



7/27/2024

Northwest Natural
250 SW Taylor St
Portland, OR 97204

VIA ELECTRONIC MAIL [Robert.burrough@dot.gov]

Robert Burrough
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration
840 Bear Tavern Road, Suite 300
West Trenton, NJ 08628

RE: CPF 1-2024-041-NOA

Dear Mr. Burrough,

Northwest Natural ("NW Natural") operates the Mist Underground Natural Gas Storage Facility ("Mist"). Northwest Natural is committed to a culture and operations that value public and worker safety as a first priority. Northwest Natural appreciated the opportunity to demonstrate its commitment to actively and aggressively pursue safe and reliable operations during the 2023 inspection by PHMSA of the NW Natural's UNGS programs, plans, and procedures.

Northwest Natural has carefully reviewed PHMSA's amended NOA and has addressed below.

Safety is of the most paramount importance to NW Natural and NW Natural continuously seeks to improve its practices. NW Natural appreciates PHMSA's input on our UNGS programs, plans, and procedures, and we look forward to working with PHMSA over the years to come. Please contact me if you have any questions about this response or require additional information.

Signed,

A handwritten signature in black ink, appearing to read 'J. S. Karney'.

Joseph Karney, Vice President, Engineering & Utility Operations, NW Natural

PHMSA Findings:**1. §192.12 Underground natural gas storage facilities.**

(a) ...

(b) *Depleted hydrocarbon and aquifer reservoir UNGSFs.*

- 1) Each UNGSF that uses a depleted hydrocarbon reservoir or an aquifer reservoir for natural gas storage and was constructed after July 18, 2017, must meet all provisions of API RP 1171 (incorporated by reference, see §192.7), and paragraph (c) and (d) of this section, prior to commencing operations.

Northwest's written construction procedures for underground natural gas storage were inadequate to assure safe operation of a pipeline facility. Specifically, Northwest failed to develop and follow a construction procedure for the reuse of tubing during reworking of tubing and packer wells pursuant to American Petroleum Institute Recommended Practice 1171 (2015) (API RP 1171), Sections 6.3.6 and 11.2.1.

API RP 1171, Section 6.3.6 - Handling requires that "[c]asing shall be stored, transported, lifted and installed as specified by the manufacturer and in accordance with API 5C1." Section 7 of API RP 5C1 includes guidance related to the inspection of used tubing.

API RP 1171, Section 11.2.1 - Construction, Operation, and Maintenance Procedures requires in part that operators "... develop and follow procedures for the construction, operation, and maintenance of natural gas storage wells and reservoirs to establish and maintain functional integrity."

During the inspection, PHMSA determined that well 13bc-34-75 had been reworked. In Northwest's October 3, 2023 response to PHMSA's verbal exit briefing report, Northwest stated:

NW Natural would like to provide clarification on its previous response.

Regarding well 13bc-34-75, the 2023 workover operations did not include installation of new tubing. The existing 7" 23# K-55 SMAX was ran back into the hole at which each connection was made up in accordance with the manufacturer recommended optimal make up torque.

PHMSA reviewed records and procedures regarding the removal and reinstallation of tubing on the well and found that the procedures did not require the inspection or replacement of the original tubing during reworking tubing and packer wells.

Therefore, Northwest's written procedures required by § 192.12(b)(1) pursuant to meeting the provisions of API RP Sections 6.3.6 and 11.2.1 were inadequate. Northwest must revise its procedures to address the deficiency outlined above.

NW Natural Response:

NW Natural conducted a re-review of the records associated with the rework of Mist UGS well 13bc-34-75 as well as previous correspondences with PHMSA following the regulatory inspection. Based on this review, NW Natural would like to provide the following clarification:

- Step #2 of the Rework Program (Dated 12/18/22) of 13bc-34-75 required the visual inspection of the 7", 23#, K-55, SMAX-RS tubing pulled from the well: "...Visually inspect 7" tubing and lay down pitted or damaged joints. Replace damaged or corroded joints with new 7", 23#, K-55, SMAX-RS tubing."
 - **Filename:** *13bc-34-75 REWK PRG 12-18-22* (OneDrive link provided in email cover)