

POST INSPECTION MEMORANDUM

Inspector: Kuang Chu/WUTC
Reviewed: David Lykken/WUTC
Follow-Up Enforcement: No Violation
PCP* PCO* NOA WL LOC
Director Approval* _____

Date: 4/07/09

Operator Inspected:

Kelso-Beaver Pipeline Company
c/o Cascade Natural Gas Company
222 Fairview Ave. N
Seattle, WA 98109

OPID: 31522

Region: Western

Unit Address:

Cascade Natural Gas
1332 Vandercook Way
Longview, WA 98362

Unit Inspected: Washington side of pipeline **Unit ID:** 9775

Unit Type: Interstate Gas

Inspection Type: I01 Standard Inspection Report, I08-OQ Field Verification

Record Location:

Cascade Natural Gas
1332 Vandercook Way
Longview, WA 98362

Inspection Dates: March 23-25, 2009

AFOD: 3

SMART Activity Number:

Operator Contact: Sam Hicks, Compliance

Phone: (206)-381-6725 **Fax:** (206)-624-7215 **Emergency:** (800)-433-0252

Unit Description: The Kelso-Beaver (K-B) Pipeline is located in Cowlitz County, Washington. K-B Pipeline takes delivery of natural gas from the Williams Northwest Pipeline meter station located east of Kelso, Washington and extends west approximately 18 miles to Columbia County, Oregon. The pipeline crosses under the Columbia River north of the City of Longview, Washington. The pipeline is a 20-inch diameter, API 5L grade X52 material, with a nominal wall thickness of 0.281, 0.344, and 0.375-inches. The pipeline is jointly owned by Portland General Electric (PGE), U.S. Gypsum Company, and Northwest Natural Gas (NWN). The K-B Pipeline

has two customers located in Oregon at the PGE's Beaver generating station and U.S. Gypsum near Rainier, Oregon.

Facilities Inspected: This inspection included a review of the records at Cascade Natural Gas' Longview, WA office and a field inspection of the pipeline right-of-way from the gate station located at the delivery point from Williams Gas Pipeline West located northeast of Longview, WA to the rectifier at Eufaula Road. Pipeline facilities inspected included the gate station, several cathodic protection test stations, road crossing casings, mainline valves, rectifier (only one in WA), above ground section of the pipeline, and land slide area.

Persons Interviewed:

Sam Hicks Compliance (206)-381-6725
 Tom Wilson District Manager (509)-952-5682

Probable Violations/Concerns: No Probable violations identified. One Area of Concern noted. The integrity of the pipeline at the "Hazel Dell Road Slide Area" is a great concern to us. The landslide is active in the "Flow Slide" area and there were signs of ground movement adjacent to the pipeline. The majority owner of the pipeline (PGE) started monitoring ground movement over the pipeline by using their own survey crew in 2000. Since 2006, PGE has been monitoring this area every two weeks during the rainy season (Nov. 1 through April 1), with additional monitoring following a 2-inch rain event in a 24-hour period. During the dry season, monitoring takes place every six weeks.

PGE stated that throughout the surveillance period, the pipe and the adjacent ground has not moved in this area. During the field inspection, we noticed that there were scarps down-slope of the pipeline and up-slope of the pipeline with approximately 50 feet separating these two scarps (with the pipeline in the middle).

We believe that the pipeline is under stress and it is holding the soil from sliding downward. New French drains were installed to improve drainage down-slope of the pipeline right after our field inspection. We recommend that the pipeline should be shut down and depressurized, and the section around the Flow Slide area be exposed to relieve pipe stress.

PGE should consult with their geotechnical consultant to install French drains up-slope of the pipeline to minimize water from flowing into the area around the pipeline. Strain gages and piezometers should be installed to monitor pipe movement and ground water lever. The exposed pipe section may be re-buried. Alternatively, this exposed pipe section may be above ground with pile supports in lieu of strain gages.

Follow up on the history of prior offenses that are still open:

Prior Offenses (for the past 5 years)		
CPF #	What type of open enforcement action(s)?	Status of the regulations(s) violated (Reoccurrence Offenses, Implement a NOA Revision, Completion of PCO or CO, and etc...)

Recommendations:

Maintain normal inspection cycle.

Issue a letter to the operator stating our concern about the integrity of the pipeline at the landslide area.

Comments:**Attachments:**

- IOCS- KB Pipeline 2009 Standard Insp.
- Standard Transmission Inspection checklist-KB Pipeline 2009 Standard Insp.
- OQ Field Inspection Protocol Form-KB Pipeline 2009 Standard Insp.
- Field data collection form-KB Pipeline 2009 Standard Insp.
- Email from Kathy Davies, PGE Transmission Contracts Analyst re: KB Pipeline – Flow Slide
- PDF files/KB Pipeline Flow Slide Parameters 1 & 2
- Photos of the landslide area
 - IMG_0392.jpg, IMG_0393.jpg, IMG_0394.jpg, IMG_0395.jpg, and IMG_0396.jpg.



The K-B Pipeline is located below where the man in orange vest was standing on the left side of the picture.



The aboveground section of the K-B Pipeline on pile supports looking toward the active landslide area at the top of the slope.