As filed with the Securities and Exchange Commission on February 11, 2010

Registration No. 333-

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

FORM S-8

REGISTRATION STATEMENT UNDER
THE SECURITIES ACT OF 1933

DUNCAN ENERGY PARTNERS L.P.

(Exact name of registrant as specified in its charter)

Delaware	**20-5639997**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
1100 Louisiana Street, 10th Floor **Houston, Texas** (Address of Principal Executive Offices)	**77002** (Zip Code)

DEP Unit Purchase Plan
2010 Duncan Energy Partners L.P. Long-Term Incentive Plan
(Full title of the plan)

Richard H. Bachmann
1100 Louisiana Street, 10th Floor
Houston, Texas 77002
(Name and address of agent for service)

(713) 381-6500
(Telephone number, including area code, of agent for service)

Copies to:
David C. Buck
Andrews Kurth LLP
600 Travis, Suite 4200
Houston, Texas 77002
(713) 220-4200

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer ☑	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered (1)(2)	Proposed maximum offering price per share (3)	Proposed maximum aggregate offering price	Amount of registration fee
Common units representing limited partner interests	1,000,000	$24.09	$24,090,000	$1,717.62

(1) Pursuant to Rule 416(a) under the Securities Act, there is also being registered such additional number of common units that become available under the plan because of events such as recapitalizations, stock dividends, stock splits or similar transactions effected without the receipt of consideration that increases the number of outstanding common units.

(2) Represents 500,000 common units registered under the DEP Unit Purchase Plan and 500,000 common units registered under the 2010 Duncan Energy Partners L.P. Long-term Incentive Plan.

(3) Estimated solely for the purpose of determining the amount of the registration fee in accordance with Rule 457(c) and (h) under the Securities Act of 1933, as amended, and based on the average of the high and low prices of the common units as reported by the New York Stock Exchange on February 9, 2010.

PART I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The document(s) containing the information specified in Part I of Form S-8 (plan information and registrant information) will be sent or given to employees as specified by Rule 428(b)(1) under the Securities Act of 1933, as amended (the "Securities Act"). In accordance with Rule 428 and the requirements of Part I of Form S-8, such documents are not being filed with the Securities and Exchange Commission (the "Commission") either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424 under the Securities Act. Duncan Energy Partners L.P. (the "Partnership") shall maintain a file of such documents in accordance with the provisions of Rule 428(a)(2) of the Securities Act. Upon request, the Partnership shall furnish to the Commission or its staff a copy of any or all of the documents included in the file.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The Partnership incorporates by reference in this registration statement the following documents and information previously filed with the Commission:

(1) The Partnership's Annual Report on Form 10-K (File No. 001-33266) for the fiscal year ended December 31, 2008, filed on March 2, 2009, as amended by the Partnership's Annual Report on Form 10-K/A for the fiscal year ended December 31, 2008, as filed on June 11, 2009, and as retrospectively adjusted by the Partnership's Current Report on Form 8-K as filed with the SEC on August 28, 2009 for the adoption of SFAS 160 and the related disclosures in Notes 1 and 3.

(2) The Partnership's Quarterly Reports on Form 10-Q (File No. 001-33266) for the period ended March 31, 2009, filed on May 11, 2009, as amended by the Partnership's Quarterly Report on Form 10-Q/A filed on June 11, 2009, the Partnership's Quarterly Report on Form 10-Q for the quarter ended June 30, 2009, filed on August 10, 2009 and the Partnership's Quarterly Report on Form 10-Q for the period ended September 30, 2009, filed on November 9, 2009.

(3) The Partnership's Current Reports on Form 8-K (File No. 001-33266) filed on February 5, 2009, March 12, 2009 (retrospectively adjusted for by the Partnership's Current Report on Form 8-K as filed with the SEC on August 28, 2009 for the adoption of SFAS 160), May 11, 2009, June 15, 2009, June 18, 2009, August 10, 2009, August 28, 2009, November 16, 2009, December 8, 2009, and January 4, 2010 (only to the extent information contained in each of these Forms 8-K has been filed and not furnished).

(4) The description of the Partnership's common units contained in the Partnership's Registration Statement on Form 8-A (File No. 001-33266) as filed on January 24, 2007, and any amendment or report filed for the purpose of updating that description.

All documents filed with the Commission by the Partnership pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, (excluding any information furnished pursuant to Item 2.02 and Item 7.01 on any current report on Form 8-K) subsequent to the date of this registration statement and prior to the filing of a post-effective amendment that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of filing of such documents.

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

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 17-108 of the Delaware Revised Uniform Limited Partnership Act empowers a Delaware limited partnership to indemnify and hold harmless any partner or other person from and against all claims and demands whatsoever. The Partnership's partnership agreement provides that the Partnership will indemnify (i) DEP Holdings, LLC (the "General Partner"), (ii) any departing general partner, (iii) any person who is or was an affiliate of the General Partner or any departing general partner, (iv) any person who is or was a member, partner, officer director, employee, agent or trustee of the General Partner or any departing general partner or any affiliate of the General Partner or any departing general partner, (v) any person who is or was serving at the request of the General Partner or any departing general partner or any affiliate of any such person, any affiliate of the General Partner or any fiduciary or trustee of another person (each, a "Partnership Indemnitee"), or (vi) any person designated by our general partner, to the fullest extent permitted by law, from and against any and all losses, claims, damages,

liabilities, joint or several, expenses (including legal fees and expenses), judgments, fines, penalties, interest, settlements or other amounts arising from any and all claims, demands, actions, suits or proceedings, whether civil, criminal, administrative or investigative, in which any Partnership Indemnitee may be involved, or is threatened to be involved, as a party or otherwise, by reason of its status as a Partnership Indemnitee; provided that in each case the Partnership Indemnitee acted in good faith and in a manner that such Partnership Indemnitee reasonably believed to be in or not opposed to the best interests of the Partnership and, with respect to any criminal proceeding, had no reasonable cause to believe its conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere, or its equivalent, shall not create an assumption that the Partnership Indemnitee acted in a manner contrary to that specified above. Any indemnification under these provisions will be only out of the assets of the Partnership, and the General Partner shall not be personally liable for, or have any obligation to contribute or lend funds or assets to the Partnership to enable it to effectuate such indemnification. The Partnership is authorized to purchase (or to reimburse the General Partner or its affiliates for the cost of) insurance against liabilities asserted against and expenses incurred by such persons in connection with the Partnership's activities, regardless of whether the Partnership would have the power to indemnify such person against such liabilities under the provisions described above.

Section 18-108 of the Delaware Limited Liability Company Act provides that, subject to such standards and restrictions, if any, as are set forth in its limited liability company agreement, a Delaware limited liability company may, and shall have the power to, indemnify and hold harmless any member or manager or other person from and against any and all claims and demands whatsoever. The limited liability company agreement of the General Partner provides for the indemnification of (i) present or former members of the Board of Directors of the General Partner or any committee thereof, (ii) present or former Member, (iii) present or former officers, employees, partners, agents or trustees of the General Partner or (iv) persons serving at the request of the General Partner in another entity in a similar capacity as that referred to in the immediately preceding clauses (i) or (iii) (each, a "General Partner Indemnitee") to the fullest extent permitted by law, from and against any and all losses, claims, damages, liabilities (joint or several), expenses (including reasonable legal fees and expenses), judgments, fines, penalties, interest, settlements and other amounts arising from any and all claims, demands, actions, suits or proceedings, whether civil, criminal, administrative or investigative, in which any such person may be involved, or is threatened to be involved, as a party or otherwise, by reason of such person's status as a General Partner Indemnitee; provided, that in each case the General Partner Indemnitee acted in good faith and in a manner which such General Partner Indemnitee believed to be in, or not opposed to, the best interests of the General Partner and, with respect to any criminal proceeding, had no reasonable cause to believe such General Partner Indemnitee's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere, or its equivalent, shall not create a presumption that the General Partner Indemnitee acted in a manner contrary to that specified above. Any indemnification pursuant to these provisions shall be made only out of the assets of the General Partner. The General Partner is authorized to purchase and maintain insurance, on behalf of the members of its Board of Directors, its officers and such other persons as the Board of Directors may determine, against any liability that may be asserted against or expense that may be incurred by such person in connection with the activities of the General Partner, regardless of whether the General Partner would have the power to indemnify such person against such liability under the provisions of its limited liability company agreement.

Insofar as indemnification for liabilities arising under the Securities Act, as amended, may be permitted to directors, officers or persons controlling the Partnership or the General Partner as set forth above, the Partnership and the General Partner have been informed that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibit Number	Description
*4.1	DEP Unit Purchase Plan.
*4.2	2010 Duncan Energy Partners L.P. Long-term Incentive Plan.

Exhibit Number	Description
+4.3	Amended and Restated Agreement of Limited Partnership of Duncan Energy Partners L.P., dated February 5, 2007 (incorporated by reference to Exhibit 3.1 to Form 8-K filed February 5, 2007).
+4.4	First Amendment to Amended and Restated Partnership Agreement of Duncan Energy Partners L.P. dated as of December 27, 2007 (incorporated by reference to Exhibit 3.1 to Form 8-K/A filed January 3, 2008).
+4.5	Second Amendment to Amended and Restated Partnership Agreement of Duncan Energy Partners L.P. dated as of November 6, 2008 (incorporated by reference to Exhibit 3.4 to Form 10-Q for the period ended September 30, 2008, filed on November 10, 2008).
+4.6	Third Amendment to Amended and Restated Partnership Agreement of Duncan Energy Partners L.P., dated December 8, 2008 (incorporated by reference to Exhibit 3.1 to Form 8-K filed December 8, 2008).
+4.7	Fourth Amendment to Amended and Restated Partnership Agreement of Duncan Energy Partners L.P., dated as of June 15, 2009 (incorporated by reference to Exhibit 3.1 to Form 8-K filed June 15, 2009).
+4.8	Second Amended and Restated Limited Liability Company Agreement of DEP Holdings, LLC, dated May 3, 2007 (incorporated by reference to Exhibit 3.4 to Form 10-Q for the period ended March 31, 2007, filed on May 4, 2007).
+4.9	First Amendment to the Second Amended and Restated Limited Liability Company Agreement of DEP Holdings, LLC, dated November 6, 2008 (incorporated by reference to Exhibit 3.8 to Form 10-Q for the period ended September 30, 2008, filed on November 10, 2008).
*5.1	Opinion of Andrews Kurth LLP with respect to legality of the securities.
*23.1	Consent of Deloitte & Touche LLP.
*23.2	Consent of Andrews Kurth LLP (included as part of Exhibit 5.1).
*24.1	Power of Attorney (set forth on the signature page of this registration statement).

\+ Incorporated by reference.

* Filed herewith.

Item 9. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

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

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

Provided, however, That paragraphs (a)(1)(i) and (a)(1)(ii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

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

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

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described under Item 6 above, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, State of Texas, on February 11, 2010.

DUNCAN ENERGY PARTNERS L.P.

By: DEP Holdings, LLC, as General Partner

By: /s/ Richard H. Bachmann
Richard H. Bachmann
President and Chief Executive Officer

POWER OF ATTORNEY

The undersigned managers and officers of DEP Holdings, LLC hereby constitute and appoint Richard H. Bachmann and Michael A. Creel, each with full power to act and with full power of substitution and resubstitution, our true and lawful attorneys-in-fact and agents with full power to execute in our name and behalf in the capacities indicated below any and all amendments (including post-effective amendments and amendments thereto) to this registration statement and to file the same, with all exhibits and other documents relating thereto and any registration statement relating to any offering made pursuant to this registration statement that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act with the Securities and Exchange Commission and hereby ratify and confirm all that such attorney-in-fact or his substitute shall lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons on behalf of the registrant in the capacities indicated below on February 11, 2010.

Signature	Title (Position with DEP Holdings, LLC)
/s/ Dan L. Duncan Dan L. Duncan	Director and Chairman
/s/ Richard H. Bachmann Richard H. Bachmann	Director, President and Chief Executive Officer
/s/ W. Randall Fowler W. Randall Fowler	Director, Executive Vice President and Chief Financial Officer
/s/ A.J. Teague A.J. Teague	Director, Executive Vice President and Chief Commercial Officer
/s/ Michael A. Creel Michael A. Creel	Director
/s/ Dr. Ralph S. Cunningham Dr. Ralph S. Cunningham	Director
 Larry J. Casey	Director
 Joe D. Havens	Director
 William A. Bruckmann, III	Director

Signature	Title (Position with DEP Holdings, LLC)
Richard S. Snell	Director
/s/ Michael J. Knesek Michael J. Knesek	Senior Vice President, Controller and Principal Accounting Officer

EXHIBIT INDEX

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+4.4	Amended and Restated Agreement of Limited Partnership of Duncan Energy Partners L.P., dated February 5, 2007 (incorporated by reference to Exhibit 3.1 to Form 8-K filed February 5, 2007).
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\+ Incorporated by reference.

* Filed herewith.

DEP UNIT PURCHASE PLAN

Enterprise Products Company, a Texas corporation (the "Company"), hereby establishes the DEP Unit Purchase Plan (the "Plan") effective as of February 11, 2010.

1. Purpose. The purpose of the Plan is to promote the interests of the Company and Duncan Energy Partners L.P., a Delaware limited partnership (the "Partnership"), by providing employees of the Company and its Affiliates (as defined below) a cost-effective program to enable them to acquire or increase their ownership of Units and to provide a means whereby such individuals may develop a sense of proprietorship and personal involvement in the development and financial success of the Partnership, and to encourage them to devote their best efforts to the business of the Partnership, thereby advancing the interests of the Partnership and the Company.

2. Definitions. As used in this Plan:

"Account" means a separate bookkeeping account maintained by the Employer or Custodian for a Participant.

"Affiliate" means, with respect to any person, any other person that directly or indirectly through one or more intermediaries controls, is controlled by or is under common control with, the person in question. As used herein, the term "control" means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through ownership of voting securities, by contract or otherwise.

"Board" means the Board of Directors of the Company.

"Committee" means a committee appointed by any Chairman, Group Chairman, Co-Chairman, Group Co-Chairman, Vice Chairman or Group Vice Chairman of the Company to administer the Plan.

"Company Blackout Period" means all periods during a year other than each 60-day period beginning on the second business day following a public announcement of the Partnership's financial results.

"Custodian" means the person engaged by the Company to perform administrative services for the Plan and to hold cash and Units, as provided in the services agreement with such person.

"DRIP" means the Duncan Energy Partners L.P. Distribution Reinvestment Plan (after such plan is implemented).

"Eligible Compensation" means, with respect to an Eligible Employee, the sum of the following items of his/her compensation: salary, hourly wages, drivers' regular pay, overtime pay, call-out pay, vacation pay, bonuses, sick pay, funeral pay, jury duty pay, holiday pay, and military or other leave of absence pay. No other items of compensation shall be considered.

"Eligible Employee" means any Employee who is classified by an Employer as a regular, active, full-time employee and whose regularly scheduled work week is at least 30 hours per week, but excluding (i) any such Employee covered by a collective bargaining agreement unless such bargaining agreement provides for his/her participation in the Plan, (ii) any temporary, project or leased employee or any nonresident alien and (iii) any Employee who owns interests or stock, as applicable, possessing 5 percent or more of the total combined voting power or value of all classes of equity interests in either the Partnership, the Company or any other Employer. If, while an Employee is an Eligible Employee, his/her employment status changes to "Inactive" or to "Leave of Absence", the Employee will continue to be deemed an Eligible Employee until a subsequent change of employment status or assignment category results in failure to meet the above eligibility criteria.

"Employee" means any individual who is an employee of the Company or another Employer.

"Employee Discount Amount" means an amount, paid by the Employers each Purchase Period, equal to 10% of the quotient of (x) the total amount withheld from the Participants' Eligible Compensation during such Purchase Period, divided by (y) 0.90.

"Employer" means the Company and any Affiliate the Committee has designated as a participating entity.

"Fair Market Value" means, with respect to Units purchased from the Partnership, the closing sales price of a Unit on the applicable purchase date (or if there is no trading in the Units on such date, on the next preceding date on which there was trading) as reported in The Wall Street Journal (or other reporting service approved by the Committee). In the event Units are not publicly traded at the time a determination of Fair Market Value is required to be made hereunder, the determination of Fair Market Value shall be made in good faith by the Committee.

"Participant" means an Eligible Employee or former Eligible Employee with an Account under the Plan.

"Plan Blackout Period" means a period established by the Committee during which a Restricted Participant may not engage in certain transactions under the Plan.

"Purchase Period" means, beginning February 11, 2010, a three-month period ending on the last day of each January, April, July and October, or such other periods as the Committee may establish.

"Restricted Participant" means an Employee who has the title of vice president or above with the Company or an Affiliate (regardless of where he/she is located) and each other Employee who is a Houston corporate office employee.

"Rule 16b-3" means Rule 16b-3 of the Securities and Exchange Commission (or any successor rule to the same effect) as in effect from time to time.

"Units" mean a limited partnership interest in the Partnership represented by Common Units as set forth in the Partnership Agreement.

3. Units Available Under Plan. Subject to adjustment as provided in this Section 3, a maximum of 500,000 Units may be delivered under the Plan. Units to be delivered under the Plan may be Units acquired by the Custodian in the open market or directly from the Partnership, the Employers or any other person, or any combination of the foregoing. In the event the Committee determines that any distribution, recapitalization, split, reverse split, reorganization, merger, consolidation, spin-off, combination, or exchange of Units or other securities of the Partnership, issuance of warrants or other rights to purchase Units or other securities of the Partnership, or other similar transaction or event affects the Units such that an adjustment in the maximum number of Units and/or the kind and number of securities deliverable under the Plan is appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, then the Committee shall make appropriate adjustments to the maximum number of Units and/or the kind and number of securities deliverable under the Plan. The adjustments determined by the Committee shall be final, binding and conclusive.

4. Employee Elections. An Eligible Employee may purchase Units under this Plan upon the following terms and conditions:

(a) An Eligible Employee may enroll in the Plan on or after the first day of the month following the date on which he/she becomes an Eligible Employee, provided, however, that a person who becomes an Eligible Employee as the result of a business acquisition may enroll in the Plan on or after the date such person becomes an Eligible Employee. An Eligible Employee may elect to have his/her Employer withhold on an after-tax basis from his/her Eligible Compensation for each pay date occurring during a Purchase Period a designated whole percentage of his/her Eligible Compensation for such pay period ranging from 1% to 10% to be used for the purchase of Units hereunder; *provided*, *however*, that if an Eligible Employee has also elected to participate in the Enterprise Unit Purchase Plan (as such plan may be amended, supplemented or succeeded from time to time by any similar unit purchase plan available to employees of the Company), then the amount withheld from his/her Eligible Compensation shall not exceed 15% in the aggregate for both the Enterprise Unit Purchase Plan (as may be so amended, supplemented or succeeded) and this Plan, and the Eligible Employee may not be enrolled nor increase his/her election until such election is adjusted by the Eligible Employee to assure that such aggregate 15% limit is not exceeded. Subject to Section 4(f), an Eligible Employee may cancel or change (within the above limitations) his/her withholding election at any time. All Eligible Employee elections and any changes to an election shall be in such form as the Committee or its delegate may establish from time to time and, subject to Section 4(f), shall be effective as soon as administratively feasible after its receipt.

(b) Subject to Section 4(f), each withholding election made by an Eligible Employee hereunder shall be an ongoing election until the earlier of the date changed by the Eligible Employee, or the date the Eligible Employee ceases to be eligible to participate in the Plan. Eligible Employees may only make contributions through payroll deductions.

(c) The Employer shall maintain or cause to be maintained for each electing Eligible Employee a separate Account reflecting the aggregate amount of his/her Eligible Compensation that has been withheld and the Employee Discount Amount that have not yet been applied to the purchase of Units for such Eligible Employee. In addition, subject to the further provisions of the Plan, such Account shall be credited with the Units purchased for the Participant under the Plan, including any Units purchased on his/her behalf pursuant to the DRIP, if applicable, by the Custodian with cash distributions on Units held for the Participant by the Custodian. Amounts of Eligible Compensation withheld by the Employer shall not be segregated from the general assets of the Employer and shall not bear interest prior to being remitted to the Custodian. The Employer shall remit to the Custodian within a reasonable time after the end of each Purchase Period (i) all amounts of Eligible Compensation that have been withheld by the Employer and (ii) the Employee Discount Amounts that have not previously been remitted to the Custodian. The cash amounts remitted to the Custodian may, subject to the determination of the Committee, be invested by the Custodian as soon as reasonably practical in a money market fund approved by the Company until such amounts are used by the Custodian to purchase Units pursuant to the Plan. The interest or dividends earned, if any, on amounts invested in the money market fund shall be allocated by the Custodian to the Participants.

(d) If a Participant's contributions under the Plan stop during a Purchase Period due to the Participant ceasing to be an Eligible Employee (including upon a termination of employment or death), then all amounts of cash and Units held in his/her Account shall be processed as described in Section 8(b).

(e) If a Participant elects to stop his/her contributions under the Plan during a Purchase Period and continues as an Eligible Employee, then all amounts of cash allocated to his/her Account shall be applied to the purchase of Units on or following the end of that Purchase Period, as provided herein, unless the Participant ceases to be an Eligible Employee before the end of such Purchase Period, in which event Section 4(d) shall be applied to such Participant.

(f) Notwithstanding any provisions of the Plan to the contrary, Restricted Participants shall be subject to the following restrictions:

(i) no Units may be sold by or for the benefit of a Restricted Participant during a Company Blackout Period or a Plan Blackout Period;

(ii) a Restricted Participant may not join the Plan or increase his/her contribution percentage during a Plan Blackout Period; however, a Restricted Participant may join the DRIP during a Company Blackout Period or a Plan Blackout Period; and

(iii) if a Restricted Participant elects to withdraw from the Plan or decrease his/her contribution percentage, the Restricted Participant must wait three months before he/she can rejoin the Plan or increase his/her contribution percentage, as the case may be.

If the above three-month restricted period would expire with respect to a Restricted Participant during a Plan Blackout Period, such restricted period shall automatically continue with respect to such Restricted Participant until the end of that Plan Blackout Period.

5. Unit Purchases; DRIP Purchases; Purchase Price.

(a) As soon as reasonably practical following the end of each Purchase Period that begins on and after February 11, 2010, unless directed otherwise by the Company, the Custodian shall purchase directly from the Partnership that number of Units that can be acquired with the sum of (i) the total amount withheld from the Participants' Eligible Compensation during such Purchase Period, (ii) the Employee Discount Amount for such Purchase Period and (iii) any interest or dividends that may be received by the Custodian from a money market fund investment on the amounts remitted to the Custodian with respect to that Purchase Period. The purchase price paid to the Partnership for such Units shall be the Fair Market Value of the Units. If the Custodian is directed to purchase Units in the open market, the price of the Units allocated to each affected Participant for a Purchase Period shall be based on the weighted average of the purchase prices actually paid for the Units acquired for such Purchase Period.

(b) Cash distributions received by the Custodian with respect to Units it has purchased and is holding for a Participant pursuant to the Plan on or prior to the record date for such distributions shall be distributed to the Participant as soon as practicable unless the Participant directs the Custodian, in the manner prescribed by the Custodian, to "reinvest" such cash distribution in additional Units on behalf of such Participant pursuant to the DRIP. The price at which such cash distributions shall be reinvested shall be the price described in the DRIP.

6. Unit Purchase Allocations. The Units acquired under the Plan for a Purchase Period shall be allocated to Participants in proportion to (i) the sum of their contributions, the allocable Employee Discount Amount, and any interest or dividends credited to their Account for such Purchase Period, over (ii) the total of all such Plan amounts applied to the purchase of Units for the Purchase Period.

7. Plan Expenses. The Employer shall pay, other than from the Accounts, all brokerage fees for the purchase, but not the sale, of Units and all other costs and expenses of administering the Plan, including the fees of the Custodian. Any fees for the issuance and delivery of certificates to a Participant (or beneficiary) shall be paid by the Participant (or beneficiary). Participants shall be responsible for, and shall pay, any brokerage fees and other costs and expenses incurred by the Custodian in connection with the sale of such Participant's Units and the expedited delivery of proceeds or other documents to such Participant.

8. Sale or Delivery of Units to Participants. Except as provided below, Units purchased under the Plan shall be held by the Custodian:

(a) Subject to Section 4(f), a Participant who is an Employee may elect at any time to have the Custodian (i) sell such Units and deliver the proceeds to the

Participant, (ii) transfer the Units to a brokerage account, or (iii) transfer the Units to a registered book-entry shareholder account with BNYMellon Shareowner Services LLC, the Partnership's transfer agent, all as soon as practical.

(b) Subject to Section 4(f), if a Participant ceases to be an Eligible Employee, then as soon as administratively feasible, all Units allocated to his/her Account shall automatically be transferred to a registered book-entry shareholder account in his/her name (or his/her beneficiary's name) with BNYMellon Shareowner Services LLC unless the Participant (or his/her beneficiary) elects, within the period provided by the Committee, for such Units to be either (i) sold by the Custodian and the proceeds delivered to the Participant (or his/her beneficiary) or (ii) transferred to a brokerage account. However, in all events, fractional Units shall be sold and the proceeds, along with any other cash in his/her account, shall be distributed to the Participant (or his/her beneficiary). If a Purchase Date is imminent and it is not administratively feasible to distribute the cash in the Account before such Purchase Date, then the cash shall be used to purchase Units, and the Units shall subsequently be transferred or sold as described above.

9. No Delivery of Fractional Units; Custodian. Notwithstanding any other provision contained herein, the Employer or Custodian will not be required to deliver any fractional Units to an Employee pursuant to this Plan, although an Employee's Account may be credited with a fractional Unit for record keeping purposes. The Company may enter into a service agreement with a Custodian that provides for the Custodian to hold on behalf of the Participants the cash contributions, the Units acquired under the Plan and distributions on such Units, provided such agreement permits a Participant to direct the Custodian to either sell or transfer such Units to a brokerage account, subject to the limitations in Section 4(f).

10. Withholding of Taxes. To the extent that the Employer is required to withhold any taxes in connection with an Eligible Employee's contributions or the Employee Discount Amount, it will be a condition to the receipt of such Units that the Eligible Employee make arrangements satisfactory to the Employer for the payment of such taxes, which may include a reduction in, or a withholding from, the Eligible Employee's Account, total compensation or salary or reimbursement by the Eligible Employee, as the case may be.

11. Rule 16b-3 Compliance. It is intended that any purchases by an Employee subject to Section 16 of the Securities and Exchange Act of 1934 meet all of the requirements of Rule 16b-3. If any action or procedure under the Plan would otherwise not comply with Rule 16b-3, such action or procedure shall be deemed modified from inception, to the extent the Committee deems practicable, to conform to Rule 16b-3.

12. Investment Representation. Unless the Units subject to purchase under the Plan have been registered under the Securities Act of 1933, as amended (the "1933 Act"), and, in the case of any Eligible Employee who may be deemed an affiliate (for securities law purposes) of the Company or the Partnership, such Units have been registered under the 1933 Act for resale by such Participant, or the Partnership has determined that an exemption from registration is available, the Employer may require prior to and as a condition of the delivery of any Units that the person purchasing such Units hereunder furnish the Employer with a written representation

in a form prescribed by the Committee to the effect that such person is acquiring such Units solely with a view to investment for his or her own account and not with a view to the resale or distribution of all or any part thereof, and that such person will not dispose of any of such Units otherwise than in accordance with the provisions of Rule 144 under the 1933 Act unless and until either the Units are registered under the 1933 Act or the Employer is satisfied that an exemption from such registration is available.

13. Compliance with Securities Laws. Notwithstanding anything herein or in any other agreement to the contrary, the Partnership shall not be obligated to sell or issue any Units to an Employee under the Plan unless and until the Partnership is satisfied that such sale or issuance complies with (i) all applicable requirements of the securities exchange on which the Units are traded (or the governing body of the principal market in which such Units are traded, if such Units are not then listed on an exchange), (ii) all applicable provisions of the 1933 Act, and (iii) all other laws or regulations by which the Partnership is bound or to which the Partnership is subject. The Company acknowledges that, as the holder of a majority of the member interest in the general partner of the Partnership, it is an affiliate of the Partnership under securities laws and it shall comply with such laws and obligations of the Partnership relating thereto as if they were directly applicable to the Company.

14. Administration of the Plan.

(a) This Plan will be administered by the Committee. A majority of the Committee will constitute a quorum, and the action of the members of the Committee present at any meeting at which a quorum is present, or acts approved in writing by a majority of the Committee members, will be the acts of the Committee.

(b) Subject to the terms of the Plan and applicable law, the Committee shall have the sole power, authority and discretion to: (i) determine which persons are Eligible Employees who may participate; (ii) determine the number of Units to be purchased by a Participant; (iii) determine the time and manner for purchasing Units; (iv) interpret, construe and administer the Plan, including without limitation determining the Blackout Periods and which Participants are Restricted Participants; (v) establish, amend, suspend, or waive such rules and regulations and appoint such agents as it shall deem appropriate for the proper administration of the Plan; (vi) make a determination as to the right of any person to receive Units under the Plan; and (vii) make any other determinations and take any other actions that the Committee deems necessary or desirable for the administration of the Plan.

(c) The Committee may correct any defect, supply any omission, or reconcile any inconsistency in the Plan in the manner and to the extent it shall deem desirable in the establishment or administration of the Plan.

(d) No member of the Committee shall be liable for any action, omission, determination or interpretation made in good faith, and the Company and the Partnership shall, in addition to any other rights of such persons, hold harmless such persons with respect to any such action, omission, determination or interpretation.

15. Amendments, Termination, Etc.

(a) This Plan may be amended from time to time by the Board, or any Chairman, Group Chairman, Co-Chairman, Group Co-Chairman, Vice Chairman or Group Vice Chairman of the Company, subject to unitholder approval to the extent required by applicable law or the requirements of the principal exchange in which the Units are listed. In addition, the Chief Executive Officer, the President or the Senior Vice President of Human Resources of the Company may, subject to unitholder approval to the extent required by applicable law or the requirements of the principal exchange in which the Units are listed, and after consultation with the Company's General Counsel, Chief Legal Officer or Deputy or Assistant General Counsel with respect to such matters, make any amendments to the Plan that do not (i) increase the number of authorized Units, (ii) increase the Employee Discount Amount or (iii) otherwise materially increase the Company's or the Partnership's obligations under the Plan; *provided*, the failure of any such authorized officer to make such consultation shall not affect the validity of any such amendments to the Plan.

(b) This Plan will not confer upon any Employee any right with respect to continuance of employment or other service with the Company or any Affiliate, nor will it interfere in any way with any right the Company or an Affiliate would otherwise have to terminate such Employee's employment or other service at any time.

(c) This Plan may be suspended or terminated at any time by the Board, or any Chairman, Group Chairman, Co-Chairman, Group Co-Chairman, Vice Chairman or Group Vice Chairman of the Company. On termination of the Plan, all amounts then remaining credited to the Accounts for Employees shall be returned to the affected Employees.

(d) A Participant may not assign, pledge, encumber or hypothecate in any manner his/her interest in the Plan, including his/her Account.

16. Governing Law. The validity, construction and effect of the Plan and any rules and regulations relating to the Plan shall be determined in accordance with applicable Federal law, and to the extent not preempted thereby, with the laws of the State of Delaware.

17. Term of the Plan; Unitholder Approval. The Plan shall continue until the earliest of (i) all available Units under the Plan have been delivered to Participants, (ii) the termination of the Plan by action of the Board, or any Chairman, Group Chairman, Co-Chairman, Group Co-Chairman, Vice Chairman or Group Vice Chairman of the Company or (iii) the 10th anniversary of the date of the initial approval of this Plan by the unitholders of the Partnership.

2010 DUNCAN ENERGY PARTNERS L.P. LONG-TERM INCENTIVE PLAN

(February 11, 2010)

Section 1. Purpose of the Plan. The 2010 Duncan Energy Partners L.P. Long-Term Incentive Plan, as established hereby (the "Plan"), has been adopted by the Board of DEP Holdings, LLC, the general partner of the Partnership (the "General Partner"), and is intended to promote the interests of Enterprise Products Company, a Texas corporation formerly named EPCO, Inc. (the "Company"), Duncan Energy Partners L.P., a Delaware limited partnership (the "Partnership"), and the General Partner, by encouraging directors, employees and consultants of the Company and employees and consultants of its Affiliates who perform services for or on behalf of the Partnership or its subsidiaries to acquire or increase their equity interests in the Partnership and to provide a means whereby they may develop a sense of proprietorship and personal involvement in the development and financial success of the Partnership, and to encourage them to remain with the Company and its Affiliates and to devote their best efforts to the Company, the General Partner and the Partnership.

Section 2 . Definitions. As used in the Plan, the following terms shall have the meanings set forth below:

"*Affiliate*" means, with respect to any Person, any other Person that, directly or indirectly, through one or more intermediaries controls, is controlled by or is under common control with, the Person in question. As used herein, the term "control" means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through ownership of voting securities, by contract or otherwise.

"*Award*" means an Option, Common Unit Appreciation Right, a Restricted Unit, a Phantom Unit or DER granted under the Plan.

"*Award Agreement*" means the written agreement or other instrument by which an Award shall be evidenced.

"*Board*" means the Board of Directors of the Company.

"*Code*" means the Internal Revenue Code of 1986, as amended.

"*Committee*" means the Audit, Conflicts and Governance Committee of the Board of Directors of the General Partner or such other committee of the Board of Directors of the General Partner as may be appointed to administer the Plan, provided that the Audit, Conflicts and Governance Committee or any such other committee constituting the Committee shall be composed solely of two or more Non-Employee Directors (as defined in Rule 16b-3).

"*Common Unit*" means a Common Unit of the Partnership.

"Common Unit Appreciation Right" or "CUAR" means an Award that, upon exercise, entitles the holder to receive the excess, or such designated portion of the excess not to exceed 100%, of the Fair Market Value of a Common Unit on the exercise date over the grant price established for such Common Unit Appreciation Right. Such excess may be paid in cash and/or in Common Units as determined by the Committee in its discretion and set forth in the Award Agreement.

"*Consultant*" means an individual, other than an Employee or a Director, providing bona fide services to the Partnership or any of its subsidiaries as a consultant or advisor, as applicable, provided that (i) such individual is a natural person, and (ii) the grant of an Award to such Person could not reasonably be expected to result in adverse federal income tax consequences under Section 409A of the Code; *provided* that for purposes of issuing Options or Common Unit Appreciation Rights, "subsidiary" means any entity in a chain of entities in which the Partnership has a "controlling interest" within the meaning of Treas. Reg. Section 1.414(c)-2(b)(2)(i), but using the threshold of 50 percent ownership wherever 80 percent appears.

"DER" means a contingent right to receive an amount of cash equal to all or a designated portion (whether by formula or otherwise) of the cash distributions made by the Partnership with respect to a Common Unit during a specified period.

"Director" means a "non-employee director," as defined in Rule 16b-3, of the Board of Directors of the General Partner.

"*Employee*" means any employee of the Company or an Affiliate who performs services for or on behalf of the Partnership or its subsidiaries; *provided* that for purposes of issuing Options or Common Unit Appreciation Rights, "subsidiary" means any entity in a chain of entities in which the Partnership has a "controlling interest" within the meaning of Treas. Reg. Section 1.414(c)-2(b)(2)(i), but using the threshold of 50 percent ownership wherever 80 percent appears.

"*Exchange Act*" means the Securities Exchange Act of 1934, as amended.

"*Fair Market Value*" of a Common Unit means the closing sales price of a Common Unit on the principal national securities exchange or other market in which trading in Common Units occurs on the applicable date (or if there is no trading in the Common Units on such date, on the next preceding date on which there was trading) as reported in The Wall Street Journal (or other reporting service approved by the Committee). In the event Common Units are not publicly traded on a national securities exchange or other market at the time a determination of Fair Market Value is required to be made hereunder, the determination of Fair Market Value shall be made in good faith by the Committee.

"*Option*" means an option to purchase Common Units granted under the Plan.

"*Participant*" means any Employee, Director or Consultant granted an Award under the Plan.

"*Person*" means any individual, corporation, limited liability company, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, government or political subdivision thereof or other entity.

"*Phantom Unit*" means a notional or phantom unit granted under the Plan which upon vesting entitles the holder to receive an amount of cash equal to the Fair Market Value of one Common Unit or, in the discretion of the Committee, one Common Unit.

"*Restricted Unit*" means a Common Unit granted under the Plan that is subject to forfeiture provisions and restrictions on its transferability.

"*Rule 16b-3*" means Rule 16b-3 promulgated by the SEC under the Exchange Act, or any successor rule or regulation thereto as in effect from time to time.

"*SEC*" means the Securities and Exchange Commission, or any successor thereto.

Section 3. Administration.

(a) *General*. The Plan shall be administered by the Committee. A majority of the Committee shall constitute a quorum, and the acts of the members of the Committee who are present at any meeting thereof at which a quorum is present, or acts unanimously approved by the members of the Committee in writing, shall be the acts of the Committee. Subject to the terms of the Plan and applicable law, and in addition to other express powers and authorizations conferred on the Committee by the Plan, the Committee shall have full power and authority to: (i) designate Participants; (ii) determine the type or types of Awards to be granted to a Participant; (iii) determine the number of Common Units to be covered by Awards; (iv) determine the terms and conditions of any Award (including but not limited to any performance requirements for such Award); (v) determine whether, to what extent, and under what circumstances Awards may be settled, exercised, canceled, or forfeited; (vi) interpret and administer the Plan and any instrument or agreement relating to an Award made under the Plan; (vii) establish, amend, suspend, or waive such rules and regulations and appoint such agents as it shall deem appropriate for the proper administration of the Plan; and (viii) make any other determination and take any other action that the Committee deems necessary or desirable for the administration of the Plan. Unless otherwise expressly provided in the Plan, all designations, determinations, interpretations, and other decisions under or with respect to the Plan or any Award shall be within the sole discretion of the Committee, may be made at any time and shall be final, conclusive, and binding upon all Persons, including the Company, the Partnership, any Affiliate, any Participant, and any beneficiary thereof.

(b) *Delegation; Limitation on Liability*. The Committee may delegate to any employees of the Company its administrative duties under this Plan (excluding its granting authority) pursuant to conditions or limitations as the Committee may establish. The Committee may also engage or authorize the engagement of a third-party administrator to carry out administrative functions under the Plan. No member of the Committee, nor any employee of the Company to whom the Committee has delegated powers in accordance with Section 3 of the

Plan, shall be liable for any action, omission, determination or interpretation made in good faith in connection with the performance of duties under the Plan, and the Company, the General Partner and the Partnership shall, in addition to any other rights of such persons, hold harmless such persons with respect to any such action, omission, determination or interpretation.

Section 4. Common Units Available for Awards.

(a) *Common Units Available.* Subject to adjustment as provided in Section 4(c), the maximum number of Common Units with respect to which Awards may be granted under the Plan is 500,000. Notwithstanding the foregoing, there shall not be any limitation on the number of Awards that may be granted under the Plan that are payable solely in cash. To the extent an Award is forfeited or otherwise terminates or is canceled without the delivery of Common Units, then the Common Units covered by such Award, to the extent of such forfeiture, termination or cancellation, shall again be Common Units with respect to which Awards may be granted. If any Award is exercised and less than all of the Common Units covered by such Award are delivered in connection with such exercise, then the Common Units covered by such Award which were not delivered upon such exercise shall again be Common Units with respect to which Awards may be granted. Common Units withheld to satisfy tax withholding obligations of the Company or an Affiliate shall not be considered to have been delivered under the Plan for this purpose. The Committee may from time to time adopt and observe such rules and procedures concerning the counting of Common Units against the Plan maximum or any sublimit as it may deem appropriate, including rules more restrictive than those set forth above to the extent necessary to satisfy the requirements of any national securities exchange on which the Common Units are listed or any applicable regulatory requirement. The Board, the Committee and the appropriate officers of the Company are authorized to take from time to time whatever actions are necessary, and to file any required documents with governmental authorities, stock exchanges and transaction reporting systems to ensure that Common Units are available for issuance pursuant to Awards.

(b) *Sources of Common Units Deliverable Under Awards.* Any Common Units delivered pursuant to an Award shall consist, in whole or in part, of Common Units acquired in the open market, Common Units acquired from any Affiliate (including, without limitation, the Partnership) or other Person, or any combination of the foregoing, as determined by the Committee in its discretion. If, at the time of exercise by a Participant of all or a portion of such Participant's Award, the Company determines to acquire Common Units in the open market and the Company is prohibited, under applicable law, or the rules and/or regulations promulgated by the Securities and Exchange Committee or the New York Stock Exchange or the policies of the Company or an Affiliate, from acquiring Common Units in the open market, delivery of any Common Units to the Participant in connection with such Participant's exercise of an Award may be delayed until such reasonable time as the Company is entitled to acquire, and does acquire, Common Units in the open market.

(c) *Adjustments.* In the event the Committee determines that any distribution (whether in the form of cash, Common Units, other securities, or other property), recapitalization, split, reverse split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase, or exchange of Common Units or other securities of the Partnership, issuance of warrants or other rights to purchase Common Units or other securities of the Partnership, or other similar transaction or event affects the Common Units such that an adjustment is determined by the Committee to be appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan, then the Committee shall, in such manner as it may deem equitable, adjust any or all of (i) the number and type of Common Units (or other securities or property) with respect to which Awards may be granted, (ii) the number and type of Common Units (or other securities or property) subject to outstanding Awards, and (iii) the grant or exercise price with respect to any Award, or make provision for a cash payment to the holder of an outstanding Award; provided, that the number of Common Units subject to any Award shall always be a whole number and provided further, that the Committee shall not take any action otherwise authorized under this subparagraph (c) to the extent that such action would cause (i) the application of Section 409A of the Code to the Award or (ii) create adverse tax consequences under Section 409A of the Code should that Code section apply to the Award.

Section 5. Eligibility. Any Employee, Director or Consultant shall be eligible to be designated a Participant.

Section 6. Awards.

(a) *Options.* The Committee shall have the authority to determine the Employees, Directors and Consultants to whom Options shall be granted, the number of Common Units to be covered by each Option, whether DERs are granted with respect to such Option, the exercise price therefor and the conditions and limitations applicable to the exercise of the Option, including the following terms and conditions and such additional terms and conditions, as the Committee shall determine, that are not inconsistent with the provisions or intent of the Plan.

(i) *Exercise Price.* The purchase price per Common Unit purchasable under an Option shall be determined by the Committee at the time the Option is granted, but may not be less than 100% of the Fair Market Value per Common Unit as of the date of grant.

(ii) *Time and Method of Exercise.* The Committee shall determine the time or times at which an Option may be exercised in whole or in part, which may include, without limitation, accelerated vesting upon the achievement of specified performance goals, and the method or methods by which any payment of the exercise price with respect thereto may be made or deemed to have been made, which may include, without limitation: cash; check acceptable to the Company; a "cashless-broker" exercise (through procedures approved by the Company); other property (including, with the consent of the Committee, the withholding of Common Units that may otherwise be delivered to the optionee upon the exercise of the Option); or any combination thereof, in each case having a value on the exercise date equal to the relevant exercise price.

(iii) *Term.* Each Option shall expire as provided in the Award Agreement for such Option.

(b) *Restricted Units.* The Committee shall have the authority to determine the Employees, Directors and Consultants to whom Restricted Units shall be granted, the number of Restricted Units to be granted to each such Participant, the period and the conditions under which the Restricted Units may become vested or forfeited, which may include, without limitation, the accelerated vesting upon the achievement of specified performance goals or other criteria, and such other terms and conditions as the Committee may establish with respect to such Award, including whether any distributions made by the Partnership with respect to the Restricted Units shall be payable with respect to, and/or accrue on, such Restricted Units and, if payable and/or accrued, whether such distributions shall be subject to forfeiture and/or other restrictions. If distributions are to be forfeited and/or otherwise restricted, such restrictions (including forfeitures, if any) shall be determined in the sole discretion of the Committee.

(c) *Phantom Units.* The Committee shall have the authority to determine the Employees, Directors and Consultants to whom Phantom Units shall be granted, the number of Phantom Units to be granted to each such Participant, the period during which the Award remains subject to forfeiture, the time or conditions under which the Phantom Units may become vested or forfeited, which may include, without limitation, the accelerated vesting upon the achievement of specified performance goals, and such other terms and conditions as the Committee may establish with respect to such Award, including whether DERs are granted with respect to such Phantom Units. Unless otherwise provided in the applicable Award Agreement, upon, or as soon as reasonably practical following, the vesting of each Phantom Unit, the Participant shall be entitled to receive payment therefore in a single lump sum no later than the fifteenth (15th) day of the third (3rd) month following the date on which vesting occurs and the restrictions lapse. Should the Participant die before receiving all amounts payable hereunder, the balance shall be paid to the Participant's estate by this date.

(d) *DERs.* The Committee shall have the authority to determine the Employees, Directors and Consultants to whom DERs shall be granted, whether such DERs are tandem or separate Awards, the number of DERs to be granted to each such Participant, the period during which the Award remains subject to forfeiture, the limits, if any, or portion of a DER that is payable, the conditions under which the DERs may become vested or forfeited, and such other terms and conditions as the Committee may establish with respect to such Award. To the extent DERs are subject to any payment restrictions, any amounts not previously paid shall be paid to the Participant at the time the payment restrictions lapse. Unless otherwise provided in the applicable Award Agreement, such amounts shall be distributed in a single lump sum no later than the fifteenth (15th) day of the third (3rd) month following the date on which the payment restrictions lapse. Should the Participant die before receiving all amounts payable thereunder, the balance shall be paid to the Participant's estate by this date.

(e) *CUARs.* The Committee shall have the authority to determine the Employees, Directors and Consultants to whom CUARs shall be granted, the number of Common Units to be covered by each grant, the exercise price therefor and the conditions and limitations applicable to the exercise of the CUAR, and such additional terms and conditions as the Committee may establish with respect to such Award. The exercise price per CUAR shall be not less than 100% of its Fair Market Value as of the date of grant. The term of a CUAR may not exceed 10 years.

(f) *General*.

(i) *Awards May Be Granted Separately or Together.* Awards may, in the discretion of the Committee, be granted either alone or in addition to, in tandem with, or in substitution for any other Award granted under the Plan or any award granted under any other plan of the Company or any Affiliate. No Award shall be issued in tandem with another Award if the tandem Awards would result in adverse tax consequences under Section 409A of the Code. Awards granted in addition to or in tandem with other Awards or awards granted under any other plan of the Company or any Affiliate may be granted either at the same time as or at a different time from the grant of such other Awards or awards.

(ii) *Limits on Transfer of Awards*.

A. Each Option shall be exercisable only by the Participant during the Participant's lifetime, or by the person to whom the Participant's rights shall pass by will or the laws of descent and distribution.

B. No Award and no right under any such Award may be assigned, alienated, pledged, attached, sold or otherwise transferred or encumbered by a Participant otherwise than by will or by the laws of descent and distribution and any such purported assignment, alienation, pledge, attachment, sale, transfer or encumbrance shall be void and unenforceable against the Company or any Affiliate. Notwithstanding the foregoing, to the extent specifically provided by the Committee with respect to an Award, an Award may be transferred by a Participant without consideration to immediate family members or related family trusts, limited partnerships or similar entities or on such terms and conditions as the Committee may from time to time establish.

(iii) *Securities Regulations.* All certificates for Common Units or other securities of the Partnership delivered under the Plan pursuant to any Award or the exercise thereof shall be subject to such stop transfer orders and other restrictions as the Committee may deem advisable under the Plan or the rules, regulations, and other requirements of the SEC, any stock exchange upon which such Common Units or other securities are then listed, and any applicable federal or state laws, and the Committee may cause a legend or legends to be put on any such certificates to make appropriate reference to such restrictions.

(iv) *Consideration for Grants.* Awards may be granted for no cash consideration payable by a Participant or for such consideration payable by a Participant as the Committee determines including, without limitation, services or such minimal cash consideration as may be required by applicable law.

(v) *Delivery of Common Units or other Securities and Payment by Participant of Consideration.* Notwithstanding anything in the Plan or any Award Agreement to the contrary, delivery of Common Units pursuant to the exercise or vesting of an Award may be deferred for any period during which, in the good faith determination of the Committee, the Company is not reasonably able to obtain Common Units to deliver pursuant to such Award without violating the rules or regulations of any applicable law or securities exchange. No Common Units or other securities shall be delivered pursuant to any Award until payment in full of any amount required to be paid pursuant to the Plan or the applicable Award Agreement (including, without limitation, any exercise price or required tax withholding) is received by the Company. Such payment may be made by such method or methods and in such form or forms as the Committee shall determine, including, without limitation, cash, withholding of Common Units, "cashless-broker" exercises with simultaneous sale, or any combination thereof; provided that the combined value, as determined by the Committee, of all cash and cash equivalents and the fair market value of any such property so tendered to, or withheld by, the Company, as of the date of such tender, is at

least equal to the full amount required to be paid to the Company pursuant to the Plan or the applicable Award Agreement.

Section 7. Amendment and Termination. Except to the extent prohibited by applicable law and unless otherwise expressly provided in an Award Agreement or in the Plan:

(a) *Amendments to the Plan.* Except as required by applicable law or the rules of the principal securities exchange on which the Common Units are traded and subject to Section 7(b) below, the Board or the Committee may amend, alter, suspend, discontinue, or terminate the Plan in any manner, including increasing the number of Common Units available for Awards under the Plan, without the consent of any partner, Participant, other holder or beneficiary of an Award, or other Person.

(b) *Amendments to Awards.* The Committee may, in its discretion, waive any conditions or rights under, amend any terms of, or alter any Award theretofore granted, provided no change, other than pursuant to Section 7(c), in any Award shall materially reduce the benefit to Participant without the consent of such Participant.

(c) *Adjustment or Termination of Awards Upon the Occurrence of Certain Events.* The Committee is hereby authorized to make adjustments in the terms and conditions of, and the criteria (if any) included in, Awards in recognition of unusual or significant events (including, without limitation, the events described in Section 4(c) of the Plan) affecting the Partnership or the financial statements of the Partnership, of changes in applicable laws, regulations or accounting principles, or a change in control of the Company (as determined by its Board) or the Partnership (as determined by the Committee), whenever the Committee determines that such adjustments are appropriate in order to prevent dilution or enlargement of the benefits or potential benefits intended to be made available under the Plan. Such adjustments may include, without limitation, extending the exercisability of an Award, accelerating the vesting or exercisability of an Award, accelerating the date on which the Award will terminate and/or canceling Awards by the issuance or transfer of Common Units having a value equal to the Option's positive "spread."

Section 8. General Provisions.

(a) *No Rights to Awards.* No Person shall have any claim to be granted any Award, and there is no obligation for uniformity of treatment of Participants. The terms and conditions of Awards need not be the same with respect to each recipient.

(b) *Termination of Employment.* For purposes of the Plan, unless the Award Agreement provides to the contrary, a Participant shall not be deemed to have terminated employment with the Company and its Affiliates or membership from the Board until such date as the Participant is no longer either an Employee of the Company or an Affiliate or a Director, i.e., a change in status from Employee to Director or Director to Employee shall not be a termination.

(c) *No Right to Employment or Services.* The grant of an Award shall not be construed as giving a Participant the right to be retained in the employ of the Company or any Affiliate, to continue services as a Consultant or to remain a Director, as applicable. Further, the Company or an Affiliate may at any time dismiss a Participant from employment or terminate a consulting relationship, free from any liability or any claim under the Plan, unless otherwise expressly provided in the Plan or in any Award Agreement. Nothing in the Plan or any Award Agreement shall operate or be construed as constituting an employment agreement with any Participant and each Employee shall be an "at will" employee, unless such Employee has entered into a separate written employment or other agreement with the Company or an Affiliate.

(d) *Governing Law.* The validity, construction, and effect of the Plan and any rules and regulations relating to the Plan shall be determined in accordance with the laws of the State of Delaware and applicable federal law, without giving effect to principles of conflicts of law.

(e) *Severability.* If any provision of the Plan or any Award is or becomes or is deemed to be invalid, illegal, or unenforceable in any jurisdiction or as to any Person or Award, or would disqualify the Plan or any Award

under any law deemed applicable by the Committee, such provision shall be construed or deemed amended to conform to the applicable laws, or if it cannot be construed or deemed amended without, in the determination of the Committee, materially altering the intent of the Plan or the Award, such provision shall be stricken as to such jurisdiction, Person or Award and the remainder of the Plan and any such Award shall remain in full force and effect.

(f) *Other Laws.* The Committee may refuse to issue or transfer any Common Units or other consideration under an Award if, in its sole discretion, it determines that the issuance or transfer or such Common Units or such other consideration might violate any applicable law or regulation, the rules of the principal securities exchange on which the Common Units are then traded, or entitle the Partnership or an Affiliate to recover the same under Section 16(b) of the Exchange Act, and any payment tendered to the Company by a Participant, other holder or beneficiary in connection with the exercise of such Award shall be promptly refunded to the relevant Participant, holder or beneficiary.

(g) *No Trust Fund Created; Unsecured Creditors.* Neither the Plan nor any Award shall create or be construed to create a trust or separate fund of any kind or a fiduciary relationship between the Company, the Partnership or any Affiliate and a Participant or any other Person. To the extent that any Person acquires a right to receive payments from the Company, the Partnership or any Affiliate pursuant to an Award, such right shall be no greater than the right of any general unsecured creditor of the Company, the Partnership or the Affiliate.

(h) *No Fractional Common Units.* No fractional Common Units shall be issued or delivered pursuant to the Plan or any Award, and any such fractional Common Units or any rights thereto shall be canceled, terminated, or otherwise eliminated, without the payment of any consideration therefor.

(i) *Headings.* Headings are given to the Sections and subsections of the Plan solely as a convenience to facilitate reference. Such headings shall not be deemed in any way material or relevant to the construction or interpretation of the Plan or any provision thereof.

(j) *Tax Withholding.* The Company or any Affiliate is authorized to withhold from any Award, from any payment due or transfer made under any Award or from any compensation or other amount owing to a Participant the amount (in cash, Common Units, other securities or other property) of any applicable taxes payable in respect of the grant of an Award, its exercise, the lapse of restrictions thereon, or any payment or transfer under an Award or under the Plan and to take such other action as may be necessary in the opinion of the Company or the Affiliate to satisfy its withholding obligations for the payment of such taxes.

(k) *Facility Payment.* Any amounts payable hereunder to any person under legal disability or who, in the judgment of the Committee, is unable to properly manage his financial affairs, may be paid to the legal representative of such person, or may be applied for the benefit of such person in any manner which the Committee may select, and the Company and its Affiliates shall be relieved of any further liability for payment of such amounts.

(l) *Participation by Affiliates.* In making Awards to Employees employed by an Affiliate of the Company, the Committee shall be acting on behalf of the Affiliate, and to the extent the Partnership has an obligation to reimburse the Affiliate for compensation paid to Employees for services rendered for the benefit of the Partnership, such payments or reimbursement payments may be made by the Partnership directly to the Affiliate, and, if made to the Company, shall be received by the Company as agent for the Affiliate.

(m) *No Guarantee of Tax Consequences*. None of the Board, the Partnership, the Company, any Affiliate nor the Committee makes any commitment or guarantee that any federal, state or local tax treatment will apply or be available to any person participating or eligible to participate hereunder.

Section 9. Term of the Plan; Unitholder Approval. The Plan shall be effective on the date of its approval by the holders of Common Units of the Partnership and shall continue until the earliest of (i) all available Common Units under the Plan have been issued to Participants, (ii) the termination of the Plan by action of the Board or the Committee or (iii) the 10th anniversary of the date of the approval by the holders of Common Units of this Plan (or such earlier anniversary, if any, required by the rules of the securities exchange on which the Common Units are

traded). However, unless otherwise expressly provided in the Plan or in an applicable Award Agreement, any Award granted prior to such termination, and the authority of the Board or the Committee to amend, alter, adjust, suspend, discontinue, or terminate any such Award or to waive any conditions or rights under such Award, shall extend beyond such termination date.

Section 10. Section 409A. Notwithstanding anything in this Plan to the contrary, if any Plan provision or Award under the Plan would result in the imposition of an additional tax under Code Section 409A and related regulations and United States Department of the Treasury pronouncements ("Section 409A"), that Plan provision or Award will be reformed to the extent practicable to avoid imposition of the applicable tax and no action taken to comply with Section 409A shall be deemed to adversely affect the Participant's rights to an Award or require the consent of the Participant. Notwithstanding any provisions in the Plan to the contrary, to the extent that the Participant is a "specified employee" (as defined in Section 409A of the Code and applicable regulatory guidance) subject to the six month delay under Section 409A in distributions under the Plan, no distribution or payment that is subject to Section 409A of the Code shall be made hereunder on account of such Participant's "separation from service" (as defined in Section 409A of the Code and applicable regulatory guidance) before the date that is the first day of the month that occurs six months after the date of the Participant's separation from service (or, if earlier, the date of death of the Participant or any other date permitted under Section 409A of the Code and applicable regulatory guidance). Any such amount that is otherwise payable within the six-month period following the Participant's separation from service will be paid in a lump sum without interest.

* * * * *

Adopted by unitholder approval: effective February 11, 2010.

ANDREWS
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EXHIBIT 5.1

February 11, 2010

Duncan Energy Partners L.P.
1100 Louisiana, 10th Floor
Houston, Texas 77002

Ladies and Gentlemen:

We have acted as special counsel to Duncan Energy Partners L.P., a Delaware limited partnership (the "*Partnership*"), in connection with the registration of (i) the sale of up to 500,000 common units (the "*UPP Units*") representing limited partner interests in the Partnership (the "*Common Units*") which may be issued pursuant to the DEP Unit Purchase Plan (the "*UPP*"), and (ii) the sale of up to 500,000 Common Units (the "*LTIP Units*" and, together with the UPP Units, the "*Units*") which may be issued pursuant to the 2010 Duncan Energy Partners L.P. Long-term Incentive Plan (the "*LTIP*" and, together with the UPP, the "*Plans*"), pursuant to the Partnership's registration statement on Form S-8 filed on the date hereof by the Partnership (the "*Registration Statement*") with the Securities and Exchange Commission (the "*Commission*") under the Securities Act of 1933, as amended (the "*Securities Act*").

As the basis for the opinion hereinafter expressed, we have examined and relied on originals or copies, certified or otherwise identified to our satisfaction, of the following: (i) the Certificate of Limited Partnership of the Partnership; (ii) the Amended and Restated Agreement of Limited Partnership of the Partnership, dated February 5, 2007, as amended (the "*Partnership Agreement*"); (iii) the Certificate of Formation of DEP Holdings, LLC, the general partner of the Partnership (the "*General Partner*"); (iv) the Second Amended and Restated Limited Liability Company Agreement of DEP Holdings, LLC, dated May 3, 2007, as amended (the "*LLC Agreement*"); (v) the Plans; (vi) the Registration Statement; and (vii) such other instruments and other certificates of public officials, officers and representatives of the Partnership and such other persons as we have deemed appropriate as a basis for the opinions set forth herein.

In rendering the opinions expressed below, we have assumed and have not verified (i) the genuineness of the signatures on all documents that we have examined, (ii) the legal capacity of all natural persons, (iii) the authenticity of all documents supplied to us as originals and (iv) the conformity to the authentic originals of all documents supplied to us as certified, photostatic or faxed copies. In conducting our examination of documents, we have assumed the power, corporate or other, of all parties thereto other than the Partnership to enter into and perform all obligations thereunder and have also assumed the due authorization by all requisite action, corporate or other, and the due execution and delivery by such parties of such documents and that, except as set forth in the numbered opining paragraphs below, to the extent such documents purport to constitute agreements, such documents constitute valid and binding obligations of such parties.

We have also assumed that (A) the Certificate of Limited Partnership of the Partnership and the Partnership Agreement and the Certificate of Formation of the General Partner and the LLC Agreement, in each case as amended to date, will not have been amended in any manner that would affect any legal conclusion set forth herein, and (B) all Common Units will be issued and sold in the manner described in the Prospectus and in accordance with the terms of the Plan.

Based upon the foregoing, and subject to the limitations and assumptions set forth herein, and having due regard for such legal considerations as we deem relevant, we are of the opinion that:

1. The issuance of the Units by the Partnership has been duly authorized by the General Partner.

2. Upon the issuance and delivery of the Units from time to time in accordance with the terms of the applicable Plan for the consideration established by such Plan and, if applicable, pursuant to the terms and conditions of a particular award under such Plan and the satisfaction of any performance conditions associated therewith and any requisite determinations by or pursuant to the authority of the Board of Directors of the General Partner or a duly constituted and acting committee thereof as provided in such Plan, and in the case of options, following the exercise thereof and payment for Units as provided therein, such Units will be validly issued, fully paid (to the extent required under the Partnership Agreement) and non-assessable, except as such non-assessability may be affected by (i) the matters described in the Partnership's Annual Report on Form 10-K for the year ended December 31, 2008 under the captions "Risk Factors—Risks Inherent in an Investment in Us" "—Unitholders may have limited liability if a court finds that unitholder action constitutes control of our business" and "—Unitholders may have liability to repay distributions" and (ii) Sections 17-303, 17-607 and 17-804 of the Delaware Revised Uniform Limited Partnership Act.

We express no opinion other than as to the Delaware Revised Uniform Limited Partnership Act (which is deemed to include the applicable provisions of the Delaware Constitution and reported judicial opinions interpreting those laws) and the federal laws of the United States of America, and we are expressing no opinion as to the effect of the laws of any other jurisdiction, domestic or foreign.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. In giving this consent we do not admit that we are "experts" under the Securities Act, or the rules and regulations of the SEC thereunder, with respect to any part of the Registration Statement, including this exhibit. This opinion is expressed as of the date hereof, and we disclaim any undertaking to advise you of any subsequent changes of the facts stated or assumed herein or any subsequent changes in applicable law, and we have assumed that at no future time would any such subsequent change of fact or law affect adversely our ability to render at such time an opinion (a) containing the same legal conclusions set forth herein and (b) subject only to such (or fewer) assumptions, limitations and qualifications as are contained herein.

Very truly yours,

/s/ ANDREWS KURTH LLP

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement of Duncan Energy Partners L.P. on Form S-8 of (i) our report dated March 2, 2009 (August 27, 2009 as to the effects of the adoption of SFAS 160 and the related disclosures in Notes 1 and 3), relating to the consolidated financial statements of Duncan Energy Partners L.P. and subsidiaries (which report expresses an unqualified opinion and includes explanatory paragraphs (1) indicating the financial statements of the Partnership were prepared from the separate records maintained by Enterprise Products Partners L.P. or affiliates and may not necessarily be indicative of the conditions that would have existed or the results of operations if the Partnership had been operated as an unaffiliated entity and (2) concerning the retrospective adjustments related to the adoption of SFAS 160) appearing in the Current Report on Form 8-K of Duncan Energy Partners L.P. dated August 27, 2009, (ii) our report dated March 2, 2009 relating to the effectiveness of Duncan Energy Partners L.P. and subsidiaries' internal control over financial reporting, appearing in the Annual Report on Form 10-K of Duncan Energy Partners L.P. for the year ended December 31, 2008, and (iii) our report dated March 2, 2009 (August 27, 2009 as to the effects of the adoption of SFAS 160 and the related disclosures in Notes 1 and 3), relating to the consolidated balance sheet of DEP Holdings, LLC and subsidiaries at December 31, 2008 (which report expressed an unqualified opinion and included an explanatory paragraph concerning the retrospective adjustments related to the adoption of SFAS 160), appearing in the Current Report on Form 8-K of Duncan Energy Partners L.P. dated August 27, 2009.

/s/ DELOITTE & TOUCHE LLP

Houston, Texas
February 10, 2010