



**NDT INSPECTION OF AN INLET SEPARATOR PACKAGE
LOCATED AT THE WINDWARD RESOURCES YARD
IN FORT ST. JOHN, B.C.**

September 20th, 2018

***ALTEC INSPECTION LTD.
FORT ST. JOHN, B.C.***

Item Inspected Con't:

Inlet Separator Tag Data:



Fuel Gas Separator Tag Data:



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Test Results:

Inlet Separator:

A total of four (4) vessel bands were inspected for the inlet separator. The inspection consisted of the top head, upper shell, lower shell and lower head. A total of six (6) fittings were inspected for the inlet separator associated piping. Three (3) anomalies were found for below nominal readings, see below:

Band #'s 8, 9 & 10 - 3" 90° elbows, indicated minimum readings that ranged between 0.244" & 0.250" or 16.7% & 18.7% below the 0.300" nominal thickness for 3" Sch. 80 material.

The vessel appeared to be in good condition, with all readings found to be near or above the stated nominal thicknesses for the vessel.

All fittings inspected (with the exception of the anomalies discussed above) were found to within the +/- 12.5% manufacturer under tolerance for ASTM material.

Fuel Gas Separator:

A total of one (1) vessel bands was inspected for the fuel gas scrubber. The inspection consisted of the upper to lower shell.

A nominal thickness for the shell section was not indicated on the vessel tag data. But ultrasonic inspection indicated uniform internal surfaces with no corrosion / erosion damage suspected.

Conclusion:

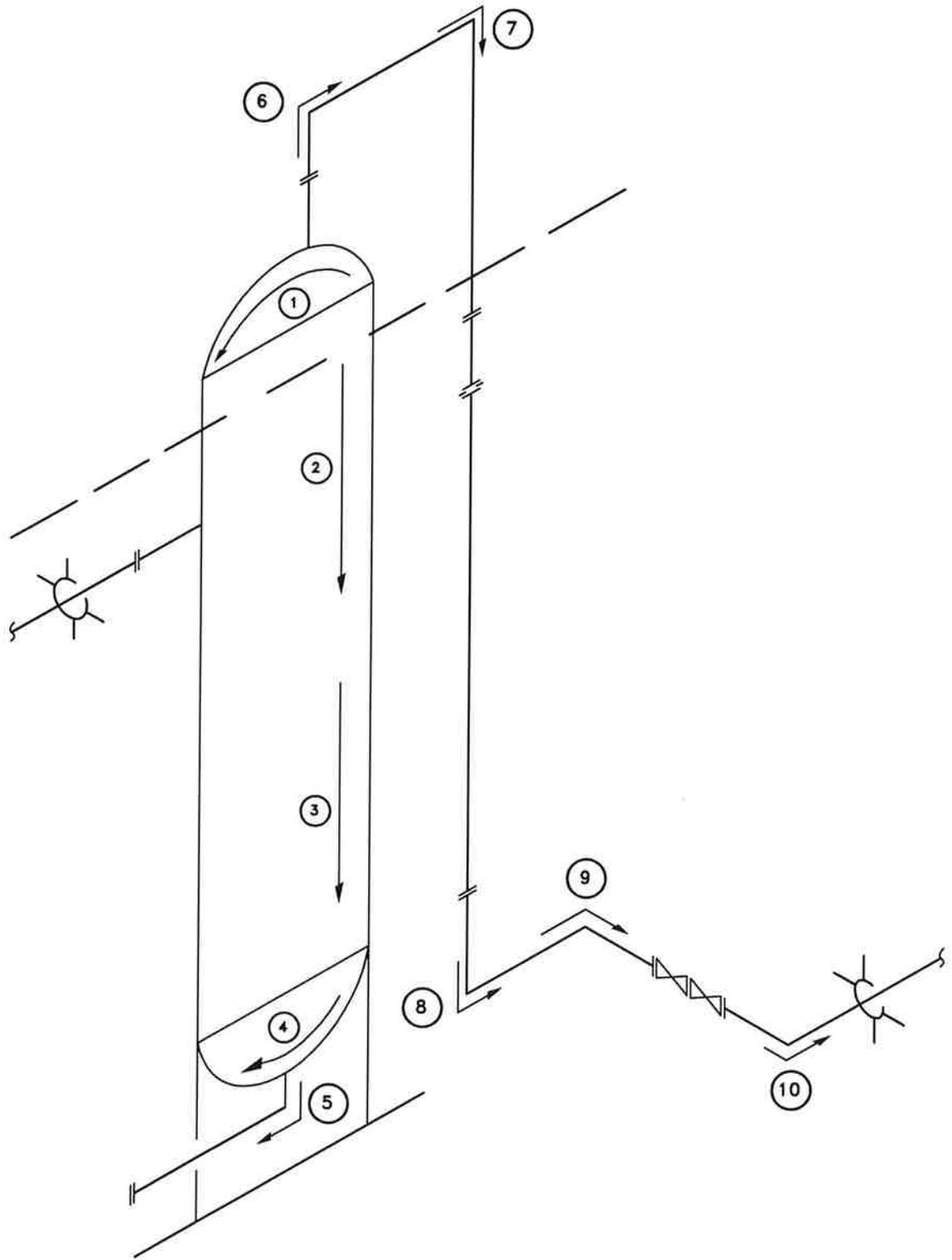
Overall, the inlet separator package was found to be in good condition. The ultrasonic inspection found the vessels to be near or above stated nominal thicknesses and all associated piping (with the exception of the anomalies discussed above) to be within the +/- 12.5% manufacturer under tolerance for ASTM material. The inlet separator package is suitable for continued service.

Yours truly,



Justin Bolog, CGSB Level 2 U/T

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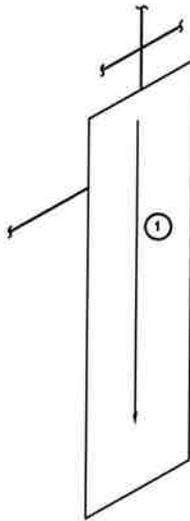


| EQUIPMENT DATA | |
|-------------------|----------------------------|
| MAKE: | LARSEN & D'AMICO MFG. LTD. |
| SER. NO.: | VS-12925 |
| CRN NO.: | R7983.213 |
| B.C. NO.: | |
| ALTA. NO.: | 541973 |
| MFG. DATE: | 2005 |
| MAWP: | 1440 PSIG @ 127°F |
| "t" SHELL: | 1.031" |
| "t" HEAD: | 0.8125" |
| SIZE: | |
| CORR. ALLOW.: | 0.125" |
| XRAY/STRESS REL.: | U, HT, W, RT1 |

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INSPECTION LTD.

| | | |
|-------|----------------|--|
| BY: | N. NEUPANE | 13080 BEATON PARK ROAD, BIRN BIRN, CHARLES LAKE, B.C. V0C 1H0 |
| DATE: | SEPT. 19, 2018 | |

| | |
|--|------------------------|
| INLET SEPARATOR | |
| WINDWARD RESOURCES YARD FORT ST. JOHN | |
| COMPANY: | DRAWING NUMBER: |
| RARE OILFIELD SERVICES CORP. | SEPARATOR A-541973.DWG |



| EQUIPMENT DATA | |
|-------------------|--------------------------|
| MAKE: | LARSEN D'AMICO MFG. LTD. |
| SER. NO.: | 12823 |
| CRN NO.: | L9476.213 |
| B.C. NO.: | |
| ALTA. NO.: | |
| MFG. DATE: | 2006 |
| MAWP: | 150 PSI @ 200°F |
| 1/4" SHELL: | |
| 1/4" HEAD: | |
| SIZE: | |
| CORR. ALLOW.: | 0.0625" |
| XRAY/STRESS REL.: | UM, HT, W, RFS |

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|-------|----------------|---|
| BY: | N. NEUPANE | 13823 HEATON PARK ROAD, BOX 853, CHARLIE LAKE, B.C. V0C 1H0 0250785 6295 |
| DATE: | SEPT. 19, 2018 | |

| | |
|--|-----------------|
| FUEL GAS SCRUBBER | |
| WINDWARD RESOURCES YARD FORT ST. JOHN | |
| COMPANY: | DRAWING NUMBER: |
| RARE OILFIELD SERVICES CORP. | FGS S-12823.DWG |

RARE Oilfield Services Corp.

File Name: Inlet Separator - A 541973 / FGS S-12823
Description: Vessels & Associated Piping
Probe: 7.5 MHz FH2E
Instrument : DMS Go
Units: INCH
Date: September 17th, 2018

Thickness Data

| Band #'s | Size | Sch | Nom. | Point # 1 | Point # 2 | Point # 3 | Point # 4 | Point # 5 | Point # 6 | Point # 7 | Point # 8 | Point # 9 | Point # 10 | T _{avg} | T _{min} | % Below Nom. |
|-----------------------------------|----------------------|-----|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------------|------------------|--------------|
| Inlet Separator - A 541973 | | | | | | | | | | | | | | | | |
| Band #1 | HEAD | | 0.813 | 0.862 | 0.826 | 0.823 | 0.829 | 0.818 | 0.820 | 0.826 | 0.825 | 0.822 | 0.865 | 0.829 | 0.818 | N/A |
| Band #2 | SHELL | | 0.902 | 1.046 | 1.044 | 1.042 | 1.044 | 1.046 | 1.043 | 1.047 | 1.043 | 1.036 | 1.028 | 1.044 | 1.042 | N/A |
| Band #3 | SHELL | | 0.902 | 1.027 | 1.038 | 1.034 | 1.036 | 1.038 | 1.037 | 1.036 | 1.043 | 1.041 | 1.040 | 1.036 | 1.027 | N/A |
| Band #4 | HEAD | | 0.813 | 0.861 | 0.816 | 0.815 | 0.821 | 0.810 | 0.809 | 0.816 | 0.812 | 0.816 | 0.867 | 0.820 | 0.809 | 0.4 |
| Band #5 | 2" - 90 ⁰ | 160 | 0.343 | 0.343 | 0.339 | 0.339 | 0.328 | 0.324 | - | - | - | - | - | 0.335 | 0.324 | 5.5 |
| Band #6 | 3" - 90 ⁰ | 80 | 0.300 | 0.309 | 0.278 | 0.274 | 0.266 | 0.266 | 0.270 | - | - | - | - | 0.277 | 0.266 | 11.3 |
| Band #7 | 3" - 90 ⁰ | 80 | 0.300 | 0.285 | 0.282 | 0.271 | 0.274 | 0.272 | 0.271 | - | - | - | - | 0.276 | 0.271 | 9.7 |
| Band #8 | 3" - 90 ⁰ | 80 | 0.300 | 0.284 | 0.269 | 0.244 | 0.258 | 0.254 | 0.273 | - | - | - | - | 0.264 | 0.244 | 18.7 |
| Band #9 | 3" - 90 ⁰ | 80 | 0.300 | 0.250 | 0.256 | 0.263 | 0.254 | 0.264 | 0.278 | - | - | - | - | 0.261 | 0.250 | 16.7 |
| Band #10 | 3" - 90 ⁰ | 80 | 0.300 | 0.262 | 0.257 | 0.249 | 0.251 | 0.260 | 0.254 | - | - | - | - | 0.256 | 0.249 | 17.0 |
| Fuel Gas Scrubber S-12823 | | | | | | | | | | | | | | | | |
| Band #1 | SHELL | | N/A | 0.197 | 0.194 | 0.194 | 0.193 | 0.189 | 0.189 | 0.190 | 0.190 | 0.192 | 0.192 | 0.192 | 0.189 | N/A |

Notes

T_{avg} Average Thickness reading for given data
T_{min} Minimum thickness reading for given data
 Green background up to 12.5% below Nominal
% Below Nom. Yellow background between 12.5% & 35% below Nominal
 Red background indicates over 35% below Nominal
 N/A - Indicates reading above nominal value