



EXTERNAL VESSEL INSPECTION REPORT

Date of Inspection: May 3/06 Inspected By: Laurie Olson
Location, LSD: 16-25-87-20 W 6 Plant Name: Squirrel
Equipment Name: Treater Equipment Tag No:

NAME PLATE DATA:

Vessels: A#, CRN, MAWP, Design Temp., Min. Design Temp., Shell Material, Shell Thickness, Head Material, Head Thickness, Corrosion Allowance, Date Built, Serial No., Manufacturer, Manway, Comments. Pressure Relief Device: PSV Tag No, CRN, Serial No, Model No., Type, Set Pressure, Capacity, Inlet Size/Type, Outlet Size/Type, Manufacturer, Date Last Serviced, Serviced By, Inlet Isolation Valve, If Yes, Car Seal Open, Outlet Isolation Valve, If Yes, Car Seal Open.

FOUNDATION:

Saddle Skirt: Seal welded ~ Stitch Welded ~ Condition: Good
Sliding Saddle: Free to Move ~ Reached End Stops ~ Sliding Sheet Present ~
Foundation Bolts: In Place ~ Yes
Grounding Strap & Cable: In Place ~ Yes
Support Type: Pilius Condition:
Comments:

VESSEL EXTERNAL CLADDING/COATING/PAINT:

Fire Proofing: ~ Yes ~ No Location of: Tin Outside Condition: Good
External Paint: ~ Yes ~ No Condition: Good
External Cladding: ~ Yes ~ No Condition: Good
Insulation: ~ Yes ~ No Wet: ~ Yes ~ No Missing Insulation/Describe: Insulated in
Comments: Good Condition

NOZZLES:

Piping Termination Points Adequately Supported: ~ Yes ~ No Comments:
Reinforcement Pad Weep Holes Visible: ~ Yes ~ No Comments:
Manway Davit Arms: ~ Yes ~ No Condition: Good
Comments:

PIPING:

PSV Piping Inspected: ~ Yes No Condition: Visuals
 Inlet Piping Inspected: ~ Yes No Condition: ✓
 Outlet Piping Inspected: ~ Yes No Condition: ✓
 Drain Piping Inspected: ~ Yes No Condition: ✓
 Instrumentation Piping Inspected: ~ Yes No Condition: ✓
 Dead Legs Present: ~ Yes No Condition: ✓
 Process Fluid and Flow Direction Indicated: Yes ~ No Condition: Good
 Comments: Visual inspection on all visible piping

LADDERS/PLATFORMS:

Ladders Secure: ~ Yes ~ No Comments: None
 Platforms Secure: Yes ~ No Comments: Welded on Piling
 Housekeeping on Platform & Inside Skirt: Acceptable: ~ Yes ~ No Comments: _____

INSTRUMENTATION/CONTROL VALVES:

Manual Isolation Valves: Leaking: ~ Yes ~ No Describe: _____
 Control Valves: Leaking: ~ Yes ~ No Describe: _____
 Vents & Drains: Plugged: ~ Yes ~ No Describe: _____
 Flange: Leaking: ~ Yes ~ No Describe: _____
 Pressure Gauge: Yes ~ No Condition: Good
 Temperature: Yes ~ No Condition: Good
 Sight Glass: Yes ~ No Condition: Good
 Float Column: Yes ~ No Condition: Good
 Comments: _____

ACTION ITEMS:	
Urgent/Immediate:	_____ _____ _____
Requires Attention / Work Order to be Issued:	_____ _____ _____
For consideration, Design Improvement Or Safety Issue:	_____ _____ _____

Item Inspected: *Treater*

TAG#:

 Location: *16-25-87-20 w6 Squire* (Provincial #:

Inspection Requested by:

 Inspection Date: *May 3/06*

 Inspection performed by: *Laurie Olson* Inspection Interval:

REMEDIAL ACTION

- no action required
- coating/lining repairs
- internal coating/lining repair
- repair welded
- ground out
- replaced
- monitor
- Repair fire Tube*

ACCESS & COVERAGE

- poor cleaning
- adequately cleaned
- partial internal inspection
- NDE inspection only
- internal visual + NDE
-

OTHER

- see comments
- baffle/weir damage
- support ring damage
- flange corrosion
- burner misaligned
- bolting damage
- downcorner corrosion
- valve caps missing
-

SHELL

- Top Bottom
- good condition
- external corrosion
- general internal corrosion
- pitted - light
- pitted - severe
- scaled - light
- scaled - heavy
- blistered
-

NOTES:
NOZZLES N/A

- good condition
- internal corrosion
- cracked
- scaled
- plugged
- poor welding
- leaking

NOTES:
WELDS N/A

- good condition
- corroded
- cracked
- broken
- poor quality

HEADS N/A

- Top Right of name plate
- good condition
- external corrosion
- general internal corrosion
- pitted - light
- pitted - severe
- scaled - light
- scaled - heavy
- blistered

HEADS N/A

- Bottom Left of name plate
- good condition
- external corrosion
- general internal corrosion
- pitted - light
- pitted - severe
- scaled - light
- scaled - heavy
- blistered
-

NOTES:
 INTERNAL COATING
 LINING N/A

- good condition
- blistered - light
- blistered - severe
- disbanded
- chipped
- holidays
- mechanical damage
- missing

ANODES N/A

- good condition *Cows 10%*
- dirty
- consumed 20%
- consumed 50%
- consumed 80%
- missing

DEMISTER SCREEN

- N/A
- good condition
- dirty
- dislodged
- broken
- missing
- tie-downs missing

HEATING COIL N/A

- good condition
- corrosion
- cracked
- scaled
- worn
- loose
- poor installation

MANWAYS N/A

- internal corrosion
- coating damage
- good condition
- mechanical damage
-

TRAYS N/A

- good condition
- collapsed
- distorted (bent)
- loose
- missing
- wear
- corrosion
- poor installation

FIRETUBES N/A

- good condition
- cracked
- corrosion
- scaled
- heat impinged
- coated
- wear

TUBE BUNDLE N/A

- good condition
- pitted – light
- pitted – severe
- scaled
- plugged
- damaged
- wear
- erosion

TUBESHEET N/A

- good condition
- general corrosion
- pitted – light
- pitted – severe
- erosion
- damaged

CHANNEL HEAD N/A

- good condition
- general corrosion
- pitted – light
- pitted – severe
- erosion
- scaled
- coated

REFRACTORY N/A

- good condition
- cracked (minor)
- spalled
- missing
- damaged
- badly cracked
-

TUBE N/A

- good condition
- external corrosion
- internal corrosion
- thinning
- bulged
- heat impinged
- distorted
- erosion
-

DRUM N/A

- mud steam
- good condition
- damaged internals
- internal corrosion
- cracking
- scaling
-

FLOOR N/A

- external corrosion
- general internal corrosion
- pitted – light
- pitted – severe
- edge settlement
- weld joint cracking
- sludge
- previous patch repairs
-

COMMENTS:

Fire Tube has scale build up and is warped on Top Where flame Tips are

RECOMMENDATIONS: Coated Firetubes to help prevent scale build up downsize burner.

RESULTS: ~~Send~~ Send Firetube in for Repairs check with Argo if Burner is too big for firetube. Also adjustments on Burner on Start up.

Inspector/Engineer

GENERAL PRESSURE VESSEL INFORMATION

Asset # 27738

District: Fort St John	Skid No.: 16-25-C
Facility: Squirrel	Location (LSD): 16-25-087-20W6
Name & Equip No: TREATER - 26775	Orientation: Horizontal
Company: Pengrowth	Cost Code:
Status: Shut-In	Operating Province: British Columbia
Unit:	W.O/P.O No.:
Registration Number:	Registration Number (Other):
Serial Number: 970049-1	CRN Number: N-9305.2
National Board:	Unique ID: ONCOR ID: 41140

PRESSURE VESSEL NAMEPLATE DATA

Internal Clad: No	Painted: Yes	Hand Hole: No
Insulated: Yes		Support Type Saddle
Capacity: M3		MDMT: -20.00 (F) -28.89 (C)
MAWP: 75.00 (psi) 517.11 (Kpa)		AT temperature: 350.00 (F) 176.67 (C)
Size (diam. x length): 96.00 x 360.00(In) 2438.40 x 144.00 (mm)		Manufacturer: SUPERIOR FABRICATION
X-Ray: RT4		Lining Or Coated:
Year Built: 1997		Heat Treatment: No
Code parameters:		Corrosion allowance: (In) 0.00 (mm)
Nozzle Rating: lb ANSI		Manway: Yes Manway Size: (In)

PIPING NAMEPLATE DATA

Primary Flange Rating: 150	ASME B16.5 - Table 2-1.1 @ 150F: 285 (psi)
Pressure Use For TMin: Vess Design Press	Piping Operating Press: 75 (psi)
Stress Value: 20000 (psi)	E Value: 1
Comments:	

SERVICE CONDITIONS-INDICATE ALL THAT APPLY

Sweet	Sour	Oil	Gas	Water
Amine	LPG	Condensate	Air	Glycol
Other (Describe):				

COMPONENTS

Name	Joint Efficiency	Outside Diameter(In.)	Head Type	Material Type	Stress Value (PSI)	Nominal Thickness(Inch)
SHELL	0.85	96.00		Unknown	14500	
HEAD	0.85	96.00	Ellipsoidal	Unknown	14500	

GENERAL COMMENTS

PIC: 658, 659, 660, 661.
 WELDED.
 NB#4

Field Inspection Report - Pengrowth

21,288

Registration #:		Equipment Name:	TREATER	Province:	
District:	Fort St John	LSID:	16-25-087-20W6	Location:	Squirrel
CRN:	N-9305.2	Skid Number:	16-25-C	Service:	
Manway:	Yes	Coating:		Equipment Number:	26775
MAWP (psi):	75.00 (psi)	Temp:	350.00 (F)	Serial Number:	970049-1
Outstanding NCR's:	No	No.:	0		
General:					

Safety Valves

Side:	MAWP (psi)	MAWP (kPa)	PSV No.	Set Press (psi)	Set Press (kPa)	Capacity Imperial	Imperial Units	Capacity Metric	Metric Units
Shell	75.00	517.11	26776	75.00	517.11	2086.00	SCFM		
Status:	Shut-In		Examination Methods:			Access:			Cleaning:

External Inspection

Inspection Date:	Oct 3, 2013	Inspection Interval:	60	Next Insp. Date:	Oct 3, 2018
Item	Condition	Inspection Comments			
Insulation	Accept	IN GOOD CONDITION			
External Condition	Accept	IN GOOD CONDITION			
Leakage	Accept	NO SIGNS OF LEAKS FOUND			
Skirt/Saddle	Accept	IN GOOD CONDITION			
Anchor Bolts	Accept	IN GOOD CONDITION			
Concrete Foundation	N/A	METAL PILINGS			
Ladder/Platform	N/A				
Nozzle	Accept	IN GOOD CONDITION			
Gauges	Accept	IN GOOD WORKING CONDITION			
External Piping	Accept	IN GOOD CONDITION			
Valving	Accept	ALL APPEAR TO BE IN GOOD WORKING CONDITON			
PSV	Reject	SERVICED IN 1997 SERVICE SEAL IS BROKEN			
NDE Methods	Accept	VE 2013			
Other	N/A				
Recommendations:	SERVICE SEAL IS BROKEN. PSV NEEDS TO BE SERVICED BEFORE BEING PLACED BACK IN OPERATION. VESSEL IS OTHERWISE FIT FOR SERVICE		Inspected By:	Duncan Kendrick	API510#:48598

INSPECTOR : I have witnessed/done the above inspections and certify that they have been done in accordance with our approved manual and that the information is accurate. I certify that the status of the Pressure equipment detailed here is:

Suitable to be returned to service	Repairs complete(AB-40 attached)
Repairs are still required:	Suggested Inspection Interval:
Inspector: Duncan Kendrick API510#:48598	Signature: _____ Date: Oct 3, 2013

Pressure Safety Valve Summary

Asset # 18374

PSV Static Data

Client:	Pengrowth	Facility:	Squirrel
District:	Fort St John	PSV Number:	26776
Location:	16-25-087-20W6	Serial Number:	51305
Description:		Manufacturer:	MERCER
CRN:	OG2606.5C	Code Stamp:	
Model:	916LJ-511878	Outlet Size:	3
Inlet Size:	3		
Side (Shell or Tube):	Shell		

PSV Service/Inspection

Set Date:	1 Sep, 1997	Service Interval:	36
Set Pressure (psig):	75	Capacity (scfm):	2086
Service Sealed Intact:	No		
Block Valve Inlet:	No	Block Valve Inlet Locked Open:	No
Block Valve Outlet:	No	Block Valve Outlet Locked Open:	No
Service Company:		Ref Number:	
Condition:		Prepped Results:	
Service Type:		Installed Date:	
Next Service Date:	1 Sep, 2000		
Comments:			

Equipment Protected

Reg #	Equip #	Type	Name	Status	MAWP
	26775	Pressure Vessel	TREATER	Shut-In	75.00

PSV Summary

PSV service is past due.
 PSV has a broken service seal.



PENGROWTH

Assesment: Mitchell Neighbour		Signature	
Inspector: Doug Brett Asset Integrity Coordinator Pengrowth		Signature:	
Cert./ISI #: IBPVI #00277		Review Date (mm/dd/yy): 01/20/14	
Insp. Date (mm/dd/yy): 10/01/2013			
Insp. Type: <input checked="" type="checkbox"/> VE <input type="checkbox"/> VI <input type="checkbox"/> UT <input type="checkbox"/> MT Other:			
Equip. Type (AB-506):			
Grade Assigned: <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2 <input checked="" type="checkbox"/> Grade 3			
Type:	Interval (mos)	Due date (mm/dd/yy)	Type: Interval Due date (mos) (mm/dd/yy)
VE:	60	10/1/2018	VI:
UT:			MT:
Other:			Describe:
<input checked="" type="checkbox"/> EAM Schedule Updated		Initial:	



Assessment: Mitchell Neighbour	<i>[Signature]</i> Signature:
Inspector: Doug Brett Asset Integrity Coordinator	Signature: <i>D. Brett</i>
Cert. #: API 510 #34191 API 570 #36939	Review Date: (mm/dd/yy)
Service Date: PSV Service is Overdue and required. (mm/dd/yy)	
Equip. Type (AB-506):	
Grade Type: <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2 <input checked="" type="checkbox"/> Grade 3	
Interval :60 (Mos)	Due Date :01/01/14 (mm/dd/yy)
<input type="checkbox"/> EAM Schedule updated	Initial: