


NOTICE: This report is required by 49 CFR Part 195. Failure to report can result in a civil penalty not to exceed \$100,000 for each violation for each day that such violation persists except that the maximum civil penalty shall not exceed \$1,000,000 as provided in 49 USC 60122.		OMB NO: 2137-0047 EXPIRATION DATE: 01/31/2014	
 U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration	Original Report Date:	06/08/2011	
	No.	20110171 - 16159 ----- (DOT Use Only)	
ACCIDENT REPORT - HAZARDOUS LIQUID PIPELINE SYSTEMS			
A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2137-0047. Public reporting for this collection of information is estimated to be approximately 10 hours per response (5 hours for a small release), including the time for reviewing instructions, gathering the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, PHMSA, Office of Pipeline Safety (PHP-30) 1200 New Jersey Avenue, SE, Washington, D.C. 20590.			
INSTRUCTIONS			
<i>Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the PHMSA Pipeline Safety Community Web Page at http://www.phmsa.dot.gov/pipeline.</i>			
PART A - KEY REPORT INFORMATION			
Report Type: (select all that apply)	Original:	Supplemental:	Final:
		Yes	Yes
Last Revision Date:	11/02/2011		
1. Operator's OPS-issued Operator Identification Number (OPID):	32334		
2. Name of Operator	TC OIL PIPELINE OPERATIONS INC		
3. Address of Operator:			
3a. Street Address	717 TEXAS AVE		
3b. City	HOUSTON		
3c. State	Texas		
3d. Zip Code	77002		
4. Local time (24-hr clock) and date of the Accident:	05/07/2011 06:20		
5. Location of Accident:			
Latitude:	45.95307		
Longitude:	-97.9057		
6. National Response Center Report Number (if applicable):	975573		
7. Local time (24-hr clock) and date of initial telephonic report to the National Response Center (if applicable):	05/07/2011 09:55		
8. Commodity released: (select only one, based on predominant volume released)	Crude Oil		
- Specify Commodity Subtype:			
- If "Other" Subtype, Describe:			
- If Biofuel/Alternative Fuel and Commodity Subtype is Ethanol Blend, then % Ethanol Blend:			
%			
- If Biofuel/Alternative Fuel and Commodity Subtype is Biodiesel, then Biodiesel Blend (e.g. B2, B20, B100):	B		
9. Estimated volume of commodity released unintentionally (Barrels):	400.00		
10. Estimated volume of intentional and/or controlled release/blowdown (Barrels):			
11. Estimated volume of commodity recovered (Barrels):	400.00		
12. Were there fatalities?	No		
- If Yes, specify the number in each category:			
12a. Operator employees			
12b. Contractor employees working for the Operator			
12c. Non-Operator emergency responders			
12d. Workers working on the right-of-way, but NOT associated with this Operator			
12e. General public			
12f. Total fatalities (sum of above)			
13. Were there injuries requiring inpatient hospitalization?	No		
- If Yes, specify the number in each category:			
13a. Operator employees			
13b. Contractor employees working for the Operator			
13c. Non-Operator emergency responders			

13d. Workers working on the right-of-way, but NOT associated with this Operator	
13e. General public	
13f. Total injuries (sum of above)	
14. Was the pipeline/facility shut down due to the Accident?	
- If No, Explain:	
- If Yes, complete Questions 14a and 14b: (use local time, 24-hr clock)	
14a. Local time and date of shutdown:	
14b. Local time pipeline/facility restarted:	
- Still shut down? (* Supplemental Report Required)	
15. Did the commodity ignite?	No
16. Did the commodity explode?	No
17. Number of general public evacuated:	0
18. Time sequence (use local time, 24-hour clock):	
18a. Local time Operator identified Accident:	05/07/2011 09:00
18b. Local time Operator resources arrived on site:	05/07/2011 09:00
PART B - ADDITIONAL LOCATION INFORMATION	
1. Was the origin of Accident onshore?	Yes
<i>If Yes, Complete Questions (2-12)</i>	
<i>If No, Complete Questions (13-15)</i>	
- If Onshore:	
2. State:	North Dakota
3. Zip Code:	58017
4. City:	Brampton
5. County or Parish:	Sargent
6. Operator-designated location:	Milepost/Valve Station
Specify:	MP ND 216.7
7. Pipeline/Facility name:	Ludden Pump Station
8. Segment name/ID:	Glacial Lakes
9. Was Accident on Federal land, other than the Outer Continental Shelf (OCS)?	No
10. Location of Accident:	Originated on Operator-controlled property, but then flowed or migrated off the property
11. Area of Accident (as found):	Aboveground
Specify:	Typical aboveground facility piping or appurtenance
- If Other, Describe:	
Depth-of-Cover (in):	
12. Did Accident occur in a crossing?	No
- If Yes, specify below:	
- If Bridge crossing –	
Cased/ Uncased:	
- If Railroad crossing –	
Cased/ Uncased/ Bored/drilled	
- If Road crossing –	
Cased/ Uncased/ Bored/drilled	
- If Water crossing –	
Cased/ Uncased	
- Name of body of water, if commonly known:	
- Approx. water depth (ft) at the point of the Accident:	
- Select:	
- If Offshore:	
13. Approximate water depth (ft) at the point of the Accident:	
14. Origin of Accident:	
- In State waters - Specify:	
- State:	
- Area:	
- Block/Tract #:	
- Nearest County/Parish:	
- On the Outer Continental Shelf (OCS) - Specify:	
- Area:	
- Block #:	
15. Area of Accident:	
PART C - ADDITIONAL FACILITY INFORMATION	
1. Is the pipeline or facility:	Interstate
2. Part of system involved in Accident:	Onshore Pump/Meter Station Equipment and Piping
- If Onshore Breakout Tank or Storage Vessel, Including Attached Appurtenances, specify:	

3. Item involved in Accident:	Relief Line
- If Pipe, specify:	
3a. Nominal diameter of pipe (in):	
3b. Wall thickness (in):	
3c. SMYS (Specified Minimum Yield Strength) of pipe (psi):	
3d. Pipe specification:	
3e. Pipe Seam, specify:	
- If Other, Describe:	
3f. Pipe manufacturer:	
3g. Year of manufacture:	
3h. Pipeline coating type at point of Accident, specify:	
- If Other, Describe:	
- If Weld, including heat-affected zone, specify:	
- If Other, Describe:	
- If Valve, specify:	
- If Mainline, specify:	
- If Other, Describe:	
3i. Manufactured by:	
3j. Year of manufacture:	
- If Tank/Vessel, specify:	
- If Other - Describe:	
- If Other, describe:	
4. Year item involved in Accident was installed:	2009
5. Material involved in Accident:	Carbon Steel
- If Material other than Carbon Steel, specify:	
6. Type of Accident Involved:	Leak
- If Mechanical Puncture – Specify Approx. size:	
in. (axial) by	
in. (circumferential)	
- If Leak - Select Type:	Connection Failure
- If Other, Describe:	
- If Rupture - Select Orientation:	
- If Other, Describe:	
Approx. size: in. (widest opening) by	
in. (length circumferentially or axially)	
- If Other – Describe:	
PART D - ADDITIONAL CONSEQUENCE INFORMATION	
1. Wildlife impact:	No
1a. If Yes, specify all that apply:	
- Fish/aquatic	
- Birds	
- Terrestrial	
2. Soil contamination:	Yes
3. Long term impact assessment performed or planned:	No
4. Anticipated remediation:	Yes
4a. If Yes, specify all that apply:	
- Surface water	Yes
- Groundwater	
- Soil	Yes
- Vegetation	
- Wildlife	
5. Water contamination:	Yes
5a. If Yes, specify all that apply:	
- Ocean/Seawater	
- Surface	Yes
- Groundwater	Yes
- Drinking water: (Select one or both)	
- Private Well	
- Public Water Intake	
5b. Estimated amount released in or reaching water (Barrels):	5.00
5c. Name of body of water, if commonly known:	Unknown, swamp area in close proximity to the pump station
6. At the location of this Accident, had the pipeline segment or facility been identified as one that "could affect" a High Consequence Area (HCA) as determined in the Operator's Integrity Management Program?	No
7. Did the released commodity reach or occur in one or more High Consequence Area (HCA)?	No
7a. If Yes, specify HCA type(s): (Select all that apply)	

- Commercially Navigable Waterway:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- High Population Area:	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Other Populated Area	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Drinking Water	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
- Unusually Sensitive Area (USA) - Ecological	
Was this HCA identified in the "could affect" determination for this Accident site in the Operator's Integrity Management Program?	
8. Estimated Property Damage:	
8a. Estimated cost of public and non-Operator private property damage	\$ 1,000
8b. Estimated cost of commodity lost	\$ 40,000
8c. Estimated cost of Operator's property damage & repairs	\$ 25,000
8d. Estimated cost of Operator's emergency response	\$ 250,000
8e. Estimated cost of Operator's environmental remediation	\$ 750,000
8f. Estimated other costs	\$ 250,000
Describe:	Repair costs to the facility and other facilities
8g. Total estimated property damage (sum of above)	\$ 1,316,000
PART E - ADDITIONAL OPERATING INFORMATION	
1. Estimated pressure at the point and time of the Accident (psig):	1,097.00
2. Maximum Operating Pressure (MOP) at the point and time of the Accident (psig):	1,440.00
3. Describe the pressure on the system or facility relating to the Accident (psig):	Pressure did not exceed MOP
4. Not including pressure reductions required by PHMSA regulations (such as for repairs and pipe movement), was the system or facility relating to the Accident operating under an established pressure restriction with pressure limits below those normally allowed by the MOP?	No
- If Yes, Complete 4.a and 4.b below:	
4a. Did the pressure exceed this established pressure restriction?	
4b. Was this pressure restriction mandated by PHMSA or the State?	
5. Was "Onshore Pipeline, Including Valve Sites" OR "Offshore Pipeline, Including Riser and Riser Bend" selected in PART C, Question 2?	No
- If Yes - (Complete 5a. – 5e. below)	
5a. Type of upstream valve used to initially isolate release source:	
5b. Type of downstream valve used to initially isolate release source:	
5c. Length of segment isolated between valves (ft):	
5d. Is the pipeline configured to accommodate internal inspection tools?	
- If No, Which physical features limit tool accommodation? (select all that apply)	
- Changes in line pipe diameter	
- Presence of unsuitable mainline valves	
- Tight or mitered pipe bends	
- Other passage restrictions (i.e. unbarred tee's, projecting instrumentation, etc.)	
- Extra thick pipe wall (applicable only for magnetic flux leakage internal inspection tools)	
- Other -	
- If Other, Describe:	
5e. For this pipeline, are there operational factors which significantly complicate the execution of an internal inspection tool run?	

- If Yes, Which operational factors complicate execution? (select all that apply)	
- Excessive debris or scale, wax, or other wall buildup	
- Low operating pressure(s)	
- Low flow or absence of flow	
- Incompatible commodity	
- Other -	
- If Other, Describe:	
5f. Function of pipeline system:	
6. Was a Supervisory Control and Data Acquisition (SCADA)-based system in place on the pipeline or facility involved in the Accident?	Yes
If Yes -	
6a. Was it operating at the time of the Accident?	Yes
6b. Was it fully functional at the time of the Accident?	Yes
6c. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
6d. Did SCADA-based information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
7. Was a CPM leak detection system in place on the pipeline or facility involved in the Accident?	Yes
- If Yes:	
7a. Was it operating at the time of the Accident?	Yes
7b. Was it fully functional at the time of the Accident?	Yes
7c. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the detection of the Accident?	Yes
7d. Did CPM leak detection system information (such as alarm(s), alert(s), event(s), and/or volume calculations) assist with the confirmation of the Accident?	Yes
8. How was the Accident initially identified for the Operator?	Controller
- If Other, Specify:	
8a. If "Controller", "Local Operating Personnel", including contractors", "Air Patrol", or "Guard Patrol by Operator or its contractor" is selected in Question 8, specify the following:	Operator employee
9. Was an investigation initiated into whether or not the controller(s) or control room issues were the cause of or a contributing factor to the Accident?	No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the Operator did not investigate)
- If No, the Operator did not find that an investigation of the controller(s) actions or control room issues was necessary due to: (provide an explanation for why the operator did not investigate)	due to the cause of the release resulted from a broken fitting on the thermal relief valve, the controlled did not contribute to the release.
- If Yes, specify investigation result(s): (select all that apply)	
- Investigation reviewed work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
- Investigation did NOT review work schedule rotations, continuous hours of service (while working for the Operator), and other factors associated with fatigue	
Provide an explanation for why not:	
- Investigation identified no control room issues	
- Investigation identified no controller issues	
- Investigation identified incorrect controller action or controller error	
- Investigation identified that fatigue may have affected the controller(s) involved or impacted the involved controller(s) response	
- Investigation identified incorrect procedures	
- Investigation identified incorrect control room equipment operation	
- Investigation identified maintenance activities that affected control room operations, procedures, and/or controller response	
- Investigation identified areas other than those above:	
Describe:	
PART F - DRUG & ALCOHOL TESTING INFORMATION	

1. As a result of this Accident, were any Operator employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations? - If Yes:	No
1a. Specify how many were tested:	
1b. Specify how many failed:	
2. As a result of this Accident, were any Operator contractor employees tested under the post-accident drug and alcohol testing requirements of DOT's Drug & Alcohol Testing regulations? - If Yes:	No
2a. Specify how many were tested:	
2b. Specify how many failed:	
PART G – APPARENT CAUSE	
Select only one box from PART G in shaded column on left representing the APPARENT Cause of the Accident, and answer the questions on the right. Describe secondary, contributing or root causes of the Accident in the narrative (PART H).	
Apparent Cause:	G6 - Equipment Failure
G1 - Corrosion Failure - only one sub-cause can be picked from shaded left-hand column	
External Corrosion:	
Internal Corrosion:	
- If External Corrosion:	
1. Results of visual examination: - If Other, Describe:	
2. Type of corrosion: <i>(select all that apply)</i>	
- Galvanic	
- Atmospheric	
- Stray Current	
- Microbiological	
- Selective Seam	
- Other: - If Other, Describe:	
3. The type(s) of corrosion selected in Question 2 is based on the following: <i>(select all that apply)</i>	
- Field examination	
- Determined by metallurgical analysis	
- Other: - If Other, Describe:	
4. Was the failed item buried under the ground? - If Yes :	
<input type="checkbox"/> 4a. Was failed item considered to be under cathodic protection at the time of the Accident? If Yes - Year protection started:	
4b. Was shielding, tenting, or disbonding of coating evident at the point of the Accident?	
4c. Has one or more Cathodic Protection Survey been conducted at the point of the Accident? If "Yes, CP Annual Survey" – Most recent year conducted: If "Yes, Close Interval Survey" – Most recent year conducted: If "Yes, Other CP Survey" – Most recent year conducted:	
- If No:	
4d. Was the failed item externally coated or painted?	
5. Was there observable damage to the coating or paint in the vicinity of the corrosion?	
- If Internal Corrosion:	
6. Results of visual examination: - Other:	
7. Type of corrosion <i>(select all that apply):</i> -	
- Corrosive Commodity	
- Water drop-out/Acid	
- Microbiological	
- Erosion	
- Other: - If Other, Describe:	
8. The cause(s) of corrosion selected in Question 7 is based on the following <i>(select all that apply):</i> -	
- Field examination	
- Determined by metallurgical analysis	

- Other:	
- If Other, Describe:	
9. Location of corrosion (select all that apply): -	
- Low point in pipe	
- Elbow	
- Other:	
- If Other, Describe:	
10. Was the commodity treated with corrosion inhibitors or biocides?	
11. Was the interior coated or lined with protective coating?	
12. Were cleaning/dewatering pigs (or other operations) routinely utilized?	
13. Were corrosion coupons routinely utilized?	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Tank/Vessel.	
14. List the year of the most recent inspections:	
14a. API Std 653 Out-of-Service Inspection	
- No Out-of-Service Inspection completed	
14b. API Std 653 In-Service Inspection	
- No In-Service Inspection completed	
Complete the following if any Corrosion Failure sub-cause is selected AND the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
15. Has one or more internal inspection tool collected data at the point of the Accident?	
15a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage Tool	Most recent year:
- Ultrasonic	Most recent year:
- Geometry	Most recent year:
- Caliper	Most recent year:
- Crack	Most recent year:
- Hard Spot	Most recent year:
- Combination Tool	Most recent year:
- Transverse Field/Triaxial	Most recent year:
- Other	Most recent year:
	Describe:
16. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
If Yes -	Most recent year tested:
	Test pressure:
17. Has one or more Direct Assessment been conducted on this segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident::	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	Most recent year conducted:
18. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
18a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:
	Describe:

G2 - Natural Force Damage - only one sub-cause can be picked from shaded left-handed column	
Natural Force Damage – Sub-Cause:	
- If Earth Movement, NOT due to Heavy Rains/Floods:	
1. Specify:	
	- If Other, Describe:
- If Heavy Rains/Floods:	
2. Specify:	
	- If Other, Describe:
- If Lightning:	
3. Specify:	
- If Temperature:	
4. Specify:	
	- If Other, Describe:
- If High Winds:	
- If Other Natural Force Damage:	
5. Describe:	
Complete the following if any Natural Force Damage sub-cause is selected.	
6. Were the natural forces causing the Accident generated in conjunction with an extreme weather event?	
6a. If Yes, specify: <i>(select all that apply)</i>	
- Hurricane	
- Tropical Storm	
- Tornado	
- Other	
	- If Other, Describe:
G3 - Excavation Damage - only one sub-cause can be picked from shaded left-hand column	
Excavation Damage – Sub-Cause:	
- If Excavation Damage by Operator (First Party):	
- If Excavation Damage by Operator's Contractor (Second Party):	
- If Excavation Damage by Third Party:	
- If Previous Damage due to Excavation Activity:	
Complete Questions 1-5 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
1. Has one or more internal inspection tool collected data at the point of the Accident?	
1a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run: -	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
	Describe:
2. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
3. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
	Most recent year tested:
	Test pressure (psig):

4. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site:	
Most recent year conducted:	
5. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
5a. If Yes, for each examination, conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
Complete the following if Excavation Damage by Third Party is selected as the sub-cause.	
6. Did the operator get prior notification of the excavation activity?	
6a. If Yes, Notification received from: <i>(select all that apply)</i> -	
- One-Call System	
- Excavator	
- Contractor	
- Landowner	
Complete the following mandatory CGA-DIRT Program questions if any Excavation Damage sub-cause is selected.	
7. Do you want PHMSA to upload the following information to CGA-DIRT (www.cga-dirt.com)?	
8. Right-of-Way where event occurred: <i>(select all that apply)</i> -	
- Public	
- If "Public", Specify:	
- Private	
- If "Private", Specify:	
- Pipeline Property/Easement	
- Power/Transmission Line	
- Railroad	
- Dedicated Public Utility Easement	
- Federal Land	
- Data not collected	
- Unknown/Other	
9. Type of excavator:	
10. Type of excavation equipment:	
11. Type of work performed:	
12. Was the One-Call Center notified?	
12a. If Yes, specify ticket number:	
12b. If this is a State where more than a single One-Call Center exists, list the name of the One-Call Center notified:	
13. Type of Locator:	
14. Were facility locate marks visible in the area of excavation?	
15. Were facilities marked correctly?	
16. Did the damage cause an interruption in service?	
16a. If Yes, specify duration of the interruption (hours)	
17. Description of the CGA-DIRT Root Cause <i>(select only the one predominant first level CGA-DIRT Root Cause and then, where available as a choice, the one predominant second level CGA-DIRT Root Cause as well):</i>	
Root Cause:	
- If One-Call Notification Practices Not Sufficient, specify:	
- If Locating Practices Not Sufficient, specify:	
- If Excavation Practices Not Sufficient, specify:	
- If Other/None of the Above, explain:	
G4 - Other Outside Force Damage - only one sub-cause can be selected from the shaded left-hand column	
Other Outside Force Damage – Sub-Cause:	

- If Nearby Industrial, Man-made, or Other Fire/Explosion as Primary Cause of Incident:	
- If Damage by Car, Truck, or Other Motorized Vehicle/Equipment NOT Engaged in Excavation:	
1. Vehicle/Equipment operated by:	
- If Damage by Boats, Barges, Drilling Rigs, or Other Maritime Equipment or Vessels Set Adrift or Which Have Otherwise Lost Their Mooring:	
2. Select one or more of the following IF an extreme weather event was a factor:	
- Hurricane	
- Tropical Storm	
- Tornado	
- Heavy Rains/Flood	
- Other	
- If Other, Describe:	
- If Routine or Normal Fishing or Other Maritime Activity NOT Engaged in Excavation:	
- If Electrical Arcing from Other Equipment or Facility:	
- If Previous Mechanical Damage NOT Related to Excavation:	
Complete Questions 3-7 ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is Pipe or Weld.	
3. Has one or more internal inspection tool collected data at the point of the Accident?	
3a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	Most recent year conducted:
- Ultrasonic	Most recent year conducted:
- Geometry	Most recent year conducted:
- Caliper	Most recent year conducted:
- Crack	Most recent year conducted:
- Hard Spot	Most recent year conducted:
- Combination Tool	Most recent year conducted:
- Transverse Field/Triaxial	Most recent year conducted:
- Other	Most recent year conducted:
Describe:	
4. Do you have reason to believe that the internal inspection was completed BEFORE the damage was sustained?	
5. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
	Most recent year tested:
	Test pressure (psig):
6. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident:	
	Most recent year conducted:
- If Yes, but the point of the Accident was not identified as a dig site:	
	Most recent year conducted:
7. Has one or more non-destructive examination been conducted at the point of the Accident since January 1, 2002?	
7a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted:	
- Radiography	Most recent year conducted:
- Guided Wave Ultrasonic	Most recent year conducted:
- Handheld Ultrasonic Tool	Most recent year conducted:
- Wet Magnetic Particle Test	Most recent year conducted:
- Dry Magnetic Particle Test	Most recent year conducted:
- Other	Most recent year conducted:

Describe:	
- If Intentional Damage:	
8. Specify:	
- If Other, Describe:	
- If Other Outside Force Damage:	
9. Describe:	
G5 - Material Failure of Pipe or Weld - only one sub-cause can be selected from the shaded left-hand column	
Use this section to report material failures ONLY IF the "Item Involved in Accident" (from PART C, Question 3) is "Pipe" or "Weld."	
Material Failure of Pipe or Weld – Sub-Cause:	
1. The sub-cause selected below is based on the following: <i>(select all that apply)</i>	
- Field Examination	
- Determined by Metallurgical Analysis	
- Other Analysis	
- If "Other Analysis", Describe:	
- Sub-cause is Tentative or Suspected; Still Under Investigation (Supplemental Report required)	
- If Construction, Installation, or Fabrication-related:	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Original Manufacturing-related (NOT girth weld or other welds formed in the field):	
2. List contributing factors: <i>(select all that apply)</i>	
- Fatigue or Vibration-related:	
Specify:	
- If Other, Describe:	
- Mechanical Stress:	
- Other	
- If Other, Describe:	
- If Environmental Cracking-related:	
3. Specify:	
- Other - Describe:	
Complete the following if any Material Failure of Pipe or Weld sub-cause is selected.	
4. Additional factors: <i>(select all that apply)</i> :	
- Dent	
- Gouge	
- Pipe Bend	
- Arc Burn	
- Crack	
- Lack of Fusion	
- Lamination	
- Buckle	
- Wrinkle	
- Misalignment	
- Burnt Steel	
- Other:	
- If Other, Describe:	
5. Has one or more internal inspection tool collected data at the point of the Accident?	
5a. If Yes, for each tool used, select type of internal inspection tool and indicate most recent year run:	
- Magnetic Flux Leakage	
Most recent year run:	
- Ultrasonic	
Most recent year run:	
- Geometry	
Most recent year run:	
- Caliper	
Most recent year run:	
- Crack	
Most recent year run:	
- Hard Spot	
Most recent year run:	

- Combination Tool	
Most recent year run:	
- Transverse Field/Triaxial	
Most recent year run:	
- Other	
Most recent year run:	
Describe:	
6. Has one or more hydrotest or other pressure test been conducted since original construction at the point of the Accident?	
- If Yes:	
Most recent year tested:	
Test pressure (psig):	
7. Has one or more Direct Assessment been conducted on the pipeline segment?	
- If Yes, and an investigative dig was conducted at the point of the Accident -	
Most recent year conducted:	
- If Yes, but the point of the Accident was not identified as a dig site -	
Most recent year conducted:	
8. Has one or more non-destructive examination(s) been conducted at the point of the Accident since January 1, 2002?	
8a. If Yes, for each examination conducted since January 1, 2002, select type of non-destructive examination and indicate most recent year the examination was conducted: -	
- Radiography	
Most recent year conducted:	
- Guided Wave Ultrasonic	
Most recent year conducted:	
- Handheld Ultrasonic Tool	
Most recent year conducted:	
- Wet Magnetic Particle Test	
Most recent year conducted:	
- Dry Magnetic Particle Test	
Most recent year conducted:	
- Other	
Most recent year conducted:	
Describe:	
G6 – Equipment Failure - only one sub-cause can be selected from the shaded left-hand column	
Equipment Failure – Sub-Cause:	Threaded Connection/Coupling Failure
- If Malfunction of Control/Relief Equipment:	
1. Specify: <i>(select all that apply)</i> -	
- Control Valve	
- Instrumentation	
- SCADA	
- Communications	
- Block Valve	
- Check Valve	
- Relief Valve	
- Power Failure	
- Stopple/Control Fitting	
- ESD System Failure	
- Other	
- If Other – Describe:	
- If Pump or Pump-related Equipment:	
2. Specify:	
- If Other – Describe:	
- If Threaded Connection/Coupling Failure:	
3. Specify:	
- If Other – Describe:	Threaded Fitting
- If Non-threaded Connection Failure:	
4. Specify:	
- If Other – Describe:	
- If Defective or Loose Tubing or Fitting:	
- If Failure of Equipment Body (except Pump), Tank Plate, or other Material:	
- If Other Equipment Failure:	
5. Describe:	

Complete the following if any Equipment Failure sub-cause is selected.	
6. Additional factors that contributed to the equipment failure: <i>(select all that apply)</i>	
- Excessive vibration	Yes
- Overpressurization	
- No support or loss of support	
- Manufacturing defect	
- Loss of electricity	
- Improper installation	
- Mismatched items (different manufacturer for tubing and tubing fittings)	
- Dissimilar metals	
- Breakdown of soft goods due to compatibility issues with transported commodity	
- Valve vault or valve can contributed to the release	
- Alarm/status failure	
- Misalignment	
- Thermal stress	
- Other	
- If Other, Describe:	
G7 - Incorrect Operation - only one sub-cause can be selected from the shaded left-hand column	
Incorrect Operation – Sub-Cause:	
Damage by Operator or Operator's Contractor NOT Related to Excavation and NOT due to Motorized Vehicle/Equipment Damage	
Tank, Vessel, or Sump/Separator Allowed or Caused to Overfill or Overflow	
1. Specify:	
- If Other, Describe:	
Valve Left or Placed in Wrong Position, but NOT Resulting in a Tank, Vessel, or Sump/Separator Overflow or Facility Overpressure	
Pipeline or Equipment Overpressured	
Equipment Not Installed Properly	
Wrong Equipment Specified or Installed	
Other Incorrect Operation	
2. Describe:	
Complete the following if any Incorrect Operation sub-cause is selected.	
3. Was this Accident related to <i>(select all that apply)</i> : -	
- Inadequate procedure	
- No procedure established	
- Failure to follow procedure	
- Other:	
- If Other, Describe:	
4. What category type was the activity that caused the Accident?	
5. Was the task(s) that led to the Accident identified as a covered task in your Operator Qualification Program?	
5a. If Yes, were the individuals performing the task(s) qualified for the task(s)?	
G8 - Other Accident Cause - only one sub-cause can be selected from the shaded left-hand column	
Other Accident Cause – Sub-Cause:	
- If Miscellaneous:	
1. Describe:	
- If Unknown:	

2. Specify:

PART H - NARRATIVE DESCRIPTION OF THE ACCIDENT

A release occurred at the Ludden Pump Station on the 3/4" pipe nipple under the thermal relief valve located on the facility discharge piping. A root cause analysis has been conducted and the failed fitting investigation performed. The fatigue failure of the 3/4" pipe nipple occurred as a result of excessive vibratio. Results have been provided to PHMSA.

File Full Name

PART I - PREPARER AND AUTHORIZED SIGNATURE

Preparer's Name	Daniel C Cerkoney
Preparer's Title	Compliance Engineer
Preparer's Telephone Number	701-483-1434
Preparer's E-mail Address	dan_cerkoney@transcanada.com
Preparer's Facsimile Number	701-483-1431
Authorized Signature's Name	Daniel C Cerkoney
Authorized Signature Title	Compliance Engineer
Authorized Signature Telephone Number	701-290-1176
Authorized Signature Email	dan_cerkoney@transcanada.com
Date	11/02/2011



November 18, 2011

Mr. Kris Roberts
North Dakota Department of Health
918 E. Divide Avenue, 4th Floor
Bismarck, North Dakota 58501-1947

Subject: Release Progress Report – Ludden Pump Station
TransCanada – Keystone Pipeline, LP
Brampton, North Dakota

Dear Mr. Roberts:

This report transmits the results of the October 2011 sampling of the land farmed area and surface water in the wetlands at the TransCanada Keystone Pipeline, LP Ludden Pump Station site near Brampton, North Dakota. This report is submitted in reference to your October 26, 2011 correspondence and the finalization of cleanup actions by TransCanada at this site.

Sampling and Analysis Results

Soil Sampling

The land farmed area was resampled on October 20, 2011. The sample locations are shown on Figure 1 and the results are summarized on Table 1. Analytical results continued to show total extractable hydrocarbon (TEH) concentrations in soils below North Dakota Department of Health (NDDH) clean-up levels at all sampling locations.

Water Sampling

The majority of the wetlands previously sampled were found to have no standing water on October 20, 2011, with the exception of the background sample location ¼ mile north of the pump station. The sample location is shown on Figure 2 and the results are summarized on Table 2.

Observed Site Conditions

The crops in the farmed area had been destroyed prior to the October 20, 2011 site visit and the field had been tilled. See attached aerial photograph from October 5, 2011 (Figure 3) showing site and land farm restoration condition.

Recommendation

Based on current conditions at the TransCanada Ludden Pump Station site and your correspondence dated October 26, 2011, we request that no further investigation or remediation be required and that the site be considered for closure.

*URS Corporation
Fifth Street Towers
100 South Fifth Street, Suite 1500
Minneapolis, MN 55402
612.370.0700 Tel
612.370.1378 Fax*



Mr. Kris Roberts
North Dakota Department of Health
November 18, 2011
Page 2

If you have any questions, please contact Robert Baumgartner of TransCanada Keystone Pipeline at (832) 320-5538 or myself at (612) 373-6849.

Sincerely,

A handwritten signature in black ink that reads 'Bruce R. Galer'.

Bruce R. Galer, PG
Senior Geologist

cc: Robert Baumgartner, TransCanada Keystone Pipeline

Table 1
Summary of Laboratory Analysis-Wetland Water Samples
Ludden Pump Station, Brampton, ND-October 20, 2011

Location	Units	WTLD-025	WTLD-26-N	WTLD-026-S	WTLD-026-Trench	WTLD-027	1/2 Mi-WILD	1/4 MI-N-WTLD	PS-ADJ-WTLD	Human Health Limit Class III Water
Sample Date		10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	
Type		NA	NA	NA	NA	NA	NA	Background-Grab	NA	
Analyte										
TEH(C09-C40)	mg/L	NA	NA	NA	NA	NA	NA	0.11	NA	---
TEM (C09-C40)	mg/L	NA	NA	NA	NA	NA	NA	0.11	NA	---
Benzene	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	71
Ethylbenzene	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	2,900
Toluene	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	200,000
Xylene (Total)	µg/L	NA	NA	NA	NA	NA	NA	<3	NA	10,000*

NOTES: mg/L=Milligrams per liter
µg/L= Micrograms per liter
<x = Not detected to reporting limits of x
TEM=total extractable range hydrocarbons without silica gel preparation
TEH=total extractable range hydrocarbons with silica gel preparation
* None listed for Class III water, value represents Class II water, wetlands unlisted are considered Class III waters
--- = No applicable standard
NA = No surface water present at sample location

Location	Units	WTLD-25	WTLD-26-N	WTLD-26-S	WTLD-26-Trench	WTLD-27	1/2 Mi-WILD	1/4 MI-N-WTLD	PS-ADJ-WTLD	Aquatic Life Value Acute ***	Aquatic Life Value Chronic ***
Sample Date		10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11		
Type		NA	NA	NA	NA	NA	NA	Background-Grab	NA		
Analyte											
Aluminum, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<200	NA	---	---
Antimony, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	---	640**
Arsenic, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	340	150
Barium, dissolved	µg/L	NA	NA	NA	NA	NA	NA	56.5	NA	---	---
Beryllium, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<5.0	NA	---	---
Boron, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<150	NA	---	---
Cadminum, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<1	NA	2.1	0.27
Chromium, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	1,800	86
Copper, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	14.0	9.3
Lead, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<3	NA	82	3.2
Nickel, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<20	NA	470	52
Selenium, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<15	NA	20	5.0
Silver, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<10	NA	3.8	---
Thallium, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<15	NA	---	0.47**
Zinc, dissolved	µg/L	NA	NA	NA	NA	NA	NA	<20	NA	120	120
Ammonia Nitrogen	mg/L	NA	NA	NA	NA	NA	NA	0.13	NA	---	---

NOTES: mg/L=Milligrams per liter
µg/L= Micrograms per liter
<x = Not detected to reporting limits of x
** Class III Steam Human Health Standard, no aquatic standard listed
*** Some values may be adjusted based on hardness and pH.
NA = No surface water present at sample location

Table 2
 Summary of Laboratory Analysis-Land Farming
 Ludden Pump Station, Brampton, ND

May 15, 2011

Location	Units	LF-A	LF-B	LF-C	LF-D	LF-BKG-A	LF-BKG-B	Clean-up Level
Sample Date		5/15/11	5/15/11	5/15/11	5/15/11	5/15/11	5/15/11	
Sample Type		Composite	Composite	Composite	Composite	Composite	Composite	
Chemical of Concern								
% Moisture	%	29.3	28	21.6	18.9	20.7	20.7	
TEH(C09-C40)	mg/kg	228	3.1	4.9	143	3.0	3.5	100
TEM(C09-C40)	mg/kg	214	13	10.7	198	13.7	9.2	100
pH	Std. Units	7.2	5.4	7.1	7.1	5.6	5.9	
Nitrate as N	mg/kg	<5.7	9.4	5.1	<4.9	8.1	7.2	
Total Phosphorus	mg/kg	348	388	349	332	428	337	
Total Organic Carbon	mg/kg	3530	5630	6980	10300	4070	4140	

August 2, 2011

Location	Units	LF-A	LF-B	LF-C	LF-D	LF-E*	LF-BKG-A	LF-BKG-B	Clean-up Level
Sample Date		8/2/11	8/2/11	8/2/11	8/2/11	8/2/11	8/2/11	8/2/11	
Sample Type		Composite	Composite	Composite	Composite	Composite	Composite	Composite	
Chemical of Concern									
% Moisture	%	6.4	12.4	21.1	11.8	23.4	36.2	10.1	
TEH(C09-C40)	mg/kg	4.6	4.2	4.1	5.6	7.7	6.8	4.3	100
TEM(C09-C40)	mg/kg	8.8	9.1	5.3	15.2	11.2	10.3	8.9	100
pH	Std. Units	5.3	5.2	5.5	5.0	7.5	7.7	8.2	
Nitrate as N	mg/kg	<4.3	4.6	<5.1	5.9	<5.2	<6.3	<4.5	
Total Phosphorus	mg/kg	274	287	329	340	273	404	307	
Total Organic Carbon	mg/kg	3810	7300	6670	4810	2810	8670	2870	

October 20, 2011

Location	Units	LF-A	LF-B	LF-C	LF-D	LF-BKG-A	LF-BKG-B	Clean-up Level
Sample Date		10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	10/20/11	
Sample Type		Composite	Composite	Composite	Composite	Composite	Composite	
Chemical of Concern								
% Moisture	%	14.4	7	12.6	9.5	17.5	8.7	
TEH(C09-C40)	mg/kg	8.6	4.1	8.4	74.2	6.2	5.6	100
TEM(C09-C40)	mg/kg	14.2	6.5	10.8	87.4	6.8	9.7	100
pH	Std. Units	7	5	6.3	6.0	8.3	7.9	
Nitrate as N	mg/kg	18.6	10.2	31.2	12.4	6.7	4.3	
Total Phosphorus	mg/kg	347	344	363	327	406	348	
Total Organic Carbon	mg/kg	12100	8030	7040	5640	7100	6690	

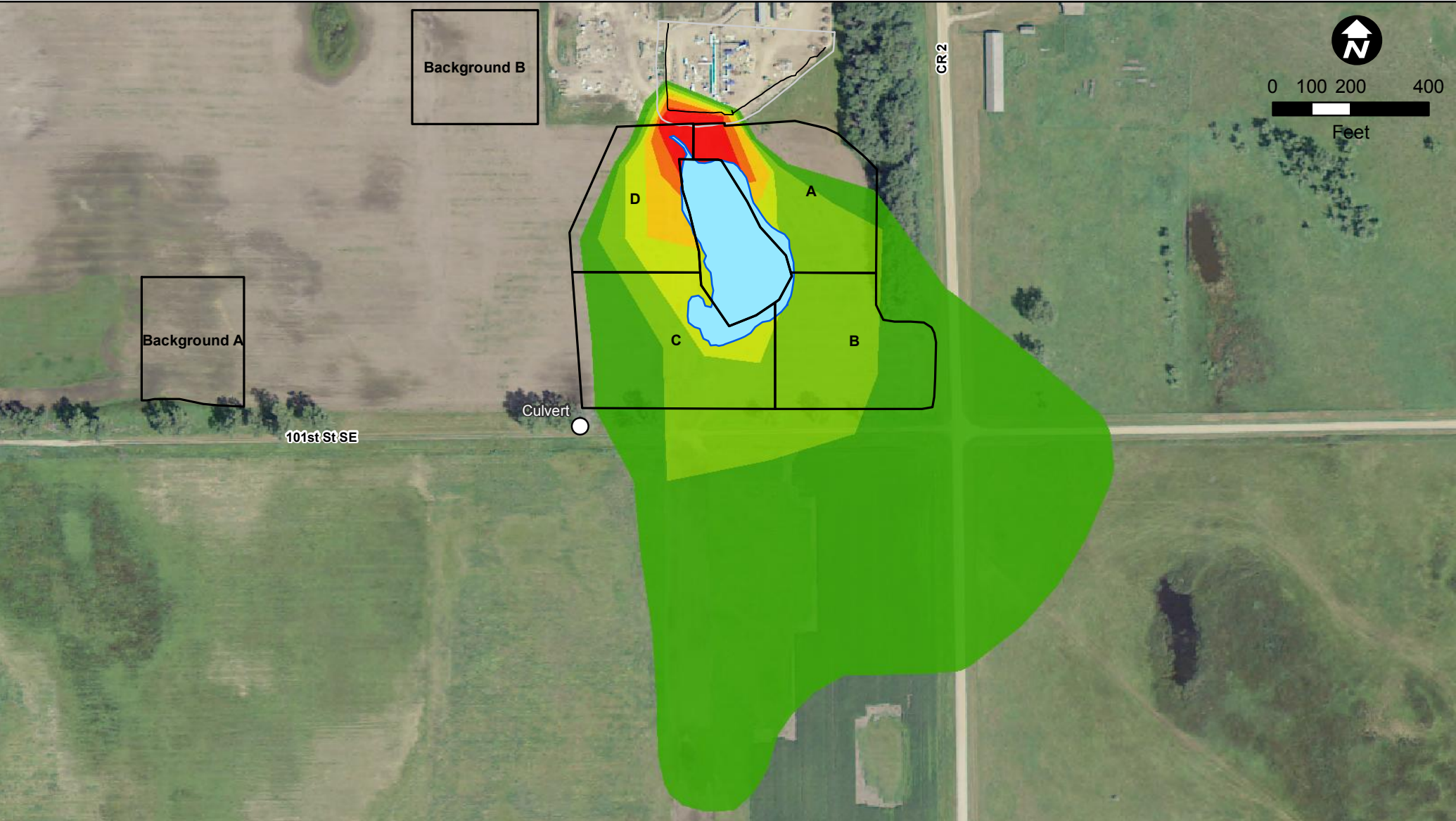
NOTES:

TEH=total extractable range hydrocarbons without silica gel preparation
 TEM=total extractable range hydrocarbons with silica gel preparation

* In August 2 sampling, the portion of the field that was scraped to remove surficial oil was separated from sample areas LF-A and LF-B and sampled as sample LF-E.

TransCanada Ludden Pump Station

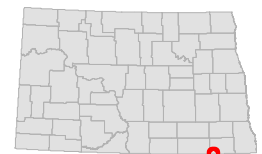
Figure 1. Land Farm Sample Locations - October 20, 2011



- | | | |
|----------------|---------------------------------|----------------------------------|
| — Fence | Misted Areas | ■ Sporadic-High = 6-10% coverage |
| — Toe of Slope | ■ Continuous = 91-100% coverage | ■ Sporadic-Low = 1-5% coverage |
| ☞ Pond | ■ Broken = 51-90% coverage | ■ Trace = <1% coverage |
| | ■ Patchy = 11-50% coverage | |

Data:
 SCAT areas collected by GPS in May
 2011.

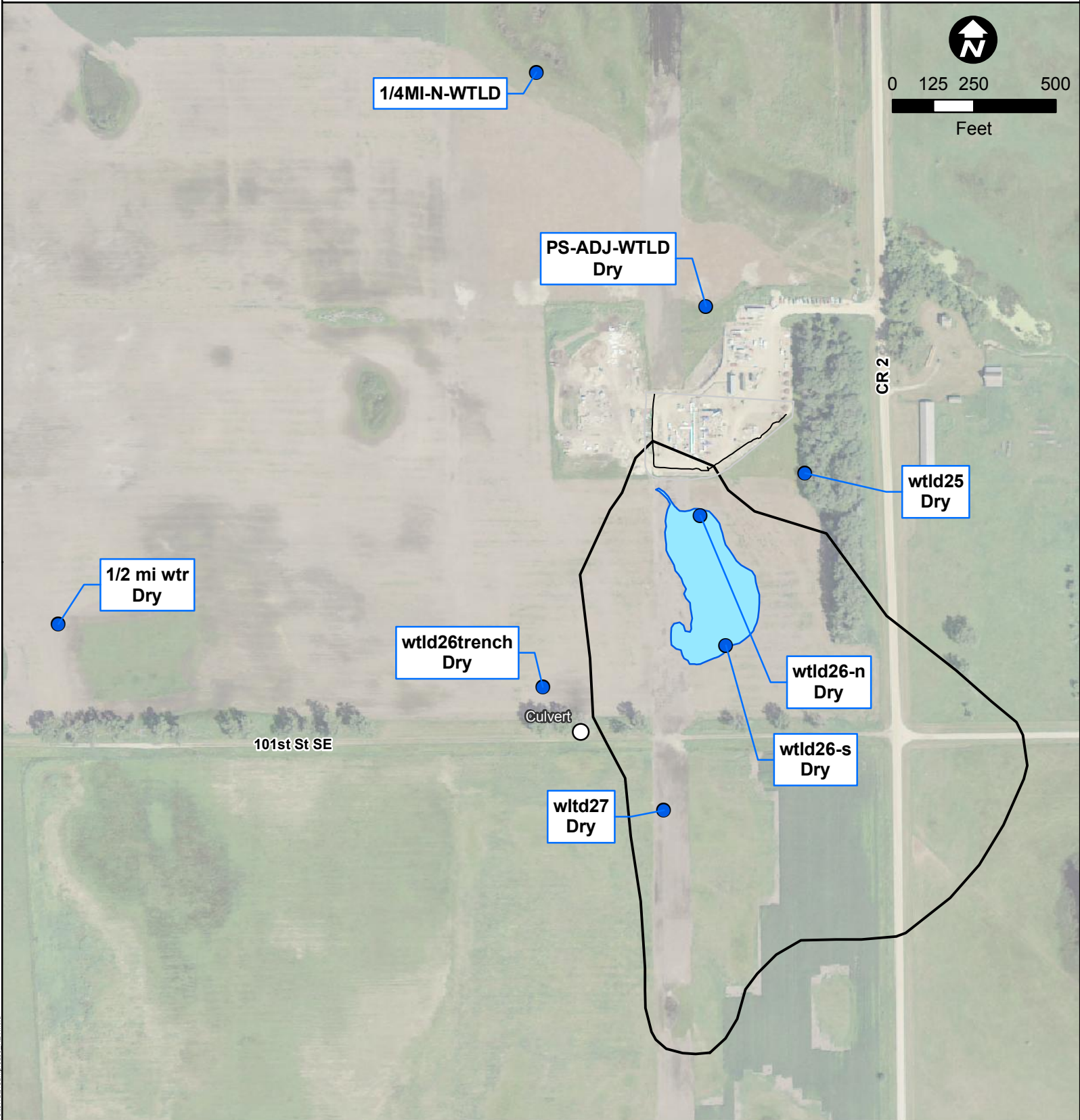
Projection:
 NAD83 UTM Zone 14N



0:3181.0858006_GISData\08312011\Fig1_LandFarmSampleLoc.mxd

TransCanada Ludden Pump Station

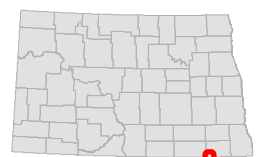
Figure 2. Off-Site Water Sampling Locations - October 20, 2011



- Fence
- Toe of Slope
- ☁ Pond
- Off-Site Water Sample
- ▭ Misted Spray Area

Data:
 SCAT areas collected by
 GPS in May 2011.

Projection:
 NAD83 UTM Zone 14N



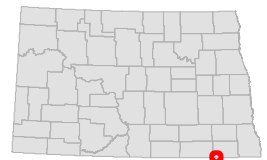
C:\31810858\06_GIS\085812011\Fig2_4\GIS\SiteWaterSampleLoc_REV.mxd

TransCanada Ludden Pump Station

Figure 3. Site Restoration as of October 5, 2011



Fifth Street Towers
100 South Fifth Street, Suite 1500
Minneapolis, MN 55402
612.370.0700 Tel
612.370.1378 Fax



Environmental Incident Report

This report has been submitted.

North Dakota Department of Health
Environmental Health Section
1.701.328.5210 or 1.701.328.5166

North Dakota Department of Emergency Services
1.701.328.8100
1.800.472.2121 State Radio 24-Hour Hotline

If this is an emergency, or for additional assistance, please call the Health or Emergency Services Department at the numbers shown above

This form is NOT for RCRA-exempt oilfield related incidents
[\(for RCRA-exempt oilfield incidents click here\)](#)
[\(if you are not sure which form to use click here\)](#)

Fill out information as completely as possible
Error messages appear to the right of the field
Use the Tab key or mouse to move between fields
Pressing the Enter key while in the form will submit the report
Required fields are shown in Red

Location Information:

County	Sargent	<input type="text"/>
Township	129	<input type="text"/>
Range	58	<input type="text"/>
Section	26	<input type="text"/>
Quarter		<input type="text"/>
QQSection		<input type="text"/>
QQQSection		<input type="text"/>

Location Description (911 address or location from nearest town)

10075 119th Ave SE
Brampton, ND 58017



Distance to Nearest Residence or Occupied Building Units

Incident Information:

Date

(mm/dd/yyyy) If unknown, enter date of discovery

Time

0605

hhmm 24-hour time, no colon

Type Other (fill in box)

Pipeline Pump Station Equipment

Estimated Duration 30 Units minutes

Estimated Volume 500 Units barrels

Substance released or of concern (include trade and/or chemical name if applicable)

Crude Oil

Agriculture Related? No

Is this substance on EPA's Extremely Hazardous Substance list? No

To find out if this substance is on the EHS list, Click Here

Describe Cause

Small diameter piping failure.

Action Taken and Recommended/Planned Future Action (how spill was contained, soil excavated, emergency approval to burn contaminant, evacuation of nearby personnel, etc.)

Pipeline system shutdown and pump station isolated. Company and contractor spill response crews mobilized to the facility. Oil contained and controlled onsite by earthen berm. Offsite oil mist delineated. Absorbent boom and earthen dam were used to collect sheen and control flow from ponded water on adjacent property to the

Where will recovered wastes be disposed?

Recovered crude oil/water mix transported to LePier Oil, Fosston, MN for recycling. Excavated oil impacted gravel/soil will be transported to Veolia LF, Buffalo MN

Impact Information:

Fatalities 0

Injuries 0

Medium affected 04 - water and soil

Immediate Risk Evaluation (explosive atmosphere, immediate health hazards, etc.)

NA - work conditions were monitored throughout response/cleanup activities.

Potential Environmental Impacts

(describe impacts to, or likelihood of impacts, to surface water, ground water, soils, etc.)

Soils - oil saturated soils were excavated as described above. Residual oil impacts will be treated using insitu landfarming techniques.
 Surface water - oil sheen was collected utilizing absorbent boom. Potential dissolved impacts are being monitored.

Responsible Party Information:

Responsible Party	TransCanada
Address (Line 1)	13710 FNB Parkway
Address (Line 2)	Suite 300
City	Omaha
State/Province	NE - Nebraska
Zip	68154
Contact First Name	Robert
Contact Last Name	Baumgartner
Contact Telephone	832-320-5538
Contact Email	robert_baumgartner@tra

Property Owner if not the Responsible Party _____

Has or will the incident be reported to property owner? Unknown

Reporting Information:

First Name	Robert
Last Name	Baumgartner
Date Reported (mm/dd/yyyy)	5/7/2011
Time Reported	1015

hhmm 24-hour time, no colon

Other agencies that have or will be notified

- NDDDES
- State Fire Marshal
- State Highway Patrol
- Local Fire Department
- Local Law Enforcement
- Local Emergency Manager

Other _____

[To see if this incident is required to be reported to the National Response Center \(NRC\) Click Here](#)

Has or will the incident be reported to the NRC ?? 1-800-424-8802 | Yes

Additional E-Mail Recipients to send report to

<input type="text" value="robert_baumgartner@transcanada"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

Official Use Only:

State Agency Person Who Received Call First Name	<input type="text"/>
Last Name	<input type="text"/>
Department of Emergency Services Incident Number	<input type="text"/>
Send this email to Department of Mineral Resources	No <input type="checkbox"/>

Pressing the submit button will send an E-Mail version of this completed Environmental Incident Report to NDDH Environmental Health Section and ND Dept. of Emergency Services personnel

Submit