

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) (1) Financial Statements

See “Index to the Consolidated Financial Statements” set forth on Page F-1.

(2) Financial Statement Schedules

All schedules are omitted because they are either not applicable or the required information is shown in the Consolidated Financial Statements or notes thereto.

(3) Exhibits

Exhibit No.	Description
2.1*	— Simplification Agreement dated as of July 11, 2016, by and among PAA GP Holdings LLC, Plains GP Holdings, L.P., Plains All American GP LLC, Plains AAP, L.P., PAA GP LLC and Plains All American Pipeline, L.P. (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed July 14, 2016).
2.2*	— Agreement and Plan of Merger dated as of July 12, 2021 by and among Plains Pipeline, L.P., Plains Marketing, L.P., Oryx Midstream Holdings LLC, Middle Cadence Holdings LLC, POP HoldCo LLC, Oryx Wink Oil Marketing LLC, Oryx Permian Oil Marketing LLC, Plains Oryx Permian Basin LLC, Plains Oryx Permian Basin Marketing LLC and Plains Oryx Permian Basin Pipeline LLC (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed July 13, 2021).
3.1	— Seventh Amended and Restated Agreement of Limited Partnership of Plains All American Pipeline, L.P. dated as of October 10, 2017 (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 12, 2017).
3.2	— Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. dated as of April 1, 2004 (incorporated by reference to Exhibit 3.2 to our Quarterly Report on Form 10-Q for the quarter ended March 31, 2004).
3.3	— Amendment No. 1 dated December 31, 2010 to the Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. (incorporated by reference to Exhibit 3.9 to our Annual Report on Form 10-K for the year ended December 31, 2010).
3.4	— Amendment No. 2 dated January 1, 2011 to the Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. (incorporated by reference to Exhibit 3.10 to our Annual Report on Form 10-K for the year ended December 31, 2010).
3.5	— Amendment No. 3 dated June 30, 2011 to the Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. (incorporated by reference to Exhibit 3.7 to our Annual Report on Form 10-K for the year ended December 31, 2013).
3.6	— Amendment No. 4 dated January 1, 2013 to the Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. (incorporated by reference to Exhibit 3.8 to our Annual Report on Form 10-K for the year ended December 31, 2013).
3.7	— Amendment No. 5 dated December 1, 2019 to the Third Amended and Restated Agreement of Limited Partnership of Plains Marketing, L.P. (incorporated by reference to Exhibit 3.7 to our Annual Report on Form 10-K for the year ended December 31, 2019.)
3.8	— Third Amended and Restated Agreement of Limited Partnership of Plains Pipeline, L.P. dated as of April 1, 2004 (incorporated by reference to Exhibit 3.3 to our Quarterly Report on Form 10-Q for the quarter ended March 31, 2004).
3.9	— Amendment No. 1 dated January 1, 2013 to the Third Amended and Restated Agreement of Limited Partnership of Plains Pipeline, L.P. (incorporated by reference to Exhibit 3.10 to our Annual Report on Form 10-K for the year ended December 31, 2013).

- 3.10 — Seventh Amended and Restated Limited Liability Company Agreement of Plains All American GP LLC dated November 15, 2016 (incorporated by reference to Exhibit 3.3 to our Current Report on Form 8-K filed November 21, 2016).
- 3.11 — Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. dated November 15, 2016 (incorporated by reference to Exhibit 3.4 to our Current Report on Form 8-K filed November 21, 2016).
- 3.12 — Amendment No. 1 dated September 26, 2018 to the Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed October 2, 2018).
- 3.13 — Amendment No. 2 dated May 23, 2019 to the Eighth Amended and Restated Limited Partnership Agreement of Plains AAP, L.P. (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed May 30, 2019).
- 3.14 — Certificate of Incorporation of PAA Finance Corp. (f/k/a Pacific Energy Finance Corporation, successor-by-merger to PAA Finance Corp.) (incorporated by reference to Exhibit 3.10 to our Annual Report on Form 10-K for the year ended December 31, 2006).
- 3.15 — Bylaws of PAA Finance Corp. (f/k/a Pacific Energy Finance Corporation, successor-by-merger to PAA Finance Corp.) (incorporated by reference to Exhibit 3.11 to our Annual Report on Form 10-K for the year ended December 31, 2006).
- 3.16 — Limited Liability Company Agreement of PAA GP LLC dated December 28, 2007 (incorporated by reference to Exhibit 3.3 to our Current Report on Form 8-K filed January 4, 2008).
- 3.17 — Certificate of Limited Partnership of Plains GP Holdings, L.P. (incorporated by reference to Exhibit 3.1 to PAGP's Registration Statement on Form S-1 (333-190227) filed July 29, 2013).
- 3.18 — Second Amended and Restated Agreement of Limited Partnership of Plains GP Holdings, L.P. dated as of November 15, 2016 (incorporated by reference to Exhibit 3.2 to PAGP's Current Report on Form 8-K filed November 21, 2016).
- 3.19 — Amendment No. 1 dated April 6, 2020 to the Second Amended and Restated Agreement of Limited Partnership of Plains GP Holdings, L.P. (incorporated by reference to Exhibit 3.1 to PAGP's Current Report on Form 8-K filed April 9, 2020).
- 3.20 — Certificate of Formation of PAA GP Holdings LLC (incorporated by reference to Exhibit 3.3 to PAGP's Registration Statement on Form S-1 (333-190227) filed July 29, 2013).
- 3.21 — Fourth Amended and Restated Limited Liability Company Agreement of PAA GP Holdings LLC dated effective as of August 19, 2021 (incorporated by reference to Exhibit 3.21 to our Annual Report on Form 10-K for the year ended December 31, 2021).
- 4.1 — Indenture dated September 25, 2002 among Plains All American Pipeline, L.P., PAA Finance Corp. and Wachovia Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2002).
- 4.2 — Sixth Supplemental Indenture (Series A and Series B 6.70% Senior Notes due 2036) dated May 12, 2006 among Plains All American Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and Wachovia Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed May 12, 2006).
- 4.3 — Tenth Supplemental Indenture (Series A and Series B 6.650% Senior Notes due 2037) dated October 30, 2006 among Plains All American Pipeline, L.P., PAA Finance Corp., the Subsidiary Guarantors named therein and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to our Current Report on Form 8-K filed October 30, 2006).
- 4.4 — Twenty-First Supplemental Indenture (5.15% Senior Notes due 2042) dated March 22, 2012 among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to our Current Report on Form 8-K filed March 26, 2012).
- 4.5 — Twenty-Second Supplemental Indenture (2.85% Senior Notes due 2023) dated December 10, 2012, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed December 12, 2012).

- 4.6 — Twenty-Third Supplemental Indenture (4.30% Senior Notes due 2043) dated December 10, 2012, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to our Current Report on Form 8-K filed December 12, 2012).
- 4.7 — Twenty-Fourth Supplemental Indenture (3.85% Senior Notes due 2023) dated August 15, 2013, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed August 15, 2013).
- 4.8 — Twenty-Fifth Supplemental Indenture (4.70% Senior Notes due 2044) dated April 23, 2014, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed April 29, 2014).
- 4.9 — Twenty-Sixth Supplemental Indenture (3.60% Senior Notes due 2024) dated September 9, 2014, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed September 11, 2014).
- 4.10 — Twenty-Eighth Supplemental Indenture (4.90% Senior Notes due 2045) dated December 9, 2014, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to our Current Report on Form 8-K filed December 11, 2014).
- 4.11 — Twenty-Ninth Supplemental Indenture (4.65% Senior Notes due 2025) dated August 24, 2015, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed August 26, 2015).
- 4.12 — Thirtieth Supplemental Indenture (4.50% Senior Notes due 2026) dated November 22, 2016, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed November 29, 2016).
- 4.13 — Thirty-First Supplemental Indenture (3.55% Senior Notes due 2029) dated September 16, 2019, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed September 17, 2019).
- 4.14 — Thirty-Second Supplemental Indenture (3.80% Senior Notes due 2030) dated June 11, 2020, by and among Plains All American Pipeline, L.P., PAA Finance Corp. and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed June 11, 2020).
- 4.15 — Registration Rights Agreement dated September 3, 2009 by and between Plains All American Pipeline, L.P. and Vulcan Gas Storage LLC (incorporated by reference to Exhibit 4.1 to our Registration Statement on Form S-3, File No. 333-162477).
- 4.16 — Registration Rights Agreement dated as of January 28, 2016 among Plains All American Pipeline, L.P. and the Purchasers named therein (incorporated by reference to Exhibit 4.1 to our Current Report on Form 8-K filed February 2, 2016).
- 4.17 — Registration Rights Agreement by and among Plains All American Pipeline, L.P. and the Holders defined therein, dated November 15, 2016 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed November 21, 2016).
- 4.18 † — Description of Our Securities.
- 10.1 — Credit Agreement dated as of August 20, 2021, among Plains All American Pipeline, L.P. and Plains Midstream Canada ULC, as Borrowers; certain subsidiaries of Plains All American Pipeline, L.P. from time to time party thereto, as Designated Borrowers; Bank of America, N.A., as Administrative Agent and Swing Line Lender; Bank of America, N.A., Citibank, N.A., JPMorgan Chase Bank, N.A. and Wells Fargo Bank, National Association, as L/C Issuers; and the other Lenders party thereto (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed August 26, 2021).

- 10.2 — First Amendment to Credit Agreement dated as of August 22, 2022, among Plains All American Pipeline, L.P. and Plains Midstream Canada ULC, as Borrowers; certain subsidiaries of Plains All American Pipeline, L.P. from time to time party thereto, as Designated Borrowers; Bank of America, N.A., as Administrative Agent and Swing Line Lender; Bank of America, N.A., Citibank, N.A., JPMorgan Chase Bank, N.A. and Wells Fargo Bank, National Association, as L/C Issuers; and the other Lenders party thereto (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed August 25, 2022).
- 10.3 — Fourth Amended and Restated Credit Agreement dated as of August 20, 2021, among Plains Marketing, L.P. and Plains Midstream Canada ULC, as Borrowers; Plains All American Pipeline, L.P., as guarantor; Bank of America, N.A., as Administrative Agent and Swing Line Lender; Bank of America, N.A., Citibank, N.A., JPMorgan Chase Bank, N.A. and Wells Fargo Bank, National Association, as L/C Issuers; and the other Lenders party thereto (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed August 26, 2021).
- 10.4 — First Amendment to Fourth Amended and Restated Credit Agreement dated as of August 22, 2022, among Plains Marketing, L.P. and Plains Midstream Canada ULC, as Borrowers; Plains All American Pipeline, L.P., as guarantor; Bank of America, N.A., as Administrative Agent and Swing Line Lender; Bank of America, N.A., Citibank, N.A., JPMorgan Chase Bank, N.A. and Wells Fargo Bank, National Association, as L/C Issuers; and the other Lenders party thereto (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed August 25, 2022).
- 10.5 — Contribution and Assumption Agreement dated December 28, 2007, by and between Plains AAP, L.P. and PAA GP LLC (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed January 4, 2008).
- 10.6 — Omnibus Agreement by and among PAA GP Holdings LLC, Plains GP Holdings, L.P., Plains All American GP LLC, Plains AAP, L.P., PAA GP LLC, and Plains All American Pipeline, L.P., dated November 15, 2016 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed November 21, 2016).
- 10.7 — Amended and Restated Administrative Agreement by and among PAA GP Holdings LLC, Plains GP Holdings, L.P., Plains All American GP LLC, Plains AAP, L.P., PAA GP LLC, and Plains All American Pipeline, L.P., dated November 15, 2016 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed November 21, 2016).
- 10.8** — Amended and Restated Employment Agreement between Plains All American GP LLC and Greg L. Armstrong dated as of June 30, 2001 (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2001).
- 10.9** — First Amendment to Amended and Restated Employment Agreement dated December 4, 2008 between Plains All American GP LLC and Greg L. Armstrong (incorporated by reference to Exhibit 10.49 to our Annual Report on Form 10-K for the year ended December 31, 2008).
- 10.10** — Waiver Agreement dated as of December 23, 2010 between Plains All American GP LLC and Greg L. Armstrong (incorporated by reference to Exhibit 10.31 to our Annual Report on Form 10-K for the year ended December 31, 2010).
- 10.11** — Waiver Agreement dated October 21, 2013 to the Amended and Restated Employment Agreement dated June 30, 2001 of Greg L. Armstrong (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K filed October 25, 2013).
- 10.12** — Second Amended and Restated Employment Agreement dated effective October 1, 2018 between Plains All American GP LLC and Greg L. Armstrong (incorporated by reference to Exhibit 10.6 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018).
- 10.13** — Third Amended and Restated Employment Agreement dated effective January 1, 2020 between Plains All American GP LLC and Greg L. Armstrong (incorporated by reference to Exhibit 10.31 to our Annual Report on Form 10-K for the year ended December 31, 2019).
- 10.14** — Amendment No. 1 to Third Amended and Restated Employment Agreement dated effective December 31, 2021 between Plains All American GP LLC and Greg L. Armstrong (incorporated by reference to Exhibit 10.12 to our Annual Report on Form 10-K for the year ended December 31, 2021).
- 10.15** — Amended and Restated Employment Agreement between Plains All American GP LLC and Harry N. Pefanis dated as of June 30, 2001 (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2001).

- 10.16** — First Amendment to Amended and Restated Employment Agreement dated December 4, 2008 between Plains All American GP LLC and Harry N. Pefanis (incorporated by reference to Exhibit 10.50 to our Annual Report on Form 10-K for the year ended December 31, 2008).
- 10.17** — Amendment No. 2 dated August 15, 2019 to Harry Pefanis Amended and Restated Employment Agreement (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2019).
- 10.18** — Waiver Agreement dated as of December 23, 2010 between Plains All American GP LLC and Harry N. Pefanis (incorporated by reference to Exhibit 10.32 to our Annual Report on Form 10-K for the year ended December 31, 2010).
- 10.19** — Waiver Agreement dated October 21, 2013 to the Amended and Restated Employment Agreement dated June 30, 2001 of Harry N. Pefanis (incorporated by reference to Exhibit 10.3 to our Current Report on Form 8-K filed October 25, 2013).
- 10.20** — Employment Agreement between Plains All American GP LLC and Willie Chiang dated July 10, 2015 (incorporated by reference to Exhibit 10.53 to our Annual Report on Form 10-K for the year ended December 31, 2015).
- 10.21** — Amended and Restated Employment Agreement dated effective October 1, 2018 between Plains All American GP LLC and Willie Chiang (incorporated by reference to Exhibit 10.7 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018).
- 10.22** — First Amendment to Plains AAP, L.P. Class B Restricted Units Agreement dated August 25, 2016 (Willie Chiang) (incorporated by reference to Exhibit 10.8 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016).
- 10.23** — Second Amendment dated March 22, 2018 to Plains AAP, L.P. Class B Restricted Units Agreement (Willie Chiang) (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
- 10.24** — LTIP Grant Letter dated August 16, 2018 (Willie Chiang) incorporated by reference to Exhibit 10.8 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2018).
- 10.25** — Plains All American 2021 Long-Term Incentive Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement filed on April 12, 2021).
- 10.26** — Plains All American 2013 Long-Term Incentive Plan (incorporated by reference to Exhibit A to our Definitive Proxy Statement filed on October 3, 2013).
- 10.27** — Plains All American PNG Successor Long-Term Incentive Plan (incorporated by reference to Exhibit 4.4 to our Registration Statement on Form S-8 (333-193139) filed December 31, 2013).
- 10.28** — PAA Natural Gas Storage, L.P. 2010 Long-Term Incentive Plan (incorporated by reference to Exhibit 10.2 to PNG's Current Report on Form 8-K filed May 11, 2010).
- 10.29** — Plains GP Holdings, L.P. Long Term Incentive Plan (incorporated by reference to Exhibit 10.3 to PAGP's Current Report on Form 8-K filed October 25, 2013).
- 10.30** — Form of Plains AAP, L.P. Class B Restricted Units Agreement (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K filed January 4, 2008).
- 10.31** — Form of Amendment to the Plains AAP, L.P. Class B Restricted Units Agreement dated October 18, 2013 (incorporated by reference to Exhibit 10.4 to our Current Report on Form 8-K filed October 25, 2013).
- 10.32** — Form of Amendment to Plains AAP, L.P. Class B Restricted Units Agreement dated August 25, 2016 (incorporated by reference to Exhibit 10.6 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 filed November 8, 2016).
- 10.33** — Form of First Amendment dated March 22, 2018 to Amended and Restated Plains AAP, L.P. Class B Restricted Units Agreement dated August 25, 2016 (Officers) (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018).
- 10.34** — Form of LTIP Grant Letter dated August 15, 2019 (Officers) (incorporated by reference to Exhibit 10.2 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2019).

10.35**	—	Form of LTIP Grant Letter dated August 15, 2019 (Directors) (incorporated by reference to Exhibit 10.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2019).
10.36**	—	Director LTIP Grant Letter (January 2020) (incorporated by reference to Exhibit 10.72 to our Annual Report on Form 10-K for the year ended December 31, 2019).
10.37**	—	Form of LTIP Grant Letter dated August 13, 2020 (Officers) (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2020).
10.38**	—	Form of LTIP Grant Letter dated August 13, 2020 (Directors) (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2020).
10.39**	—	Form of Special Retention LTIP Grant Letter dated November 20, 2019 (incorporated by reference to Exhibit 10.53 to our Annual Report on Form 10-K for the year ended December 31, 2020).
10.40**	—	Form of LTIP Grant Letter dated August 19, 2021 (Named Executive Officers) (incorporated by reference to Exhibit 10.3 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2021).
10.41**	—	Form of LTIP Grant Letter dated August 19, 2021 (Directors) (incorporated by reference to Exhibit 10.4 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2021).
10.42**	—	Form of Amended and Restated Special Retention LTIP Grant Letter Dated February 24, 2022 (incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022).
10.43**	—	Form of LTIP Grant Letter dated August 18, 2022 (Named Executive Officers) (incorporated by reference to Exhibit 10.4 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2022).
10.44**	—	Form of LTIP Grant Letter dated August 18, 2022 (Directors) (incorporated by reference to Exhibit 10.5 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2022).
21.1 †	—	List of Subsidiaries of Plains All American Pipeline, L.P.
23.1 †	—	Consent of PricewaterhouseCoopers LLP.
31.1 †	—	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a).
31.2 †	—	Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a).
32.1 ††	—	Certification of Principal Executive Officer pursuant to 18 U.S.C. 1350.
32.2 ††	—	Certification of Principal Financial Officer pursuant to 18 U.S.C. 1350.
101. INS†	—	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH†	—	Inline XBRL Taxonomy Extension Schema Document
101.CAL†	—	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF†	—	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB†	—	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE†	—	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104†	—	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

† Filed herewith.

†† Furnished herewith.

* Certain schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule will be furnished supplementally to the SEC upon request.

** Management compensatory plan or arrangement.

Item 16. *Form 10-K Summary*

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

PLAINS ALL AMERICAN PIPELINE, L.P.

By: PAA GP LLC,
its general partner

By: Plains AAP, L.P.,
its sole member

By: PLAINS ALL AMERICAN GP LLC,
its general partner

By: /s/ Willie Chiang
Willie Chiang,
Chief Executive Officer of Plains All
American GP LLC
(Principal Executive Officer)

February 28, 2023

By: /s/ Al Swanson
Al Swanson,
Executive Vice President and Chief Financial Officer of
Plains All American GP LLC
(Principal Financial Officer)

February 28, 2023

By: /s/ Chris Herbold
Chris Herbold,
Senior Vice President, Finance and Chief Accounting
Officer of Plains All American GP LLC
(Principal Accounting Officer)

February 28, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Name	Title	Date
<u>/s/ Willie Chiang</u> Willie Chiang	Chairman of the Board of PAA GP Holdings LLC and Chief Executive Officer of Plains All American GP LLC (Principal Executive Officer)	February 28, 2023
<u>/s/ Harry N. Pefanis</u> Harry N. Pefanis	Director of PAA GP Holdings LLC and President of Plains All American GP LLC	February 28, 2023
<u>/s/ Al Swanson</u> Al Swanson	Executive Vice President and Chief Financial Officer of Plains All American GP LLC (Principal Financial Officer)	February 28, 2023
<u>/s/ Chris Herbold</u> Chris Herbold	Senior Vice President, Finance and Chief Accounting Officer of Plains All American GP LLC (Principal Accounting Officer)	February 28, 2023
<u>/s/ Greg L. Armstrong</u> Greg L. Armstrong	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Victor Burk</u> Victor Burk	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Ellen R. DeSanctis</u> Ellen R. DeSanctis	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Kevin McCarthy</u> Kevin McCarthy	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Gary R. Petersen</u> Gary R. Petersen	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Alexandra D. Pruner</u> Alexandra D. Pruner	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ John T. Raymond</u> John T. Raymond	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Bobby S. Shackouls</u> Bobby S. Shackouls	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Christopher M. Temple</u> Christopher M. Temple	Director of PAA GP Holdings LLC	February 28, 2023
<u>/s/ Lawrence M. Ziemba</u> Lawrence M. Ziemba	Director of PAA GP Holdings LLC	February 28, 2023

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
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MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Plains All American Pipeline, L.P.'s management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Internal control over financial reporting has inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Management has used the framework set forth in the report entitled "Internal Control—Integrated Framework" (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") to evaluate the effectiveness of the Partnership's internal control over financial reporting. Based on that evaluation, management has concluded that the Partnership's internal control over financial reporting was effective as of December 31, 2022.

The effectiveness of the Partnership's internal control over financial reporting as of December 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears on Page F-3.

/s/ Willie Chiang

Willie Chiang

*Chief Executive Officer of Plains All American GP LLC
(Principal Executive Officer)*

/s/ Al Swanson

Al Swanson

*Executive Vice President and Chief Financial Officer of
Plains All American GP LLC
(Principal Financial Officer)*

February 28, 2023

Report of Independent Registered Public Accounting Firm

To the Board of Directors of PAA GP Holdings LLC and Unitholders of Plains All American Pipeline, L.P.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Plains All American Pipeline, L.P. and its subsidiaries (the “Partnership”) as of December 31, 2022 and 2021, and the related consolidated statements of operations, of comprehensive income (loss), of changes in accumulated other comprehensive income (loss), of changes in partners' capital and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Partnership's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Partnership as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Partnership maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Partnership's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on the Partnership's consolidated financial statements and on the Partnership's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Partnership in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Fair Value of the Preferred Distribution Rate Reset Option

As described in Note 13 to the consolidated financial statements, the Preferred Distribution Rate Reset Option of the Partnership's Series A preferred units is an embedded derivative that is bifurcated from the related host contract and recorded at fair value. The fair value, as of December 31, 2022, was \$189 million, and is recorded in other long-term liabilities and deferred credits. Management determines the fair value based on a Monte Carlo valuation model that estimates the fair value of the Series A preferred units with and without the Preferred Distribution Rate Reset Option. This model relies on assumptions for forecasts for the ten-year U.S. Treasury rate, the Partnership's common unit price, and default probabilities which impact timing estimates as to when the option will be exercised.

The principal considerations for our determination that performing procedures relating to the fair value of the Preferred Distribution Rate Reset Option is a critical audit matter are the significant judgment by management when developing the fair value estimate of the Preferred Distribution Rate Reset Option using the Monte Carlo valuation model. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating the Monte Carlo valuation model and management's significant assumption related to forecasts for the ten-year U.S. Treasury rate. Also, the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the fair value of the Preferred Distribution Rate Reset Option, including the appropriateness of the Monte Carlo valuation model, the significant assumption, and data used in developing the fair value estimate. These procedures also included, among others (i) testing the completeness and accuracy of the contractual information from the Series A preferred unit agreement that is used in the valuation model, (ii) evaluating the reasonableness of, and testing the accuracy of, inputs used to estimate the fair value of the Preferred Distribution Rate Reset Option, and (iii) the involvement of professionals with specialized skill and knowledge to assist in evaluating the reasonableness of management's estimate by developing (a) an independent Monte Carlo valuation model and (b) an independent range of fair values using independently developed forecasts for the ten-year U.S. Treasury rate and comparing the independent range of fair values to management's estimate.

/s/ PricewaterhouseCoopers LLP

Houston, Texas
February 28, 2023

We have served as the Partnership's auditor since 1998.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in millions, except unit data)

	December 31, 2022	December 31, 2021
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	\$ 401	\$ 449
Trade accounts receivable and other receivables, net	3,907	4,705
Inventory	729	783
Other current assets	318	200
Total current assets	5,355	6,137
PROPERTY AND EQUIPMENT		
Accumulated depreciation	(4,770)	(4,354)
Property and equipment, net	15,250	14,903
OTHER ASSETS		
Investments in unconsolidated entities	3,084	3,805
Intangible assets, net	2,145	1,960
Linefill	961	907
Long-term operating lease right-of-use assets, net	349	393
Long-term inventory	284	253
Other long-term assets, net	464	251
Total assets	<u>\$ 27,892</u>	<u>\$ 28,609</u>
LIABILITIES AND PARTNERS' CAPITAL		
CURRENT LIABILITIES		
Trade accounts payable	\$ 4,044	\$ 4,810
Short-term debt	1,159	822
Other current liabilities	688	600
Total current liabilities	5,891	6,232
LONG-TERM LIABILITIES		
Senior notes, net	7,237	8,329
Other long-term debt, net	50	69
Long-term operating lease liabilities	308	339
Other long-term liabilities and deferred credits	1,081	830
Total long-term liabilities	8,676	9,567
COMMITMENTS AND CONTINGENCIES (NOTE 19)		
PARTNERS' CAPITAL		
Series A preferred unitholders (71,090,468 and 71,090,468 units outstanding, respectively)	1,505	1,505
Series B preferred unitholders (800,000 and 800,000 units outstanding, respectively)	787	787
Common unitholders (698,354,498 and 704,991,540 units outstanding, respectively)	7,765	7,680
Total partners' capital excluding noncontrolling interests	10,057	9,972
Noncontrolling interests	3,268	2,838
Total partners' capital	13,325	12,810
Total liabilities and partners' capital	<u>\$ 27,892</u>	<u>\$ 28,609</u>

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per unit data)

	Year Ended December 31,		
	2022	2021	2020
REVENUES			
Product sales revenues	\$ 55,948	\$ 40,883	\$ 22,058
Services revenues	1,394	1,195	1,232
Total revenues	57,342	42,078	23,290
COSTS AND EXPENSES			
Purchases and related costs	53,176	38,504	20,431
Field operating costs	1,315	1,065	1,076
General and administrative expenses	325	292	271
Depreciation and amortization	965	774	653
(Gains)/losses on asset sales and asset impairments, net (Note 6, Note 7)	269	592	719
Goodwill impairment loss (Note 8)	—	—	2,515
Total costs and expenses	56,050	41,227	25,665
OPERATING INCOME/(LOSS)	1,292	851	(2,375)
OTHER INCOME/(EXPENSE)			
Equity earnings in unconsolidated entities	403	274	355
Gains (losses) on/(impairment of) investments in unconsolidated entities, net (Note 7, Note 9)	346	2	(182)
Interest expense (net of capitalized interest of \$5, \$18 and \$24, respectively)	(405)	(425)	(436)
Other income/(expense), net	(219)	19	39
INCOME/(LOSS) BEFORE TAX	1,417	721	(2,599)
Current income tax expense	(84)	(50)	(51)
Deferred income tax (expense)/benefit	(105)	(23)	70
NET INCOME/(LOSS)	1,228	648	(2,580)
Net income attributable to noncontrolling interests	(191)	(55)	(10)
NET INCOME/(LOSS) ATTRIBUTABLE TO PAA	<u>\$ 1,037</u>	<u>\$ 593</u>	<u>\$ (2,590)</u>
NET INCOME/(LOSS) PER COMMON UNIT (NOTE 4):			
Net income/(loss) allocated to common unitholders — Basic and Diluted	\$ 831	\$ 393	\$ (2,790)
Basic and diluted weighted average common units outstanding	701	716	728
Basic and diluted net income/(loss) per common unit	<u>\$ 1.19</u>	<u>\$ 0.55</u>	<u>\$ (3.83)</u>

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME/(LOSS)
(in millions)

	Year Ended December 31,		
	2022	2021	2020
Net income/(loss)	\$ 1,228	\$ 648	\$ (2,580)
Other comprehensive income/(loss)	(101)	65	15
Comprehensive income/(loss)	1,127	713	(2,565)
Comprehensive income attributable to noncontrolling interests	(191)	(55)	(10)
Comprehensive income/(loss) attributable to PAA	<u>\$ 936</u>	<u>\$ 658</u>	<u>\$ (2,575)</u>

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN ACCUMULATED
OTHER COMPREHENSIVE INCOME/(LOSS)
(in millions)

	Derivative Instruments	Translation Adjustments	Other	Total
Balance at December 31, 2019	<u>\$ (259)</u>	<u>\$ (674)</u>	<u>\$ —</u>	<u>\$ (933)</u>
Reclassification adjustments	11	—	—	11
Unrealized loss on hedges	(10)	—	—	(10)
Currency translation adjustments	—	17	—	17
Other	—	—	(3)	(3)
2020 Activity	<u>1</u>	<u>17</u>	<u>(3)</u>	<u>15</u>
Balance at December 31, 2020	<u>\$ (258)</u>	<u>\$ (657)</u>	<u>\$ (3)</u>	<u>\$ (918)</u>
Reclassification adjustments	31	—	—	31
Unrealized gain on hedges	19	—	—	19
Currency translation adjustments	—	15	—	15
2021 Activity	<u>50</u>	<u>15</u>	<u>—</u>	<u>65</u>
Balance at December 31, 2021	<u>\$ (208)</u>	<u>\$ (642)</u>	<u>\$ (3)</u>	<u>\$ (853)</u>
Reclassification adjustments	7	—	—	7
Unrealized gain on hedges	94	—	—	94
Currency translation adjustments	—	(204)	—	(204)
Other	—	—	2	2
2022 Activity	<u>101</u>	<u>(204)</u>	<u>2</u>	<u>(101)</u>
Balance at December 31, 2022	<u>\$ (107)</u>	<u>\$ (846)</u>	<u>\$ (1)</u>	<u>\$ (954)</u>

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Year Ended December 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income/(loss)	\$ 1,228	\$ 648	\$ (2,580)
Reconciliation of net income/(loss) to net cash provided by operating activities:			
Depreciation and amortization	965	774	653
(Gains)/losses on asset sales and asset impairments, net (Note 6, Note 7)	269	592	719
Goodwill impairment loss (Note 8)	—	—	2,515
Equity-indexed compensation expense	40	23	15
Inventory valuation adjustments (Note 5)	—	—	233
Deferred income tax expense/(benefit)	105	23	(70)
(Gains)/losses on sales of linefill	(35)	—	1
(Gain)/loss on foreign currency revaluation	41	(7)	(16)
Settlement of terminated interest rate hedging instruments	42	—	(100)
Change in fair value of Preferred Distribution Rate Reset Option (Note 13)	189	(14)	(20)
Equity earnings in unconsolidated entities	(403)	(274)	(355)
Distributions on earnings from unconsolidated entities	488	431	472
(Gains) losses on/impairment of investments in unconsolidated entities, net (Note 7, Note 9)	(346)	(2)	182
Other	16	29	23
Changes in assets and liabilities, net of acquisitions:			
Trade accounts receivable and other	649	(2,179)	1,432
Inventory	(10)	(18)	(304)
Trade accounts payable and other	(830)	1,970	(1,286)
Net cash provided by operating activities	2,408	1,996	1,514
CASH FLOWS FROM INVESTING ACTIVITIES			
Cash paid in connection with acquisitions, net of cash acquired (Note 7)	(149)	(32)	(310)
Investments in unconsolidated entities (Note 9)	(14)	(94)	(461)
Additions to property, equipment and other	(455)	(336)	(738)
Proceeds from sales of assets (Note 7)	60	881	429
Cash received from sales of linefill	72	3	3
Cash paid for purchases of linefill	(84)	(37)	(14)
Other investing activities	44	1	(2)
Net cash provided by/(used in) investing activities	(526)	386	(1,093)
CASH FLOWS FROM FINANCING ACTIVITIES			
Net borrowings/(repayments) under commercial paper program (Note 11)	—	(545)	456
Net borrowings/(repayments) under senior secured hedged inventory facility (Note 11)	—	(167)	(160)
Repayment of GO Zone term loans (Note 11)	—	(200)	—
Proceeds from the issuance of senior notes (Note 11)	—	—	748
Repayments of senior notes (Note 11)	(750)	—	(617)
Repurchase of common units (Note 12)	(74)	(178)	(50)
Distributions paid to Series A preferred unitholders (Note 12)	(149)	(149)	(149)
Distributions paid to Series B preferred unitholders (Note 12)	(49)	(49)	(49)
Distributions paid to common unitholders (Note 12)	(584)	(517)	(655)
Distributions paid to noncontrolling interests (Note 12)	(298)	(14)	(10)
Contributions from noncontrolling interests (Note 12)	26	1	12
Other financing activities	(53)	(166)	39
Net cash used in financing activities	(1,931)	(1,984)	(435)
Effect of translation adjustment	(3)	(5)	(8)
Net increase/(decrease) in cash and cash equivalents and restricted cash	(52)	393	(22)
Cash and cash equivalents and restricted cash, beginning of period	453	60	82
Cash and cash equivalents and restricted cash, end of period	<u>\$ 401</u>	<u>\$ 453</u>	<u>\$ 60</u>
Cash paid for:			
Interest, net of amounts capitalized	\$ 393	\$ 401	\$ 428
Income taxes, net of amounts refunded	\$ 112	\$ 76	\$ 111

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN PARTNERS' CAPITAL
(in millions)

	Limited Partners			Partners' Capital Excluding Noncontrolling Interests	Noncontrolling Interests	Total Partners' Capital
	Preferred Unitholders		Common Unitholders			
	Series A	Series B				
Balance at December 31, 2019	\$ 1,505	\$ 787	\$ 10,770	\$ 13,062	\$ 133	\$ 13,195
Net income/(loss)	149	49	(2,788)	(2,590)	10	(2,580)
Distributions (Note 12)	(149)	(49)	(655)	(853)	(10)	(863)
Other comprehensive income	—	—	15	15	—	15
Equity-indexed compensation expense	—	—	19	19	—	19
Repurchase of common units (Note 12)	—	—	(50)	(50)	—	(50)
Contributions from noncontrolling interests (Note 12)	—	—	—	—	12	12
Other	—	—	(10)	(10)	—	(10)
Balance at December 31, 2020	\$ 1,505	\$ 787	\$ 7,301	\$ 9,593	\$ 145	\$ 9,738
Net income	149	49	395	593	55	648
Distributions (Note 12)	(149)	(49)	(517)	(715)	(14)	(729)
Other comprehensive income	—	—	65	65	—	65
Equity-indexed compensation expense	—	—	19	19	—	19
Repurchase of common units (Note 12)	—	—	(178)	(178)	—	(178)
Contributions from noncontrolling interests (Note 12)	—	—	—	—	1	1
Plains Oryx Permian Basin LLC joint venture formation (Note 7)	—	—	605	605	2,651	3,256
Other	—	—	(10)	(10)	—	(10)
Balance at December 31, 2021	\$ 1,505	\$ 787	\$ 7,680	\$ 9,972	\$ 2,838	\$ 12,810
Net income	149	52	836	1,037	191	1,228
Distributions (Note 12)	(149)	(52)	(584)	(785)	(298)	(1,083)
Other comprehensive loss	—	—	(101)	(101)	—	(101)
Equity-indexed compensation expense	—	—	32	32	—	32
Repurchase of common units (Note 12)	—	—	(74)	(74)	—	(74)
Contributions from noncontrolling interests (Note 12)	—	—	—	—	26	26
Plains Oryx Permian Basin LLC joint venture formation (Note 7)	—	—	(10)	(10)	(16)	(26)
Cactus II Pipeline LLC transaction (Note 7)	—	—	—	—	526	526
Other	—	—	(14)	(14)	1	(13)
Balance at December 31, 2022	\$ 1,505	\$ 787	\$ 7,765	\$ 10,057	\$ 3,268	\$ 13,325

The accompanying notes are an integral part of these consolidated financial statements.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 1—Organization and Basis of Consolidation and Presentation

Organization

Plains All American Pipeline, L.P. (“PAA”) is a Delaware limited partnership formed in 1998. Our operations are conducted directly and indirectly through our primary operating subsidiaries. As used in this Form 10-K and unless the context indicates otherwise, the terms “Partnership,” “we,” “us,” “our,” “ours” and similar terms refer to PAA and its subsidiaries.

Our business model integrates large-scale supply aggregation capabilities with the ownership and operation of critical midstream infrastructure systems that connect major producing regions to key demand centers and export terminals. As one of the largest midstream service providers in North America, we own an extensive network of pipeline transportation, terminalling, storage and gathering assets in key crude oil and natural gas liquids (“NGL”) producing basins (including the Permian Basin) and transportation corridors and at major market hubs in the United States and Canada. Our assets and the services we provide are primarily focused on and conducted through two operating segments: Crude Oil and NGL. See Note 20 for further discussion of our operating segments.

Our non-economic general partner interest is held by PAA GP LLC (“PAA GP”), a Delaware limited liability company, whose sole member is Plains AAP, L.P. (“AAP”), a Delaware limited partnership. In addition to its ownership of PAA GP, as of December 31, 2022, AAP also owned a limited partner interest in us through its ownership of approximately 241.0 million of our common units (approximately 31% of our total outstanding common units and Series A preferred units combined). Plains All American GP LLC (“GP LLC”), a Delaware limited liability company, is AAP’s general partner. Plains GP Holdings, L.P. (“PAGP”) is the sole and managing member of GP LLC, and, at December 31, 2022, owned an approximate 81% limited partner interest in AAP. PAA GP Holdings LLC (“PAGP GP”) is the general partner of PAGP.

As the sole member of GP LLC, PAGP has responsibility for conducting our business and managing our operations; however, the board of directors of PAGP GP has ultimate responsibility for managing the business and affairs of PAGP, AAP and us. GP LLC employs our domestic officers and personnel; our Canadian officers and personnel are employed by our subsidiary, Plains Midstream Canada ULC.

References to the “PAGP Entities” include PAGP GP, PAGP, GP LLC, AAP and PAA GP. References to our “general partner,” as the context requires, include any or all of the PAGP Entities. References to the “Plains Entities” include us, our subsidiaries and the PAGP Entities.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Definitions

Additional defined terms are used in the following notes and shall have the meanings indicated below:

AOCI	=	Accumulated other comprehensive income/(loss)
ASC	=	Accounting Standards Codification
ASU	=	Accounting Standards Update
Bcf	=	Billion cubic feet
Btu	=	British thermal unit
CAD	=	Canadian dollar
CODM	=	Chief Operating Decision Maker
DERs	=	Distribution equivalent rights
EBITDA	=	Earnings before interest, taxes, depreciation and amortization
EPA	=	United States Environmental Protection Agency
FASB	=	Financial Accounting Standards Board
GAAP	=	Generally accepted accounting principles in the United States
ICE	=	Intercontinental Exchange
ISDA	=	International Swaps and Derivatives Association
LIBOR	=	London Interbank Offered Rate
LTIP	=	Long-term incentive plan
Mcf	=	Thousand cubic feet
MMbbls	=	Million barrels
MLP	=	Master limited partnership
NGL	=	Natural gas liquids, including ethane, propane and butane
NYMEX	=	New York Mercantile Exchange
SEC	=	United States Securities and Exchange Commission
TWh	=	Terawatt hour
U.S.	=	United States
USD	=	United States dollar
WTI	=	West Texas Intermediate

Basis of Consolidation and Presentation

The accompanying financial statements and related notes present and discuss our consolidated financial position as of December 31, 2022 and 2021, and the consolidated results of our operations, cash flows, changes in partners' capital, comprehensive income and changes in accumulated other comprehensive income/(loss) for the years ended December 31, 2022, 2021 and 2020. All significant intercompany balances and transactions have been eliminated in consolidation, and certain reclassifications have been made to information from previous years to conform to the current presentation.

The accompanying consolidated financial statements include the accounts of PAA and all of its wholly owned subsidiaries and those entities that it controls. Investments in entities over which we have significant influence but not control are accounted for by the equity method. We apply proportionate consolidation for pipelines and other assets in which we own undivided joint interests.

Subsequent Events

Subsequent events have been evaluated through the financial statements issuance date and have been included in the following footnotes where applicable.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Note 2—Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, as well as the disclosure of contingent assets and liabilities at the date of the financial statements. Such estimates and assumptions also affect the reported amounts of revenues and expenses during the reporting period. We make significant estimates with respect to (i) estimated fair value of assets and liabilities acquired and identification of associated goodwill and intangible assets, (ii) fair value of derivatives, (iii) accruals and contingent liabilities, (iv) property and equipment, depreciation and amortization expense and asset retirement obligations, (v) impairment assessments of property and equipment, investments in unconsolidated entities and intangible assets and (vi) inventory valuations. Although we believe these estimates are reasonable, actual results could differ from these estimates.

Purchases and Related Costs

Purchases and related costs include (i) the weighted average cost of crude oil and NGL sold to customers, (ii) fees incurred for storage and transportation, whether by pipeline, truck or rail and (iii) performance-related bonus costs. These costs are recognized when incurred except in the case of products sold, which are recognized at the time title transfers to our customers. Inventory exchanges under buy/sell transactions are presented net in “Purchases and related costs” in our Consolidated Statements of Operations.

Field Operating Costs and General and Administrative Expenses

Field operating costs consist of various field operating expenses, including payroll, compensation and benefits costs for operations personnel; fuel and power costs (including the impact of gains and losses from derivative related activities); third-party trucking transportation costs for our U.S. crude oil operations; maintenance and integrity management costs; regulatory compliance; environmental remediation; insurance; costs for usage of third-party owned pipeline, rail and storage assets; vehicle leases; and property taxes. General and administrative expenses consist primarily of payroll, compensation and benefits costs; certain information systems and legal costs; office rent; contract and consultant costs; and audit and tax fees.

Foreign Currency Transactions/Translation

Certain of our subsidiaries use the Canadian dollar as their functional currency. Assets and liabilities of subsidiaries with a Canadian dollar functional currency are translated at period-end rates of exchange, and revenues and expenses are translated at average exchange rates prevailing for each month. The resulting translation adjustments are made directly to a separate component of other comprehensive income, which is reflected in Partners’ Capital on our Consolidated Balance Sheets.

Certain of our subsidiaries also enter into transactions and have monetary assets and liabilities that are denominated in a currency other than the entities’ respective functional currencies. Gains and losses from the revaluation of foreign currency transactions and monetary assets and liabilities are generally included in the Consolidated Statements of Operations. However, gains and losses arising from intercompany foreign currency transactions that are of a long-term investment nature are reported in the same manner as translation adjustments. For the years ended December 31, 2022, 2021 and 2020, the revaluation of foreign currency transactions and monetary assets and liabilities resulted in the recognition of a net loss of \$41 million, a net gain of \$7 million and a net gain of \$16 million, respectively, in our Consolidated Statements of Operations.

Cash and Cash Equivalents

Cash and cash equivalents consist of all unrestricted demand deposits and funds invested in highly liquid instruments with original maturities of three months or less and typically exceed federally insured limits. We periodically assess the financial condition of the institutions where these funds are held and believe that our credit risk is minimal.

In accordance with our policy, unless they may be covered by funds on deposit, outstanding checks are classified as trade accounts payable rather than negative cash. As of December 31, 2022 and 2021, trade accounts payable included \$25 million and \$19 million, respectively, of outstanding checks that were reclassified from cash and cash equivalents.

PLAINS ALL AMERICAN PIPELINE, L.P. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Noncontrolling Interests

Noncontrolling interest represents the portion of assets and liabilities in a consolidated subsidiary that is owned by a third party. FASB guidance requires all entities to report noncontrolling interests in subsidiaries as a component of equity in the consolidated financial statements. See Note 12 for additional discussion regarding our noncontrolling interests.

Asset Retirement Obligations

FASB guidance establishes accounting requirements for retirement obligations associated with tangible long-lived assets, including estimates related to (i) the time of the liability recognition, (ii) initial measurement of the liability, (iii) allocation of asset retirement cost to expense, (iv) subsequent measurement of the liability and (v) financial statement disclosures. FASB guidance also requires that the cost for asset retirement should be capitalized as part of the cost of the related long-lived asset and subsequently allocated to expense using a systematic and rational method.

Some of our assets, primarily our pipelines, certain processing and fractionation facilities and terminals assets, have contractual or regulatory obligations to perform remediation and, in some instances, dismantlement and removal activities when the assets are abandoned. These obligations include varying levels of activity including disconnecting inactive assets from active assets, cleaning and purging assets, and in some cases, completely removing the assets and returning the land to its original state. These assets have been in existence for many years and with regular maintenance will continue to be in service for many years to come. It is not possible to predict when demand for these transportation, storage or other services will cease, and we do not believe that such demand will cease for the foreseeable future. Accordingly, we believe the date when these assets will be abandoned is indeterminate. With no reasonably determinable abandonment date, we cannot reasonably estimate the fair value of the associated asset retirement obligations. We will record asset retirement obligations for these assets in the period in which sufficient information becomes available for us to reasonably estimate the settlement dates.

A small portion of our contractual or regulatory obligations is related to assets that are inactive or that we plan to take out of service and, although the ultimate timing and costs to settle these obligations are not known with certainty, we have recorded a reasonable estimate of these obligations. The following table presents the change in the liability for asset retirement obligations, substantially all of which is reflected in “Other long-term liabilities and deferred credits” on our Consolidated Balance Sheets as of December 31, 2022, 2021 and 2020 (in millions):

	December 31,		
	2022	2021	2020
Beginning balance	\$ 143	\$ 135	\$ 137
Liabilities incurred	2	2	12
Liabilities settled ⁽¹⁾	(26)	(1)	(1)
Accretion expense	4	4	5
Revisions in estimated cash flows	(1)	3	(18)
Ending balance	<u>\$ 122</u>	<u>\$ 143</u>	<u>\$ 135</u>

⁽¹⁾ The 2022 amount primarily relates to the transfer of liabilities to the third party purchaser associated with the sale of Line 901 and the Sisquoc to Pentland portion of Line 903 pipeline. See Notes 7 and 19 for additional information.

Fair Value Measurements

Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the fair value measurement requires judgment, which affects the placement of assets and liabilities within the fair value hierarchy levels. The determination of the fair values includes not only the credit standing of the counterparties involved and the impact of credit enhancements (such as cash deposits and letters of credit) but also the impact of our nonperformance risk on our liabilities. The fair value of our commodity derivatives and interest rate derivatives includes adjustments for credit risk. Our credit adjustment methodology uses market observable inputs and requires judgment. There were no changes to any of our valuation techniques during the period. See Note 13 for further discussion.

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Other Significant Accounting Policies

See the respective footnotes for our accounting policies regarding (i) revenues and accounts receivable, (ii) net income/(loss) per common unit, (iii) inventory, linefill and long-term inventory, (iv) property and equipment, (v) acquisitions, (vi) goodwill, (vii) investments in unconsolidated entities, (viii) intangible assets, (ix) income allocation for partners' capital presentation purposes, (x) derivatives and risk management activities, (xi) leases, (xii) income taxes, (xiii) equity-indexed compensation and (xiv) legal and environmental matters.

Recent Accounting Pronouncements

In October 2021, the FASB issued ASU 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*. This guidance requires that an acquirer recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Topic 606, Revenue from Contracts with Customers, as if it had originated the contracts. The guidance is effective prospectively for interim and annual periods beginning after December 15, 2022, with early adoption permitted. We adopted this guidance as of January 1, 2023, and do not anticipate that our adoption will have a material impact on our financial position, results of operations or cash flows.

In July 2021, the FASB issued ASU 2021-05, *Lessors - Certain Leases with Variable Lease Payments (Topic 842)* which modifies the lease classification requirements for lessors in Topic 842, which we adopted on the effective date of January 1, 2019. The amendments require lessors to classify and account for a lease with variable lease payments that do not depend on a reference index or a rate as an operating lease at lease commencement if another classification (i.e., sales-type or direct financing) would result in the recognition of a day-one loss. For entities that have adopted Topic 842, the guidance is effective for fiscal years, and for interim periods within those fiscal years, beginning after December 15, 2021, with early adoption permitted. We have elected to early adopt the guidance on a prospective basis as of July 1, 2021. Our adoption did not have a material impact on our financial position, results of operations or cash flows.

In August 2020, the FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*, which simplifies accounting for certain financial instruments with characteristics of liabilities and equity, including convertible instruments and contracts on an entity's own equity, by eliminating two of the three models that require separate accounting for embedded conversion features and the settlement assessment that entities are required to perform to determine whether a contract qualifies for equity classification. This guidance is effective for interim and annual periods beginning after December 15, 2021, with early adoption permitted. We adopted this guidance effective January 1, 2022, and our adoption did not have a material impact on our financial position, results of operations or cash flows.

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, which provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. This guidance was effective prospectively upon issuance through December 31, 2022. In December 2022, the FASB issued ASU 2022-06, *Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848*, which defers the sunset date of Topic 848 from December 31, 2022 to December 31, 2024. We will continue to apply applicable expedients and exceptions to contract modifications through December 31, 2024, as applicable.

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*, to simplify the accounting for income taxes based on changes suggested by stakeholders as part of the FASB's simplification initiative. This guidance is effective for interim and annual periods beginning after December 15, 2020, with early adoption permitted. We adopted this guidance effective January 1, 2021, and our adoption did not have a material impact on our financial position, results of operations or cash flows.

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Note 3—Revenues and Accounts Receivable

Revenue Recognition

We disaggregate our revenues by segment and type of activity. These categories depict how the nature, amount, timing and uncertainty of revenues and cash flows are affected by economic factors.

Revenues from Contracts with Customers. The following tables present our revenues from contracts with customers disaggregated by segment and type of activity (in millions):

	Year Ended December 31,		
	2022	2021	2020
Crude Oil segment revenues from contracts with customers			
Sales	\$ 53,822	\$ 39,635	\$ 21,250
Transportation	745	484	570
Terminalling, Storage and Other	362	431	507
Total Crude Oil segment revenues from contracts with customers	\$ 54,929	\$ 40,550	\$ 22,327
	Year Ended December 31,		
	2022	2021	2020
NGL segment revenues from contracts with customers			
Sales	\$ 2,414	\$ 2,292	\$ 1,350
Transportation	30	25	29
Terminalling, Storage and Other	100	82	96
Total NGL segment revenues from contracts with customers	\$ 2,544	\$ 2,399	\$ 1,475

Sales Revenues. Revenues from sales of crude oil and NGL are recognized at the time title to the product sold transfers to the purchaser, which occurs upon delivery of the product to the purchaser or its designee. The consideration received under these contracts is variable based on commodity prices. Inventory exchanges under buy/sell transactions are excluded from sales revenues in our Consolidated Statements of Operations.

Transportation Revenues. Transportation revenues include revenues from transporting crude oil and NGL on pipelines and trucks. Revenues from pipeline tariffs and fees are associated with the transportation of crude oil and NGL at a published tariff. We primarily recognize pipeline tariff and fee revenues over time as services are rendered, based on the volumes transported. As is common in the pipeline transportation industry, our tariffs incorporate a loss allowance factor. We recognize the allowance volumes collected as part of the transaction price and record this non-cash consideration at fair value, measured as of the contract inception date.

Terminalling, Storage and Other Revenues. Revenues in this category include (i) fees that are generated when we receive liquids from one connecting source and deliver the applicable product to another connecting carrier, (ii) fees from storage capacity agreements, (iii) fees from loading and unloading services at our terminals and (iv) fees from natural gas and condensate processing services and from NGL fractionation and isomerization service. We generate revenue through a combination of month-to-month and multi-year agreements and processing arrangements. Storage fees are typically recognized in revenue ratably over the term of the contract regardless of the actual storage capacity utilized as our performance obligation is to make available storage capacity for a period of time. Terminal fees (including throughput and loading/unloading fees) are recognized as the liquids enter or exit the terminal and are received from or delivered to the connecting carrier or third-party terminal, as applicable. We recognize loading and unloading fees when the volumes are delivered or received. Natural gas storage related activities fees were recognized in the period the natural gas moved across our header system. Fees from NGL fractionation and isomerization services and gas processing services are recognized in the period when the services are performed.

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Reconciliation to Total Revenues of Reportable Segments. The following disclosures only include information regarding revenues associated with consolidated entities; revenues from entities accounted for by the equity method are not included. The following tables present the reconciliation of our revenues from contracts with customers (as described above for each segment) to total revenues of reportable segments and total revenues as disclosed in our Consolidated Statements of Operations (in millions):

Year Ended December 31, 2022	Crude Oil	NGL	Total
Revenues from contracts with customers	\$ 54,929	\$ 2,544	\$ 57,473
Other items in revenues	151	217	368
Total revenues of reportable segments	\$ 55,080	\$ 2,761	\$ 57,841
Intersegment revenues elimination			(499)
Total revenues			\$ 57,342

Year Ended December 31, 2021	Crude Oil	NGL	Total
Revenues from contracts with customers	\$ 40,550	\$ 2,399	\$ 42,949
Other items in revenues	(80)	(431)	(511)
Total revenues of reportable segments	\$ 40,470	\$ 1,968	\$ 42,438
Intersegment revenues elimination			(360)
Total revenues			\$ 42,078

Year Ended December 31, 2020	Crude Oil	NGL	Total
Revenues from contracts with customers	\$ 22,327	\$ 1,475	\$ 23,802
Other items in revenues	(128)	(115)	(243)
Total revenues of reportable segments	\$ 22,199	\$ 1,360	\$ 23,559
Intersegment revenues elimination			(269)
Total revenues			\$ 23,290

Minimum Volume Commitments. We have certain agreements that require counterparties to transport or throughput a minimum volume over an agreed upon period. Some of these agreements include make-up rights if the minimum volume is not met. We record a receivable from the counterparty in the period that services are provided or when the transaction occurs, including amounts for deficiency obligations from counterparties associated with minimum volume commitments. If a counterparty has a make-up right associated with a deficiency, we defer the revenue attributable to the counterparty's make-up right as a contract liability and subsequently recognize the revenue at the earlier of when the deficiency volume is delivered or shipped, when the make-up right expires or when it is determined that the counterparty's ability to utilize the make-up right is remote.

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The following table presents counterparty deficiencies associated with contracts with customers and buy/sell arrangements that include minimum volume commitments for which we had remaining performance obligations and the customers still had the ability to meet their obligations (in millions):

Counterparty Deficiencies	Financial Statement Classification	December 31,	
		2022	2021
Billed and collected	Other current liabilities	\$ 104	\$ 63
Unbilled ⁽¹⁾	N/A	1	16
Total		<u>\$ 105</u>	<u>\$ 79</u>

⁽¹⁾ Amounts were related to deficiencies for which the counterparties had not met their contractual minimum commitments and are not reflected in our Consolidated Financial Statements as we had not yet billed or collected such amounts.

Contract Balances. Our contract balances consist of amounts received associated with services or sales for which we have not yet completed the related performance obligation. The following table presents the changes in the liability balance associated with contracts with customers (in millions):

	Contract Liabilities
Balance at December 31, 2020	<u>\$ 501</u>
Amounts recognized as revenue ⁽¹⁾	(393)
Additions	33
Balance at December 31, 2021	<u>\$ 141</u>
Amounts recognized as revenue	(26)
Additions ⁽²⁾	145
Other	(31)
Balance at December 31, 2022	<u>\$ 229</u>

⁽¹⁾ Includes approximately \$361 million associated with crude oil sales agreements that were entered into in conjunction with storage arrangements and future inventory exchanges. Such amount was recognized as revenue in the first quarter of 2021.

⁽²⁾ Includes approximately \$122 million associated with a gas processing agreement that was entered into in conjunction with the purchase of an additional ownership interest in certain straddle plants. Such amount is expected to be recognized as revenue over a 50-year term. See Note 7 for additional information.

Remaining Performance Obligations. The information below includes the amount of consideration allocated to partially and wholly unsatisfied remaining performance obligations under contracts that exist as of the end of the periods and the timing of revenue recognition of those remaining performance obligations. Certain contracts meet the requirements for the presentation as remaining performance obligations. These arrangements include a fixed minimum level of service, typically a set volume of service, and do not contain any variability other than expected timing within a limited range. The following table presents the amount of consideration associated with remaining performance obligations for the population of contracts with external customers meeting the presentation requirements as of December 31, 2022 (in millions):

	2023	2024	2025	2026	2027	2028 and Thereafter
Pipeline revenues supported by minimum volume commitments and capacity agreements ⁽¹⁾	\$ 329	\$ 337	\$ 370	\$ 130	\$ 94	\$ 228
Terminalling, storage and other agreement revenues	254	195	121	94	84	704
Total	<u>\$ 583</u>	<u>\$ 532</u>	<u>\$ 491</u>	<u>\$ 224</u>	<u>\$ 178</u>	<u>\$ 932</u>

⁽¹⁾ Calculated as volumes committed under contracts multiplied by the current applicable tariff rate.

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The presentation above does not include (i) expected revenues from legacy shippers not underpinned by minimum volume commitments, including pipelines where there are no or limited alternative pipeline transportation options, (ii) intersegment revenues and (iii) the amount of consideration associated with certain income generating contracts, which include a fixed minimum level of service, that are either not within the scope of ASC 606 or do not meet the requirements for presentation as remaining performance obligations. The following are examples of contracts that are not included in the table above because they are not within the scope of ASC 606 or do not meet the requirements for presentation:

- Minimum volume commitments on certain of our joint venture pipeline systems;
- Acreage dedications;
- Buy/sell arrangements with future committed volumes;
- Short-term contracts and those with variable consideration due to the election of practical expedients, as discussed below;
- Contracts within the scope of ASC Topic 842, *Leases*; and
- Contracts within the scope of ASC Topic 815, *Derivatives and Hedging*.

We have elected practical expedients to exclude the presentation of remaining performance obligations for variable consideration which relates to wholly unsatisfied performance obligations. Certain contracts do not meet the requirements for presentation of remaining performance obligations due to variability in amount of performance obligation remaining, variability in the timing of recognition or variability in consideration. Acreage dedications require us to perform future services but do not contain a minimum level of services and are therefore excluded from this presentation. Long-term merchant arrangements contain variable timing, volumes and/or consideration and are excluded from this presentation. The duration of these contracts varies across the periods presented above.

Additionally, we have elected practical expedients to exclude contracts with terms of one year or less, and therefore exclude the presentation of remaining performance obligations for short-term transportation, storage and processing services, merchant arrangements, including the non-cancelable period of evergreen arrangements, and any other types of arrangements with terms of one year or less.

Trade Accounts Receivable and Other Receivables, Net

Our accounts receivable are primarily from purchasers and shippers of crude oil and, to a lesser extent, purchasers of NGL. These purchasers include, but are not limited to, refiners, producers, marketing and trading companies and financial institutions. The majority of our accounts receivable relate to our crude oil merchant activities that can generally be described as high volume and low margin activities, in many cases involving exchanges of crude oil volumes.

To mitigate credit risk related to our accounts receivable, we utilize a rigorous credit review process. We closely monitor market conditions and perform credit reviews of each customer to make a determination with respect to the amount, if any, of open credit to be extended to any given customer and the form and amount of financial performance assurances we require. Such financial assurances are commonly provided to us in the form of advance cash payments, standby letters of credit, credit insurance or parental guarantees. Additionally, in an effort to mitigate credit risk, a significant portion of our transactions with counterparties are settled on a net-cash basis. For a majority of these net-cash arrangements, we also enter into netting agreements (contractual agreements that allow us to offset receivables and payables with those counterparties against each other on our balance sheet).

Accounts receivable from the sale of crude oil are generally settled with counterparties on the industry settlement date, which is typically in the month following the month in which the title transfers. Otherwise, we generally invoice customers within 30 days of when the products or services were provided and generally require payment within 30 days of the invoice date. We review all outstanding accounts receivable balances on a monthly basis and record our receivables net of expected credit losses. We do not write-off accounts receivable balances until we have exhausted substantially all collection efforts. At December 31, 2022 and 2021, substantially all of our trade accounts receivable were less than 30 days past their invoice date. Our expected credit losses are immaterial. Although we consider our credit procedures to be adequate to mitigate any significant credit losses, the actual amount of current and future credit losses could vary significantly from estimated amounts.

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The following is a reconciliation of trade accounts receivable from revenues from contracts with customers to total Trade accounts receivable and other receivables, net as presented on our Consolidated Balance Sheets (in millions):

	December 31,	
	2022	2021
Trade accounts receivable arising from revenues from contracts with customers	\$ 4,141	\$ 4,031
Other trade accounts receivables and other receivables ⁽¹⁾	7,216	5,126
Impact due to contractual rights of offset with counterparties	(7,450)	(4,452)
Trade accounts receivable and other receivables, net	<u>\$ 3,907</u>	<u>\$ 4,705</u>

⁽¹⁾ The balance is comprised primarily of accounts receivable associated with buy/sell arrangements that are not within the scope of ASC 606.

Note 4—Net Income/(Loss) Per Common Unit

After consideration of distributions to preferred unitholders, basic and diluted net income/(loss) per common unit is determined pursuant to the two-class method as prescribed in FASB guidance. This method is an earnings allocation formula that is used to determine allocations to our limited partners and participating securities according to distributions pertaining to the current period's net income and participation rights in undistributed earnings or distributions in excess of earnings. Under the two-class method, net income is reduced by distributions pertaining to the period, and all remaining earnings or distributions in excess of earnings are then allocated to our common unitholders and participating securities based on their respective rights to share in distributions, regardless of whether those earnings would actually be distributed during a particular period from an economic or practical perspective. Participating securities include equity-indexed compensation plan awards that have vested DERs, which entitle the grantee to a cash payment equal to the cash distribution paid on our outstanding common units.

We calculate basic and diluted net income/(loss) per common unit by dividing net income/(loss) attributable to PAA (after deducting amounts allocated to the preferred unitholders and participating securities) by the basic and diluted weighted average number of common units outstanding during the period.

The diluted weighted average number of common units is computed based on the weighted average number of common units plus the effect of potentially dilutive securities outstanding during the period, which include (i) our Series A preferred units and (ii) our equity-indexed compensation plan awards. See Note 12 for additional information regarding our Series A preferred units. See Note 18 for a complete discussion of our equity-indexed compensation plan awards. When applying the if-converted method prescribed by FASB guidance, the possible conversion of approximately 71 million Series A preferred units, on a weighted-average basis, were excluded from the calculation of diluted net income/(loss) per common unit for the years ended December 31, 2022, 2021 and 2020 as the effect was antidilutive for all periods. Our equity-indexed compensation plan awards that contemplate the issuance of common units are considered potentially dilutive unless (i) they become vested only upon the satisfaction of a performance condition and (ii) that performance condition has yet to be satisfied. Equity-indexed compensation plan awards that were deemed to be dilutive during the year were reduced by a hypothetical common unit repurchase based on the remaining unamortized fair value, as prescribed by the treasury stock method in guidance issued by the FASB. For the years ended December 31, 2022, 2021 and 2020, approximately 2.0 million, 0.5 million and 0.3 million equity-indexed compensation plan awards, respectively, on a weighted-average basis, were excluded from the computation of diluted net income/(loss) per common unit as the effect did not change the presentation of diluted net income/(loss) per common unit or the effect was antidilutive.

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The following table sets forth the computation of basic and diluted net income/(loss) per common unit (in millions, except per unit data):

	Year Ended December 31,		
	2022	2021	2020
Basic and Diluted Net Income/(Loss) per Common Unit			
Net income/(loss) attributable to PAA	\$ 1,037	\$ 593	\$ (2,590)
Distributions to Series A preferred unitholders	(149)	(149)	(149)
Distributions to Series B preferred unitholders	(52)	(49)	(49)
Amounts allocated to participating securities	(5)	(2)	(2)
Net income/(loss) allocated to common unitholders ⁽¹⁾	<u>\$ 831</u>	<u>\$ 393</u>	<u>\$ (2,790)</u>
Basic and diluted weighted average common units outstanding	701	716	728
Basic and diluted net income/(loss) per common unit	<u>\$ 1.19</u>	<u>\$ 0.55</u>	<u>\$ (3.83)</u>

⁽¹⁾ We calculate net income/(loss) allocated to common unitholders based on the distributions pertaining to the current period's net income. After adjusting for the appropriate period's distributions, the remaining undistributed earnings or excess distributions over earnings (i.e., undistributed loss), if any, are allocated to the common unitholders and participating securities in accordance with the contractual terms of our partnership agreement in effect for the period and as further prescribed under the two-class method.

Note 5—Inventory, Linefill and Long-term Inventory

Inventory, including long-term inventory, primarily consists of crude oil and NGL in pipelines, storage facilities and railcars that are valued at the lower of cost or net realizable value, with cost determined using an average cost method within specific inventory pools. At the end of each reporting period, we assess the carrying value of our inventory and make any adjustments necessary to reduce the carrying value to the applicable net realizable value. Any resulting adjustments are a component of "Purchases and related costs" on our accompanying Consolidated Statements of Operations. No adjustments were recorded during the years ended December 31, 2022 or 2021. During the year ended December 31, 2020, we recorded charges of \$233 million (of which \$40 million was associated with our long-term inventory) related to the write down of our crude oil and NGL inventory due to declines in prices. A portion of these inventory valuation adjustments was offset by the recognition of gains on derivative instruments being utilized to hedge future sales of our crude oil and NGL inventory. Such gains were recorded to "Product sales revenues" in our accompanying Consolidated Statements of Operations. See Note 13 for discussion of our derivative and risk management activities.

Linefill in assets we own is recorded at historical cost and consists of crude oil and NGL. We classify as linefill (i) our proportionate share of barrels used to fill a pipeline that we own such that when an incremental barrel is pumped into or enters a pipeline it forces product out at another location and (ii) barrels that represent the minimum working requirements in tanks and caverns that we own. Linefill carrying amounts are reviewed for impairment in accordance with FASB guidance with respect to accounting for the impairment or disposal of long-lived assets. Carrying amounts that are not expected to be recoverable through future cash flows are written down to estimated fair value. See Note 6 for further discussion regarding impairment of long-lived assets. During 2022, 2021 and 2020, we did not recognize any material impairments of linefill.

Minimum working inventory requirements in third-party assets and other working inventory in our assets that are needed for our commercial operations are included within specific inventory pools in inventory (a current asset) in determining the average cost of operating inventory. At the end of each period, we reclassify the inventory not expected to be liquidated within the succeeding twelve months out of "Inventory," at the average cost of the applicable inventory pools, and into "Long-term inventory," which is reflected as a separate line item under "Other assets" on our Consolidated Balance Sheets.

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Inventory, linefill and long-term inventory consisted of the following (barrels in thousands and carrying value in millions):

	December 31, 2022				December 31, 2021			
	Volumes	Unit of Measure	Carrying Value	Price/Unit ⁽¹⁾	Volumes	Unit of Measure	Carrying Value	Price/Unit ⁽¹⁾
Inventory								
Crude oil	6,713	barrels	\$ 452	\$ 67.33	8,041	barrels	\$ 544	\$ 67.65
NGL	7,285	barrels	270	\$ 37.06	6,982	barrels	234	\$ 33.51
Other	N/A		7	N/A	N/A		5	N/A
Inventory subtotal			729				783	
Linefill								
Crude oil	15,480	barrels	906	\$ 58.53	15,199	barrels	862	\$ 56.71
NGL	1,876	barrels	55	\$ 29.32	1,633	barrels	45	\$ 27.56
Linefill subtotal			961				907	
Long-term inventory								
Crude oil	3,102	barrels	246	\$ 79.30	2,973	barrels	209	\$ 70.30
NGL	1,066	barrels	38	\$ 35.65	1,135	barrels	44	\$ 38.77
Long-term inventory subtotal			284				253	
Total			<u>\$ 1,974</u>				<u>\$ 1,943</u>	

⁽¹⁾ Price per unit of measure is comprised of a weighted average associated with various grades, qualities and locations. Accordingly, these prices may not coincide with any published benchmarks for such products.

Note 6—Property and Equipment

In accordance with our capitalization policy, expenditures made to expand the existing operating and/or earnings capacity of our assets are capitalized, as are certain costs directly related to the construction of such assets, including related internal labor costs, engineering costs and interest costs. We also capitalize expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets. Repair and maintenance expenditures incurred in order to maintain the day to day operation of our existing assets are expensed as incurred.

Property and equipment, net is stated at cost and consisted of the following (in millions):

	Estimated Useful Lives (Years)	December 31,	
		2022	2021
Pipelines and related facilities ⁽¹⁾	10 - 50	\$ 13,643	\$ 12,765
Storage, terminal and rail facilities	10 - 50	5,067	5,100
Trucking equipment and other	2 - 15	471	502
Construction in progress	N/A	201	248
Office property and equipment	2 - 50	312	312
Land and other	N/A	326	330
Property and equipment, gross		20,020	19,257
Accumulated depreciation		(4,770)	(4,354)
Property and equipment, net		<u>\$ 15,250</u>	<u>\$ 14,903</u>

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- (1) We include rights-of-way, which are intangible assets, in our Pipelines and related facilities amounts within property and equipment.

We calculate our depreciation using the straight-line method, based on estimated useful lives and salvage values of our assets. Depreciation expense for the years ended December 31, 2022, 2021 and 2020 was \$707 million, \$652 million and \$563 million, respectively.

As of December 31, 2022, 2021 and 2020, we incurred liabilities of \$46 million, \$48 million and \$51 million, respectively, for construction in progress that had not been paid.

Impairment of Long-Lived Assets (Held and Used)

Long-lived assets with recorded values that are not expected to be recovered through future cash flows are written down to estimated fair value in accordance with FASB guidance with respect to the accounting for the impairment or disposal of long-lived assets. Under this guidance, a long-lived asset is tested for impairment when events or circumstances indicate that its carrying value may not be recoverable. The carrying value of a long-lived asset is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use and eventual disposition of the asset. If the carrying value exceeds the sum of the undiscounted cash flows, an impairment loss equal to the amount by which the carrying value exceeds the fair value of the asset is recognized.

We periodically evaluate property and equipment and other long-lived assets for impairment when events or circumstances indicate that the carrying value of these assets may not be recoverable. The evaluation is highly dependent on the underlying assumptions of related cash flows. The subjective assumptions used to determine the existence of an impairment in carrying value include:

- whether there is an indication of impairment;
- the grouping of assets;
- the intention of “holding,” “abandoning” or “selling” an asset;
- the forecast of undiscounted expected future cash flow over the asset’s estimated useful life; and
- if an impairment exists, the fair value of the asset or asset group.

In addition, when we evaluate property and equipment and other long-lived assets for recoverability, it may also be necessary to review related depreciation estimates and methods.

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During the third quarter of 2022, we temporarily ceased service on a crude oil pipeline in California as a precautionary measure following a routine inspection and initiated a program of additional tests and inspections. After assessing the results of such tests and the changing operating conditions of our California assets, we determined that we had a triggering event due to the effect on future cash flows for certain of our assets that required us to assess the recoverability of our carrying value of our California crude oil assets (which includes the temporarily idled pipeline) reported in our Crude Oil segment. As a result of our impairment review, we wrote off the portion of the carrying amount of these long-lived assets that exceeded their fair value. We recognized a non-cash loss of approximately \$330 million, which amount is reflected in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations. Our estimated fair values (which we consider a Level 3 measurement in the fair value hierarchy) were based upon a discounted cash flow approach utilizing various assumptions and the application of a discount rate of approximately 15%, which represents our estimate of the cost of capital of a theoretical market participant for the asset group. Such assumptions included (but were not limited to) (i) future commodity volumes (consistent with historical information and estimates of future drilling and completion activity), (ii) tariff rates, (iii) estimated fixed and variable costs, (iv) the length of time the assets operate and (v) the amount for which assets in the asset group could be sold.

During the year ended December 31, 2021, we recognized approximately \$220 million of non-cash impairment losses related to certain crude oil storage terminal assets included in our Crude Oil segment. This amount is reflected in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statements of Operations. Decreased demand for our services related to changing market conditions resulted in decreases in expected future cash flows for certain of our assets, which was a triggering event that required us to assess the recoverability of our carrying value of such long-lived assets. As a result of our impairment review, we wrote off the portion of the carrying amount of these long-lived assets that exceeded their fair value. Our estimated fair value (which we consider a Level 3 measurement in the fair value hierarchy) was primarily based upon an assumption for the amount for which the relevant assets and land could be sold.

During the year ended December 31, 2020, we recognized approximately \$541 million of non-cash impairment losses, reflected in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations.

Of our 2020 impairment losses, approximately \$415 million was associated with certain pipeline assets in our Crude Oil segment located in the Mid-Continent region. The macroeconomic and geopolitical conditions that occurred in 2020, including the collapse of oil prices driven by both the decrease in demand caused by the COVID-19 pandemic and excess supply, as well as changing market conditions and expected lower crude oil production in certain regions, resulted in expected decreases in future cash flows for certain of our assets, which was a triggering event that required us to assess the recoverability of our carrying value of such long-lived assets. As a result of our impairment review, we wrote off the portion of the carrying amount of these long-lived assets that exceeded their fair value. Our estimated fair values (which we consider a Level 3 measurement in the fair value hierarchy) were based upon a discounted cash flow approach utilizing various assumptions and the application of a discount rate of approximately 14%, which represents our estimate of the cost of capital of a theoretical market participant. Such assumptions included (but were not limited to) (i) future commodity volumes (consistent with historical information and estimates of future drilling and completion activity), (ii) tariff rates, (iii) future commodity prices (based on relevant indices and applicable quality and location differentials), and (iv) estimated fixed and variable costs.

The remaining 2020 impairment losses were associated with idled or underutilized assets, primarily in our Crude Oil segment, including certain pipelines located in the Western region and other long-lived assets, for which it has been determined that it is unlikely that opportunities will exist in the future to recover our investment in these assets. We wrote off substantially all of the carrying value of these assets.

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Note 7—Acquisitions, Divestitures and Other Transactions

Acquisitions

Cactus II

In November 2022, we and Enbridge Inc. (“Enbridge”) purchased Western Midstream Partners, LP (“WES”)’s 15% interest in Cactus II Pipeline, LLC (“Cactus II”) for an aggregate amount of \$265 million. Enbridge acquired 10% and we acquired 5% of Cactus II, with each paying a proportionate share (\$177 million and \$88 million, respectively) of the aggregate purchase price. We and Enbridge are now the sole owners of Cactus II, with 70% and 30% respective ownership interests. We will continue to serve as operator. We previously accounted for our 65% interest in Cactus II as an equity method investment. In addition to the change in ownership, there were changes in governance which led to a change in control. We now control Cactus II and reflect Cactus II as a consolidated subsidiary in our Consolidated Financial Statements, with Enbridge’s 30% interest reflected as a noncontrolling interest.

The acquisition was accounted for as a business combination achieved in stages, or a “step acquisition”, using the acquisition method of accounting. As the majority owner and the controlling entity, we are considered the acquirer and the Cactus II predecessor business was recorded based on the fair value of the assets acquired and liabilities assumed, with Enbridge’s 30% interest in Cactus II of \$526 million recognized as noncontrolling interest in partners’ capital.

As a result of us obtaining control over Cactus II, our previously held 65% interest in Cactus II was remeasured to its fair value of \$1.140 billion based upon a valuation of the acquired business, as of the date of acquisition. We considered multiple factors in determining the fair value of the previously held equity method investment, including, (i) the price negotiated with WES for its 15% interest in Cactus II and (ii) a discounted cash flow approach. The discounted cash flow approach utilized a discount rate of 13.8%, based on the estimate of the risk that a theoretical market participant would assign to the business. Prior to the acquisition, we had a preexisting relationship with Cactus II, through one of our consolidated joint ventures, for certain capacity lease agreements. The portion of the fair value of Cactus II associated with these agreements is eliminated in consolidation. Accounting for such impact, the remeasurement of our investment in Cactus II to fair value resulted in a gain of \$370 million. This gain has been recognized in the line item “Gains (losses) on/(impairment of) investments in unconsolidated entities, net” on our Consolidated Statement of Operations

In accordance with applicable accounting guidance, the fair value of Cactus II following the acquisition is utilized as the consideration transferred for the purchase price allocation. The consideration transferred of \$1.556 billion excludes the value associated with the capacity lease agreements described above as such value is eliminated for our Consolidated Financial Statements.

The determination of the fair value of the assets acquired and liabilities assumed was estimated in accordance with the applicable accounting guidance. The analysis was performed based on estimates that are reflective of market participant assumptions. The following table reflects our determination of the fair value of those assets and liabilities (in millions):

Identifiable Assets Acquired and Liabilities Assumed:	Estimated Useful Lives (in years)	Recognized Amount
Property and equipment	3-50	\$ 1,174
Intangible assets	20	428
Working capital and other assets and liabilities	N/A	(46)
		<u>\$ 1,556</u>

The fair value of the tangible assets is a Level 3 measurement in the fair value hierarchy and was determined using a market approach for rights-of-way and a cost approach for other tangible assets, which were based on costs incurred on similar recent construction projects. The fair value of the intangible assets is also a Level 3 measurement in the fair value hierarchy and was determined by applying a discounted cash flow approach. Such approach utilized a discount rate of approximately 18%, based on our estimate of the risk that a theoretical market participant would assign to the respective intangible assets. The projection of future crude oil volumes transported and the estimated tariff rates for transportation were also key assumptions in the valuation of the intangible assets. Projected future volumes and estimated tariff rates were based on current contracts in place with assumptions for forecasted rate increases and contract renewals.

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The fair value of intangible assets is comprised of customer relationships that will be amortized over their useful lives, which have a remaining weighted average life of approximately 20 years. The value assigned to such intangible assets will be amortized to earnings under the declining balance method of amortization. Amortization expense was approximately \$13 million during the year ended December 31, 2022, and the future amortization expense through 2027 is estimated as follows (in millions):

2023	\$	61
2024	\$	51
2025	\$	47
2026	\$	32
2027	\$	32

Pro forma financial information assuming the step acquisition had occurred as of the beginning of the calendar year prior to the year of the step acquisition, as well as the revenues and earnings generated during the period since the step acquisition date, were not material for disclosure purposes.

Other Acquisitions

During the year ended December 31, 2022, we also completed the following acquisitions:

- the acquisition in July 2022 of the remaining 50% interest in Advantage Pipeline Holdings LLC (“Advantage”) for \$74 million, including cash paid for working capital. As a result of this transaction, we now own 100% of Advantage and its subsidiaries and such entities are reflected as consolidated subsidiaries in our Consolidated Financial Statements.
- the acquisition in October 2022 of an additional ownership interest in certain straddle plants included in our NGL segment in a non-cash transaction whereby we agreed to provide processing capacity over a 50-year term at specified terms and conditions. This transaction was accounted for as an asset acquisition. The fair value of the straddle plant assets acquired and liabilities assumed was approximately \$122 million, and we recognized an equally offsetting contract liability that will be amortized on a straight-line basis into “Services revenue” over the 50-year term of the agreement.

In February 2020, we acquired Felix Midstream LLC, now known as FM Gathering LLC (“FM Gathering”) from Felix Energy Holdings II, LLC for approximately \$300 million, net of working capital and other adjustments. FM Gathering owns and operates a newly constructed crude oil gathering system in the Delaware Basin, with associated crude oil storage and truck offloading capacity, and is supported by a long-term acreage dedication. The assets acquired are included in our Crude Oil segment. This acquisition was accounted for using the acquisition method of accounting and the determination of the fair value of the assets acquired and liabilities assumed was determined in accordance with the applicable accounting guidance. The assets acquired primarily consisted of property and equipment with a fair value of \$115 million and intangible assets with a fair value of \$187 million. The fair value of the tangible assets is a Level 3 measurement in the fair value hierarchy and was determined using a cost approach. The cost approach was based on costs incurred on similar recent construction projects. The fair value of the intangible assets is also a Level 3 measurement in the fair value hierarchy and was determined by applying a discounted cash flow approach. Such approach utilized discount rates varying from 18% to 19%, based on our estimate of the risk that a theoretical market participant would assign to the respective intangible assets.

Asset Exchange

In June 2021, we closed on an asset exchange agreement (the “Asset Exchange”) with Inter Pipeline Ltd., through which we acquired additional interests in two straddle plants included in our NGL segment that we currently operate, in exchange for a pipeline and related storage and truck offload facilities previously included in our Crude Oil segment and cash consideration of \$32 million, including working capital and other adjustments. We recognized a gain of \$106 million on the divestiture of the pipeline and related storage and truck offload facilities, which is included in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations, based on the difference between the fair value of the divested assets and their carrying value.

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Joint Venture Transaction

In October 2021, we and Oryx Midstream completed the merger, in a cashless, debt-free transaction, of our respective Permian Basin assets, operations and commercial activities into a newly formed joint venture, the Permian JV. The Permian JV includes all of Oryx Midstream's Permian Basin assets and, with the exception of our long-haul pipeline systems and certain of our intra-basin terminal assets, the vast majority of our assets located within the Permian Basin. We own 65% of the Permian JV, operate the combined assets and reflect the Permian JV as a consolidated subsidiary in our consolidated financial statements.

The formation of the joint venture was accounted for as a business combination using the acquisition method of accounting. As the majority owner and the controlling entity, we are considered the acquirer and the transfer of our predecessor business to the joint venture was accounted for at historical cost, while the Oryx Midstream predecessor business was recorded based on the fair value of the assets acquired and liabilities assumed. In accordance with applicable accounting guidance, the fair value of Oryx Midstream's ownership interest in the joint venture following the formation of \$3.230 billion is utilized as the consideration transferred for the purchase price allocation.

The combination of the historical cost and fair value, discussed above, resulted in net assets of the joint venture of approximately \$7.529 billion upon formation. Oryx Midstream's 35% interest in the net assets of the Permian JV was recognized as noncontrolling interest in partners' capital. The difference between the noncontrolling interest recognized and the fair value of Oryx Midstream's assets acquired and liabilities assumed was recorded as an increase to our partners' capital excluding noncontrolling interests.

The following table presents the amounts recognized in partners' capital associated with this transaction (in millions):

	Recognized Amount
Noncontrolling interests	\$ 2,635
Partners' capital, excluding noncontrolling interests	595
	<u>\$ 3,230</u>

The fair value of the \$3.230 billion consideration is a Level 3 measurement in the fair value hierarchy and was determined by valuing both the enterprise value of Oryx Midstream's Permian Basin business and the enterprise value of our Permian Basin assets that were contributed to the joint venture. The enterprise value of Oryx Midstream's Permian Basin business was calculated by weighting the results of (i) a discounted cash flow approach and (ii) a guideline public company method ("GPCM"). The value of our Permian Basin assets that were contributed to the joint venture was based on a GPCM. The discounted cash flow approach utilized a discount rate of 11.75%, based on our estimate of the risk that a theoretical market participant would assign to the business. The projection of future crude volumes gathered and transported was also a key assumption in the discounted cash flow approach and was based on projected rig activity on the associated acreage. The GPCM applies market multiples to estimated earnings to derive the fair value. The GPCM values for Oryx Midstream's Permian Basin business and for our Permian Basin assets that were contributed to the joint venture assumed market multiples ranging from 9.5 to 11.0, which were derived from assumptions of market multiples for similar businesses.

The determination of the fair value of the assets acquired and liabilities assumed was estimated in accordance with the applicable accounting guidance. The analysis was performed based on estimates that are reflective of market participant assumptions. The following table reflects our determination of the fair value of those assets and liabilities (in millions):

Identifiable Assets Acquired and Liabilities Assumed	Estimated Useful Lives (in years)	Recognized Amount
Property and equipment	3-30	\$ 1,886
Intangible assets	20	1,247
Investment in unconsolidated entities	N/A	103
Working capital and other assets and liabilities	N/A	(6)
		<u>\$ 3,230</u>

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The fair value of the tangible assets is a Level 3 measurement in the fair value hierarchy and was determined using a cost approach based on costs incurred on similar recent construction projects. The fair value of the intangible assets is also a Level 3 measurement in the fair value hierarchy and was determined by applying a discounted cash flow approach. Such approach utilized a discount rate of approximately 16%, based on our estimate of the risk that a theoretical market participant would assign to the respective intangible assets. The projection of future crude oil volumes gathered and transported was also a key assumption in the valuation of the intangible assets and was based on projected rig activity on the associated acreage.

The fair value of intangible assets is comprised of customer relationships that will be amortized over their useful lives, which have a remaining weighted average life of approximately 20 years. The value assigned to such intangible assets will be amortized to earnings under the declining balance method of amortization. Amortization expense was approximately \$142 million and \$28 million during the years ended December 31, 2022 and 2021, respectively, and the future amortization expense through 2026 is estimated as follows (in millions):

2023	\$	138
2024	\$	127
2025	\$	117
2026	\$	106

During the year ended December 31, 2021, we incurred approximately \$17 million of transaction-related costs associated with the joint venture formation transaction. Such costs are reflected as a component of “General and administrative expenses” on our Consolidated Statements of Operations.

Distributions of available cash from the Permian JV to us and Oryx Midstream are subject to a tiered modified sharing arrangement (“MSA”) for up to ten years. Pursuant to the terms of the governing documents for the Permian JV, the MSA will terminate in October 2031, or sooner if Oryx Midstream exercises its right to terminate the MSA at any time by delivery of written notice to us. Upon termination of the MSA, monthly distributions of available cash will be paid 65% to PAA and 35% to Oryx. Through the third quarter of 2022, the Permian JV made quarterly distributions, but starting in December 2022, the Permian JV began making monthly distributions to the members after renegotiation of the MSA.

Under the MSA, distributions will be allocated as follows (in millions):

Tier	Available Cash Annualized	Distributions Percentages	
		PAA	Oryx
1	Up to \$300	50%	50%
2	\$300 - \$428	100%	—%
3	\$428 - \$815	65%	35%
4	\$815 and above	70%	30%

Oryx Midstream is a portfolio company of Stonepeak Infrastructure Partners (“Stonepeak”). Affiliates of Stonepeak own approximately 8.9% of our outstanding Series A preferred units, which equates to less than 1% of our outstanding common units and Series A preferred units (our “common unit equivalents”) combined.

Pro Forma and Other Financial Results

Financial results of the Permian JV have been included in the results of operations within the Crude Oil segment since the date of the formation. Disclosure of the revenues and earnings from the Oryx Midstream predecessor business for the period subsequent to the joint venture formation is not practicable as it is not being operated as a standalone subsidiary. The following selected unaudited pro forma results of operations were derived from the historical financial statements of PAA and Oryx Midstream, and gives effect to the joint venture formation as if it had occurred on January 1, 2020. The pro forma results of operations do not include any cost savings or other synergies that may result from the Permian JV or any estimated costs that have been or will be incurred by us to integrate Oryx Midstream’s assets. These results are not necessarily indicative of the results that might have actually occurred had the merger taken place on January 1, 2020; furthermore, this financial information is not intended to be a projection of future results (in millions, except per unit amounts):

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	Year ended December 31,	
	2021	2020
Total revenues	\$ 42,359	\$ 23,536
Net income/(loss) attributable to PAA	\$ 524	\$ (2,898)
Net income/(loss) allocated to common unitholders	\$ 324	\$ (3,098)
Basic and diluted net income/(loss) per common unit	\$ 0.45	\$ (4.26)

Divestitures

During the year ended December 31, 2022, we sold certain non-core assets for total proceeds of \$60 million. The assets sold primarily consisted of land and related assets in Long Beach, California, as well as Line 901 and the Sisquoc to Pentland portion of Line 903. These assets were previously reported in our Crude Oil segment. We recognized gains of \$61 million related to these asset sales, a portion of which relates to the transfer of an asset retirement obligation to the purchaser. Such amounts are included in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations.

In August 2021, we sold our Pine Prairie and Southern Pines natural gas storage facilities, which were included in our Crude Oil segment for periods prior to the sale, for net proceeds of approximately \$850 million, including working capital adjustments. Prior to the sale, we classified the assets related to this transaction (primarily “Property and equipment”), valued at the lower of the carrying amount or fair value less costs to sell, of approximately \$832 million as assets held for sale with approximately \$18 million of deferred losses on hedges remaining in other comprehensive income until the closing of the sale. Upon classification of the assets to held for sale in the second quarter of 2021, we recognized a non-cash impairment loss of \$475 million which is included in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations.

During the year ended December 31, 2020, we received cash proceeds of \$451 million, primarily from the sale of:

- certain Los Angeles Basin crude oil terminals previously included in our Crude Oil segment for proceeds of approximately \$200 million, subject to certain adjustments;
- certain NGL terminals previously included in our NGL segment for proceeds of approximately \$163 million (including \$22 million related to a multi-year supply agreement related to the sale), subject to certain adjustments; and
- a 10% ownership interest in Saddlehorn Pipeline Company, LLC (“Saddlehorn”) for proceeds of approximately \$78 million, including working capital adjustments (see Note 9 for additional information).

We recognized a loss related to these asset sales of \$178 million, including non-cash impairments recognized upon classification to assets held for sale, for the year ended December 31, 2020. Such amount is included in “(Gains)/losses on asset sales and asset impairments, net” on our Consolidated Statement of Operations.

Assets Held for Sale

In December 2022, we entered into a definitive agreement to sell our 21% non-operated/undivided joint interest in the Keyera Fort Saskatchewan facility to Keyera Corporation for approximately CAD\$365 million. As of December 31, 2022, we classified the assets related to this transaction (primarily “Property and equipment” in our NGL segment), valued at the lower of the carrying amount or fair value less costs to sell, of approximately \$130 million as assets held for sale on our Consolidated Balance Sheet (in “Other current assets”). This transaction closed in February 2023.

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Note 8—Goodwill

During the first quarter of 2020, we recorded impairment losses of \$2.515 billion related to goodwill. Our market capitalization declined significantly during the first quarter driven by macroeconomic and geopolitical conditions that occurred in 2020, including the collapse of oil prices driven by both the decrease in demand caused by the COVID-19 pandemic and excess supply, as well as changing market conditions and expected lower crude oil production in certain regions, that resulted in expected decreases in future cash flows for certain of our assets, which we concluded was a triggering event that required us to perform a quantitative impairment test as of March 31, 2020, utilizing a discounted cash flow approach. We applied a discount rate of approximately 14% in the determination of the fair value of each of our reporting units, which represented our estimate of the cost of capital of a theoretical market participant as of March 31, 2020. As a result of the impairment test, we concluded that the carrying value of each of our reporting units exceeded their respective fair values, resulting in an impairment charge for the entire goodwill balance for each reporting unit.

Note 9—Investments in Unconsolidated Entities

Investments in entities over which we have significant influence but not control are accounted for under the equity method. We do not consolidate any part of the assets or liabilities of our equity investees. Our share of net income or loss is reflected as one line item on our Consolidated Statements of Operations entitled “Equity earnings in unconsolidated entities” and will increase or decrease, as applicable, the carrying value of our investments in unconsolidated entities on our Consolidated Balance Sheets. We evaluate our equity investments for impairment in accordance with FASB guidance with respect to the equity method of accounting for investments in common stock. An impairment of an equity investment results when factors indicate that the investment’s fair value is less than its carrying value and the reduction in value is other than temporary in nature.

Our investments in unconsolidated entities consisted of the following (in millions, except percentage data):

Entity ⁽¹⁾	Type of Operation	Ownership Interest at December 31, 2022	Investment Balance December 31,	
			2022	2021
BridgeTex Pipeline Company, LLC (“BridgeTex”)	Crude Oil Pipeline	20%	\$ 403	\$ 406
Cactus II ⁽²⁾	Crude Oil Pipeline	—%	—	737
Capline Pipeline Company LLC	Crude Oil Pipeline	54%	539	531
Diamond Pipeline LLC (“Diamond”)	Crude Oil Pipeline	50%	460	464
Eagle Ford Pipeline LLC (“Eagle Ford Pipeline”)	Crude Oil Pipeline	50%	371	363
Eagle Ford Terminals Corpus Christi LLC (“Eagle Ford Terminals”)	Crude Oil Terminal and Dock	50%	118	120
OMOG JV LLC (“OMOG”) ⁽³⁾	Crude Oil Pipeline	57%	211	102
Saddlehorn	Crude Oil Pipeline	30%	197	209
White Cliffs Pipeline, LLC	Crude Oil Pipeline	36%	150	171
Wink to Webster Pipeline LLC (“W2W Pipeline”) ⁽⁴⁾	Crude Oil Pipeline	16%	357	345
Other investments ⁽⁵⁾			278	357
Total Investments in Unconsolidated Entities			<u>\$ 3,084</u>	<u>\$ 3,805</u>

⁽¹⁾ The financial results from these entities are reported in our Crude Oil segment.

⁽²⁾ In November 2022, we acquired an additional 5% interest in Cactus II which, combined with changes in governance, resulted in our obtaining control of the entity. We now reflect Cactus II as a consolidated subsidiary in our Consolidated Financial Statements. See Note 7 for additional information.

⁽³⁾ In November 2022, we acquired an additional interest in OMOG. Although we own greater than 50% of OMOG, we use the equity method to account for the investment because the joint venture partner still retains substantive participating rights.

⁽⁴⁾ Although we own less than 20% of W2W Pipeline, we use the equity method to account for the investment because we believe we have significant influence over the financial and operating decisions of the company.

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- (5) In July 2022, we acquired the remaining 50% interest in Advantage. Prior to the acquisition, our 50% interest in Advantage was accounted for as an equity method investment. See Note 7 for additional information.

Acquisitions

During the fourth quarter of 2022, through a non-monetary transaction, we acquired an additional interest in OMOG in exchange for the contribution of portions of two pipeline systems. Subsequent to the transaction, our ownership interest in OMOG increased to 57% from 40%. We continue to account for OMOG as an equity method investment. The transaction resulted in a loss of approximately \$25 million, which represents the difference between the fair value and historical book value of the assets contributed. This loss is reflected in “Gains (losses) on/(impairment of) investments in unconsolidated entities, net” on our Consolidated Statement of Operations.

Impairments

During the year ended December 31, 2020, we recognized losses as a result of the write-down of certain of our investments in unconsolidated entities, as discussed further below. Such amounts are reflected in “Gains (losses) on/(impairment of) investments in unconsolidated entities, net” on our Consolidated Statement of Operations.

STACK. During the third quarter of 2020, we determined that there was an other-than-temporary impairment of our investment in STACK Pipeline LLC as a result of a continued decline of drilling activity and related volumes of crude oil in its area of operation. We recognized a loss of \$91 million related to the write-down of the portion of the carrying amount of our investment that exceeded its fair value. The estimated fair value (which we consider a Level 3 measurement in the fair value hierarchy) was based on a discounted cash flow approach utilizing various assumptions and the application of a discount rate of approximately 14%, which represented our estimate of the cost of capital of a theoretical market participant. Such assumptions included (but were not limited to) (i) volumes (consistent with historical information and estimates of future drilling and completion activity), (ii) tariff rates, (iii) future commodity prices (based on relevant indices and applicable quality and location differentials), and (iv) estimated fixed and variable costs.

Red Oak. In June 2019, we formed Red Oak Pipeline LLC (“Red Oak”), a joint venture with a subsidiary of Phillips 66 and in which we own a 50% interest, to develop a new crude oil pipeline project. In 2020, the partners of Red Oak determined that the project would not proceed as previously contemplated. We determined that there was an other-than-temporary impairment of our investment in Red Oak, and we recognized a loss of \$69 million related to the write-down of our investment in Red Oak to the estimated residual value of our share of the net assets during the second quarter of 2020.

Other investments. During the first quarter of 2020, we also recognized a loss of \$43 million related to the write-down of certain of our investments included in “Other investments” in the table above due to an other-than-temporary impairment related to a decline in market conditions.

Divestitures

Saddlehorn. In February 2020, we sold a 10% ownership interest in Saddlehorn for proceeds of approximately \$78 million. We recorded a gain of approximately \$21 million related to this sale, which is included in “Gains (losses) on/(impairment of) investments in unconsolidated entities, net” on our Consolidated Statement of Operations. We continue to account for our remaining 30% interest in Saddlehorn under the equity method of accounting.

Distributions

Distributions received from unconsolidated entities are classified based on the nature of the distribution approach, which looks to the activity that generated the distribution. We consider distributions received from unconsolidated entities as a return on investment in those entities to the extent that the distribution was generated through operating results, and therefore classify these distributions as cash flows from operating activities in our Consolidated Statement of Cash Flows. Other distributions received from unconsolidated entities are considered a return of investment and classified as cash flows from investing activities on the Consolidated Statement of Cash Flows.

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Contributions

We generally fund our portion of development, construction or capital investment projects of our equity method investees through capital contributions. During the years ended December 31, 2022, 2021 and 2020, we made cash contributions of \$13 million, \$82 million and \$445 million, respectively, to certain of our equity method investees. We capitalize interest costs associated with contributions to unconsolidated entities for projects under development and construction. Our contributions to these entities (including capitalized interest costs) increase the carrying value of our investments and are reflected in our Consolidated Statements of Cash Flows as cash used in investing activities.

Basis Differences

Our investments in unconsolidated entities exceeded our share of the underlying equity in the net assets of such entities by \$204 million and \$223 million at December 31, 2022 and 2021, respectively. Such basis differences are included in the carrying values of our investments on our Consolidated Balance Sheets. The portion of the basis differences attributable to depreciable or amortizable assets is amortized on a straight-line basis over the estimated useful life of the related assets, which reduces “Equity earnings in unconsolidated entities” on our Consolidated Statements of Operations. The portion of the basis differences attributable to goodwill is not amortized. The majority of the basis difference at both December 31, 2022 and 2021 was attributable to goodwill related to our ownership interest in BridgeTex and Capline LLC with the remaining basis difference primarily related to capitalized interest incurred during construction of the assets of our unconsolidated entities.

Summarized Financial Information of Unconsolidated Entities

Combined summarized financial information for all of our unconsolidated entities is shown in the tables below (in millions). None of our unconsolidated entities have noncontrolling interests.

	December 31,	
	2022	2021
Current assets	\$ 471	\$ 509
Noncurrent assets	\$ 7,579	\$ 8,879
Current liabilities	\$ 252	\$ 366
Noncurrent liabilities	\$ 8	\$ 15

	Year Ended December 31,		
	2022	2021	2020
Revenues	\$ 1,726	\$ 1,320	\$ 1,360
Operating income	\$ 1,004	\$ 505	\$ 828
Net income	\$ 1,011	\$ 506	\$ 826

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Note 10—Intangible Assets, Net

Intangible assets, net of accumulated amortization, consisted of the following (in millions):

	Estimated Useful Lives (Years)	December 31, 2022			December 31, 2021		
		Cost	Accumulated Amortization	Net	Cost	Accumulated Amortization	Net
Customer contracts and relationships ⁽¹⁾	1 – 29	\$ 2,817	\$ (695)	\$ 2,122	\$ 2,445	\$ (510)	\$ 1,935
Other agreements	1 – 70	35	(12)	23	36	(11)	25
Intangible assets ⁽²⁾		\$ 2,852	\$ (707)	\$ 2,145	\$ 2,481	\$ (521)	\$ 1,960

⁽¹⁾ The increase in intangible assets related to Customer contracts and relationships in 2022 is primarily associated with the assets recognized upon consolidation of Cactus II. See Note 7 for additional information.

⁽²⁾ We include rights-of-way, which are intangible assets, in our pipeline and related facilities amounts within property and equipment. See Note 6 for a discussion of property and equipment.

Intangible assets that have finite lives are tested for impairment when events or circumstances indicate that the carrying value may not be recoverable. We did not recognize any impairments of finite-lived intangible assets during the three years ended December 31, 2022.

The majority of our finite-lived intangible assets are amortized under the declining balance method. Amortization expense for finite-lived intangible assets for the years ended December 31, 2022, 2021 and 2020 was \$254 million, \$122 million and \$90 million, respectively. We estimate that our amortization expense related to finite-lived intangible assets for the next five years will be as follows (in millions):

2023	\$ 296
2024	\$ 266
2025	\$ 241
2026	\$ 207
2027	\$ 186

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Note 11—Debt

Debt consisted of the following (in millions):

	December 31, 2022	December 31, 2021
SHORT-TERM DEBT		
Senior notes:		
3.65% senior notes due June 2022	\$ —	\$ 750
2.85% senior notes due January 2023	400	—
3.85% senior notes due October 2023	700	—
Other	59	72
Total short-term debt	1,159	822
LONG-TERM DEBT		
Senior notes:		
2.85% senior notes due January 2023	—	400
3.85% senior notes due October 2023	—	700
3.60% senior notes due November 2024	750	750
4.65% senior notes due October 2025	1,000	1,000
4.50% senior notes due December 2026	750	750
3.55% senior notes due December 2029	1,000	1,000
3.80% senior notes due September 2030	750	750
6.70% senior notes due May 2036	250	250
6.65% senior notes due January 2037	600	600
5.15% senior notes due June 2042	499	499
4.30% senior notes due January 2043	348	348
4.70% senior notes due June 2044	687	687
4.90% senior notes due February 2045	649	649
Unamortized discounts and debt issuance costs	(46)	(54)
Senior notes, net of unamortized discounts and debt issuance costs	7,237	8,329
Other long-term debt:		
Other	50	69
Total long-term debt	7,287	8,398
Total debt ⁽¹⁾	\$ 8,446	\$ 9,220

⁽¹⁾ Our fixed-rate senior notes had a face value of approximately \$8.4 billion and \$9.1 billion at December 31, 2022 and 2021, respectively. We estimated the aggregate fair value of these notes to be approximately \$7.6 billion and \$9.9 billion at December 31, 2022 and 2021, respectively. Our fixed-rate senior notes are traded among institutions, and these trades are routinely published by a reporting service. Our determination of fair value is based on reported trading activity near the end of the reporting period. We estimate that the carrying value of outstanding borrowings under our credit facilities and commercial paper program approximates fair value as interest rates reflect current market rates. The fair value estimates for our senior notes, credit facilities and commercial paper program are based upon observable market data and are classified in Level 2 of the fair value hierarchy.

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Commercial Paper Program

We have a commercial paper program under which we may issue (and have outstanding at any time) up to \$2.7 billion in the aggregate of privately placed, unsecured commercial paper notes. Such notes are backstopped by our senior unsecured revolving credit facility and our senior secured hedged inventory facility; as such, any borrowings under our commercial paper program reduce the available capacity under these facilities.

Credit Agreements

Senior secured hedged inventory facility. We have a credit agreement that provides for a senior secured hedged inventory facility with a committed borrowing capacity of \$1.35 billion. Subject to obtaining additional or increased lender commitments and other terms and conditions, the committed capacity of the facility may be increased to \$1.9 billion. The credit agreement provides for the issuance of letters of credit of up to \$400 million. Proceeds from the facility are primarily used to finance purchased or stored hedged inventory, including NYMEX and ICE margin deposits. Such obligations under the committed facility are secured by the financed inventory and the associated accounts receivable and are repaid from the proceeds of the sale of the financed inventory. Borrowings accrue interest based, at our election, on certain floating rate indices as defined in the credit agreement, in each case plus a margin based on our credit rating at the applicable time. The amended credit agreement also provides for one or more one-year extensions, subject to applicable approval and other terms and conditions. In August 2022, we amended this agreement to, among other things, extend the maturity date of the facility to August 2025 for each existing lender.

Senior unsecured revolving credit facility. We have a credit agreement that provides for a senior unsecured revolving credit facility with a committed borrowing capacity of \$1.35 billion, of which \$400 million is available for the issuance of letters of credit. Subject to obtaining additional or increased lender commitments and other terms and conditions, the committed capacity may be increased to \$2.1 billion. Borrowings accrue interest based, at our election, on certain floating rate indices as defined in the credit agreement, in each case plus a margin based on our credit rating at the applicable time. The credit agreement provides for one or more one-year extensions, subject to applicable approval and other terms and conditions. In August 2022, we amended this agreement to, among other things, extend the maturity date of the facility to August 2027 for each existing lender.

GO Zone term loans. In August 2021, in connection with the sale of the Southern Pines natural gas storage facility, we repaid \$200 million of term loans (the “Go Zone term loans”) that were initially assumed in connection with our acquisition of that facility. See Note 7 for additional information.

Senior Notes

Our senior notes are co-issued, jointly and severally, by Plains All American Pipeline, L.P. and a 100%-owned consolidated finance subsidiary (neither of which have independent assets or operations) and are unsecured senior obligations of such entities and rank equally in right of payment with existing and future senior indebtedness of the issuers. We may, at our option, redeem any series of senior notes at any time in whole or from time to time in part, prior to maturity, at the redemption prices described in the indentures governing the senior notes. Our senior notes are not guaranteed by any of our subsidiaries.

Senior Notes Issuances. The table below summarizes our issuances of senior unsecured notes during the three years ended December 31, 2022 (in millions):

Year	Description	Maturity	Face Value	Interest Payment Dates
2020	3.80% Senior Notes issued at 99.794% of face value	September 2030	\$ 750	March 15 and September 15

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Senior Notes Repayments. During the three years ended December 31, 2022, we repaid the following senior unsecured notes in full (in millions):

Year	Description	Repayment Date	
2022	\$750 million 3.65% Senior Notes due June 2022	March 2022	(1)
2020	\$600 million 5.00% Senior Notes due February 2021	November 2020	(2)

(1) We repaid these senior notes with cash on hand and borrowings under our commercial paper program.

(2) We repaid these senior notes with proceeds from our 3.80% senior notes issued in June 2020 and cash on hand.

On January 31, 2023, we redeemed our 2.85%, \$400 million senior notes. We utilized a combination of cash on hand and borrowings under our commercial paper program to repay these senior notes.

Maturities

The weighted average maturity of our senior notes outstanding at December 31, 2022 was approximately 9 years. The following table presents the aggregate contractually scheduled maturities of such senior notes for the next five years and thereafter. The amounts presented exclude unamortized discounts and debt issuance costs.

Calendar Year	Payment (in millions)
2023	\$ 1,100
2024	\$ 750
2025	\$ 1,000
2026	\$ 750
2027	\$ —
Thereafter	\$ 4,783

Covenants and Compliance

The credit agreements for our revolving credit facilities (which impact our ability to access our commercial paper program because they provide the financial backstop that supports our short-term credit ratings) and the indentures governing our senior notes contain cross-default provisions. Our credit agreements prohibit declaration or payments of distributions on, or purchases or redemptions of, units if any default or event of default is continuing. In addition, the agreements contain various covenants limiting our ability to, among other things:

- grant liens on certain property;
- incur indebtedness, including finance leases;
- sell substantially all of our assets or enter into a merger or consolidation;
- engage in certain transactions with affiliates; and
- enter into certain burdensome agreements.

The credit agreements for our senior unsecured revolving credit facility and senior secured hedged inventory facility treat a change of control as an event of default and also require us to maintain a debt-to-EBITDA coverage ratio that, on a trailing four-quarter basis, will not be greater than 5.00 to 1.00 (or 5.50 to 1.00 on all outstanding debt during an acquisition period (generally, the period consisting of three fiscal quarters following an acquisition greater than \$150 million)). For covenant compliance purposes, Consolidated EBITDA may include certain adjustments, including those for material projects and certain non-recurring expenses. Additionally, letters of credit and borrowings to fund hedged inventory and margin requirements are excluded when calculating the debt coverage ratio.

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A default under our credit agreements or indentures would permit the lenders to accelerate the maturity of the outstanding debt. As long as we are in compliance with the provisions contained in our credit agreements, our ability to make distributions of available cash is not restricted. As of December 31, 2022, we were in compliance with the covenants contained in our credit agreements and indentures.

Borrowings and Repayments

Total borrowings under our credit facilities and commercial paper program for the years ended December 31, 2022, 2021 and 2020 were approximately \$25.0 billion, \$32.5 billion and \$29.3 billion, respectively. Total repayments under our credit facilities and commercial paper program were approximately \$25.0 billion, \$33.2 billion and \$29.0 billion for the years ended December 31, 2022, 2021 and 2020, respectively. The variance in total gross borrowings and repayments is impacted by various business and financial factors including, but not limited to, the timing, average term and method of general partnership borrowing activities.

Letters of Credit

In connection with our merchant activities, we provide certain suppliers with irrevocable standby letters of credit to secure our obligation for the purchase and transportation of crude oil and NGL. These letters of credit are issued under our senior unsecured revolving credit facility and our senior secured hedged inventory facility, and our liabilities with respect to these purchase obligations are recorded in accounts payable on our balance sheet in the month the crude oil or NGL is purchased. Generally, these letters of credit are issued for periods of up to seventy days and are terminated upon completion of each transaction. Additionally, we issue letters of credit to support insurance programs, derivative transactions, including hedging-related margin obligations, and construction activities. At December 31, 2022 and 2021, we had outstanding letters of credit of \$102 million and \$98 million, respectively.

Debt Issuance Costs

Costs incurred in connection with the issuance of senior notes are recorded as a direct deduction from the related debt liability and are amortized using the straight-line method over the term of the related debt. Use of the straight-line method does not differ materially from the “effective interest” method of amortization.

Note 12—Partners’ Capital and Distributions

Units Outstanding

At December 31, 2022, partners’ capital consisted of outstanding common units and Series A and Series B preferred units, which represent limited partner interests in us and which give the holders thereof the right to participate in distributions and to exercise the other rights or privileges as outlined in our partnership agreement. Our general partner has a non-economic interest in us.

Series A Preferred Units

Our Series A preferred units were issued in a private placement in 2016 at a price of \$26.25 per unit (the “Issue Price”). The Series A preferred units represent limited partner interests in us, rank pari passu with our Series B preferred units, and senior to our common units and to each other class or series of our equity securities with respect to distribution rights and rights upon liquidation. The holders of the Series A preferred units receive cumulative quarterly distributions, subject to customary antidilution adjustments, to unitholders of record within 45 days following the end of each quarter.

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The initial Series A preferred unit distribution is equal to \$0.525 per unit (\$2.10 per unit annualized). For a period of 30 days following (a) the fifth anniversary of the January 28, 2016 issuance date (the “Issuance Date”) of the Series A preferred units and (b) each subsequent anniversary of the Issuance Date, the holders of the Series A preferred units, acting by majority vote, may make a one-time election to reset the Series A preferred unit distribution rate to equal the then applicable rate of ten-year U.S. Treasury Securities plus 5.85% (the “Preferred Distribution Rate Reset Option”). The Preferred Distribution Rate Reset Option is accounted for as an embedded derivative. See Note 13 for additional information. If the holders of the Series A preferred units have exercised the Preferred Distribution Rate Reset Option, then, at any time following 30 days after the sixth anniversary of the Issuance Date, we may redeem all or any portion of the outstanding Series A preferred units in exchange for cash, common units (valued at 95% of the volume-weighted average price of our common units for a trading day period specified in our partnership agreement) or a combination of cash and common units at a redemption price equal to 110% of the Issue Price, plus any accrued and unpaid distributions. In January 2023, we received notice that the Series A preferred unitholders elected the Preferred Distribution Rate Reset Option. Effective January 31, 2023, the new Series A preferred unit distribution rate is equal to 9.375% per annum on the original Issue Price (approximately \$2.46 per unit annualized). The quarterly distribution to be paid in May 2023 will reflect a pro-rated amount of \$0.58516 per unit.

The holders may convert their Series A preferred units into common units, generally on a one-for-one basis and subject to customary anti-dilution adjustments, at any time, in whole or in part, subject to certain minimum conversion amounts (and not more often than once per quarter). We may convert the Series A preferred units into common units at any time (but not more often than once per quarter), in whole or in part, subject to certain minimum conversion amounts, if the closing price of our common units is greater than 150% of the Issue Price for the preceding 20 trading days. The Series A preferred units vote on an as-converted basis with our common units on the election of directors and have certain other class voting rights with respect to any amendment to our partnership agreement that would adversely affect any rights, preferences or privileges of the Series A preferred units. In addition, upon certain events involving a change of control, the holders of the Series A preferred units may elect, among other potential elections, to convert the Series A preferred units into common units at the then applicable conversion rate.

Series B Preferred Units

Our Series B Fixed-to-Floating Rate Cumulative Redeemable Perpetual Preferred Units representing limited partner interests in us (the “Series B preferred units”) were issued in 2017 at a price to the public of \$1,000 per unit. Our Series B preferred units represent perpetual equity interests in us, have no stated maturity or mandatory redemption date and are not redeemable at the option of the holders under any circumstances. Holders of the Series B preferred units generally have no voting rights, except for limited voting rights with respect to (i) potential amendments to our partnership agreement that would have a material adverse effect on the existing preferences, rights, powers or duties of the Series B preferred units, (ii) the creation or issuance of any parity securities if the cumulative distributions payable on then outstanding Series B preferred units are in arrears, (iii) the creation or issuance of any senior securities and (iv) the payment of distributions to our common unitholders out of capital surplus. The Series B preferred units rank, as to the payment of distributions and amounts payable on a liquidation event, *pari passu* with our outstanding Series A preferred units and senior to our common units.

The Series B preferred units have a liquidation preference of \$1,000 per unit. Holders of our Series B preferred units are entitled to receive, when, as and if declared by our general partner out of legally available funds for such purpose, cumulative semiannual or quarterly cash distributions, as applicable. Through November 15, 2022, distributions on the Series B preferred units were paid semiannually in arrears on the 15th day of May and November. After November 15, 2022, distributions are payable quarterly in arrears on the 15th day of February, May, August and November of each year. The initial distribution rate for the Series B preferred units from and including October 10, 2017 to, but not including, November 15, 2022 was 6.125% per year of the liquidation preference per unit (equal to \$61.25 per unit per year). On and after November 15, 2022, distributions on the Series B preferred units accumulate for each distribution period at a percentage of the liquidation preference equal to the applicable three-month LIBOR (or, if discontinued, a substitute or successor rate determined by the calculation agent) plus a spread of 4.11%. The distribution rate for the quarterly distribution paid on February 15, 2023 was 8.71614% (\$22.27 per Series B preferred unit).

At any time, we may redeem the Series B preferred units, at our option, in whole or in part, at a redemption price of \$1,000 per Series B preferred unit plus an amount equal to all accumulated and unpaid distributions thereon to, but not including, the date of redemption, whether or not declared.

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The following table presents the activity for our preferred and common units:

	Limited Partners		
	Series A Preferred Units	Series B Preferred Units	Common Units
Outstanding at December 31, 2019	71,090,468	800,000	728,028,576
Repurchase and cancellation of common units under the Common Equity Repurchase Program	—	—	(6,222,748)
Issuances of common units under equity-indexed compensation plans	—	—	574,588
Outstanding at December 31, 2020	71,090,468	800,000	722,380,416
Repurchase and cancellation of common units under the Common Equity Repurchase Program	—	—	(18,061,583)
Issuances of common units under equity-indexed compensation plans	—	—	672,707
Outstanding at December 31, 2021	71,090,468	800,000	704,991,540
Repurchase and cancellation of common units under the Common Equity Repurchase Program	—	—	(7,251,361)
Issuances of common units under equity-indexed compensation plans	—	—	614,319
Outstanding at December 31, 2022	71,090,468	800,000	698,354,498

Common Equity Repurchase Program. In November 2020, the board of directors of PAGP GP approved a \$500 million common equity repurchase program (the “Program”) to be utilized as an additional method of returning capital to investors. The Program authorizes the repurchase from time to time of up to \$500 million of our common units and/or PAGP Class A shares via open market purchases or negotiated transactions conducted in accordance with applicable regulatory requirements. No time limit has been set for completion of the Program, and the Program may be suspended or discontinued at any time. The Program does not obligate us or PAGP to acquire a particular number of common units or PAGP Class A shares. Any common units or PAGP Class A shares that are repurchased will be canceled. PAGP Class C shares held by us associated with any publicly held common units that are repurchased will also be canceled. See Note 17 for additional information regarding our ownership of PAGP Class C shares.

During the years ended December 31, 2022, 2021 and 2020, we repurchased common units under the Program through open market purchases for a total purchase price of \$74 million, \$178 million and \$50 million, respectively, including commissions and fees. The repurchased common units were canceled immediately upon acquisition, as were the PAGP Class C shares held by us associated with the repurchased common units. At December 31, 2022, the remaining available capacity under the Program was \$198 million.

Income Allocation

We allocate net income for partners’ capital presentation purposes by applying the allocation methodology in our partnership agreement. Net income is allocated 100% to our common unitholders, after giving effect to income allocations for cash distributions to our Series A preferred unitholders and guaranteed payments attributable to our Series B preferred unitholders.

For purposes of determining basic and diluted net income per common unit, income is allocated as prescribed in FASB guidance for calculating earnings per unit, including a deduction to income available to common unitholders for distributions attributable to the period on our Series A and Series B preferred units. See Note 4 for additional information.

Distributions to Unitholders

In accordance with our partnership agreement, after making distributions to holders of our outstanding preferred units, we distribute the remainder of our available cash to common unitholders of record within 45 days following the end of each quarter. Available cash is generally defined as all of our cash and cash equivalents on hand at the end of each quarter, less reserves established in the discretion of our general partner for future requirements. Our available cash also includes cash on hand resulting from borrowings made after the end of the quarter.

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Preferred Unit Distributions

The following table details distributions paid to our preferred unitholders during the years presented (in millions, except unit data):

Year	Cash Distributions	
	Series A Preferred Unitholders	Series B Preferred Unitholders
2022	\$ 149	\$ 49
2021	\$ 149	\$ 49
2020	\$ 149	\$ 49

On February 14, 2023, we paid a cash distribution of \$37 million to our Series A preferred unitholders. At December 31, 2022, such amount was accrued as distributions payable in “Other current liabilities” on our Consolidated Balance Sheet. On February 15, 2023, we paid a cash distribution of \$18 million to our Series B preferred unitholders. At December 31, 2022, approximately \$9 million of accrued distributions payable to our Series B preferred unitholders was included in “Other current liabilities” on our Consolidated Balance Sheet.

Common Unit Distributions

The following table details distributions paid to common unitholders during the years presented (in millions, except per unit data):

Year	Distributions Paid			Distributions per common unit
	Public	AAP	Total	
2022	\$ 383	\$ 201	\$ 584	\$ 0.8325
2021	\$ 341	\$ 176	\$ 517	\$ 0.7200
2020	\$ 432	\$ 223	\$ 655	\$ 0.9000

On January 9, 2023, we declared a cash distribution of \$0.2675 per unit on our outstanding common units. The total distribution of \$187 million was paid on February 14, 2023 to unitholders of record at the close of business on January 31, 2023, for the period from October 1, 2022 through December 31, 2022. Of this amount, approximately \$65 million was paid to AAP.

Noncontrolling Interests in Subsidiaries

As of December 31, 2022, noncontrolling interests in our subsidiaries consisted of (i) a 35% interest in the Permian JV, (ii) a 30% interest in Cactus II and (iii) a 33% interest in Red River Pipeline Company LLC (“Red River”). The transactions resulting in the recognition of noncontrolling interests in the Permian JV and Cactus II are described below.

In November 2022, we acquired an additional 5% interest in Cactus II which, combined with changes in governance, resulted in our obtaining control of the entity. We own 70% of Cactus II and reflect the entity as a consolidated subsidiary in our Consolidated Financial Statements, with Enbridge’s 30% interest accounted for as a noncontrolling interest. This transaction resulted in the recognition of partners’ capital attributable to noncontrolling interests of approximately \$526 million. See Note 7 for more details regarding this transaction.

In October 2021, we formed a joint venture, the Permian JV, with Oryx Midstream. We own 65% of the Permian JV and consolidate based on control, with Oryx Midstream’s 35% interest accounted for as a noncontrolling interest. This transaction resulted in the recognition of partners’ capital attributable to noncontrolling interests of approximately \$2.6 billion and an increase to our partners’ capital excluding noncontrolling interests of approximately \$595 million. See Note 7 for more details regarding this transaction.

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Distributions to Noncontrolling Interests

Pursuant to the terms of the governing documents for the Permian JV, with the exception of the initial distribution paid in the first quarter of 2022, distributions of available cash from the Permian JV are subject to a tiered modified sharing arrangement. See Note 7 for additional information. Cash available for distribution is cash on hand less the amount of cash required to fund normal operations and capital projects. Distributions from Cactus II and Red River are paid in proportion to each owners interest in the entity. The following table details distributions paid to noncontrolling interests during the years presented (in millions):

	2022	2021	2020
Permian JV ⁽¹⁾	\$ 273	\$ —	\$ —
Cactus II	4	—	—
Red River	21	14	10
	<u>\$ 298</u>	<u>\$ 14</u>	<u>\$ 10</u>

(1) The initial distribution from the Permian JV was paid during the first quarter of 2022, with approximately \$54 million paid to noncontrolling interests.

Contributions from Noncontrolling Interests

During the year ended December 31, 2022, we received a contribution of \$26 million from noncontrolling interests in the Permian JV associated with the acquisition of the remaining 50% interest in Advantage. See Note 7 for additional information.

During the year ended December 31, 2020, we received contributions from noncontrolling interests in Red River of \$12 million related to a pipeline capacity expansion.

Note 13—Derivatives and Risk Management Activities

We identify the risks that underlie our core business activities and use risk management strategies to mitigate those risks when we determine that there is value in doing so. We use various derivative instruments to optimize our profits while managing our exposure to commodity price risk and interest rate risk. Our commodity price risk management policies and procedures are designed to help ensure that our hedging activities address our risks by monitoring our derivative positions, as well as physical volumes, grades, locations, delivery schedules and storage capacity. Our interest rate risk management policies and procedures are designed to monitor our derivative positions and ensure that those positions are consistent with our objectives and approved strategies. Our policy is to use derivative instruments for risk management purposes and not for the purpose of speculating on changes in commodity prices or interest rates. When we apply hedge accounting, our policy is to formally document all relationships between hedging instruments and hedged items, as well as our risk management objectives for undertaking the hedge. This process includes specific identification of the hedging instrument and the hedged transaction, the nature of the risk being hedged and how the hedging instrument's effectiveness will be assessed. At the inception of the hedging relationship, we assess whether the derivatives employed are highly effective in offsetting changes in cash flows of anticipated hedged transactions. Throughout the hedging relationship, retrospective and prospective hedge effectiveness is assessed on a qualitative basis.

We record all open derivatives on the balance sheet as either assets or liabilities measured at fair value. Changes in the fair value of derivatives are recognized currently in earnings unless specific hedge accounting criteria are met. For derivatives designated as cash flow hedges, changes in fair value are deferred in AOCI and recognized in earnings in the periods during which the underlying hedged transactions are recognized in earnings. Derivatives that are not designated in a hedging relationship for accounting purposes are recognized in earnings each period. Cash settlements associated with our derivative activities are classified within the same category as the related hedged item in our Consolidated Statements of Cash Flows.

Our financial derivatives, used for hedging risk, are governed through ISDA master agreements and clearing brokerage agreements. These agreements include stipulations regarding the right of set off in the event that we or our counterparty default on performance obligations. If a default were to occur, both parties have the right to net amounts payable and receivable into a single net settlement between parties.

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At December 31, 2022 and 2021, none of our outstanding derivatives contained credit-risk related contingent features that would result in a material adverse impact to us upon any change in our credit ratings. Although we may be required to post margin on our exchange-traded derivatives transacted through a clearing brokerage account, as described below, we do not require our non-cleared derivative counterparties to post collateral with us.

Commodity Price Risk Hedging

Our core business activities involve certain commodity price-related risks that we manage in various ways, including through the use of derivative instruments. Our policy is to (i) only purchase inventory for which we have a sales market, (ii) structure our sales contracts so that price fluctuations do not materially affect our operating income and (iii) not acquire and hold material physical inventory or derivatives for the purpose of speculating on commodity price changes. The material commodity-related risks inherent in our business activities are described below.

In the normal course of our operations, we purchase and sell commodities. We use derivatives to manage the associated risks and to optimize profits. As of December 31, 2022, net derivative positions related to these activities included:

- A net long position of 3.9 million barrels associated with our crude oil purchases, which was unwound ratably during January 2023 to match monthly average pricing.
- A net short time spread position of 6.4 million barrels, which hedges a portion of our anticipated crude oil lease gathering purchases through December 2024.
- A net crude oil basis spread position of 2.6 million barrels at multiple locations through December 2024. These derivatives allow us to lock in grade and location basis differentials.
- A net short position of 18.4 million barrels through June 2024 related to anticipated net sales of crude oil and NGL inventory.

We purchase natural gas for processing and operational needs. Additionally, we purchase NGL mix for fractionation and sell the resulting individual specification products (including ethane, propane, butane and condensate). In conjunction with these activities, we hedge the price risk associated with the purchase of the natural gas and the subsequent sale of the individual specification products. The following table summarizes our open derivative positions utilized to hedge the price risk associated with anticipated purchases and sales related to our natural gas processing and NGL fractionation activities as of December 31, 2022.

	Notional Volume (Short)/Long	Remaining Tenor
Natural gas purchases	47.7 Bcf	December 2024
Propane sales	(9.1) MMbbls	December 2024
Butane sales	(2.1) MMbbls	December 2024
Condensate sales	(0.8) MMbbls	December 2024
Fuel gas requirements ⁽¹⁾	7.3 Bcf	December 2023
Power supply requirements ⁽¹⁾	0.4 TWh	December 2023

⁽¹⁾ Positions to hedge a portion of our power supply and fuel gas requirements at our Canadian natural gas processing and fractionation plants.

Physical commodity contracts that meet the definition of a derivative but are ineligible, or not designated, for the normal purchases and normal sales scope exception are recorded on the balance sheet at fair value, with changes in fair value recognized in earnings. We have determined that substantially all of our physical commodity contracts qualify for the normal purchases and normal sales scope exception.

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Our commodity derivatives are not designated in a hedging relationship for accounting purposes; as such, changes in the fair value are reported in earnings. The following table summarizes the impact of our commodity derivatives recognized in earnings (in millions):

	Year Ended December 31,		
	2022	2021	2020
Product sales revenues	\$ 179	\$ (710)	\$ (302)
Field operating costs	59	71	5
Net gain/(loss) from commodity derivative activity	<u>\$ 238</u>	<u>\$ (639)</u>	<u>\$ (297)</u>

Our accounting policy is to offset derivative assets and liabilities executed with the same counterparty when a master netting arrangement exists. Accordingly, we also offset derivative assets and liabilities with amounts associated with cash margin. Our exchange-traded derivatives are transacted through clearing brokerage accounts and are subject to margin requirements as established by the respective exchange. On a daily basis, our account equity (consisting of the sum of our cash balance and the fair value of our open derivatives) is compared to our initial margin requirement resulting in the payment or return of variation margin. The following table provides the components of our net broker receivable/(payable) (in millions):

	December 31,	
	2022	2021
Initial margin	\$ 93	\$ 133
Variation margin posted/(returned)	(236)	173
Letters of credit	(25)	(47)
Net broker receivable/(payable)	<u>\$ (168)</u>	<u>\$ 259</u>

The following table reflects the Consolidated Balance Sheet line items that include the fair values of our commodity derivative assets and liabilities and the effect of the collateral netting. Such amounts are presented on a gross basis, before the effects of counterparty netting. However, we have elected to present our commodity derivative assets and liabilities with the same counterparty on a net basis on our Consolidated Balance Sheet when the legal right of offset exists. Amounts in the table below are presented in millions.

	December 31, 2022					December 31, 2021				
	Commodity Derivatives		Effect of Collateral Netting	Net Carrying Value Presented on the Balance Sheet		Commodity Derivatives		Effect of Collateral Netting	Net Carrying Value Presented on the Balance Sheet	
	Assets	Liabilities				Assets	Liabilities			
Derivative Assets										
Other current assets	\$ 300	\$ (71)	\$ (168)	\$ 61	\$ 90	\$ (210)	\$ 259	\$ 139		
Other long-term assets, net	9	(5)	—	4	3	—	—	3		
Derivative Liabilities										
Other current liabilities	2	(13)	—	(11)	4	(24)	—	(20)		
Other long-term liabilities and deferred credits	—	—	—	—	3	(9)	—	(6)		
Total	\$ 311	\$ (89)	\$ (168)	\$ 54	\$ 100	\$ (243)	\$ 259	\$ 116		

Interest Rate Risk Hedging

We use interest rate derivatives to hedge the benchmark interest rate associated with interest payments occurring as a result of debt issuances. The derivative instruments we use to manage this risk consist of forward starting interest rate swaps and treasury locks. These derivatives are designated as cash flow hedges. As such, changes in fair value are deferred in AOCI and are reclassified to interest expense as we incur the interest expense associated with the underlying debt.

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The following table summarizes the terms of our outstanding interest rate derivatives as of December 31, 2022 (notional amounts in millions):

Hedged Transaction	Number and Types of Derivatives Employed	Notional Amount	Expected Termination Date	Average Rate Locked	Accounting Treatment
Anticipated interest payments	8 forward starting swaps (30-year)	\$ 200	6/15/2023	1.38 %	Cash flow hedge
Anticipated interest payments	4 forward starting swaps (30-year)	\$ 100	6/14/2024	0.74 %	Cash flow hedge

As of December 31, 2022, there was a net loss of \$107 million deferred in AOCI. The deferred net loss recorded in AOCI is expected to be reclassified to future earnings contemporaneously with interest expense accruals associated with underlying debt instruments. During the year ended December 31, 2022, we terminated \$100 million of notional interest hedging instruments previously expected to terminate in June 2024 for proceeds of \$42 million. The early termination did not result in an impact to the relationship between the hedging instrument and hedged item. We estimate that substantially all of the remaining deferred loss will be reclassified to earnings through 2054 as the underlying hedged transactions impact earnings. A portion of these amounts is based on market prices as of December 31, 2022; thus, actual amounts to be reclassified will differ and could vary materially as a result of changes in market conditions.

The following table summarizes the net unrealized gain/(loss) recognized in AOCI for derivatives (in millions):

	Year Ended December 31,		
	2022	2021	2020
Interest rate derivatives, net	\$ 94	\$ 19	\$ (10)

At December 31, 2022, the net fair value of our interest rate hedges, which were included in “Other current assets” and “Other long-term assets, net” on our Consolidated Balance Sheet, totaled \$75 million and \$45 million, respectively. At December 31, 2021, the net fair value of these hedges totaled \$65 million and was included in “Other long-term assets, net.”

Preferred Distribution Rate Reset Option

A derivative feature embedded in a contract that does not meet the definition of a derivative in its entirety must be bifurcated and accounted for separately if the economic characteristics and risks of the embedded derivative are not clearly and closely related to those of the host contract. The Preferred Distribution Rate Reset Option of our Series A preferred units is an embedded derivative that must be bifurcated from the related host contract, our partnership agreement, and recorded at fair value on our Consolidated Balance Sheet. This embedded derivative is not designated in a hedging relationship for accounting purposes and corresponding changes in fair value are recognized in “Other income/(expense), net” in our Consolidated Statement of Operations. For the years ended December 31, 2022, 2021 and 2020 we recognized a net loss of \$189 million, a net gain of \$14 million and a net gain of \$20 million, respectively. The fair value of the Preferred Distribution Rate Reset Option, which was included in “Other long-term liabilities and deferred credits” on our Consolidated Balance Sheets, totaled \$189 million and less than \$1 million at December 31, 2022 and 2021, respectively. In January 2023, we received notice that the Series A preferred unitholders elected the Preferred Distribution Rate Reset Option, which will be effective for the distribution paid in May 2023. See Note 12 for additional information regarding our Series A preferred units and the Preferred Distribution Rate Reset Option.

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Recurring Fair Value Measurements

Derivative Financial Assets and Liabilities

The following table sets forth by level within the fair value hierarchy our financial assets and liabilities that were accounted for at fair value on a recurring basis (in millions):

Recurring Fair Value Measures ⁽¹⁾	Fair Value as of December 31, 2022				Fair Value as of December 31, 2021			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Commodity derivatives	\$ (7)	\$ 229	\$ —	\$ 222	\$ (17)	\$ (124)	\$ (2)	\$ (143)
Interest rate derivatives	—	120	—	120	—	65	—	65
Preferred Distribution Rate Reset Option	—	—	(189)	(189)	—	—	—	—
Total net derivative asset/(liability)	<u>\$ (7)</u>	<u>\$ 349</u>	<u>\$ (189)</u>	<u>\$ 153</u>	<u>\$ (17)</u>	<u>\$ (59)</u>	<u>\$ (2)</u>	<u>\$ (78)</u>

⁽¹⁾ Derivative assets and liabilities are presented above on a net basis but do not include related cash margin deposits.

Level 1

Level 1 of the fair value hierarchy includes exchange-traded commodity derivatives and over-the-counter commodity contracts such as futures and swaps. The fair value of exchange-traded commodity derivatives and over-the-counter commodity contracts is based on unadjusted quoted prices in active markets.

Level 2

Level 2 of the fair value hierarchy includes exchange-cleared commodity derivatives and over-the-counter commodity and interest rate derivatives that are traded in observable markets with less volume and transaction frequency than active markets. In addition, it includes certain physical commodity contracts. The fair values of these derivatives are corroborated with market observable inputs.

Level 3

Level 3 of the fair value hierarchy includes certain physical commodity and other contracts, over-the-counter options and the Preferred Distribution Rate Reset Option contained in our partnership agreement which is classified as an embedded derivative.

The fair values of our Level 3 physical commodity and other contracts and over-the-counter options are based on valuation models utilizing significant timing estimates, which involve management judgment, and pricing inputs from observable and unobservable markets with less volume and transaction frequency than active markets. Significant deviations from these estimates and inputs could result in a material change in fair value. We report unrealized gains and losses associated with these contracts in our Consolidated Statements of Operations as Product sales revenues.

The fair value of the Preferred Distribution Rate Reset Option of our Series A preferred units contained in our partnership agreement is based on a Monte Carlo valuation model that estimates the fair value of the Series A preferred units with and without the Preferred Distribution Rate Reset Option. This model relies on assumptions for forecasts for the ten-year U.S. Treasury rate, our common unit price, and default probabilities which impact timing estimates as to when the option will be exercised. In general, an increase in ten-year U.S. Treasury rates would increase the fair value of the feature and our liability and expense. The future impact on “Other income/(expense), net” depends on how inputs change in relation to one another.

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Rollforward of Level 3 Net Asset/(Liability)

The following table provides a reconciliation of changes in fair value of the beginning and ending balances for our derivatives classified as Level 3 (in millions):

	Year Ended December 31,	
	2022	2021
Beginning Balance	\$ (2)	\$ (29)
Net gains/(losses) for the period included in earnings	(189)	15
Settlements	2	12
Ending Balance	<u>\$ (189)</u>	<u>\$ (2)</u>
Change in unrealized gains/(losses) included in earnings relating to Level 3 derivatives still held at the end of the period	\$ (189)	\$ 15

Note 14—Leases

Lessee

We evaluate all agreements entered into or modified that convey to us the use of property or equipment for a term to determine whether the agreement is or contains a lease. Significant judgment is required when determining whether we obtain the right to direct the use of identified property or equipment. We lease certain property and equipment under noncancelable and cancelable operating and finance leases. Our operating leases primarily relate to railcars, office space, land, vehicles, and storage tanks, and our finance leases primarily relate to tractor trailers, land, storage tanks and vehicles. One of our finance leases is for storage tanks owned by an equity method investee, in which we own a 50% interest. For leases with an initial term of greater than 12 months, we recognize a right-of-use asset and lease liability on the balance sheet. Leases with an initial term of 12 months or less are not recorded on the balance sheet. We have elected the non-lease component separation practical expedient for certain classes of assets where we are the lessee. Our lease agreements have remaining lease terms ranging from one year to approximately 58 years. When applicable, this range includes additional terms associated with leases for which we are reasonably certain to exercise the option to renew and such renewal options are recognized as part of our right-of-use assets and lease liabilities. We have renewal options for leases with terms ranging from one year to 25 years that are not recognized as part of our right-of-use assets or lease liabilities as we have determined we are not reasonably certain to exercise the option to renew.

Certain of our leases have variable lease payments, many of which are based on changes in market indices such as the Consumer Price Index. Our lease agreements for our tractor trailers contain residual value guarantees equal to the fair market value of the tractor trailers at the end of the lease term in the event that we elect not to purchase the asset for an amount equal to the fair value. Our lease agreements do not contain any material restrictive covenants.

For determining the present value of lease payments, we use the discount rate implicit in the lease when readily determinable; however, such rate is not readily determinable for most of our leases. For those leases for which the discount rate is not readily determinable, we utilize incremental borrowing rates that reflect collateralized borrowing with payments and terms that mirror our lease portfolio to discount the lease payments based on information available at the lease commencement date.

The following table presents components of lease cost, including both amounts recognized in income and amounts capitalized (in millions):

Lease Cost	Year Ended December 31,		
	2022	2021	2020
Operating lease cost	\$ 91	\$ 96	\$ 111
Short-term lease cost	18	19	31
Other ^{(1) (2)}	15	14	8
Total lease cost	<u>\$ 124</u>	<u>\$ 129</u>	<u>\$ 150</u>

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- (1) Includes finance lease costs, variable lease costs and sublease income.
- (2) Includes approximately \$8 million, \$8 million, and \$6 million for the years ended December 31, 2022, 2021 and 2020, respectively, associated with leased storage tanks owned by an equity method investee, in which we own a 50% interest.

The following table presents information related to cash flows arising from lease transactions (in millions):

	Year Ended December 31,		
	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows for operating leases	\$ 92	\$ 91	\$ 108
Operating cash flows for finance leases	\$ 6	\$ 7	\$ 5
Financing cash flows for finance leases	\$ 12	\$ 11	\$ 19
Non-cash change in lease liabilities arising from obtaining new right-of-use assets or modifications:			
Operating leases	\$ 43	\$ 94	\$ 5
Finance leases ⁽¹⁾	\$ 2	\$ 1	\$ 32

- (1) Includes \$25 million for the year ended December 31, 2020 associated with leased storage tanks owned by an equity method investee, in which we own a 50% interest.

Information related to the weighted-average remaining lease term and discount rate is presented in the table below:

	December 31,	
	2022	2021
Weighted-average remaining lease term (in years):		
Operating leases	12	11
Finance leases	9	9
Weighted-average discount rate:		
Operating leases	4.3 %	4.2 %
Finance leases	12.3 %	11.6 %

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The following table presents the amount and location of our operating and finance lease right-of-use assets and liabilities on our Consolidated Balance Sheets (in millions):

Leases	Balance Sheet Location	December 31,	
		2022	2021
Assets			
Operating lease right-of-use assets	Long-term operating lease right-of-use assets, net	\$ 349	\$ 393
Finance lease right-of-use assets ⁽¹⁾	Property and equipment	\$ 124	\$ 136
	Accumulated depreciation	(41)	(37)
	Property and equipment, net	\$ 83	\$ 99
Total lease right-of-use assets		\$ 432	\$ 492
Liabilities			
Operating lease liabilities			
Current	Other current liabilities	\$ 71	\$ 77
Noncurrent	Long-term operating lease liabilities	308	339
Total operating lease liabilities		\$ 379	\$ 416
Finance lease liabilities ⁽¹⁾			
Current	Short-term debt	\$ 10	\$ 12
Noncurrent	Other long-term debt, net	50	59
Total finance lease liabilities		\$ 60	\$ 71
Total lease liabilities		\$ 439	\$ 487

⁽¹⁾ Includes right-of-use assets of \$30 million and \$33 million and lease liabilities of \$35 million and \$35 million as of December 31, 2022 and 2021, respectively, associated with leased storage tanks owned by an equity method investee, in which we own a 50% interest.

The following table presents the maturity of undiscounted cash flows for future minimum lease payments under noncancelable leases as of December 31, 2022 reconciled to our lease liabilities on our Consolidated Balance Sheet (amounts in millions):

	Operating	Finance ⁽²⁾
Future minimum lease payments ⁽¹⁾ :		
2023	\$ 83	\$ 16
2024	70	15
2025	59	12
2026	45	7
2027	39	6
Thereafter	231	54
Total	527	110
Less: Present value discount	(148)	(50)
Lease liabilities	<u>\$ 379</u>	<u>\$ 60</u>

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- (1) Excludes future minimum payments for short-term and other immaterial leases not included on our Consolidated Balance Sheet.
- (2) Includes payments of approximately \$6 million for each of the years ending 2023 through 2027 and approximately \$51 million thereafter associated with leased storage tanks owned by an equity method investee, in which we own a 50% interest.

Lessor

We evaluate all agreements entered into or modified that convey to others the use of property or equipment for a term to determine whether the agreement is or contains a lease. Significant judgment is required when determining whether a customer obtains the right to direct the use of identified property or equipment. The underlying assets associated with these agreements are evaluated for future use beyond the lease term. We have elected the non-lease component separation practical expedient for all classes of assets where we are the lessor.

We enter into agreements to conduct activities associated with (i) providing storage services primarily for crude oil and NGL and (ii) transporting crude oil and NGL. Certain of these agreements convey counterparties the right to direct the operation of physically distinct assets. Such agreements include (i) fixed consideration, which is measured based on an available capacity during the period multiplied by the rate in the agreement, or (ii) a fixed monthly fee and variable consideration based on usage. These agreements often include options to extend or terminate the lease, with advance notice. These agreements are operating leases.

The following table presents our lease revenue for the periods indicated (in millions):

	Year Ended December 31,		
	2022	2021	2020
Operating lease revenue ⁽¹⁾	\$ 29	\$ 28	\$ 19

- (1) These amounts are included in “Services revenues” on our Consolidated Statements of Operations.

The table below presents the maturity of lease payments for operating lease agreements in effect as of December 31, 2022. This presentation includes minimum fixed lease payments and does not include an estimate of variable lease consideration. These agreements have remaining lease terms ranging from one year to 19 years. The following table presents the undiscounted cash flows expected to be received related to these agreements (in millions):

	2023	2024	2025	2026	2027	Thereafter
Future minimum lease revenue	\$ 35	\$ 27	\$ 25	\$ 21	\$ 18	\$ 168

Note 15—Income Taxes

Income tax expense is estimated using the tax rate in effect or to be in effect during the relevant periods in the jurisdictions in which we operate. Deferred income tax assets and liabilities are recognized for temporary differences between the basis of assets and liabilities for financial reporting and tax purposes and are stated at enacted tax rates expected to be in effect when taxes are actually paid or recovered. To the extent we do not consider it more likely than not that a deferred tax asset will be recovered, a valuation allowance is established. Changes in tax legislation are included in the relevant computations in the period in which such changes are effective. We review contingent tax liabilities for estimated exposures on a more likely than not standard related to our current tax positions.

Pursuant to FASB guidance related to accounting for uncertainty in income taxes, we may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained upon examination by the taxing authorities, based on the technical merits of the tax position and also the past administrative practices and precedents of the taxing authority. As of December 31, 2022 and 2021, we had not recognized any material amounts in connection with uncertainty in income taxes.

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U.S. Federal and State Taxes

As an MLP, we are not subject to U.S. federal income taxes; rather the tax effect of our operations is passed through to our unitholders. Although we are subject to state income taxes in some states, the impact to the years ended December 31, 2022, 2021, and 2020 was immaterial.

Canadian Federal and Provincial Taxes

All of our Canadian operations are conducted by entities that are treated as corporations for Canadian tax purposes (flow through for U.S. income tax purposes) and that are subject to Canadian federal and provincial taxes. Additionally, payments of interest and dividends from our Canadian entities to other Plains entities are subject to Canadian withholding tax that is treated as income tax expense.

Tax Components

Components of income tax expense are as follows (in millions):

	Year Ended December 31,		
	2022	2021	2020
Current income tax expense:			
State income tax	\$ 1	\$ 2	\$ —
Canadian federal and provincial income tax	83	48	51
Total current income tax expense	\$ 84	\$ 50	\$ 51
Deferred income tax expense/(benefit):			
Canadian federal and provincial income tax	\$ 105	\$ 23	\$ (70)
Total deferred income tax expense/(benefit)	\$ 105	\$ 23	\$ (70)
Total income tax expense/(benefit)	\$ 189	\$ 73	\$ (19)

The difference between income tax expense based on the statutory federal income tax rate and our effective income tax expense is summarized as follows (in millions):

	Year Ended December 31,		
	2022	2021	2020
Income/(loss) before tax	\$ 1,417	\$ 721	\$ (2,599)
Partnership (earnings)/loss not subject to current Canadian tax	(686)	(370)	2,221
	\$ 731	\$ 351	\$ (378)
Canadian federal and provincial corporate tax rate	24%	24%	24%
Income tax expense/(benefit) at statutory rate	\$ 175	\$ 84	\$ (91)
Canadian permanent differences and rate changes	\$ 13	\$ (13)	\$ 72
State income tax	1	2	—
Total income tax expense/(benefit)	\$ 189	\$ 73	\$ (19)

The Canadian permanent differences and rate changes for the year ended December 31, 2020 primarily related to an impairment of goodwill that was recognized during the year. A portion of the goodwill that was impaired had no basis for Canadian income tax purposes and thus was not a deductible expense in determining taxable income, resulting in a permanent difference for Canadian tax purposes. See Note 8 for additional information regarding this impairment.

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Deferred tax assets and liabilities are aggregated by the applicable tax paying entity and jurisdiction and result from the following (in millions):

	December 31,	
	2022	2021
Deferred tax assets:		
Derivative instruments	\$ —	\$ 39
Lease liabilities	45	48
Net operating losses	—	2
Other	16	17
Total deferred tax assets	61	106
Deferred tax liabilities:		
Property and equipment in excess of tax values	(515)	(531)
Derivative instruments	(46)	—
Lease assets	(42)	(47)
Other	(3)	(3)
Total deferred tax liabilities	(606)	(581)
Net deferred tax liabilities	\$ (545)	\$ (475)
Balance sheet classification of deferred tax assets/(liabilities):		
Other long-term assets, net	\$ —	\$ 2
Other long-term liabilities and deferred credits	(545)	(477)
	\$ (545)	\$ (475)

Generally, tax returns for our Canadian entities are open to audit from 2016 through 2022. Our U.S. and state tax years are generally open to examination from 2019 to 2022.

As of December 31, 2022, in reference to tax years 2008 to 2017, we had received notices of reassessment (“notices”) from the Canada Revenue Agency and the Alberta Tax and Revenue Administration (the “Canadian Tax Authorities”) related primarily to transfer pricing associated with cross-border intercompany financing transactions. These notices include assessments, including penalties and interest, associated with these transfer pricing matters totaling approximately \$142 million (based on the exchange rate as of December 31, 2022). Payment of a portion of the assessment is required in order to file a notice of objection to dispute the reassessment. Accordingly, we have remitted approximately \$115 million (based on the exchange rate as of December 31, 2022) related to the assessments, which is included in “Other long-term assets, net,” on our Consolidated Balance Sheets. We disagree with these notices and have contested the reassessments. We intend to vigorously defend our position, and we plan to pursue all remedies available to us to successfully resolve these matters, including administrative remedies with the Canadian Tax Authorities, and judicial remedies, if necessary. As of December 31, 2022, we believe that our tax position associated with these matters is “more likely than not” to be sustained and have not recognized any amounts for uncertainty in income taxes related to these notices.

Note 16—Major Customers and Concentration of Credit Risk

ExxonMobil Corporation and its subsidiaries accounted for 20%, 15% and 12% of our revenues for the years ended December 31, 2022, 2021 and 2020, respectively. Marathon Petroleum Corporation and its subsidiaries accounted for 12% and 13% of our revenues for the years ended December 31, 2021 and 2020, respectively. BP p.l.c. and its subsidiaries accounted for 10% of our revenues for the year ended December 31, 2021. No other customers accounted for 10% or more of our revenues during any of the three years ended December 31, 2022. The majority of revenues from these customers pertain to our Crude Oil segment merchant activities, and sales to these customers occur at multiple locations. If we were to lose one or more of these customers, there is risk that we would not be able to identify and access a replacement market at a comparable margin.

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Financial instruments that potentially subject us to concentrations of credit risk consist principally of trade receivables. Our accounts receivable are primarily from purchasers and shippers of crude oil and, to a lesser extent, purchasers of NGL. This industry concentration has the potential to impact our overall exposure to credit risk in that the customers may be similarly affected by changes in economic, industry or other conditions. We review credit exposure and financial information of our counterparties and generally require letters of credit for receivables from customers that are not considered creditworthy, unless the credit risk can otherwise be reduced. See Note 3 for additional discussion of our accounts receivable and our review of credit exposure.

Note 17—Related Party Transactions

Ownership of PAGP Class C Shares

As of December 31, 2022 and 2021, we owned 528,442,538 and 534,596,831, respectively, Class C shares of PAGP. Each Class C share represents a non-economic limited partner interest in PAGP. The number of Class C shares that we own is equal to the number of outstanding common units and Series A preferred units that are entitled to vote, pro rata with the holders of PAGP Class A and Class B shares, for the election of eligible PAGP GP directors. The Class C shares function as a “pass-through” voting mechanism through which we vote at the direction of and as proxy for our common unitholders and Series A preferred unitholders in such director elections. Common units held by AAP and Series B preferred units are not entitled to vote in the election of directors.

Reimbursement of Our General Partner and its Affiliates

Our general partner provides services necessary to manage and operate our business, properties and assets, including employing or retaining personnel. We do not pay our general partner a management fee, but we do reimburse our general partner for all direct and indirect costs it incurs or payments it makes on our behalf, including the costs of employee, officer and director compensation and benefits allocable to us as well as all other expenses necessary or appropriate to conduct our business. We record these costs on the accrual basis in the period in which our general partner incurs them. Our partnership agreement provides that our general partner will, in a manner it deems in its sole discretion to be reasonable, determine the expenses that are allocable to us. Total costs reimbursed by us to our general partner for the years ended December 31, 2022, 2021 and 2020 were \$476 million, \$467 million and \$553 million, respectively.

Omnibus Agreement

The Plains Entities entered into an Omnibus Agreement on November 15, 2016, which provides for the following:

- that we will pay all direct or indirect expenses of any of the PAGP Entities, other than income taxes, including, but not limited to, (i) compensation for the directors of PAGP GP, (ii) director and officer liability insurance, (iii) listing exchange fees, (iv) investor relations expenses and (v) fees related to legal, tax, financial advisory and accounting services. Amounts paid on behalf of the PAGP Entities during the years ended December 31, 2022, 2021 and 2020 were not material;
- the ability of PAGP to issue additional Class A shares and use the net proceeds therefrom to purchase a like number of AAP units from AAP, and the corresponding ability of AAP to use the net proceeds therefrom to purchase a like number of our common units from us; and
- the ability of PAGP to lend proceeds of any future indebtedness incurred by it to AAP, and AAP’s corresponding ability to lend such proceeds to us, in each case on substantially the same terms as incurred by PAGP.

Transactions with Other Related Parties

Our other related parties include (i) entities in which we hold investments and account for under the equity method of accounting (see Note 9 for information regarding such entities) and (ii) principal owners and their affiliated entities. We recognize as our principal owners entities that have a designated representative on the board of directors of PAGP GP and/or own greater than 10% of the limited partner interests in AAP. Such limited partner interests in AAP translate into a significantly smaller indirect ownership interest in PAA. We also consider subsidiaries or funds identified as affiliated with principal owners to be related parties. As of December 31, 2022, no entities met the criteria to be recognized as a principal owner.

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In August 2021, the board of directors of PAGP GP approved and adopted an amendment to PAGP GP’s limited liability company agreement (the “Amendment”) which eliminated all previously negotiated “director designation” rights and requires that all directors be subject to public election, including Kayne Anderson Capital Advisors, L.P.’s (“Kayne Anderson”) legacy contractual right to designate an individual to serve on the PAGP GP board without being subject to public election. The Amendment also eliminated all previously negotiated rights, including Kayne Anderson’s right, to appoint a PAGP GP board observer under certain circumstances. As a result of these changes, we no longer recognize Kayne Anderson and its affiliates as related parties.

During the three years ended December 31, 2022, we recognized sales and transportation revenues, purchased petroleum products and utilized transportation and storage services from our related parties. These transactions were conducted at posted tariff rates or prices that we believe approximate market.

The impact to our Consolidated Statements of Operations from these transactions is included below (in millions):

	Year Ended December 31,		
	2022	2021	2020
Revenues from related parties ⁽¹⁾	\$ 45	\$ 33	\$ 46
Purchases and related costs from related parties ⁽¹⁾	\$ 365	\$ 385	\$ 451

⁽¹⁾ Crude oil purchases that are part of inventory exchanges under buy/sell transactions are netted with the related sales, with any margin presented in “Purchases and related costs” in our Consolidated Statements of Operations.

Our receivable and payable amounts with these related parties as reflected on our Consolidated Balance Sheets were as follows (in millions):

	December 31,	
	2022	2021
Trade accounts receivable and other receivables, net from related parties ⁽¹⁾	\$ 45	\$ 41
Trade accounts payable to related parties ⁽¹⁾⁽²⁾	\$ 79	\$ 72

⁽¹⁾ Includes amounts related to crude oil purchases and sales, transportation and storage services and amounts owed to us or advanced to us related to investment capital projects of equity method investees where we serve as construction manager.

⁽²⁾ We have agreements to store crude oil at facilities and transport crude oil or utilize capacity on pipelines that are owned by equity method investees. A portion of our commitment to transport is supported by crude oil buy/sell or other agreements with third parties with commensurate quantities.

Note 18—Equity-Indexed Compensation Plans

Our equity-indexed compensation plans primarily include LTIPs. Although other types of awards are contemplated under certain of the LTIPs, currently outstanding awards are limited to “phantom units,” which mature into the right to receive common units of PAA (or cash equivalent) upon vesting, and “tracking units,” which, upon vesting, represent the right to receive a cash payment in an amount based upon the market value of a PAA common unit at the time of vesting. Some awards also include DERs, which, subject to applicable vesting criteria, entitle the grantee to a cash payment equal to the cash distribution paid on an outstanding PAA common unit. The DERs terminate with the vesting or forfeiture of the underlying LTIP award.

Plains All American 2021 Long-Term Incentive Plan. In May 2021, PAA unitholders approved the Plains All American 2021 Long-Term Incentive Plan, which amends, restates, and renames the Plains All American 2013 Long-Term Incentive Plan and authorizes an incremental 20 million PAA common units deliverable upon vesting of awards granted under the plan.

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Our LTIP awards include both liability-classified and equity-classified awards. In accordance with FASB guidance regarding share-based payments, the fair value of liability-classified LTIP awards is calculated based on the closing market price of the underlying PAA unit at each balance sheet date and adjusted for the present value of any distributions that are estimated to occur on the underlying units over the vesting period that will not be received by the award recipients. The fair value for equity-classified awards is calculated in a similar manner on the respective grant dates. These fair values are recognized as compensation expense over the service period. We have elected to recognize forfeitures of awards when they occur.

Our LTIP awards contain (i) time-based vesting criteria, (ii) performance conditions, (iii) market conditions or (iv) a combination of time-based vesting criteria and performance conditions. For awards with performance conditions, expense is accrued over the service period only if the performance condition is considered probable of occurring. When awards with performance conditions that were previously considered improbable become probable, we incur additional expense in the period that the probability assessment changes. This is necessary to bring the accrued obligation associated with these awards up to the level it would have been if we had been accruing for these awards since the grant date. For awards with market conditions, the probable outcomes are determined on the respective dates that the fair values are calculated, and the resulting expense is accrued over the service period.

The following is a summary of the awards authorized under our LTIPs as of December 31, 2022 (in millions):

LTIP	LTIP Awards Authorized
Plains All American 2021 Long-Term Incentive Plan	28.8
Plains All American PNG Successor Long-Term Incentive Plan	1.3
Plains All American GP LLC 2006 Long-Term Incentive Tracking Unit Plan	13.4
Total ⁽¹⁾	43.5

⁽¹⁾ Of the 43.5 million total awards authorized, 19.7 million awards are currently available for future grant. The remaining balance has already vested or is currently outstanding.

As of December 31, 2022, 12.9 million LTIP awards were outstanding. Of the awards outstanding, 10.2 million include associated DERs. At December 31, 2022, certain of the outstanding LTIP awards were considered probable of vesting and such awards are expected to vest at various dates between January 2023 and August 2026. As of December 31, 2022, the outstanding awards that are considered probable of vesting have a remaining unrecognized fair value of approximately \$65 million.

Note 19—Commitments and Contingencies

Commitments

We have commitments (some of which are leases) related to real property, equipment and operating facilities. We also incur costs associated with leased land, rights-of-way, permits and regulatory fees. Future noncancelable commitments related to these items at December 31, 2022 are summarized below (in millions):

	2023	2024	2025	2026	2027	Thereafter	Total
Leases ⁽¹⁾	\$ 99	\$ 85	\$ 71	\$ 52	\$ 45	\$ 285	\$ 637
Other commitments ⁽²⁾	345	320	307	233	205	529	1,939
Total	\$ 444	\$ 405	\$ 378	\$ 285	\$ 250	\$ 814	\$ 2,576

⁽¹⁾ Includes both operating and finance leases as defined by FASB guidance. Leases are primarily for (i) railcars, (ii) office space, (iii) land, (iv) vehicles, (v) storage tanks and (vi) tractor trailers. See Note 14 for additional information.

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- (2) Primarily includes storage, transportation and pipeline throughput agreements, as well as certain rights-of-way easements. Expense associated with our storage, transportation and pipeline throughput agreements was approximately \$336 million, \$270 million and \$265 million for 2022, 2021 and 2020, respectively. A majority of the storage, transportation and pipeline throughput commitments are associated with agreements to store crude oil at facilities and transport crude oil on pipelines owned by equity method investees at posted tariff rates or prices that we believe approximate market. A portion of our commitment to transport is supported by crude oil buy/sell or other agreements with third parties with commensurate quantities.

Loss Contingencies — General

To the extent we are able to assess the likelihood of a negative outcome for a contingency, our assessments of such likelihood range from remote to probable. If we determine that a negative outcome is probable and the amount of loss is reasonably estimable, we accrue an undiscounted liability equal to the estimated amount. If a range of probable loss amounts can be reasonably estimated and no amount within the range is a better estimate than any other amount, then we accrue an undiscounted liability equal to the minimum amount in the range. In addition, we estimate legal fees that we expect to incur associated with loss contingencies and accrue those costs when they are material and probable of being incurred.

We do not record a contingent liability when the likelihood of loss is probable but the amount cannot be reasonably estimated or when the likelihood of loss is believed to be only reasonably possible or remote. For contingencies where an unfavorable outcome is reasonably possible and the impact would be material to our consolidated financial statements, we disclose the nature of the contingency and, where feasible, an estimate of the possible loss or range of loss.

Legal Proceedings — General

In the ordinary course of business, we are involved in various legal proceedings, including those arising from regulatory and environmental matters. In connection with determining the probability of loss associated with such legal proceedings and whether any potential losses associated therewith are estimable, we take into account what we believe to be all relevant known facts and circumstances, and what we believe to be reasonable assumptions regarding the application of those facts and circumstances to existing agreements, laws and regulations. Although we are insured against various risks to the extent we believe it is prudent, there is no assurance that the nature and amount of such insurance will be adequate, in every case, to fully protect us from losses arising from current or future legal proceedings.

Accordingly, we can provide no assurance that the outcome of the various legal proceedings that we are currently involved in, or will become involved with in the future, will not, individually or in the aggregate, have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Environmental — General

We currently own or lease, and in the past have owned and leased, properties where hazardous liquids, including hydrocarbons, are or have been handled. These properties and the hazardous liquids or associated wastes disposed thereon may be subject to the U.S. federal Comprehensive Environmental Response, Compensation and Liability Act, as amended, and the U.S. federal Resource Conservation and Recovery Act, as amended, as well as state and Canadian federal and provincial laws and regulations. Under such laws and regulations, we could be required to remove or remediate hazardous liquids or associated wastes (including wastes disposed of or released by prior owners or operators) and to clean up contaminated property (including contaminated groundwater). Assets we have acquired or will acquire in the future may have environmental remediation liabilities for which we are not indemnified or insured.

Although we have made significant investments in our maintenance and integrity programs, we have experienced (and likely will experience future) releases of hydrocarbon products into the environment from our pipeline, rail, storage and other facility operations. These releases can result from accidents or from unpredictable man-made or natural forces and may reach surface water bodies, groundwater aquifers or other sensitive environments. We also may discover environmental impacts from past releases that were previously unidentified. Damages and liabilities associated with any such releases from our existing or future assets could be significant and could have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

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We record environmental liabilities when environmental assessments and/or remedial efforts are probable and the amounts can be reasonably estimated. Generally, our recording of these accruals coincides with our completion of a feasibility study or our commitment to a formal plan of action. We do not discount our environmental remediation liabilities to present value. We also record environmental liabilities assumed in business combinations based on the estimated fair value of the environmental obligations caused by past operations of the acquired company. We record receivables for amounts we believe are recoverable from insurance or from third parties under indemnification agreements in the period that we determine the costs are probable of recovery.

Environmental expenditures that pertain to current operations or to future revenues are expensed or capitalized consistent with our capitalization policy for property and equipment. Expenditures that result from the remediation of an existing condition caused by past operations and that do not contribute to current or future profitability are expensed.

At December 31, 2022, our estimated undiscounted reserve for environmental liabilities (excluding liabilities related to the Line 901 incident, as discussed further below) totaled \$55 million, of which \$10 million was classified as short-term and \$45 million was classified as long-term. At December 31, 2021, our estimated undiscounted reserve for environmental liabilities (excluding liabilities related to the Line 901 incident) totaled \$57 million, of which \$11 million was classified as short-term and \$46 million was classified as long-term. Such short-term liabilities are reflected in “Other current liabilities” and long-term liabilities are reflected in “Other long-term liabilities and deferred credits” on our Consolidated Balance Sheets. At December 31, 2022 and 2021, we had recorded receivables (excluding receivables related to the Line 901 incident) totaling \$4 million and \$11 million, respectively, for amounts probable of recovery under insurance and from third parties under indemnification agreements, \$1 million of which for each period is reflected in “Other long-term assets, net” and the remainder is reflected in “Trade accounts receivable and other receivables, net” on our Consolidated Balance Sheets.

In some cases, the actual cash expenditures associated with these liabilities may not occur for three years or longer. Our estimates used in determining these reserves are based on information currently available to us and our assessment of the ultimate outcome. Among the many uncertainties that impact our estimates are the necessary regulatory approvals for, and potential modification of, our remediation plans, the limited amount of data available upon initial assessment of the impact of soil or water contamination, changes in costs associated with environmental remediation services and equipment and the possibility of existing or future legal claims giving rise to additional liabilities. Therefore, although we believe that the reserve is adequate, actual costs incurred (which may ultimately include costs for contingencies that are currently not reasonably estimable or costs for contingencies where the likelihood of loss is currently believed to be only reasonably possible or remote) may be in excess of the reserve and may potentially have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

Specific Legal, Environmental or Regulatory Matters

Line 901 Incident. In May 2015, we experienced a crude oil release from our Las Flores to Gaviota Pipeline (Line 901) in Santa Barbara County, California. A portion of the released crude oil reached the Pacific Ocean at Refugio State Beach through a drainage culvert. Following the release, we shut down the pipeline and initiated our emergency response plan. A Unified Command, which included the United States Coast Guard, the EPA, the State of California Department of Fish and Wildlife (“CDFW”), the California Office of Spill Prevention and Response and the Santa Barbara Office of Emergency Management, was established for the response effort. Clean-up and remediation operations with respect to impacted shoreline and other areas has been determined by the Unified Command to be complete, and the Unified Command has been dissolved. Our estimate of the amount of oil spilled, based on relevant facts, data and information, and as set forth in the Consent Decree described below, is approximately 2,934 barrels; of this amount, we estimate that 598 barrels reached the Pacific Ocean.

As a result of the Line 901 incident, several governmental agencies and regulators initiated investigations into the Line 901 incident, various claims have been made against us and a number of lawsuits have been filed against us, the majority of which have been resolved. Set forth below is a brief summary of actions and matters that are currently pending or recently resolved.

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As the “responsible party” for the Line 901 incident we are liable for various costs and for certain natural resource damages under the Oil Pollution Act. In this regard, following the Line 901 incident, we entered into a cooperative Natural Resource Damage Assessment (“NRDA”) process with the federal and state agencies designated or authorized by law to act as trustees for the natural resources of the United States and the State of California (collectively, the “Trustees”). Additionally, various government agencies sought to collect civil fines and penalties under applicable state and federal regulations. On March 13, 2020, the United States and the People of the State of California filed a civil complaint against Plains All American Pipeline, L.P. and Plains Pipeline L.P. along with a pre-negotiated settlement agreement in the form of a Consent Decree (the “Consent Decree”) that was signed by the United States Department of Justice, Environmental and Natural Resources Division, the United States Department of Transportation, Pipeline and Hazardous Materials Safety Administration, the EPA, CDFW, the California Department of Parks and Recreation, the California State Lands Commission, the California Department of Forestry and Fire Protection’s Office of the State Fire Marshal, Central Coast Regional Water Quality Control Board, and Regents of the University of California. The Consent Decree was approved and entered by the Federal District Court for the Central District of California on October 14, 2020. Pursuant to the terms of the Consent Decree, Plains paid \$24 million in civil penalties and \$22.325 million as compensation for injuries to, destruction of, loss of, or loss of use of natural resources resulting from the Line 901 incident. The Consent Decree, which resolved all regulatory claims related to the incident, also contains requirements for implementing certain agreed-upon injunctive relief, as well as requirements for potentially restarting Line 901 and the Sisquoc to Pentland portion of Line 903. On October 13, 2022, Plains sold Line 901 and the Sisquoc to Pentland portion of Line 903 to Pacific Pipeline Company, an indirect wholly owned subsidiary of Exxon Mobil Corporation. As required by the terms of the Consent Decree, such purchaser assumed responsibility for compliance with the Consent Decree as it relates to the future ownership and operation of Line 901 and the Sisquoc to Pentland portion of Line 903.

Following an investigation and grand jury proceedings, in May of 2016, PAA was charged by a California state grand jury, pursuant to an indictment filed in California Superior Court, Santa Barbara County (the “May 2016 Indictment”), with alleged violations of California law in connection with the Line 901 incident. Fifteen charges from the May 2016 Indictment were the subject of a jury trial in California Superior Court in Santa Barbara County, and the jury returned a verdict on September 7, 2018, pursuant to which we were (i) found guilty on one felony discharge count and eight misdemeanor counts (which included one reporting count, one strict liability discharge count and six strict liability animal takings counts) and (ii) found not guilty on one strict liability animal takings count. The remaining counts were subsequently dismissed by the Court. On April 25, 2019, PAA was sentenced to pay fines and penalties in the aggregate amount of just under \$3.35 million for the convictions covered by the September 2018 jury verdict (the “2019 Sentence”). The fines and penalties imposed in connection with the 2019 Sentence have been paid. In September 2021, the Superior Court concluded a series of hearings on the issue of whether there were any “direct victims” of the spill that are entitled to restitution under applicable criminal law. Through a series of final orders issued at the trial court level and without affecting any rights of the claimants under civil law, the Court dismissed the vast majority of the claims and ruled that the claimants were not entitled to restitution under applicable criminal laws. The Court did award an aggregate amount of less than \$150,000 to a handful of claimants and we settled with approximately 40 claimants before the hearings for aggregate consideration that is not material. The prosecution and certain separately represented claimants have appealed the Court’s rulings.

In addition, after various other unitholder derivative lawsuits were either dismissed or consolidated, one derivative suit proceeded in Delaware Chancery Court. Generally, the plaintiffs in the derivative lawsuit claimed that PAGP’s Board of Directors failed to exercise proper oversight over PAA’s pipeline integrity efforts. In April 2022, Plains entered into a settlement agreement to settle this lawsuit, subject to court approval and notice to all PAA unitholders (the “Derivative Settlement”). Following preliminary court approval, on May 23, 2022 we filed a Current Report on Form 8-K with the SEC. We also posted notice on our website and mailed copies of the notice to all record holders of PAA common units as of August 10, 2022. The key terms of the Derivative Settlement include a payment of Plaintiff’s attorneys’ fees by our insurers in the amount of approximately \$1.0 million and the agreement of Plains to comply with various covenants regarding the implementation or continuation of certain Board oversight practices with respect to pipeline integrity. At a settlement hearing held on November 1, 2022, the Delaware Chancery Court approved the terms of the Derivative Settlement.

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We also received several individual lawsuits and claims from companies, governmental agencies and individuals alleging damages arising out of the Line 901 incident. These lawsuits and claims generally seek restitution, compensatory and punitive damages, and/or injunctive relief. The majority of these lawsuits have been settled or dismissed by the court. In addition to the other lawsuits disclosed herein, the following lawsuits remain: (i) a lawsuit filed in the United States District Court for the Central District of California that was remanded to the California Superior Court in Santa Barbara County for lost revenue or profit asserted by a former oil producer that declared bankruptcy and shut in its offshore production platform following the Line 901 incident; (ii) a lawsuit filed by the California State Land Commission in California Superior Court in Santa Barbara County seeking lost royalties following the shut-down of Line 901, as well as costs related to the decommissioning of such platform, and (iii) lawsuits filed in California Superior Court in Santa Barbara County by various companies and individuals who provided labor, goods, or services associated with oil production activities they claim were disrupted following the Line 901 incident. We are vigorously defending these remaining lawsuits and believe we have strong defenses, including a lack of duty owed to the claimants to keep Line 901 in service.

Furthermore, shortly following the Line 901 incident, we established a claims line and encouraged any parties that were damaged by the release to contact us to discuss their damage claims. We received a number of claims through the claims line and we have processed those claims and made payments as appropriate. Nine class action lawsuits were filed against us; however, after various claims were either dismissed or consolidated, two proceedings remained pending in the United States District Court for the Central District of California.

In the first proceeding, the plaintiffs seek a declaratory judgment that Plains' right-of-way agreements would not allow Plains to lay a new pipeline to replace Line 901 and/or the non-operating segment of Line 903 without paying additional compensation. No trial date has been set in that action and the purchaser of Line 901 and the Sisquoc to Pentland portion of Line 903 will be joining this proceeding as a co-defendant with respect to its interest in such acquired pipelines.

In the second proceeding, the plaintiffs claimed two different classes of claimants were damaged by the release: (i) commercial fishermen who landed fish in certain specified fishing blocks in the waters off the coast of Southern California or persons or businesses who resold commercial seafood caught in those areas; and (ii) owners and lessees of residential beachfront properties, or properties with a private easement to a beach, where plaintiffs claim oil from the spill washed up. In 2022, in order to fully and finally resolve all claims and litigation for both classes, we reached an agreement to settle this case in exchange for a payment of \$230 million (the "Class Action Settlement"). The Class Action Settlement was formally approved by the trial court on September 20, 2022, and we made the \$230 million settlement payment on October 27, 2022. Plains formally submitted claims for reimbursement of the Class Action Settlement to our insurance carriers on November 7, 2022. To date, we have received payment of approximately \$3.6 million from one insurer, which represents the final payment obligation of such insurer and brings the total amount collected from all insurers under such program to \$275 million of the \$500 million policy limits as of December 31, 2022. Insurers responsible for \$185 million of the remaining \$225 million of coverage formally communicated a denial of coverage for the Class Action Settlement generally alleging that some or all damages encompassed by the Class Action Settlement are not covered by their policies and that all or some portion of the \$275 million for which Plains has already received insurance reimbursement does not properly exhaust the underlying policies that paid those sums. The insurer responsible for the final \$40 million of coverage under such insurance program has not yet responded to our reimbursement demand. We intend to vigorously pursue recovery from our insurers of all amounts for which we have claimed reimbursement. We believe that our claim for reimbursement from our insurers of the Class Action Settlement payment is strong and that our ultimate recovery of such amounts is probable. Our belief is based on: (i) our analysis of the terms of the underlying insurance policies as applied to the facts and circumstances that comprise our claim for reimbursement, (ii) our experience with the cost submissions and timely collection of claims for the \$275 million collected to date for this incident under the same insurance program as the denied claims, including from some of the same insurers who are now denying claims, (iii) our extensive legal review and assessment of the insurer's claimed basis for denial of coverage, which review and assessment includes the advice of external legal counsel experienced in these type of matters and solidly supports our belief that our insurers are required to provide coverage based on the terms of the policies and the nature of our claims, and (iv) the financial strength of the insurance carriers as determined by an independent credit ratings agency. Various factors could impact the timing and amount of recovery of our insurance receivable, including future developments that adversely impact our assessment of the strength of our coverage claims, the outcome of any dispute resolution proceedings with respect to our coverage claims and the extent to which insurers may become insolvent in the future. An unfavorable resolution could have a material impact on our results of operations.

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In connection with the foregoing, including the Class Action Settlement and the Derivative Settlement, we have made adjustments to our total estimated Line 901 costs and the portion of such costs that we believe are probable of recovery from insurance carriers, net of deductibles. Effective as of December 31, 2022, we estimate that the aggregate total costs we have incurred or will incur with respect to the Line 901 incident will be approximately \$740 million, which includes actual and projected emergency response and clean-up costs, natural resource damage assessments, fines and penalties payable pursuant to the Consent Decree, certain third-party claims settlements (including the Class Action Settlement and the Derivative Settlement), and estimated costs associated with our remaining Line 901 lawsuits and claims as described above, as well as estimates for certain legal fees and statutory interest where applicable. We accrue such estimates of aggregate total costs to “Field operating costs” in our Consolidated Statements of Operations. This estimate considers our prior experience in environmental investigation and remediation matters and available data from, and in consultation with, our environmental and other specialists, as well as currently available facts and presently enacted laws and regulations. We have made assumptions for (i) the resolution of certain third-party claims and lawsuits, but excluding claims and lawsuits with respect to which losses are not probable and reasonably estimable, and excluding future claims and lawsuits and (ii) the nature, extent and cost of legal services that will be required in connection with all lawsuits, claims and other matters requiring legal or expert advice associated with the Line 901 incident. Our estimate does not include any lost revenue associated with the shutdown of Line 901 or 903 and does not include any liabilities or costs that are not reasonably estimable at this time or that relate to contingencies where we currently regard the likelihood of loss as being only reasonably possible or remote. We believe we have accrued adequate amounts for all probable and reasonably estimable costs; however, this estimate is subject to uncertainties associated with the assumptions that we have made. For example, with respect to potential losses that we regard as only reasonably possible or remote, we have made assumptions regarding the strength of our legal position based on our assessment of the relevant facts and applicable law and precedent; if our assumptions regarding such matters turn out to be inaccurate (i.e., we are found to be liable under circumstances where we regard the likelihood of loss as being only reasonably possible or remote), we could be responsible for significant costs and expenses that are not currently included in our estimates and accruals. In addition, for any potential losses that we regard as probable and for which we have accrued an estimate of the potential losses, our estimates regarding damages, legal fees, court costs and interest could turn out to be inaccurate and the actual losses we incur could be significantly higher than the amounts included in our estimates and accruals. Also, the amount of time it takes for us to resolve all of the current and future lawsuits and claims that relate to the Line 901 incident could turn out to be significantly longer than we have assumed, and as a result the costs we incur for legal services could be significantly higher than we have estimated. Accordingly, our assumptions and estimates may turn out to be inaccurate and our total costs could turn out to be materially higher; therefore, we can provide no assurance that we will not have to accrue significant additional costs in the future with respect to the Line 901 incident.

During the years ended December 31, 2022 and 2021, we recognized costs, net of amounts probable of recovery from insurance carriers, of \$95 million and \$15 million, respectively. We did not recognize any such costs during the year ended December 31, 2020. As of December 31, 2022, we had a remaining undiscounted gross liability of approximately \$105 million related to the Line 901 incident, which aggregate amount is reflected in “Current liabilities” on our Consolidated Balance Sheet. As discussed above, we maintain insurance coverage, which is subject to certain exclusions and deductibles, in the event of such liabilities. As of December 31, 2022, our incurred costs for the Line 901 incident have exceeded our insurance coverage limit of \$500 million related to our 2015 insurance program applicable to the Line 901 incident by \$240 million. Through December 31, 2022, we had collected, subject to customary reservations, approximately \$280 million out of the \$505 million of release costs that we believe are probable of recovery from insurance carriers (including the 2015 insurance program and our directors and officers (D&O) insurance policies), net of deductibles. Therefore, as of December 31, 2022, we have recognized a long-term receivable of approximately \$225 million for the portion of the release costs that we believe is probable of recovery from insurance, net of deductibles and amounts already collected. We anticipate that the process to enforce our coverage claims with respect to the Class Action Settlement will take time and, accordingly, have recognized such amount as a long-term asset in “Other assets” on our Consolidated Balance Sheet.

We have completed the required clean-up and remediation work as determined by the Unified Command and the Unified Command has been dissolved; however, we expect to make payments for additional legal, professional and regulatory costs during future periods. Taking into account the costs that we have included in our total estimate of costs for the Line 901 incident and considering what we regard as very strong defenses to the claims made in our remaining Line 901 lawsuits, we do not believe the ultimate resolution of such remaining lawsuits will have a material adverse effect on our consolidated financial condition, results of operations or cash flows.

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Other Litigation Matters. On July 19, 2022 Hartree Natural Gas Storage, LLC (“Hartree”) filed a lawsuit under seal in the Superior Court for the State of Delaware asserting claims against PAA Natural Gas Storage, L.P. and PAA arising out of a Membership Interest Purchase Agreement relating to the 2021 sale of the Pine Prairie Energy Center natural gas storage facility to Hartree. We believe the claims are without merit and that the outcome of the lawsuit will not have a material adverse effect on our financial condition, results of operations or cash flows. We intend to vigorously defend against the claims asserted in this lawsuit.

Insurance

Pipelines, terminals, trucks or other facilities or equipment may experience damage as a result of an accident, natural disaster, terrorist attack, cyber event or other event. These hazards can cause personal injury and loss of life, severe damage to and destruction of property and equipment, pollution or environmental damage and suspension of operations. Consistent with insurance coverage generally available in the industry, in certain circumstances our insurance policies provide limited coverage for losses or liabilities relating to gradual pollution, with broader coverage for sudden and accidental occurrences. We maintain various types and varying levels of insurance coverage to cover our operations and properties, and we self-insure certain risks, including gradual pollution, cybersecurity and named windstorms. To the extent we do maintain insurance coverage, such insurance does not cover every potential risk that might occur, associated with operating pipelines, terminals and other facilities and equipment, including the potential loss of significant revenues and cash flows.

The occurrence of a significant event not fully insured, indemnified or reserved against, or the failure of a party to meet its insurance or indemnification obligations, could materially and adversely affect our operations and financial condition. While we strive to maintain adequate insurance coverage, our actual costs may exceed our coverage levels and insurance will not cover many types of interruptions that might occur, will not cover amounts up to applicable deductibles and will not cover all risks associated with certain of our assets and operations. With respect to our insurance coverage, our policies are subject to deductibles and retention levels that we consider reasonable and not excessive. Additionally, no assurance can be given that we will be able to maintain adequate insurance in the future at rates we consider reasonable. As a result, we may elect to self-insure or utilize higher deductibles in certain other insurance programs. In addition, although we believe that we have established adequate reserves and liquidity to the extent such risks are not insured, costs incurred in excess of these reserves may be higher or we may not receive insurance proceeds in a timely manner, which may potentially have a material adverse effect on our financial conditions, results of operations or cash flows.

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Note 20—Segment Information

Our operating segments, Crude Oil and NGL, which are also our reportable segments, are organized by product as our Crude Oil and NGL businesses are generally impacted by different market fundamentals and require the use of different assets and business strategies. The Crude Oil segment includes our crude oil pipelines, crude oil storage and marine terminals and related crude oil marketing activities. The NGL segment includes our NGL pipelines, NGL storage, natural gas processing and NGL fractionation facilities and related NGL marketing activities. Our crude oil and NGL marketing activities are included in the respective reporting segments as their primary purpose is to support the utilization of our assets by entering into transactions that facilitate increased volumes handled by our assets, resulting in additional earnings for each of our segments.

Our CODM (our Chief Executive Officer) evaluates segment performance based on measures including Segment Adjusted EBITDA (as defined below) and maintenance capital. The measure of Segment Adjusted EBITDA forms the basis of our internal financial reporting and is the primary performance measure used by our CODM in assessing performance and allocating resources among our operating segments. We define Segment Adjusted EBITDA as revenues and equity earnings in unconsolidated entities less (a) purchases and related costs, (b) field operating costs and (c) segment general and administrative expenses, plus (d) our proportionate share of the depreciation and amortization expense (including write-downs related to cancelled projects and impairments) of unconsolidated entities, further adjusted (e) for certain selected items including (i) gains and losses on derivative instruments that are related to underlying activities in another period (or the reversal of such adjustments from a prior period), gains and losses on derivatives that are either related to investing activities (such as the purchase of linefill) or purchases of long-term inventory, and inventory valuation adjustments, as applicable, (ii) long-term inventory costing adjustments, (iii) charges for obligations that are expected to be settled with the issuance of equity instruments, (iv) amounts related to deficiencies associated with minimum volume commitments, net of the applicable amounts subsequently recognized into revenue and (v) other items that our CODM believes are integral to understanding our core segment operating performance and (f) to exclude the portion of all preceding items that is attributable to noncontrolling interests (“Adjusted EBITDA attributable to noncontrolling interests”).

Segment Adjusted EBITDA excludes depreciation and amortization. As an MLP, we make quarterly distributions of our “available cash” (as defined in our partnership agreement) to our unitholders. We look at each period’s earnings before non-cash depreciation and amortization as an important measure of segment performance. The exclusion of depreciation and amortization expense could be viewed as limiting the usefulness of Segment Adjusted EBITDA as a performance measure because it does not account in current periods for the implied reduction in value of our capital assets, such as pipelines and facilities, caused by age-related decline and wear and tear. We compensate for this limitation by recognizing that depreciation and amortization are largely offset by repair and maintenance investments, which act to partially offset the aging and wear and tear in the value of our principal fixed assets. These maintenance investments are a component of field operating costs included in Segment Adjusted EBITDA or in maintenance capital, depending on the nature of the cost. Capital expenditures made to expand the existing operating and/or earnings capacity of our assets are classified as investment capital. Capital expenditures for the replacement and/or refurbishment of partially or fully depreciated assets in order to maintain the operating and/or earnings capacity of our existing assets are classified as maintenance capital, which is deducted in determining “available cash.” Repair and maintenance expenditures incurred in order to maintain the day to day operation of our existing assets are charged to expense as incurred. Assets are not reviewed by our CODM on a segmented basis; therefore, such information is not presented.

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The following tables reflect certain financial data for each segment (in millions):

	Crude Oil	NGL	Intersegment Revenues Elimination	Total
Year Ended December 31, 2022				
Revenues ⁽¹⁾ :				
Product sales	\$ 53,840	\$ 2,575	\$ (467)	\$ 55,948
Services	1,240	186	(32)	1,394
Total revenues	\$ 55,080	\$ 2,761	\$ (499)	\$ 57,342
Equity earnings in unconsolidated entities	\$ 403	\$ —		\$ 403
Segment Adjusted EBITDA	\$ 1,986	\$ 518		\$ 2,504
Investment and acquisition capital expenditures ^{(2) (3)}	\$ 461	\$ 157		\$ 618
Maintenance capital expenditures ⁽³⁾	\$ 112	\$ 99		\$ 211

As of December 31, 2022

Investments in unconsolidated entities	\$ 3,084	\$ —		\$ 3,084
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	Crude Oil	NGL	Intersegment Revenues Elimination	Total
Year Ended December 31, 2021				
Revenues ⁽¹⁾ :				
Product sales	\$ 39,395	\$ 1,829	\$ (341)	\$ 40,883
Services	1,075	139	(19)	1,195
Total revenues	\$ 40,470	\$ 1,968	\$ (360)	\$ 42,078
Equity earnings in unconsolidated entities	\$ 274	\$ —		\$ 274
Segment Adjusted EBITDA	\$ 1,909	\$ 285		\$ 2,194
Investment and acquisition capital expenditures ^{(2) (3)}	\$ 212	\$ 57		\$ 269
Maintenance capital expenditures ⁽³⁾	\$ 100	\$ 68		\$ 168

As of December 31, 2021

Investments in unconsolidated entities	\$ 3,805	\$ —		\$ 3,805
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	Crude Oil	NGL	Intersegment Revenues Elimination	Total
Year Ended December 31, 2020				
Revenues ⁽¹⁾ :				
Product sales	\$ 21,089	\$ 1,218	\$ (249)	\$ 22,058
Services	1,110	142	(20)	1,232
Total revenues	\$ 22,199	\$ 1,360	\$ (269)	\$ 23,290
Equity earnings in unconsolidated entities	\$ 355	\$ —		\$ 355
Segment Adjusted EBITDA	\$ 2,216	\$ 327		\$ 2,543
Investment and acquisition capital expenditures ^{(2) (3)}	\$ 1,182	\$ 49		\$ 1,231
Maintenance capital expenditures ⁽³⁾	\$ 171	\$ 45		\$ 216

As of December 31, 2020

Investments in unconsolidated entities	\$ 3,764	\$ —		\$ 3,764
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- (1) Segment revenues include intersegment amounts that are eliminated in Purchases and related costs. Intersegment activities are conducted at posted tariff rates where applicable, or otherwise at rates similar to those charged to third parties or rates that we believe approximate market at the time the agreement is executed or renegotiated.
- (2) Investment and acquisition capital expenditures, including investments in unconsolidated entities.
- (3) These amounts combined represent total capital expenditures.

Segment Adjusted EBITDA Reconciliation

The following table reconciles Segment Adjusted EBITDA to Net income/(loss) attributable to PAA (in millions):

	Year Ended December 31,		
	2022	2021	2020
Segment Adjusted EBITDA	\$ 2,504	\$ 2,194	\$ 2,543
Adjustments ⁽¹⁾ :			
Depreciation and amortization of unconsolidated entities ⁽²⁾	(85)	(123)	(73)
Derivative activities and inventory valuation adjustments ⁽³⁾	280	271	(480)
Long-term inventory costing adjustments ⁽⁴⁾	4	94	(44)
Deficiencies under minimum volume commitments, net ⁽⁵⁾	(7)	7	(74)
Equity-indexed compensation expense ⁽⁶⁾	(32)	(19)	(19)
Foreign currency revaluation ⁽⁷⁾	(4)	4	3
Line 901 incident ⁽⁸⁾	(95)	(15)	—
Significant transaction-related expenses ⁽⁹⁾	—	(16)	(3)
Adjusted EBITDA attributable to noncontrolling interests ⁽¹⁰⁾	364	94	14
Depreciation and amortization	(965)	(774)	(653)
Gains/(losses) on asset sales and asset impairments, net	(269)	(592)	(719)
Goodwill impairment loss	—	—	(2,515)
Gains (losses) on/(impairment of) investments in unconsolidated entities, net	346	2	(182)
Interest expense, net	(405)	(425)	(436)
Other income/(expense), net	(219)	19	39
Income/(loss) before tax	1,417	721	(2,599)
Income tax (expense)/benefit	(189)	(73)	19
Net income/(loss)	1,228	648	(2,580)
Net income attributable to noncontrolling interests	(191)	(55)	(10)
Net income/(loss) attributable to PAA	\$ 1,037	\$ 593	\$ (2,590)

- (1) Represents adjustments utilized by our CODM in the evaluation of segment results.
- (2) Includes our proportionate share of the depreciation and amortization expense (including write-downs related to cancelled projects and impairments) of unconsolidated entities.
- (3) We use derivative instruments for risk management purposes and our related processes include specific identification of hedging instruments to an underlying hedged transaction. Although we identify an underlying transaction for each derivative instrument we enter into, there may not be an accounting hedge relationship between the instrument and the underlying transaction. In the course of evaluating our results, we identify differences in the timing of earnings from the derivative instruments and the underlying transactions and exclude the related gains and losses in determining Segment Adjusted EBITDA such that the earnings from the derivative instruments and the underlying transactions impact Segment Adjusted EBITDA in the same period. In addition, we exclude gains and losses on derivatives that are related to (i) investing activities, such as the purchase of linefill, and (ii) purchases of long-term inventory. We also exclude the impact of corresponding inventory valuation adjustments, as applicable.

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- (4) We carry crude oil and NGL inventory that is comprised of minimum working inventory requirements in third-party assets and other working inventory that is needed for our commercial operations. We consider this inventory necessary to conduct our operations and we intend to carry this inventory for the foreseeable future. Therefore, we classify this inventory as long-term on our balance sheet and do not hedge the inventory with derivative instruments (similar to linefill in our own assets). We exclude the impact of changes in the average cost of the long-term inventory (that result from fluctuations in market prices) and write-downs of such inventory that result from price declines from Segment Adjusted EBITDA.
- (5) We, and certain of our equity method investees, have certain agreements that require counterparties to deliver, transport or throughput a minimum volume over an agreed upon period. Substantially all of such agreements were entered into with counterparties to economically support the return on our capital expenditure necessary to construct the related asset. Some of these agreements include make-up rights if the minimum volume is not met. We record a receivable from the counterparty in the period that services are provided or when the transaction occurs, including amounts for deficiency obligations from counterparties associated with minimum volume commitments. If a counterparty has a make-up right associated with a deficiency, we defer the revenue attributable to the counterparty's make-up right and subsequently recognize the revenue at the earlier of when the deficiency volume is delivered or shipped, when the make-up right expires or when it is determined that the counterparty's ability to utilize the make-up right is remote. We include the impact of amounts billed to counterparties for their deficiency obligation, net of applicable amounts subsequently recognized into revenue, as a selected item impacting comparability. Our CODM views the inclusion of the contractually committed revenues associated with that period as meaningful to Segment Adjusted EBITDA as the related asset has been constructed, is standing ready to provide the committed service and the fixed operating costs are included in the current period results.
- (6) Our total equity-indexed compensation expense includes expense associated with awards that will be settled in units and awards that will be settled in cash. The awards that will be settled in units are included in our diluted net income per unit calculation when the applicable performance criteria have been met. We exclude compensation expense associated with these awards in determining Segment Adjusted EBITDA as the dilutive impact of the outstanding awards is included in our diluted net income per unit calculation, as applicable. The portion of compensation expense associated with awards that will settle in cash is not excluded in determining Segment Adjusted EBITDA. See Note 18 for information regarding our equity-indexed compensation plans.
- (7) During the periods presented, there were fluctuations in the value of CAD to USD, resulting in the realization of foreign exchange gains and losses on the settlement of foreign currency transactions as well as the revaluation of monetary assets and liabilities denominated in a foreign currency. These gains and losses are not integral to our core operating performance and were therefore excluded in determining Segment Adjusted EBITDA.
- (8) Includes costs recognized during the period related to the Line 901 incident that occurred in May 2015, net of amounts we believe are probable of recovery from insurance. See Note 19 for additional information regarding the Line 901 incident.
- (9) Includes expenses associated with the Permian JV transaction in 2021 and the Felix Midstream LLC acquisition in 2020. See Note 7 for additional discussion. An adjustment for these non-recurring expenses is included in the calculation of Segment Adjusted EBITDA for the years ended December 31, 2021 and 2020 as our CODM does not view such expenses as integral to understanding our core segment operating performance.
- (10) Reflects amounts attributable to noncontrolling interests in the Permian JV (beginning October 2021), Cactus II (beginning November 2022) and Red River.

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Geographic Data

We have operations in the United States and Canada. Set forth below are revenues and long-lived assets attributable to these geographic areas (in millions):

Revenues ⁽¹⁾	Year Ended December 31,		
	2022	2021	2020
United States	\$ 46,903	\$ 34,458	\$ 17,942
Canada	10,439	7,620	5,348
	<u>\$ 57,342</u>	<u>\$ 42,078</u>	<u>\$ 23,290</u>

⁽¹⁾ Revenues are primarily attributed to each region based on where the services are provided or the product is shipped.

Long-Lived Assets ⁽¹⁾	December 31,	
	2022	2021
United States	\$ 18,655	\$ 18,273
Canada	3,802	4,094
	<u>\$ 22,457</u>	<u>\$ 22,367</u>

⁽¹⁾ Excludes long-term derivative assets and long-term deferred tax assets.