 <p>RTD QUALITY SERVICES INC. #104, 11302 – 98 AVENUE GRANDE PRAIRIE, ALBERTA T8V-8H4 PHONE 1-780-814-7227 FAX 1-780-402-3030</p>	<p align="center">GENERAL NDE REPORT</p> <p>Date <u>September 29, 2015</u> Page <u>1</u> of <u>3</u> RTD Job #: <u>10.116626</u> RTD Dep. #: <u>Grande Prairie Asset</u></p>
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Client: <u>Canadian Natural Resources Limited</u> Address: <u>Grande Prairie, AB</u> P.O.#: _____ Client Rep.: <u>Jordan Hack</u>	Lot #: <u>LaGlace North Oil Battery</u> Location: <u>LSD: 10-14-76-10 W6M</u> Procedure: <u>MT-005 Rev. 4, UT-001 Rev. 4</u> Code: <u>ASME VIII Div 1</u>
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Description: To perform Ultrasonic, Magnetic Particle and Visual inspection on two fire tubes removed from Oil Treater A0245115

Surface Condition: Weldment Machined Painted
 Ground Sandblasted Other

Surface Temp (C°): < 5 > 5 < 60 > 60

MAGNETIC PARTICLE INSPECTION

Equipment Type: Yoke Bench Asset No.: 23520 Calibration Due Date: Jan 2016
Blacklight: Intensity Check: _____ $\mu\text{W}/\text{cm}^2$ Asset No.: _____ Calibration Due Date: _____
Method: A/C D/C Type: Continuous Residual Power Supply: 120 V Battery Natural
Type: Dry Powder: Colour: _____ Wet: Black and White Fluorescent
Product Manufacturer: Magnaflux Product Identification Code: 14 AM

ULTRASONIC THICKNESS MEASUREMENT

Method: P/E Dual T/T Other Type: Longitudinal Shear Wave
Instrumentation: Manufacturer: Panametrics RTD Asset No.: 11721 Calibration Due Date: Aug 2016
Cal. Block(s): Type: ASME 2 – 20 mm RTD Asset No.: 1179 Serial No.: _____
Couplant: Manufacturer: Sonotec Type: UTX

Probe Type	Angle	Frequency	Size	Reference Level (dB)	Scanning Level (dB)	Range	Skip Value	Beam Travel	Transfer Value (dB)
Pan	0 deg	5 mHz	.250 in	54 db	54 db	25 mm	0 in	50 mm	0 db

INSPECTION DETAILS

Scope: **To use Ultrasonic, Magnetic Particle and Visual inspection to determine the integrity of the fire tubes by identifying and quantifying any corrosion, pitting, cracking and/or mechanical damage.**

Background **1. The fire tubes were 100% grit blasted prior to inspection.**
2. Fire tube measures 18 inch diameter x13 ft 6 inch length, nominal wall thickness 9.5 mm.
3. The fire tubes are identified with stamped markings LT and RT.

Results: **1. Magnetic particle inspection:**
Fire tube RT: No cracking detected.
Fire tube LT: 12 inch crack identified on bottom tube to plate weld 10:00 to 2:00 position.

2. Ultrasonic thickness inspection:
Both fire tube RT and LT had similar areas of corrosion at the stack outlet 6:00 position.
Nominal 9.5 mm, minimum thickness 7.2 mm – General corrosion area: 8 inch W x 2 feet L

4. Visual inspection:
Approximately 20 scattered small diameter pitting 0.020 in max depth (average 0.010 inch) on each tube. No measurable mechanical damage.

Repairs: **1. Carry out weld repair on identified crack on fire tube LT using an approved CNRL repair procedure.**

Technician: <u>Chris Maxsom</u> Signature: _____ Method: <u>UT/MT</u> Assistant: _____ CGSB /ASNT/SNT Level: <u>I/II</u> Client Signature: _____	Start Time: _____ Stop Time: _____ ST _____ OT _____ Unit: _____ Km: _____ Travel Time: _____ <input type="checkbox"/> Subsistence required <input type="checkbox"/> OT Meal Consumables: _____
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*Results are an interpretation of the inspection method, not a guarantee. Client signature indicates acceptance of report, results and applicable charges.



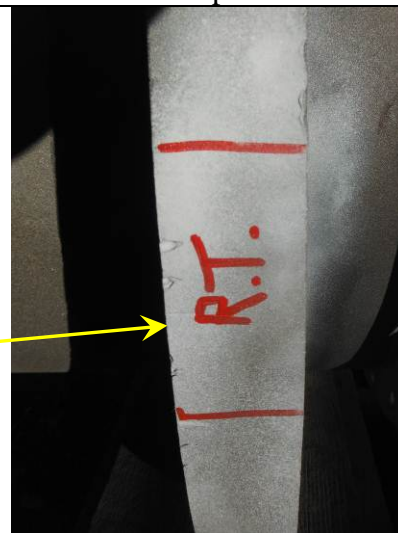
Overview Treater



Data plate



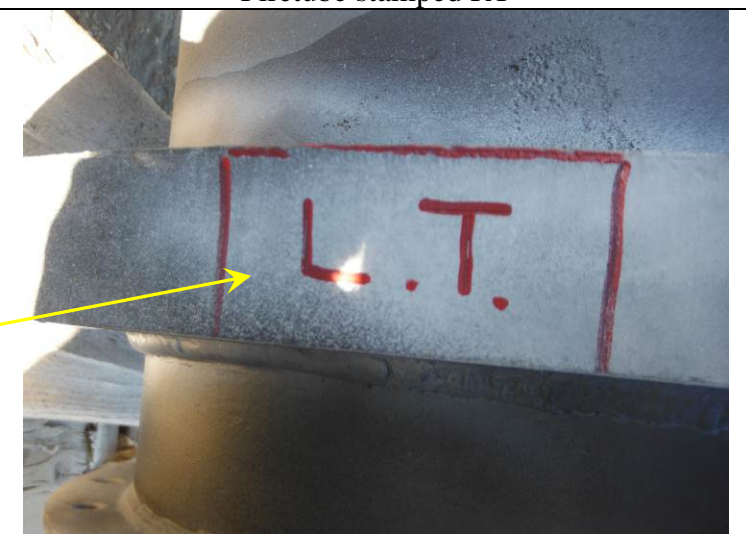
Overview – Firetube RT



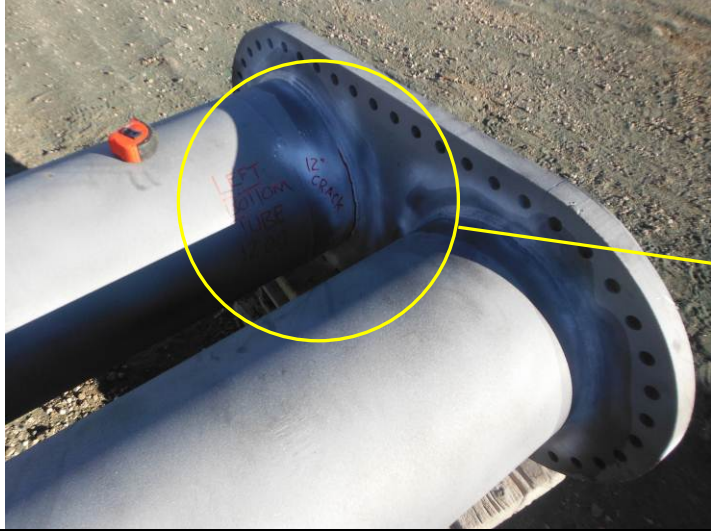
Firetube stamped RT



Overview – Firetube LT



Firetube stamped LT



Firetube LT



Firetube LT – 12 inch crack location