



VentLOG: Introduction and Case Studies

Implementation at Multiple Sites

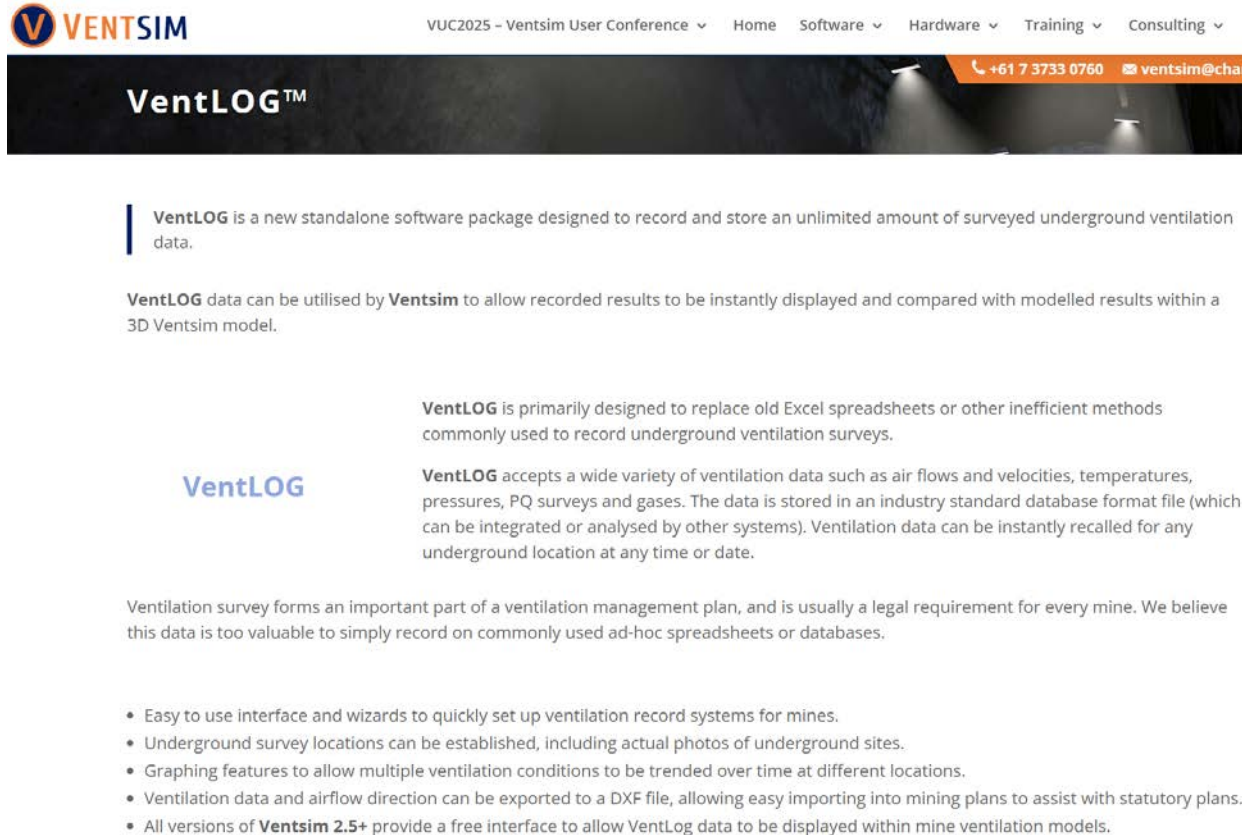
John Bowling, Principal Consultant (Mine Ventilation)

Ventsim User Conference, Brisbane, 11 Mar 2025

What is VentLOG?

Ventsim-compatible vent survey records storage

- Direct representation in Ventsim
- Export ventilation measurements and arrows to mine maps
- Graphical comparison of records



The screenshot shows the Ventsim website. At the top is the VENTSIM logo and a navigation menu with links: VUC2025 – Ventsim User Conference, Home, Software, Hardware, Training, and Consulting. Below the navigation bar is a dark banner with the text "VentLOG™" and a background image of a mine tunnel. To the right of the banner is a contact bar with a phone icon, the number "+61 7 3733 0760", and an email icon with the address "ventsim@cha". Below the banner, the text reads: "VentLOG is a new standalone software package designed to record and store an unlimited amount of surveyed underground ventilation data." This is followed by a paragraph: "VentLOG data can be utilised by Ventsim to allow recorded results to be instantly displayed and compared with modelled results within a 3D Ventsim model." Below this is the "VentLOG" logo. To the right of the logo is a paragraph: "VentLOG is primarily designed to replace old Excel spreadsheets or other inefficient methods commonly used to record underground ventilation surveys." Below this is another paragraph: "VentLOG accepts a wide variety of ventilation data such as air flows and velocities, temperatures, pressures, PQ surveys and gases. The data is stored in an industry standard database format file (which can be integrated or analysed by other systems). Ventilation data can be instantly recalled for any underground location at any time or date." Below this is a paragraph: "Ventilation survey forms an important part of a ventilation management plan, and is usually a legal requirement for every mine. We believe this data is too valuable to simply record on commonly used ad-hoc spreadsheets or databases." At the bottom is a bulleted list of features.

VentLOG is a new standalone software package designed to record and store an unlimited amount of surveyed underground ventilation data.

VentLOG data can be utilised by Ventsim to allow recorded results to be instantly displayed and compared with modelled results within a 3D Ventsim model.

VentLOG

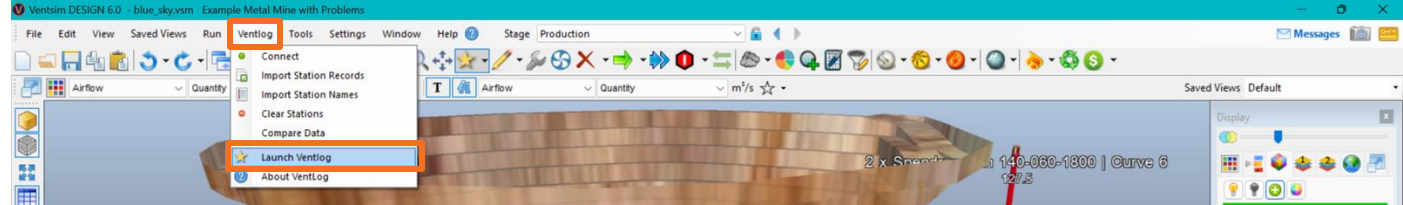
VentLOG is primarily designed to replace old Excel spreadsheets or other inefficient methods commonly used to record underground ventilation surveys.

VentLOG accepts a wide variety of ventilation data such as air flows and velocities, temperatures, pressures, PQ surveys and gases. The data is stored in an industry standard database format file (which can be integrated or analysed by other systems). Ventilation data can be instantly recalled for any underground location at any time or date.

Ventilation survey forms an important part of a ventilation management plan, and is usually a legal requirement for every mine. We believe this data is too valuable to simply record on commonly used ad-hoc spreadsheets or databases.

- Easy to use interface and wizards to quickly set up ventilation record systems for mines.
- Underground survey locations can be established, including actual photos of underground sites.
- Graphing features to allow multiple ventilation conditions to be trended over time at different locations.
- Ventilation data and airflow direction can be exported to a DXF file, allowing easy importing into mining plans to assist with statutory plans.
- All versions of Ventsim 2.5+ provide a free interface to allow VentLog data to be displayed within mine ventilation models.

VentLOG



VentLog

File

Home

Edit

Export

Add

Save

Connection

Online

License

About

Help

Close

Desktop Mode

Filters

Date/Time From

09 Sep 2024

Date/Time To

09 Mar 2025

Person Recording

Christensen, Craig

Mine

Zone

Group 1

Level

SURFACE

Stope

Not Setup

Reason for Reading

Weekly

Display

Station

Select Station

Description

Level

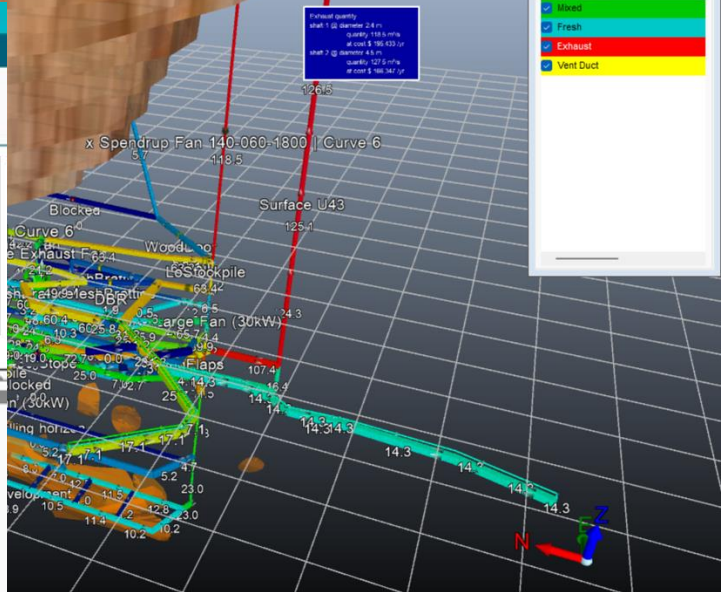
SURFACE

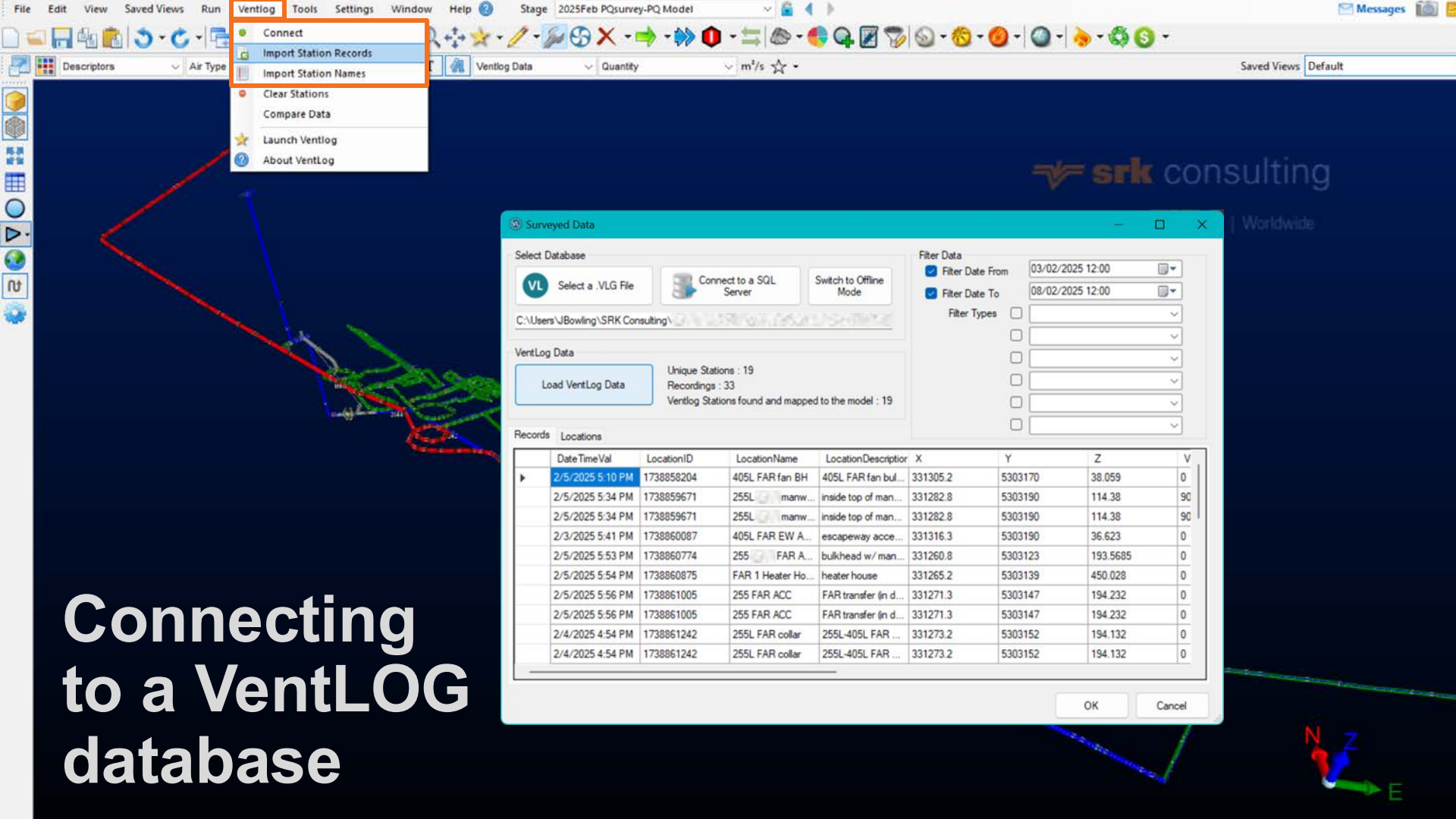
Edit Station

History

Graph

	Station	Date and Time	Recorded By	Site Status	Reason For Reading	Activity	Personnel Present	Respiratory Protection	Comments
View	Airway 2634	8/23/2019 12:13...	Craig Christensen	Active	Bogging	Vent Survey	5	Yes	Random Demo
View	Airway 2634	8/23/2019 12:13...	Craig Christensen	Active	Survey	Site Check	4	Yes	Random Demo
View	Airway 247	8/23/2019 12:00...	Craig Christensen	Active	Drilling Production	Investigatory	5	Yes	Random Demo
View	Airway 247	8/23/2019 12:00...	Craig Christensen	Active	Electrical	Site Check	3	Yes	Random Demo
View	Airway 247	8/23/2019 12:00...	Craig Christensen	Active	Electrical	Vent Survey	5	Yes	Random Demo
View	Airway 2607	8/23/2019 11:28...	Craig Christensen	Active	Clean Up	Vent Survey	4	Yes	Random Demo
View	Airway 2607	8/23/2019 11:28...	Craig Christensen	Active	Survey	Investigatory	3	Yes	Random Demo
View	Airway 2607	8/23/2019 11:28...	Craig Christensen	Active	Survey	Vent Survey	3	Yes	Random Demo
View	Airway 2668	8/23/2019 11:11...	Craig Christensen	Active	Clean Up	Investigatory	2	Yes	Random Demo
View	Airway 2668	8/23/2019 11:11...	Craig Christensen	Active	Survey	Follow Up	5	Yes	Random Demo
View	Airway 2668	8/23/2019 11:11...	Craig Christensen	Active	Survey	Investigatory	6	Yes	Random Demo
View	Airway 2707	8/23/2019 10:55...	Craig Christensen	Active	Electrical	Vent Survey	4	Yes	Random Demo
View	Airway 2707	8/23/2019 10:55...	Craig Christensen	Active	Survey	Vent Survey	4	Yes	Random Demo
View	Airway 2707	8/23/2019 10:55...	Craig Christensen	Active	Survey	Vent Survey	6	Yes	Random Demo
View	Airway 285	8/23/2019 10:37...	Craig Christensen	Active	Bogging	Vent Survey	3	Yes	Random Demo
View	Airway 285	8/23/2019 10:37...	Craig Christensen	Active	Drilling Production	Follow Up	4	Yes	Random Demo
View	Airway 285	8/23/2019 10:37...	Craig Christensen	Active	Survey	Follow Up	5	Yes	Random Demo





Connecting to a VentLOG database

Surveyed Data

Select Database

☐ VL Select a .VLG File ☐ Connect to a SQL Server ☐ Switch to Offline Mode

C:\Users\JBowling\SRK Consulting\

VentLog Data

Unique Stations : 19
Recordings : 33
Ventlog Stations found and mapped to the model : 19

Filter Data

☒ Filter Date From 03/02/2025 12:00
☒ Filter Date To 08/02/2025 12:00
Filter Types ☐
☐
☐
☐
☐
☐

Records Locations

Date Time Val	LocationID	LocationName	LocationDescription	X	Y	Z	V
2/5/2025 5:10 PM	1738858204	405L FAR fan BH	405L FAR fan bul...	331305.2	5303170	38.059	0
2/5/2025 5:34 PM	1738859671	255L manw...	inside top of man...	331282.8	5303190	114.38	90
2/5/2025 5:34 PM	1738859671	255L manw...	inside top of man...	331282.8	5303190	114.38	90
2/3/2025 5:41 PM	1738860087	405L FAR EW A...	escapeway acce...	331316.3	5303190	36.623	0
2/5/2025 5:53 PM	1738860774	255 FAR A...	bulkhead w/ man...	331260.8	5303123	193.5685	0
2/5/2025 5:54 PM	1738860875	FAR 1 Heater Ho...	heater house	331265.2	5303139	450.028	0
2/5/2025 5:56 PM	1738861005	255 FAR ACC	FAR transfer (in d...	331271.3	5303147	194.232	0
2/5/2025 5:56 PM	1738861005	255 FAR ACC	FAR transfer (in d...	331271.3	5303147	194.232	0
2/4/2025 4:54 PM	1738861242	255L FAR collar	255L-405L FAR ...	331273.2	5303152	194.132	0
2/4/2025 4:54 PM	1738861242	255L FAR collar	255L-405L FAR ...	331273.2	5303152	194.132	0



Toggle VentLOG
data boxes off

Connecting
to a VentLOG
database

Setting up VentLOG

Set Up Wizard

Step 6: Stations

Set up the stations in your mine that you are going to add records against. You can enter the X, Y, Z and Area values here as well as a Direction. This will enable you to export your records into DXF files.

VentLog Stations

Vent Station: _____

Mine ID/Name: _____

Description: _____

Group: _____ Area: _____

Level: _____

3D Coordinates:

X: _____

Y: _____

Z: _____

Plan Coordinates:

P - X: _____

P - Y: _____

Normal Airflow Direction:

Vertical Direction:

Up ☐ Flat ☐ Down ☐

Horizontal Bearing:

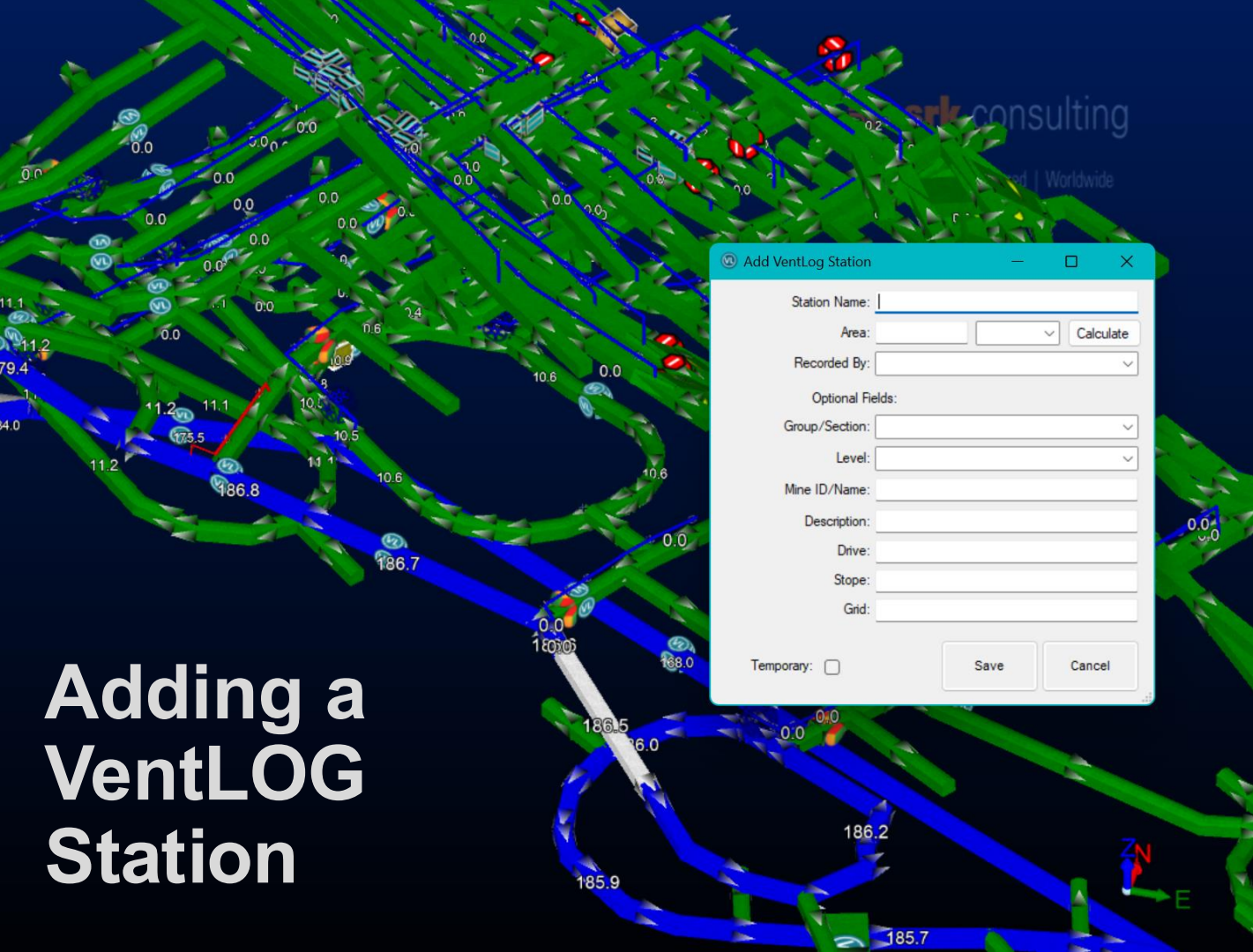
NW N NE W E SW SE S

Group Levels Stations Personnel Type Settings Activities Reasons Site Status Respiratory Protections Add Calculated Values Anemometers

< Back Next > Cancel

Want to set up VentLOG?

- Follow the Wizard!
- Complete the prompts
- Skip station setup
- Change defaults to suit *your* needs!



Adding a VentLOG Station

Add VentLog Station

Station Name:

Area:

Recorded By:

Optional Fields:

Group/Section:

Level:

Mine ID/Name:

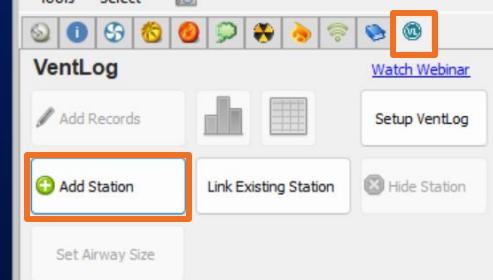
Description:

Drive:

Stope:

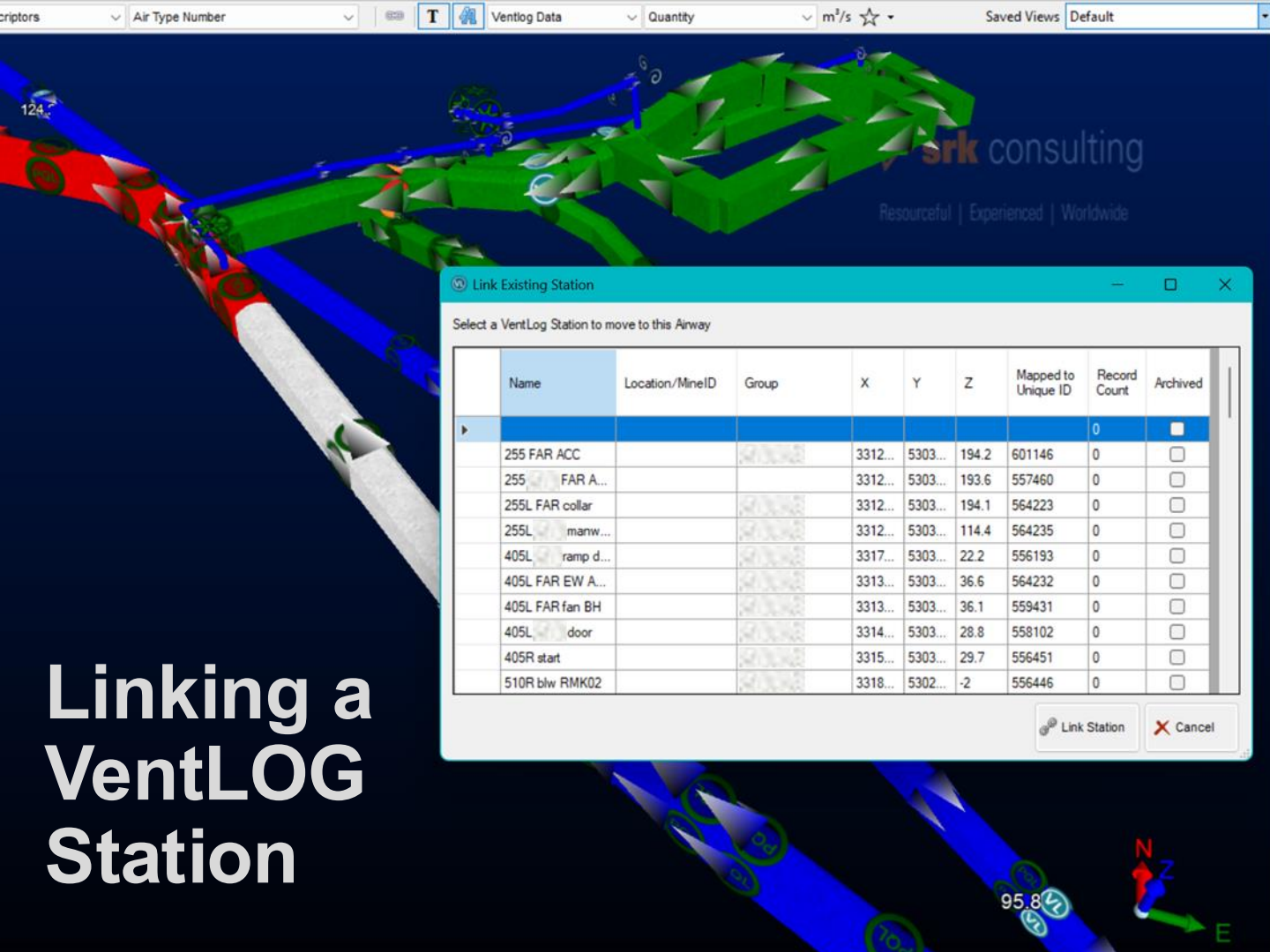
Grid:

Temporary: ☐

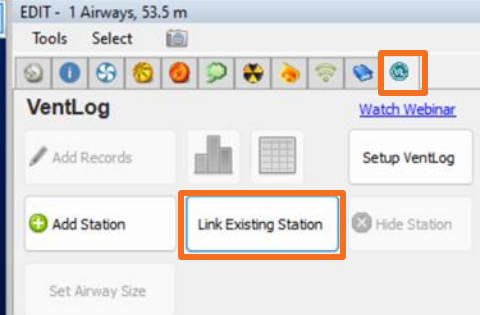


Add Station in Airway Edit Box

- Location and arrow direction from airway
- Area from airway*



Linking a VentLOG Station



Link Existing Station in Airway Edit Box

- Location and arrow direction from airway
- Area from airway*

VentLOG Importer Tool

- Standalone tool

B	C	D	E	
DateTimeVal	Location	RecordedBy	Personnel	Per
DateTimeVal	Location	Personnel Name	Per	pr
1/0/1900	28/01/2025 12:00:00	Station #1 - Remuck #3		
1/0/1900	28/01/2025 12:00:00	Station #2 - 300		
1/0/1900	28/01/2025 12:00:00	Station #3 - 405 FAR		
1/0/1900	28/01/2025 12:00:00	Station #34 - 105 Storage		
1/0/1900	28/01/2025 12:00:00	Station #6 - 300R		
1/0/1900	28/01/2025 12:00:00	Station #28 - 420R		
1/0/1900	28/01/2025 12:00:00	Station #11 - 300R		
1/0/1900	28/01/2025 12:00:00	Station #36 - 405R		
1/0/1900	28/01/2025 12:00:00	Station #37 - 300L Central Storage		
1/0/1900	28/01/2025 12:00:00	Station #34 - 240L		
1/0/1900	28/01/2025 12:00:00	Station #36 - 270L Incline DGM		
1/0/1900	28/01/2025 12:00:00	Station #49 - 255L		
1/0/1900	28/01/2025 12:00:00	Station #50 - 270L		
1/0/1900	28/01/2025 12:00:00	Station #18 - 285L		
1/0/1900	28/01/2025 12:00:00	Station #19 - 300L		
1/0/1900	28/01/2025 12:00:00	Station #20 - 315L		
1/0/1900	28/01/2025 12:00:00	Station #21 - 330L		
1/0/1900	28/01/2025 12:00:00	Station #22 - 345L		
1/0/1900	28/01/2025 12:00:00	Station #23 - 360L		
1/0/1900	28/01/2025 12:00:00	Station #24 - 375L WFZ		
1/0/1900	28/01/2025 12:00:00	Station #25 - 390L WFZ		
1/0/1900	28/01/2025 12:00:00	Station #27 - 420L WFZ		
1/0/1900	28/01/2025 12:00:00	Station #38 - 510L ALL ACC USE		
1/0/1900	28/01/2025 12:00:00	Station #54 - 510L ALL ACC 01W		
1/0/1900	28/01/2025 12:00:00	Station #45 - 585R		
1/0/1900	28/01/2025 12:00:00	Station #30 - 300L CEZ		
1/0/1900	28/01/2025 12:00:00	Station #31 - 315L CEZ		
1/0/1900	28/01/2025 12:00:00	Station #32 - 330L CEZ		
1/0/1900	28/01/2025 12:00:00	Station #40 - 345L CEZ		
1/0/1900	28/01/2025 12:00:00	Station #33 - 360L CEZ		
1/0/1900	28/01/2025 12:00:00	Station #39 - 360 CEZ Shop		
1/0/1900	28/01/2025 12:00:00	Station #41 - 375L CEZ		

Ventlog Importer

Import Data

Select Import File

C:\Users\J\Bowlring\SRK Consulting\

Import and Map Entries

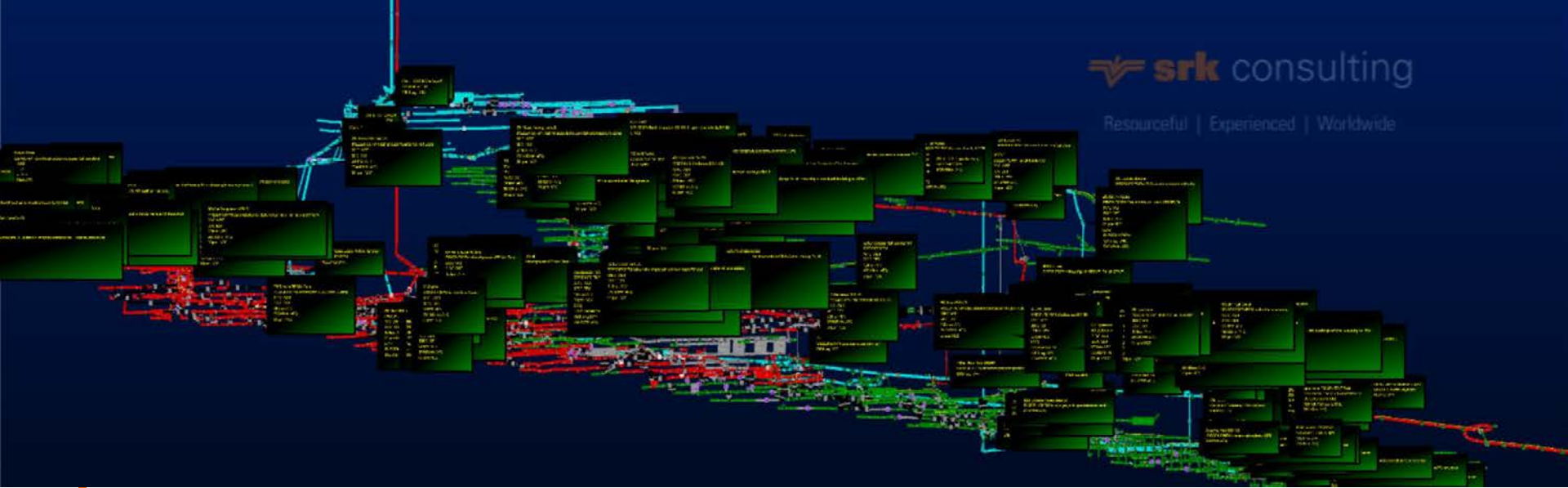
Fix Unmapped Stations

	DateTimeVal	Location	Personnel Name	Personnel present	Site Status	ReasonForRead	Comments	Drybulb (°C)	Velocity m/s	Quantity (m³/s)	Carbon Monoxide (CO) in ppm	Nitrogen Dioxide (NO2) ppm	Ammonia (NH3) ppm	Fan Operating	Fan Speeds rpm / Hz	Fan Speed %	Fan Pressure	Longitud	PQ Resistance
▶	45655.5	Station #1 -		1	Active	Weekly	-AI 4 main fa...	15.8	5.13	140.562	2	0.4	0						
	45655.5	Station #2 -		1	Active	Weekly	-AI 4 main fa...	15.8	4.32	129.6	0	0.2	0						
	45655.5	Station #3 -		1	Active	Weekly	-AI 4 main fa...	16.6	8.02	223.758	0	0.6	0						
	45655.5	Station #34 -		1	Active	Weekly	0	15.2	0.54	16.2	0	0.2	0						
	45655.5	Station #5 -		1	Active	Weekly	-AI 4 main fa...	14.9	1.93	55.97	0	0.6	0						
	45655.5	Station #28 -		1	Active	Weekly	-AI 4 main fa...	15.5	2.86	74.074	0	0.8	0						
	45655.5	Station #11 -		1	Active	Weekly	-AI 4 main fa...	17	2.84	88.04	0	0.3	0						
	45655.5	Station #36 -		1	Active	Weekly	-AI 4 main fa...	20.4	0.64	16.512	0	0.3	0						
	45655.5	Station #37 -		1	Active	Weekly	0	16.3	0.5	15	0	0	0						
	45655.5	Station #14 -		1	Active	Weekly	Mining activi...	15.6	1.52	38	3	0	0						
	45655.5	Station #16 -		1	Active	Weekly	-DD finished...	16.4	0.3	8.1	3	0	0						
	45655.5	Station #43 -		1	Active	Weekly	0	15.1	0.81	22.80393	0	0.6	0						

Ventlog Entries Found

Final Step: Write Entries to Ventlog

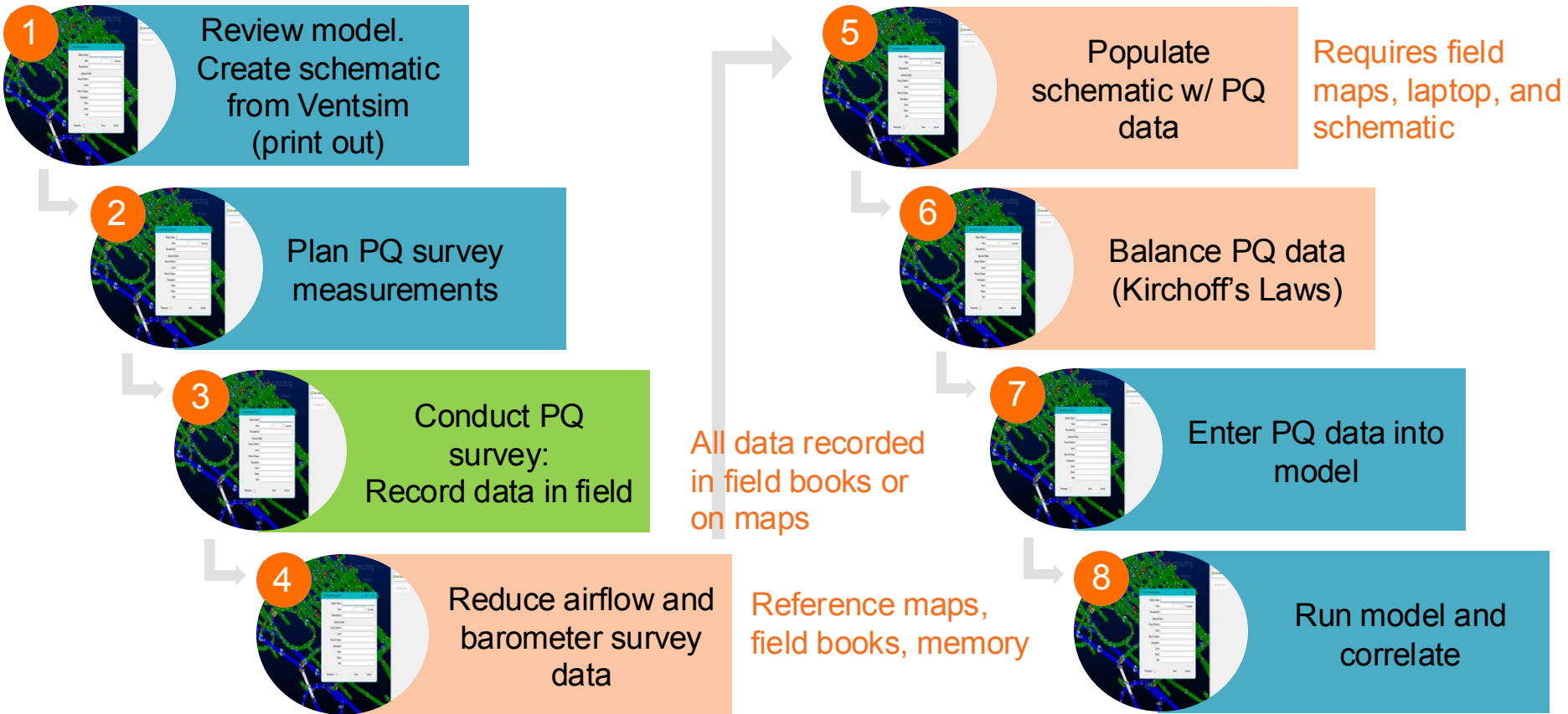
	RecordedBy	DateTimeVal	Location	SensorGroup	SensorType	Record Value	RecordUnits	Comments	GroupID	X	Y	Z	PersonnelPresent	SiteStatus	ReasonForRead	Activity	Respiratory Protec
▶	3	1/28/2025 12:00:00		3	302	15.8	C	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	202	5.13	m/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	201	140.562	m³/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	404	2	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	406	0.4	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	411	0	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		3	302	15.8	C	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	202	4.32	m/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	201	129.6	m³/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	404	0	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	406	0.2	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	411	0	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		3	302	16.6	C	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	202	8.02	m/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	201	223.758	m³/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	404	0	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	406	0.6	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	411	0	ppm	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		3	302	15.2	C	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	202	0.54	m/s	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	201	16.2	m³/s	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	404	0	ppm	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	406	0.2	ppm	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	411	0	ppm	0					1	Active	Weekly		
	3	1/28/2025 12:00:00		3	302	14.9	C	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	202	1.93	m/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		2	201	55.97	m³/s	-AI 4 main fan...					1	Active	Weekly		
	3	1/28/2025 12:00:00		4	404	0	ppm	-AI 4 main fan...					1	Active	Weekly		



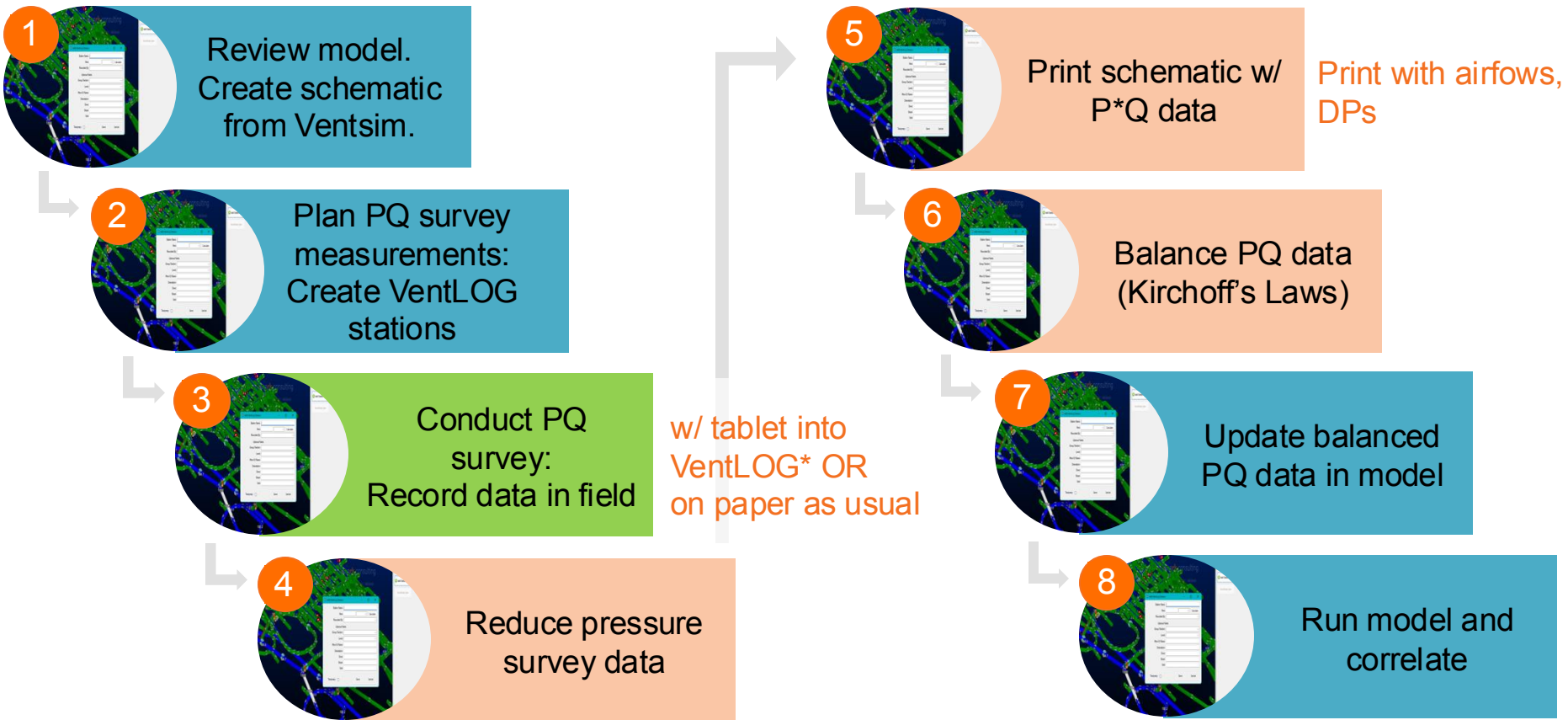
Using VentLOG

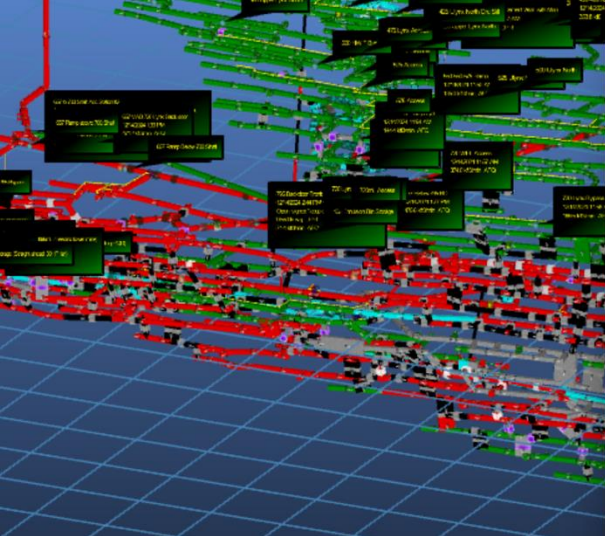
PQ survey workflows based in experience

PQ Survey Workflow (Traditional)



Recommended workflow w/ VentLOG





Drag a column header here to group by that column

	% Diff	Date - Time	Station Name	Airway Number	Find	Record Type	Units	Simulated	VentLog	Comments	Difference	
▶	39.5%	12/14/2024 4:...	BH-02 Louvre t...	14291821	ρ	Airflow Volume	kcfm	42.71	70.6	60% open	27.89	▲
	71.4%	12/14/2024 4:...	BH-02 Louvre t...	14291821	ρ	Differential Pre...	in w.g	0.31	1.08	60% open	0.77	
	74.8%	12/14/2024 4:...	Scapeway Rais...	14090870	ρ	Airflow Volume	kcfm	1.05	0.6	pressure drop ...	-0.45	
	12.3%	12/14/2024 4:...	1245mL - Main ...	13853623	ρ	Airflow Volume	kcfm	104.19	118.8		14.61	
	107.1%	12/14/2024 4:...	1245mL - Main ...	13854575	ρ	Airflow Volume	kcfm	104.16	50.3		-53.86	
	112.4%	12/14/2024 4:...	1245mL - Main ...	13853654	ρ	Airflow Volume	kcfm	60.12	28.3		-31.82	
	238.3%	12/14/2024 4:...	1245mL Vent D...	13849234	ρ	Airflow Volume	kcfm	43.98	13	Alt. Scenario (...)	-30.98	
	56.9%	12/14/2024 4:...	1245mL Vent D...	13849234	ρ	Differential Pre...	in w.g	1.58	1.01	Alt. Scenario (...)	-0.57	
	383.3%	12/14/2024 4:...	1245mL Vent D...	13849234	ρ	Airflow Volume	kcfm	43.98	9.1	Alt. Scenario (...)	-34.88	
	219.2%	12/14/2024 4:...	1245mL Vent D...	13849234	ρ	Differential Pre...	in w.g	1.58	0.5	Alt. Scenario (...)	-1.09	
	211.7%	12/14/2024 4:...	Vent Door Sha...	13932764	ρ	Differential Pre...	in w.g	1.52	0.49	2x sliders open	-1.03	
	17.5%	12/14/2024 4:...	1220mL Trans ...	13855712	ρ	Airflow Volume	kcfm	23.1	28		4.9	
	92.9%	12/14/2024 4:...	1220mL Crush...	13856776	ρ	Airflow Volume	kcfm	3.09	43.6	Fan off, air goi...	40.51	
	14.7%	12/14/2024 4:...	1195-1220 Mai...	13854055	ρ	Airflow Volume	kcfm	260.12	226.7		-33.42	
	99.2%	12/14/2024 4:...	1220mL Crush...	13855054	ρ	Airflow Volume	kcfm	0.33	41.3		40.97	
	4.6%	12/14/2024 4:...	1195-1220 Mai...	13853739	ρ	Airflow Volume	kcfm	261.97	274.5		12.53	
	29.1%	12/14/2024 4:...	1080 Vent Doo...	14234200	ρ	Differential Pre...	in w.g	0.84	1.19		0.35	

Model Calibration using VentLOG

Model Calibration: Considerations

- An airflow model depends on airflow and pressure data
- A thermal model depends on temperature and heat (psychrometric) data
- Compare both **airflow** and **pressure** data
- Record fan operating points and settings (blade angle, speed)
- Some data will NOT balance well (due to bad measurements, unusual conditions, etc.)
 - Discard (or *archive*) known bad measurements
 - Decide how to handle balanced data
- Have vent automation records?
Measurement timestamps can help!

Reviewing Data with Timestamps

- Similar limitations as any vent survey: documenting
 - Timestamp can be helpful to know state of vent controls



Record of VOD
system changes
of regulator
settings, airflows

Reviewing Data with Timestamps

- Similar limitations as any vent survey: documenting
 - Timestamp can be helpful to know state of vent controls

VentLog

File Home Edit Export

Add Save Connection Online License About Help Close Desktop Mode

Filters

Date/Time From: 04 Feb 2025 Date/Time To: 07 Feb 2025

Person Recording: ☐ Display

Mine: ☐ Display

Zone: ALL ☐ Display

Level: Surface ☐ Display

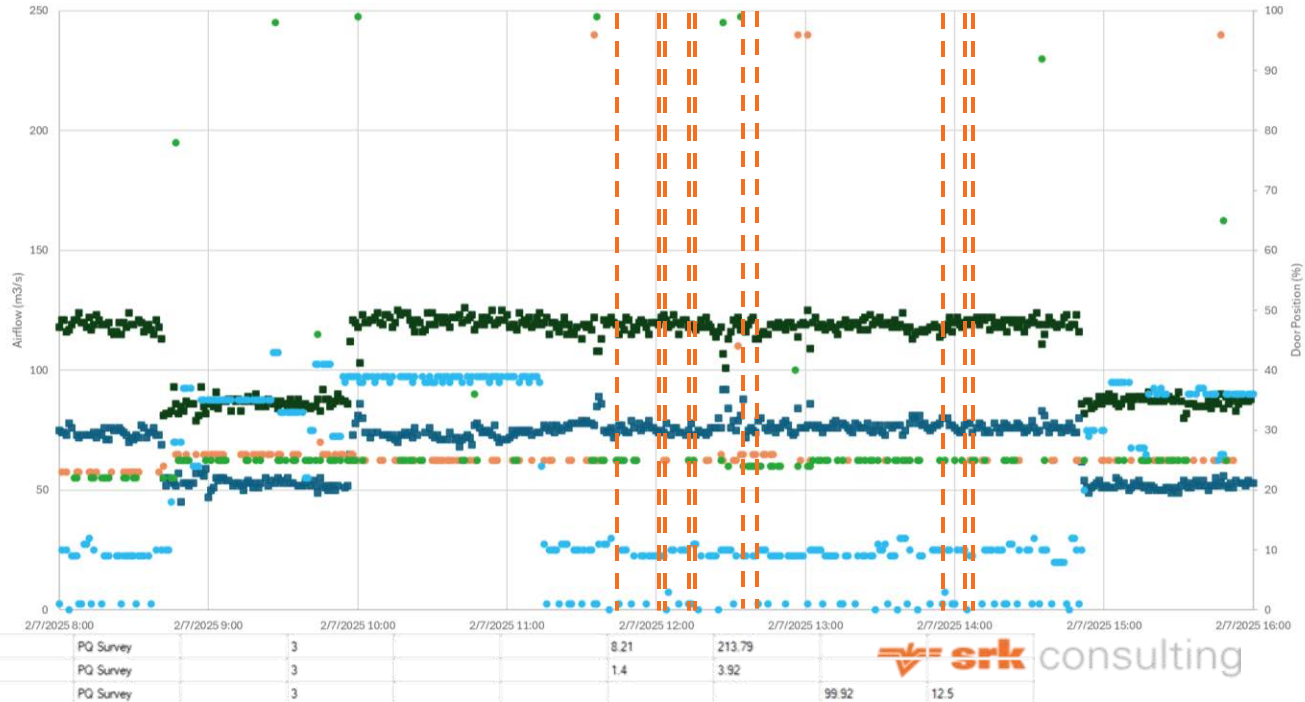
Stope: Not Setup ☐ Display

Reason for Reading: Weekly ☐ Display

History

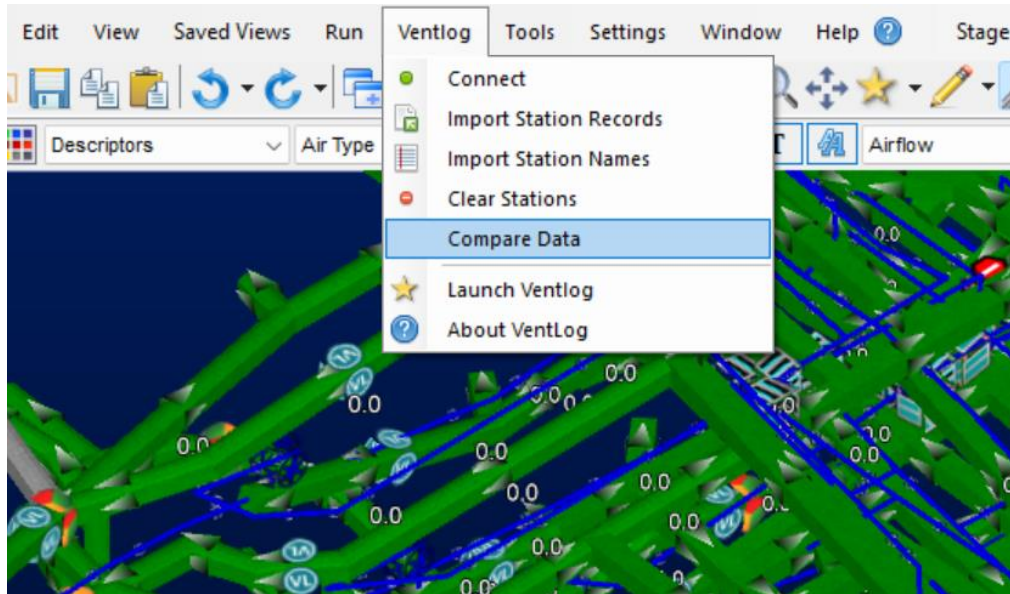
Station	Date and Time	Recorded By	Site
View VS#1 - Remuck #3	2/7/2025 2:09 PM	John Bowling	
View VS#2 - 300	2/7/2025 2:03 PM	John Bowling	
View VS#6 - 300R	2/7/2025 1:55 PM	John Bowling	
View VS#11 - 300R	2/7/2025 12:43 PM	John Bowling	
View VS#3 - 405 FAR	2/7/2025 12:38 PM	John Bowling	
View 405R start	2/7/2025 12:21 PM	John Bowling	
View 510R blw RMK02	2/7/2025 12:15 PM	John Bowling	
View 510R RMK 01N	2/7/2025 12:04 PM	John Bowling	
View 510R-495ELZ EW	2/7/2025 12:01 PM	John Bowling	
View VS#47 - 480R	2/7/2025 11:40 AM	John Bowling	
View 255 FAR ACC	2/6/2025 11:56 AM		
View 255L manway	2/6/2025 11:34 AM		
View 255L FAR collar	2/5/2025 10:54 AM	John Bowling	

Graph



Model Calibration: Compare data

- VentLOG > Compare Data



Model Calibration: Compare data

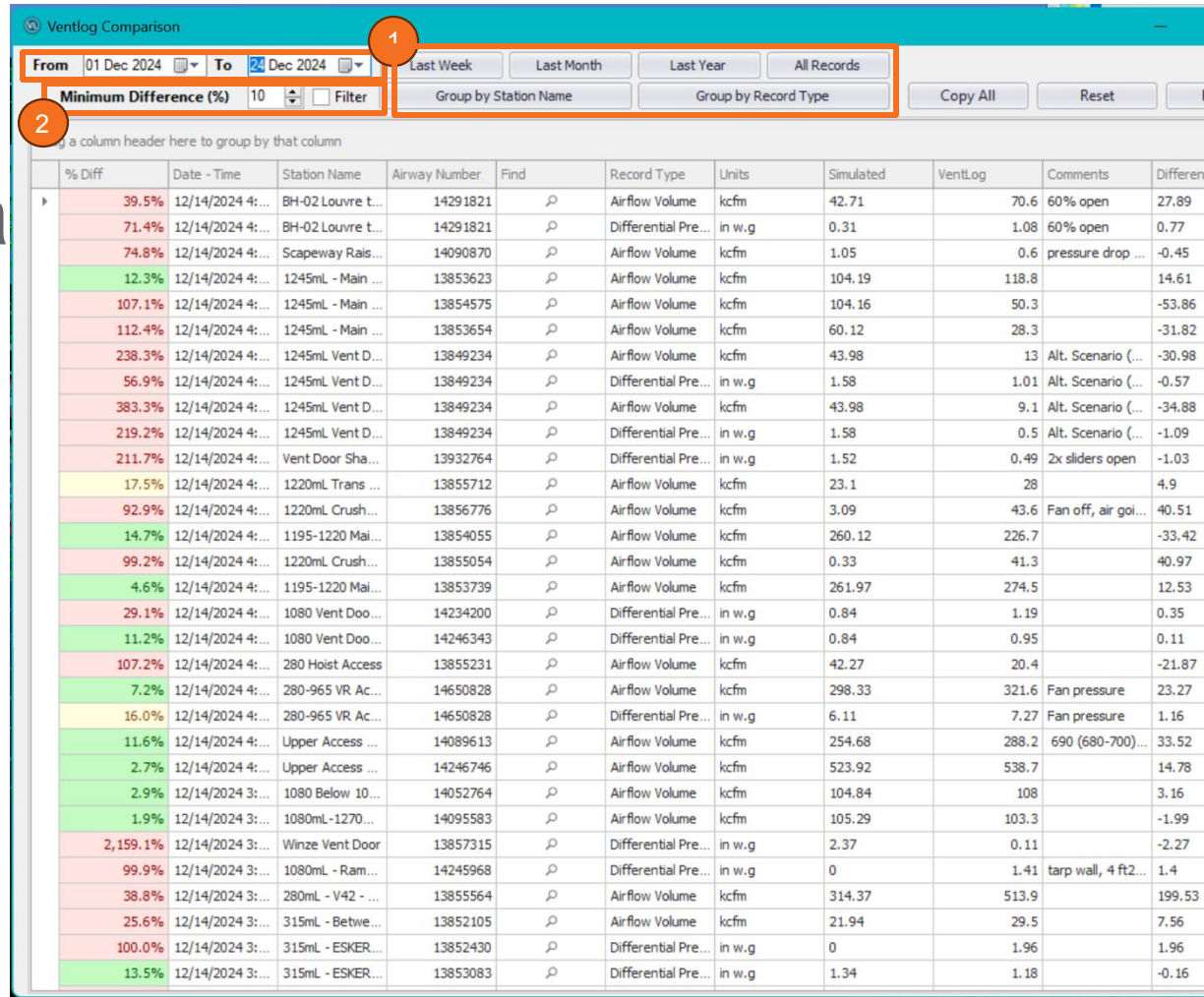
1. Filter by date and record type (e.g. Airflow Volume, Differential Pressure, etc.)
2. Filter by % difference if desired to target the biggest deviations

Notes:

raw data \neq balanced data

Consider data reliability

Apply Kirchoff's laws?



Ventlog Comparison

From 01 Dec 2024 To 20 Dec 2024 Last Week Last Month Last Year All Records

Minimum Difference (%) 10 Filter

Group by Station Name Group by Record Type Copy All Reset

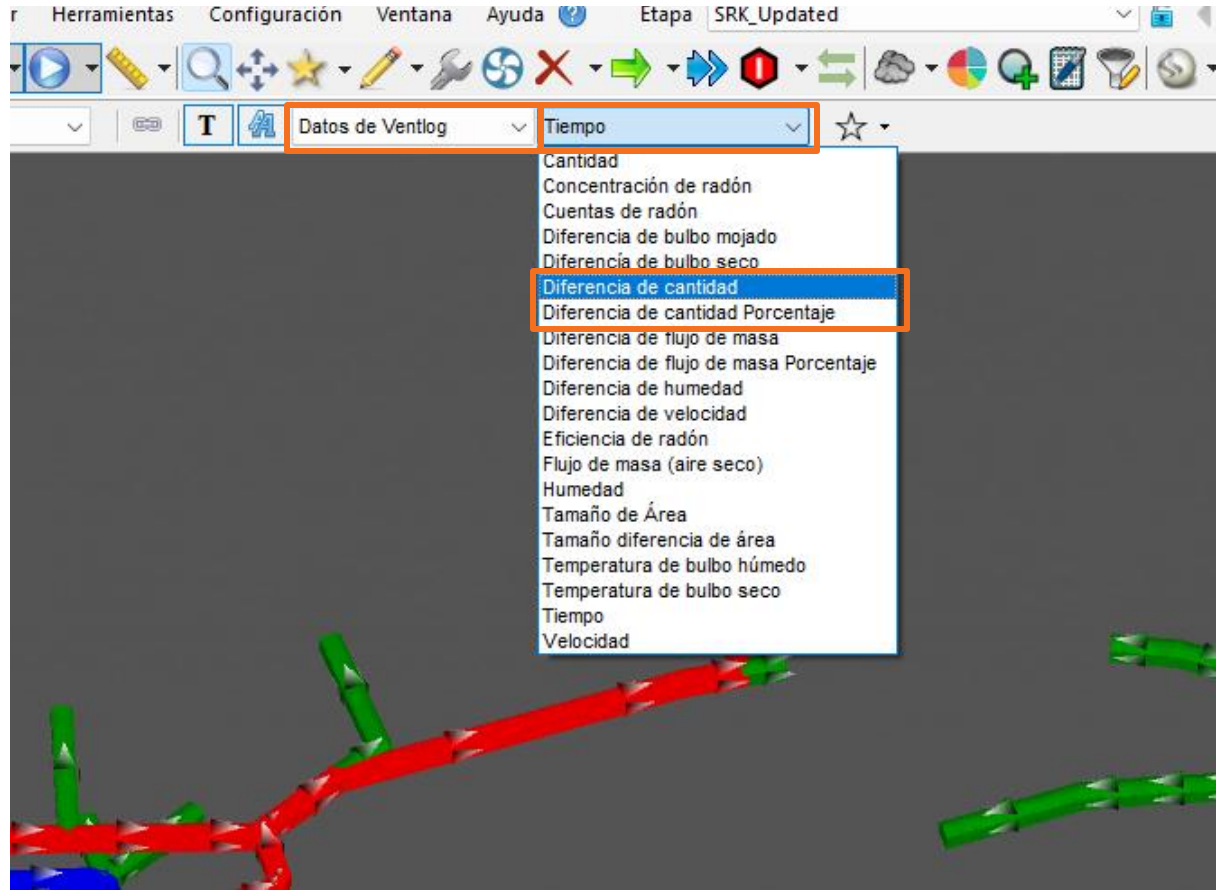
a column header here to group by that column

% Diff	Date - Time	Station Name	Airway Number	Find	Record Type	Units	Simulated	VentLog	Comments	Difference
39.5%	12/14/2024 4:...	BH-02 Louvre t...	14291821	⌂	Airflow Volume	kcfm	42.71	70.6	60% open	27.89
71.4%	12/14/2024 4:...	BH-02 Louvre t...	14291821	⌂	Differential Pre...	in w.g	0.31	1.08	60% open	0.77
74.8%	12/14/2024 4:...	Scapeway Rais...	14090870	⌂	Airflow Volume	kcfm	1.05	0.6	pressure drop ...	-0.45
12.3%	12/14/2024 4:...	1245mL - Main ...	13853623	⌂	Airflow Volume	kcfm	104.19	118.8		14.61
107.1%	12/14/2024 4:...	1245mL - Main ...	13854575	⌂	Airflow Volume	kcfm	104.16	50.3		-53.86
112.4%	12/14/2024 4:...	1245mL - Main ...	13853654	⌂	Airflow Volume	kcfm	60.12	28.3		-31.82
238.3%	12/14/2024 4:...	1245mL Vent D...	13849234	⌂	Airflow Volume	kcfm	43.98	13	Alt. Scenario (...)	-30.98
56.9%	12/14/2024 4:...	1245mL Vent D...	13849234	⌂	Differential Pre...	in w.g	1.58	1.01	Alt. Scenario (...)	-0.57
383.3%	12/14/2024 4:...	1245mL Vent D...	13849234	⌂	Airflow Volume	kcfm	43.98	9.1	Alt. Scenario (...)	-34.88
219.2%	12/14/2024 4:...	1245mL Vent D...	13849234	⌂	Differential Pre...	in w.g	1.58	0.5	Alt. Scenario (...)	-1.09
211.7%	12/14/2024 4:...	Vent Door Sha...	13932764	⌂	Differential Pre...	in w.g	1.52	0.49	2x sliders open	-1.03
17.5%	12/14/2024 4:...	1220mL Trans ...	13855712	⌂	Airflow Volume	kcfm	23.1	28		4.9
92.9%	12/14/2024 4:...	1220mL Crush...	13856776	⌂	Airflow Volume	kcfm	3.09	43.6	Fan off, air goi...	40.51
14.7%	12/14/2024 4:...	1195-1220 Mai...	13854055	⌂	Airflow Volume	kcfm	260.12	226.7		-33.42
99.2%	12/14/2024 4:...	1220mL Crush...	13855054	⌂	Airflow Volume	kcfm	0.33	41.3		40.97
4.6%	12/14/2024 4:...	1195-1220 Mai...	13853739	⌂	Airflow Volume	kcfm	261.97	274.5		12.53
29.1%	12/14/2024 4:...	1080 Vent Doo...	14234200	⌂	Differential Pre...	in w.g	0.84	1.19		0.35
11.2%	12/14/2024 4:...	1080 Vent Doo...	14246343	⌂	Differential Pre...	in w.g	0.84	0.95		0.11
107.2%	12/14/2024 4:...	280 Hoist Access	13855231	⌂	Airflow Volume	kcfm	42.27	20.4		-21.87
7.2%	12/14/2024 4:...	280-965 VR Ac...	14650828	⌂	Airflow Volume	kcfm	298.33	321.6	Fan pressure	23.27
16.0%	12/14/2024 4:...	280-965 VR Ac...	14650828	⌂	Differential Pre...	in w.g	6.11	7.27	Fan pressure	1.16
11.6%	12/14/2024 4:...	Upper Access ...	14089613	⌂	Airflow Volume	kcfm	254.68	288.2	690 (680-700)...	33.52
2.7%	12/14/2024 4:...	Upper Access ...	14246746	⌂	Airflow Volume	kcfm	523.92	538.7		14.78
2.9%	12/14/2024 3:...	1080 Below 10...	14052764	⌂	Airflow Volume	kcfm	104.84	108		3.16
1.9%	12/14/2024 3:...	1080mL-1270...	14095583	⌂	Airflow Volume	kcfm	105.29	103.3		-1.99
2,159.1%	12/14/2024 3:...	Winze Vent Door	13857315	⌂	Differential Pre...	in w.g	2.37	0.11	tarp wall, 4 ft2...	-2.27
99.9%	12/14/2024 3:...	1080mL - Ram...	14245968	⌂	Differential Pre...	in w.g	0	1.41		1.4
38.8%	12/14/2024 3:...	280mL - V42 - ...	13855564	⌂	Airflow Volume	kcfm	314.37	513.9		199.53
25.6%	12/14/2024 3:...	315mL - Betwe...	13852105	⌂	Airflow Volume	kcfm	21.94	29.5		7.56
100.0%	12/14/2024 3:...	315mL - ESKER...	13852430	⌂	Differential Pre...	in w.g	0	1.96		1.96
13.5%	12/14/2024 3:...	315mL - ESKER...	13853083	⌂	Differential Pre...	in w.g	1.34	1.18		-0.16

Model Calibration: Compare data

VentLOG data is another parameter in Ventsim – visible by color and value in the visual interface

Simplified local model calibration – identify where the model and measurements differ



Case Studies - Implementation

1. On-site technician with off-site long-range planning (corporate)
 - Allowed for sharing from the same VLG file (less confusion)
 - Multiple people from multiple sites synced
 - Definitive calibration – easier for all parties to quantify and understand
 - Standardized record-keeping
2. All vent expertise on-site
3. Consulting (remote support)

Conclusions:

VentLOG Pros and Cons

Pros

- 3D visual communication:
data in context in Ventsim
- Simplified records – one source
- Remote data sharing/sync
- Simplified export to maps
- Simplified, transparent model calibration

Cons (current limitations)

- Importer tool is standalone, can be challenging
- Must commit to one unit set in database
- Some units unclear in VentLOG, lacks good user documentation

Conclusions: PQ Surveys with VentLOG

Strengths

- Produce schematic from Ventsim + VentLOG data
- Filter VentLOG data by date/time range
- Traceable data (recorder, timestamps)
- Tablet interface is quick and enforces quality *if setup correctly*

Issues to sort out:

- Balanced data from measured data? *some QA from data entry*
- Which data are reliable?
- How to display pressure measurements over (>1 airway)?
- Psychrometric survey?
- Fan/duct pitot tube survey tool?

Tips for Using VentLOG

- Minimize new VentLOG stations
 - Understand which stations/airways are really the same!
 - Move development face stations (update area)
- Add stations in Ventsim (from the office)
- Decide on a name scheme and be consistent!
- Define Groups, Levels, Activities, etc. well (at the beginning)
- Buy a tablet (ok... a few) with its own VentLOG license
- Decide on a sync location/scheme

VentLOG Workflows – Lessons Learned

Ventilation on-site

- For routine vent (flow) surveys VentLOG saves a LOT of time
- The more frequent the survey, the more time saved
- Best with a tablet

As a consultant

- For first time/one-off PQ survey ... mixed results
- Initial setup takes longest by far. *Hire out to a consultant?*
- Did not rule out paper maps, field books – not all data feeds neatly into VentLOG

Consultant's Point of View

- All the work is in the VentLOG initial setup
- Easy for client (end user) to maintain the database
- Calibrated model is a valuable deliverable
- With VentLOG, the calibrated model is:
 - transparent, defensible, repeatable
- Empowers client (end user) to maintain model calibration
- Simplifies future calibration and troubleshooting (I hope, TBD!)



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Thank you for your attention



1,700+ Professionals, 40+ offices, 6 continents

What does VentLOG do?

Record and store ventilation records.

- Database format forces accountability

Communicate data between users/models

- Remote tech services and consultants view site data **in context**
- Eliminate questions, e.g. location, time/date of measurements

Simplify model validation (calibration)

Export survey data to maps

- DXF w/ aligned arrows or as database