

# INSPECTION REPORT



Pressure Vessel Survey			
<b>Location:</b>	Point Tupper	<b>EM&amp;I J Report No.:</b>	PT-D2100D-090714-JT-R0
<b>Client Name:</b>		<b>Client Ref No.:</b>	PT-11564783-002-D2100D
<b>Client Rep.:</b>		<b>Inspector Name:</b>	James Tulk
<b>WO No.:</b>		<b>Inspection Date:</b>	July 14, 2009
<b>SPO No.:</b>		<b>System:</b>	Propane
<b>Workscope No.:</b>	PT-2009-D2100D-INT-01	<b>EM&amp;I J Job No:</b>	EMJ0132.43
<b>Tag No.:</b>	D-2100D	<b>Equipment Description:</b>	Propane Storage Vessel D-2100D
<b>Date of Last Inspection:</b>	NA	<b>Previous Records Seen:</b>	NA
<b>Drawing No.:</b>	LA-B23-F-22-8052-01-Z4, 980047-4-2, 980047-2-4		

Inspection Summary					
Restriction?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Comments:		
Item	Condition				Comments
	Good	Fair	Poor	NA	
<b>External Ladders, Access and Support Structure</b>					
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"/>	
<b>Vessel External Surfaces</b>					
Internal inspection only					
1. Check permanent identifying tags on vessel are legible and present the required information.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Detail of Findings and photo 4
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.	<input type="checkbox"/>	<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"/>	
<b>External Piping / Instrument Attachments</b>					
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Detail of Findings and photo 5
3. Inspect fittings, nozzles and other connections, including the surrounding vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

# INSPECTION REPORT



Inspection Summary					
Restriction?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	Comments:		
Item	Condition				Comments
shell / head for any signs of distortion or cracks, wall loss, leakage, deterioration of coatings, etc. Specify extent and location.					
<b>Vessel Internal Surfaces</b>	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"/>	Manway only, see note 4
<b>Internal Equipment/Piping /Supports</b>	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 support legs, 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
<p>Instructions: With the aid of Drawing(s), Sketch(es) and Photo(s) describe findings</p>
<p>Note 1) No signs of cracks, blisters, distortion, erosion/corrosion (other than pitting) or any forms of deterioration evident on interior shell. However, a mechanical mark having a diameter approximately 1.5" and a depth of 1.4 mm (max. depth evident) was noted adjacent to circumference weld seam 9. See photo 1 and 2. Generalized pitting found throughout shell particularly between circ seams 9 to 11. A random selection of the most pronounced pitting was measured and the maximum depth was found to be approximately 1.2 mm. Acceptable for service. See photo 3.</p> <p>Note 2) No evidence of corrosion, cracking, pitting or deterioration was found on welded joints. Acceptable for service.</p> <p>Note 3) No signs of distortion, cracks, corrosion, wall loss or any type of defect on manway, nozzels or connections was found. Acceptable for continuing service.</p> <p>Note 4) No evidence of corrosion/erosion or any mechanical damage on manway gasket and cover seals. Acceptable for service.</p> <p>Note 5) No signs of cracking, corrosion, erosion, distortion or any deterioration on screen support legs.</p> <p>Note 6) No evidence of corrosion, distortion, missing components or any deterioration on votex .</p> <p>Note: Only lower half of vessel in question could be properly inspected during time of entry. No scaffold in place to access upper half.</p>

**Detail of Findings**

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

**ID Tag:**

Certified by: RNG Pro-Tech Inc

MAWP: 210/-11 PSI @ 149°F

MDMT: -17°F @ 250/-11 PSI

Serial No: 98-9

Year Built: 1999

CRN: 8124.8

MAWP: 1724/-76 KPA @ 65°C

MDMT: -27°C @ 1724/-76 KPA

Year Built: 1999

CRN: 8124.8

**PSV Tag:**

L&S Job: 09-16828-19

Date: March 4, 2009

Set Pressure: 1723 KPA

Capacity: 18649 SCFM

Model: JPVM 15A



Photo 1 – Mechanical mark adjacent to circ weld seam 9



Photo 2 – Mechanical mark adjacent to circ weld seam 9

**Detail of Findings**

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



Photo 3 – Sample of pitting on shell



Photo 4 – ID tag



Photo 5 – PSV tag

**List of Attachments**

Attachment 1: PT-D2100D-090706-NE-MPI (hinges)

Attachment 2: PT-D2100D-090714-NE-MPI (internal)

Attachment 3: 980047-2-4

End of Report

# INSPECTION REPORT



## Magnetic Particle Inspection

<b>Location:</b>	Point Tupper	<b>EM&amp;I Report No.:</b>	PT-D2100D-090706-NE-MPI
<b>Client Name:</b>	Exxon Mobil Sable	<b>Client Ref No.:</b>	PT-11564783-001-D2100D
<b>Client Rep.:</b>	Dale Groves	<b>Inspector Name:</b>	Neil English
<b>WO No.:</b>	11564783	<b>Inspection Date:</b>	July 6, 2009
<b>SPO No.:</b>	4501905471	<b>Inspection Time:</b>	Various
<b>Worksopce No.:</b>	PT-2009-D2100D-INT-01	<b>System:</b>	Propane Storage Vessel D-2100D
<b>Previous Report No.</b>	NA	<b>EM&amp;I Job No:</b>	EMJ0132.43
<b>Ref. Drawing No.:</b>	LA-B23-F-22-8052-01-Z4, 980047-4-2, 980047-2-4	<b>Item Inspected:</b>	D-2100D
<b>Technician Certifications:</b>	CGSB MPI LVL 2	<b>Certification Expiry Date:</b>	December 31, 2011
<b>Inspection Code:</b>	ASME VIII	<b>Inspection Procedure:</b>	MT401ASME
<b>Acceptance Criteria:</b>	ASTM Section III		
<b>Material:</b>	C/S	<b>Surface Condition:</b>	Wire Brush Cleaned
<b>Temp.:</b>	Ambient	<b>Field Indicator:</b>	
<b>Lighting Type:</b>	Natural	<b>Black Light S/N:</b>	NA
<b>Light Level:</b>	1000 LUX		
<b>Contrast:</b>	White	<b>Manufacturer:</b>	Ardrox
<b>Type:</b>	8901W		<b>Batch:</b> 86082407
<b>Ink:</b>		<b>Manufacturer:</b>	Ardrox
<b>Type:</b>	8031, Black Ink		<b>Batch:</b> 32111507
<b>Equipment:</b>	<b>Type:</b> Electro Spec ES-X	<b>S/N:</b> 12768	<b>Calibration Due:</b> 10 Lb Cal Lift
			<b>Current Type:</b> AC

## Inspection Summary

<b>Restriction?</b>	<input type="radio"/> Yes	<input checked="" type="radio"/> No	<b>Comments:</b>
<p><b>Comments:</b></p> <p>Black on white Magnetic Particle Inspection was conducted on propane storage vessel D-2100D on the 24" man-way hinges.</p> <p>At the time of the inspection, no indications were observed.</p> <p>Foil strip type 1 indicator (brass finish) was used to test sensitivity.</p>			

End of Report

<b>Inspector Name:</b>	Neil English	<b>Signature:</b>	See Field Copy	<b>Date:</b>	
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# INSPECTION REPORT



## MPI Survey

<b>Location:</b>	Point Tupper	<b>EM&amp;I Report No.:</b>	PT-D2100D-090714-NE-MPI
<b>Client Name:</b>	Exxon Mobil Sable	<b>Client Ref No.:</b>	PT-11564783-002-D2100D
<b>Client Rep.:</b>	Dale Groves	<b>Inspector Name:</b>	Neil English
<b>WO No.:</b>	11564783	<b>Inspection Date:</b>	July 14, 2009
<b>SPO No.:</b>	4501905471	<b>Inspection Time:</b>	Various
<b>Worksopce No.:</b>	PT-2009-D2100D-INT-01	<b>System:</b>	Propane Storage Vessel
<b>Previous Report No.</b>	NA	<b>EM&amp;I Job No:</b>	EMJ0132.43
<b>Ref. Drawing No.:</b>	LA-B23-F-22-8052-01-Z4, 980047-4-2, 980047-2-4		
<b>Technician Certifications:</b>	CGSB MPI LVL 2	<b>Certification Expiry Date:</b>	December 31, 2011
<b>Inspection Code:</b>	ASME VIII	<b>Inspection Procedure:</b>	MT401ASME
<b>Material:</b>	C/S	<b>Surface Condition:</b>	Wire brush cleaned
<b>Consumables:</b>	<b>Contrast: White</b>	<b>Type: 8901W</b>	<b>Manufacturer: Ardrex</b>
			<b>Batch: 65082407</b>
<b>Equipment:</b>	<b>Type: Electro Spec ES-X</b>	<b>S/N: 12764</b>	<b>Calibration Due: 10 Lb Cal lift</b>
			<b>Current Type: AC</b>

## Inspection Summary

**Comments:**

Black on white Magnetic Particle Inspection was conducted on the propane storage vessel D-2100D. Nozzles N6, N3B, N4B, N3, N10 and M1 were inspected. Also, two foot spot checks on every second circular seam were inspected in the 3, 6, and 9 o'clock positions, as well as any accessible tee joint.

At time of inspection, no relevant Indications were observed.

Foil strip Type 1 indicator (brass finish) used to test sensitivity.

Neil English  
CGSB: #11752

**Ink**

Manufacturer: Ardrex  
Type: 8031 Black Ink  
Solution: Prepared bath, Aerosol  
Batch:32111507

<b>Inspector Name:</b>	Neil English	<b>Signature:</b>	See field report	<b>Date:</b>	July-14-09
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End of Report

PROJECT INFORMATION		
PROJECT NO.	1214-08	
DATE	08-28-08	
SCALE	AS SHOWN	
REVISIONS		
NO.	DESCRIPTION	DATE
1	ISSUE FOR BIDDING	08-28-08
2	REVISED PER RFP	09-11-08
3	REVISED PER RFP	09-11-08
4	REVISED PER RFP	09-11-08
5	REVISED PER RFP	09-11-08
6	REVISED PER RFP	09-11-08
7	REVISED PER RFP	09-11-08
8	REVISED PER RFP	09-11-08
9	REVISED PER RFP	09-11-08
10	REVISED PER RFP	09-11-08
11	REVISED PER RFP	09-11-08
12	REVISED PER RFP	09-11-08
13	REVISED PER RFP	09-11-08
14	REVISED PER RFP	09-11-08
15	REVISED PER RFP	09-11-08
16	REVISED PER RFP	09-11-08
17	REVISED PER RFP	09-11-08
18	REVISED PER RFP	09-11-08
19	REVISED PER RFP	09-11-08
20	REVISED PER RFP	09-11-08

