

GENERAL INSPECTION FORM						
District: Area 1			Skid No. :			
Facility: Gregg Lakes Gas Plant			Location (LSD) Surface: 13-30-53-25-W5M			
Vessel Name & Equipment Number: V 201 Inlet Separator						
Orientation: Horizontal <input checked="" type="checkbox"/> or Vertical <input type="checkbox"/>			Location (LSD) Downhole:			
Status: In Service <input checked="" type="checkbox"/> or Out of Service (blinded / fully isolated) <input type="checkbox"/>			Commissioning Inspection <input type="checkbox"/> or Regulatory Inspection <input checked="" type="checkbox"/>			
PRESSURE VESSEL NAMEPLATE DATA						
"A" or "G" or "S" (Sask.) or BC Registration Number. A 457880			CRN Number K 1554.12			
Vessel serial number: 2496 V201			Size (diameter x length- estimate if necessary): 72 in I.D. X 240 in			
Shell thickness: 69.9 mm			Shell material: SA 516 70N			
Head thickness: 65.5 mm			Head material: SA 516 70N			
Tube wall thickness:			Tube material:			
Tube diameter:			Tube length:			
Channel thickness:			Channel material:			
MAWP	Shell: 1349 psi		Operating pressure	Shell:		
	Tubes:			Tubes:		
Design Temp.	Shell: 199 deg F		Operating temperature	Shell:		
	Tubes:			Tubes:		
X-ray: RT 1			Heat treatment? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>			
Code parameters: ASME VIII, Div 1			Joint efficiency (if on nameplate):			
Manufacturer: Plains Oil Limited			Year built: 1999			
Corrosion allowance: 3.2 mm			Manway? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>			
PRESSURE SAFETY VALVE NAMEPLATE DATA						
Tag Number(s)	Set Pressure	CRN #	Manufacturer/ Model / Serial / Code Stamp	Capacity (Scfm)	Size (Inlet x Outlet)	Set Date (mm/dd/yyyy)
Shell Side G# G 711919	1349 PSI		Crosby / JOS-E-45-A-N2 / FAS005145-01 / UV	49271	3 X 4	10/14/08
Tube Side G#						
SERVICE CONDITIONS-INDICATE ALL THAT APPLY						
Sweet <input type="checkbox"/>	Sour <input checked="" type="checkbox"/>		Oil <input type="checkbox"/>	Gas <input checked="" type="checkbox"/>	Water <input checked="" type="checkbox"/>	
Amine <input type="checkbox"/>	LPG <input type="checkbox"/>		Condensate <input checked="" type="checkbox"/>	Air <input type="checkbox"/>	Glycol <input type="checkbox"/>	
Other (Describe):						

Inspection Interval _____ **PSV Service Interval** _____
 (Determined by integrity specialist in conjunction with Chief Inspector following guidelines of ConocoPhillips Canada Owner-User Inspection Program)
 Reports reviewed and accepted by: _____

Integrity Specialist _____ **Date** _____
 Fill out all forms as completely as possible. All information is important! Use back of sheets to record additional information or sketch if required.

External Inspection Items	G	F	P	N/A	Comments
Insulation Verify sealed around manways, nozzles, no damage present, and there is no egress of moisture. Are straps secure?				X	This vessel is not insulated.
External Condition Assess paint condition, areas peeling, record any corrosion, damage, distortion etc (record location, size and depth of corrosion or damage)	X				Good condition – no exposed metal.
Leakage Record any leakage at flanges, threaded joints, weep holes on repads, etc.	X				No leaks detected.
Skirt/ Saddle Assess condition of paint, fire protection, concrete. Look for corrosion, buckling, dents, etc. Look at vessel surface area near supports. Verify no signs of leakage at attachment to vessel and attachment welds are acceptable. Is ground wire attached?	X				Saddle: Good condition, no distortion or buckling. No corrosion at saddle to shell welds – no leaking. Ground cable attached to skid.
Anchor Bolts Hammer tap to ensure secure. Look for corrosion, cracking in threads or signs of deformation.	X				Saddle is firmly bolted to supports and supports are welded to skid deck.
Concrete foundation Check for cracks, spalling, etc.				X	No concrete – steel deck on pilings.
Ladder / Platform Describe general condition, ensure support is secure to vessel, describe any hazards.				X	No ladder or platform.
Nozzle Assess paint, look for leakage, and ensure stud threads are fully engaged. Record any damage, deflection, etc. Are nozzles gusseted? Inspect gussets for cracking.	X				No deflection – no leaks. All studs engaged to nuts with the exception of nozzles that are blinded for inspection. Nozzles are not gusseted.
Gauges Ensure gauges are visible, working, no leakage, and suitable for range of MAWP/ Temp.	X				Pressure gauge: 0 to 1000 psi. (Gauge does not cover full range listed on data plate) Temperature gauge: minus 40 to 160 deg F (Covers range listed on data plate)
External Piping Ensure pipe is well supported. All clamps, supports, shoes, etc. in place. Look for evidence of structural overload, deflection, etc. Paint condition, external corrosion?	X				Well supported, no deflection, all clamps and supports in place. Paint is in good condition, no exposed metal.
Valving Ensure no leaks are visible. Valves are properly supported and chained if necessary.	X				Well supported – no leaks.
PSV Ensure PSV is set at pressure at or below that of vessel. Discharge piping is same size as valve outlet and is properly supported and routed. Are PSV seals in place? Ensure no block valves between PSV and vessel, or if there are ensure they are locked/sealed open.	X				Located on top shell – set at MAWP of vessel. Seal intact. No block valve. Discharge piping same size as outlet orifice.
NDE methods Was UT/ MPI done on vessel	X				Ultrasonic thickness survey carried out – vessel is known to have some excavated areas and these are under monitor for growth – no metal loss at this time. Piping metal is on constant monitor for wall loss and due to process will continue to lose metal thickness and will be scheduled for change out when metal thickness is at a point where safety and the environment is compromised. Refer to RTD Quality Services UTS data report for details.
Other Observations:					
See internal inspection for summary and recommendations.					

Inspected By: D. Wiedman

(Please Print)

Date: October 16 – 2008

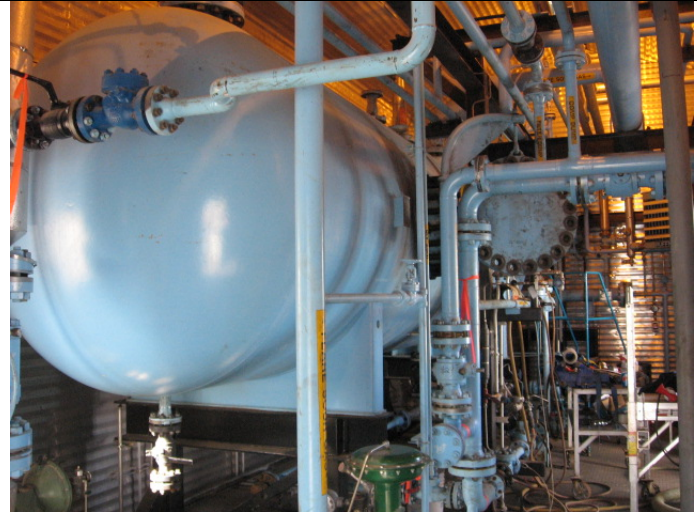
Internal Inspection Items	G	F	P	N/A	Comments
Coating Assess coating. Describe area coated, general condition of coating. Look at nozzles, coupling, and areas of most severe corrosion to ensure coating is intact. If coating is in poor condition make decision <u>now</u> if re-coating necessary? If so, when?			X		The internal of this vessel was flame sprayed with a Hastelloy alloy in 2007. The coating is blistered / unbonded from the shell to 70% approximately. The blisters range in size from .250 inch to 4 inches in diameter and are scattered throughout the vessel. The highest concentration of large blisters are at the 24 inch wide vapor to liquid phase on the shell. One blister was intentionally ruptured to determine the integrity of the coating and to determine if there is any trapped fluid behind the blisters – no fluid was present and the blister came off in a multiple of pieces but the thickness was homogeneous. Note: Both heads appear to be unaffected. Note: There was some epoxy applied to the inside of the upper PSV nozzle during the flame spray operation as they could not be sprayed and the epoxy is also blistering.
Anodes. How many, type, condition. % consumed. Are they being replaced?		X			There are 24 zinc anodes in this vessel, 6 are consumed up to 20% but remainder are in good condition and appear untouched.
Internal Piping Is there any? If so, carbon or stainless steel. Describe condition, dents, corrosion, erosion, etc. Ensure supports are secure and any bolts are suitable for future use.				X	No internal piping.
Trays How many? Type of material. Are valves in place. Check for erosion/ corrosion; wear on tray valve legs. Cleanliness?				X	No internal trays.
Baffles, deflector plates, etc. If present, describe condition. Look closely at welds attached to vessel wall.	X				Inlet diffuser is intact and in place – no corrosion.
East Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				
West Head Note all corrosion, erosion or mechanical damage. (If vessel is horizontal identify direction of this head)	X				
Shell Sections Record number of shell sections. Record location, size and depth of all erosion, corrosion or mechanical damage. Describe general condition. If any corrosion greater than corrosion allowance is observed in either shell or head, discuss with Chief Inspector before closing vessel.		X			There was previous pitting in the shell at the 6:00 position – these areas were excavated prior to flame spray application in 2007 – there is no increase in corrosion activity in these excavations and have no blistering on the coating either. Max excavation appears to have been .250 inches deep.
Demister pad Is it in place? Is it clean? If any corrosion is apparent in vessel, lift pad and check top head for corrosion.	X				Good condition, intact and in place – not soiled.
Welds Inspect all welds, including attachment welds. Record all service-related damages and if there is any discuss with Chief Inspector before closing.	X				Welds are in good condition as can be viewed through flame spray – no evidence of corrosion.
Repairs Required. If yes, ensure procedure and copy of AB-40 is on file, and one sent to local ABSA Inspector	X				One blister was broken open to determine the condition of the shell underneath – this was hand patched with epoxy grout Devco 142 C.
NDE Was any NDE done.	X				Ultrasonic thickness was conducted on the blisters to determine the coating thickness - .025 inch thick was average. Ultrasonic thickness inspection was carried out on the shell from external surface to determine if the metal was sound and no parent metal blistering existed – Shell metal is sound – no blisters detected.
Other Observations Recommendations: Maintain Ultrasonic thickness monitoring on shell – coating is failing and will not be replaced in the near future. Summary: This vessel is in good condition, visual external and internal carried out – previous excavations show no corrosion activity. Internal coating (Flame Spray) is blistered throughout internal surface, 1blister ruptured to determine if liquid was trapped behind the surface – no trapped liquid and no corrosion to shell.					

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Data Plate

Over view



Man way

Saddle supports



Temp gauge

Pressure gauge



Anodes



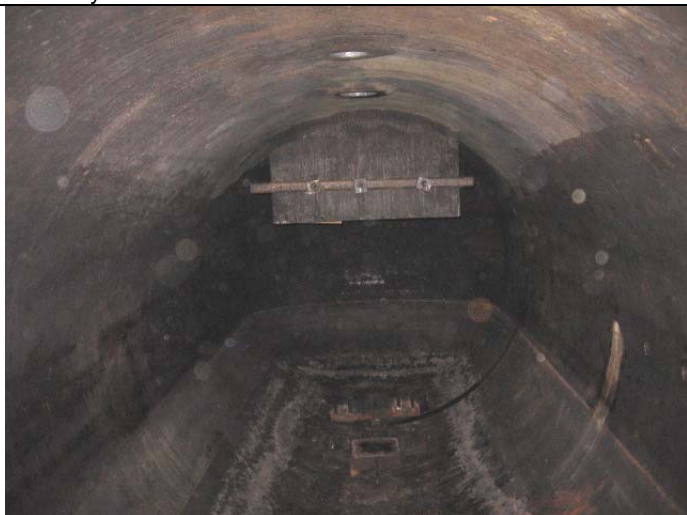
2 inch nozzle drain – plugged with wax



Man way nozzle



Previous pitting in man way nozzle to .120 inches deep.



Over view of internal – demister cage in rear of vessel.



Demister pad



Inlet diffuser



Inlet nozzle with diffuser



Vortex breaker on water draw off nozzle – was plugged with solids.



Anode support brackets



Ruptured blister on shell



Over view of blisters on bottom of vessel



Over view of blisters in vapor / liquid space