LVA - Longwall Visual Analysis

Information Sheet

LVA_Overlay User Guide

for LVA_Overlay versions 1.24 and later

Contents

1.	Introduction	. 2
2.	Check the Chainage Data	. 2
3.	Check LVA panel configuration	. 3
4.	Edit panel configuration in LVA_Datalink	.4
5.	Get your DWG file	. 5
6.	Run LVA_Overlay	. 5
7.	Adjust the legend table	. 8
8.	What to plot	. 9
9.	Panning and Zooming	.9
10.	Other features	.9

1. Introduction

You can overlay LVA data onto a picture of a mine map (e.g. jpg or png file) from within the LVA program, but if you want to overlay data onto AutoCAD DWG files then you need to use the separate LVA_Overlay program.

This document outlines the process and options for overlaying LVA data onto AutoCAD DWG files using the utility program LVA_Overlay.exe

This section is intended for first-time users. Once you're more familiar with the process you will be able to skip some of the steps. Some steps may be required in LVA to update chainage data and check panel coordinates, and also in LVA_Datalink to add eastings and northings of the panel coordinates if necessary.

If can't see the tab options for panels and chainage you may need to change your LVA into Technical (or Server) User Mode.

<u>F</u> ile <u>V</u> iew <u>G</u> raph	Help Panel019, LW19
O Live O Historical	from 2025/03/09, 14:00 to 2025/03/12, 14:00 ♀ 3 days ∨ Low Set pressures 45 shields Set < 320 bar 6 shields within 10 min 4 shields > 5
Trending Face Scan 3D	Images Scan Maps Load Cycle Maps Time of Day Maps Console Overlays Alerts Reports & Utilities Configuration
General Settings Graph	Colours Panels Chainage Weblink HTTP/File Image Server Log files Licencing LVA User Modes
□ Network folder W □ □ □ Local folder C:	is is the folder LVA.exe is currently running from (not editable) (Data2-Limited Backup\LVA-Installations\QLD\Broadmeadow\aa-Training-Broadmeadow-2025
Select an LVA mode	
	Save settings to network Retrieve network settings
Server Mode Technical User Mode Typical User Mode Viewer User Mode	Full access to all settings including Layouts, Alerts, emails, graph colours and longwall settings. Save settings to network for propogation to all users. Like Server Mode, but no calculating live Alerts or sending emails, weblink or http server. Recommended for most users. Edit local settings and Layouts only. No emails, weblink etc. Like User Mode but cannot edit Layouts

2. Check the Chainage Data

Daily chainage data are required in order to locate the LVA data on the mine plan. Make sure the chainage data is correct and up to date in LVA – go to Configuration | Chainage and check the chainage dates and values, and update if necessary. You can enter dates and chainages directly into the table, or import from a spreadsheet after specifying the spreadsheet location and column numbers for dates and chainage. If the spreadsheet is always in the same location, and someone

updates it regularly, you can optionally tick the box for LVA to load new chainage data automatically every day – see screenshot below...



3. Check LVA panel configuration

Whilst in LVA, check that the longwall panel you want to overlay has its correct eastings and northings coordinates..

- a. Got to Configuration | Panels
- b. Select the panel you want to overlay by clicking on a cell in its column (LW14 in the example below)
- c. Check the number of shields, and the eastings and northings for MG and TG Start and End.
- d. You can't edit the values from this section in LVA, if they need to be edited then this must be done from LVA_Datalink (see next section).

General Settings Graph Colours Note Panels are configure - Panel dates should i - Check that all comp - Current panel: check Show Panel layou	Panels Ch. ad in LVA_Data not overlap - ea leted panels ha k start date is c ts (Ctrl+Click ta	ainage Webl ach panel shou we the correct correct, and en ble columns to	ink HTTP/F current setting Ild finish before start and end d date is later show multiple	ile Image Sen is here. e the next one dates. Check than latest and panels)	ver Li e starts the nu ticipate	ig files Eastin imber a d end.	Licen gs and l f shields	oing LV Northings for each	A User Modes are optional (requ panel.	ired only for Overlays).	
	Panel001	Panel012	Panel013	Panel014	Par	MG	TG	Start	End		
Panel name	Panel001	LW12	LW13	LW14	LW1	1	2		In 2011		
Start date (yyyy/MM/dd)	0	2017/03/23	2018/11/11	2020/07/27	202						
End date (yyyy/MM/dd)	0	2018/10/31	2019/11/30	2021/02/10	202					LW14 (Panel014)	
Number of shields	0	158	158	158	158						
Calculated Panel length	0	3309	3400	1399	1884						
Calculated Panel width	0 -	320	320	320	324	1	-				
MG start - Easting	0	605017.1	605136.3	604178.3	6043						
MG start - Northing	0	7586743	7586368	7585990	7585						
MG end - Easting	0	601710.5	601734.8	602779.1	6024						
MG end - Northing	0	75867 <mark>4</mark> 3	7586368	7585990	7585						
TG start - Easting	0	605023.1	605136.3	604178.3	6043						
TG start - Northing	0	7587063	7586688	7586310	7585						
TG end - Easting	0	601710.1	601736.3	602779.1	6024						
TG end - Northing	0	7587063	7586688	7586310	7585						

4. Edit panel configuration in LVA_Datalink

If the eastings and northings need to be edited then this must be done from LVA_Datalink, which should be running on the LVA server.

- In LVA_Datalink, go to "Panels", locate the column for the panel you want to overlay LVA data onto, and check the data for that column start and end dates, number of shields, and the eastings and northings. If all correct then no further action is required in LVA_Datalink, go to next section.
- If you need to edit any parameters then continue...
- First make a note of the eastings and northings of the four corners of the panel you want to overlay (MG and TG Start and End).
- In LVA_Datalink, turn scanning OFF and unlock for editing.
- The example below shows data for Panel022, called Longwall 22.
- Click the Panels tab, and optionally "Show Panel Layouts"
- Check and edit as necessary the data for panel name, number of shields, and the eastings and northings for the four corners of the panel.

•	Don't forget to turn LVA_Datalink scanning back on!	

LVA_Datalink 5.47.32 -	Panel022 - L	ongwall 22	5							2
e Help										
is app is a critical pa	art of the LV/	A software	suite. It shou	ild run al	ways it co	llects and	saves	your longwall data.		
can Target Scan	Settings		170 -1:-1	1			St	atus		
🔾 Local	Scanning to 0	FF	Danal022	s						
	Locked incre	ditionen	Coop data of	- Longwa				Scanning OFF		
			Scan uata e	very 20	sec 🗸					
atest scan Taos and se	ttinos Data s	ources Cv	cles processing	Panels	Network path	s Licencin	Fast s	canning		
Add New Par	nel	Show	v Panel layouts	1			ender Mitter PVA			
	Panel001	Panel015	Panel022			MG TG	Start	End		 -
Panel name	Panel001	Panel015	Longwall 22							
Start date	0	0	2024/08/01							
End date	0	0	2024/12/31			-	_	Longwall 22 (p-	~	
Number of shields	0	0	170					- (Fanel022)		 7
MG start - Easting	0	0	293541.4						_	1
Northing	0	0	6194387							1
MG end - Easting	0	0	291051.9							
Northing	0	0	6194924							
	A COLORADO AND A COLORADO ANDO ANDO ANDO ANDO ANDO ANDO ANDO A									
TG start - Easting	0	0	293477.7		~~~~~					
TG start - Easting Northing	0	0	293477.7 6194098							
TG start - Easting Northing TG end - Easting	0 0 0	0 0 0	293477.7 6194098 290988.5							

5. Get your DWG file

Obtain or create a DWG mine plan in CAD, it may help to strip it down a bit so it's just a basic outline of the roadways etc. Also it should be exported as AutoCAD 2013 file format for compatibility with LVA_Overlay.

6. Run LVA_Overlay

- At this stage LVA should be correctly configured with updated chainage and panel coordinates, and you can start up the separate LVA_Overlay.exe utility (contact LVA if you need a copy of this utility).
- The LVA_Overlay program and its DLL dependencies should be installed into the same folder as LVA, and when you start it up it will display the available Panels of LVA data.
- Under the "Panel details" tab, check that the Eastings and Northings are correct.

fineLVA	Mine			•••	1 🖬	\$	1.1	X,)
anelLW1	1, CRI (Pane	Ιſ						
PlotTWA	٨P	÷	1					
Range. Ever	y leg, every 1	m 🔻						
0	to 100	% of panel						
P	anel base	Legend	1					
			8					
	Draw par	nel data						
□ Live und	ate - redraw e	every 24 hours	-					
🗆 Live upd	ate - redraw e	every 24 hours	•					
Live upd	ate - redraw e	every24 hours	•					
Live upd	ate - redraw e Colors Lay	every 24 hours vers Chainage	•					
C Live upd	ate - redraw e Colors Lay	every 24 hours vers Chainage anel configuratio						
C Live upd	ate - redraw e Colors Lay from LVA pa	every 24 hours /ers Chainage anel configuratio						
C Live upd Panel details Use data C Enter co	ate - redraw e Colors Lay from LVA pa ordinates ma	every 24 hours vers Chainage anel configuratio nually from DV						
Live upd Panel details Use data CEnter co Item	ate - redraw e Colors Lay from LVA pa ordinates mai	every 24 hours vers Chainage anel configuratio nually from DV						
Live upd Panel details Use data CEnter co Item MG start	ate - redraw e Colors Lay from LVA pa ordinates mai Easting 32.469	every 24 hours vers Chainage anel configuratio nually from DV Northing 490.803						
Live upd Panel details Use data CEnter co Item MG start MG end	colors Lay from LVA pa ordinates mai Easting 32.469 972.104	every 24 hours vers Chainage anel configuratio nually from DV Northing 490.803 489.748	VG					
Live upd Panel details Use data CEnter co Item MG start MG end TG start	Colors Lay from LVA pa ordinates man Easting 32.469 972.104 32.997	every 24 hours rers Chainage anel configuratio nually from DV Northing 490.803 489,748 594.679	VG					
Live upd Panel details Use data CEnter co Item MG start MG end TG start TG end	ate - redraw e Colors Lay from LVA pa ordinates mai Easting 32.469 972.104 32.997 971.577	every 24 hours erers Chainage anel configuratio nually from DV Northing 490.803 489.748 594.679 593.625	vG					
Live upd Panel details Use data CEnter co Item MG start MG end TG start TG start TG end Legend table	colors Lay from LVA pa ordinates mai Easting 32.469 972.104 32.997 971.577	every 24 hours vers Chainage anel configuration nually from DV Northing 490.803 489.748 594.679 593.625	VG					
Live upd Panel details Use data Enter co Item MG start MG end TG start TG end Legend table Legend size	Colors Lay from LVA pa ordinates man Easting 32.469 972.104 32.997 971.577	every 24 hours vers Chainage anel configuratio nually from DV Northing 490.803 489,748 594.679 593.625	VG					

• Click "File | Open CAD file", or click the Open file icon, and select the DWG file you wish to open.

<u>File Export H</u> elp	•
MineLVA Mine	🔶 🗋 💣 🖬 🖬 🗟 🖸 🔍 y

- Sometimes when you open a DWG file it looks blank because it's all compressed into a tiny dot. This has something to do with the way it was saved, e.g. with a zero reference point. If this happens you need to hunt around for the dot and zoom in.
- LVA_Overlay 1.24 LVA_Mine01.dwg X <u>File Export Help</u> Mine..... LVA Mine Panel.... Panel011, LW11 Plot..... TWAP Range. Every shield, every 1 m to 100 % of panel 0 Draw panel base Draw legend T W11 1 W11 Draw papel data Live update - redraw every... 24 hours ~ Panel details Colours Layers Chainage 1.9412 O Use data from LVA panel configuration O Enter coordinates manually from DWG LW136 LW13b LW13 Northing Item Easting MG Start 31.7 491.3 MG End 971.6 491.3 TG Start 33 594.4 $\lfloor W14$ LW14 TG End 970.2 594.4 Legend table 767.1 463.9 Legend size 6 LW15 LW15 Panel name LW11 Start 2022/07/19 Completion 2023/04/15 196 Supports Width 103 Length 938
- Once loaded, you should see the file in LVA_Overlay.

- Select a panel to plot ("Panel011, LW11" in this example).
- Check that the panel coordinates are correct by clicking the "Panel base" button. This will draw a grey background over the panel. Make sure it's covering the panel correctly.
- Note that you can choose to use the coordinates from the LVA and LVA_Datalink panel configuration, or you can select "Enter coordinates manually" and either type values in or click a box, click the location on the drawing, then click "from DWG".

• Use the same method to specify where the legend table should go (type it in or select the cell and click the drawing, and then click "from DWG").



• If all looks good, then choose what to plot (TWAP for this example, every shield, every 1 metre, and 0 to 100% of the panel) and then click "Draw panel data".



• You can change the colour scale to match the LVA colours (they are not automatically imported from LVA)... click "Colours" and choose (in this example) Rainbow from 0 to 500 bar. You can also select the custom Colour table and enter values and colours manually.



7. Adjust the legend table

- Click the Easting box against "Legend table".
- Then click on the drawing where you want the legend table to be.
- Click the "from DWG" button and the coordinates will be entered into the table.
- Enter a legend text size (6 to 12 often works well).
- Then click the "Draw Legend" button.
- (Note you can use a similar method to enter panel coordinates manually, if the "Enter coordinates manually" option is selected).

8. What to plot

• The above example shows an overlay of TWAP (Time-Weighted Average Pressure). You can select other data to plot instead, by clicking the dropdown box near "Plot". Choose from TWAP, Set pressure, Yield counts, Loading rates, Cycle duration, etc.

<u>F</u> ile	<u>Export</u> <u>H</u> elp
Mine	LVA Mine
Panel	LW11, CRI (Panel001)
Plot	TWAP
Range.	TWAP Set Pressure Yields Loading Rate, 1-5 min Loading Rate, 5-10 min Cycle Duration

9. Panning and Zooming

- Zoom in/out with the mouse wheel.
- Zoom a rectangle Shift-click and drag.
- Pan Click and drag.

10. Other features

- Look over the menu items for other features.
- Note that Program settings are saved automatically when you close LVA_Overlay.

File Export	t Help) · · · · · · · · · · · · · · · · · · ·	File	Export	Help
New Open C	AD file	Ctrl+N		CA	D-dwg, dxf
Save CA	D file	Ctrl+S		Sur	fer XYZ - dat
Save CA Save Pro	D As ogram se	ettings		Tak	ble - csv
Exit	-	Alt+F4			

• Look over the tabs for options for Panel details, Colors, Layers, and to check or edit chainage data.

O Use data	from LVA pan	el configuration	Rainbow 0 to 500	Delete laver	Date & time	Chainage
O Enter coo	or <mark>d</mark> inates manu	ally from DWG			2022/07/21 00:00	1882
			Use Colour Table	VA Data - LW11 (TWAP)	2022/07/22 00:00	1881.2
Item	Easting	Northing	440	LVA Legend - LW11	2022/07/23 00:00	1874.8
MG Start	31.7	491.3	400	UVA_NAMES	2022/07/24 00:00	1870.1
MG End	971.6	491.3	350		2022/07/25 00:00	1863.6
TG Start	33	594.4	300		2022/07/26 00:00	1858.6
TG End	970.2	594.4	0		2022/07/27 00:00	1852.6
Legend table	767.1	463.9	0		2022/07/28 00:00	1842.6
Legend size	6		0		2022/07/29 00:00	1828
Panel name	LW11				2022/07/30 00:00	1815.1
Start	2022/07/19				2022/07/31 00:00	1800
Completion	2023/04/15				2022/08/01 00:00	1787.3
Supports	196				2022/08/02 00:00	1781.5
Width	103				2022/08/03 00:00	1769.7
Length	938				2022/08/04 00:00	1761.9
	10	8 - 14			2022/08/05 00:00	1753.2

• Look over the drawing icons for full screen, New, Open, Save, Save As, Layers, Zoom extents, save & restore zoom state...

Eile Export Help		
Mine LVA Mine	● 〕 🐸 🖬 🖬 😂 🖸 🍳 🍳	x = 10.036, y = 240.142
Panel Panel011 W11 V)	

- To save your drawing, click "File | Save" or click the grey save icon.
- Or click the red "Save As" icon to save as an image (jpg, png etc), or export the overlaid data to various file formats like csv or surfer format.
- The LVA data in the DWG file are saved as layers, so you can open the saved DWG file in AutoCAD and copy the layer to other DWG or AutoCAD mine maps.
- Note that any changes made in LVA_Overlay are *not* passed back to LVA.