Pressure Vessel Survey			
Location:	Point Tupper	**EM&I J Report No.:**	PT-D2105A-090317-BR-R1
Client Name:		**Client Ref No.:**	PT-11573617-001-D2105A
Client Rep.:		**Inspector Name:**	Barry Ritchie
WO No.:		**Inspection Date:**	March 17, 2009
SPO No.:		**System:**	Butane
Workscope No.:	PT-2008-VESSEL-EXT-04	**EM&I J Job No:**	EMJ0132.33
Tag No.:	D-2105A	**Equipment Description:**	Butane Storage Vessel D-2105A
Date of Last Inspection:	NA	**Previous Records Seen:**	NA
Drawing No.:	LA-B23-F-22-8060-01-Z4, 98-CA-399735-1C-5, 98-CA-399735-4C-0		

Inspection Summary

Item	Condition				Comments
External Ladders, Access and Support Structure	Good	Fair	Poor	NA	
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.	☒	☐	☐	☐	As per report D-2015C
2. If applicable, check vessel supports for signs of deterioration, settlement, deflection, and/or corrosion.	☒	☐	☐	☐	See Photos #1,2,3,4
3. If applicable, check coatings for signs of deterioration, rusts spots, cracks, blistering, and/or coating disbondment.	☒	☐	☐	☐	Traped moisture between concrete support and vessel
4. a) For horizontally mounted vessels, check for signs of trapped moisture, resulting in corrosion between cradle support and vessel shell.	☐	☐	☐	☐	
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.	☐	☐	☐	☒	
5. Check the grounding connection is correctly installed, with cable connections tight and ground wires in good condition.	☒	☐	☐	☐	Both in good condition
6. Check all bolted connections for any signs of corrosion or mechanical damage.	☒	☐	☐	☐	
7. If applicable, check the vessel sliding foot free to move and hold-down bolts are free.	☐	☐	☐	☒	
Vessel External Surfaces	Good	Fair	Poor	NA	
1. Check permanent identifying tags on vessel are legible and present the required information.	☒	☐	☐	☐	See Photos #7,8,9
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.	☒	☐	☐	☐	
3. If applicable, check bolted connections are in full contact with connected elements and connections for any signs of rust, corrosion or mechanical damage.	☒	☐	☐	☐	
4. If applicable, check insulation support bands and clips for signs of corrosion or breakage.	☐	☐	☐	☒	
5. Check all welded seams and connections for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.	☒	☐	☐	☐	
6) If applicable, check insulation type, condition for any insulation damage and ingress of water. Record insulation type.	☐	☐	☐	☒	
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.	☒	☐	☐	☐	See Photos #17-20
8. If applicable, check weep holes in reinforcement plates are not plugged.	☐	☐	☐	☒	
External Piping / Instrument Attachments	Good	Fair	Poor	NA	
1. If applicable, check vessel trim, such as gauges, sight glasses, valves and other appurtenances, show signs of deterioration, or missing components, etc.	☒	☐	☐	☐	
2. If applicable, check if the PSV on the vessel is in calibration. Record tag number of PSV and calibration date.	☐	☐	☐	☐	
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	☐	☐	☐	☐	

Inspection Summary

Item	Condition				Comments
coatings, etc. Specify extent and location.					
Vessel Internal Surfaces	Good	Fair	Poor	NA	**External Only**
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.	☐	☐	☐	☒	
2. Check all welded joints for any signs of deterioration, corrosion, cracking, pitting or other sign of failure. Specify.	☐	☐	☐	☒	
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.	☐	☐	☐	☒	
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.	☐	☐	☐	☒	
5. Where applicable, check vessel internal cladding for signs of bulging, buckling, cracks, holes, etc. If any, specify type, location and extent.	☐	☐	☐	☒	
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.	☐	☐	☐	☒	
7. If possible, check gasket seals on all flanges for signs of corrosion and/or mechanical damage.	☐	☐	☐	☒	
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.	☐	☐	☐	☒	
2. If applicable, check vessel's internals for signs of corrosion, distortion and deterioration, missing components etc.	☐	☐	☐	☒	
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.	☐	☐	☐	☒	

Detail of Findings

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

UT thickness readings were taken on areas where coating breakdown was noted. No areas of concern

ID Tag:
Certified By: Patterson Industries Limited
MAWP: 1275/-62 KPAG @ 65C
MDMT: -27C @ 1275/-62 KPAG
Serial No.: 98CA9735C1
Year Built: 1998
CRN: 9095.8

MAWP: 185/-9 PSIG @ 149F
MDMT: -16.6F @ 185/-9 PSIG
Serial No.: 98CA9735C1
Year Built: 1998
CRN: 9095.8

PSV Tag:
L&S Job: 09-1654-4
Date: January 14, 2009
Set Pressure: 1274 KPA
Capacity: 24890 SCFM
Model: JPVM 15A

Detail of Findings

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

Photo 1 – Photo taken of the North face of North vessel support, in good condition with small patches of coating breakdown

Photo 2 – South face of North vessel suport, in generally good condition, with patches of coating breakdown along flange connection to concrete

Photo 3 – South vessel support North face, in good condition with light patches of coating breakdown along flange connection to concrete. Photo taken facing North

Photo 4 –South vessel support South face, in good condition with very light patches of coating breakdown running along the bottom of the flange. Photo taken facing North

Detail of Findings

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

Photo 5 – Earth strap connection to North vessel supporting, in good condition

Photo 6 – Earth strap connection to South vessel support, in good condition

Photo 7 – Showing ID tags

Photo 8 – Showing ID tags

Detail of Findings

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

Photo 9 – Showing ID tags

Photo 10 – Nozzle N6, in good condition. Studs and nuts CAT III

Photo 11 – Nozzles N3B & N4B, showing light corrosion and coating breakdown. Studs and nuts CAT III

Photo 12 – Nozzle N2, showing light corrosion and coating breakdown. Studs and nuts CAT III

Detail of Findings

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

Photo 13 – Nozzle N5, showing coating breakdown and light corrosion. Studs and nuts CAT III

Photo 14 – Manhole, showing moderate coating breakdown. Studs and nuts CAT III

Photo 15 – Nozzle N1D with insulation

Photo 16 – General photo of dome, South end of vessel

Detail of Findings

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

Photo 17 – General photo taken of East side shell of vessel. Photo taken facing North

Photo 18 – North dome East side, water staining coming from light coating breakdown at vessel walkway support. Photo taken facing West

Photo 19 – General photo taken of North dome end

Photo 20 – General photo of West side shell, in good condition. Photo taken facing South

Detail of Findings

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

Photo 21 – Nozzles N3A , N4A , N8 & N1, very light corrosion and coating breakdown. Studs and nuts CAT III

Photo 22 – Nozzle N9 light coating breakdown. Studs and nuts CAT III

Photo 23 – General photo taken of upper East side shell. Photo taken facing North

Photo 24 – Isolated patches of coaying breakdown on upper South-East side of vessel. Photo taken from walkway at South end of vessel facing West. The largest patch being approximately 90mm by 90mm

Detail of Findings

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

Photo 25 – General photo taken of the top of the vessel. Photo taken facing North

Photo 26 – General photo taken showing top upper West side shell. Photo taken facing South

Photo 27 – Nozzle N7 with light coating breakdown. Studs and nuts CAT III

Photo 28 – PSV calibration tag

Detail of Findings

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

	
Photo 29 – General photo showing top East side shell. Photo taken facing South	Photo 30 – General veiw along top section of vessel. Photo taken facing South

List of Attachments

Attachment 1: PT-D2105A-090314-VE-UT (Page 1 to 2)
Attachment 2: PT-D2105A-090522-MR-UT (Page 1 to 5)
Attachment 3: 98-CA-399735-1C-5

End of Report

INSPECTION REPORT

EM&I Jacques Ltd.

Ultrasonic Inspection Survey for Vessel Inspection			
Location:	Point Tupper	**EM&I J Report No.:**	PT-D2105A-090314-VR-UT
Client Name:	Exxon Mobil Sable	**Client Ref No.:**	PT-11573617-001-D2105A
Client Rep.:	Dale Groves	**Inspector Name:**	Victor Ritchie
WO No.:	11573617	**Inspection Date:**	March 14, 2009
SPO No.:	4501869140	**Inspection Time:**	Various
Workscope No.:	PT-2008-VESSEL-EXT-04	**System:**	Butane
Previous Report No.	NA	**EM&I J Job No:**	EMJ0132.33
Ref. Drawing No.:	LA-B23-F-22-8060-01-Z4, 98-CA-399735-1C-5, 98-CA-399735-4C-0		
Technician Certifications:	PCN UT 2	**Certification Expiry Date:**	January 29, 2014
Inspection Code:	NA	**Inspection Procedure:**	EM&I
Item Inspected:	D-2105A	**Material (Incl. Vol.):**	CS
Surface Condition:	As coated	**Surface Temp:**	Ambient

Instrument	**Type:** Epoch LTC	**Equipment S/N:** 090100701	**Cal Due Date:** January 24, 2010
Instrument Settings	**Reference Level:** 80fsh	**Gain:** 50db	**Reject Settings:** NA
Search Unit Cables	**Type:**	**Length: 5'**	**Transfer Value:**

Calibration Block:	Step wedge 2.5-12.5mm	**Calibration Block S/N:**	CB2
Simulation Block:	NA	**Couplant:**	Ultragel
Computerized Program:	NA		

Transducer Mfg:	Type:	Model No.:	Angle:	Frequency:	Size:
Panametrics	dual element	D790SM	0	5MHz	10mm

Inspection Summary

Restricted Access?	☐ Yes	☒ No	Comments:

Comments:

UT measurments were taken using side wall echo technique and readings were recorded.
This does not constitute a UT survey.
See below for locations and readings. All readings are in millimeters.

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
Shell Bottom	TP1	132"	20.6	21.4	N/A
Shell Bottom	TP2	132"	20.6	21.8	N/A
Shell Bottom	TP3	132"	20.6	21.4	N/A
Shell Bottom	TP4	132"	20.6	21.8	N/A
Shell Bottom	TP5	132"	20.6	21.4	N/A
Shell Bottom	TP6	132"	20.6	21.6	N/A
Shell Bottom	TP7	132"	20.6	21.9	N/A
Shell Bottom	TP8	132"	20.6	21.6	N/A
Shell Bottom	TP9	132"	20.6	21.4	N/A
Shell Bottom	TP10	132"	20.6	21.5	N/A
Shell Bottom	TP11	132"	20.6	21.4	N/A
Shell Bottom	TP12	132"	20.6	21.6	N/A
Shell Bottom	TP13	132"	20.6	21.5	N/A
Shell Bottom	TP14	132"	20.6	21.4	N/A
Shell Bottom	TP15	132"	20.6	21.6	N/A
Shell Bottom	TP16	132"	20.6	21.6	N/A
Shell Bottom	TP17	132"	20.6	21.5	N/A
Shell Bottom	TP18	132"	20.6	21.8	N/A
Shell Bottom	TP19	132"	20.6	21.9	N/A
Shell Bottom	TP20	132"	20.6	22.0	N/A
Shell Bottom	TP21	132"	20.6	22.0	N/A
Shell Bottom	TP22	132"	20.6	22.0	N/A
Shell Bottom	TP23	132"	20.6	22.0	N/A
Shell Bottom	TP24	132"	20.6	22.0	N/A
Shell Bottom	TP25	132"	20.6	22.0	N/A
Shell Bottom	TP26	132"	20.6	21.9	N/A
Shell Bottom	TP27	132"	20.6	22.1	N/A
Shell Bottom	TP28	132"	20.6	22.0	N/A
Shell Bottom	TP28	132"	20.6	21.7	N/A
Shell Bottom	TP29	132"	20.6	21.6	N/A
Shell Bottom	TP30	132"	20.6	21.7	N/A
Shell Bottom	TP32	132"	20.6	21.5	N/A
Shell Bottom	TP33	132"	20.6	21.2	N/A
Shell Bottom	TP34	132"	20.6	22.1	N/A
Shell Bottom	TP35	132"	20.6	21.6	N/A
Shell Bottom	TP36	132"	20.6	21.9	N/A

End of Report

INSPECTION REPORT

EM&I Jacques Ltd.

Ultrasonic Inspection Survey for Vessel Inspection			
Location:	Point Tupper	**EM&I J Report No.:**	PT-D2105A-090522-MR-UT
Client Name:	Exxon Mobil Sable	**Client Ref No.:**	PT-11573617-001-D2105A
Client Rep.:	Dale Groves	**Inspector Name:**	Michael Rotondella
WO No.:	11573617	**Inspection Date:**	May 22, 2009
SPO No.:	4501869140	**Inspection Time:**	Various
Workscope No.:	PT-2008-VESSEL-EXT-04	**System:**	Butane
Previous Report No.	NA	**EM&I J Job No:**	EMJ0132.33
Ref. Drawing No.:	LA-B23-F-22-8060-01-Z4, 98-CA-399735-1C-5, 98-CA-399735-4C-0		
Technician Certifications:	PCN UT 2 3.1, 3.2, 3.8, 3.9	**Certification Expiry Date:**	October 24, 2010
Inspection Code:	NA	**Inspection Procedure:**	EM&I
Item Inspected:	D2105A	**Material (Incl. Vol.):**	C/S
Surface Condition:	As coated	**Surface Temp:**	Ambient

Instrument	**Type:** Epoch LTC	**Equipment S/N:** 090108403	**Cal Due Date:** March 11, 2010
Instrument Settings	**Reference Level:** 80fsh	**Gain:** 60db	**Reject Settings:** NA
Search Unit Cables	**Type:**	**Length: 5'**	**Transfer Value:**

Calibration Block:	Step wedge 2.5-12.5mm	**Calibration Block S/N:**	09-1652
Simulation Block:	NA	**Couplant:**	Ultragel II
Computerized Program:	NA		

Transducer Mfg:	Type:	Model No.:	Angle:	Frequency:	Size:
Panametrics	Dual Element	D790SM	0	5MHz	10mm

Inspection Summary

Restricted Access?	☐ Yes	☒ No	**Comments:** Rope Access Required

Comments:

UT spot readings were taken and the readings were recorded.
See below and Attachment 3 for locations and readings. All readings are in millimeters.

Readings on North head were taken facing South and South head readings were taken facing North.

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2105A Bottom Shell	Plate 1	132"	20.6	20.5	N/A
D2105A Bottom Shell	Plate 2	132"	20.6	20.5	N/A
D2105A Bottom Shell	Plate 3	132"	20.6	20.5	N/A
D2105A Bottom Shell	Plate 4	132"	20.6	20.7	N/A
D2105A Bottom Shell	Plate 5	132"	20.6	20.6	N/A
D2105A Bottom Shell	Plate 6	132"	20.6	20.7	N/A
D2105A Bottom Shell	Plate 7	132"	20.6	20.6	N/A
D2105A Bottom Shell	Plate 8	132"	20.6	20.9	N/A
D2105A Bottom Shell	Plate 9	132"	20.6	20.8	N/A
D2105A Bottom Shell	Plate 10	132"	20.6	20.6	N/A
D2105A Bottom Shell	Plate 11	132"	20.6	20.7	N/A
D2105A Bottom Shell	Plate 12	132"	20.6	21.0	N/A
D2105A Top Shell	Plate 1	132"	20.6	20.6	N/A
D2105A Top Shell	Plate 2	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 3	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 4	132"	20.6	20.8	N/A
D2105A Top Shell	Plate 5	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 6	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 7	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 8	132"	20.6	20.9	N/A
D2105A Top Shell	Plate 9	132"	20.6	20.7	N/A
D2105A Top Shell	Plate 10	132"	20.6	20.6	N/A
D2105A Top Shell	Plate 11	132"	20.6	20.6	N/A
D2105A Top Shell	Plate 12	132"	20.6	20.7	N/A
D2105A North Head	12 O'clock	132"	19.8	21.9	N/A
D2105A North Head	3 O'clock	132"	19.8	21.9	N/A
D2105A North Head	6 O'clock	132"	19.8	21.9	N/A
D2105A North Head	9 O'clock	132"	19.8	22.1	N/A
D2105A North Head	Centre	132"	19.8	21.6	N/A
D2105A South Head	12 O'clock	132"	19.8	21.7	N/A
D2105A South Head	3 O'clock	132"	19.8	21.8	N/A
D2105A South Head	6 O'clock	132"	19.8	21.5	N/A
D2105A South Head	9 O'clock	132"	19.8	21.7	N/A
D2105A South Head	Centre	132"	19.8	21.4	N/A

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2105A East Shell	Plate 1	132"	20.6	20.8	N/A
D2105A East Shell	Plate 2	132"	20.6	20.8	N/A
D2105A East Shell	Plate 3	132"	20.6	20.7	N/A
D2105A East Shell	Plate 4	132"	20.6	20.8	N/A
D2105A East Shell	Plate 5	132"	20.6	20.7	N/A
D2105A East Shell	Plate 6	132"	20.6	20.7	N/A
D2105A East Shell	Plate 7	132"	20.6	20.7	N/A
D2105A East Shell	Plate 8	132"	20.6	20.7	N/A
D2105A East Shell	Plate 9	132"	20.6	20.7	N/A
D2105A East Shell	Plate 10	132"	20.6	20.7	N/A
D2105A East Shell	Plate 11	132"	20.6	20.7	N/A
D2105A East Shell	Plate 12	132"	20.6	20.8	N/A
D2105A West Shell	Plate 1	132"	20.6	20.7	N/A
D2105A West Shell	Plate 2	132"	20.6	20.7	N/A
D2105A West Shell	Plate 3	132"	20.6	20.8	N/A
D2105A West Shell	Plate 4	132"	20.6	20.7	N/A
D2105A West Shell	Plate 5	132"	20.6	20.7	N/A
D2105A West Shell	Plate 6	132"	20.6	20.8	N/A
D2105A West Shell	Plate 7	132"	20.6	20.7	N/A
D2105A West Shell	Plate 8	132"	20.6	20.7	N/A
D2105A West Shell	Plate 9	132"	20.6	20.7	N/A
D2105A West Shell	Plate 10	132"	20.6	20.8	N/A
D2105A West Shell	Plate 11	132"	20.6	20.8	N/A
D2105A West Shell	Plate 12	132"	20.6	20.7	N/A
D2105A N1	North	4"	33.15	33.2	N/A
D2105A N1	East	4"	33.15	33.0	N/A
D2105A N1	South	4"	33.15	32.9	N/A
D2105A N1	West	4'	33.15	33.1	N/A
D2105A N2	North	8"	22.22	24.0	N/A
D2105A N2	East	8"	22.22	24.0	N/A
D2105A N2	South	8"	22.22	23.8	N/A
D2105A N2	West	8"	22.22	24.0	N/A
D2105A N3A	North	3"	31.43	31.5	N/A
D2105A N3A	East	3"	31.43	31.7	N/A
D2105A N3A	South	3"	31.43	31.6	N/A
D2105A N3A	West	3"	31.43	31.5	N/A

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2105A N3B	North	3"	31.43	31.9	N/A
D2105A N3B	East	3"	31.43	31.9	N/A
D2105A N3B	South	3"	31.43	31.9	N/A
D2105A N3B	West	3"	31.43	32.0	N/A
D2105A N4A	North	2"	16.67	17.3	N/A
D2105A N4A	East	2"	16.67	17.2	N/A
D2105A N4A	South	2"	16.67	17.3	N/A
D2105A N4A	West	2"	16.67	17.2	N/A
D2105A N4B	North	2"	16.67	17.4	N/A
D2105A N4B	East	2"	16.67	17.3	N/A
D2105A N4B	South	2"	16.67	17.4	N/A
D2105A N4B	West	2"	16.67	17.4	N/A
D2105A N5	North	3"	31.43	31.4	N/A
D2105A N5	East	3"	31.43	31.5	N/A
D2105A N5	South	3"	31.43	31.4	N/A
D2105A N5	West	3"	31.43	31.4	N/A
D2105A N6	North	2"	25.40	25.4	N/A
D2105A N6	East	2"	25.40	25.4	N/A
D2105A N6	South	2"	25.40	25.4	N/A
D2105A N6	West	2"	25.40	25.3	N/A
D2105A N7	North	4"	33.15	32.9	N/A
D2105A N7	East	4"	33.15	32.9	N/A
D2105A N7	South	4"	33.15	33.1	N/A
D2105A N7	West	4"	33.15	33.0	N/A
D2105A N8	North	6"	31.61	31.9	N/A
D2105A N8	East	6"	31.61	31.9	N/A
D2105A N8	South	6"	31.61	31.9	N/A
D2105A N8	West	6"	31.61	32.0	N/A
D2105A N9	North	2"	16.67	17.1	N/A
D2105A N9	East	2"	16.67	17.2	N/A
D2105A N9	South	2"	16.67	17.1	N/A
D2105A N9	West	2"	16.67	17.3	N/A
D2105A N10	North	3"	31.43	32.0	N/A
D2105A N10	East	3"	31.43	32.0	N/A
D2105A N10	South	3"	31.43	32.1	N/A
D2105A N10	West	3"	31.43	31.9	N/A

INSPECTION REPORT

EM&I Jacques Ltd.

Inspection Summary

Item Identification	Test Point	Diameter (inches)	Nominal Wall Thickness (mm)	Minimum Wall Thickness (mm)	Average Wall Thickness (mm)
D2105A M	North	24"	127	128	N/A
D2105A M	East	24"	127	128	N/A
D2105A M	South	24"	127	127	N/A
D2105A M	West	24"	127	128	N/A

End of Report

D2105 A

N = 31.5
E = 31.7
S = 31.6
W = 31.5

N = 33.2
E = 33.0
S = 32.9
W = 33.1

N = 31.9
E = 31.9
S = 31.9
W = 32.0

N = 17.3
E = 17.2
S = 17.3
W = 17.2

N = 17.1
E = 17.2
S = 17.1
W = 17.3

N = 33.8
E = 33.7
S = 33.7
W = 33.7

N = 128
E = 128
S = 127
W = 128

N = 31.4
E = 31.5
S = 31.4
W = 31.4

N = 32.0
E = 32.0
S = 32.1
W = 31.9

N = 17.2
E = 17.2
S = 17.2
W = 17.2

N = 24.0
E = 24.0
S = 23.8
W = 24.0

N = 31.9
E = 31.9
S = 31.9
W = 32.0

N = 17.4
E = 17.3
S = 17.3
W = 17.3

12 = 21.7
3 = 21.8
6 = 21.5
9 = 21.7
C = 21.4

B = 20.5
W = 20.7
T = 20.6
E = 20.8

B = 20.5
W = 20.7
T = 20.7
E = 20.8

B = 20.5
W = 20.8
T = 20.7
E = 20.7

B = 20.7
W = 20.7
T = 20.8
E = 20.8

B = 20.6
W = 20.7
T = 20.7
E = 20.7

B = 20.7
W = 20.8
T = 20.7
E = 20.7

B = 20.6
W = 20.7
T = 20.7
E = 20.7

B = 20.9
W = 20.7
T = 20.9
E = 20.7

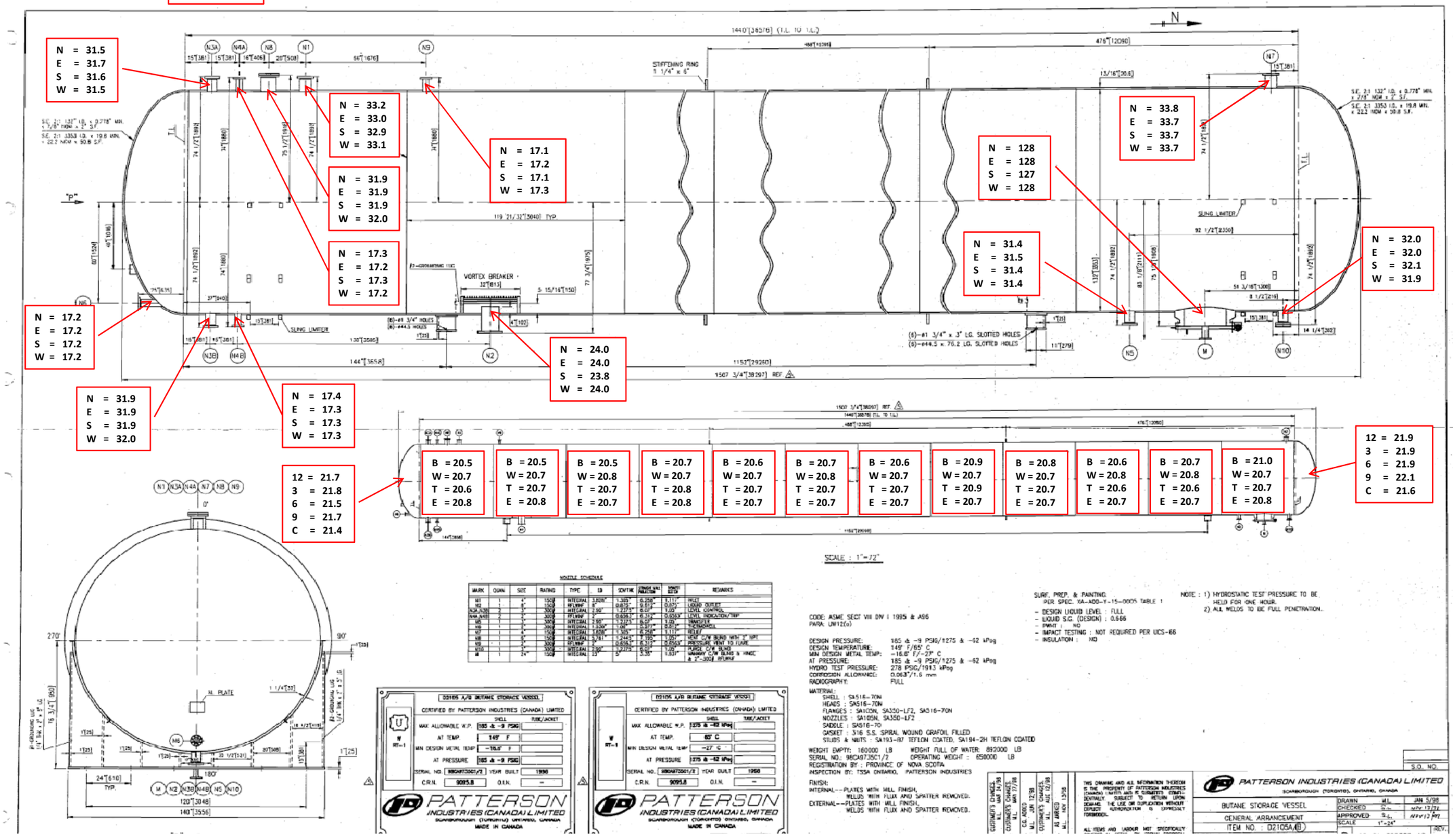
B = 20.8
W = 20.7
T = 20.7
E = 20.7

B = 20.6
W = 20.8
T = 20.6
E = 20.7

B = 20.7
W = 20.8
T = 20.6
E = 20.7

B = 21.0
W = 20.7
T = 20.7
E = 20.8

12 = 21.9
3 = 21.9
6 = 21.9
9 = 22.1
C = 21.6



NOZZLE SCHEDULE

MARK	QUAN	SIZE	RATING	TYPE	I.D.	SCHEDULE	REMARKS
N1	1	4"	150#	INTEGRAL	3.826"	1.305"	HOLD
N2	1	4"	150#	REPAD	4"	0.812"	LIQUID OUTLET
N3A,N3B	2	3"	300#	INTEGRAL	2.90"	1.277"	LEVEL CONTROL
N4A,N4B	2	3"	300#	PIPING	3"	0.876"	LEVEL INDICATION/TEMP
N5	1	3"	300#	INTEGRAL	2.90"	1.277"	TRANSFER
N6	1	3"	300#	INTEGRAL	2.90"	1.00"	T.S.O.(SMALL)
N7	1	4"	150#	INTEGRAL	3.826"	1.305"	RELIEF
N8	1	4"	150#	INTEGRAL	5.761"	1.2445"	VENT C/W BLIND WITH 4" NPT
N9	1	4"	300#	REPAD	4"	0.636"	PRESSURE VENT TO FLARE
N10	1	3"	300#	INTEGRAL	2.90"	1.277"	PURGE C/W BLIND
M	1	24"	150#	INTEGRAL	23"	5"	MANWAY C/W BLIND & HINGE & 2"-300# RETAINER

D2105 A/B BUTANE STORAGE VESSEL
CERTIFIED BY PATTERSON INDUSTRIES (CANADA) LIMITED

	SHELL	TUBE/JACKET
MAX. ALLOWABLE W.P.	185 & -9 PSIG	
AT TEMP.	149° F	
MIN. DESIGN METAL TEMP.	-16.6° F	
AT PRESSURE	185 & -9 PSIG	
SERIAL NO.	98CA873501/2	YEAR BUILT 1998
C.R.N.	9095.8	O.I.N. —

PATTERSON INDUSTRIES (CANADA) LIMITED
SCARBOROUGH (TORONTO) ONTARIO, CANADA
MADE IN CANADA

D2105 A/B BUTANE STORAGE VESSEL
CERTIFIED BY PATTERSON INDUSTRIES (CANADA) LIMITED

	SHELL	TUBE/JACKET
MAX. ALLOWABLE W.P.	1275 & -62 kPag	
AT TEMP.	65° C	
MIN. DESIGN METAL TEMP.	-27° C	
AT PRESSURE	1275 & -62 kPag	
SERIAL NO.	98CA873501/2	YEAR BUILT 1998
C.R.N.	9095.8	O.I.N. —

PATTERSON INDUSTRIES (CANADA) LIMITED
SCARBOROUGH (TORONTO) ONTARIO, CANADA
MADE IN CANADA

CODE: ASME SECT VIII DIV 1 1995 & A96
PARA: UW12(a)

DESIGN PRESSURE:	185 & -9 PSIG/1275 & -62 kPag
DESIGN TEMPERATURE:	149° F/65° C
MIN DESIGN METAL TEMP:	-16.6° F/-27° C
AT PRESSURE:	185 & -9 PSIG/1275 & -62 kPag
HYDRO TEST PRESSURE:	278 PSIG/1913 kPag
CORROSION ALLOWANCE:	0.063"/1.6 mm
RADIOGRAPHY:	FULL

MATERIAL:
SHELL : SA516-70N
HEADS : SA516-70N
FLANGES : SA105N, SA350-LF2, SA516-70N
NOZZLES : SA105N, SA350-LF2
SADDLE : SA516-70
GASKET : 316 S.S. SPIRAL WOUND GRAFOIL FILLED
STUDS & NUTS : SA193-B7 TEFLON COATED, SA194-2H TEFLON COATED

WEIGHT EMPTY: 160000 LB WEIGHT FULL OF WATER: 892000 LB
SERIAL NO.: 98CA873501/2 OPERATING WEIGHT : 650000 LB
REGISTRATION BY : PROVINCE OF NOVA SCOTIA
INSPECTION BY: TSSA ONTARIO, PATTERSON INDUSTRIES

FINISH:
INTERNAL--PLATES WITH MILL FINISH, WELDS WITH FLUX AND SPATTER REMOVED.
EXTERNAL--PLATES WITH MILL FINISH, WELDS WITH FLUX AND SPATTER REMOVED.

SURF. PREP. & PAINTING:
PER SPEC. XA-A00-Y-15-0005 TABLE 1
- DESIGN LIQUID LEVEL : FULL
- LIQUID S.G. (DESIGN) : 0.666
- SWAT : NO
- IMPACT TESTING : NOT REQUIRED PER UCS-66
- INSULATION : NO

NOTE : 1) HYDROSTATIC TEST PRESSURE TO BE HELD FOR ONE HOUR.
2) ALL WELDS TO BE FULL PENETRATION.

SCALE : 1"=72"

PATTERSON INDUSTRIES (CANADA) LIMITED
SCARBOROUGH (TORONTO), ONTARIO, CANADA

BUTANE STORAGE VESSEL
GENERAL ARRANGEMENT
ITEM NO. : D2105A/B

DRAWN M.L. JAN 5/98
CHECKED S.L. NOV 17/11
APPROVED S.L. NOV 17/11
SCALE 1"=24"

S.O. NO.

CUSTOMER'S CHANGES M.L. MAR 24/98
CUSTOMER'S CHANGES M.L. JAN 12/99
C.O. ADDED M.L. JAN 12/99
CUSTOMER'S CHANGES M.L. AUG 12/99
AS BUILT M.L. NOV 13/98

THIS DRAWING AND ALL INFORMATION THEREON IS THE PROPERTY OF PATTERSON INDUSTRIES (CANADA) LIMITED AND IS SUBMITTED STRICTLY CONFIDENTIALLY. SUBJECT TO RETURN UPON DEMAND. THE USE OR DUPLICATION WITHOUT EXPRESS AUTHORIZATION IS EXPRESSLY FORBIDDEN.

ALL ITEMS AND LABOUR NOT SPECIFICALLY