



111, 4808 - 87 Street, Edmonton, Alberta T6E 5W3  
Phone: (780) 469-2401 Fax: (780) 468-2422

Report No: TP 000480

Client	Harvest Operations Corporation	Inspection Date	Mar 20, 2008		
Prov. Reg. #	AB 3055474	Inspection Type	VE / UT		
Equipment Type	FWKO	LSD	AB 12-15-040-08W4		
Tag/Equip.	V-130	Location	Amisk		
Status	In Service	Area	Hardisty East		
Manufacturer	PROCESS INDUSTRIES INC.	Year Built	1994		
Serial Number	94-C2883-3000	Service	Sour		
CRN #	M6442.2	Manway	None		
Comp/Unit Id		Coating	No		
Nat.Board #		Owned By	Harvest Operations Corp.		
Interim Insp'n		Interim Type			
Next Inspection	2009	Next Insp Type	VI / VE / UT / MT		
Length	480 in	Height			
Volume		RT	1	HT	No
Job No.	08-0178	Client Reference			
Foreman	Darren Olofson				
ABSA	Plant: H    Vessel: K    Process: W    Special: B	ASME	Sec. VIII div. 1		
History Log	AB-10 submitted April 6, 2009 - Vessel owned by Harvest				

<b>Component</b>	Vessel Shell				
<b>MAWP</b>	100.0 PSI @ 140 °F		<b>MDMT</b>	-20 °F @ 100.0 PSI	
<b>Material</b>	SA-516-70		<b>Material Thickness</b>	0.375 in	
<b>Diameter</b>	144 in		<b>Length</b>		
<b>Corrosion Allowance</b>	0 in				



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<b>Valve Tag No</b>	PSV130	<b>Relief Type</b>	Pressure Safety Valve
<b>Manufacturer</b>	Farris	<b>Set Pressure</b>	100 PSI
<b>Serial Number</b>	CE40565A14	<b>Capacity</b>	3186 USGPM
<b>Model</b>	26GA10L12056SP	<b>Last Service</b>	Jun 14, 2006
<b>CRN</b>	OG2369.5C	<b>Next Service</b>	2008
<b>Service Co.</b>	Bee Gee Valve	<b>Service Interval</b>	24 Months
<b>Service Co. Tag</b>		<b>Inlet Size</b>	6 in
<b>ASME Stamp</b>	UV	<b>Outlet Size</b>	8 in
<b>NB Stamp</b>	YES	<b>Connection</b>	Flanged
<b>Relief Dest.</b>	To Close Drain Header	<b>Valve Loc.</b>	On Piping
<b>Comments</b>			

<b>Component</b>	Heads of Vessel		
<b>Material</b>	SA-516-70	<b>Material Thickness</b>	0.43 in
<b>Corrosion Allowance</b>	0 in		

### **Building Observations**

The building is generally in good condition and well supported. The floor was clean and was checker plate steel. The building is well lit and the door functions well. There were no combustibles in the building. There was generally good access to the equipment in the building.

### **Piping Observations**

The attached piping was generally in good condition. There is no damage, distortion or stress evident on piping. The piping was painted and the paint was in good condition. There was no significant surface corrosion on the piping. The piping was well supported. The piping was threaded and there were no visible leaks at any of the joints. Flow direction was not indicated.

### **PSV Observations**

The PSV was attached to the shell of the vessel and was outside the building. The PSV was securely attached to the piping/nozzle and in good condition. The drain line was through the building wall and provided positive drainage to the valve. There was an extra support bracket attached to the discharge line. The vent size was adequate. The valve was mounted in the vertical position. There was no access to the PSV.



### External Observations

The nameplate was legible and securely mounted to the vessel. The vessel was horizontal and mounted on two saddles that were bolted to the floor. The mounting bolts were in good condition. The vessel had flanged and threaded connections. There was no evidence of leaks at the piping connections. The studs and nuts were in good condition. The bottom drain lines had isolation kits on them. The bolting was not long enough for the addition of these isolation kits and therefore these were short bolted. The gauges were in good condition. The anode nozzles, blind flanges and anode wires were in good condition. There were no visible leaks at any of the vessel nozzles. The vessel was approximately 50% outside the building. The vessel was insulated and clad outside the building and the cladding was in good condition throughout the vessel. The vessel was painted inside the building and the paint was in good condition throughout the vessel.

Figure: 1



North Head

Figure: 2



South Head

Figure: 3



Shell

Figure: 4



Bottom Drains - Short Bolting



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**UT1 Observations**

Ultrasonic thickness measurements were performed as follows.

Top Shell (south course) - 0.417 to 0.425 inches  
Top Shell (2nd course) - 0.382 to 0.423 inches  
Side Shell (south course) - 0.413 to 0.402 inches  
Side Shell (2nd course) - 0.402 to 0.429 inches  
Side Shell (3rd course) - 0.403 to 0.425 inches  
Side Shell (north course) - 0.402 to 0.408 inches  
Bottom Shell (south course) - 0.402 to 0.408 inches  
Bottom Shell (2nd course) - 0.410 to 0.431 inches  
Bottom Shell (3rd course) - 0.404 to 0.426 inches  
Bottom Shell (north course) - 0.394 to 0.421 inches

The measured thicknesses were found to be acceptable.

**General Observations****External**

PSV was removed for service by Bee Gee. The vessel was opened and cleaned for inspection. The west half of the shell was located inside a building, the rest of the vessel was outside the building. The shell inside the building was painted. The paint had a few small scratches and product runs around the instrumentation piping. The attached gauges were in good condition. Attached piping was painted a designated color for the service. The piping appeared to be in good condition and securely attached to the vessel and the piping supports. The bottom shell water drain nozzles have been replaced and stainless steel SA182 316L elbows have been attached using an isolation kit. No indication of cracking or corrosion on nozzles or elbows. The studs used to connect the stainless elbow should be one size longer as there are no threads protruding and the stud is just flush on both ends. The shell and head outside the building were insulated and clad. Some damage to the north head above the manway was observed. Two anode nozzles were on the east side of the shell. The anode wires were secure. The manway on the east side of the shell was not opened. The vessel is welded onto a steel saddle with a stitch welded pedestal that is bolted securely to a steel skid.

**Internal**

The north manway has some previous repairs. Four of these repairs have chipped to the base steel. The internals are 100% coated and the coating is generally in good condition. The north head was in good condition. 3 ladder bars were mounted below the manway and one bar was mounted above. The bars were secure and in good condition. The oil gas interface was at approximately the eight foot level. The oil water interface appeared to be at the two foot level. A stainless inlet box was mounted to the top of the shell below the inlet nozzle. The box and nuts appeared to be in good condition. The north level line nozzles were plugged with product and could not be assessed. A skim line nozzle flange was very short bolted. The first four baffles have been removed. A second skim line has fallen from the nozzles and mounting brackets. Some coating damage has resulted below the nozzle. The fifth baffle remained. Significant corrosion damage has occurred to the baffle platelets. The right hand mid spacer on the bottom section has pulled from position. The attaching bracket has corrosion on the bottom right and left space. Some corrosion to the bottom of the platelets on the middle and top rows of the baffles as well. The desand lines appear to be stainless - not magnetic. These lines have been connected to the shell nozzles without an isolation kit, using stainless bolts and nuts. The desand piping is connected to the shell brackets using stainless u-brackets. The nozzle bolts, u-brackets and carbon steel connection points are secure and in good condition. The desand lines have a moderate scale on them but no indications of corrosion or visible cracking. The coating was in good condition throughout with only two visible locations of damage located below the south anode. The anodes were 100% consumed including the carbon steel holding rod. The wood rolling blocks are seized.

South End - internal piping is 8 and 10 inch diameter stainless steel piping. Flanged connections are double nutted with stainless bolts and nuts. The oil box was securely welded to the shell and the coating was in good condition. The shell and head coating was in good condition. The manway nozzle was in good condition. One ladder bar was welded above the manway. The bar was coated and in good condition. The oil box manway plate was stainless steel and the attachment bolts and nuts were secure and in good condition. The baffle was securely bolted to the shell attachment brackets.

**Recommendations**

1. Check the anode potential or inspect the anodes for the remaining material.
2. Depending on the remaining anode life will determine the acceptance of the deferral of the internal inspection.
3. Correct the short bolting next outage.



RAE Engineering and Inspection Ltd.

## Field Inspection Report

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Trevor Paananen  
IBPV INSPECTOR  
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**Inspector:** Trevor Paananen