

Report Number:			
Date:	September 23, 2015	Description:	<input checked="" type="checkbox"/> Vessel <input type="checkbox"/> Exchanger <input type="checkbox"/> Furnace <input type="checkbox"/> Boiler
Inspector:	Brian Boulet	Unit #:	Equip #:
Agent Co:	Streamline Inspection	Equip. Name:	Free Water Knockout
Owner:	Harvest	Jurisdiction #:	A3055474 CRN #: M8442.2
Region:	Alberta	Manufacturer:	Process Industries Inc
Area:	Amisk	Year Built:	1994 S/N: 94-02883-3000
		Location/LSD:	12-15-40-8W4
Scope:	A visual internal (VI) inspection was performed on all accessible shell and head surfaces, nozzles, welds, etc.		
Access:	<input checked="" type="checkbox"/> Manway <input type="checkbox"/> Hand-hole <input type="checkbox"/> Inspection Nozzle		
Opening	Gasket Surfaces:	<input checked="" type="checkbox"/> Compliant with code	Comment No Concerns
	Nozzle Tube:	<input checked="" type="checkbox"/> No pitting, erosion, etc.	Comment
Shell and Head Surfaces	Uniform Corrosion:	<input type="checkbox"/> Insignificant amount	Comment Uniform corrosion noted around anode support brackets
	Pitting Corrosion:	<input type="checkbox"/> None noted	Comment Significant Isolated Pitting to 0.200"
	Erosion:	<input checked="" type="checkbox"/> None noted	Comment
	Mechanical Damage:	<input checked="" type="checkbox"/> None noted	Comment
Welds	Uniform Corrosion:	<input checked="" type="checkbox"/> Insignificant amount	Comment
	Pitting Corrosion:	<input checked="" type="checkbox"/> None noted	Comment
	Welding Defects:	<input checked="" type="checkbox"/> None noted	Comment
	<input type="checkbox"/> NDT was performed by:		Extent:
	Type: <input type="checkbox"/> MPI ( <input type="checkbox"/> WF <input type="checkbox"/> B&W <input type="checkbox"/> Dry) <input type="checkbox"/> LPI <input type="checkbox"/> UT <input type="checkbox"/> RT <input type="checkbox"/> Other:		
Results: N/A			
Nozzles	Obstructions:	<input type="checkbox"/> None noted	Comment Some nozzles not clean out for inspection
	Corrosion:	<input checked="" type="checkbox"/> None noted	Comment
	Erosion:	<input checked="" type="checkbox"/> None noted	Comment
Attachments	<input type="checkbox"/> Vortex breaker	<input type="checkbox"/> Secure <input type="checkbox"/> Good Condition	Comment
	<input type="checkbox"/> Impingement plate	<input checked="" type="checkbox"/> Secure <input type="checkbox"/> Good Condition	Comment
	<input type="checkbox"/> Suction tube	<input type="checkbox"/> Secure <input type="checkbox"/> Good Condition	Comment
	<input type="checkbox"/> Demister	<input type="checkbox"/> Secure <input type="checkbox"/> Good Condition	Comment
	<input checked="" type="checkbox"/> Other:	<input type="checkbox"/> Secure <input type="checkbox"/> Good Condition	Comment Oil box in acceptable condition
Inspection Summary	<p>The internal vessel was coated with epoxy, isolated areas of coating failures were observed and active corrosion was present on exposed steel surfaces measured at 0.200" around the anode support brackets. The pitting was more pronounced around attachment support brackets on the belly of the shell, four areas 0.100" and deeper. A few (4) other isolated areas measured 0.070" to 0.085". Previous pitting, repairs and MT markings were visible on the shell. The de-sand spray nozzles are intact with no concerns. The coalescer vein pack was poorly supported and fell to the bottom of the shell. The coalescor was past its service life, significant damage and corrosion was present. The inlet horse shoe deflector plates were in good condition and the access opening were not removed for inspection. The ladder rungs were secure with no concerns. The anodes were removed from service and were going to be replaced during outage. As per operation the free water knockout will be left out of service and left as a spare.</p>		
Recommended Actions:			NCR/IDR
It is recommended repairing all isolated pitting under T-min once calculated. All coating failures need to be professionally repaired after repairs are complete			
It is recommended to remove or replace the coalescer vein packs before put back into service.			
VESSEL STATUS			
Integrity Status	Suitable for Continued Service <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Immediate Repairs Required <input type="checkbox"/> Future Repairs Required <input type="checkbox"/> Replace		
Inventory Status	<input type="checkbox"/> In Service <input type="checkbox"/> Out of Service <input checked="" type="checkbox"/> Surplus <input type="checkbox"/> Scrap <input type="checkbox"/> Action Items Completed		

Additional Notes on continuation page: ☐ (Report C \_\_\_\_)

Inspection Interval: 4 yrs OR Changed to: \_\_\_\_ yrs. Signature of In-Service Inspector: 

PSV Interval: 4 yrs OR Changed to: \_\_\_\_ yrs.

IPV/IBPV Certificate #: 0650

**INSPECTION PHOTOS**



**Nameplate**



**Overall Internal View**



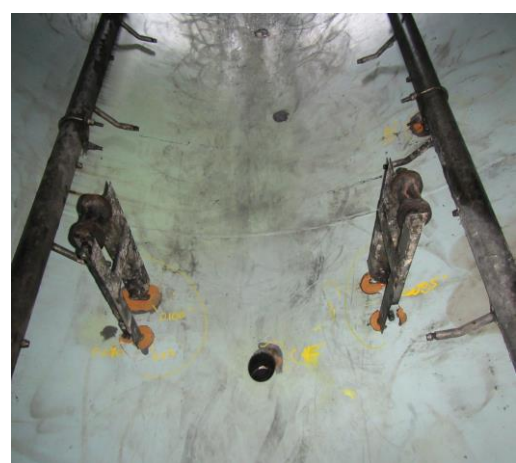
**Vein Pack Corrosion**



**0.200" Corrosion on Anode Bracket**



**Pitting around Anode Supports**



**Coating Failures with Pitting**



Vein Pack resting on floor



Internal Nozzle



Vein Pack



Pitting on Shell



Pitting on Shell



Pitting on Bottom of Shell