

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

SCHEDULE 13D

(Amendment No.)*

Under the Securities Exchange Act of 1934

K-Sea Transportation Partners L.P.

(Name of Issuer)

Common Units

(Title of Class of Securities)

48268Y101

(CUSIP Number)

Kirby Corporation
55 Waugh Drive, Suite 1000
Houston, Texas 77007
Attn: Amy D. Husted
(713) 435-1000

Copy To:

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(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

March 13, 2011

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box. o

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

| | | |
|---|---|---|
| 1 | NAMES OF REPORTING PERSONS. Kirby Corporation | |
| 2 | CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS) (a) <input type="radio"/> (b) <input checked="" type="checkbox"/> | |
| 3 | SEC USE ONLY | |
| 4 | SOURCE OF FUNDS (SEE INSTRUCTIONS) OO (See Item 3) | |
| 5 | CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e) <input type="radio"/> | |
| 6 | CITIZENSHIP OR PLACE OF ORGANIZATION Nevada | |
| NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH: | 7 | SOLE VOTING POWER 0 |
| | 8 | SHARED VOTING POWER 22,968,120 ^{1 2} |
| | 9 | SOLE DISPOSITIVE POWER 0 |
| | 10 | SHARED DISPOSITIVE POWER 22,968,120 ^{1 2} |
| 11 | AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 22,968,120 ^{1 2} | |
| 12 | CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) <input type="radio"/> | |
| 13 | PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 59.9% ^{1 2 3} | |
| 14 | TYPE OF REPORTING PERSON (SEE INSTRUCTIONS) CO | |

¹ Beneficial ownership of the above referenced securities is being reported hereunder solely because the reporting person may be deemed to have beneficial ownership of such securities as a result of Support Agreements (as defined in Item 3 below) entered into with beneficial owners of such securities as described herein. Neither the filing of this statement on Schedule 13D nor any of its contents shall be deemed to constitute an admission by the reporting person that it is the beneficial owner of any of the securities referred to herein for purposes of Section 13(d) of the Act, or for any other purpose, and such beneficial ownership is expressly disclaimed.

² Includes 19,178,120 Preferred Units (as defined in Item 4 below) that are convertible into Common Units (as defined in Item 1 below) at the option of the holder of the Preferred Units that are subject to the Support Agreements described herein. Pursuant to the terms and conditions of the limited partnership agreement of K-Sea (as defined in Item 1 below), the holder of the Preferred Units votes with the holders of the Common Units on an as-converted basis. As of March 13, 2011, to the knowledge of the reporting person, each Preferred Unit is convertible into a single Common Unit.

³ Subject to the terms of the Support Agreements, and based on the unit holdings of the parties to the Support Agreements as of March 13, 2011, the reporting person is entitled to cast a total of 22,968,120, or 59.9%, of the total votes that may be cast by the holders of the Common Units and Preferred Units on such

date with respect to the Merger (as defined in Item 4 below), based on the representations in the Merger Agreement (as defined in Item 4 below) that, as of such date, there were 19,160,394 Common Units and 19,178,120 Preferred Units outstanding.

Item 1. Security and Issuer

This statement on Schedule 13D relates to the Common Units (the "Common Units") of K-Sea Transportation Partners L.P., a Delaware limited partnership ("K-Sea").

The principal executive offices of K-Sea are located at One Town Center Boulevard, 17th Floor, East Brunswick, New Jersey 08816.

Item 2. Identity and Background

(a) The name of the person filing this statement is Kirby Corporation, a Nevada corporation ("Kirby").

(b) Kirby's business address is 55 Waugh Drive, Suite 1000, Houston, Texas 77007.

(c) Kirby's principal businesses are marine transportation and diesel engine services.

(d) Neither Kirby nor, to Kirby's knowledge, any person identified on Schedule A attached hereto during the last five years has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) Neither Kirby nor, to Kirby's knowledge, any person identified on Schedule A attached hereto during the last five years has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(f) All of the directors and executive officers of Kirby named in Schedule A attached hereto are citizens of the United States.

Set forth on Schedule A is the name and present principal occupation or employment, and the name, principal business and address of any corporation or other organization in which such employment is conducted, of each of the directors and executive officers of Kirby as of the date hereof.

Item 3. Source and Amount of Funds and Other Considerations

To induce Kirby to enter into the Merger Agreement (as defined in Item 4 below), on March 13, 2011, KA First Reserve, LLC, EW Transportation LLC, EW Transportation Corp. and EW Holding Corp. (collectively, the "Covenanting Unitholders") entered into Support Agreements (collectively, the "Support Agreements") with Kirby, KSP Holding Sub, LLC, a Delaware limited liability company and a direct wholly owned subsidiary of Kirby ("Holding Sub"), KSP LP Sub, LLC, a Delaware limited liability company and a direct wholly owned subsidiary of Kirby ("LP Sub"), and KSP Merger Sub, LLC, a Delaware limited liability company wholly owned by Holding Sub and LP Sub ("Merger Sub"), with respect to the Units beneficially owned by the Covenanting Unitholders. As described in Item 4 below, the Units beneficially owned by the Covenanting Unitholders have not been purchased by Kirby, and thus no funds were used for such purpose. Kirby did not pay any monetary consideration to the Covenanting Unitholders in connection with the execution and delivery of the Support Agreements. For a description of the Support Agreements, see Item 4 below, which description is incorporated by reference into this Item 3.

Item 4. Purpose of Transaction

As an inducement for Kirby to enter into the Merger Agreement (as defined below), the Covenanting Unitholders entered into the Support Agreements. The purpose of the Support Agreements is to facilitate the transactions contemplated by the Merger Agreement.

On March 13, 2011, Kirby, Merger Sub, Holding Sub, LP Sub, K-Sea, K-Sea General Partner L.P., a Delaware general partnership and the general partner of K-Sea (the "General Partner"), K-Sea General Partner GP LLC, a Delaware limited liability company and the general partner of the General Partner ("GP LLC"), and K-Sea IDR

Holdings LLC, a Delaware limited liability company and a wholly owned subsidiary of the General Partner (“K-Sea IDR”), entered into an Agreement and Plan of Merger (the “Merger Agreement”). Pursuant to the Merger Agreement, and upon the terms and subject to the conditions set forth therein, Merger Sub will be merged with and into K-Sea (the “Merger”), with K-Sea surviving the Merger as a wholly owned subsidiary of Kirby.

Subject to the terms and conditions of the Merger Agreement, at the effective time of the Merger (i) each outstanding Common Unit will be converted into the right to receive, at the election of the holder, either (a) \$8.15 in cash or (b) \$4.075 in cash and 0.0734 of a share of Kirby’s common stock, (ii) each outstanding Series A Preferred Unit of K-Sea (collectively, the “Preferred Units,” and, together with the Common Units, the “Units”) will be converted into the right to receive \$4.075 in cash and 0.0734 of a share of Kirby’s common stock and (iii) each outstanding general partner unit of K-Sea will be converted into the right to receive \$8.15 in cash. The incentive distribution rights of K-Sea, which are owned by K-Sea IDR, will be converted into the right to receive \$18 million in cash.

The Merger Agreement is subject to customary closing conditions, including, among other things (i) approval by the affirmative vote of holders of a majority of the Units, voting together as a single class, (ii) approval by the affirmative vote of the holders of a majority of the Preferred Units voting separately as a class, (iii) receipt of applicable regulatory approvals, (iv) the effectiveness of a registration statement on Form S-4 with respect to the issuance of Kirby’s common stock in connection with the Merger and (v) approval for listing of the shares of Kirby’s common stock to be issued in connection with the Merger on the New York Stock Exchange. In addition, the Merger Agreement is subject to the closing condition that Kirby be satisfied, in its reasonable discretion, as to K-Sea’s tax classification.

On March 13, 2011, Kirby, Merger Sub, LP Sub and Holding Sub entered into the Support Agreements with the Covenanting Unitholders, pursuant to which each Covenanting Unitholder agreed, among other things, to vote the Preferred Units or Common Units held by such Covenanting Unitholder in favor of the Merger and against any proposal made in opposition to the Merger, and to grant an irrevocable proxy to Kirby, coupled with an interest. Each Covenanting Unitholder also agreed that, during the duration of the Support Agreement, it will not (i) Transfer (as such term is defined in the Support Agreement) any of its Common or Preferred Units or any right or interest therein; (ii) enter into any agreement, arrangement or understanding that could violate or conflict with such Covenanting Unitholder’s representations, warranties, covenants and obligations under the Support Agreement; (iii) take any action that could restrict such Covenanting Unitholder’s legal power and authority to comply with and perform its covenants and obligations under the Support Agreement; (iv) convert any of the Preferred Units held by such Covenanting Unitholder into Common Units, or (v) discuss, negotiate or enter into any contract or other arrangement with respect to any matter related to the Support Agreement. In addition, each Covenanting Unitholder agreed to not solicit, either directly or indirectly, an acquisition proposal with respect to K-Sea and also made certain customary representations and warranties. The Support Agreements will remain in effect until the earliest to occur of (a) the effective time of the Merger, (b) the termination of the Merger Agreement, (c) the date of any modification, amendment or waiver of the Merger Agreement that adversely affects such Covenanting Unitholder, and (d) a change in recommendation in respect of the Merger by the Company Board (as defined in the Merger Agreement) (or any committee thereof).

The foregoing description of the Merger, the Merger Agreement and the Support Agreements does not purport to be complete and is subject to, and qualified in its entirety by, the full text of the Merger Agreement and the Support Agreements, copies of which were filed as exhibits to Kirby’s Current Report on Form 8-K, filed with the SEC on March 16, 2011, and which are incorporated herein by reference.

Upon consummation of the Merger, (i) the form of Limited Partnership Agreement attached to the Merger Agreement will become the Limited Partnership Agreement of K-Sea, (ii) Holding Sub will become the sole general partner of K-Sea, and (iii) LP Sub will become the sole limited partner of K-Sea. In addition, pursuant to the Merger Agreement, Kirby may request the resignation of each officer of K-Sea and its subsidiaries, and, if such request is made, K-Sea and its subsidiaries will be obligated to use their reasonable best efforts to effect such resignations.

The Merger Agreement prohibits K-Sea from incurring debt, issuing securities or changing its capitalization without Kirby’s prior written consent, except under limited circumstances set forth therein. The Merger Agreement also

prohibits K-Sea from making, declaring, setting aside or paying any dividends or distributions in respect of any of its equity interests (other than the payment of a quarterly distribution to the holders of the Preferred Units), or repurchasing, redeeming or otherwise acquiring any of its equity interests or other securities without Kirby's prior written consent, except under limited circumstances set forth therein.

If the transactions contemplated by the Merger Agreement are consummated, the surviving company of the Merger will become a wholly owned subsidiary of Kirby.

The Merger Agreement contains provisions that limit the ability of K-Sea and specified representatives of K-Sea to engage in a transaction that would effect a change of control of K-Sea (other than the transactions contemplated by the Merger Agreement) during the pendency of the transactions contemplated by the Merger Agreement.

Promptly after the consummation of the Merger, the Common Units will be deregistered under the Act and delisted from the New York Stock Exchange.

Other than as described above, Kirby currently has no plan or proposal which relates to, or may result in, any of the matters described in Items 4(a)-(i) of this Schedule 13D (although Kirby reserves the right to develop such plans).

Item 5. Interest in Securities of the Issuer

Kirby does not directly own any Common Units. However, as described in Item 4 of this Schedule 13D, as a result of the Support Agreements, Kirby may be deemed to be the beneficial owner of 22,968,120 Common Units. Subject to the terms and conditions of the Support Agreements, and based on the unit holdings of the parties to the Support Agreements as of March 13, 2011, Kirby is entitled to cast a total of 22,968,120, or 59.9%, of the total votes that may be cast by K-Sea unitholders as of such date with respect to the Merger, based on the representations in the Merger Agreement that, as of such date, there were 19,160,394 Common Units and 19,178,120 Preferred Units outstanding.

Kirby, however, hereby disclaims beneficial ownership of such Units and this Schedule 13D shall not be construed as an admission that Kirby is, for any or all purposes, the beneficial owner of the securities covered by this Schedule 13D. Except as set forth in this Schedule 13D, no Units are beneficially owned by Kirby or, to Kirby's knowledge, any person listed on Schedule A to this Schedule 13D.

Schedule B to this Schedule 13D sets forth, to Kirby's knowledge, the following information for those entities with whom Kirby may be deemed to share the power to vote or to direct the vote or to dispose or to direct the disposition of the securities subject to the Support Agreements: name, state or other place of organization, principal business and business address. Kirby has no knowledge that any entity listed on Schedule B to this Schedule 13D during the last five years has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors). Kirby has no knowledge that any entity listed on Schedule B to this Schedule 13D during the last five years has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

(c) Except as disclosed herein, neither Kirby nor, to Kirby's knowledge, any person named in Schedule A to this Schedule 13D, has effected any transaction in any Units during the past 60 days.

(d) To Kirby's knowledge, no other person has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the securities subject to the Support Agreements.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

Other than as described in Items 4 and 5 above, Kirby is not a party to any contracts, arrangements, understandings or relationships (legal or otherwise) with respect to any securities of K-Sea, including but not limited to transfer or

voting of any of the securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profit, division of profits or losses, or the giving or withholding of proxies.

Item 7. Material to be Filed as Exhibits

| <u>Exhibit No.</u> | <u>Document</u> |
|--------------------|--|
| 1. | Agreement and Plan of Merger, dated March 13, 2011, by and among Kirby Corporation, KSP Holding Sub, LLC, KSP LP Sub, LLC, KSP Merger Sub, LLC, K-Sea Transportation Partners L.P., K-Sea General Partner L.P., K-Sea General Partner GP LLC and K-Sea IDR Holdings LLC* |
| 2. | Support Agreement, dated March 13, 2011, by and among Kirby Corporation, KSP Holding Sub, LLC, KSP LP Sub, LLC, KSP Merger Sub, LLC and KA First Reserve, LLC* |
| 3. | Support Agreement, dated March 13, 2011, by and among Kirby Corporation, KSP Holding Sub, LLC, KSP LP Sub, LLC, KSP Merger Sub, LLC and EW Transportation LLC* |
| 4. | Support Agreement, dated March 13, 2011, by and among Kirby Corporation, KSP Holding Sub, LLC, KSP LP Sub, LLC, KSP Merger Sub, LLC and EW Transportation Corp.* |
| 5. | Support Agreement, dated March 13, 2011, by and among Kirby Corporation, KSP Holding Sub, LLC, KSP LP Sub, LLC, KSP Merger Sub, LLC and EW Holding Corp.* |

* Incorporated by reference to the Current Report on Form 8-K filed by Kirby Corporation with the Securities and Exchange Commission on March 16, 2011.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

KIRBY CORPORATION

By: /s/ David W. Grzebinski

Name: David W. Grzebinski

Title: Executive Vice President and Chief Financial Officer

Dated: March 23, 2011

SCHEDULE A
EXECUTIVE OFFICERS AND DIRECTORS OF KIRBY CORPORATION

Executive Officers of Kirby Corporation

| <u>Name</u> | <u>Position</u> |
|---------------------|--|
| Joseph H. Pyne | Chairman of the Board, President and Chief Executive Officer |
| David W. Grzebinski | Executive Vice President and Chief Financial Officer |
| Gregory R. Binion | President — Kirby Inland Marine, LP |
| Dorman L. Strahan | President — Kirby Engine Systems, Inc. |
| Ronald A. Dragg | Vice President and Controller |
| G. Stephen Holcomb | Vice President — Investor Relations and Assistant Secretary |
| Amy D. Husted | Vice President — Legal |
| David R. Mosley | Vice President and Chief Information Officer |
| Joseph H. Reniers | Vice President — Human Resources |
| Renato A. Castro | Treasurer |

All individuals named in the table above are employed by Kirby Corporation or one of its wholly owned subsidiaries. The address of Kirby Corporation's principal executive offices is 55 Waugh Drive, Suite 1000, Houston, Texas 77007.

Directors of Kirby Corporation

| <u>Name</u> | <u>Present Principal Occupation or Employment</u> | <u>Name, Principal Business and Address of Organization in which Employed</u> |
|-------------------------|--|---|
| James R. Clark | Retired | Not applicable |
| Bob G. Gower | Retired | Not applicable |
| C. Sean Day | Chairman of Teekay Corporation | Teekay Corporation 4th Floor, Belvedere Building 69 Pitts Bay Road Hamilton, HM 08 Bermuda Teekay Corporation is a foreign flag tank vessel owner and operator. |
| William M. Lamont, Jr. | Private Investor | Not applicable |
| C. Berdon Lawrence | Private Investor | Not applicable |
| David L. Lemmon | Retired | Not applicable |
| Monte J. Miller | Retired | Not applicable |
| George A. Peterkin, Jr. | Retired | Not applicable |
| Joseph H. Pyne | Chairman, President and Chief Executive Officer of Kirby Corporation | Kirby Corporation 55 Waugh Drive, Suite 1000 Houston, Texas 77007 Kirby Corporation's principal businesses are marine transportation and diesel engine services. |
| Richard R. Stewart | Retired | Not applicable |

SCHEDULE B

**ENTITIES WITH WHOM KIRBY CORPORATION
SHARES VOTING AND DISPOSITIVE POWER**

| <u>Name</u> | <u>State or Other Place of Organization</u> | <u>Name, Principal Business and Address of Organization</u> |
|-------------------------|---|---|
| KA First Reserve, LLC | Delaware | First Reserve Corporation One Lafayette Place Greenwich, Connecticut 06830 |
| EW Transportation LLC | Delaware | EW Transportation LLC One Tower Center Boulevard, 17 th Floor East Brunswick, New Jersey 08816 |
| EW Transportation Corp. | Delaware | EW Transportation Corp. One Tower Center Boulevard, 17 th Floor East Brunswick, New Jersey 08816 |
| EW Holding Corp. | Delaware | EW Holding Corp. One Tower Center Boulevard, 17 th Floor East Brunswick, New Jersey 08816 |