



**Client:**  
**CNRL**

UT SURVEY	Reject
PSV INSP	Accept
VTE INSP	Concern
VTI INSP	N/A

**EQUIPMENT DEFICIENCY SUMMARY**

District:	Fort St John	Facility	Graham	Location/LSD	C-076-K/094-B-08
Equipment Name	INLET SEPARATOR			Prov Reg No.:	0454381
Serial No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/A

**UT SURVEY** LATEST UT DATE USED IN SUMMARY April 21, 2018

LOCATION	Nom - CA	Low RDG	Avg RD	TMin	UT Flag	RECOMMENDATION	QUALITY ACTION	RESULT
36 90L 3 XS	0.26	0.17	0.26	0.12	LOW RDG < NOM-CA BY MORE THAN 20%	CONSIDER REDUCING THE INSPECTION INTERVAL.	OWNER TO DETERMINE	Reject
38 90L 3 80	0.26	0.21	0.24	0.12	LOW RDG IS > 10% BELOW NOM-CA BUT > Tmin	CONSIDER REDUCING THE INSPECTION INTERVAL.	OWNER TO DETERMINE	Concern
54 90L 2 80	0.19	0.14	0.16	0.08	LOW RDG < NOM-CA BY MORE THAN 20%	CONSIDER REDUCING THE INSPECTION INTERVAL.	OWNER TO DETERMINE	Reject
66 90L 2 160	0.30	0.25	0.28	0.08	LOW RDG IS > 10% BELOW NOM-CA BUT > Tmin	CONSIDER REDUCING THE INSPECTION INTERVAL.	OWNER TO DETERMINE	Concern

**PSV INSPECTION** LATEST PSV INSP DATE USED IN SUMMARY April 21, 2018

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
No Deficiencies Found	N/A	N/A	Accept

**VISUAL EXTERNAL INSPECTION** LATEST VTE DATE USED IN SUMMARY April 21, 2018

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
Piping is supported by Clamp system :Reject	PERFORM A REVIEW OF THE SUPPORTS FOR THIS VESSEL/PIPING	NONE	Concern

**VISUAL INTERNAL INSPECTION** LATEST VTI DATE USED IN SUMMARY

DEFICIENCY	RECOMMENDATION	QUALITY ACTION	RESULT
N/A	N/A	N/A	N/A



Client:  
CNRL

## PRESSURE EQUIPMENT DATA REPORT

### EQUIPMENT GENERAL INFORMATION

<b>District:</b>	Fort St John		
<b>Facility:</b>	Graham		
<b>Location /LSD:</b>	C-076-K/094-B-08	<b>Operating Province:</b>	British Columbia
<b>Equipment Name:</b>	INLET SEPARATOR		
<b>Equipment Status:</b>	Operating	<b>Orientation:</b>	Horizontal
<b>Skid No.:</b>	INLET SEP/SALES DEHY	<b>Unit:</b>	

### EQUIPMENT STATIC DATA

<b>AB Registration No.:</b>	0454381		<b>Serial No.:</b>	2000-6332-01	
<b>Registration No./Other:</b>			<b>Equipment No.:</b>	V-005	
<b>CRN NO.:</b>	P-0334.21		<b>Unique ID No.:</b>		
<b>National Board No.:</b>	N/A		<b>Oncor ID No.:</b>	166969	
<b>Manufacturer:</b>	Alco Gas & Oil		<b>Year Built:</b>	2000	
<b>MAWP:</b>	1332.00 (psi)	9183.87 (Kpa)	<b>Temperature:</b>	200.00 (F)	93.33 (C)
<b>Diameter.:</b>	72.000 (In)	1828.80 (mm)	<b>Length:</b>	288.00 (In)	7315.20 (mm)
<b>Radiography:</b>	RT1		<b>Heat Treatment:</b>	Yes	
<b>Corrosion allowance:</b>	0.125 (In)	3.175 (mm)	<b>MDMT:</b>	-20.00	
<b>Lining Or Coated:</b>	Yes		<b>Painted:</b>	Yes	
<b>Insulated:</b>	No		<b>Internally Clad:</b>	No	
<b>Hand Hole:</b>	No		<b>Support Type:</b>	Saddle	
<b>Manway:</b>	Yes		<b>Manway Size(In):</b>	20.00	
<b>Capacity/Volume(m3):</b>			<b>Nozzle Rating:</b>	600.00	

### MATERIALS/COMPONENTS

Name	Joint Efficiency	Outside Diameter(in.)	Head Type	Material Type	Stress Value (PSI)	Nominal Thickness(In.)
SHELL	1.00	72.000		SA-516 70	20000	3.00
HEAD	1.00	72.000	Ellipsoidal	SA-516 70	20000	2.90
BOOT SHELL	1.00	18.000		SA-516 70	20000	1.00
BOOT HEAD	1.00	18.000	Ellipsoidal	SA-516 70	20000	1.00
BRIDLE SHELL	1.00	6.625		Unknown	17500	

### PIPING STATIC DATA

<b>Primary Flange Rating:</b>	600	<b>ASME B16.5 - Table 2-1.1 @ 150F:</b>	1480 (psi)
<b>Pressure Use For TMin:</b>	Vess Design Press	<b>Piping Operating Press:</b>	1332 (psi)
<b>Stress Value:</b>	20000 (psi)	<b>E Value:</b>	1.00 Joint: SMLS

### SERVICE CONDITIONS

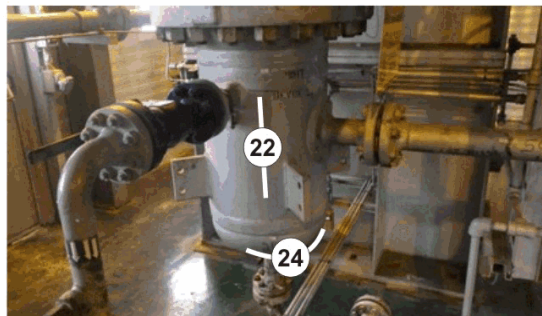
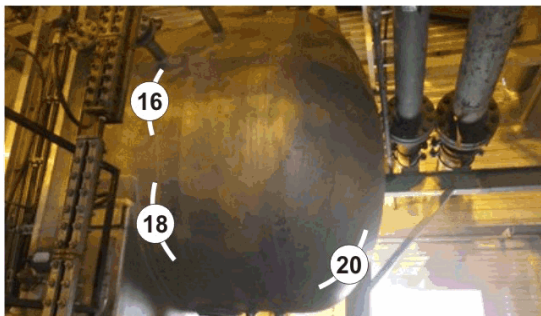
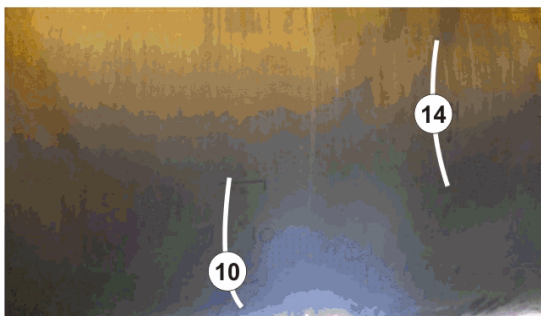
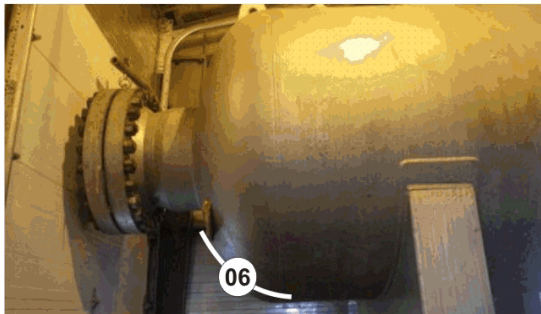
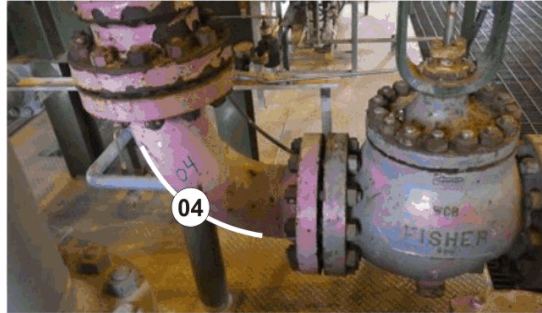
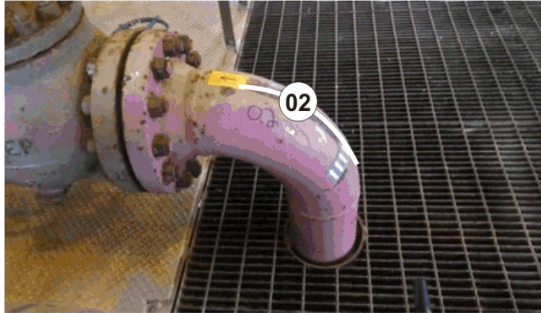
<b>Sweet</b>	<b>Sour</b>	<b>Oil</b>	<b>Gas</b>	<b>Water</b>
<b>Amine</b>	<b>LPG</b>	<b>Condensate</b>	<b>Air</b>	<b>Glycol</b>

### COMMENTS

--

**EXAMINATION ILLUSTRATION**

<b>DISTRICT:</b>	Fort St John	<b>FACILITY:</b>	Graham	<b>LOCATION/LSD:</b>	C-076-K/094-B-08
<b>EQUIP NAME:</b>	INLET SEPARATOR			<b>PROV REG No.:</b>	0454381
<b>SERIAL No.:</b>	2000-6332-01	<b>Equip No.:</b>	V-005	<b>National Board No.:</b>	N/A

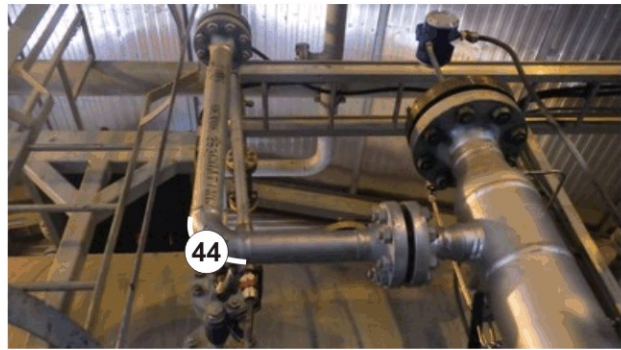
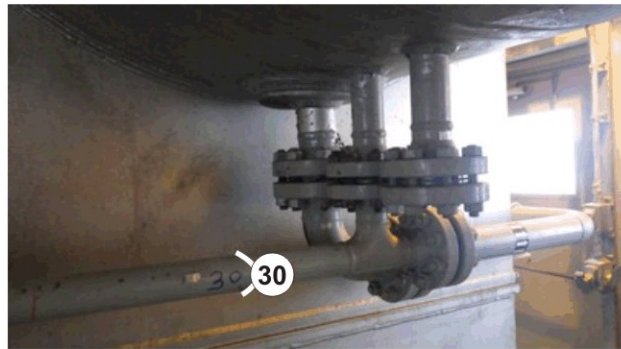
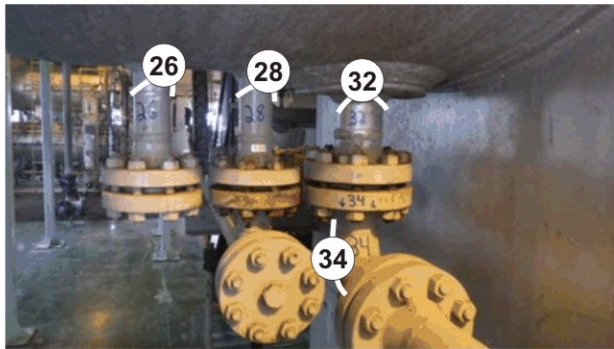


NOTES:



### EXAMINATION ILLUSTRATION

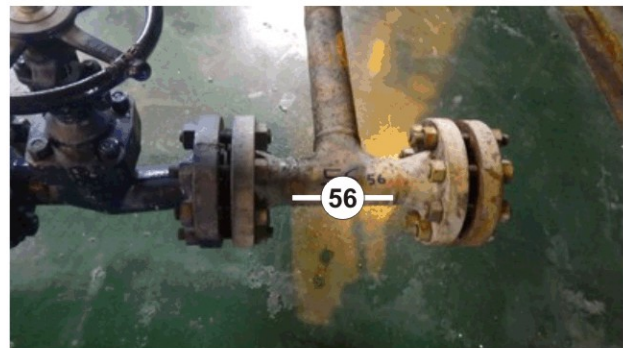
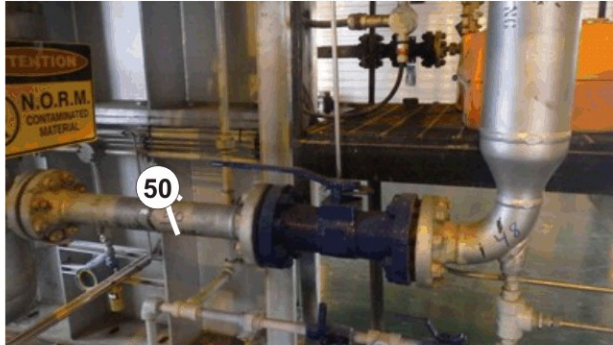
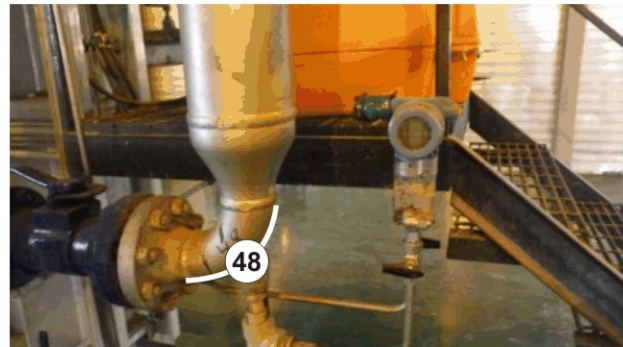
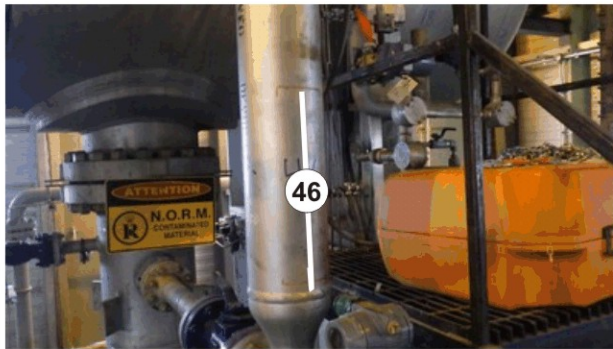
DISTRICT:	FORT ST JOHN	FACILITY:	GRAHAM	LOCATION/LSD:	C-076-K/094-B-08
EQUIP NAME:	INLET SEPARATOR			PROV REG No.:	0454381
SERIAL No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/S



NOTES:

## EXAMINATION ILLUSTRATION

DISTRICT:	FORT ST JOHN	FACILITY:	GRAHAM	LOCATION/LSD:	C-076-K/094-B-08
EQUIP NAME:	INLET SEPARATOR			PROV REG No.:	0454381
SERIAL No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/S

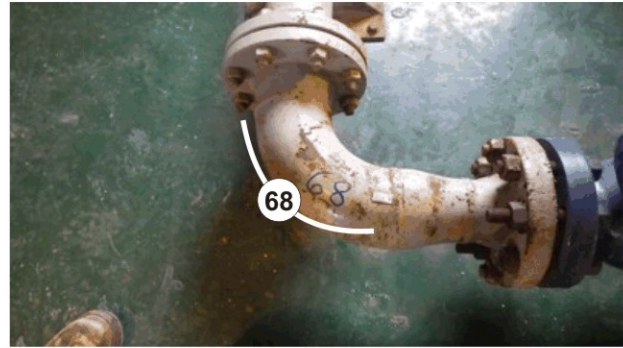
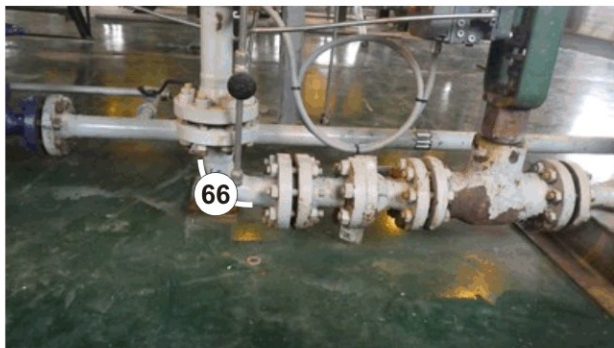
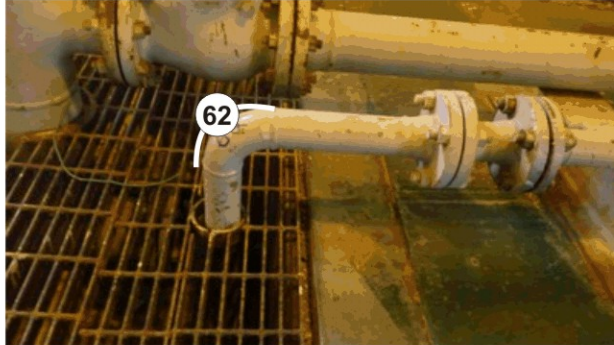
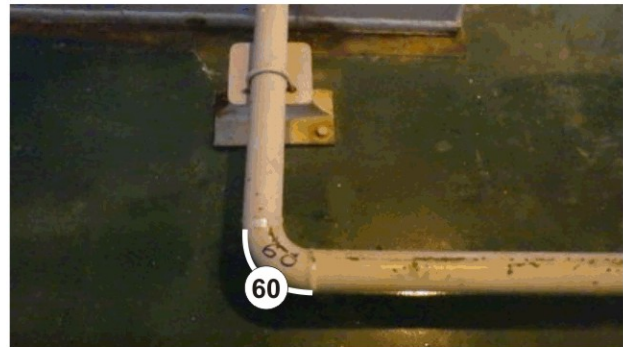
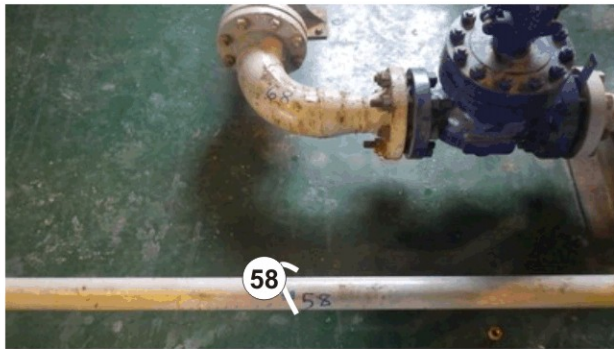


NOTES:



### EXAMINATION ILLUSTRATION

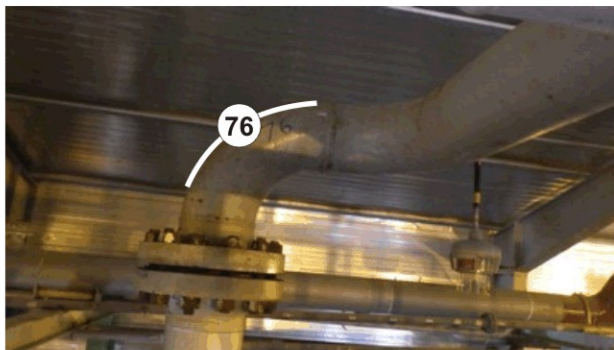
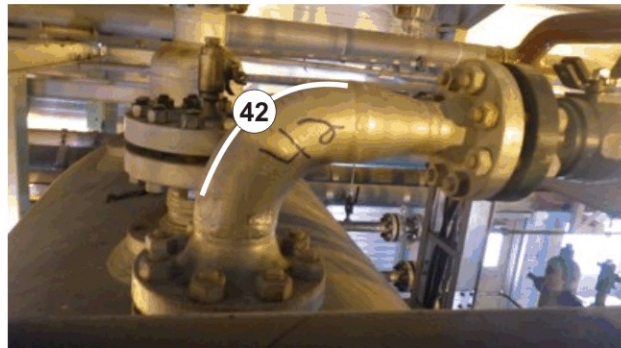
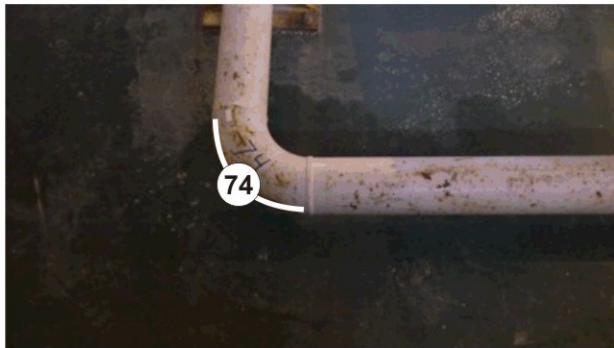
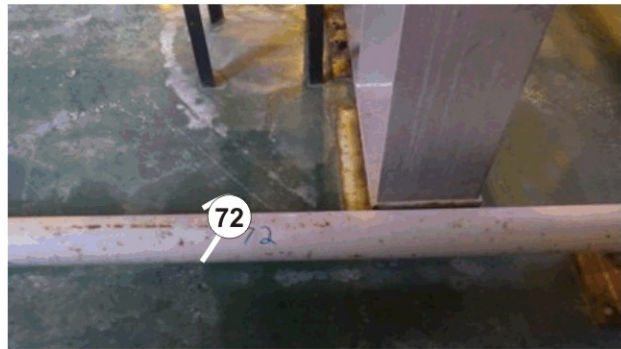
DISTRICT:	FORT ST JOHN	FACILITY:	GRAHAM	LOCATION/LSD:	C-076-K/094-B-08
EQUIP NAME:	INLET SEPARATOR			PROV REG No.:	0454381
SERIAL No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/S



NOTES:

### EXAMINATION ILLUSTRATION

DISTRICT:	FORT ST JOHN	FACILITY:	GRAHAM	LOCATION/LSD:	C-076-K/094-B-08
EQUIP NAME:	INLET SEPARATOR			PROV REG No.:	0454381
SERIAL No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/S



NOTES:





Client:  
**CNRL**

## ULTRASONIC CORROSION SURVEY REPORT

DISTRICT:	Fort St John	FACILITY:	Graham	LOCATION/LSD:	C-076-K/094-B-08
EQUIP NAME:	INLET SEPARATOR			PROV REG No.:	0454381
SERIAL No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/A

### SUMMARY

TYPE	LAST INSPECTIONS	INSPECTION INTERVAL (YEARS)	CORROSION RATE (IN/YR)		REMAINING LIFE (YEARS)	NEXT INSPECTION DATE
			SHORT TERM	LONG TERM		
VESSEL	Apr 21, 2018	5.0	0.0032	0.0032	186.8	Apr 21, 2023
PIPING	Apr 21, 2018	5.0	0.0073	0.0073	6.6	

### VESSEL SURVEY READINGS

POINT NUMBER	TYPE	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS				Flag
		NOM.	C.A.	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term	remaining life		
06	HEAD	2.9000	0.1250	2.7750	Apr 21/18	2.997	3.020	2.262	0.0000	0.0000	198.0	NO COMMENTS	
08	SHELL	3.0000	0.1250	2.8750	Apr 21/18	3.024	3.035	2.335	0.0000	0.0000	198.0	NO COMMENTS	
10	SHELL	3.0000	0.1250	2.8750	Apr 21/18	3.025	3.035	2.335	0.0000	0.0000	198.0	NO COMMENTS	
12	SHELL	3.0000	0.1250	2.8750	Apr 21/18	3.028	3.040	2.335	0.0000	0.0000	198.0	NO COMMENTS	
14	SHELL	3.0000	0.1250	2.8750	Apr 21/18	3.040	3.055	2.335	0.0000	0.0000	198.0	NO COMMENTS	
16	SHELL	3.0000	0.1250	2.8750	Apr 21/18	3.047	3.060	2.335	0.0000	0.0000	198.0	NO COMMENTS	
18	SHELL	3.0000	0.1250	2.8750	Apr 21/18	2.941	2.960	2.335	0.0032	0.0032	189.0	NO COMMENTS	
20	HEAD	2.9000	0.1250	2.7750	Apr 21/18	2.996	3.035	2.262	0.0000	0.0000	198.0	NO COMMENTS	
22	BOOT SHELL	1.0000	0.1250	0.8750	Apr 21/18	1.109	1.120	0.584	0.0000	0.0000	198.0	NO COMMENTS	
24	BOOT HEAD	1.0000	0.1250	0.8750	Apr 21/18	0.961	0.980	0.566	0.0021	0.0021	186.8	NO COMMENTS	
46	BRIDLE SHELL	0.0000	0.1250	-0.1250	Apr 21/18	0.434	0.445	0.245	0.0000	0.0000	198.0	NO COMMENTS	

### PIPING SURVEY READINGS

POINT NUMBER	TYPE	SIZE	SCH	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS			Flag
				NOM.	Mill ToI/CA	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term corr rate	remaining life	
02	90L 8 XS	8.00	XS	0.5000	0.0625	0.4375	Apr 21/18	0.479	0.505	0.287	0.0011	0.0011	168.2	NO COMMENTS
04	90L 8 XS	8.00	XS	0.5000	0.0625	0.4375	Apr 21/18	0.437	0.465	0.287	0.0034	0.0034	43.8	NO COMMENTS
26	BAND 2 160	2.00	160	0.3440	0.0430	0.3010	Apr 21/18	0.330	0.350	0.079	0.0008	0.0008	330.1	NO COMMENTS
28	BAND 2 160	2.00	160	0.3440	0.0430	0.3010	Apr 21/18	0.334	0.350	0.079	0.0005	0.0005	469.5	NO COMMENTS
30	BAND 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.211	0.235	0.079	0.0004	0.0004	347.1	NO COMMENTS
32	BAND 3 160	3.00	160	0.4380	0.0548	0.3833	Apr 21/18	0.416	0.435	0.117	0.0012	0.0012	250.7	NO COMMENTS
34	90L 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 21/18	0.263	0.280	0.117	0.0020	0.0020	72.9	NO COMMENTS
36	90L 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 21/18	0.165	0.260	0.117	0.0073	0.0073	6.6	LOW RDG < NOM-CA BY MORE THAN 20%





Client:  
CNRL

POINT NUMBER	TYPE	SIZE	SCH	POINT DATA (INCH)			DATE	SURVEY READINGS			CALCULATIONS			Flag
				NOM.	Mill Tol./CA	NOM-CA		LOW	AVG	T Req (inch)	short term corr	long term corr rate	remaining life	
Comments: PIPING STAMPED 3 SCH XS. DOUBLE CHECKED CALIBRATION AND CONFIRMED READING.														
38	90L 3 80	3.00	80	0.3000	0.0375	0.2625	Apr 21/18	0.212	0.235	0.117	0.0048	0.0048	20.0	LOW RDG IS > 10% BELOW NOM-CA BUT > Tmin
Comments: PIPING ELBOW STAMPED SCH S80. DOUBLE CHECKED CALIBRATION AND CONFIRMED READING.														
40	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.195	0.210	0.079	0.0012	0.0012	92.8	NO COMMENTS
42	90L 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 21/18	0.280	0.300	0.117	0.0011	0.0011	150.5	NO COMMENTS
44	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.258	0.275	0.079	0.0000	0.0000	198.0	NO COMMENTS
48	90L 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 21/18	0.281	0.295	0.117	0.0010	0.0010	159.4	NO COMMENTS
50	BAND 3 XS	3.00	XS	0.3000	0.0375	0.2625	Apr 21/18	0.296	0.310	0.117	0.0002	0.0002	826.2	NO COMMENTS
52	BAND 2 160	2.00	160	0.3440	0.0430	0.3010	Apr 21/18	0.337	0.350	0.079	0.0004	0.0004	678.6	NO COMMENTS
54	90L 2 80	2.00	80	0.2180	0.0273	0.1908	Apr 21/18	0.141	0.155	0.079	0.0042	0.0042	14.8	LOW RDG < NOM-CA BY MORE THAN 20%
Comments: PIPING ELBOW STAMPED SCH S80. DOUBLE CHECKED CALIBRATION AND CONFIRMED READING.														
56	Strip 2 80	2.00	80	0.2180	0.0273	0.1908	Apr 21/18	0.273	0.290	0.079	0.0000	0.0000	198.0	NO COMMENTS
Comments: (T) SECTION														
58	BAND 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.213	0.225	0.079	0.0003	0.0003	493.2	NO COMMENTS
60	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.205	0.215	0.079	0.0007	0.0007	178.4	NO COMMENTS
62	90L 2 XS	2.00	XS	0.2180	0.0273	0.1908	Apr 21/18	0.201	0.215	0.079	0.0009	0.0009	132.1	NO COMMENTS
64	90L 2 160	2.00	160	0.3440	0.0430	0.3010	Apr 21/18	0.278	0.300	0.079	0.0036	0.0036	55.5	NO COMMENTS
66	90L 2 160	2.00	160	0.3440	0.0430	0.3010	Apr 21/18	0.248	0.275	0.079	0.0052	0.0052	32.4	LOW RDG IS > 10% BELOW NOM-CA BUT > Tmin
Comments: PIPE STAMPED SCH S160. DOUBLE CHECKED CALIBRATION AND CONFIRMED READING.														
68	90L 4 40	4.00	40	0.2370	0.0296	0.2074	Apr 21/18	0.243	0.260	0.150	0.0000	0.0000	198.0	NO COMMENTS
70	Strip 4 40	4.00	40	0.2370	0.0296	0.2074	Apr 21/18	0.307	0.325	0.150	0.0000	0.0000	198.0	NO COMMENTS
Comments: (T) SECTION.														
72	BAND 4 40	4.00	40	0.2370	0.0296	0.2074	Apr 21/18	0.217	0.235	0.150	0.0011	0.0011	61.8	NO COMMENTS
74	90L 4 STD	4.00	STD	0.2370	0.0296	0.2074	Apr 21/18	0.244	0.260	0.150	0.0000	0.0000	198.0	NO COMMENTS



Client:  
CNRL

POINT NUMBER	TYPE	SIZE	SCH	POINT DATA (INCH)			SURVEY READINGS			CALCULATIONS			Flag	
				NOM.	Mill Tol./CA	NOM-CA	DATE	LOW	AVG	T Req (inch)	short term corr	long term corr rate		remaining life
76	90L 8 XS	8.00	XS	0.5000	0.0625	0.4375	Apr 21/18	0.506	0.520	0.287	0.0000	0.0000	198.0	NO COMMENTS
78	90L 8 XS	8.00	XS	0.5000	0.0625	0.4375	Apr 21/18	0.495	0.515	0.287	0.0003	0.0003	765.4	NO COMMENTS

**INSPECTOR-EQUIPMENT DATA**

Inspected By	Signature	CGSB Level	CGSB No.	Survey Dat	UT Equipment	Due Date OF Calibration	NDE Procedure #
Jamey Tanasichuk		SNT LV 2	11444	04/21/2018	106_61457706_EPOCH 4	04/30/2018	WQS UT-001



**Client:**  
**CNRL**

District	Fort St John	Facility	Graham	Location/LSD	C-076-K/094-B-08
Equipment Name:	INLET SEPARATOR			Prov Reg No.:	0454381
Serial No.:	2000-6332-01	Equip No.:	V-005	National Board No.:	N/A

**External Inspection**

Inspector:	Jamey Tanasichuk	ABSA PESL #000411	Signature:		Date:	04/21/2018
------------	------------------	-------------------	------------	--	-------	------------

**External Corrosion**

There was no significant external corrosion found on the vessel/piping

Accept

**External Damage**

There was no external corrosion found on the vessel/piping

Accept

**Leakage**

No Leaks were found on the vessel or piping connections

Accept

**Vessel and Piping Supports**

Vessel support is Saddle and is acceptable

Accept

Vessel support anchor bolts are in place and acceptable

Accept

Vessel Foundation is Concrete and is acceptable

Accept

Piping is supported by Clamp system :Reject

Concern

**Insulation/Paint**

	Type	Findings	
Vessel	Painted	Accept	Accept
Inlet Piping	Painted	Accept	Accept
Outlet Piping	Painted	Accept	Accept

**Pressure Envelope Flanging**

	Bolting	Thread engagement	Gaskets	Flange Rating	
Manway	Accept	Accept	Accept	Accept	Accept
Vessel	Accept	Accept	Accept	Accept	Accept
Inlet Piping	Accept	Accept	Accept	Accept	Accept
Outlet Piping	Accept	Accept	Accept	Accept	Accept
Other Piping	Accept	Accept	Accept	Accept	Accept

**General**

Temp Gauge is acceptable, Level Gauge is acceptable, Grounding is acceptable, Platform is acceptable, Ladder/Stairway is acceptable, Davit is acceptable,

Accept

**Comment**





**Client:**  
**CNRL**

**PRESSURE RELIEF VALVE SUMMARY**

<b>District:</b>	Fort St John	<b>Facility:</b>	Graham	<b>Location/LSD:</b>	C-076-K/094-B-08
------------------	--------------	------------------	--------	----------------------	------------------

**PSV STATIC DATA**

<b>Tag/Equip No.:</b>	14854F	<b>Serial No.:</b>	420527-1-A11
<b>Manufacturer:</b>	FARRIS	<b>CRN No.:</b>	0G2369.5C
<b>Model No.:</b>	26HB13-120/S7	<b>Code Stamp:</b>	
<b>Side (Shell or Tube):</b>	Shell	<b>Outlet Size:</b>	3
<b>Inlet Size:</b>	2	<b>Outlet Type / ANSI Rating:</b>	Flanged / 150
<b>Inlet Type / ANSI Rating</b>	Flanged / 600		

**PSV SERVICE DATA**

<b>Set Date:</b>	22 Aug, 2013	<b>Service Interval:</b>	60
<b>Set Pressure (psig)</b>	1332	<b>Capacity (scfm):</b>	20300
<b>Service Company:</b>	UNIFIED VALVE	<b>Next Service Date:</b>	22 Aug, 2018

**PSV FIELD INSPECTION**

**Inspector** Jamey Tanasichuk **Company** Western Quality Services **Signature:**  **Inspection Date:** 21-Apr-2018

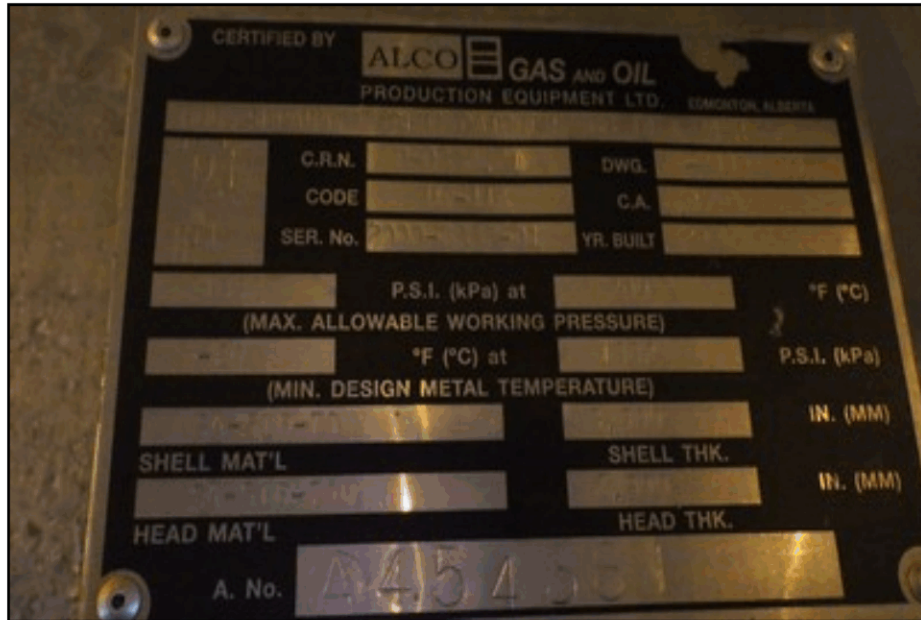
**Inspection Type:**

<b>RESTRICTIONS</b>	<b>BLINDS</b>	INLET:	No Blinds found btwn vessels and psv inlet	Accept
		OUTLET:	No blinds found btwn PSV and discharge point	Accept
	<b>REDUCERS</b>	INLET:	No reducers found btwn Vessel(s) and PSV Inlet	Accept
		OUTLET:	No reducers found btwn PSV and Discharge Point	Accept
	<b>BLOCK VALVES</b>	INLET:	Inlet Block valve is locked open	Accept
		OUTLET:	Outlet Block valve is locked open	Accept
<b>SERVICING</b>	<b>SET PRESSURE</b>	PSV set pressure is at or less than MAWP of all linked vessels in the system.		Accept
	<b>SERVICE DATE</b>	PSV set date is current at time of inspection		Accept
	<b>SERVICE SEAL</b>	Service seal is intact		Accept
<b>OPERATION</b>	<b>TAGGING</b>	Service tag is properly attached to the psv		Accept
	<b>VIBRATION</b>	None		Accept
	<b>DISCHARGE</b>	PSV Discharge point is in a safe location and is acceptable		Accept
	<b>LEAKS</b>	INLET:	No visible leaks found at psv inlet connection	
OUTLET:		No visible leaks found at psv outlet connection		Accept
<b>INSTALLATION</b>	<b>PSV SUPPORTS</b>	PSV supported		Accept
	<b>ANGLE</b>	PSV is installed in the proper upright position		Accept

**EQUIPMENT PROTECTED**

Prov Reg No.	Equipment No.	Serial No.	Equipment Name	Status	MAWP
0454381	V-005	2000-6332-01	INLET SEPARATOR	Operating	1332.00

## PHOTOGRAPHS



NAMEPLATE



LSD



OVERALL

**PHOTOGRAPHS**



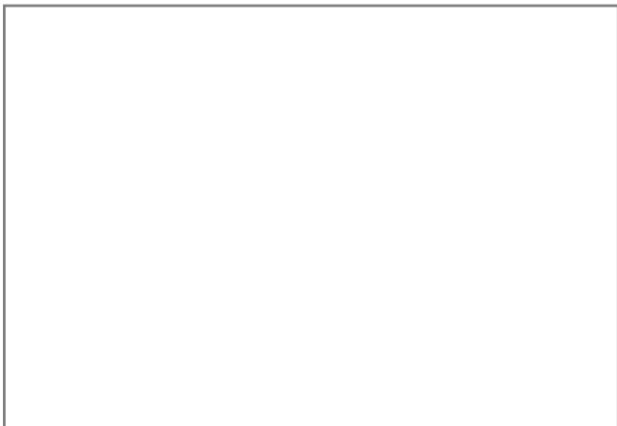
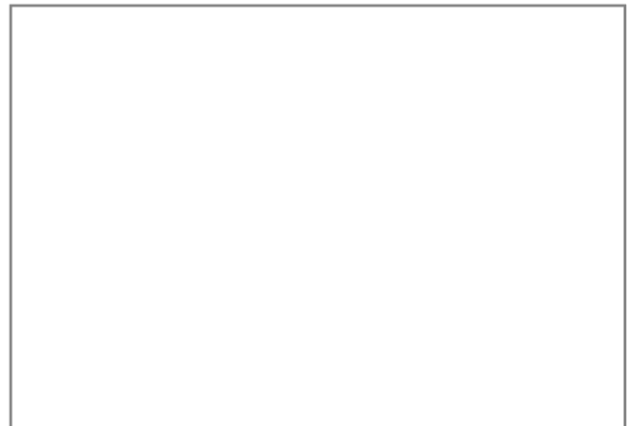
PSV



PSV TAG



PSV TAG



NOTES: