

## Observation and Findings Report

**PIM Work Order # CS-01**

**PIM Sales Order #:33-532**

Client: Encana Corporation

Date: July 18, 2019

Project Name: 16-06-81-17 Tower Nodal Gas Lift Station (TNGL) Tower Lake

Reference #: SO81652 SO Line 1 AFE: 19200377.8755.366

Client Contact: Mitch Dow

### Observations: Visual concerns code compliant and in operating condition

- Time was spent today, 2019-07-18, flying to the Dawson Creek area where a vehicle was rented and taken to Encana site D-85-G-95-P-3, northwest of Dawson Creek, British Columbia. Those present were Lynn Konner, Joe Maclean and Arben Kodra.
- Previous arrangements were made with the site operations to review some of the equipment which has been out of service for some time. It is noted that this equipment is in Encana's inventory and the in-service history is in Encana's possession.
- The glycol dehy was of the main item for review. The time available for the site visit was not long enough for a thorough in-service inspection, therefore, it was predetermined to perform some random external thickness readings, enter a borescope into the absorber tower as well as to perform a visual inspection on the fire tube section of the reboiler after the fire tube was removed and cleaning took place. The dehy and most of its pressure components were manufactured by OPSO which is presently known as Spectrum and is an Encana approved vendor. Only the reboiler and the absorber were reviewed at this visit.
- The REBOILER information is as follows:  
Manufactured by OPSO Energy Industries in 2005, serial number REB-054439 381.
- The ABSORBER TOWER information is as follows:  
Manufactured by OPSO Energy Industries in 2005, serial number 02-4430-1 CRN T5125.21.
- The SEPARATOR information as follows:  
Manufactured by Compact 2000 in 2003, serial number C03-6848-1, CRN R4149.21.

### Findings: Non-Compliance to Code or affects operation

- Upon arrival at the site, the operators had the reboiler fire tube removed and cleaning was underway. Note that this site was not active; however, an indoctrination took place.
- The reboiler had been taken apart, a steam and vacuum truck had cleaned up the reboiler and fire tube section only.
- Both the inside shell section and the fire tube were found to be in extremely good shape and deemed acceptable for further use.
- The random thickness reading of the shell section confirmed no metal loss based on the visual of the internal of the fire tube section.
- A review of the inside of the absorber tower bottom section only was performed. A borescope camera was inserted in through a spare 2" coupling.
- The inside was extremely black, with only the camera lighting some pictures of the coil and the inside of the lower tower shell. The coil and shell did not appear to have any pitting or corrosion.
- Some random thickness tests were also concluded and the thickness of the dehy tower was acceptable based on the published nominal thickness of 1.375" for the head and shell.
- Due to time constraints and the positive outcome of the absorber and the reboiler, the other pressure vessels such as filters and flash vessel were not reviewed.



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- Subsequently, a further review of the history would suffice to corroborate today's findings and the tower would be a strong consideration for further use.
- A brief meeting was held at site with Lynn Konner, Joe MacLean and Arben Kodra and it was agreed that the dehy package was deemed fit for service and could be adopted into the program for the TNGL project. The dehy is an OPSCO dehy, job # 024430-01. There were no drawings available during the review
- OPSCO (now Spectrum) was contacted by Lynn Konner and Will van den Elzen had the drawings were forwarded to Lynn Konner and were circulated. There was not a turnover package at site for the unit.
- It was decided by the team that a quick review or walk down could take place for the rest of the equipment such as the separator as noted.
- The separator package was reviewed with similar results, although the turnover package was on site to review.
- A borescope review was performed on the inside of the internally coated vessel.
- The vessel weir was located and photos were taken. The boot section was accessed and some photos were taken. Based on the limited lighting it appeared to be free from major solid build up and in extremely good shape. The rest of the equipment on the separator package was also in good shape.
- Random thickness readings were take on the vessel shell and confirmed the thickness was 2.75". The internal coating would preserve the original metal wall thickness.
- This package has been deemed acceptable; although was not part of the original agenda.
- Several other pieces of equipment on site, which weren't part of the agenda, were taken into account. The two compressors, the FKO (Bilton) and the Flarestack (needs some work) were also quickly reviewed and the equipment was in extremely good shape and can also be utilized for the TNGL project. The turn over packages for these items are in the main office which also serves an MCC and an Instrument air package.

### Remarks:

- The equipment that was looked at was and was found acceptable for fit for service.
- It is noted that this equipment is in Encana's inventory and the in-service history is in Encana's possession. It is recommended that it be reviewed prior to commissioning.

Consultant: Lynn Konner

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### PHOTOGRAPHS



Photo 1 Description: Absorber tower nameplate.



Photo 2 Description: Absorber bottom coil, inside the bottom section of the tower.

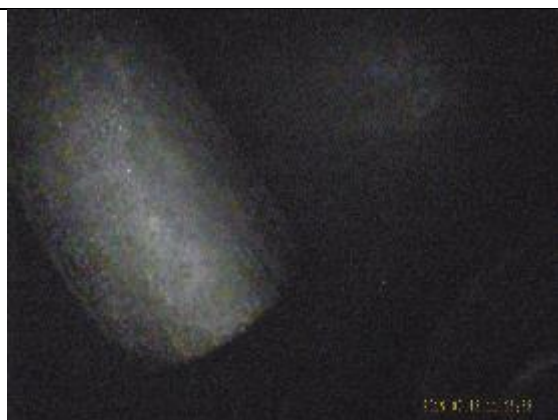


Photo 3 Description: Absorber bottom wall.



Photo 4 Description: Reboiler after clean up.

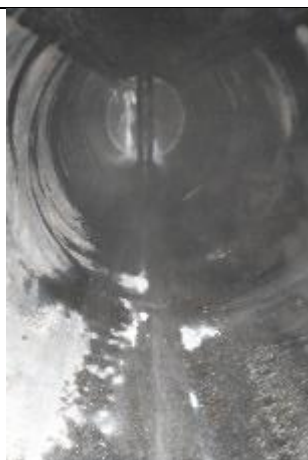


Photo 5 Description: No corrosion.



Photo 6 Description: Fire tube burner assembly.



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### PHOTOGRAPHS



Photo 7 Description: Fire tube external.



Photo 8 Description: Reboiler nameplate.



Photo 9 Description: Separator boot vortex breaker inside.



Photo 10 Description: Separator boot and drain.



Photo 11 Description: Separator bottom weir located right of boot.



Photo 12 Description: Separator assembly.



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### PHOTOGRAPHS



Photo 13 Description: Separator nameplate.

Photo 14 Description:















D BY  
ENERGY  
RIES LTD.

CALGARY, ALBERTA, CANADA

MODEL : REBOILER

SERIAL No : RRB-05-4430-361 KA

FUEL : SWEET NATURAL GAS

FUEL SUPPLY PRESSURE : 14.35" PSIG

MANIFOLD PRESSURE : 5-18" PSIG

MAXIMUM HR INPUT : 1071430 BTU/HR

OUTPUT RATING : 750 000 BTU/HR

ELECTRICAL : 24 V / 60 Hz / 100-200 MA

V. REG.















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ENERGY  
DUSTRIES LTD.

CALGARY, ALBERTA, CANADA.

M.A.W.P. 265 P.S.I. AT 150 °F

M.D.M.T. -20 °F AT 265 P.S.I.

SERIAL # 08-4430-1 YEAR BUILT 2005

C.R.N. T0047.21 TAG # V-250

VESEL TYPE: FLASH VESSEL

SH. WT. . 375<sup>kg</sup>

HD. WT. . 375<sup>kg</sup>

C.A. . 125<sup>cm</sup>

PROV. REG.