

INSPECTION REPORT



| Pressure Vessel Survey | | | |
|--------------------------|---|------------------------|--------------------------------|
| Location: | Point Tupper | EM&I S Report No.: | PT-D2100A-090805-JT-R0 |
| Client Name: | | Client Ref No.: | PT-11564780-001-D2100A |
| Client Rep.: | | Inspector Name: | James Tulk |
| WO No.: | | Inspection Date: | August 05, 2009 |
| SPO No.: | | System: | Propane |
| Workscope No.: | PT-2009-D2100A-INT-01 | EM&I S Job No: | EMJ0132.43 |
| Tag No.: | D-2100A | Equipment Description: | Propane Storage Vessel D-2100A |
| Date of Last Inspection: | NA | Previous Records Seen: | NA |
| Drawing No.: | LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5 | | |

| Inspection Summary | | | | | |
|---|------------------------------|--|--------------------------|-------------------------------------|--------------------------|
| Restriction? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Comments: | | |
| Item | Condition | | | | Comments |
| External Ladders, Access and Support Structure | Good | Fair | Poor | NA | Internal Inspection Only |
| 1. If applicable, check ladders, stairways, platforms and walkways that are connected to, or bearing on the vessel for signs of corrosion, missing components, or deterioration. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 2. If applicable, check vessel supports for signs of deterioration, settlement, deflection, and/or corrosion. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. If applicable, check coatings for signs of deterioration, rusts spots, cracks, blistering, and/or coating disbondment. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 4. a) For horizontally mounted vessels, check for signs of trapped moisture, resulting in corrosion between cradle support and vessel shell. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| b) For vertically mounted vessels on skirt support or support legs, check for condensation, resulting in corrosion on the bottom cap/ inside skirt support surface or area of attachment of the support legs to the bottom cap. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 5. Check the grounding connection is correctly installed, with cable connections tight and ground wires in good condition. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 6. Check all bolted connections for any signs of corrosion or mechanical damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 7. If applicable, check the vessel sliding foot free to move and hold-down bolts are free. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Vessel External Surfaces | Good | Fair | Poor | NA | Internal Inspection Only |
| 1. Check permanent identifying tags on vessel are legible and present the required information. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 2. If applicable, check that all bolts/studs extend fully through their nuts, having a protrusion beyond the nut of not less than one thread; flange bolts have bolt heads all on the side of the joint. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. If applicable, check bolted connections are in full contact with connected elements and connections for any signs of rust, corrosion or mechanical damage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 4. If applicable, check insulation support bands and clips for signs of corrosion or breakage. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 5. Check all welded seams and connections for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 6) If applicable, check insulation type, condition for any insulation damage and ingress of water. Record insulation type. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 7. Carry out visual inspection of the exterior surface of the vessel, including coatings for any signs of leaks, cracks, deformation, distortion, pitting, corrosion or other forms of deterioration. If so, specify type, location and extent. | FOR | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 8. If applicable, check weep holes in reinforcement plates are not plugged. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| External Piping / Instrument Attachments | Good | Fair | Poor | NA | Internal Inspection Only |
| 1. If applicable, check vessel trim, such as gauges, sight glasses, valves and other appurtenances, show signs of deterioration, or missing components, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 2. If applicable, check if the PSV on the vessel is in calibration. Record tag number of PSV and calibration date. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |

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| Inspection Summary | | | | | |
|---|-------------------------------------|-----------------------------|--------------------------|-------------------------------------|--|
| Restriction? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | Comments: | | |
| Item | Condition | | | | Comments |
| 3. Inspect fittings, nozzles and other connections, including the surrounding vessel shell / head for any signs of distortion or cracks, wall loss, leakage, deterioration of coatings, etc. Specify extent and location. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| Vessel Internal Surfaces | Good | Fair | Poor | NA | |
| 1. Check for signs of corrosion, erosion, cracks, blisters, pitting, distortion, or other forms of deterioration on the internal vessel surfaces. If any, specify type, location and extent. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | see Note 1 |
| 2. Check all welded joints for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | see Note 2 |
| 3. Check all man-ways, nozzles and connections for distortion, cracks, corrosion, wall loss and other type of defects or failures. If any defects are noted, specify type, extent and location. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | see Note 3 |
| 4. If applicable, compare the results of performed wall thickness survey with previous reports for areas of wall thickness loss. Identify areas on inspection report. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 5. Where applicable, check vessel internal cladding for signs of bulging, buckling, cracks, holes, etc. If any, specify type, location and extent. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 6. Where applicable, check the vessel internal coating for signs of deterioration, such as: rust spots, blisters, coating disbandment, etc. If any, specify type, location and extent. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 7. If possible, check gasket seals on all flanges for signs of corrosion and/or mechanical damage. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Man-way only See Note 4 |
| Internal Equipment/Piping /Supports | Good | Fair | Poor | NA | |
| 1. Where applicable, check supports for vessel's internal equipment and components for signs of corrosion, distortion and deterioration. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Screen angle iron support legs in good condition. See Note 5 |
| 2. If applicable, check vessel's internals for signs of corrosion, distortion and deterioration, missing components etc. | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Vortex breaker #N2 See Note 6 |
| 3. If applicable, check if bolted connections are in full contact with connected elements and connections are free from rust or other deleterious material that may prohibit full contact. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

Note 1:

No signs of cracks, blisters, distortion, erosion/corrosion (other than pitting) or any forms of deterioration evident on interior shell. Generalized pitting found throughout shell particularly between lower half of circ. seams #11 to #13. A random selection of the most pronounced isolated pitting evident on both North and South heads as well as other locations throughout shell was measured and recorded for future reference and follow up. They are as listed below:

Five (5) isolated corrosion pits (two on South head; three on North head) was evaluated to be the most significant.

- South Head Pit #1= 1.5mm depth - see Photo #8
- South Head Pit #2= 1.2mm depth - see Photo #9
- North Head Pit #1= 1.2mm depth - see Photo #22
- North Head Pit #2= 2.0mm depth - see Photo #22
- North Head Pit #3= 2.0mm depth- see Photo #23

Most significant pitting evident on interior shell sections are as follows:

- West side between circ. #2 and #3 = 0.7mm depth - see Photo #21
- West side between circ. #11 and #12 - Pit #1 = 0.6mm depth - see Photo #14 and Pit #2 = 1.2mm depth - see Photo #15
- East side between circ. #12 and #13 - corrosion pit #1 = 1.0mm depth; corrosion pit #2 = 1.2mm depth; corrosion pit #3 = 1.2mm depth.

An isolated mechanical indication found on West wall between circ.weld #3 and #4 created during 1999 fabrication of vessel (having a crescent shape) has a depth of 2.5mm, width approx: 3.0mm and 1cm in length. No signs of corrosion/erosion in the immediate area.

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Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

Magnetic particle examination was performed on and around this indication but no other evidence of discontinuities present. See Photos #3 and 4 after MPI performed. See Photo #19 before MPI.

Remainder of findings were noted to be mechanical marks existing from original fabrication in 1999. They are as follows:

- Mechanical gouge on South head has a length of approx: 60cm and max. depth of 1.2mm. See Photo #9
- Mechanical mark on East wall between circ. weld #9 and #10 has a depth of 1.4mm. See Photo #16
- Mechanical mark on West wall between circ. weld #9 and #10 has a depth of 1.0mm. See Photo #17
- Mechanical mark on West wall between circ. weld #2 and #3 has a depth of approx: 0.7mm. No photo

Note 2:

During inspection, no evidence of corrosion, cracking, pitting or deterioration was found on welded joints.

Note 3:

No signs of distortion, cracks, corrosion, wall loss or any type of defect on manway, nozzels or connections was found.

Note 4:

No evidence of corrosion/erosion or any mechanical damage on manway gasket and cover seals.

Note 5:

No signs of cracking, corrosion, erosion, distortion or any deterioration on screen support legs.

Note 6:

No evidence of corrosion, distortion, missing components or any deterioration on vortex breaker for nozzle #N2.

*Note: Only lower half of vessel's interior in question could be properly inspected. No scaffold to access the upper half of vessel.

Magnetic Particle Inspection was performed by Neil English

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings



Photo 1 – Nozzle N10, view looking down



Photo 2 – Nozzle N7, view looking up

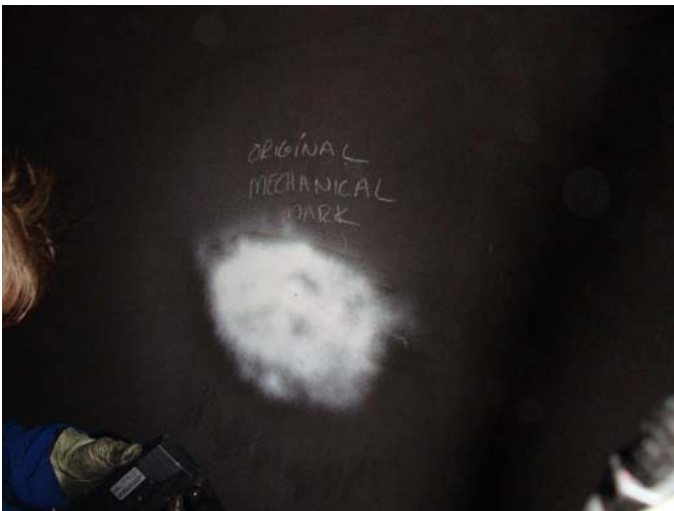


Photo 3 – Original mechanical mark



Photo 4 – Close-up of mechanical mark

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings



Photo 5 – Side view of vortex breaker, looking South



Photo 6 – Top view of vortex breaker looking down at nozzle



Photo 7 – Profile view of nozzles N6, N3B, N4B, looking South



Photo 8 –South head pitting

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

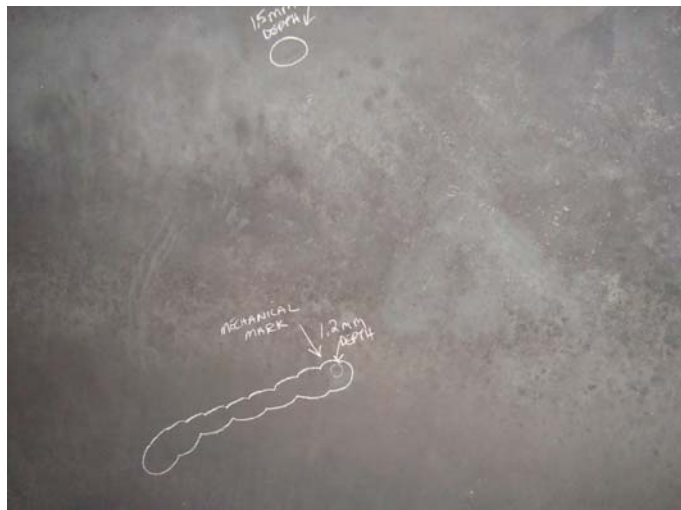


Photo 9 – Mechanical mark



Photo 10 – South head pitting



Photo 11 – Profile view looking up at Nozzle N3A, N4A, N8 at South end of vessel



Photo 12 – Profile shot at Nozzle N1 looking up at South end of vessel

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings



Photo 13 – Profile shot of Nozzle N9 and upper portion of circ. seam #12 at South end

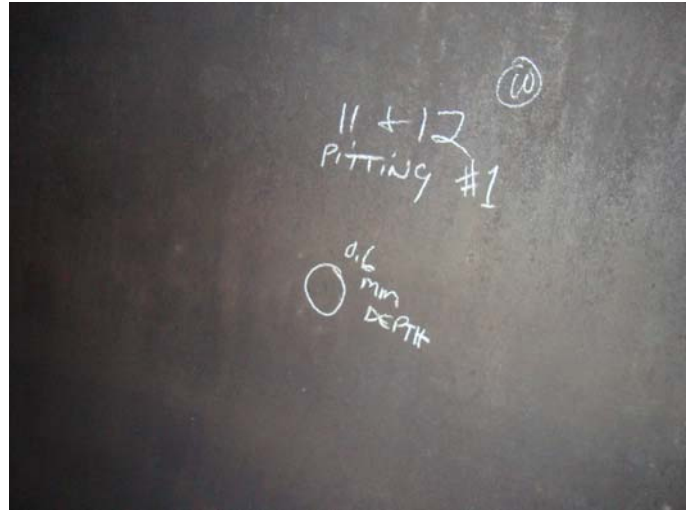


Photo 14 – Pitting



Photo 15 – Pitting



Photo 16 – Mechanical mark

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

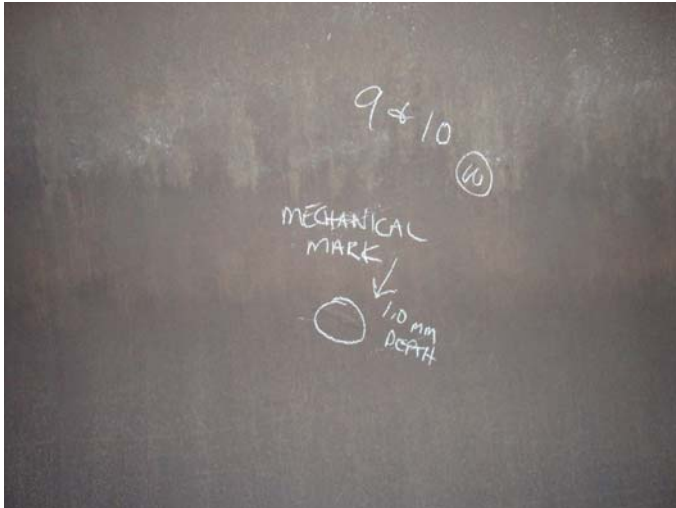


Photo 17 – Mechanical mark



Photo 18 – Profile shot of interior vessel, looking North



Photo 19 – Original mechanical mark



Photo 20 – Profile shot of Man-way M24 looking down from interior

INSPECTION REPORT

Detail of Findings

Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings

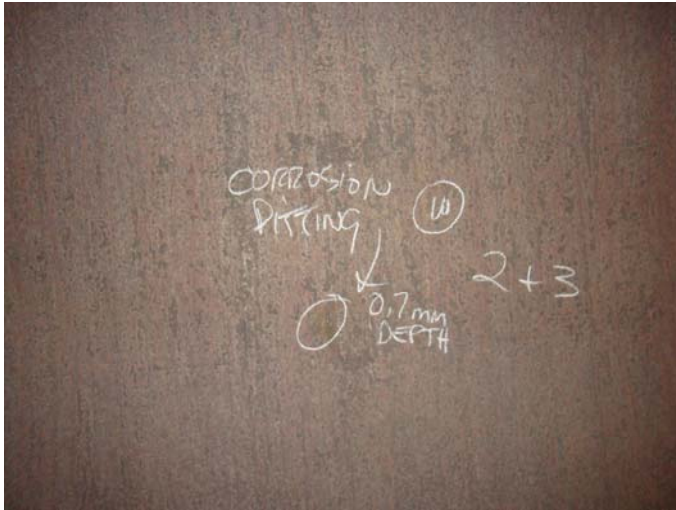


Photo 21 – Corrosion pitting



Photo 22 – North head pitting



Photo 23 – North end pitting

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List of Attachments

Attachment 1: PT-D2100A-090805-NE-MPI (MPI on Hinges)
Attachment 2: PT-D2100A-090805-NE-MPI (MPI on Internal Welds)
Attachment 3: Photo Locations

End of Report

INSPECTION REPORT



Magnetic Particle Inspection

| | | | |
|-----------------------------------|--|-----------------------------------|--------------------------------------|
| Location: | Point Tupper | EM&I S Report No.: | PT-D2100A-090805-NE-MPI |
| Client Name: | Exxon Mobil Sable | Client Ref No.: | PT-11564780-001-D2100A |
| Client Rep.: | Dale Groves | Inspector Name: | Neil English |
| WO No.: | 11564780 | Inspection Date: | August 5, 2009 |
| SPO No.: | 4501905471 | Inspection Time: | Various |
| Workscope No.: | PT-2009-D2100A-INT-01 | System: | Propane |
| Previous Report No. | NA | EM&I S Job No: | EMJ0132.43 |
| Ref. Drawing No.: | LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5 | Item Inspected: | Propane Storage Vessel D-2100A |
| Technician Certifications: | CGSB, Lev II, MPI | Certification Expiry Date: | December 31, 2011 |
| Inspection Code: | ASME VIII | Inspection Procedure: | MT401, ASME |
| Acceptance Criteria: | Crack Detection | | |
| Material: | C/S | Surface Condition: | Wire Brush Cleaned |
| Temperature: | Ambient | Field Indicator: | Type 2 Foil Strip |
| Lighting Type: | Artificial | Black Light S/N: | N/A |
| Light Level: | 1000 LUX | | |
| Contrast: White | Manufacturer: Ardrex | Type: 8901w | Batch: 65082407 |
| Ink: | Manufacturer: Ardrex | Type: 8031 | Batch: 32111507 |
| Equipment: | Type: Electro Spec ES-X | S/N: 9600 | Calibration Due: 31, Jan 2010 |
| | | | Current Type: AC Cont. |

Inspection Summary

| | | | |
|---|------------------------------|--|------------------|
| Restriction? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Comments: |
| <p>External MPI Inspection was performed on Propane Storage D-2100A on Man-way Hinges M1 (24").</p> <p>At time of Inspection no Indications were found.</p> | | | |

End of Report

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|------------------------|--------------|-------------------|--|--------------|--|
| Inspector Name: | Neil English | Signature: | | Date: | |
|------------------------|--------------|-------------------|--|--------------|--|

INSPECTION REPORT



Magnetic Particle Inspection

| | | | |
|-----------------------------------|--|-----------------------------------|--------------------------------------|
| Location: | Point Tupper | EM&I S Report No.: | PT-D2100A-090805-NE-MPI |
| Client Name: | Exxon Mobil Sable | Client Ref No.: | PT-11564780-001-D2100A |
| Client Rep.: | Dale Groves | Inspector Name: | Neil English |
| WO No.: | 11564780 | Inspection Date: | August 5, 2009 |
| SPO No.: | 4501905471 | Inspection Time: | Various |
| Workscope No.: | PT-2009-D2100A-INT-01 | System: | Propane |
| Previous Report No. | NA | EM&I S Job No: | EMJ0132.43 |
| Ref. Drawing No.: | LA-B23-F-22-8050-01-Z5, 98-CA-399735-1B-5 | Item Inspected: | Propane Storage Vessel D-2100A |
| Technician Certifications: | CGSB, Lev II, MPI | Certification Expiry Date: | December 31, 2011 |
| Inspection Code: | ASME VIII | Inspection Procedure: | MT401, ASME |
| Acceptance Criteria: | Crack Detection | | |
| Material: | C/S | Surface Condition: | Wire Brush Cleaned |
| Temperature: | Ambient | | Field Indicator: |
| | | | Type 2 Foil Strip |
| Lighting Type: | Artificial | Black Light S/N: | NA |
| Light Level: | 1030 LUX | | |
| Contrast: White | Manufacturer: Ardrex | Type: 8901w | Batch: 65082407 |
| Ink: | Manufacturer: Ardrex | Type: 8031 | Batch: 32111507 |
| Equipment: | Type: Electro Spec ES-X | S/N: 9600 | Calibration Due: 31, Jan 2010 |
| | | | Current Type: AC Cont. |

Inspection Summary

| | | | |
|---|------------------------------|--|------------------|
| Restriction? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Comments: |
| <p>Internal MPI Inspection was performed on the Internal welds of Propane Storage Vessel D-2100A, Man-way and Nozzles and selected weld areas.</p> <p>M1 (24" Man-way) N3B (3" Level Control) N4B (2" Level Indication) N5 (4" Level Transfer) N6 (2" Thermowell) N10 (3" Purge c/w Blind</p> <p>At time of inspection no indications were found.</p> <p>Refer to API Report for Photos.</p> | | | |

End of Report

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|------------------------|--------------|-------------------|--|--------------|--|
| Inspector Name: | Neil English | Signature: | | Date: | |
|------------------------|--------------|-------------------|--|--------------|--|

