

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Stack Test Observation**

B719847019

FACILITY: ANR Pipeline-Cold Springs12 /Blue Lk/ Cold Sprngs 1		SRN / ID: B7198
LOCATION: 10000 Pflum Rd., MANCELONA		DISTRICT: Gaylord
CITY: MANCELONA		COUNTY: KALKASKA
CONTACT: Chris Waltman (current Env Contact 2018) , Sr Environmental Specialist		ACTIVITY DATE: 11/13/2018
STAFF: Sharon LeBlanc	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: stack test for Engine C conducted by Environmental Quality Management, Inc.		
RESOLVED COMPLAINTS:		

On Tuesday, November 20, 2018, AQD District Staff arrived at the ANR Cold Springs Facility located at 10000 Pflum Road NE, Mancelona, Cold Springs township, Kalkaska County, Michigan (SRN B7198) to observe engine testing of "Engine C". Engine testing was conducted to meet ROP MI-ROP-B7198-2014A requirements under FG CS12CMPES. The referenced facility is part of a sectioned ROP for the ANR Pipeline Cold Springs 12/ Blue Lake/ Cold Springs 1, a Natural Gas (NG) compression, storage and transmission facility.

The proposed engine test plan prepared by Environmental Quality Management, Inc. (EQM) was received by AQD on November 9, 2018, with proposed testing on November 21, 2018. Testing activities were moved up to November 20, 2018, when an engine to be tested at the ANR South Chester Facility (B7219) blew a piston prior to testing creating an opening in the test schedule for ANR staff and EQM staff.

Upon arrival Engine C (EUCS12CMPR-C) was in operation, injecting NG into storage. Both Engines "A" and "B" had been shut down for the season. Engine C was identified as an Ingersoll Rand Reciprocating Internal Combustion Engine (RICE) rated for 3750 HP. No catalyst is associated with the referenced emission unit. The unit was operating at:

TIME (actual)	HP	RPMs	Torque Calculated (%)	Torque Fuel (%)
07:45	3544	351	94	96

Note that multiple "times" were noted, as the Facility's computers were reported to represent Houston time, the wall clocks "local" time, which differed from the time on cell phones. The "times" below reflect the times on the Facility screen which was 1 hour and 13 minutes behind cell phone and non-facility computer times.

Chris Waldman of Transcanda was onsite as environmental staff for the facility. EQM staff person Karl Mast provided testing information and oversight of testing activities.

Engine Operational Parameters

The data reflected below reflects the operational data for engine C throughout the three test runs conducted by EQM staff on November 20, 2018. Facility staff reported that Engine C was running at 90% or greater of potential and that % torque best represented percent of RICE operating potential. The screen did not appear to report fuel usage, which will be included in the final report.

TIME (operators screen)	HP	RPMs	Torque Calculated (%)	Torque Fuel (%)
7:36	3540	352	94	96
7:54	3713	350	99	100
8:11	3739	350	100	100
8:22	3725	350	99	100
8:34	3696	352	98	99
8:44	3711	351	98	99

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8:49	3686	351	98	99
8:54	3722	350	98	99
9:09	3720	349	99	100
9:15	3722	351	99	100
9:21	3713	350	99	99
9:25	3725	352	99	99
9:38	3683	350	98	100
9:46	3680	353	98	98
9:54	3669	350	98	98
10:00	3669	350	98	99
10:03	3691	351	98	99
10:13	3722	351	99	99
10:22	3712	351	99	100
10:34	3713	352	99	100
10:43	3690	351	98	99
10:49	3676	350	98	99
10:54	3664	351	97	99
11:00	3651	351	97	98

Emission Results

Emissions reported as a result of data collected by EQM over the course of the three one-hour test runs is summarized below:

TIME	RUN #	NOX (lb/hr)	NOX (gram/bhp-hr)
7:51-8:51	1	62.45	7.63
8:55 - 9:55	2	59.28	7.28
10:00- 11:00	3	59.67	7.27
LIMIT	NA	99.2 lb/hr (SC I.1)	12 gram/bhp-hr (SC IV.1)

Test results indicated that the engine was operating in compliance with permit limits. No operational issues or discrepancies were noted at the time of the testing. Analyzer calibrations appeared to be in order and within appropriate ranges. VEs were not visible at the time of testing. Cloud cover was 100% and temperatures were below freezing.

NAME James Wilson DATE 11/21/2018 SUPERVISOR SN