

§3174.4

Using Dynamic Measurement Methods and Volumetric Correction Factors, Part 4, Calculation of Base Prover Volumes by the Waterdraw Method; First Edition, December 1997; Reaffirmed March 2009; Errata July 2009 (“API 12.2.4”), IBR approved for §3174.11(b).

(29) API MPMS Chapter 13—Statistical Aspects of Measuring and Sampling, Section 1, Statistical Concepts and Procedures in Measurements; First Edition, June 1985 Reaffirmed February 2011; Errata July 2013 (“API 13.1”), IBR approved for §3174.4(a).

(30) API MPMS Chapter 13, Section 3, Measurement Uncertainty; First Edition, May, 2016 (“API 13.3”), IBR approved for §3174.4(a).

(31) API MPMS Chapter 14, Section 3, Orifice Metering of Natural Gas and Other Related Hydrocarbon Fluids—Concentric, Square-edged Orifice Meters, Part 1, General Equations and Uncertainty Guidelines; Fourth Edition, September 2012; Errata July 2013 (“API 14.3.1”), IBR approved for §3174.4(a).

(32) API MPMS Chapter 18—Custody Transfer, Section 1, Measurement Procedures for Crude Oil Gathered From Small Tanks by Truck; Second Edition, April 1997; Reaffirmed February 2012 (“API 18.1”), IBR approved for §3174.6(b).

(33) API MPMS Chapter 18, Section 2, Custody Transfer of Crude Oil from Lease Tanks Using Alternative Measurement Methods, First Edition, July 2016 (“API 18.2”), IBR approved for §3174.6(b).

(34) API MPMS Chapter 21—Flow Measurement Using Electronic Metering Systems, Section 2, Electronic Liquid Volume Measurement Using Positive Displacement and Turbine Meters; First Edition, June 1998; Reaffirmed August 2011 (“API 21.2”), IBR approved for §§3174.8(b), 3174.9(f), 3174.10(f).

(35) API Recommended Practice (RP) 12R1, Setting, Maintenance, Inspection, Operation and Repair of Tanks in Production Service; Fifth Edition, August 1997; Reaffirmed April 2008 (“API RP 12R1”), IBR approved for §3174.5(b).

(36) API RP 2556, Correction Gauge Tables For Incrustation; Second Edition, August 1993; Reaffirmed November 2013 (“API RP 2556”), IBR approved for §3174.5(c).

NOTE 1 TO §3174.3(B): You may also be able to purchase these standards from the following resellers: Techstreet, 3916 Ranchero Drive, Ann Arbor, MI 48108; telephone 734-780-8000; www.techstreet.com/api/apigate.html; IHS Inc., 321 Inverness Drive South, Englewood, CO 80112; 303-790-0600; www.ihs.com; SAI Global, 610 Winters Avenue, Paramus, NJ 07652; telephone 201-986-1131; <http://infostore.saiglobal.com/store/>.

§3174.4 Specific measurement performance requirements.

(a) *Volume measurement uncertainty levels.* (1) The FMP must achieve the following overall uncertainty levels as calculated in accordance with statistical concepts described in API 13.1, the methodologies in API 13.3, and the quadrature sum (square root of the sum of the squares) method described in API 14.3.1, Subsection 12.3 (all incorporated by reference, see §3174.3) or other methods approved under paragraph (d):

TABLE 1 TO §3174.4—VOLUME MEASUREMENT UNCERTAINTY LEVELS

If the averaging period volume (see definition 43 CFR 3170.3) is:	The overall volume measurement uncertainty must be within:
1. Greater than or equal to 30,000 bbl/month.	±0.50 percent.
2. Less than 30,000 bbl/month	±1.50 percent.

(2) Only a BLM State Director may grant an exception to the uncertainty levels prescribed in paragraph (a)(1) of this section, and only upon:

(i) A showing that meeting the required uncertainty level would involve extraordinary cost or unacceptable adverse environmental effects; and

(ii) Written concurrence of the PMT, prepared in coordination with the Deputy Director.

(b) *Bias.* The measuring equipment used for volume determinations must achieve measurement without statistically significant bias.

(c) *Verifiability.* All FMP equipment must be susceptible to independent verification by the BLM of the accuracy and validity of all inputs, factors, and equations that are used to determine quantity or quality. Verifiability includes the ability to independently recalculate volume and quality based on source records.

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(d) *Alternative equipment.* The PMT will make a determination under §3174.13 of this subpart regarding whether proposed alternative equipment or measurement procedures meet or exceed the objectives and intent of this section.

§3174.5 Oil measurement by tank gauging—general requirements.

(a) *Measurement objective.* Oil measurement by tank gauging must accurately compute the total net standard volume of oil withdrawn from a properly calibrated sales tank by following the activities prescribed in §3174.6 and the requirements of §3174.4 of this subpart to determine the quantity and quality of oil being removed.

(b) *Oil tank equipment.* (1) Each tank used for oil storage must comply with the recommended practices listed in API RP 12R1 (incorporated by reference, see §3174.3).

(2) Each oil storage tank must be connected, maintained, and operated in compliance with §§3173.2, 3173.6, and 3173.7 of this part.

(3) All oil storage tanks, hatches, connections, and other access points must be vapor tight. Unless connected to a vapor recovery or flare system, all tanks must have a pressure-vacuum relief valve installed at the highest point in the vent line or connection with another tank. All hatches, connections, and other access points must be installed and maintained in accordance with manufacturers' specifications.

(4) All oil storage tanks must be clearly identified and have an operator-generated number unique to the lease, unit PA, or CA, stenciled on the tank and maintained in a legible condition.

(5) Each oil storage tank associated with an approved FMP that has a tank-gauging system must be set and maintained level.

(6) Each oil storage tank associated with an approved FMP that has a tank-gauging system must be equipped with a distinct gauging reference point, consistent with API 3.1A (incorporated by reference, see §3174.3). The height of the reference point must be stamped on a fixed bench-mark plate or stenciled on the tank near the gauging hatch,

and be maintained in a legible condition.

(c) *Sales tank calibrations.* The operator must accurately calibrate each oil storage tank associated with an approved FMP that has a tank-gauging system using either API 2.2A, API 2.2B, or API 2.2C; and API RP 2556 (all incorporated by reference, see §3174.3). The operator must:

(1) Determine sales tank capacities by tank calibration using actual tank measurements;

(i) The unit volume must be in barrels (bbl); and

(ii) The incremental height measurement must match gauging increments specified in §3174.6(b)(5)(i)(C);

(2) Recalibrate a sales tank if it is relocated or repaired, or the capacity is changed as a result of denting, damage, installation, removal of interior components, or other alterations; and

(3) Submit sales tank calibration charts (tank tables) to the AO within 45 days after calibration. Tank tables may be in paper or electronic format.

§3174.6 Oil measurement by tank gauging—procedures.

(a) The procedures for oil measurement by tank gauging must comply with the requirements outlined in this section.

(b) The operator must follow the procedures identified in API 18.1 or API 18.2 (both incorporated by reference, see §3174.3) as further specified in this paragraph to determine the quality and quantity of oil measured under field conditions at an FMP.

(1) *Isolate tank.* Isolate the tank for at least 30 minutes to allow contents to settle before proceeding with tank gauging operations. The tank isolating valves must be closed and sealed under §3173.2 of this part.

(2) *Determine opening oil temperature.* Determination of the temperature of oil contained in a sales tank must comply with paragraphs (b)(2)(i) through (iii) of this section, API 7, and API 7.3 (both incorporated by reference, see §3174.3). Opening temperature may be determined before, during, or after sampling.

(i) Glass thermometers must be clean, be free of fluid separation, have