



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **91517-CA-41**  
 Inspect Date: 04/20/2011  
 Page: 1 of 13  
 Insp. Co. Job #: 91517

**Criticality Designation:**       **Green**

Insp. Comp: Matrix\_Inspection District: St Albert - South Field: Rimbey 1477  
 Location: 06-29-045-01W5 Unit / Skid #: \_\_\_\_\_ LSD: 06-29-045-01W5  
 Jurisdiction #: A2704100 Equip Tag #: \_\_\_\_\_ Serial #: FH-48-7-1-1746A  
 CRN #: K3423.2 Nat'l Bd #: \_\_\_\_\_ Year Built: 1991  
 Manufacturer: OPSCO Equipment Description: Other: INLET SEPARATOR  
 Status: In Service - Equip. Type: Vessel: Separator Service: Sweet  
 MAWP Shell: 720 Psi @ 100 °F Volume: \_\_\_\_\_ Code Stamp:  Y  N  
 MAWP Tube: \_\_\_\_\_ Psi @ \_\_\_\_\_ °F Height/Length: \_\_\_\_\_ in. Insulated:  Y  N  
 MDMT: -20 °F RT: RT-2 Size/Diameter.: \_\_\_\_\_ in. PWHT:  Y  N  
 Support Saddle Vessel on Original CNRL Inventory List:  Y  N Manway:  Y  N  
 C.A.: 0.063 in. 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:

New information added

**PSV Static Data**

PSV -1 Tag #: PSV2704100 Serial #: 61038 CRN: 02176.52  
 Model #: JOS35A Capacity: 18456 SCFM Set Pressure: 720 psi  
 Manufacturer: Crosby Service Company: \_\_\_\_\_  
 Inlet Size & Type: 2.50 in. - Flanged Last Service Date: 6/12/2007  
 Outlet Size & Type: 4.00 in. - Flanged Block Valve: N/A - -  
 Carseal Intact: Yes Code Stamp: Yes  
 Shell Side / Tube Side: Shell Side Out for Service During Insp.: \_\_\_\_\_ Location of PSV: On Vessel

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**

PSV appears to be plumbed properly and is set to adequately protect the vessel



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **91517-CA-41**  
 Inspect Date: 04/20/2011  
 Page: 2 of 13  
 Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**External Inspection Results – VE External Inspection Performed**

Item	N/A	Condition	Comment (Check Status Bar or Press F1 for Help)	NCR	Action Item Integrity	Action Item Maintenance
Nameplate	<input type="checkbox"/>	Accept	Clean and legible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation and Supports	<input type="checkbox"/>	Accept	No deformation or deflection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anchor Bolts	<input type="checkbox"/>	Accept	No corrosion or damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grounding	<input type="checkbox"/>	Accept	Ground through structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation Condition	<input checked="" type="checkbox"/>		The vessel is not insulated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSV	<input type="checkbox"/>	Accept	See PSV comments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shell Heads & Nozzles	<input type="checkbox"/>	Accept	Mechanical damage from adjacent piping support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal Surfaces (Paint)	<input type="checkbox"/>	Accept	No chips or flakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aux Equipment	<input type="checkbox"/>	Accept	In operational condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cathodic Protection	<input checked="" type="checkbox"/>		None noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alignment	<input type="checkbox"/>	Accept	Appears straight and level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flange Connections	<input type="checkbox"/>	Accept	Engaged bolting, no corrosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pressure Gauge	<input type="checkbox"/>	Accept	Clear and readable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature Gauge	<input type="checkbox"/>	Accept	Clear and readable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sight Glass	<input type="checkbox"/>	Accept	Clear and readable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ladder / Platform	<input checked="" type="checkbox"/>		None associated with this vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leaks	<input type="checkbox"/>	No	None noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping from Vessel	<input type="checkbox"/>	Accept	Supported, no corrosion			
Previous UT Survey	<input type="checkbox"/>		No access to historical data			UT Company:

**External Visual Observations**

An external and internal visual and UT corrosion survey inspection was performed on A2704100, inlet separator at the 06-29 site to help determine suitability for continued service.

The horizontal vessel has saddle style supports. The supports are bolted to the structure. No deformation or deflection was noted. The paint was well adhered on the supports and were free of corrosion.

The data plate was firmly affixed to the shell and was both clean and readable

The heads, shell and nozzles are painted. The paint was found in good condition with no flakes or chips and all surfaces were free of external corrosion and pitting

All flange bolting was fully engaged and no corrosion or pitting was noted.

The pressure gauge was clear and readable.

The temp. gauges and sight glasses were clear and readable

All piping was noted to be well supported, painted and free of extensive corrosion with no leaks found. In multiple areas, supports for piping and instrumentation were installed directly in contact with the vessel. In these areas, the paint has been rubbed off and light surface corrosion is evident.

UT corrosion survey was performed on selected areas of the shell, heads, nozzles and piping at suspect locations on the heads, shell and boot. All readings recorded were found to be at or above nominal thickness - corrosion allowance. Evidence of previously performed surveys was noted but no access to previous UT data was available at the time of inspection.

Overall external of this vessel was in good condition

**Recommendations:**

Move the piping supports so they do not contact the vessel



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **91517-CA-41**  
 Inspect Date: 04/20/2011  
 Page: 3 of 13  
 Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

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



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **91517-CA-41**  
 Inspect Date: 04/20/2011  
 Page: 4 of 13  
 Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**Firetube Static Data Vessel Not Equiped with Firetube**

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



PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT

Report #: **91517-CA-41**  
Inspect Date: 04/20/2011  
Page: 5 of 13  
Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**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):**

Vessel is clean, straight and level with minor mechanical damage from adjacent supports

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

Move the piping supports so they do not contact the vessel

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

None

**Additional Visual Observations**

None

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

None



PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT

Report #: 91517-CA-41  
Inspect Date: 04/20/2011  
Page: 6 of 13  
Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**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

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



PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT

Report #: **91517-CA-41**  
Inspect Date: 04/20/2011  
Page: 7 of 13  
Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**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

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



**PRESSURE VESSEL  
VISUAL INSPECTION  
REPORT**

Report #: **91517-CA-41**  
 Inspect Date: 04/20/2011  
 Page: 8 of 13  
 Insp. Co. Job #: 91517

Insp. Company: Matrix Inspection LSD: 06-29-045-01W5 Jurisdiction #: A2704100

**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? : **Yes**
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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> Party In-Service Pressure Vessel Inspector.*

**Criticality Designation**



**Green**

Vehicle #: \_\_\_\_\_ Kms: \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 Time In: 00:00 Time Out: 00:00 Hrs \_\_\_\_\_  
 Personnel: \_\_\_\_\_  
 Billing Info: \_\_\_\_\_

Inspector (Name): Chris Auld PESL: IBPV 206  
 Inspector (Signature): \_\_\_\_\_  
Inspector Signature  
 API: 510-34022  
 CNRL Coordinator (Name): \_\_\_\_\_  
 CNRL Coordinator (Signature): \_\_\_\_\_  
Coordinator Signature  
 CNRL Chief Inspector (Signature): \_\_\_\_\_  
06/30/2010 08:43:20 am  
 (I am in full agreement with report contents)  
Chief Inspector Signature  
06/30/2010 08:43:20 am  
 (I am in full agreement with report contents)

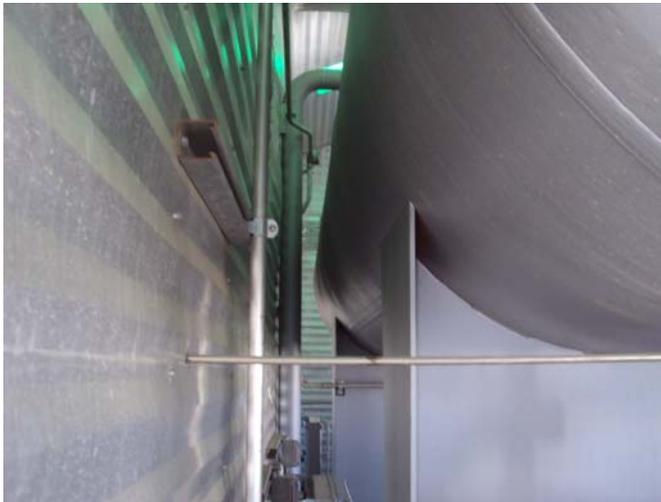
**Equipment Photographs:**



**01-DATA PLATE**



**02-VESSEL OVERVIEW**



**03-BACK SIDE OF VESSEL AND SUPPORT**



**04-SADDLE SUPPORT**



05-LEVEL GAUGE



06-FLANGED CONNECTION



07-MECHANICAL DAMAGE



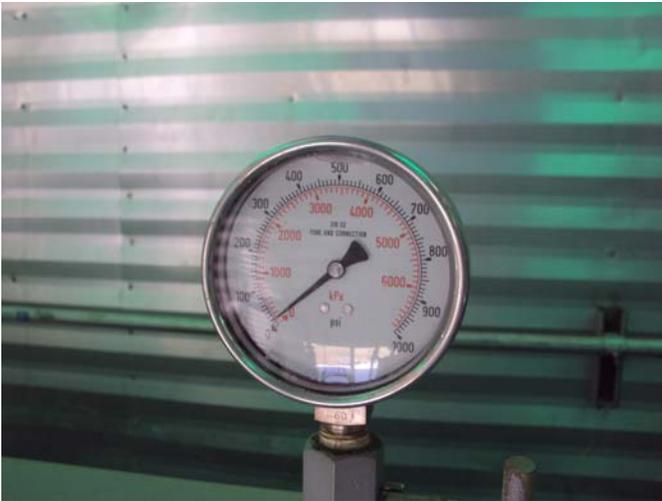
08-BOOT



09-BOOT DRAIN



10-TEMP GAUGE



11-PRESSURE GAUGE



12-MECHANICAL DAMAGE FROM SUPPORT



13-MECHANICAL DAMAGE FROM SUPPORT 2



14-MECHANICAL DAMAGE FROM SUPPORT 3



15-MECHANICAL DAMAGE FROM SUPPORT 4



16-PSV



17-PSV DATA PLATE



18-PSV SERVICE TAG