

**TransCanada**

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**To be sent via courier and electronic mail**

December 4, 2013

Ms. Cynthia L. Quarterman  
Administrator  
Pipeline and Hazardous Material Safety Administration  
1200 New Jersey Avenue, SE  
Washington, DC 20590

Mr. Rodrick Seeley  
Director, SW Region  
Pipeline and Hazardous Material Safety Administration  
8701 South Gessner Road, Suite 1110  
Houston, TX 77074

Dear Ms. Quarterman and Mr. Seeley:

***RE: TRANSCANADA GULF COAST PIPELINE***

TC Oil Pipeline Operations Inc. (the Operator for the TransCanada Gulf Coast Pipeline) hereby certifies to the Pipeline and Hazardous Material Safety Administration (PHMSA) that it is ready to introduce hydrocarbons into the TransCanada Gulf Coast Pipeline (the Pipeline) for the purpose of commencing line fill.

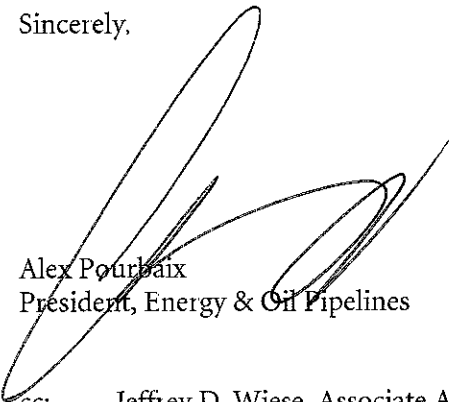
From the beginning of the Pipeline project, TransCanada has worked to ensure that effective and efficient communication with PHMSA's Southwest Region was a priority. Meetings were held on a regular basis to review pipeline construction planning and progress, review records, define documentation submittal processes and discuss questions identified by PHMSA, all with the ultimate goal of certifying compliance of the Pipeline. As TransCanada completed construction and dry commissioning of line fill assets, and prepared for commencement of line fill, TransCanada and the PHMSA SW Region held further meetings specifically to review and finalize documentation and address specific questions and requests posed by PHMSA.

As discussed in the *Summary of Responses to SW Region Questions and Requests* (Attachment 1), TransCanada has now provided responses and supporting documentation with respect to all questions and requests posed by the PHMSA SW Region. In addition to achieving closure on those matters, TransCanada has completed an extensive project team, functional department, and senior management review of the processes and programs administered and the documentation created during the design and construction of the Pipeline to assure that all applicable codes, regulations and permit requirements have been met.

Further, TransCanada confirms that it has designed, constructed and will operate and maintain the Pipeline in accordance with the 57 Special Conditions developed by PHMSA during its review of the proposed TransCanada Keystone XL Presidential Permit application, as well as in compliance with 49 CFR Parts 194 and 195. Additionally, the 57 Special Conditions have been incorporated into TransCanada's Hazardous Liquid Operations and Maintenance Manual.

For all of the reasons set forth herein, TransCanada confirms that all requirements precedent to commencing line fill of the Pipeline have been satisfied and it is our intent to commence line fill on December 5, 2013, pending receipt of PHMSA's concurrence.

Sincerely,



Alex Pourbaix  
President, Energy & Oil Pipelines

cc: Jeffrey D. Wiese, Associate Administrator for Pipeline Safety, PHMSA  
Alan Mayberry, Deputy Associate Administrator, PHMSA  
Vern Meier, President TC Oil Pipeline Operations Inc.  
Corey Goulet, Vice President Keystone Projects

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**Attachment 1: Summary of Responses to SW Region Questions and Requests**

Hereinafter, TransCanada summarizes its responses to the recently received questions and requests posed by the PHMSA SW Region:

**1. Dent Anomaly Repairs**

**Question:**

- PHMSA questioned why non-destructive examination (NDE) was not conducted on apparent dents that were identified by the post-construction in-line inspection (ILI) tool and that were determined to be below the repair threshold of two percent as required by the current regulation. PHMSA further questioned how TransCanada could ensure that any remaining dents or pipe installed in areas with rock ditch would not present a future pipeline integrity threat.

**Response:**

- TransCanada excavated and visually inspected all dents identified by the ILI caliper tool as being greater than two percent. If the actual “in ditch” measurement of the dent fell below the two percent repair criteria a NDE inspection was performed on the feature if there were any signs of coating damage or stress concentrations. TransCanada has provided PHMSA with the non-destructive examination records for these 64 reported feature locations of less than two percent that were examined but did not require removal. The non-destructive testing that was conducted included magnetic particle inspection for evidence of cracking, nital etch inspection for evidence of hard spots and ultrasonic thickness measurements for evidence of wall loss and laminations. The NDE tests of these features indicated that there were no metallurgical integrity concerns associated with any of the features. In addition to these “in ditch” examinations, TransCanada conducted NDE on all of the dents that were greater than or equal to two percent and had been removed from the Pipeline as part of the repair program. The non-destructive testing of these features which also required magnetic particle inspection, nital etch and ultrasonic inspection confirmed that there were no metallurgical integrity concerns associated with any of the features.. Documented evidence of these test results has also been provided to the PHMSA SW Region. The results of these inspections show that any of the shallower dents (i.e., less than two percent) remaining in the Pipeline that were not non-destructively examined do not present integrity concerns.
- As further follow up to the occurrence of these construction related dents and pipe ovalities, TransCanada is conducting a full Root Cause Analysis (RCA) and will implement appropriate action per the final findings of that RCA. Upon its completion, TransCanada will provide PHMSA with a copy of the RCA report.
- To confirm the integrity of the Pipeline and to verify that the profile of the dents remaining in the Pipeline are not affected in any way by the line fill activities and subsequent in-service operations at normal operating pressures, TransCanada will be conducting a combination geometry and high resolution magnetic flux leakage ILI of the entire pipeline within six to 12 months of the in-service date. This is two to two-and-a-half years earlier than the requirement for conducting the initial ILI within three years of placing the Pipeline in-service. As per the requirement of the Special Conditions we will also be completing the close interval survey within three months of conducting the in-line-inspection.

- TransCanada would further note that the occurrence of these dents was identified through its post construction ILI and that all dents exceeding PHMSA's repair criteria were removed from the Pipeline and promptly replaced with pre-tested pipe. At no time did these features represent a threat to the integrity of the Pipeline. In addition, TransCanada voluntarily reported the discovery of these dents to PHMSA and invited PHMSA to witness the repair of each anomaly.

## 2. Dent Location Verification

### Question:

- PHMSA noted that a number of apparent dents identified by the ILI tool, when visually inspected, were either smaller than the ILI tool had indicated or could not be located. PHMSA requested confirmation that TransCanada's process for verifying that the location of the excavations and the location of the identified features were adequately correlated and sufficiently documented.
- As a result of the above query PHMSA requested that TransCanada perform verification for all apparent dents greater than five percent where no visible anomaly was found.

### Response:

- TransCanada verbally described to PHMSA the detailed process that was used to verify that the location of the excavation properly coincided with the reported location of the defect. We then followed up with documentation that demonstrated that this process was consistently followed. This documentation included positional data records that demonstrated that TransCanada followed and documented its process for verifying the location of ILI indications and that the excavated location of the defects and the adjacent girth welds corresponds with the as-built locations of these same girth welds.
- TransCanada reviewed excavation documentation for each dent site identified by PHMSA for re-excavation. The documentation consisted of ILI vendor dig sheets and TransCanada excavation packages. In all cases, the sites identified by PHMSA were areas of pipe ovality, not dents, and TransCanada was able to demonstrate that the locations of the excavations were verified and conducted in the appropriate locations. To confirm tool accuracy TransCanada provided excavation reports that confirmed field measured joint lengths were the same as reported lengths of the high resolution deformation tool.

## 3. Coating Damage

### Question:

- PHMSA questioned how TransCanada had ensured that the lack of coating adhesion near specific girth welds identified in the first 10 miles of Spread 3, and subsequently excavated and repaired by TransCanada, do not exist elsewhere on the Pipeline and have been adequately addressed.

### Response:

- TransCanada's investigation determined that this issue is isolated to the first 10 miles of Spread 3 in part due to the fact that this was the only spread that involved manual production welding. The affected areas involved repairs to the factory-applied coating as a result of damage from weld splatter from the manual welding process. TransCanada's investigation determined that in these locations the coating repair failed adhesion testing and needed to be stripped and re-applied. For subsequent sections of Spread 3 TransCanada addressed welding splatter by:

- increasing the size of the welding blankets used during girth weld production to protect adjacent factory applied coating;
  - modifying the coating application procedure;
  - re-training the coating repair crew;
  - revising the coating audit protocol to ensure this condition was specifically addressed during each subsequent quality audit
- In addition, audit and training records were provided to PHMSA that demonstrated no further issues were identified on Spread 3.
  - TransCanada also provided PHMSA with the Coating Inspection reports and Non-Conformance Reports for Spreads 1 and 2 to demonstrate that no similar issues were identified on those spreads. TransCanada also provided PHMSA with a copy of its Root Cause Analysis report into these non-conformances.

#### 4. Material Traceability for Pretested Pipe Used For Repairs

**Question:**

- PHMSA requested that TransCanada provide evidence that the procedure used was adequate for tracking pipe identification information for pretested pipe sections that were subsequently cut and used for repair purposes was adequate.

**Response:**

- TransCanada described the detailed process that was used for tracking pipe identification information for pretested pipe and presented supporting documentation substantiating that the process was properly followed. TransCanada provided a complete document trail demonstrating its process for sample repair locations where pretested pipe was used to replace line pipe anomalies.

#### 5. Valve Placement Methodology

**Question:**

- PHMSA requested a topographical map of the spill dispersion patterns in high consequence areas (HCAs) and environmentally sensitive areas (ESAs) for the initial valve placement design compared to the final issued for construction plan after the initial design was optimized to minimize the effects on HCAs and ESAs.
- PHMSA also requested a narrative explaining the rationale for the threshold that was set for the maximum acceptable spill volume. PHMSA requested that TransCanada provide the rationale and justification for valves at specific locations near 100 foot water bodies on the Pipeline.

**Response:**

- TransCanada provided explanations for each of the locations identified by PHMSA. All the water bodies at the locations cited were less than 100 feet wide and therefore valves were not required in accordance with 49 CFR 195.260(e). Valve placement charts were reviewed that clearly delineated that the identified water bodies were less than 100 feet wide. Supporting documentation and a narrative addressing the rationale and justification for remote mainline valves along the Pipeline, including the maximum acceptable spill volume was also provided to PHMSA.

- TransCanada provided the topographical maps of the dispersion analysis for contributing pipeline segments and high consequence areas, the worst case discharge graphs that defined spill dispersion patterns for high consequence areas (HCAs) and environmentally sensitive areas (ESAs) and the Gulf Coast Identification of Contributing Pipeline Segments – High Consequence Areas and 100-foot Water bodies.
- These documents demonstrate that valve placement has effectively mitigated potential spill volumes.

## 6. Welding Procedure Qualification

### Question:

- In its Letter dated September 26, 2013, PHMSA stated that, as a result of inspections it performed on the Pipeline, *“it appears that you (TransCanada) have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations.”* In a meeting with PHMSA on November 21, 2013, to review documentation related to the issue identified in the Warning Letter, PHMSA stated that discrepancies between the welding Procedure Qualification Record (PQR) and the Welding Procedure Specifications (WPS) for the first 425 welds on Spread 3 may have been a contributing factor in the high welding repair rates experienced in this section. PHMSA also stated that TransCanada changed essential variables of the WPS to better match the PQR and as such was obligated to re-qualify the modified procedure. PHMSA further stated that the welding procedure re-verification that TransCanada subsequently performed was not a valid approach for verifying the original 425 welds because it was performed using the modified procedure.

### Response:

- TransCanada brought to PHMSA’s attention that, in addition to the documented and submitted re-verification of the refined welding procedure witnessed by PHMSA in Tulsa, OK, TransCanada also cut out 10 of the 425 welds produced using the original welding procedure and destructively tested them to assure their integrity. The documentation for these destructive tests has been previously submitted to PHMSA. A face-to-face review of the submitted destructive testing was conducted with PHMSA on November 26, 2013, which confirmed the welding procedures utilized for manual welding on Spread 3 were adequate. The review, and submission to PHMSA, included:
  - specifics of the root cause analysis;
  - timeline of destructive testing activities that validated the manual welding procedure, including witness by PHMSA’s welding specialist from Washington DC and PHMSA SW Region personnel in Tulsa on November 6, 2012;
  - weld procedure qualification records;
  - original and refined welding procedure specifications;
  - root cause analysis;
  - destructive testing reports;
  - engineering critical assessment; and
  - review of welding procedures (DNV report)

The DNV Report was prepared by an industry expert on API1104 and provided clarification and expert interpretation that the modifications that TransCanada made to the original Spread 3 welding procedure did not constitute a change in essential parameters and therefore the procedure was not required to be re-qualified. Notwithstanding the fact that the expert report

verified that the welds met API1104, TransCanada re-verified its procedure using the same process that would be followed for a re-qualification.

## 7. Valve Automation

### Question:

- PHMSA requested that TransCanada confirm that all automated mainline valves will be fully functional prior to commencing line fill.

### Response:

- TransCanada submitted a list of the automated mainline valve status that confirms full automation prior to commencing line fill.

## 8. Fencing and Signage

### Question:

- PHMSA required confirmation that all valve site security fencing and signage needed to be in place prior to commencing line fill.

### Response:

- TransCanada has provided documentation that the required fencing and signage at the mainline valve sites is in place prior to line fill.

## 9. Direct Current Voltage Gradient Surveys

### Question:

- PHMSA requested TransCanada to describe the process that they used to correlate coating damages documented in excavation inspection reports and the results of the Direct Current Voltage Gradient (DCVG) surveys.

### Response:

- During a face to face meeting on November 26, 2013, TransCanada produced records correlating the co-ordinates of reported coating damage associated with defect excavation locations and the DCVG co-ordinate information. Final DCVG survey reports were reviewed and GPS correlation was conducted to confirm location of reported anomalies.

## 10. Commissioning Plan/Emergency Response Plan

### Question:

- PHMSA requested that TransCanada provide the Commissioning Plan for the Pipeline and the Emergency Response Plans for line fill and for in-service operations.

**Response:**

- TransCanada has re-submitted its comprehensive Commissioning Plan and its Emergency Response Plans for line fill and subsequent operations. The Commissioning Plan addresses:
  - the scope of the line fill activities;
  - the required resources;
  - references to the Emergency Response Plans;
  
  - plans to notify Emergency Responders prior to commencement of line fill and as it progresses;
  - pressure control and over-pressure protection systems;
  - leak detection and aerial surveillance procedures; and
  - PHMSA communication, notifications and approval checkpoints during line fill

**11. Surge Analysis**

**Question:**

- PHMSA requested that TransCanada provide the maximum operating pressure (MOP) for the Gulf Coast Pipeline, the maximum surge pressure and percentage of MOP during line fill and the maximum surge pressure and percentage of MOP during worst case operating conditions.

**Response:**

- TransCanada has provided the maximum operating pressure, the maximum surge pressure during line fill and the worst case surge pressure during pipeline operations.