U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

JUN 05 2018

Mr. Andrew Cole
General Manager
Donlin Gold, LLC
4720 Business Park Blvd., Suite G-25
Anchorage, Alaska 99503

Docket No. PHMSA-2016-0149

Dear Mr. Cole:

On November 11, 2016, the Donlin Gold Limited Liability Corporation (DGLLC) wrote to the Pipeline and Hazardous Materials Safety Administration (PHMSA) to request a special permit that would waive compliance with PHMSA's pipeline safety regulation in 49 Code of Federal Regulations (CFR) 192.103. This regulation addresses conditions that impose external forces on pipelines, such as thaw settlement that can occur in discontinuous permafrost. Thaw settlement is defined as time-dependent ground movements that result in external forces on the pipeline, due to subsurface thawing and subsequent consolidation beneath the buried pipeline, and it may subject a pipeline to bending strains that result in strains greater than 0.5%. Section 192.103 requires that the pipeline wall thickness be sufficient to withstand these pressures and loads.

DGLLC proposed the construction of a 315-mile-long, 14-inch-diameter pipeline to transport natural gas from the Cook Inlet in south-central Alaska to the DGLLC planned project mine site located approximately 10 miles north of the village of Crooked Creek on the Kuskokwim River in western Alaska. DGLLC requested that PHMSA permit the use of strain-based design (SBD) for these pipeline segments to be buried in areas of discontinuous permafrost. SBD employs advanced metallurgy, design, construction, and maintenance to allow the pipe to deform in the longitudinal direction and better maintain its integrity and safety.

PHMSA is the regulating agency for 49 CFR Part 192, which includes the applicable code sections and specific regulatory requirements for the design, construction, operation, and maintenance of natural gas pipelines to maintain safety. PHMSA determined that 192.103, 192.105, 192.111, 192.317, and 192.619 are applicable to pipeline design for pipelines in permafrost soils. The current 49 CFR Part 192 is based on hoop strength and internal pressure but has no provisions for the material, design, operations and maintenance, or integrity management aspects of SBD. Other standards for natural gas pipelines referenced in 192.7, such as the American Petroleum Institute (API) and American Society of Mechanical Engineers (ASME)/American National Standards Institute (ANSI) similarly do not contain specific provisions for the usage of SBD for pipeline manufacturing, design, construction, operations, or maintenance.

Based on soil mapping and geotechnical borings conducted by DGLLC, the presence of permafrost in significant quantities along the planned pipeline route is limited to the area from mile post (MP) 100, near Puntilla Lake, to MP 215, near the Tatlawiksuk River crossing. Additional, isolated pockets of permafrost may occur along other segments of the pipeline and would typically be addressed via alternative engineering and construction techniques, including above ground construction, horizontal directional drilling, heavier-walled pipe, or the excavation of frozen material below the pipe. These techniques, which will comply with 49 CFR Part 192, are designed to mitigate the potential for high longitudinal pipe strains due to thaw settlement.

DGLLC has confirmed the presence of discontinuous permafrost from proposed MP 173 through MP 189, MP 192 through MP 196, MP 201 through MP 209.5, and MP 213 through MP 215. Because buried pipe exposed to these conditions would need to be exceptionally thick-walled to withstand the forces and strains due to thaw settlement, DGLLC must design, construct, operate, and maintain these pipeline segments using a SBD approach, as detailed in the special permit (enclosed).

This special permit will allow the use of SBD in the design, construction, operation, and maintenance of the proposed DGLLC pipeline, but does not affect the decision making process of the Army Corps of Engineers or any matter relevant to that agency's jurisdiction.

PHMSA grants this special permit based on the permit's conditions and the environmental assessment findings of no significant impact, which can be read in their entirety in Docket No. PHMSA-2016-0149 in the Federal Docket Management System at: www.Regulations.gov.

My staff would be pleased to discuss this or any other regulatory matter with you. John Gale, Director of Standards and Rulemaking, may be contacted at 202-366-0434, regarding regulatory matters. Kenneth Lee, Director of Engineering and Research, may be contacted at 202-366-0434 regarding technical matters specific to this special permit.

Sincerely,

Alan K. Mayberry
Associate Administrator for Pipeline Safety

Enclosure: Special Permit – PHMSA-2016-0149