wolverine Execution Services, LLC  | 8/18/2008         | 10/19/2010        | 5/14/2010          | 5/14/2010          | 3/1/2006            | 9/24/2010         | Member<br>TPH | 175 W Jackson Boulevard<br>Suite 200<br>Chicago, IL 60604             | 312-884-4000 | Clearing, Floor Broker, Transact Business with the Public, Brokerage |