



**PRESSURE VESSEL
VISUAL INSPECTION
REPORT**

Report #: **156697-MD-45**
 Inspect Date: 03/01/2012
 Page: 1 of 8
 Insp. Co. Job #: 156697

Criticality Designation:



Yellow

Insp. Comp: Matrix_Inspection District: Grande Prairie - North Field: 15-09-096-11w6
 Location: Hamburg Unit / Skid #: _____ LSD: 15-09-096-11W6
 Jurisdiction #: A0465074 Equip Tag #: _____ Serial #: CB-10189
 CRN #: D4268.213 Nat'l Bd #: _____ Year Built: 2001
 Manufacturer: LARSEN D' AMICO MFG LTD Equipment Description: Other: HEATER COIL
 Status: Out of Service - 999 - Equip. Type: Exch.: Line Heater Service: Sweet
 MAWP Shell: 2025 Psi @ _____ Volume: _____ Code Stamp: Y N
 MAWP Tube: 3375 Psi @ _____ Height/Length: _____ Insulated: Y N
 MDMT: _____ RT: _____ Size/Diameter.: _____ PWHT: Y N
 Support: _____ Vessel on Original CNRL Inventory List: Y N Manway: Y N
 C.A.: _____ Coated: _____ Clad: _____ J.E.: _____ Remote Access: - _____

Component	Material	Nominal Thk	Diameter	OD/ID	Tube Side	Shell Side
1 Main - Shell					<input type="checkbox"/>	<input type="checkbox"/>
2 - Head					<input type="checkbox"/>	<input type="checkbox"/>
3 - Head					<input type="checkbox"/>	<input type="checkbox"/>
4 -					<input type="checkbox"/>	<input type="checkbox"/>
5 -					<input type="checkbox"/>	<input type="checkbox"/>

Static Data: Confirmed Changed (See Comments)

Comments:

This vessel is not in service at this time
 No inspections were carried out.

PSV Static Data

PSV -1 Tag #: _____ Serial #: _____ CRN: _____
 Model #: _____ Capacity: _____ Set Pressure: _____
 Manufacturer: _____ Service Company: _____
 Inlet Size & Type: _____ - _____ Last Service Date: _____
 Outlet Size & Type: _____ - _____ Block Valve: _____ - _____
 Carseal Intact: _____ Code Stamp: _____
 Shell Side / Tube Side: _____ Out for Service During Insp.: _____ Location of PSV: _____

PSV -2 Tag #: _____ Serial #: _____ CRN: _____
 Model #: _____ Capacity: _____ Set Pressure: _____
 Manufacturer: _____ Service Company: _____
 Inlet Size & Type: _____ - _____ Last Service Date: _____
 Outlet Size & Type: _____ - _____ Block Valve: _____ - _____
 Carseal Intact: _____ Code Stamp: _____
 Shell Side / Tube Side: _____ Out for Service During Insp.: _____ Location of PSV: _____

PSV Comments

This vessel is not in service at this time
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External Inspection Results – VE N/A (Not Applicable)

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Nameplate	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation and Supports	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anchor Bolts	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grounding	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation Condition	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSV	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shell Heads & Nozzles	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal Surfaces (Paint)	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aux Equipment	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cathodic Protection	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange Connections	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure Gauge	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature Gauge	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sight Glass	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladder / Platform	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaks	<input checked="" type="checkbox"/>		No External Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping from Vessel	<input checked="" type="checkbox"/>		No External Inspection Carried Out			
Previous UT Survey	<input checked="" type="checkbox"/>		No External Inspection Carried Out			UT Company:

External Visual Observations

No External Inspection Carried Out
 This vessel is not in service at this time
 No inspections were carried out.

Recommendations:

No External Inspection Carried Out
 This vessel is not in service at this time
 No inspections were carried out.



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Internal Inspection Results – VI N/A (Not Applicable)

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Shell	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heads	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manway	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gasket Surfaces	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Welds	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Refractory	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating Coils	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demister Pad	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vane Pack	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baffles	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trays	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filter	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Coating	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tubesheet	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tube Bundle	<input checked="" type="checkbox"/>		No Internal Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Internal Visual Observations

No Internal Inspection Carried Out

Recommendations:

No Internal Inspection Carried Out



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Firetube Static Data N/A (Not Applicable)

Diameter: Not Applicable Nom Thickness: Not Applicable Bend: Not Applicable
 Length: Not Applicable Firetube Description: Not Applicable

Firetube NDE Performed: UT Report#: Not Applicable ET Report#: Not Applicable
 MT Report#: Not Applicable RT Report#: Not Applicable
 PT Report#: Not Applicable Other Report#: Not Applicable

Firetube Inspection Results

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Burner	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stack	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange (Throat)	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tube Sheet	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot Side	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Miter	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Return Bend	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supports	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Butt Welds	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fillet Welds	<input checked="" type="checkbox"/>		No Firetube Inspection Carried Out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Firetube Visual Observations

No Firetube Inspection Carried Out

Recommendations:

No Firetube Inspection Carried Out



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Vessel NDE and Final Summary:

NDE Performed: UT Report#: _____ ET Report#: _____
MT Report#: _____ RT Report#: _____
PT Report#: _____ Other Report#: _____

Maxi-Trak Observations Summary (Summarize inspection results Max 255 Characters):

This vessel is not in service at this time
No inspections were carried out.

Maxi-Trak Recommendations Summary (Summarize Recommendations Max 255 Characters):

This vessel is not in service at this time
No inspections were carried out.

Actions Corrected at Time of Inspection: (If actions were corrected at the time of Inspection – note the corrected actions here.)

This vessel is not in service at this time
No inspections were carried out.

Additional Visual Observations

This vessel is not in service at this time
No inspections were carried out.

Any other safety concerns or observations from associated equipment: (for example associated piping, buildings, pumps etc...)

This vessel is not in service at this time
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Thickness and Remaining Life Evaluation “ Must be Completed ”

MUST BE COMPLETED AND RESOLVED WITH CNRL IMMEDIATELY UPON DISCOVERY OF LOW WALL THICKNESS AREAS

Step 1: Was any thickness measurement location found to be less than (Nominal WT – Corrosion Allowance)?: **No**

If YES, proceed to Step 2; if NO, proceed to “Crack Evaluation” and “CNRL Criticality Designation”.

Step 2: Which component(s) were found below (Nominal WT – Corrosion Allowance)?

Components found below Nom - CA:

Components
N/A - N/A
N/A - N/A
N/A - N/A
N/A - N/A
N/A - N/A

Perform Steps 3 – 8 for each component with actual thickness less than (Nominal WT – Corrosion Allowance).

Step 3: Describe Location and Extent of Corrosion:

Components	Location and Extent of Corrosion
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection
N/A - N/A	Not Applicable for this Inspection

Notes:
 Not Applicable for this Inspection

Step 4:

- For shells and nozzles, calculate minimum required thickness (T-min) as per ASME Section VIII UG-27.
- For heads, calculate minimum required thickness (T-min) as per ASME Section VIII UG-32.

Components	T-Min
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A



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Thickness and Remaining Life Evaluation (Continued)

Step 5: Is any measured thickness less than calculated minimum required thickness (T-min)? **N/A**

*If YES, complete Step 6
If NO, proceed to Step 7..*

Step 6: Is nature and extent of pitting acceptable as per API 510? **N/A**

Step 7: Calculate Remaining Life as per API 510. How? (Find last reading; use nominal thickness if nothing available). Short Term Corrosion Rates and Long Term Corrosion Rates.

Components	Remaining Life (Yrs)
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A
N/A - N/A	N/A

Step 8: Contact CNRL Integrity Coordinator to discuss above results.

- Name of CNRL contact: Not Applicable for this Inspection
- Date and time of conversation: Not Applicable for this Inspection

Summary/results of conversation:
Not Applicable for this Inspection

Crack Evaluation by Magnetic Particle or Alternative Inspection “Must be Completed”

MUST BE COMPLETED AND RESOLVED WITH CNRL IMMEDIATELY UPON DISCOVERY OF CRACK-LIKE INDICATIONS

Were any indications found to suggest the vessel contained cracks? **N/A**

If NO, proceed to “CNRL Criticality Designation”.

If YES, Contact CNRL Integrity Coordinator to discuss results.

- Name of CNRL contact: Not Applicable for this Inspection
- Date and time of conversation: Not Applicable for this Inspection

Summary/results of conversation:
Not Applicable for this Inspection



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CNRL Criticality Evaluation - MUST BE COMPLETED

The CNRL In-Service Pressure Vessel Inspector MUST answer all the following questions

- 1. Is the vessel fit-for-service? : No
2. Was the measured thickness less than the calculated minimum required thickness (T-min) for any component?: No
3. Were MT indications found?: N/A
4. Was the remaining life less than 6 years for sour service vessels or less than 10 years for sweet service vessels?: No
5. Were NCR's or Action Items generated as a result of the inspection? : No
6. Were UT readings below (Nominal WT - Corrosion Allowance) found? : No

Information on CNRL Owner User Program - Criticality Designation and Required Review

RED - Vessel Inspection Results are deemed RED if one of the following occurred:

- The measured thickness was less than the calculated minimum required thickness (T-min) for any component.
MT indications were found.
The remaining life was calculated to be less than 6 years for sour-service vessels or less than 10 years for sweet-service vessels.

RED inspection reports must be signed off by the CNRL Chief Inspector.

YELLOW - Vessel Inspection Results are deemed YELLOW if one or more of the following occurred:

- The vessel was declared NOT fit-for-service by the 3rd Party In-Service PV Inspector.
NCR's or Action Items were generated as a result of the inspection.
UT readings below (Nominal WT - Corrosion Allowance) were found.

YELLOW inspection reports must be signed off by the CNRL Pressure Equipment Integrity Coordinator.

GREEN - Vessel Inspection Results are deemed GREEN if all of the following are true:

- The vessel was declared fit-for-service by the 3rd Party In-Service PV Inspector.
UT readings below (Nominal WT - Corrosion Allowance) were NOT found.
MT indications were NOT found.
NCR's or Action Items were NOT generated as a result of the VE inspection.

GREEN inspection reports must be signed off by the 3rd Party In-Service Pressure Vessel Inspector.

Criticality Designation



Yellow

Vehicle #: 380 Kms:
Time In: 00:00 Time Out: 00:00 Hrs
Time In: 00:00 Time Out: 00:00 Hrs
Personnel: JD, LP
Billing Info: AFE :

Inspector (Name): Matthew B Dickinson PESL: 601
Inspector (Signature): API: 39483
CNRL Coordinator (Name):
CNRL Coordinator (Signature):
CNRL Chief Inspector (Signature): (I am in full agreement with report contents)