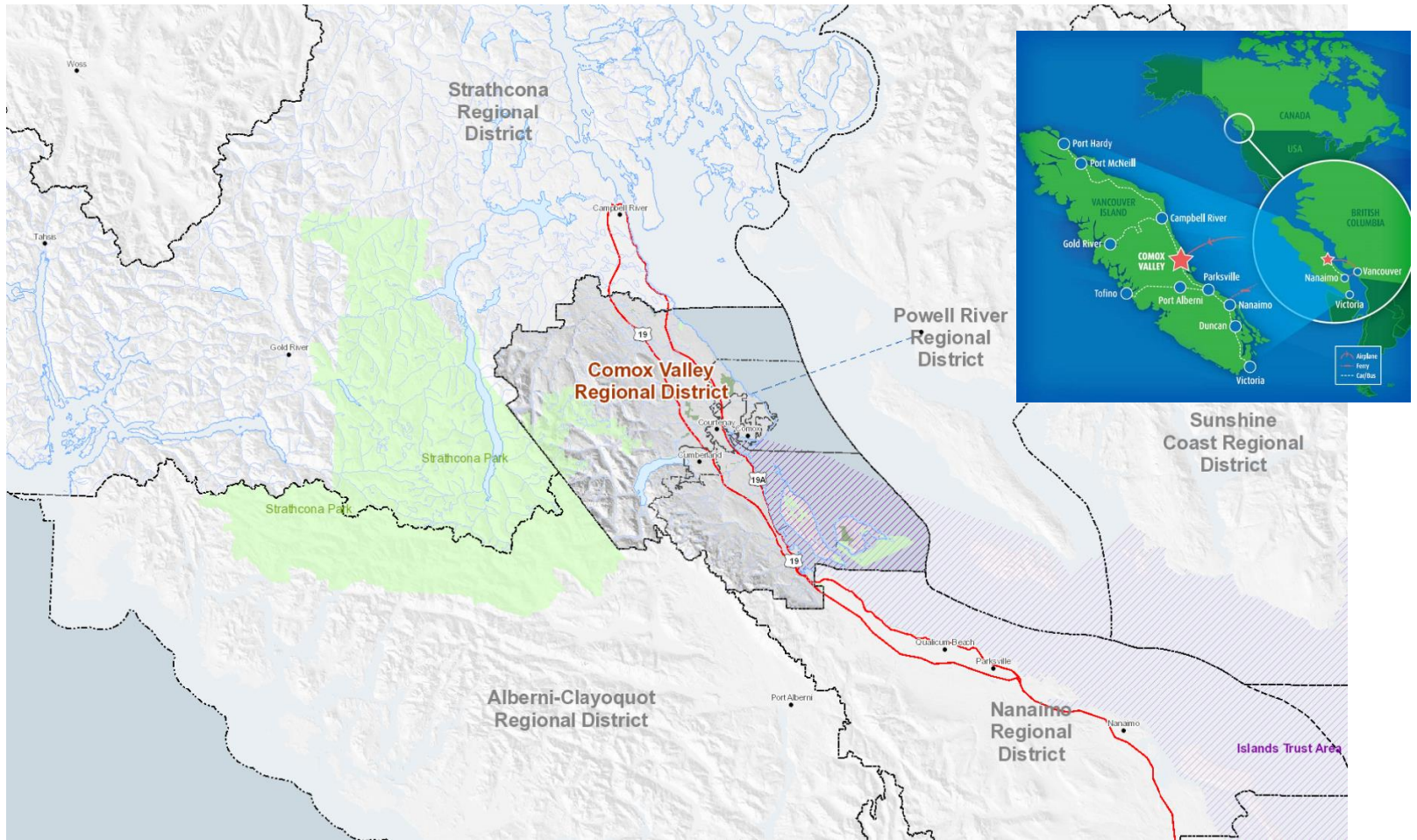




SCADA Data Across the Organization

Presented by
Brian Pearson
Senior Manager of Information Systems & GIS





Comox Valley Regional District

- Local regional government for 3 municipalities and 3 rural areas
- Manage major utilities – Water, Sewer, Solid Waste
- Population of 65,000
- 29 remote sites throughout the Comox Valley



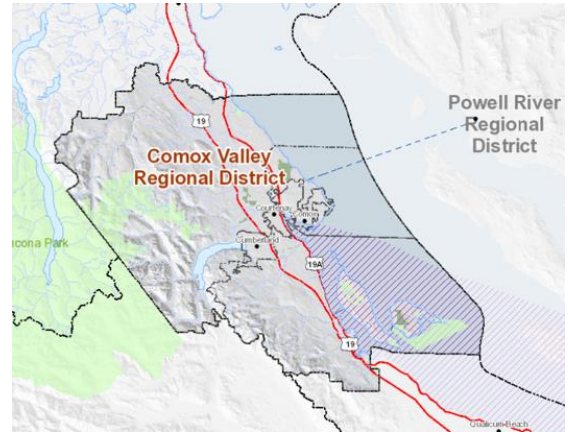
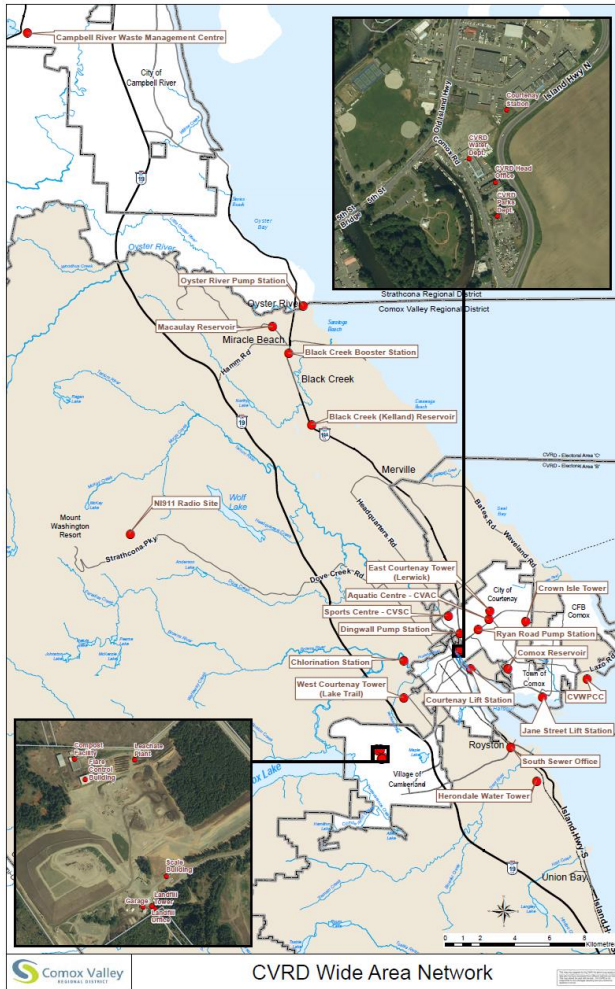
Overview

- Business Challenges
- Existing systems and how data collection worked in past
- Implementation of network and data connections
- Integration of the PI System®
- Integration of PI Vision™ and PI ProcessBook®
- Changes to systems and how staff work
- Outcomes and future directions with data integration

Business Challenges

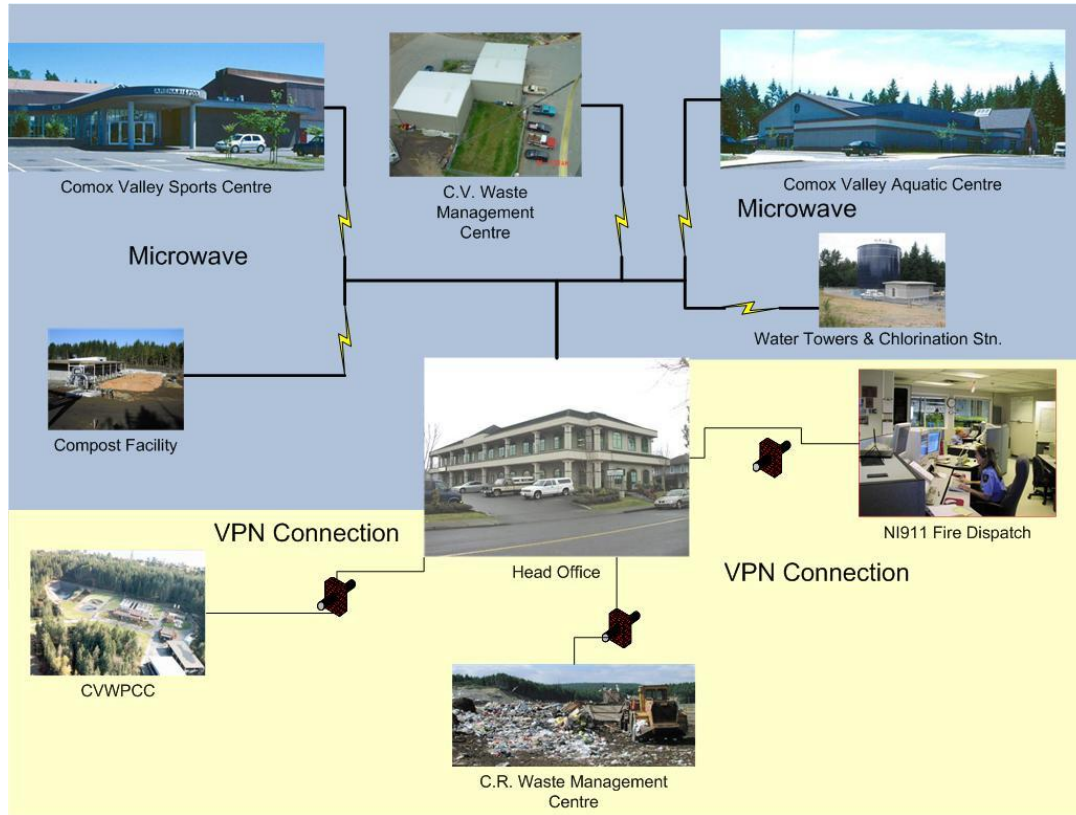
- Bring all data from remote water, sewer and solid waste stations to central office
- Large distances between sites makes local data analysis impossible
- Need to centrally store and analyze data from remote sites in real time
- Many staff members in several departments need to view and monitor collected data and systems
- Increase efficiencies in time, labour and costs to access data and to control remote systems

29 remote sites throughout the Comox Valley

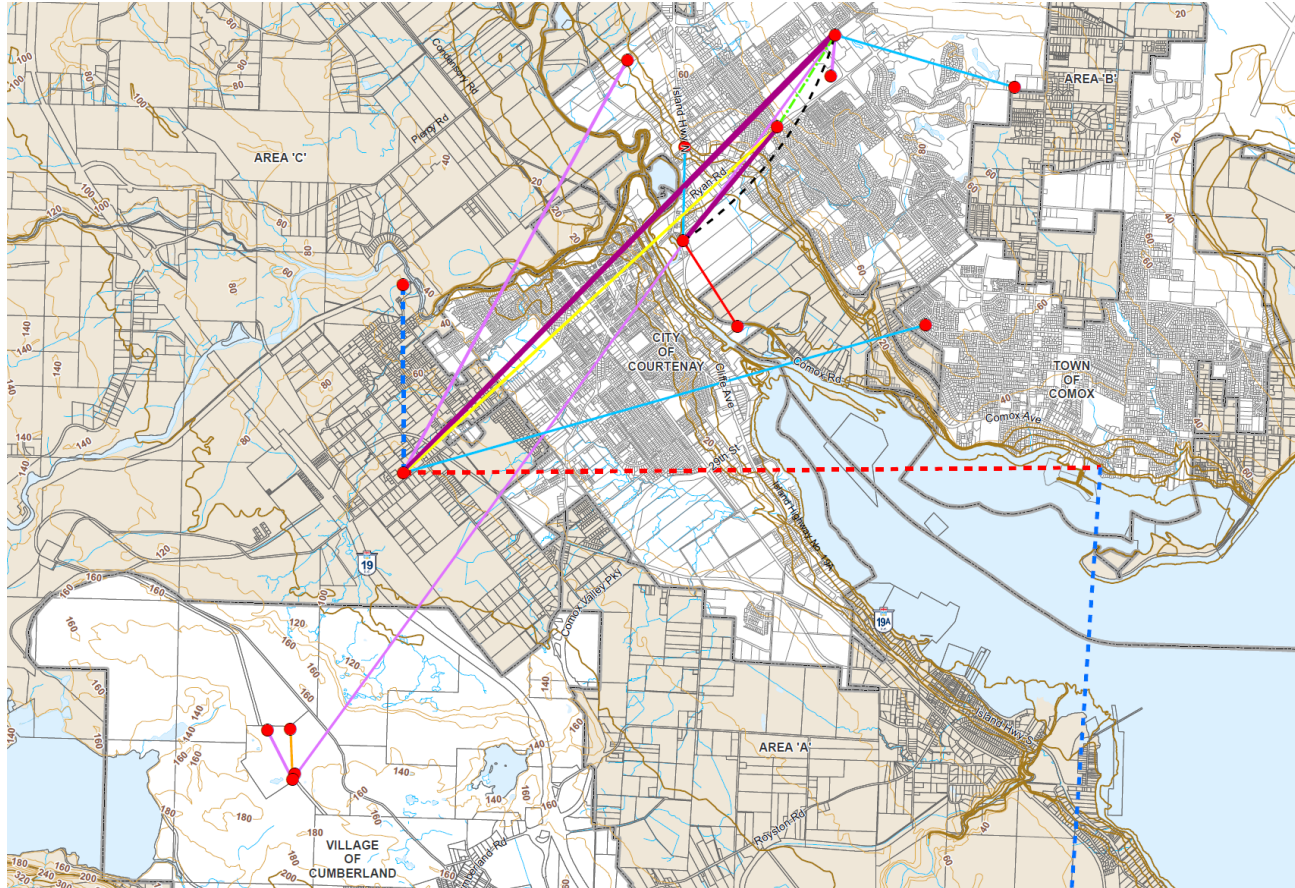


Comox Valley REGIONAL DISTRICT CVRD Wide Area Network

CVRD Wide Area Network



CVRD Wide Area Network





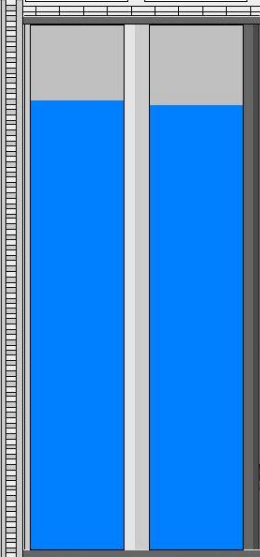




West Courtenay Reservoir

Cell 1: 85.5 %

Cell 2: 84.5 %



WEST COURTENAY

Station Flow: 406 m3/hr

Suction Pressure: 68.2 PSI

Cell 1 Level: 85.5 %

Cell 2 Level: 84.5 %

Altitude Valve Status

AUTO

OPEN

STAGE 2

Position: 18.2 %

Hold SP: 18.0 %

Max Hold SP: 27.0 %

Altitude Valve Status

AUTO

OPEN

STAGE 2

Position: 13.4 %

Hold SP: 13.3 %

Max Hold SP: 20.0 %

MARSDEN

Marsden Boosted: 7.7 m3/hr

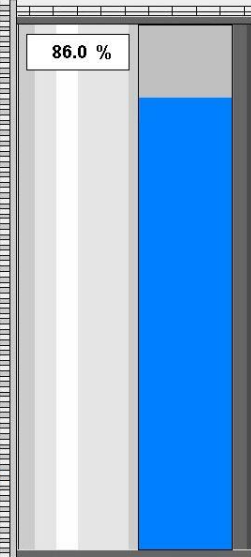
CVLSA Flow: 10.1 m3/hr

Discharge Pressure: 86.0 PSI

Reservoir Level: 86.0 %

Marsden Reservoir

86.0 %



Altitude Valve Control Mode

MULTI-STAGE HOLD: **ENABLED**

NIGHT MODE: **DISABLED**

MANUAL OVERRIDE: **DISABLED**

PUMP RUN MODE: **DISABLED**

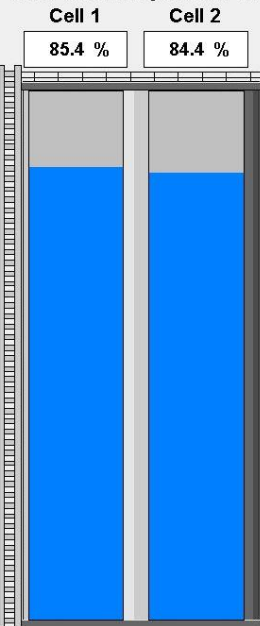
TURBIDITY MODE: **DISABLED**

CURRENT USER: JAMES

- SELECTION SCREEN
- PLEASE LOGOUT
- WEST COURT OVERVIEW
- WEST COURT ALARMS
- WEST COURT TIMERS
- WEST COURT SETPOINTS
- MARSDEN SETPOINTS
- WEST COURT TRENDING
- WC ALARM HISTORY
- WC EVENT HISTORY

Idle in 10:00

West Courtenay Reservoir



Active Reservoir Cell for Setpoints: **CELL 1**

WC ALTITUDE VALVE
SETPOINT DEFAULTS

Alarm Setpoints		Current
Cell 1 High Reservoir Level Alarm	98 %	85.37
Cell 1 Low Reservoir Level Alarm	70 %	
Low Suction Pressure Alarm	10 PSI	68.01
Low Flow Alarm	0 m3/hr	376.59
Control Setpoints		
Cell 1 Stop Fill	95.0 %	85.37
Cell 1 Stage 3 Setpoint	85.0 %	
Cell 1 Night Mode Disable	80.0 %	85.37
Low Suction Pressure Close Valve SP	40.0 PSI	68.01

ALTITUDE VALVE CONTROL

MULTI-STAGE HOLD **ENABLED**
 NIGHT MODE **DISABLED** **ENABLE**
 Altitude Valve Multi-Stage Max Hold Setpoint 27.0 %

Altitude Valve Hold Stages

	Valve Position	Reservoir Level
Current	18.07 %	85.37 %
Stage 1 (PLC)	9.00 %	94.50 %
Stage 2 (PLC)	18.00 %	91.17 %
Stage 3 (HMI)	27.00 %	85.00 %

MANUAL OVERRIDE **DISABLED** **ENABLE**
 Altitude Valve Manual Override Hold Setpoint 0.0 %

PUMP RUN MODE **DISABLED** **ENABLE**

1st PUMP		2nd PUMP	
STOP SETPOINT	95.0 %	STOP SETPOINT	90.0 %
START SETPOINT	85.0 %	START SETPOINT	80.0 %

TURBIDITY MODE **DISABLED** **ENABLE**

Altitude Valve Will Hold Closed When Turbidity Mode is Enabled

Altitude Valve will open below: 94.50 %
 Altitude Valve will close above: 95.00 %

Altitude Valve Status

AUTO
OPEN
STAGE 2

Position 18.1 %
 Hold SP 18.0 %
 Max Hold SP 27.0 %

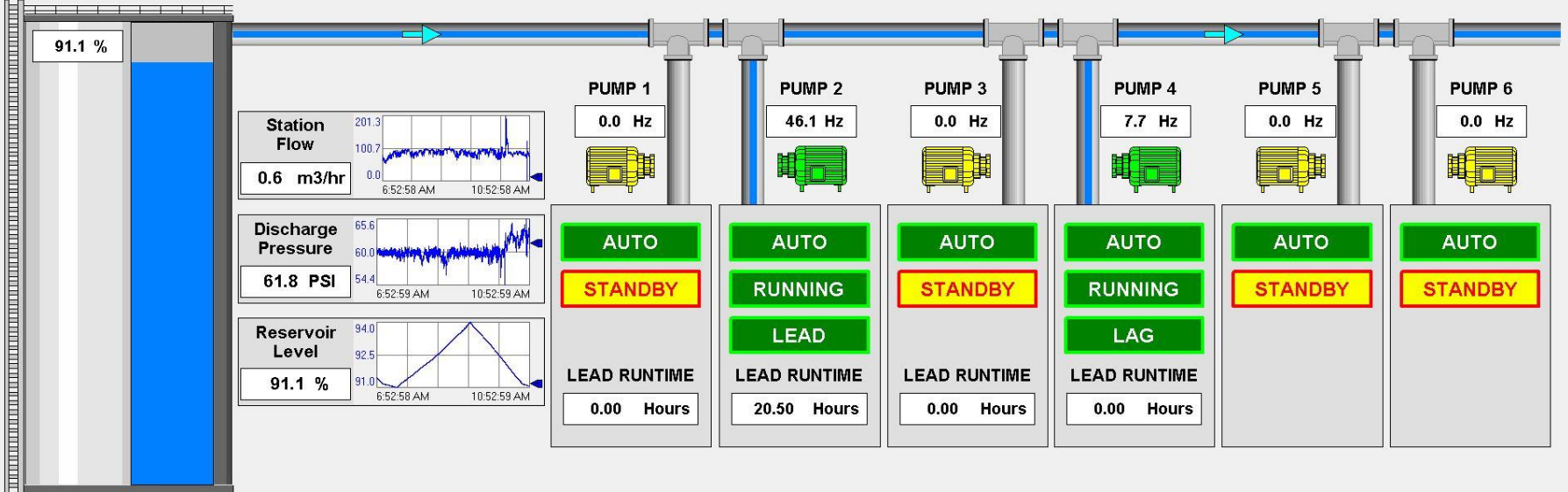
CURRENT USER: JAMES

- SELECTION SCREEN
- PLEASE LOGOUT
- WEST COURT OVERVIEW
- WEST COURT ALARMS
- WEST COURT TIMERS
- WEST COURT SETPOINTS
- MARSDEN SETPOINTS
- WEST COURT TRENDING
- WC ALARM HISTORY
- WC EVENT HISTORY

Idle in 10:00



East Courtenay Reservoir



CURRENT USER: JAMES

SELECTION
SCREEN

PLEASE
LOGOUT

EAST COURT
OVERVIEW

EAST COURT
ALARMS

EAST COURT
TRENDING

EAST COURT
SETPOINTS

EAST COURT
TIMERS

EC ALARM
HISTORY

EC EVENT
HISTORY

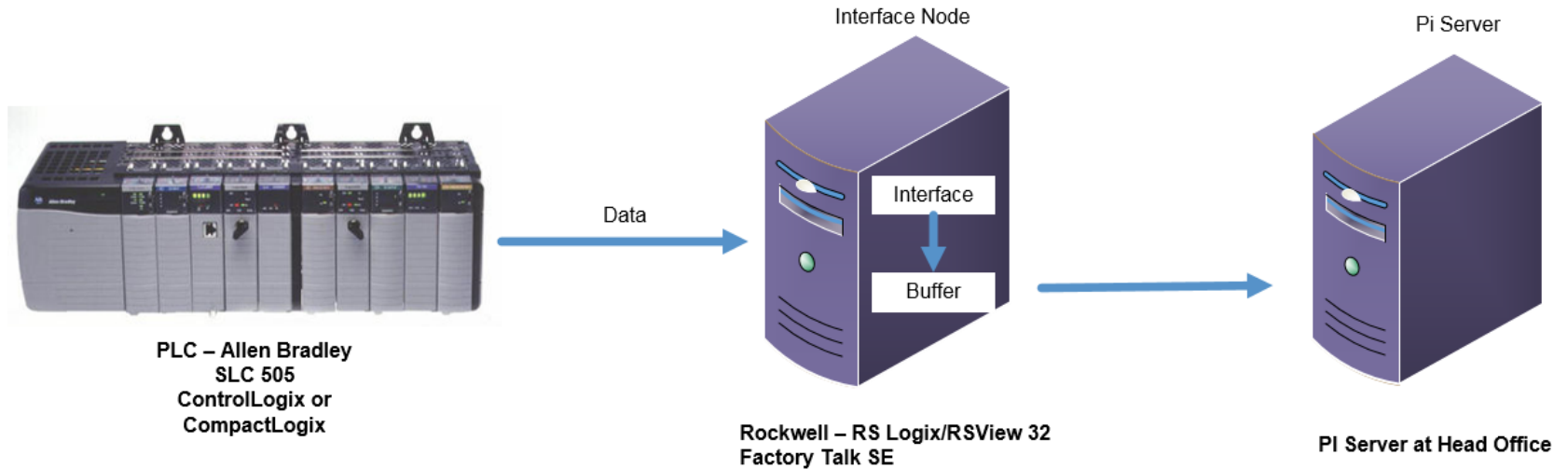
Idle in 9:59

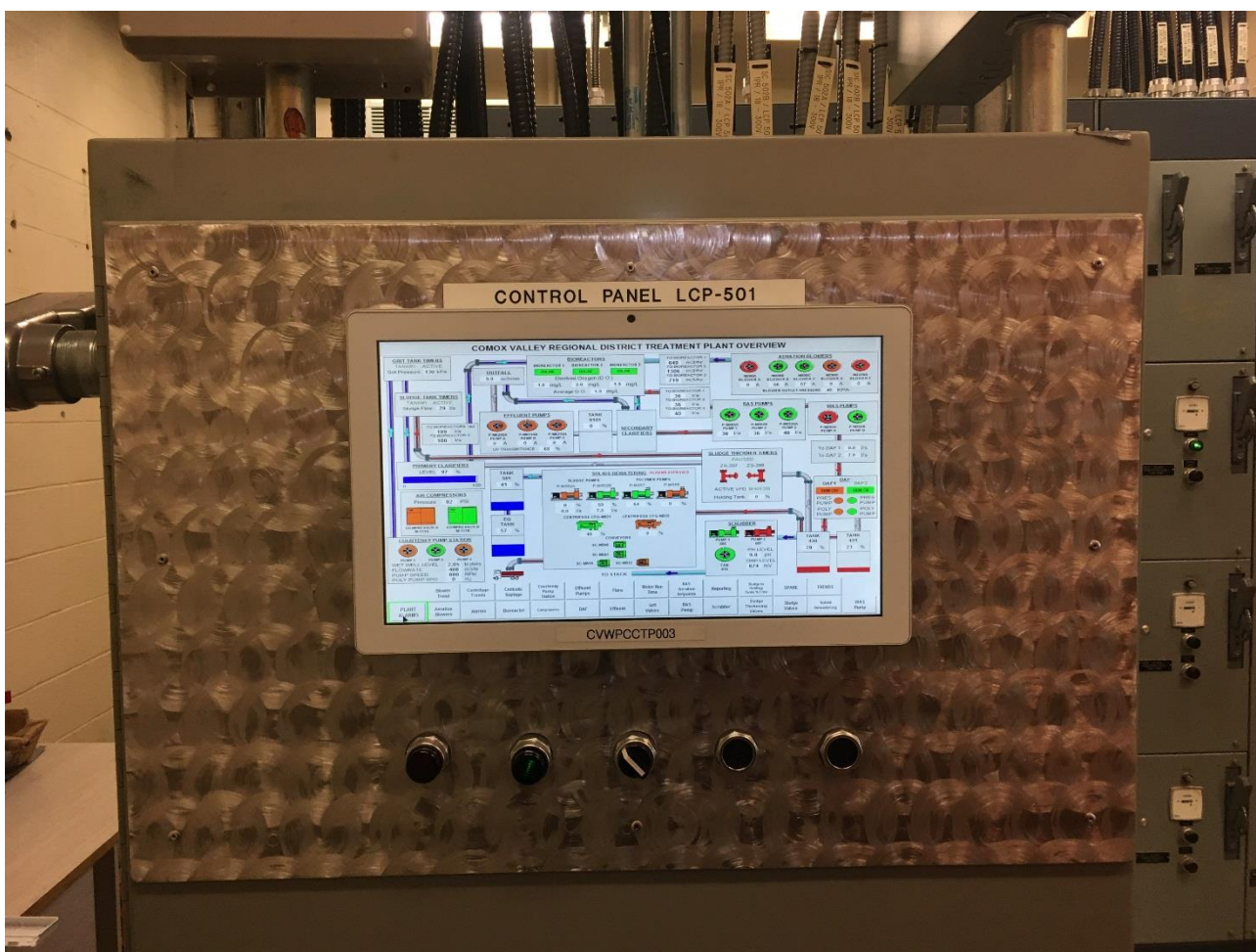
Original chart recorders for data collection



PI System® – PI Server™

Standard Configuration at Remote Sites







Servers

Search

Servers

System Management Tools

Search

- Alarms
- Batch
- Data
- Interfaces
- IT Points
- Operation
- Points
- Security
 - Database Security
 - Firewall
 - Identities, Users, & Groups
 - Mappings & Trusts**
 - Security Settings

Trust	Server	Collective	Description	PI User	Domain	OS User	Application Name	Network Path	IP Address	NetMask	Enabled
(Proxy_127)				piadmin						255.255.255.255	True
Black Creek RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Buffering Black Creek				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Chloinaton Service				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering ComoxRes Service				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Courtenay Station Service				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Crown Isle				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Dingwall				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering East Courtenay				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Flare				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Marsden Service				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Oyster River				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Treatment Plant				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering Treatment Plant New				PI_OPICnt			pibufss.exe			255.255.255.255	True
Buffering West Courtenay				PI_OPICnt			pibufss.exe			255.255.255.255	True
BufferingTrust				PI_OPICnt			pibufss.exe			255.255.255.0	True
BufferingTrust(2ndPJ)				PI_OPICnt			pibufss.exe			255.255.255.255	True
Chloinaton RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Comox Res RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Courtenay Station RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Crown Isle RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
CVRDCoresight_hostname				piadmin				Coresight	0.0.0.0		True
CVRDCoresight_IP				piadmin						255.255.255.255	True
ewetNet				piadmin						255.255.255.255	True
Dingwall RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
EastCourtenay RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Flare OPC				PI_OPICnt			OPCpe			255.255.255.255	True
Historian connection				PI_OPICnt						255.255.255.255	True
Historian connection server				PI_ICUEditor			PHCU.exe			255.255.255.255	True
Marsden RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
Oyster River RSView OPC				PI_OPICnt			OPCpE			255.255.255.255	True
PI ICU Black Creek			Black Creek	PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Chloinaton				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU ComoxRes				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Courtenay Station			Communication from the remote node to the server	PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Crown Isle				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Dingwall				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU EastCourtenay				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Flare				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Marsden				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Oyster River			Oyster River Station	PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Ryan				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Treatment Plant				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU Treatment Plant New				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI ICU West Courtenay				PI_ICUEditor			PHCU.exe			255.255.255.255	True
PI SDK Trust Oyster River				PI_ICUEditor			PISDKUtility.exe			255.255.255.255	True
PI SDK Trust Treatment Plant				PI_ICUEditor			PISDKUtility.exe			255.255.255.255	True
PI SDK Trust Treatment Plant New				PI_ICUEditor			PISDKUtility.exe			255.255.255.255	True
PI SDK Trust Treatment Plant New				piadmin			rsantF			255.255.255.255	True

Session Record

piadmin, piadmins, PIWorld

PI System Interface Failover

The screenshot shows the 'PI Interface Configuration Utility - opcint3' window. The 'Interface' is 'FailOver Chlorination 31 (opcint3)'. The 'Type' is 'OPCint'. The 'Description' is 'FailOver Chlorination 31'. The 'Versions' are 'opcint.exe version 2.5.1.3' and 'Unintnt version 4.5.5.22'. A 'PI Data server Connection Status' box shows a green checkmark and the word 'Writable'.

The 'Unint Failover' section is expanded, showing the following configuration:

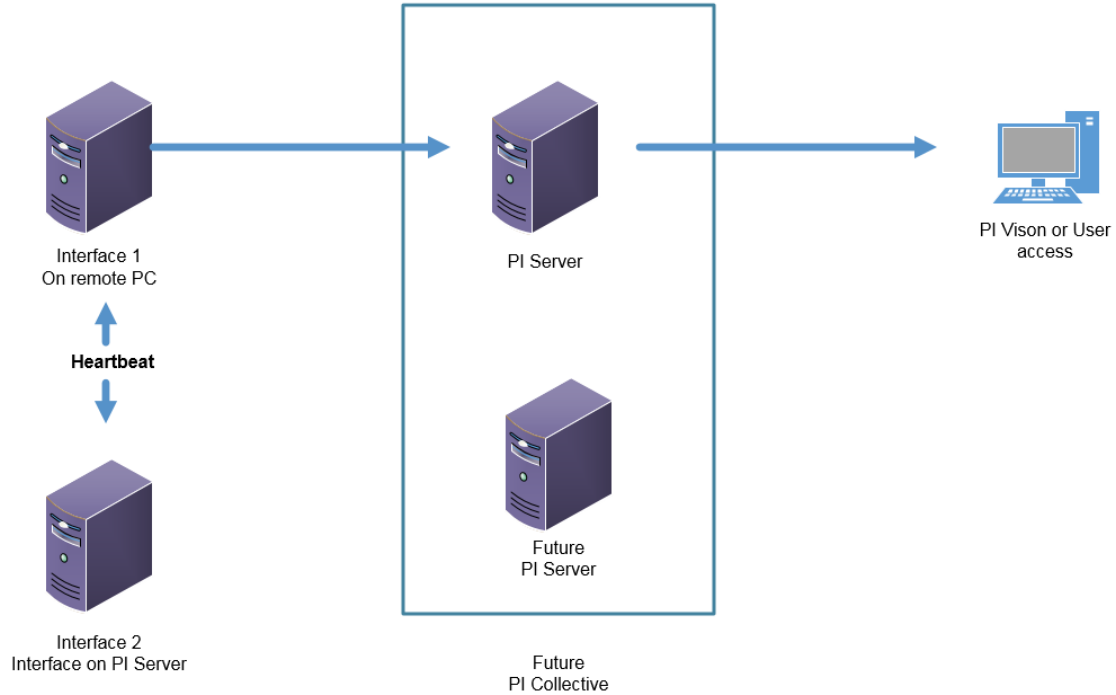
- Enable Unint Failover
- Phase 1 (radio button), Phase 2 (radio button)
- Failover ID# for this instance: 2
- Failover ID# of the other instance: 1
- Do not failover when both interfaces lose connection to PI
- Failover control tags are unsolicited (not scan based)
- Rate at which the heartbeat point is updated/checked: 5000 milliseconds
- UFO Type: WARM
- Synchronization File Path: ailoover\opcint_OPC_31.dat

Status	Tag	Exdesc	PointSource	L	^
Created	opcint_31_OPC_UFO2_ActiveID	[UFO2_ActiveID]	OPC	3	
Created	opcint_31_OPC_UFO2_Heartbeat_2	[UFO2_Heartbeat:2]	OPC	3	
Created	opcint_31_OPC_UFO2_Heartbeat_1	[UFO2_Heartbeat:1]	OPC	3	

Buttons: Close, Apply

Taskbar: Ready, Stopped, opcint3 - Installed

Failover and High Availability (HA)



Advanced Computing Engine (ACE)

Name	Status/Value	Since	Schedule	Output Tags
Context Summary				
	On	7/12/2016 3:23:38 PM	Clock (5, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 10)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 10)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 10)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (15, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 5)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 0)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 5)	1
	On	7/12/2016 3:23:38 PM	Clock (5, 5)	1

**PI Vision™
and
PI ProcessBook®
Visualization**

Search All Displays

Filter by Keywords

- All Displays
- Favorites
- My Displays
- Recent
- ProcessBook

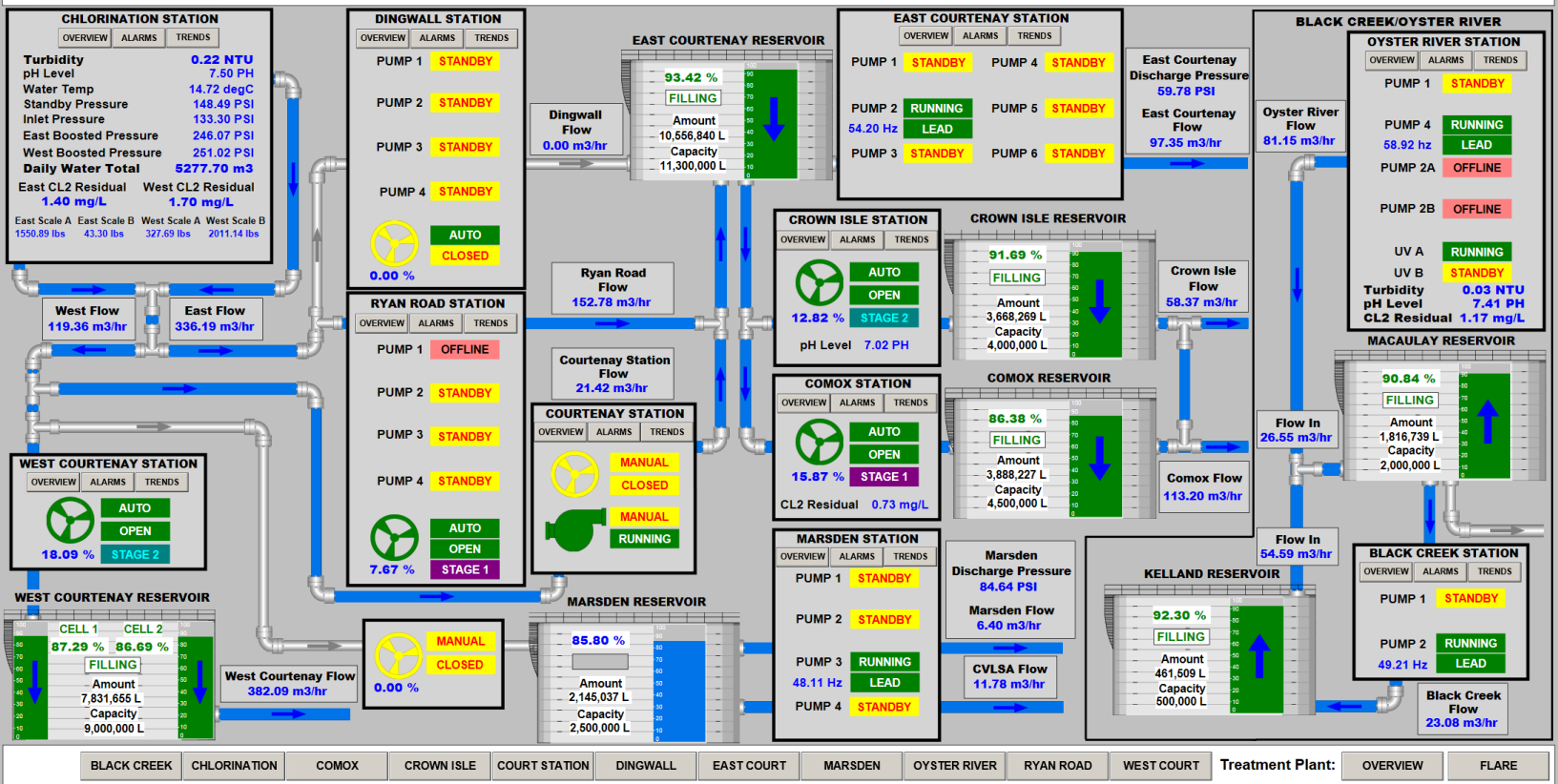
All Displays (148)

<p>Water System Overview RDCS/dawjam</p>	<p>Comox Overview RDCS/dawjam</p>	<p>Chlorination Station Overview RDCS/dawjam</p>	<p>Flare Overview RDCS/dawjam</p>	<p>Treatment Plant Overview RDCS/dawjam</p>	<p>Courtenay Pump Station Overview RDCS/dawjam</p>	<p>Solids Dewatering Overview RDCS/dawjam</p>
<p>Aeration Blower Overview RDCS/dawjam</p>	<p>Bioreactor Overview RDCS/dawjam</p>	<p>Total Water use RDCS/peabri</p>	<p>Ryan Road Single Trend RDCS/dawjam</p>	<p>Oyster River Overview RDCS/dawjam</p>	<p>Black Creek Overview RDCS/dawjam</p>	<p>Crown Isle Overview RDCS/dawjam</p>
<p>Marsden Overview RDCS/dawjam</p>	<p>WS Reservoir Level Trend RDCS/dawjam</p>	<p>NTU Only RDCS/peabri</p>	<p>Air Compressor Control RDCS/dawjam</p>	<p>Sludge Thickener Valves Overview RDCS/dawjam</p>	<p>Sludge Tank Valves Overview RDCS/dawjam</p>	<p>East Courtenay Overview RDCS/dawjam</p>
<p>Treatment Plant Alarms RDCS/dawjam</p>	<p>Grit Tank Valve Timers Overview RDCS/dawjam</p>	<p>Chlorination Station Alarms RDCS/dawjam</p>	<p>Chlorination Station Trends RDCS/dawjam</p>	<p>EQ Tank Trends RDCS/dawjam</p>	<p>Dingwall Alarms RDCS/dawjam</p>	<p>WS Legend RDCS/dawjam</p>



Comox Valley Regional District Water System Overview

ALARMS RESERVOIR LEVELS TREND PUMP RUN LEGEND



BLACK CREEK CHLORINATION COMOX CROWN ISLE COURT STATION DINGWALL EAST COURT MARSDEN OYSTER RIVER RYAN ROAD WEST COURT Treatment Plant: OVERVIEW FLARE

CHLORINATION STATION

OVERVIEW

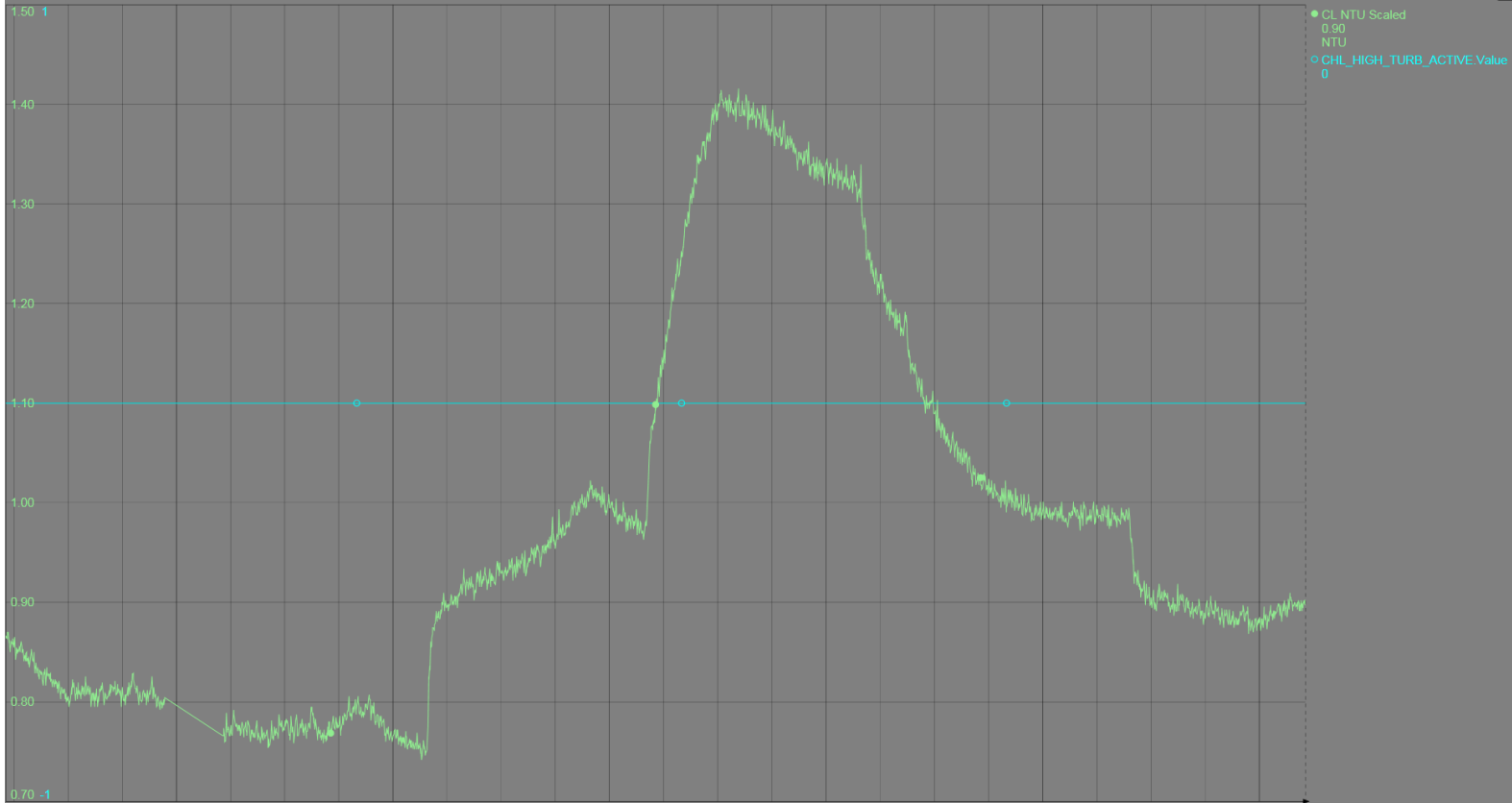
ALARMS

TRENDS

Turbidity	0.23 NTU		
pH Level	7.50 PH		
Water Temp	14.72 degC		
Standby Pressure	148.32 PSI		
Inlet Pressure	133.14 PSI		
East Boosted Pressure	246.26 PSI		
West Boosted Pressure	251.09 PSI		
Daily Water Total	5277.70 m3		
East CL2 Residual	West CL2 Residual		
1.50 mg/L	1.91 mg/L		
East Scale A	East Scale B	West Scale A	West Scale B
1551.08 lbs	43.11 lbs	326.92 lbs	2012.47 lbs

West Flow
118.03 m3/hr

East Flow
334.86 m3/hr



Chlorination Stn Water Turbidity

10/16/2016 8:51:04 AM

1d

Now

10/17/2016 8:51:04 AM

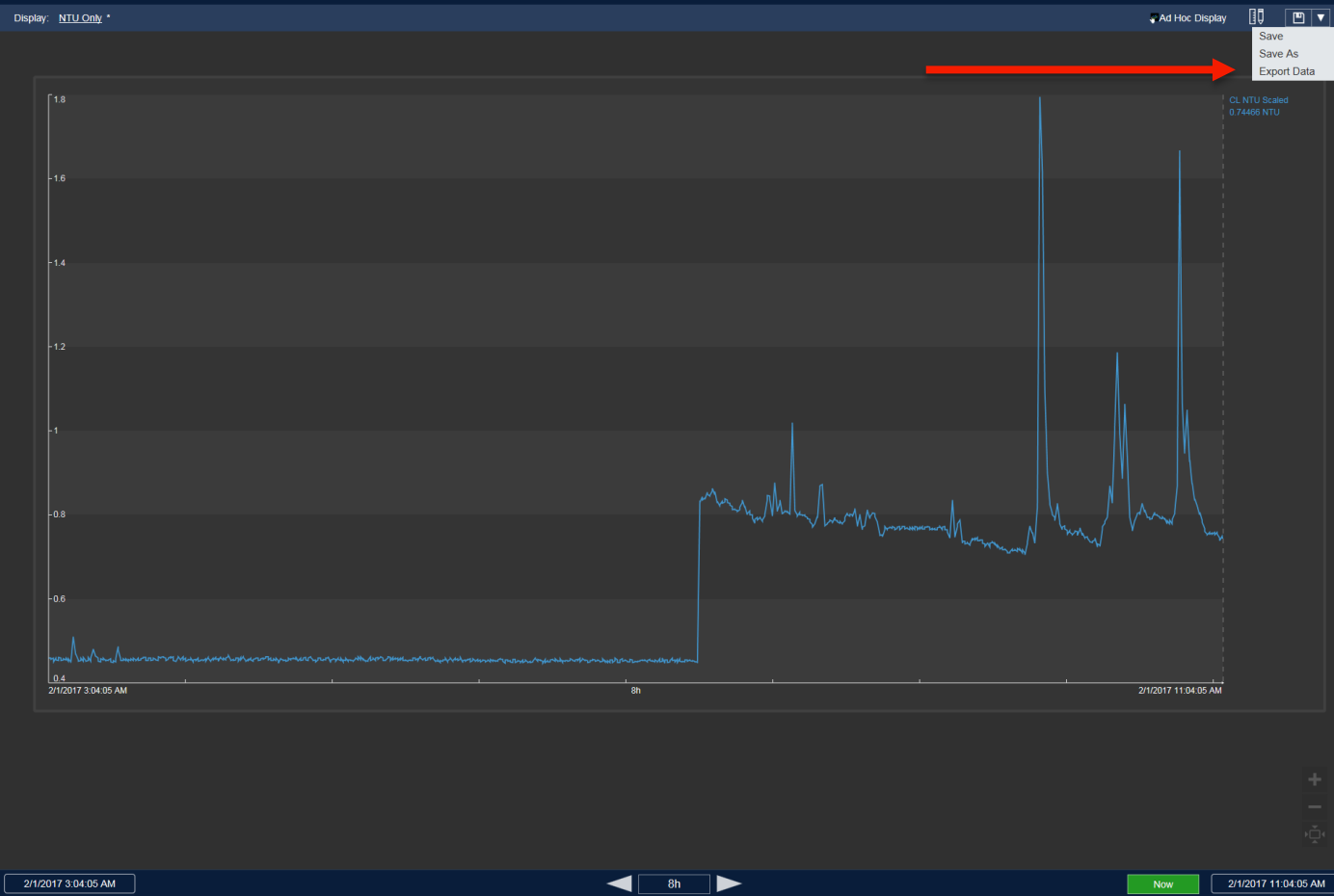
Assets

cl*

- CL EDIT_E_CL2_LO_FLOW_SP
- CL EDIT_E_CL2_LO_SP
- CL EDIT_East_Res_SP
- CL EDIT_HI_NTU_SP
- CL EDIT_Inlet_press_low_SP
- CL EDIT_N4_Hi_press_SD_SP
- CL EDIT_W_CL2_HI_SP
- CL EDIT_W_CL2_LO_FLOW_SP
- CL EDIT_W_CL2_LO_SP
- CL EDIT_W_DIFF_PRESS_ALM_SP
- CL EDIT_West_Res_SP
- CL Gen_Fail_ALM
- CL Gen_Fault
- CL GEN_Running
- CL HI_NTU_SP**
- CL Inlet_press_low_SP
- CL MA_All_Valve_Call

< Page 1 of 4 >

Attributes



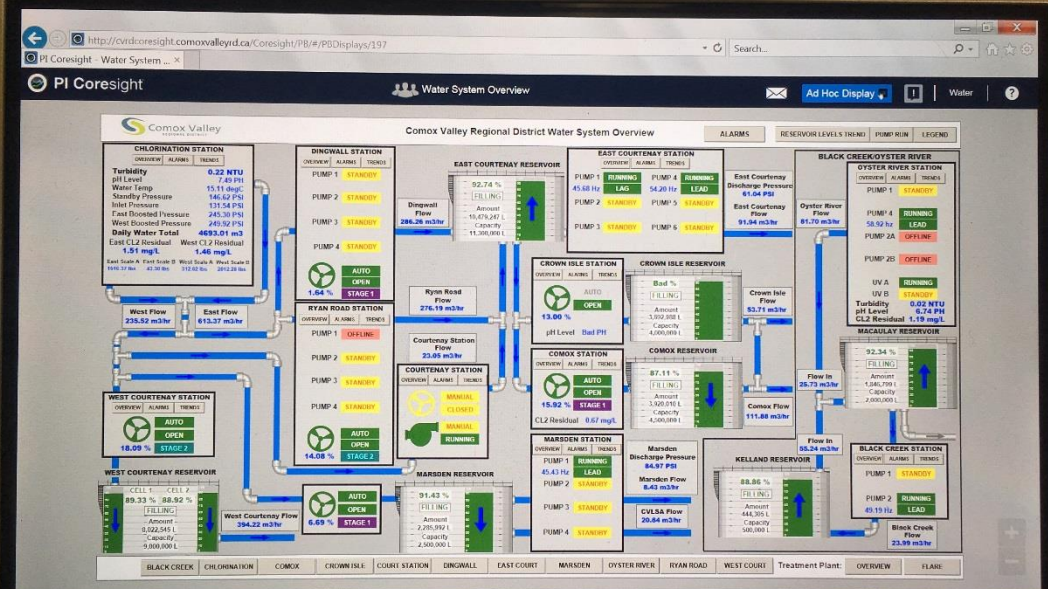
- Assets
- cl*
- CL pH Scaled
 - CL both flow sum
 - CL both flow Totalizer
 - CL CHL_Leak_ALM
 - CL CHL_Room_Flood
 - CL CL_East_Scale_A
 - CL CL_East_Scale_B
 - CL CL_West_Scale_A
 - CL CL_West_Scale_B
 - CL Comm_Fail_ALM
 - CL COMM_FAIL_STBY_STN
 - CL Cx_alt_valve_call
 - CL CX_RES_LVL
 - CL DI_Alt_Valve_Call
 - CL E_CL2_HI_SP
 - CL E_CL2_LO_FLOW_SP
 - CL E_CL2_LO_SP
- Attributes





Panasonic FZ-G1

TOUGHPAD

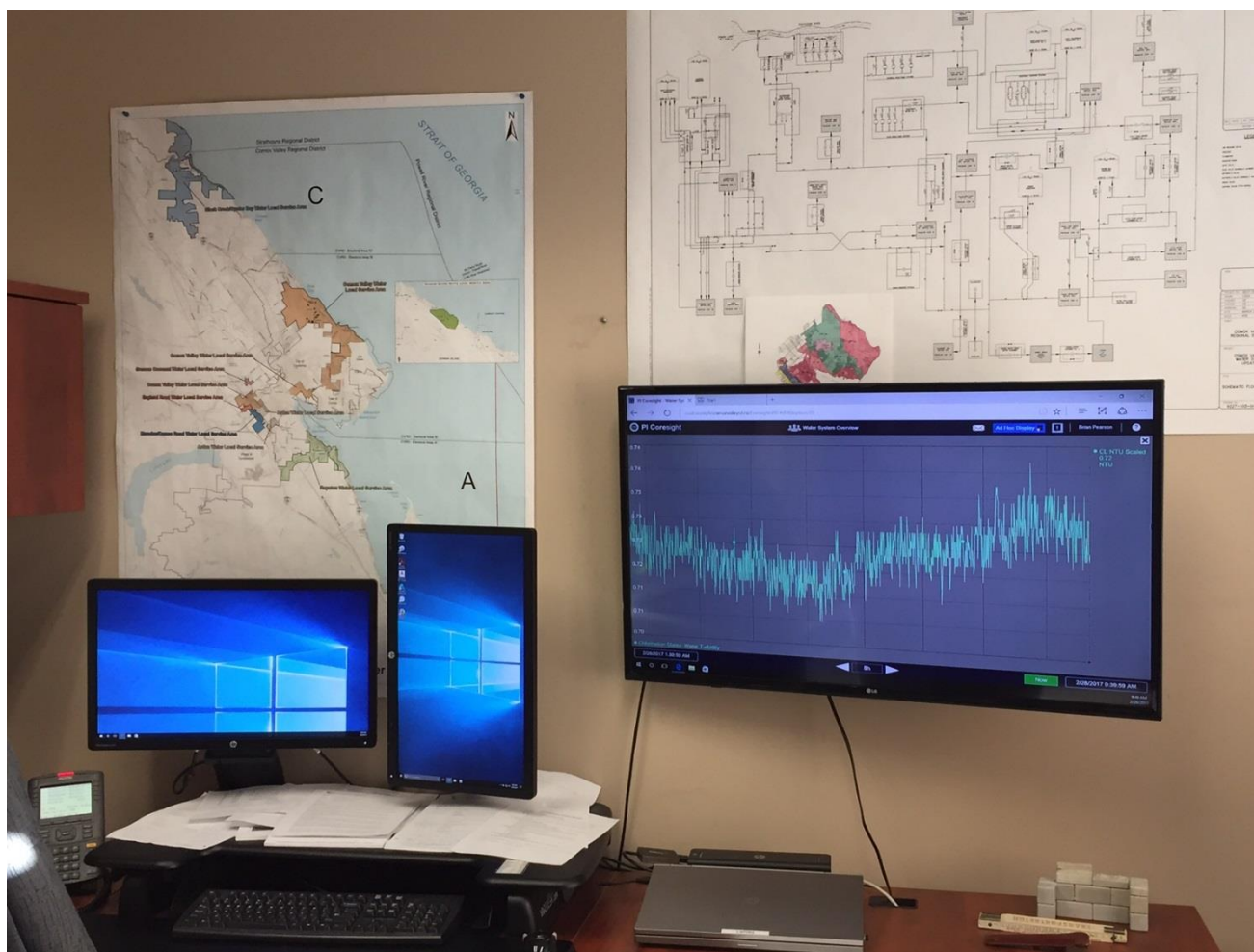


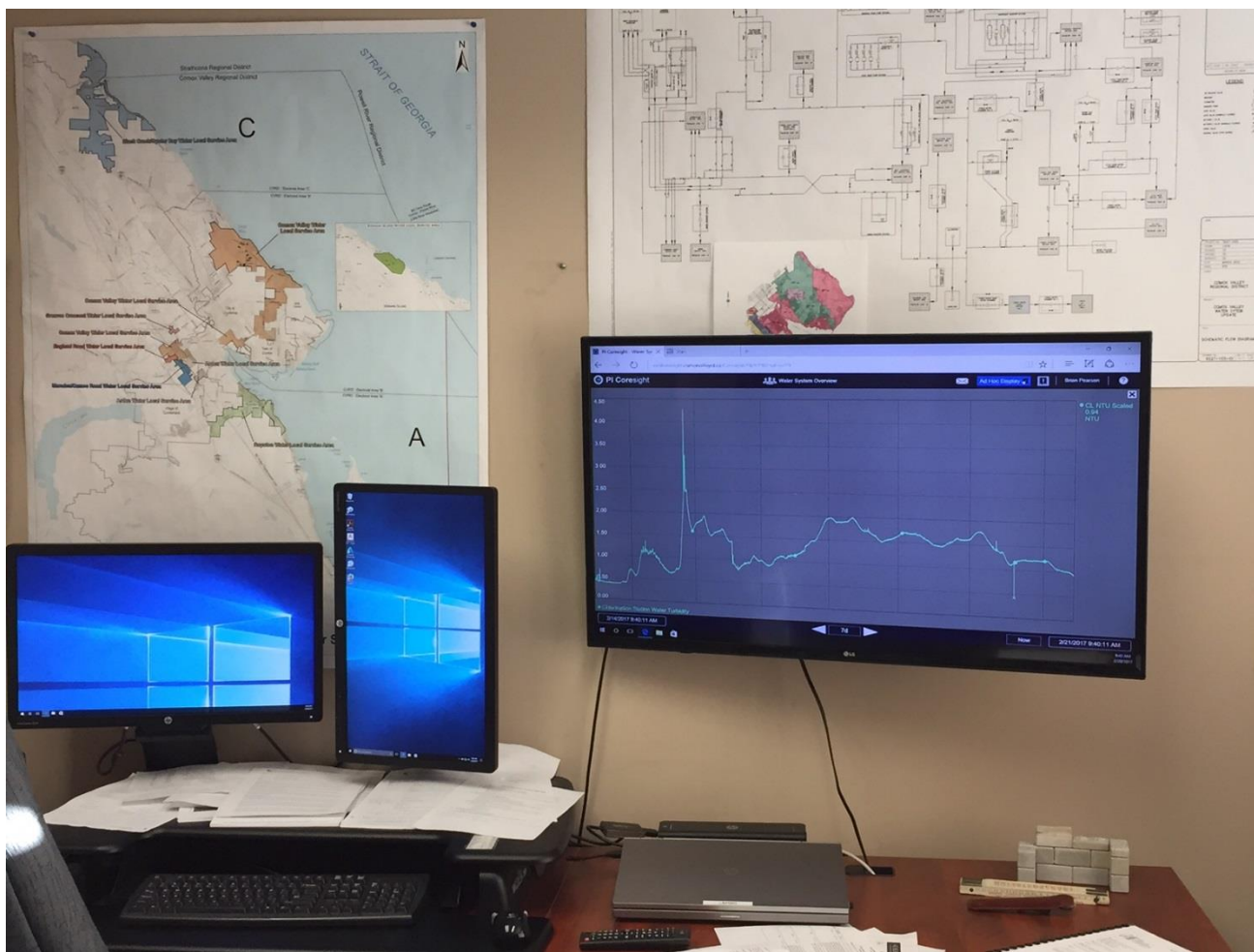
GPS UniPro

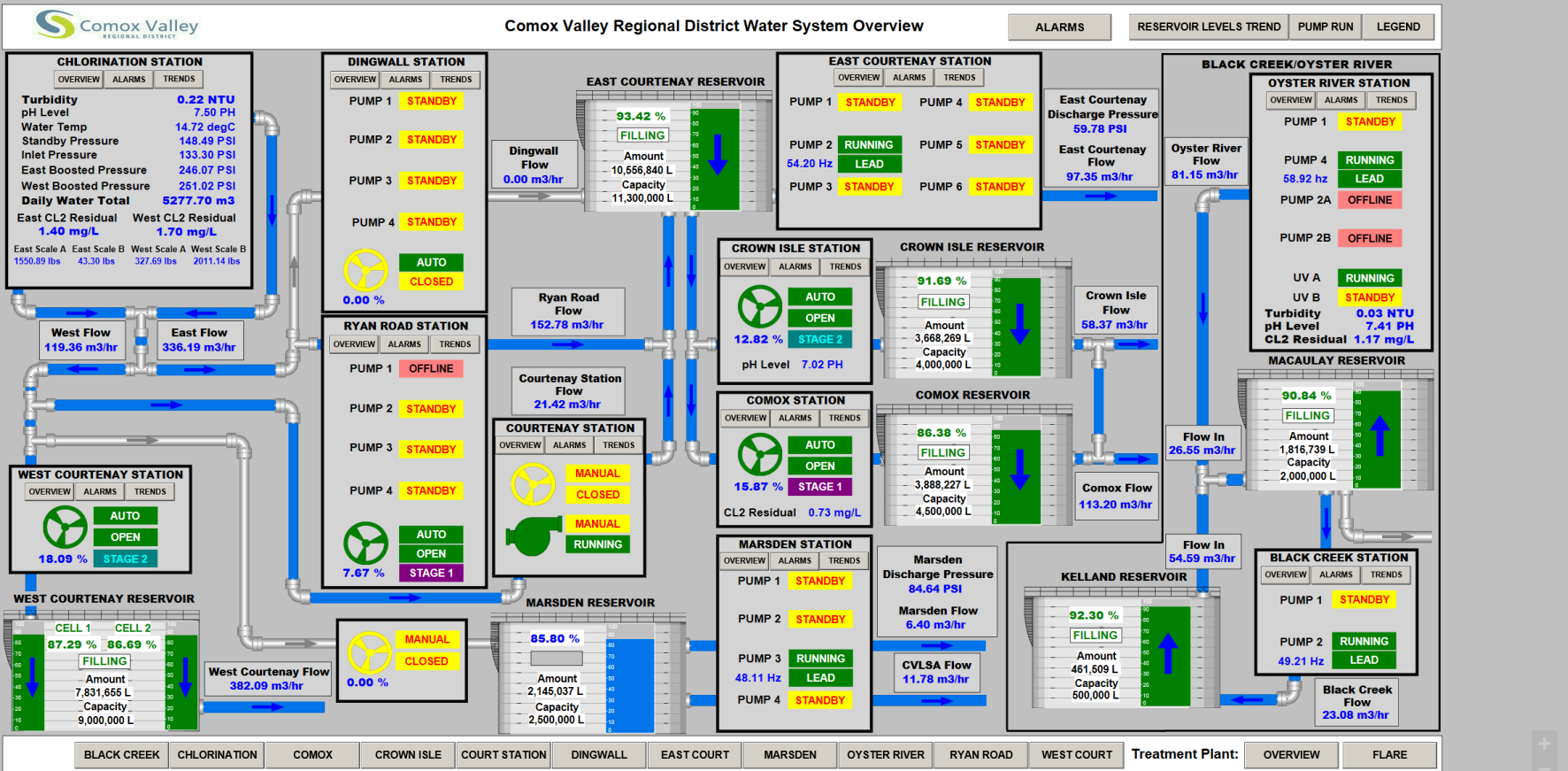
MeterR

Navigation and control buttons including A1, A2, volume, power, and a Windows logo button.

System status bar showing the date and time: 2017-10-26 12:42:27 AM, a 8h timer, and 2017-10-26 8:42:27 AM. It also includes a battery icon and the text '8:42 AM 26/10/2017'.









Comox Overview

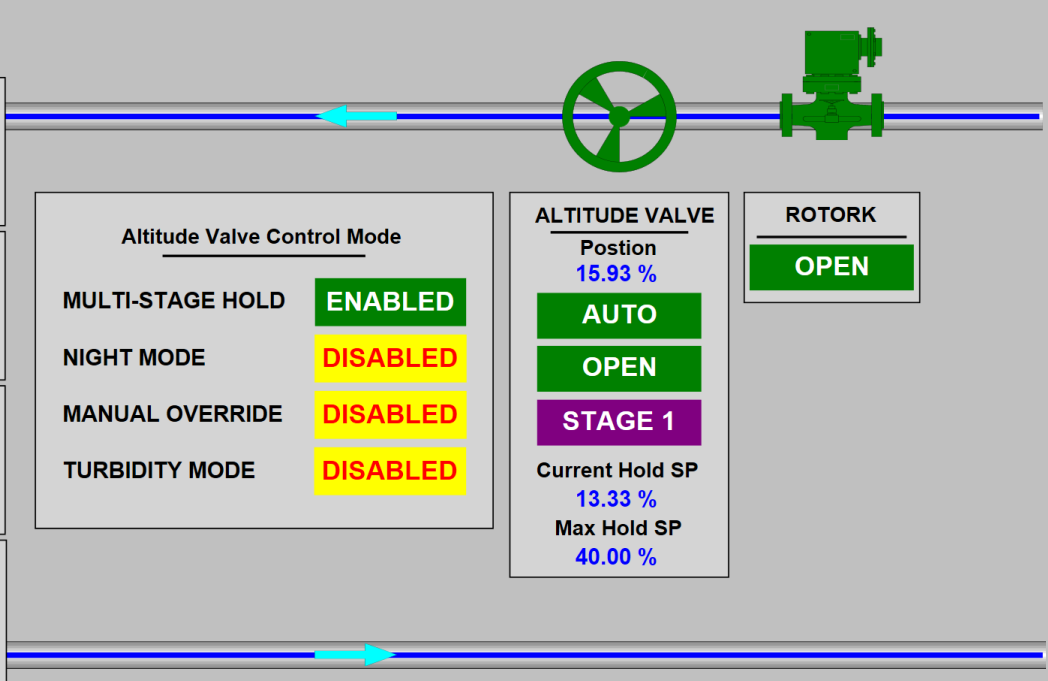
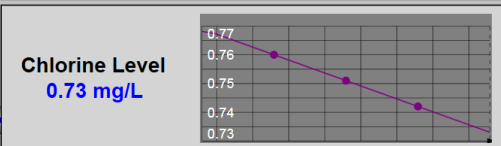
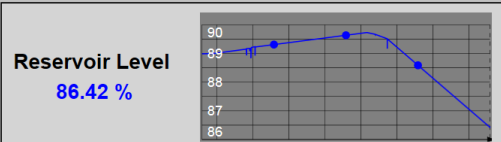
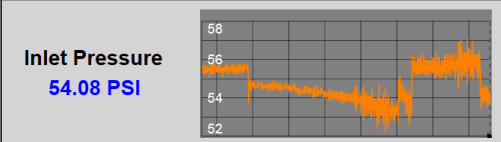
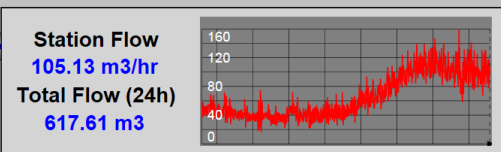
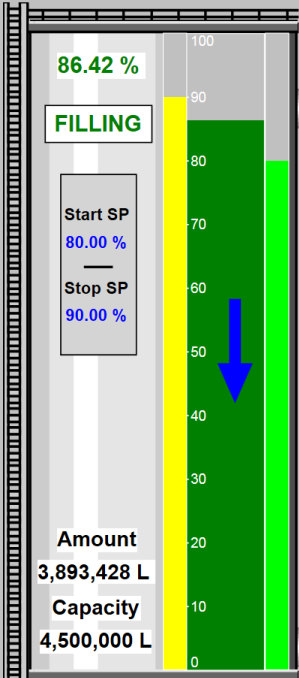
SETPOINTS

ALARMS

TRENDS

TOTALS

Comox Reservoir



WS Overview

Black Creek

Chlorination

Comox

Crown Isle

Court Station

Dingwall

East Court

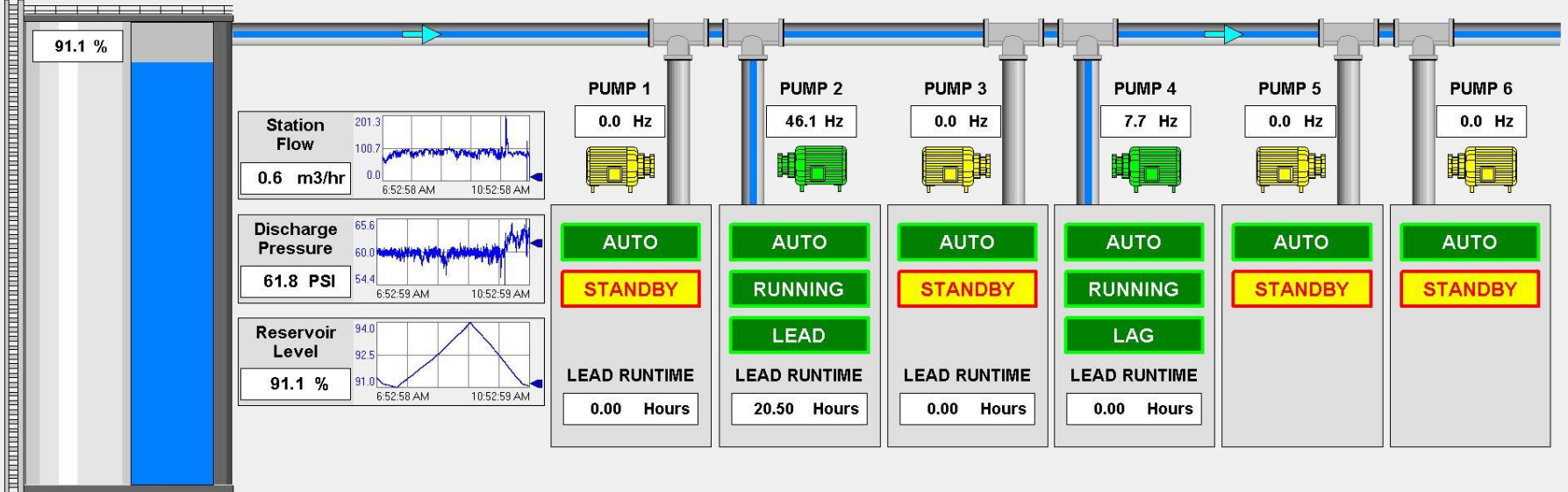
Marsden

Oyster River

Ryan Road

West Court

East Courtenay Reservoir



RSView HMI Screen

CURRENT USER: JAMES

SELECTION
SCREEN

PLEASE
LOGOUT

EAST COURT
OVERVIEW

EAST COURT
ALARMS

EAST COURT
TRENDING

EAST COURT
SETPOINTS

EAST COURT
TIMERS

EC ALARM
HISTORY

EC EVENT
HISTORY

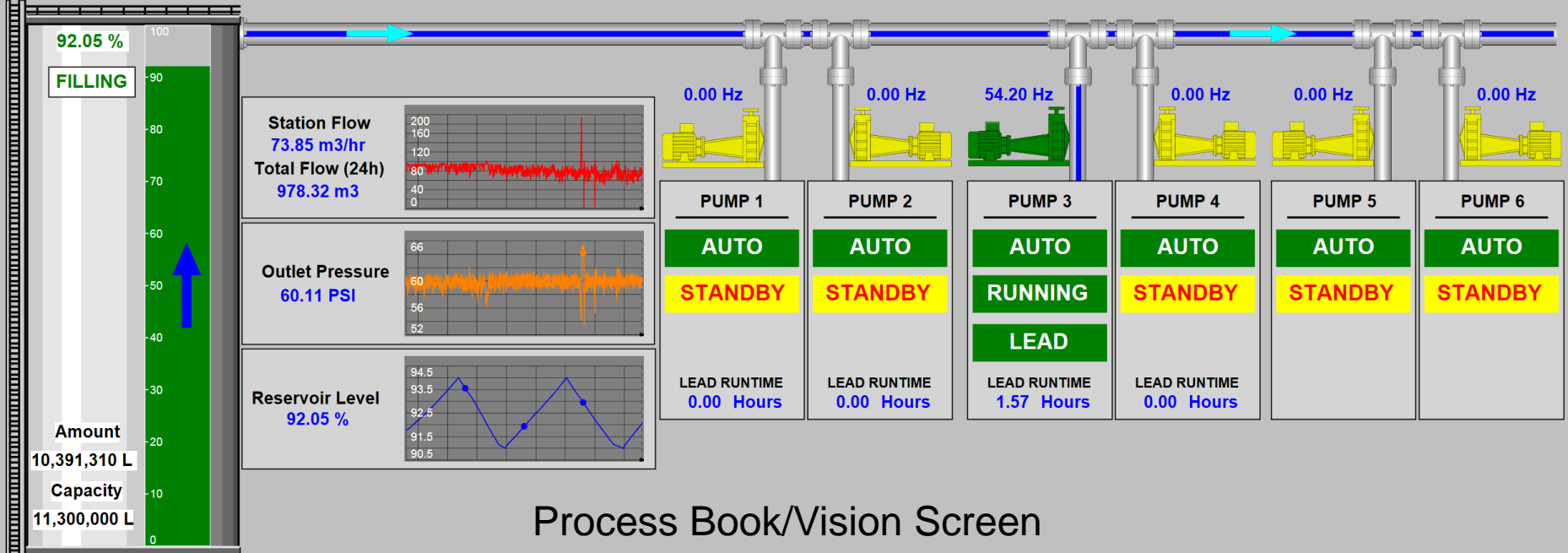
Idle in 9:59



East Courtenay Overview

SETPOINTS ALARMS TRENDS TOTALS

East Courtenay Reservoir



Process Book/Vision Screen

WS Overview Black Creek Chlorination Comox Crown Isle Court Station Dingwall East Court Marsden Oyster River Ryan Road West Court



Chlorination Station Overview

[SETPOINTS](#)
[ALARMS](#)
[TRENDS](#)
[TOTALS](#)
[PUMP RUN](#)

Comox Reservoir
86.49 %
FILLING

Comox Reservoir Level

East Courtenay Reservoir
93.51 %
FILLING

East Courtenay Reservoir Level

Marsden Reservoir
85.81 %

Marsden Reservoir Level

West Courtenay Reservoir
87.36 %
FILLING

West Courtenay Reservoir Level

East Flow 336.73 m3/hr
West Flow 121.77 m3/hr
Combined Flowrate 463.84 m3/hr
Combined Total Flow (24h) 5265.49 m3

East Flow 336.73 m3/hr	East Boosted 246.81 PSI
West Flow 121.77 m3/hr	West Boosted 251.45 PSI
Standby Pressure 148.32 PSI	Water Turbidity 0.22 NTU
Inlet Pressure 133.20 PSI	Water Temperature 14.72 degC
pH Level 7.51 PH	Station UVT 92.44

CHLORINE

East Scale A: 1551.08 lbs
 East Scale B: 41.39 lbs
 West Scale A: 326.92 lbs
 West Scale B: 2011.52 lbs

CHLORINE RESIDUAL

East Chlorine Residual: 1.40 mg/L
 West Chlorine Residual: 1.91 mg/L

GENERATOR STANDBY
SCRUBBER STANDBY

DINGWALL **AUTO** **MARSDEN** **MANUAL** **RYAN ROAD** **AUTO** **WEST COURT** **AUTO**
CLOSED CLOSED OPEN STAGE 1 STAGE 2

[WS Overview](#)
[Black Creek](#)
[Chlorination](#)
[Comox](#)
[Crown Isle](#)
[Court Station](#)
[Dingwall](#)
[East Court](#)
[Marsden](#)
[Oyster River](#)
[Ryan Road](#)
[West Court](#)



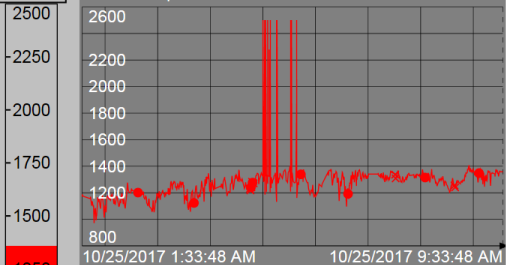
Flare Overview

ALARMS



Pilot Light Temp
852 DegF

Flame Temperature



Flare Information

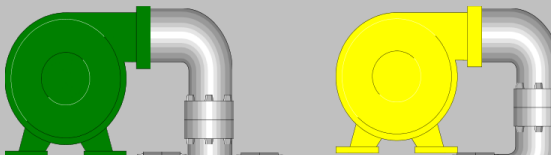
Flame Temperature 1358.20 DegF
Total Runtime 12190.00 Hrs
Flow Rate 256.11 SCFM
Flow Total 149261.19 SCFD
Inlet Temperature 44.39 DegF
Inlet Vacuum Pressure 10.94 "WC
CST Level (Sump) 23.16 in

Blower 301

Amperage 8.46 A
% Max Speed 37.73 %
Vibration 0.09 In/S

Blower 302

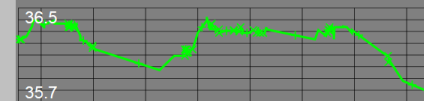
Amperage 0.19 A
% Max Speed 0.00 %
Vibration 0.04 In/S



Gas Composition

C02 35.78 %
Methane 54.65 %
Oxygen 0.56 %

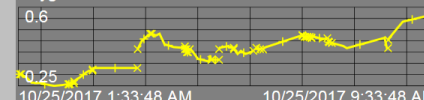
CO2 Levels



Methane Levels



Oxygen Levels



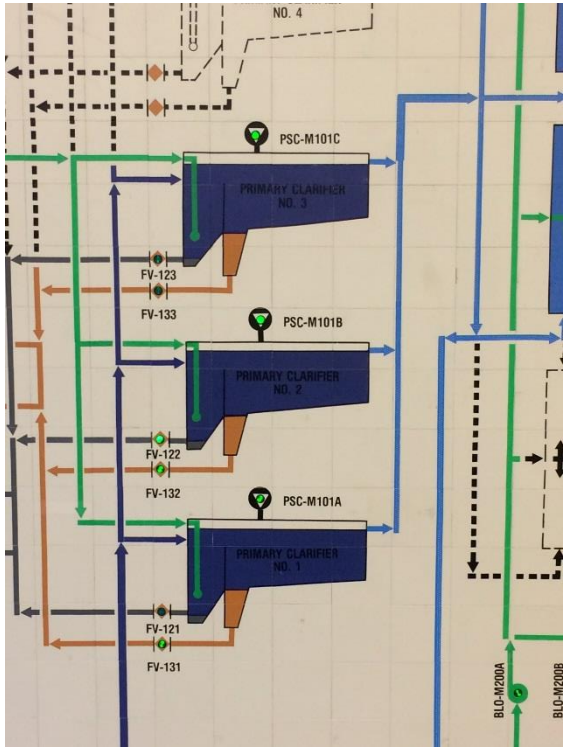
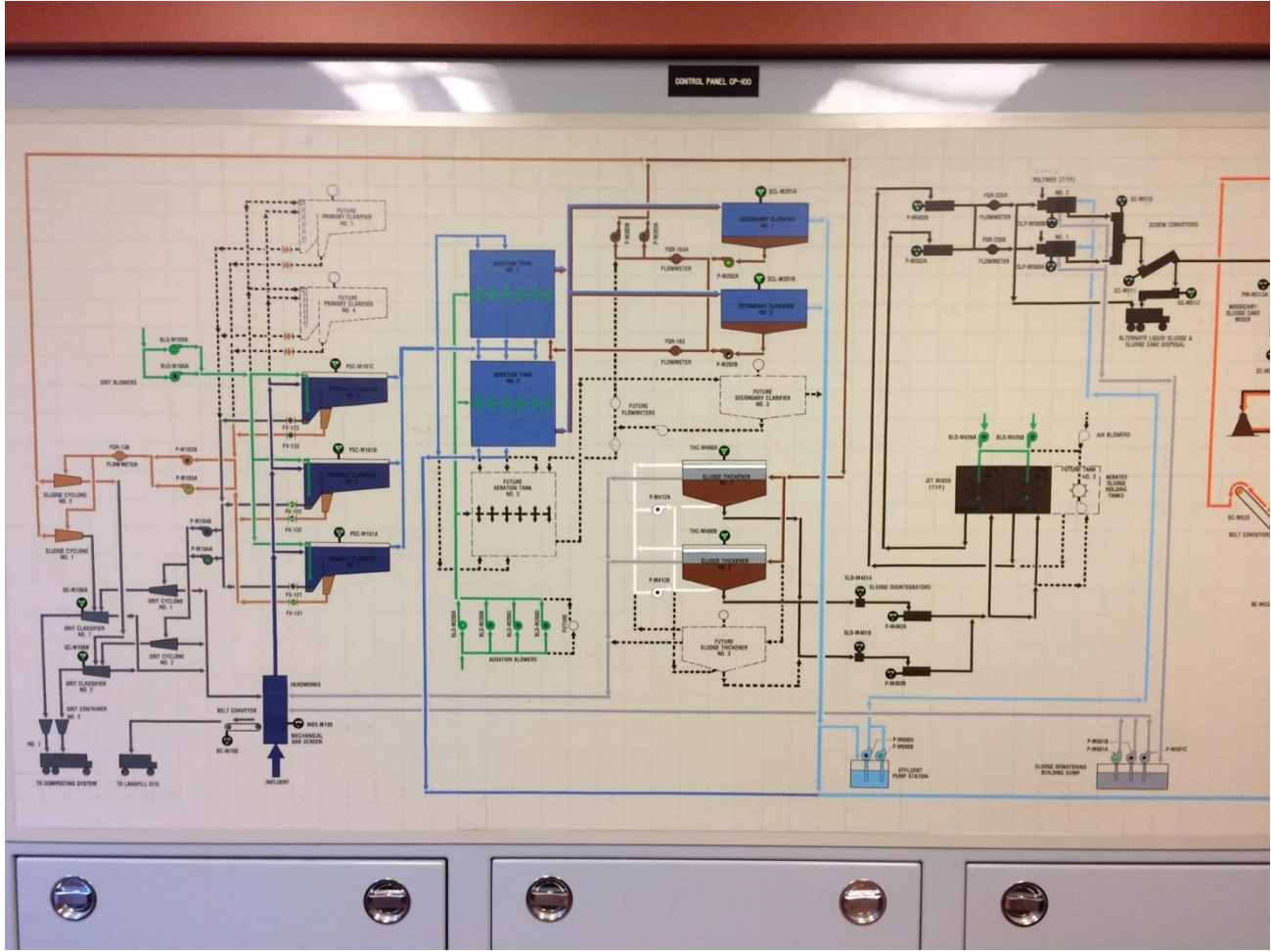
H2S 0.00 ppm

H2S Level



Water System Overview

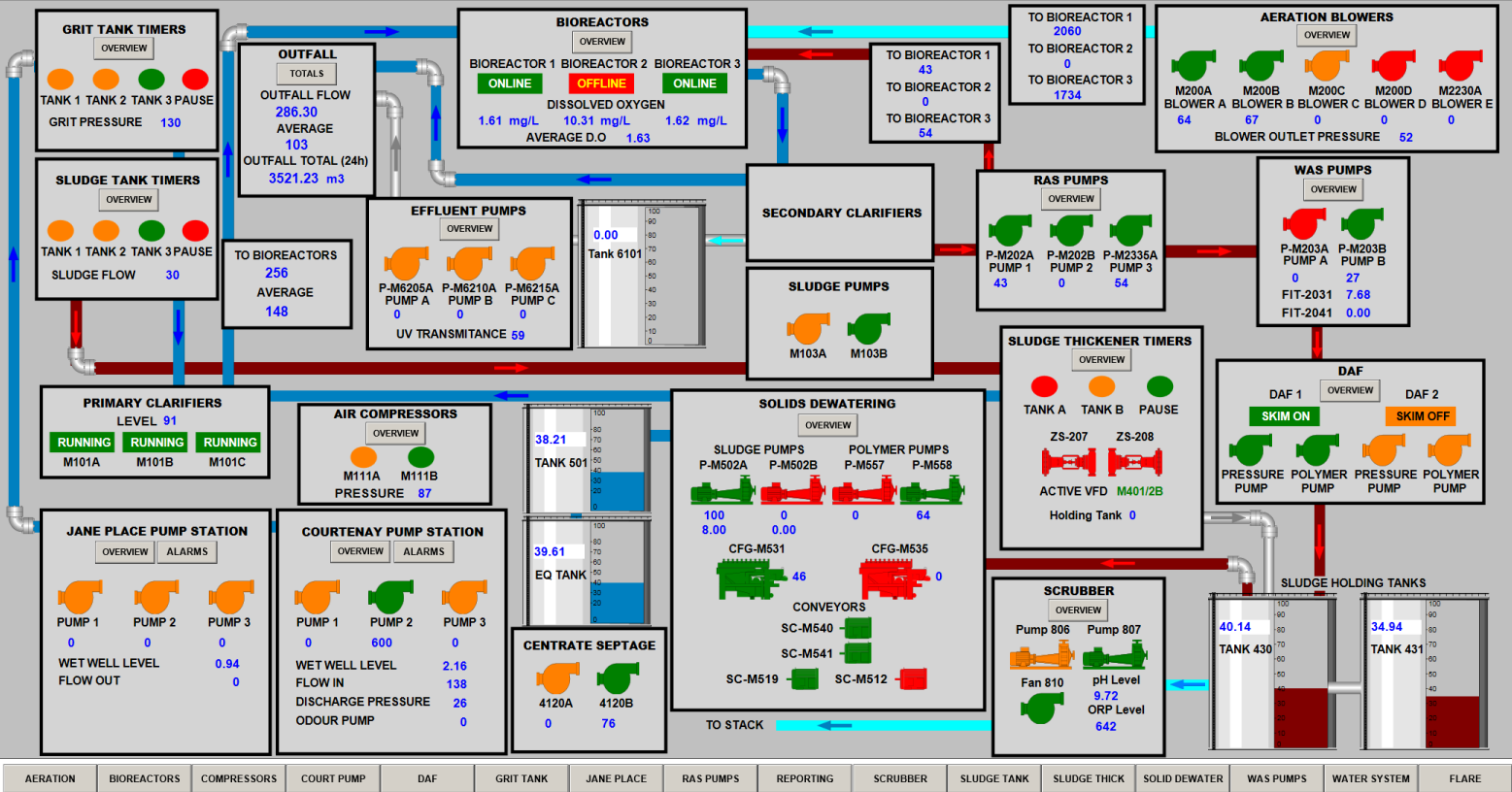
Treatment Plant Overview





Comox Valley Regional District Treatment Plant Overview

ALARMS TRENDS LEGEND



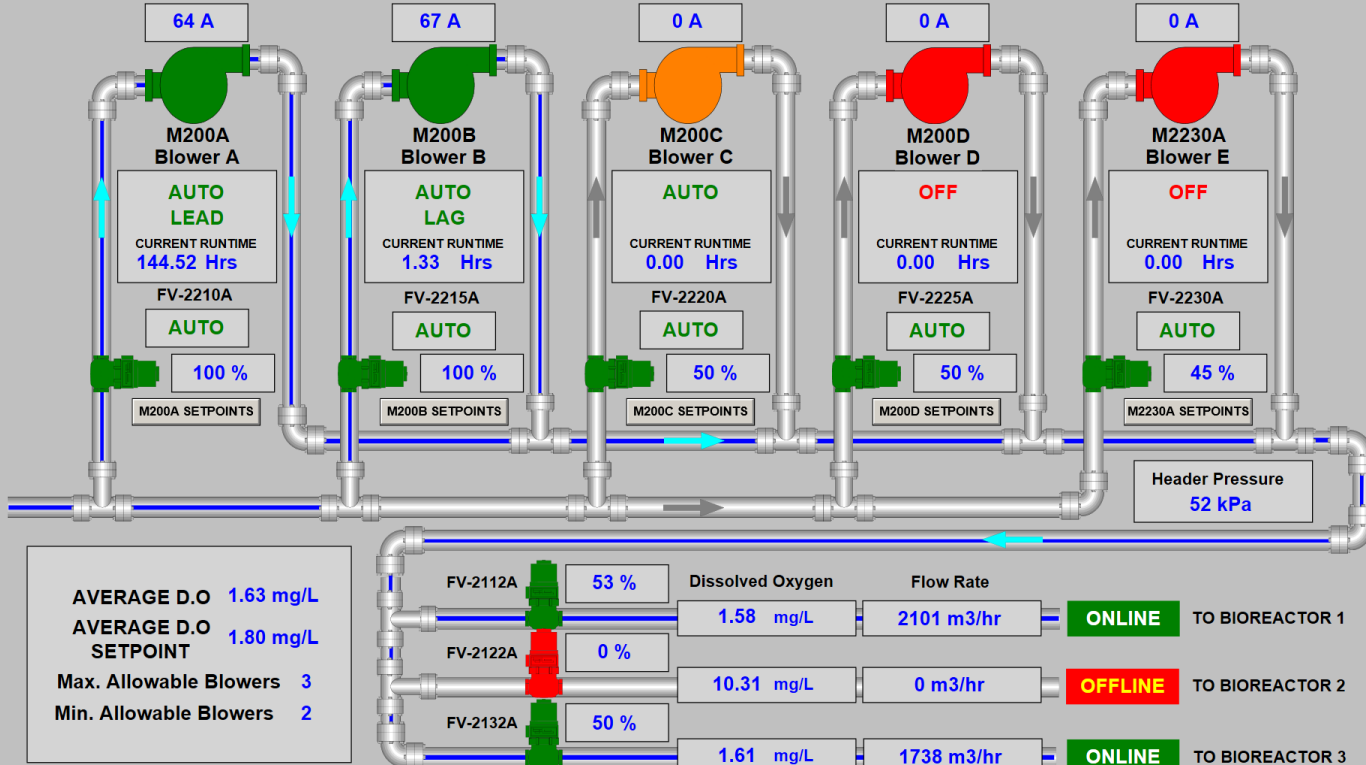
- AERATION
- BIOREACTORS
- COMPRESSORS
- COURT PUMP
- DAF
- GRIT TANK
- JANE PLACE
- RAS PUMPS
- REPORTING
- SCRUBBER
- SLUDGE TANK
- SLUDGE THICK
- SOLID DEWATER
- WAS PUMPS
- WATER SYSTEM
- FLARE



Aeration Blower Overview

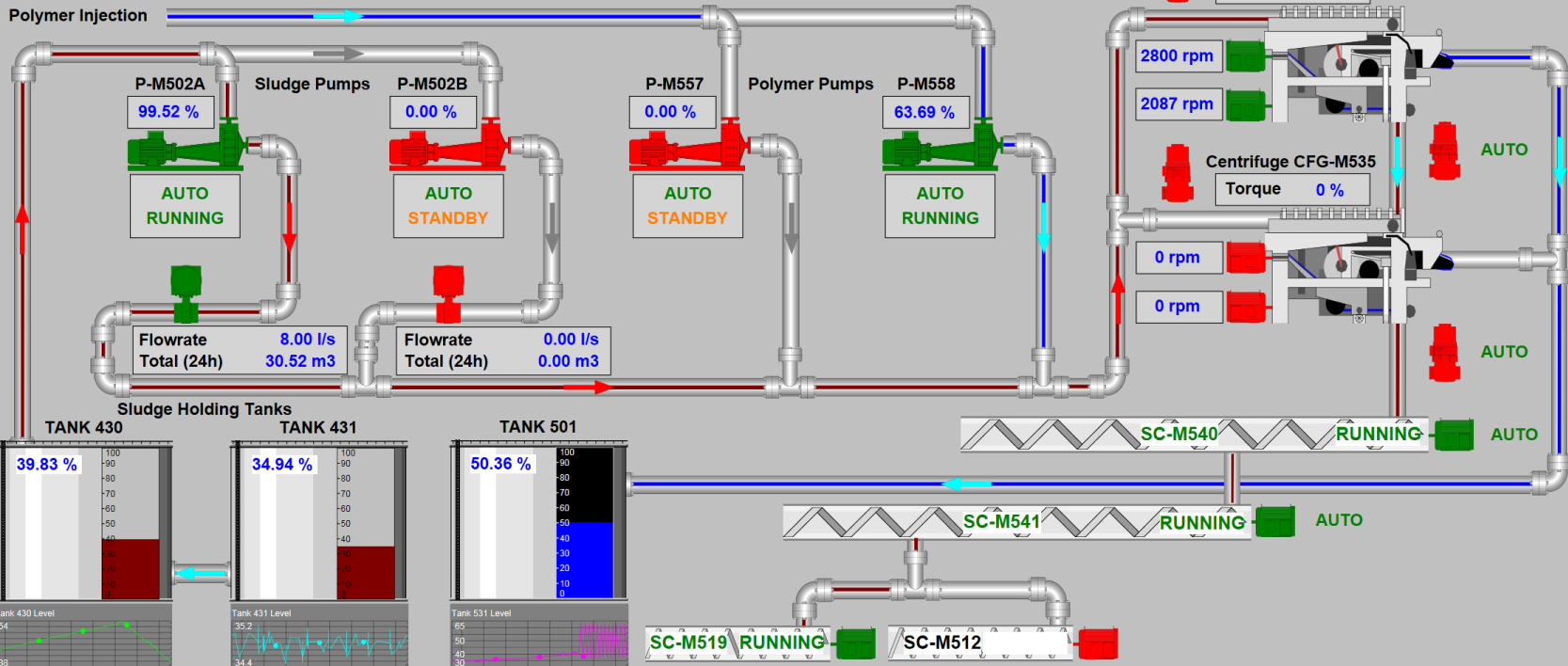
SETPOINTS

ALARMS



AVERAGE D.O 1.63 mg/L
AVERAGE D.O SETPOINT 1.80 mg/L
Max. Allowable Blowers 3
Min. Allowable Blowers 2

- TP Overview
- Aeration
- Bioreactor
- Compressors
- Court Pump
- DAF
- Grit Tank
- Jane Place
- RAS Pump
- Reporting
- Scrubber
- Sludge Tank
- Sludge Thick
- Solid Dewater
- WAS Pump



- TP Overview
- Aeration
- Bioreactor
- Compressors
- Court Pump
- DAF
- Grit Tank
- Jane Place
- RAS Pump
- Reporting
- Scrubber
- Sludge Tank
- Sludge Thick
- Solid Dewater
- WAS Pump



Courtenay Pump Station Overview

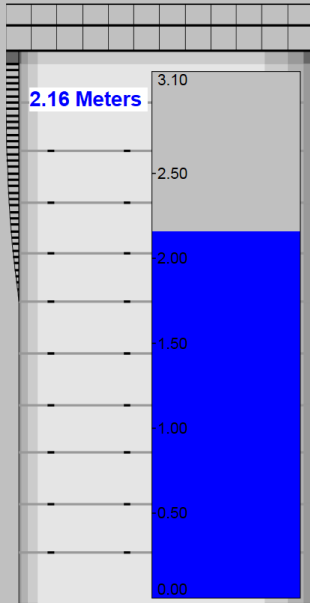
TRENDS

TOTALS

ALARMS

ALARMS

WET WELL



FLOW IN
 148 l/s
 531 m3/hr

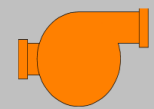
FLOW TOTAL (24h)
 2324.93 m3

Setpoints

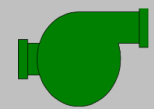
High Level 3.10 Meters
 Lag Start 2.90 Meters
 Lead Start 2.60 Meters
 Stop Level 1.60 Meters
 Low Level 1.50 Meters

TO TREATMENT PLANT

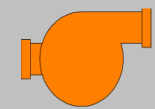
Discharge Pressure
 26 PSI



PUMP 1
 0 RPM




PUMP 2
 598 RPM
LEAD



PUMP 3
 0 RPM

ODOUR CONTROL PUMP



Speed 0 %
 Min. Speed Setpoint 0 l/s
 Max. Speed Setpoint 180 l/s
 Max. Pump Speed 0 %

USAGE

Today's Total 104 Liters
 Overall Total 407 Liters

- TP Overview
- Aeration
- Bioreactor
- Compressors
- Court Pump
- DAF
- Grit Tank
- Jane Place
- RAS Pump
- Reporting
- Scrubber
- Sludge Tank
- Sludge Thick
- Solid Dewater
- WAS Pump

10/25/2017 1:32:54 AM

8h

Now

10/25/2017 9:32:54 AM

Meeting our Business needs

- **PI System®** allows us to bring all data from remote water, sewer and Solid waste stations to central office, and to all points on the WAN
- **PI System®** allows for collection through many methods as well as providing failover for the many different network connections between remote sites
- **PI System®** centrally stores and archives data from remote sites and allows for data analysis and monitoring in real time, anywhere
- **PI Vision™** allows staff members in several different departments, at many remote sites to view, monitor and analyze collected data quickly and easily.

PI Server™ - Metrics

- **Data Archive** and **PI Interface™** have created a redundant, easily accessible data system
- **PI Server™** has centralized data collection for **27 remote sites**
- Removed the need for sneaker net – staff going to remote sites to fetch data
- Extensive savings in record management, staff time, and time required to maintain historic data. (some sites were still using chart recorders)
 - **4 hours a week saved** to collect scan and store chart records –
Approx savings \$8K/year

PI ProcessBook® - Metrics

- **PI ProcessBook®** has given the ability to create graphic rich HMIs for all PLC controlled sites.
- Has quickly become the standard viewing HMI for all sites, local site control is still RSView and Factory Talk
- **PI ProcessBook®** has allowed single point control of set points for reservoir filling, water control and pumping
 - **Savings of 3 man hours per set point change** – this can happen several times a week, or day. **Savings : \$8K /year**

PI Vision™ - Metrics

Water

- **PI Vision™** has allowed the water department to monitor in real time the effects of changes to our water system that enable the CVRD to develop a more dynamic water delivery system
 - Reducing water pumping
 - Electricity use
 - Wear and tear on all aspects of water system
 - Real time monitoring allows for prioritization of site visits
 - Increased safety for operators – less late night traveling to sites
 - Savings in late night call outs per year: **Approx \$10K/year**

PI Vision™ - Metrics

Sewer

- **PI Vision™** has allowed the sewer department to monitor in real time remote sites that are 25+ kilometers away
 - Reducing staff travel time and efficiencies during the day
 - Allows for prioritization of site visits for the day/week
 - Electricity use through real time monitoring and adjustments
 - Reductions in wear and tear on all aspects of the treatment plant systems and pumping systems

PI Vision™ - Metrics

Engineering and management staff

- **PI Vision™** allows staff to easily access data and generate needed analytics on data.
 - **Saving many hours a week** of SCADA tech time using PI Datalink®: **Savings of approx. \$5k – 8k/yr**
 - Managers and Staff generate their own graphs, analytics or data downloads that they need through the course of a day.
 - All data is accessible, exportable and usable in many applications

Next Steps with data and PI system

Incorporating really remote Field Data

- Two rivers affecting water turbidity in Comox Lake, regional source of drinking water
- Need to collect turbidity data from remote data recorders
- No access to power, microwave connections or cellular data
- Satellite data connection through NOAA satellite
- Data to be incorporated into the PI System® using PI UFL Connector
- Compare turbidity from source to entry to water system



- **Brian Pearson**
- bpearson@comoxvalleyrd.ca
- Senior Manager of Information Systems & GIS
- Comox Valley Regional District



Questions

Please wait for the **microphone** before asking your questions



State your **name & company**

Complete the Post Event Survey

감사합니다

谢谢

Danke

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado