April 26, 2021

Re: TC Energy - Rutledge Compressor Station
Annual Leak Monitoring Survey Report

TC Energy's Columbia Pipeline Group operates the Rutledge Compressor Station in Fallston, Maryland. Per 26.11.41.03B(3)(a) the Rutledge Compressor Station conducted its initial leak detection monitoring survey on March 2, 2021. In accordance with COMAR 26.11.41.07, each leak monitoring survey is required to be posted on a publicly available website for a period of two years from the survey date. This posting fulfills TC Energy's obligation to meet that requirement.

TC Energy - Rutledge Compressor Station

Leak Detection and Repair Report April 2021

TARGET EMISSION SERVICES

EMISSION DETAIL REPORT

Company:	TC Energy USA	**Facility:**	Rutledge	**Start Date:**	3/2/2021	**Technician:**	Sebastian Smith
District:	CPG North	**Location:**	39.561770 / -76.477239	**End Date:**	3/2/2021	**Technician:**	Matthew Fuller

Leaks

LDAR Leak Count:	13	Vents	Repair Required: 0
			Total: 0
Non-LDAR Leak Count:	0	Mandatory Emission Tests	Leak Tests: 0
			Vent Tests: 0
Total Leak Count:	13		No Emission Tests: 0
			Total Tests 0

REPAIR STATUS

Repaired:	Delay of Repair:	Unsuccessful Attempt:
11	2	0

Assessment Comments: MDE Survey at Rutledge on 03/02/2021. All Units are Dry Seal Centrifugal Compressors and were standby Pressurized. Station and Unit Blowdowns are combined. Station Blowdown Valves are Burried. Acoustic VPAC was used to Identify leaking Unit Isolation Valves; all Unit Blowdowns were Identified as leaking.

Emission ID #	Emission Type	Detection Date	Process Block	Field Equipment Designation	Component	Sub Source	Operating Mode	Emission Description	LEL +/or Safety Hazard*	Emission Severity	Gas Type	Previous Leak (emission id)	Rate (cfm)	Detection Method / Quantification Method	N/A	Repair Recommendation	Initial PPM Reading	LDAR Tag ID	Bubble Test	Repair Status	Repair Status Date	First Attempt Due Date	Final Attempt Due Date	DOR Start Date	DOR End Date	DOR Reason	DOR Approver Name	Final PPM Reading	Repair Confirmation Method
35611076	Leak	03/02/2021	Separator/Filter	Main suction scrubber	Connector - MDE	Threaded Connection	N/A	Bottom Threading to Pressure Transmitter, Suction Line to Inlet Scrubber.	No	LOW	Sweet Gas		0.02	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611077	Leak	03/02/2021	Separator/Filter	Main suction scrubber	Connector - MDE	Threaded Connection	N/A	Top Thread to East Level Switch on Hydrocarbon Tank, Main Suction Scrubber.	No	LOW	Sweet Gas		0.03	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611078	Leak	03/02/2021	Compressor Cent. Dry Seal	North cooling gas scrubber, unit 1	Connector - MDE	Threaded Connection	Standby/Pressurized	South Threading to Union on Drain Line from North Cooling Gas Scrubber, Unit 1.	No	LOW	Sweet Gas		0.08	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611079	Leak	03/02/2021	Compressor Cent. Dry Seal	South cooling gas scrubber, unit 1	Connector - MDE	Flange Connection	Standby/Pressurized	South Flange, Valve 108, Bottom Horizontal 3" Valve to South Cooling Gas Scrubber, Unit 1.	No	LOW	Sweet Gas		0.08	Optical Gas Imaging/ Optical Gas Imaging		Replace gasket/seal and tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611080	Leak	03/02/2021	Compressor Cent. Dry Seal	South cooling gas scrubber, unit 1	Connector - MDE	Flange Connection	Standby/Pressurized	West Threading to Differential Pressure Meter, South Cooling Gas Scrubber, Unit 1.	No	LOW	Sweet Gas		0.05	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Delay of Repair	04/01/2021	-	04/01/2021	04/01/2021	04/01/2022	Shutdown Required	Wayne Cook	-	-
35611081	Leak	03/02/2021	Compressor Cent. Dry Seal	North cooling gas scrubber, unit 2	Valve - MDE	Grease Fitting	Standby/Pressurized	Grease Fitting, Unit 2 Cooling Gas Linr Valve.	No	LOW	Sweet Gas		0.01	Optical Gas Imaging/ Optical Gas Imaging		Tighten valve packing	-	-	No	Repaired	03/02/2021	-	04/01/2021	-	-	-	-	-	OGI
35611082	Leak	03/02/2021	Compressor Cent. Dry Seal	Unit 2	Connector - MDE	Threaded Connection	Standby/Pressurized	Top Tubing Union on Unit side of Pressure Differential Line over Suction Loading Valve, Unit 2.	No	LOW	Sweet Gas		0.01	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/02/2021	-	04/01/2021	-	-	-	-	-	OGI
35611083	Leak	03/02/2021	Compressor Cent. Dry Seal	Unit 2	Connector - MDE	Threaded Connection	Standby/Pressurized	Tubing Union to Elbow North of Pressure Differential Meter over Suction Loading Valve, Unit 2.	No	LOW	Sweet Gas		0.01	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/02/2021	-	04/01/2021	-	-	-	-	-	OGI
35611084	Leak	03/02/2021	Compressor Cent. Dry Seal	Unit 2	Connector - MDE	Threaded Connection	Standby/Pressurized	Tubing Union to Elbow Below of Pressure Differential Meter over Suction Loading Valve, Unit 2.	No	LOW	Sweet Gas		0.01	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/02/2021	-	04/01/2021	-	-	-	-	-	OGI
35611085	Leak	03/02/2021	Compressor Cent. Dry Seal	Unit 3	Connector - MDE	Threaded Connection	Standby/Pressurized	Top Union, Filter Dump, Cooling Gas System, Unit 3.	No	LOW	Sweet Gas		0.03	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611086	Leak	03/02/2021	Compressor Cent. Dry Seal	Unit 3	Valve - MDE	Valve Stem	Standby/Pressurized	Packing, Discharge Valve, Unit 3.	No	MEDIUM	Sweet Gas		0.12	Optical Gas Imaging/ Optical Gas Imaging		Tighten valve packing	-	-	Yes	Delay of Repair	04/01/2021	-	04/01/2021	04/01/2021	04/01/2022	Shutdown Required	Wayne Cook	-	-
35611087	Leak	03/02/2021	Separator/Filter	Main discharge scrubber	Connector - MDE	Threaded Connection	N/A	Top Threading Connection to South Level Switch, Hydrocarbon Tank, Main Discharge Scrubber.	No	LOW	Sweet Gas		0.08	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
35611088	Leak	03/02/2021	Separator/Filter	Unit 3	Connector - MDE	Threaded Connection	N/A	Top Threading Connection to North Level Switch, Hydrocarbon Tank, Main Discharge Scrubber.	No	LOW	Sweet Gas		0.08	Optical Gas Imaging/ Optical Gas Imaging		Tighten connection	-	-	Yes	Repaired	03/17/2021	-	04/01/2021	-	-	-	-	-	Bubble Test
TOTAL													0.61																

LEL +/or Safety Hazard*

The following risk matrix is used to used to risk rank any possible leak/vent safety hazards.
The LEL/Safety Hazard Checkbox must be checked if a leak (or group of leaks) poses any significant hazard.
Examples of this may be:

- Personal detector reads any LEL readine
- Personal detector reads any H2S or any H2S leak
- Personal detector alarms for any reason (toxic, low O2, etc.)
- Emission is found near any possible ignition source (i.e. burner, electrical conduit, exposed wirine, etc.)
- Emission rate is so high that it poses a hazard
- Emission source location may cause inhalation hazard to facility personnel or public

The severity is primarily based on the LEL reading or ppm for any toxic gases (see fifth column under "Consequences").
The total leak rate is also taken into account on the severity.

Severity	Consequences					Probability			
	People	Assets	Environment	Reputation	LEL/Toxic Gas Level	A	B	C	D
						Low	Slight	Mod.	High
0	No injury or health effect	No Damage	No effect (<0.01 cfm)	No impact	0% LEL and 0ppm Toxics within 0.5 m of source				
1	Slight inhalation/odor risk	Slight wear	Slight effect (0.01 – 0.05 cfm)	Slight impact	0% LEL and 0ppm Toxics within 0.5 m of source				
3	Minor fire/explosion injury risk or exposure risk	Minor Damage	Minor effect (0.05 – 1.0 cfm)	Minor impact	1-5% LEL and below alarm level Toxics within 0.5 m of source				
4	Moderate fire/explosion injury risk or exposure risk	Moderate Damage	Moderate Effect (1.0 – 10 cfm)	Moderate impact (Regulator involvement)	Cause of LEL of 1-5% and alarm level Toxics in building				
5	Extreme fire/explosion or toxic exposure fatality risk	Major Damage	Major Effect (>10.0 cfm)	Major impact (Regulator enforcement)	Cause of LEL 10% and over and above alarm level Toxics in building				

	LOW RISK	The risk is not serious. It does not require immediate action, but should be periodically revisited to ensure that risks remains acceptably low.
	MODERATE RISK	The risk is moderate. It requires further review of controlled responses to determine the potential for escalation and to ensure risk is within acceptable limits.
	HIGH RISK	The risk is high. It requires immediate action and prompt review of control and mitigation measures.