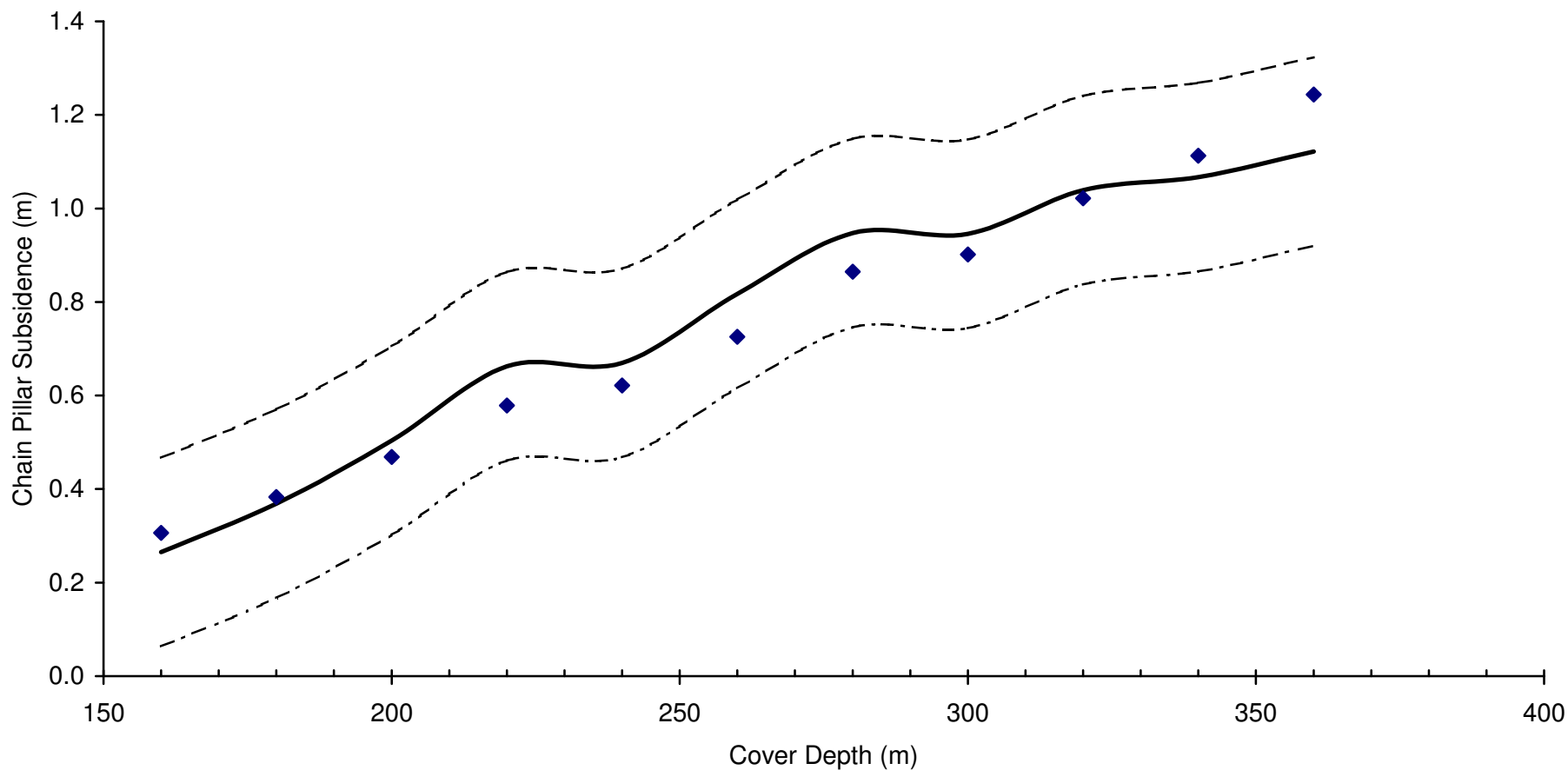
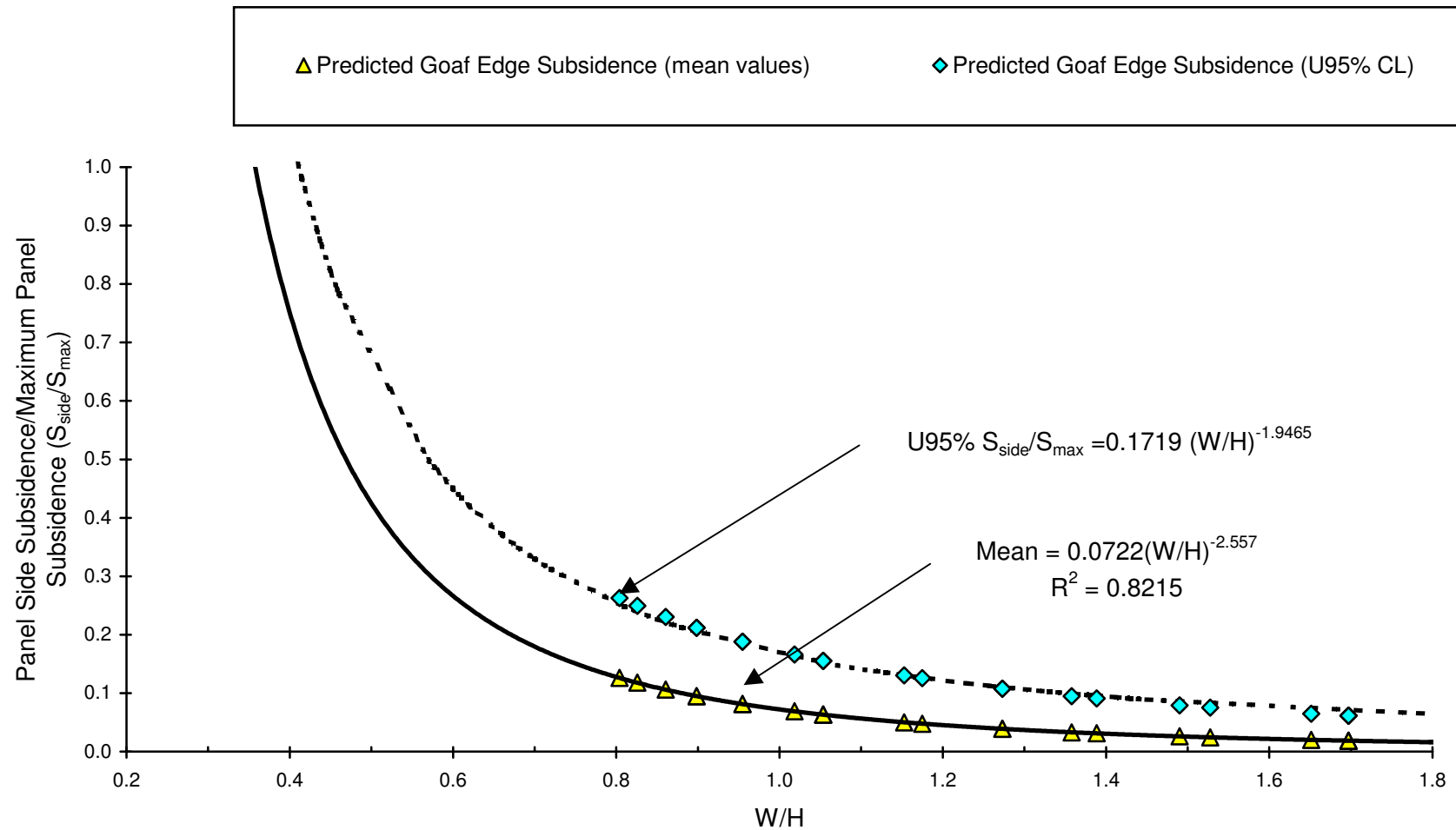


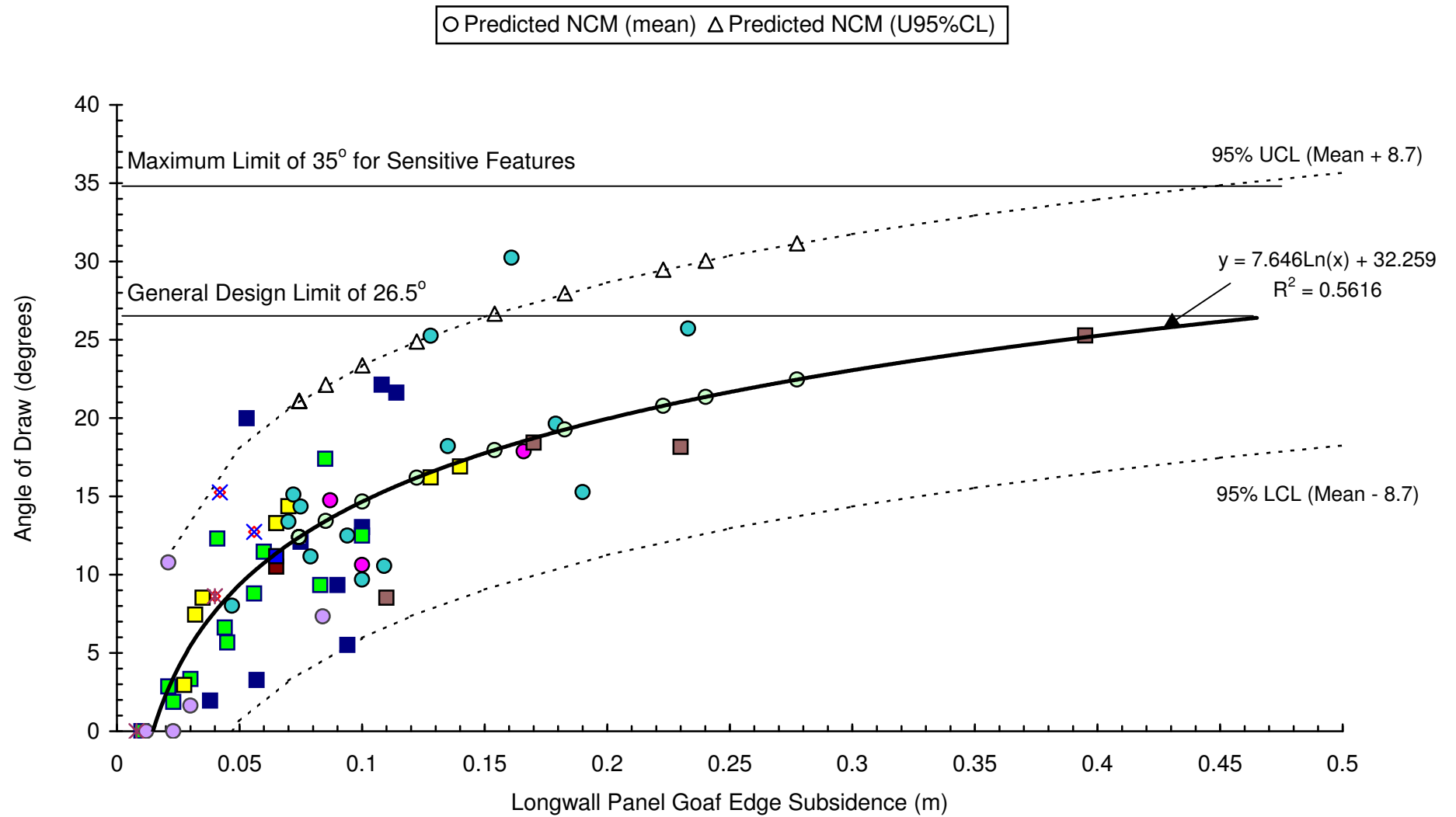
◆ Analytical Model (Lower Bound) — Empirical Model (mean) - - - Empirical Model (U95%CL) - - - Empirical Model (L95%CL)



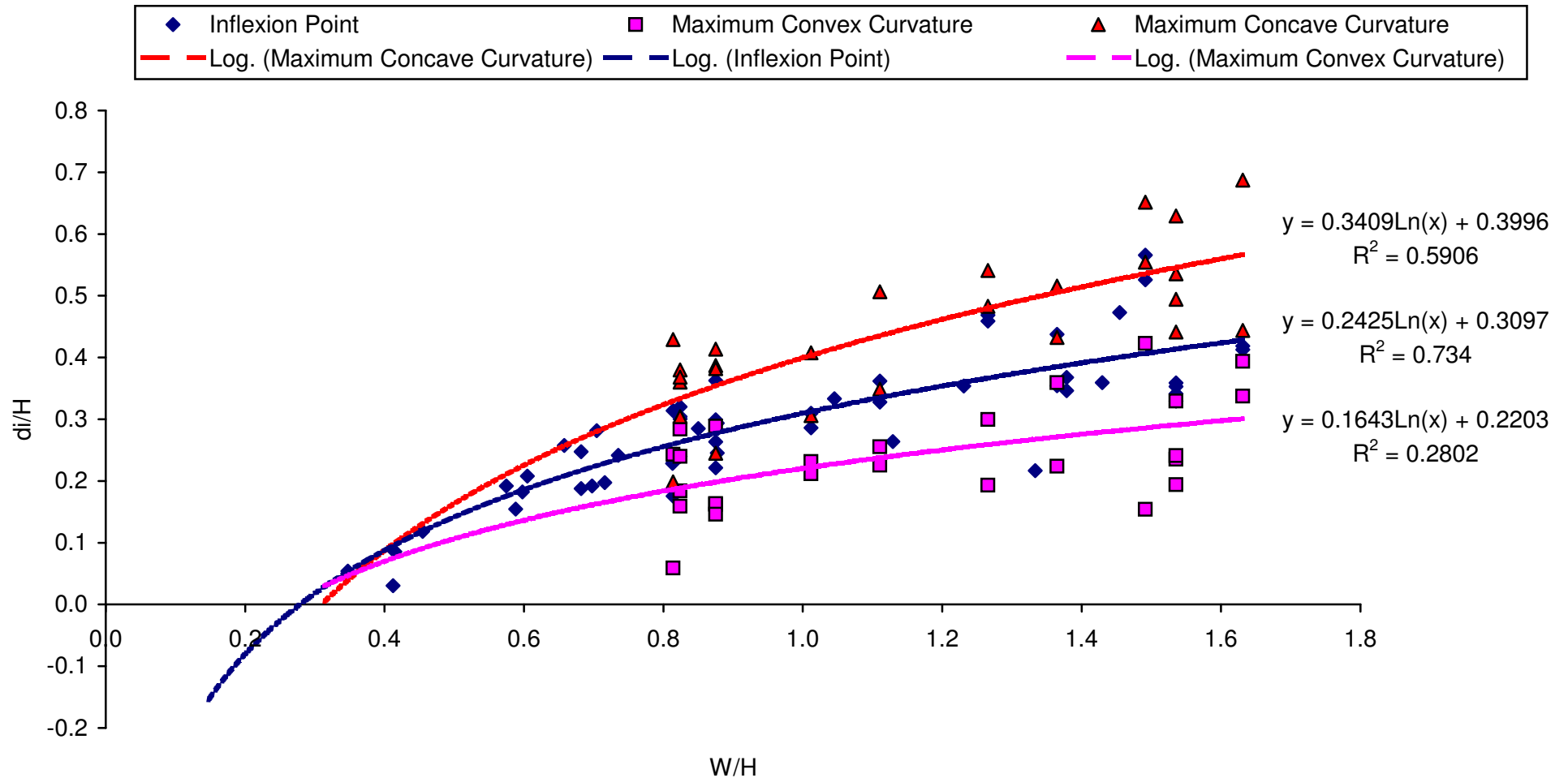
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)		
	Drawn:	S.Ditton		NAR-001/1		
	Date:	10.03.09	Title:	Empirical v. Analytical Chain Pillar Subsidence Prediction Model Outcomes		
	Ditton Geotechnical			for LWs 1 to 26 and a 4.2 m Mining Height		
	Services Pty Ltd		Scale:	NTS		Figure No:



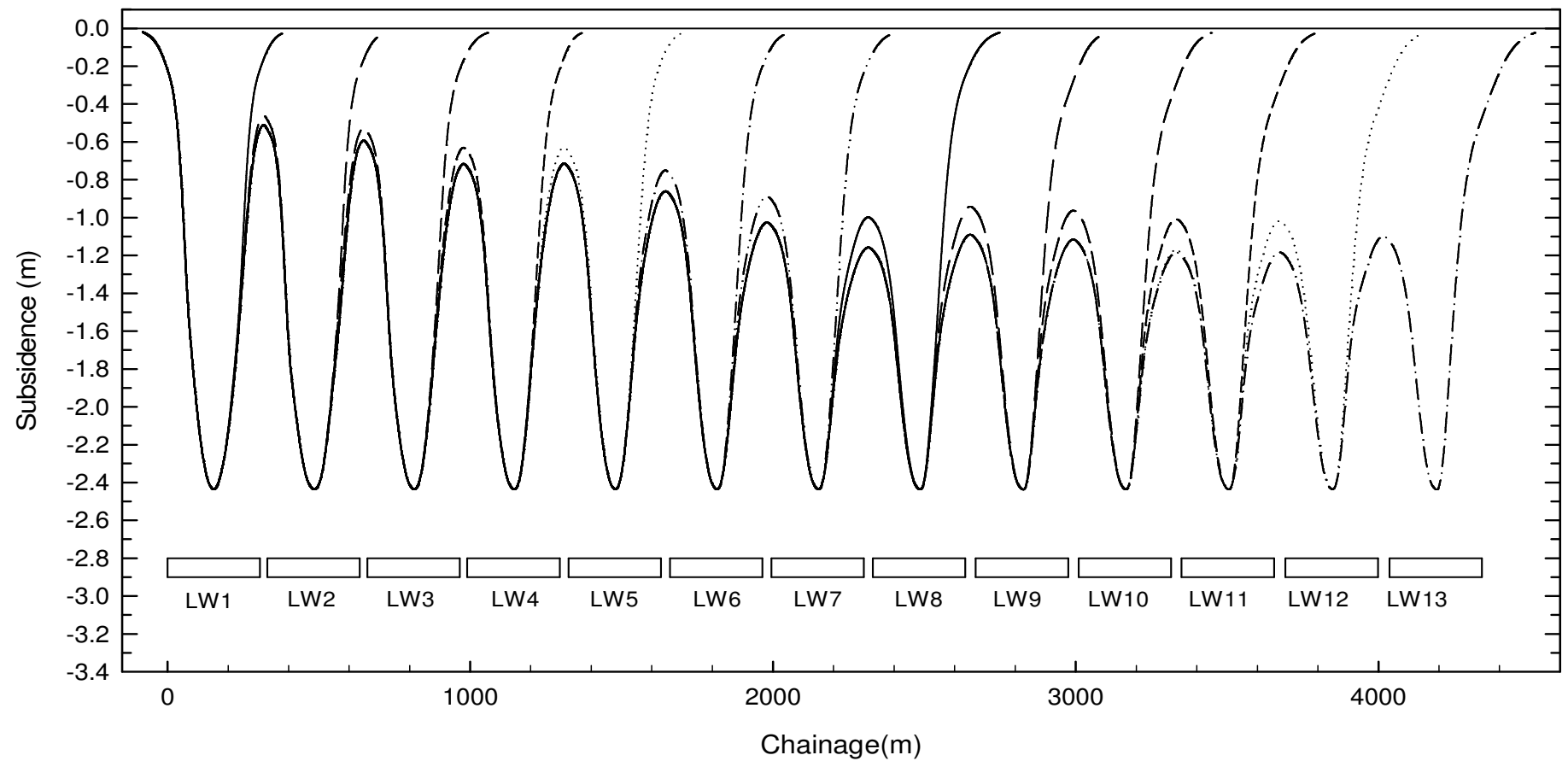
Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
Drawn:	S.Ditton		NAR-001/1			
Date:	08.08.08	Title:	Empirical Model for Goaf Edge Subsidence Prediction Above Longwall Panels			
Ditton Geotechnical Services Pty Ltd						
		Scale:	NTS		Figure No:	17



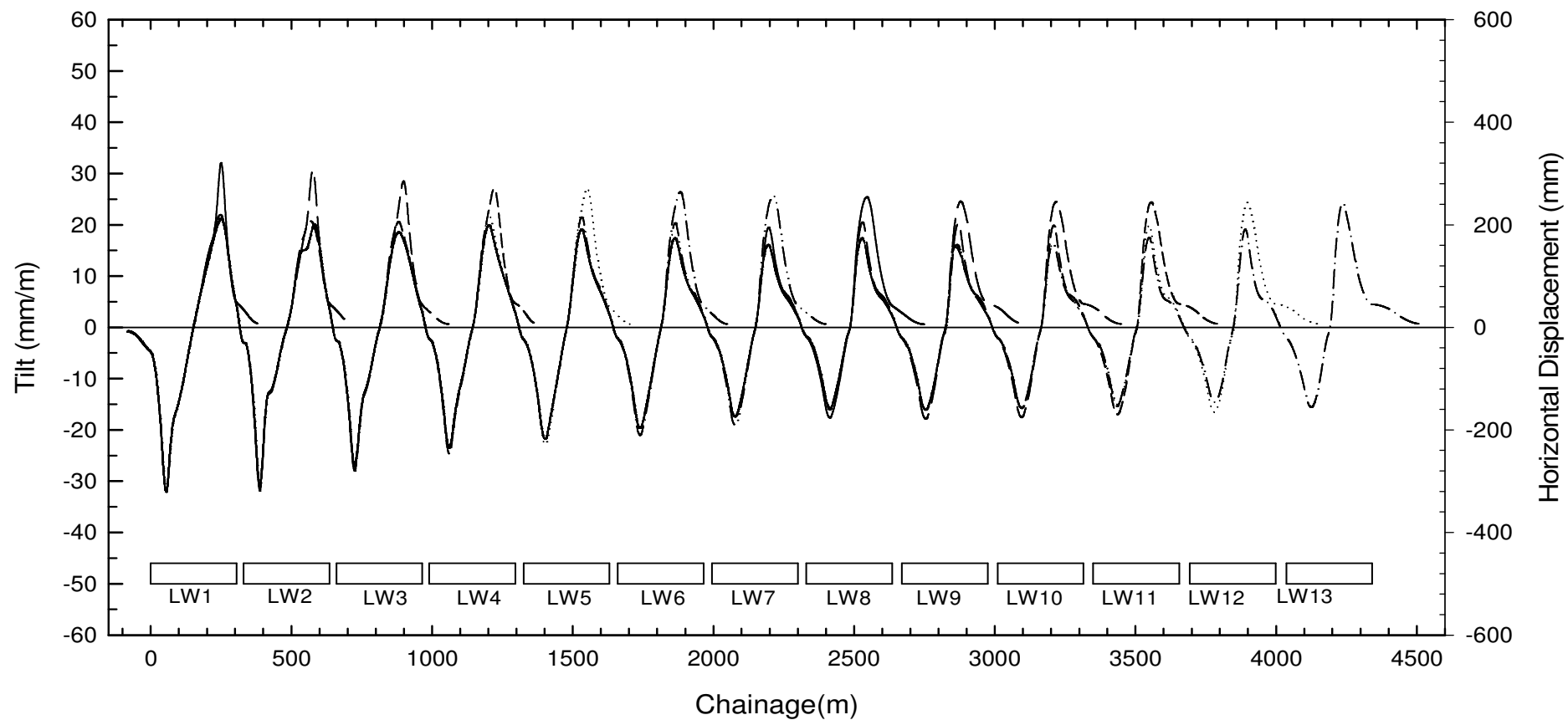
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	16.03.09	Title:	Empirical Model for Predicting the Angle of Draw from Longwall Panel Limits			
	Ditton Geotechnical			in the Newcastle Coalfield and NCM Panel Outcomes			
	Services Pty Ltd		Scale:	NTS		Figure No:	18



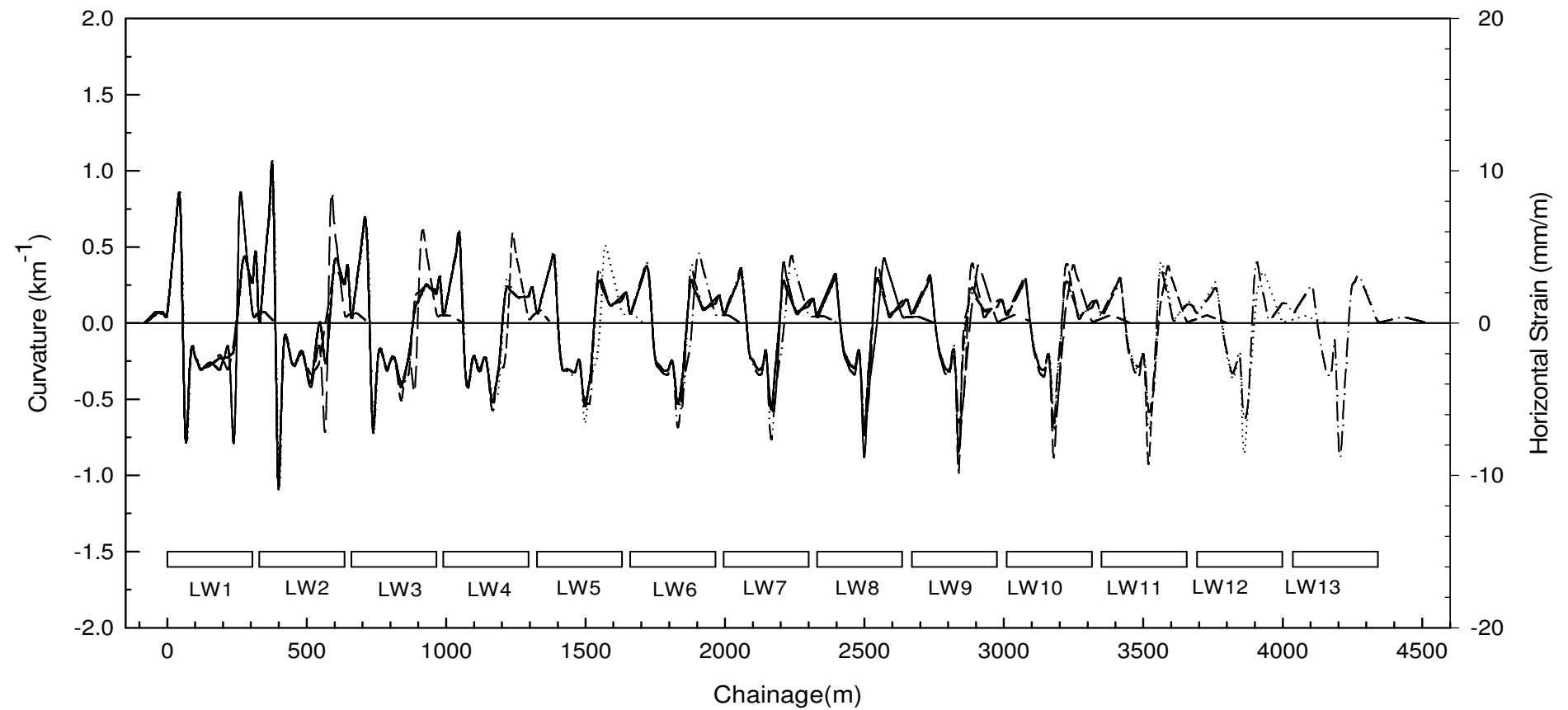
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Empirical Model for Predicting the Location of Inflexion Point, Maximum Tensile and			
	Ditton Geotechnical			Compressive Strain Peaks due to Longwall Panel Subsidence in the Newcastle Coalfield			
	Services Pty Ltd		Scale:	NTS			Figure No:



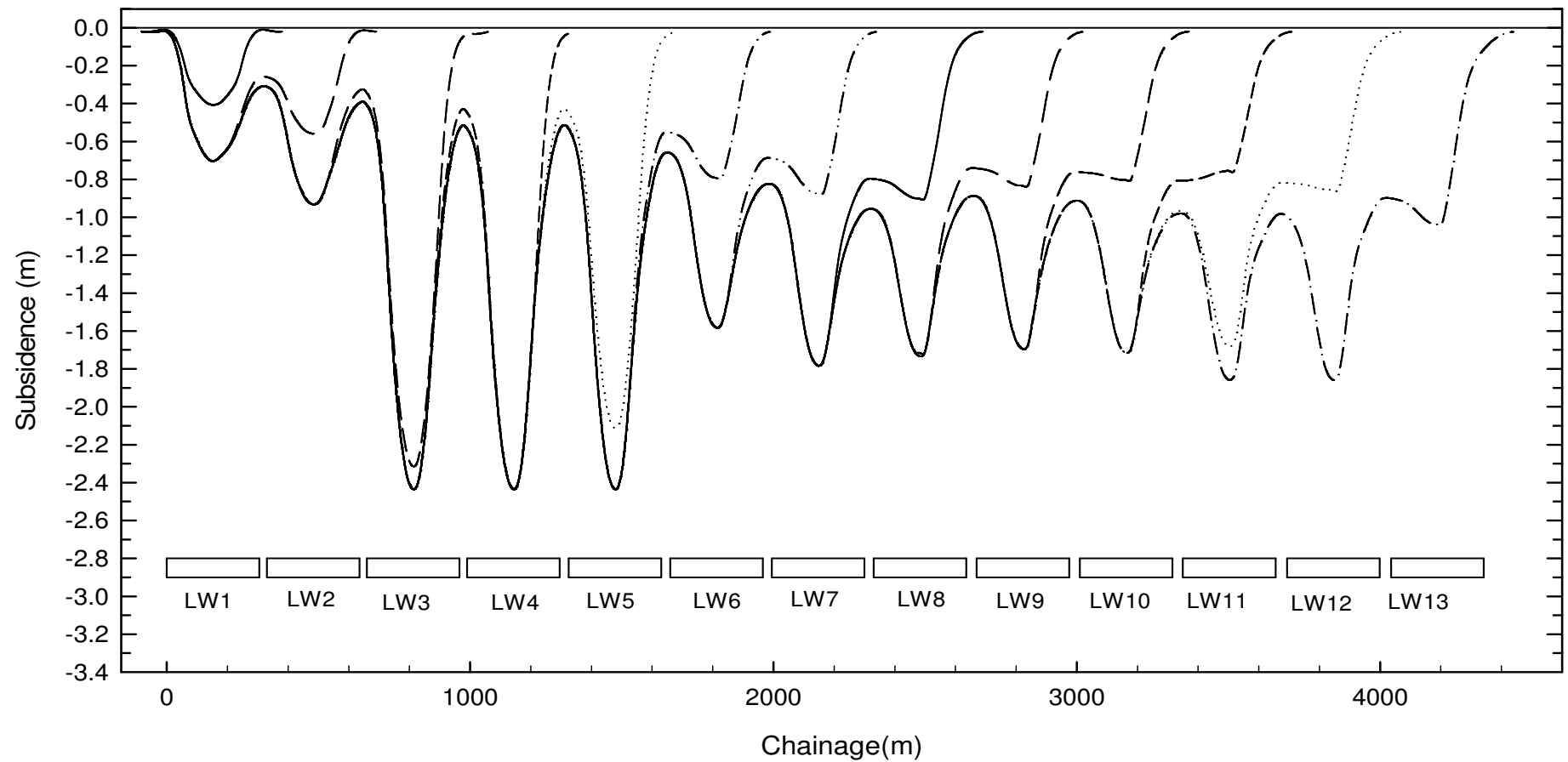
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Predicted Credible Worst-Case Subsidence along XL 4 after Extraction of LWs 1 to 13 for			
	Ditton Geotechnical			Case 1 (non-spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	20



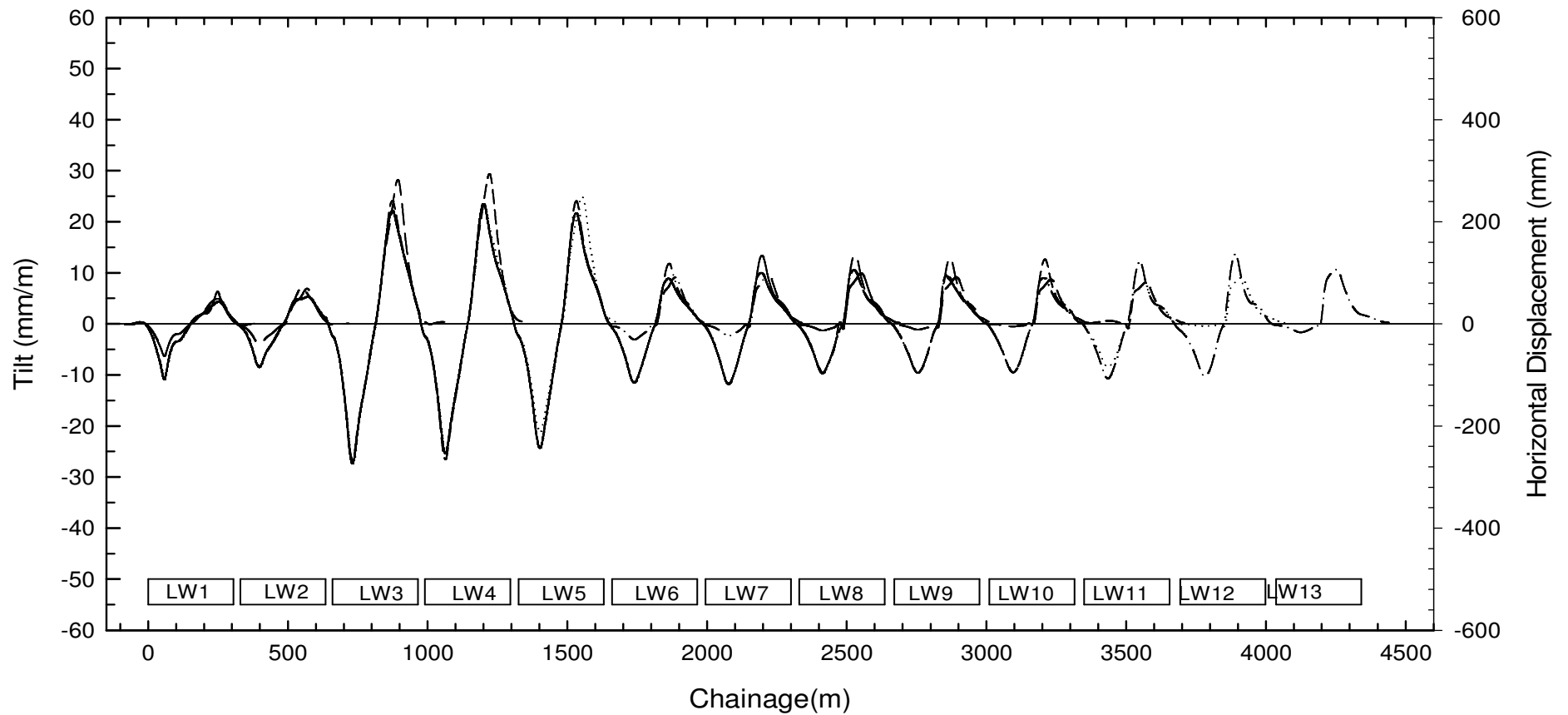
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Predicted Credible Worst-Case Tilt along XL 4 after Extraction of LWs 1 to 13 for			
	Ditton Geotechnical			Case 1 (non-spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	21



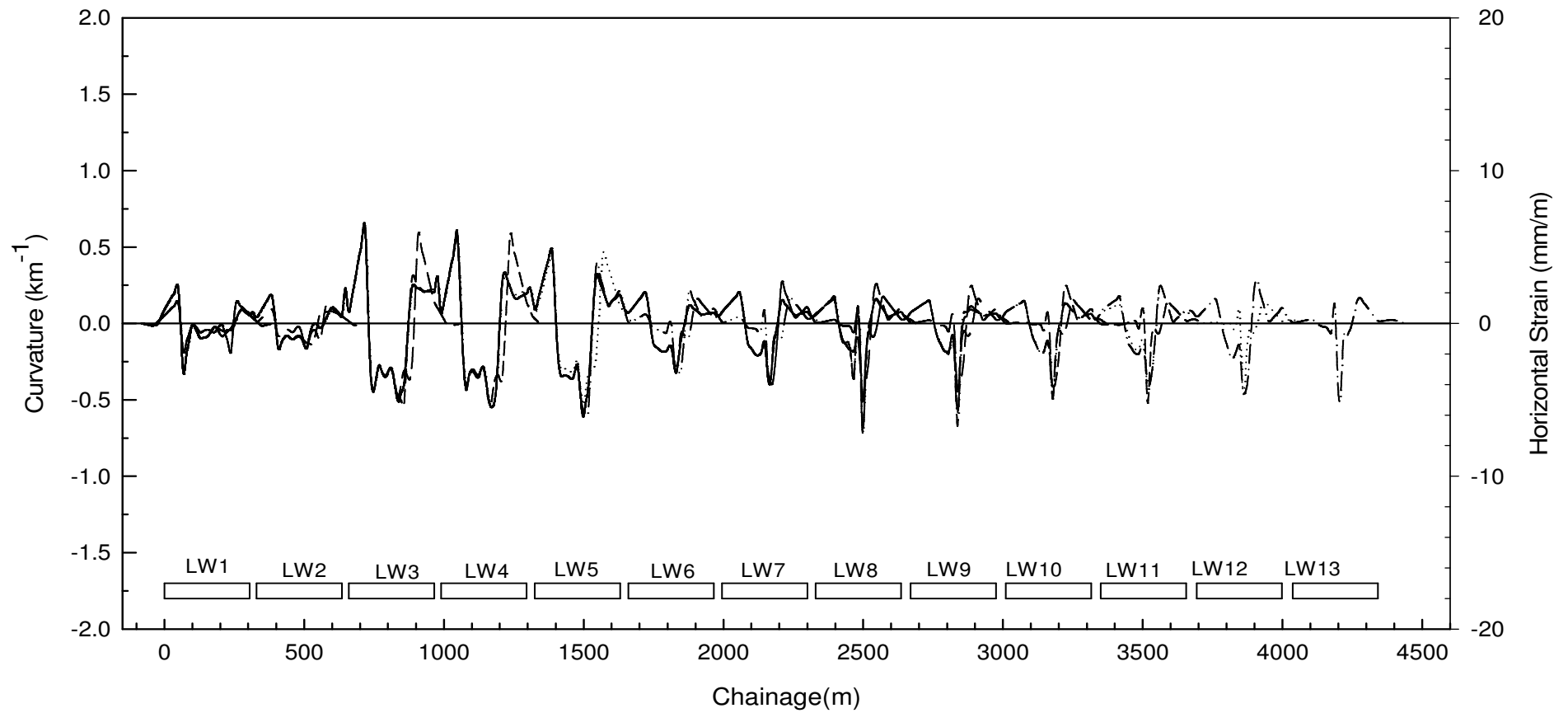
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Predicted Credible Worst-Case Strain along XL 4 after Extraction of LWs 1 to 13 for			
	Ditton Geotechnical			Case 1 (non-spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	22



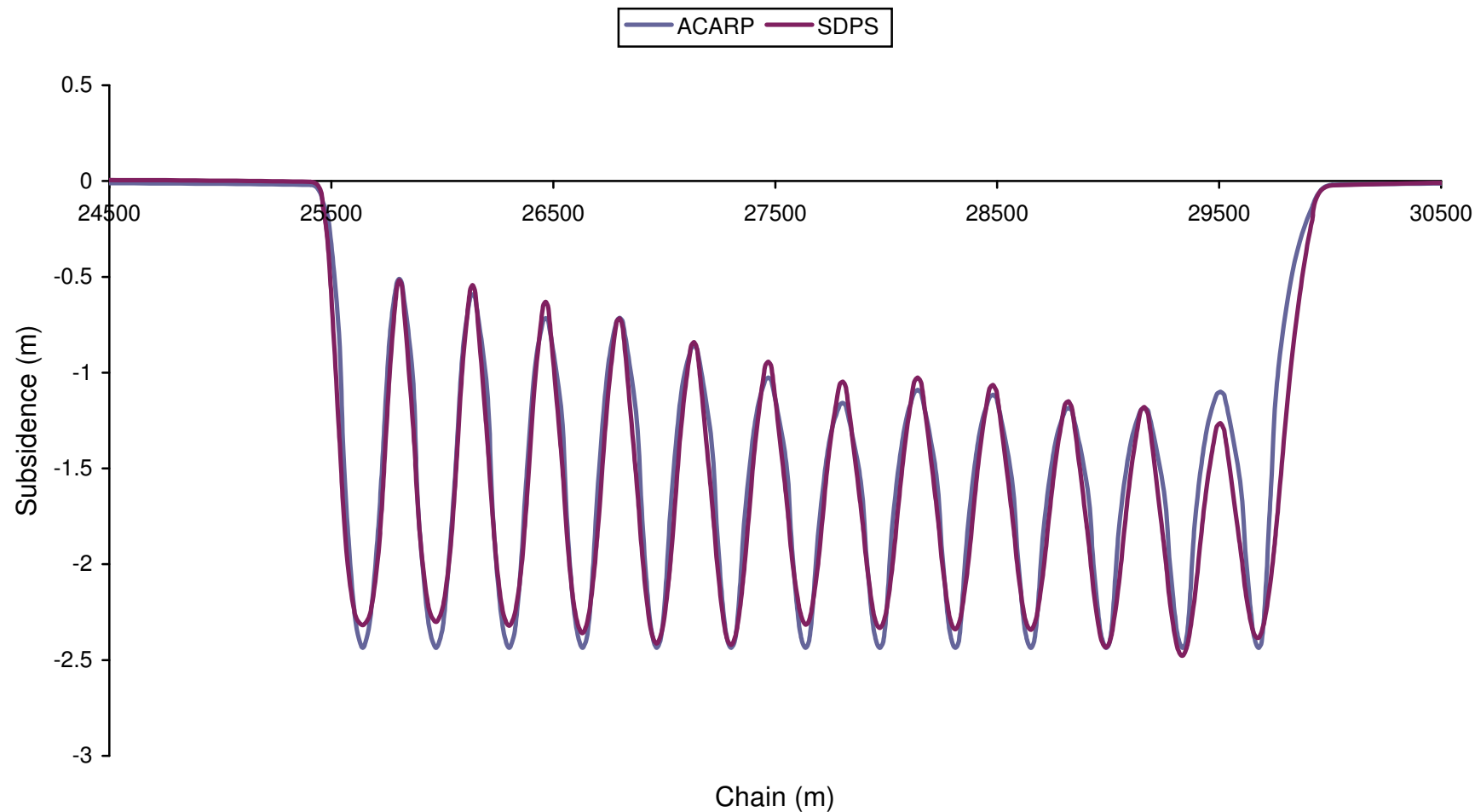
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Predicted Credible Worst-Case Subsidence along XL 4 after Extraction of LWs 1 to 13			
	Ditton Geotechnical			for Case 2 (with Spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	23



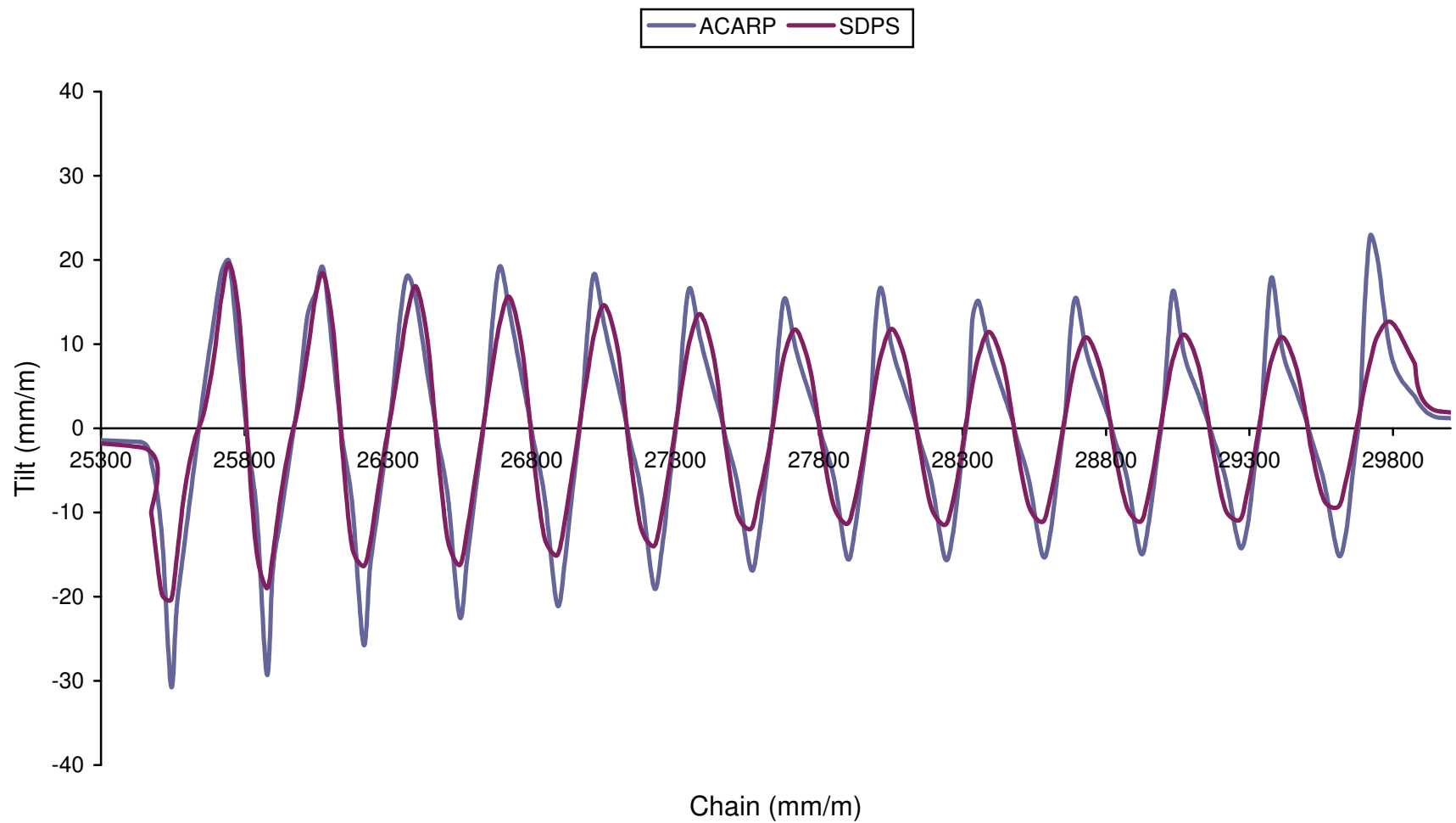
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	16.03.09	Title:	Predicted Credible Worst-Case Tilt along XL 4 after Extraction of LWs 1 to 13 for Case 2 (with spanning Garrawilla Volcanics)			
	Ditton Geotechnical						
	Services Pty Ltd		Scale:	NTS		Figure No:	24



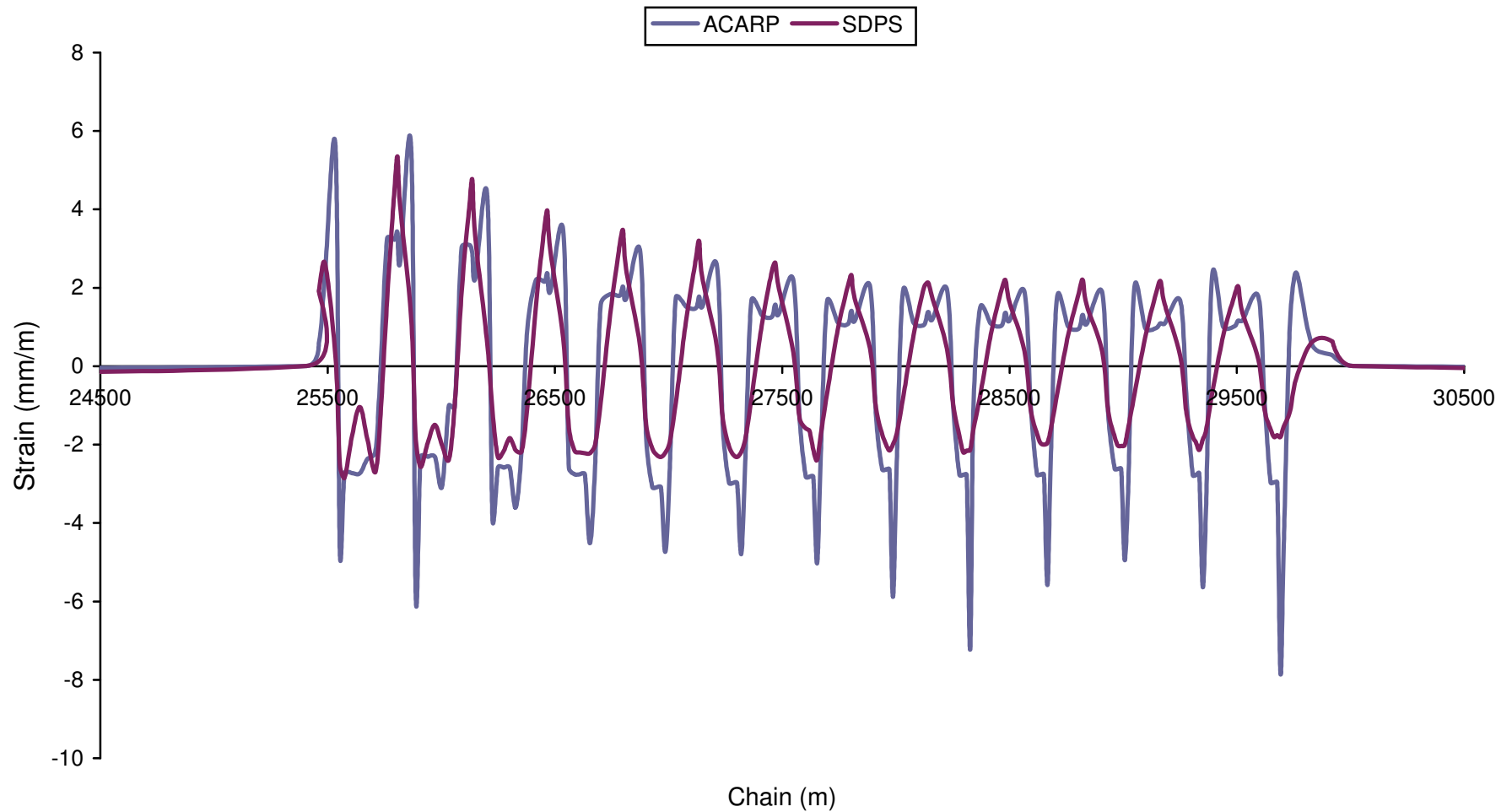
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	Predicted Credible Worst-Case Strain along XL 4 after Extraction of LWs 1 to 13 for			
	Ditton Geotechnical			Case 2 (with spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	25



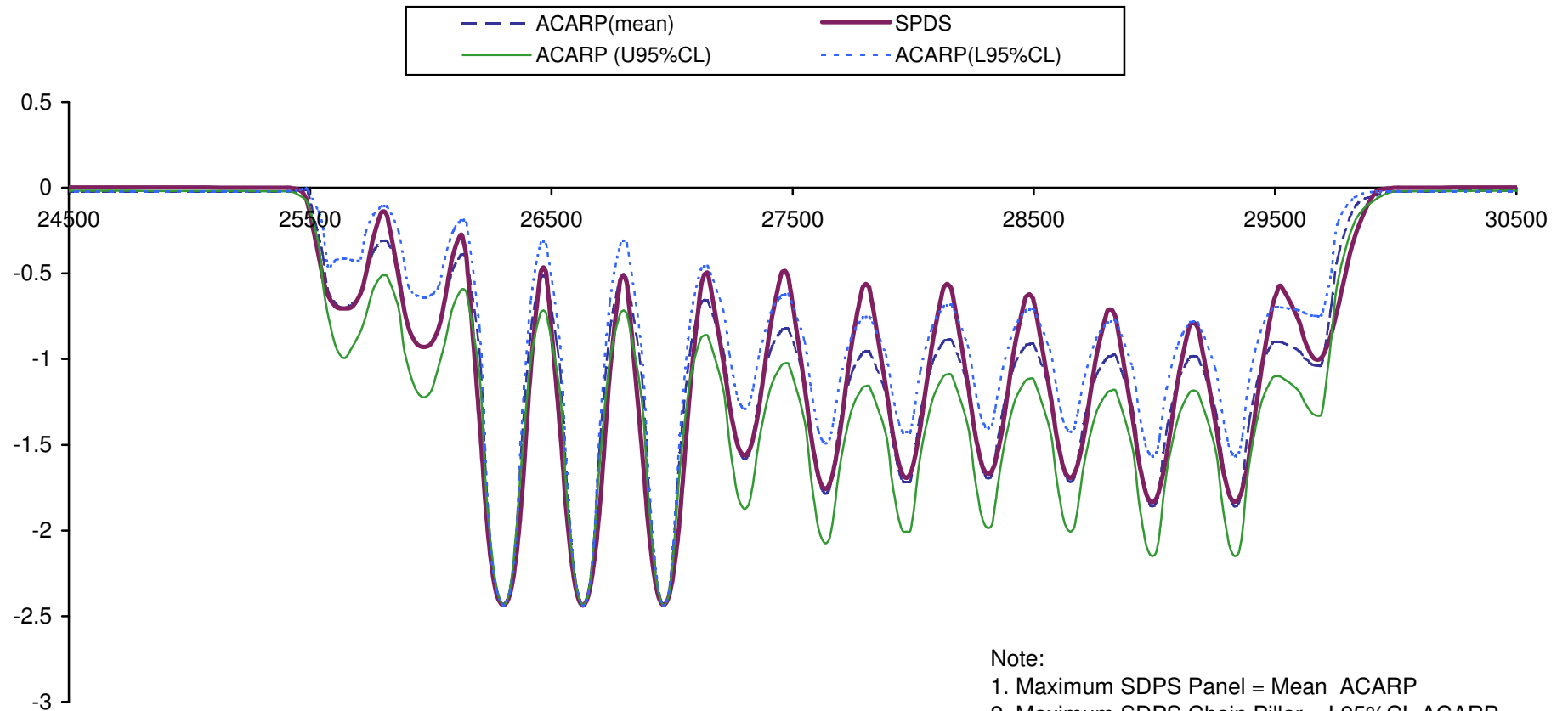
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Subsidence Predictions Along			
	Ditton Geotechnical Services Pty Ltd			XL 4 After LWs 1 to 13: Case 1 (non-spanning Garrawilla Volcanics)			
			Scale:	NTS		Figure No:	26



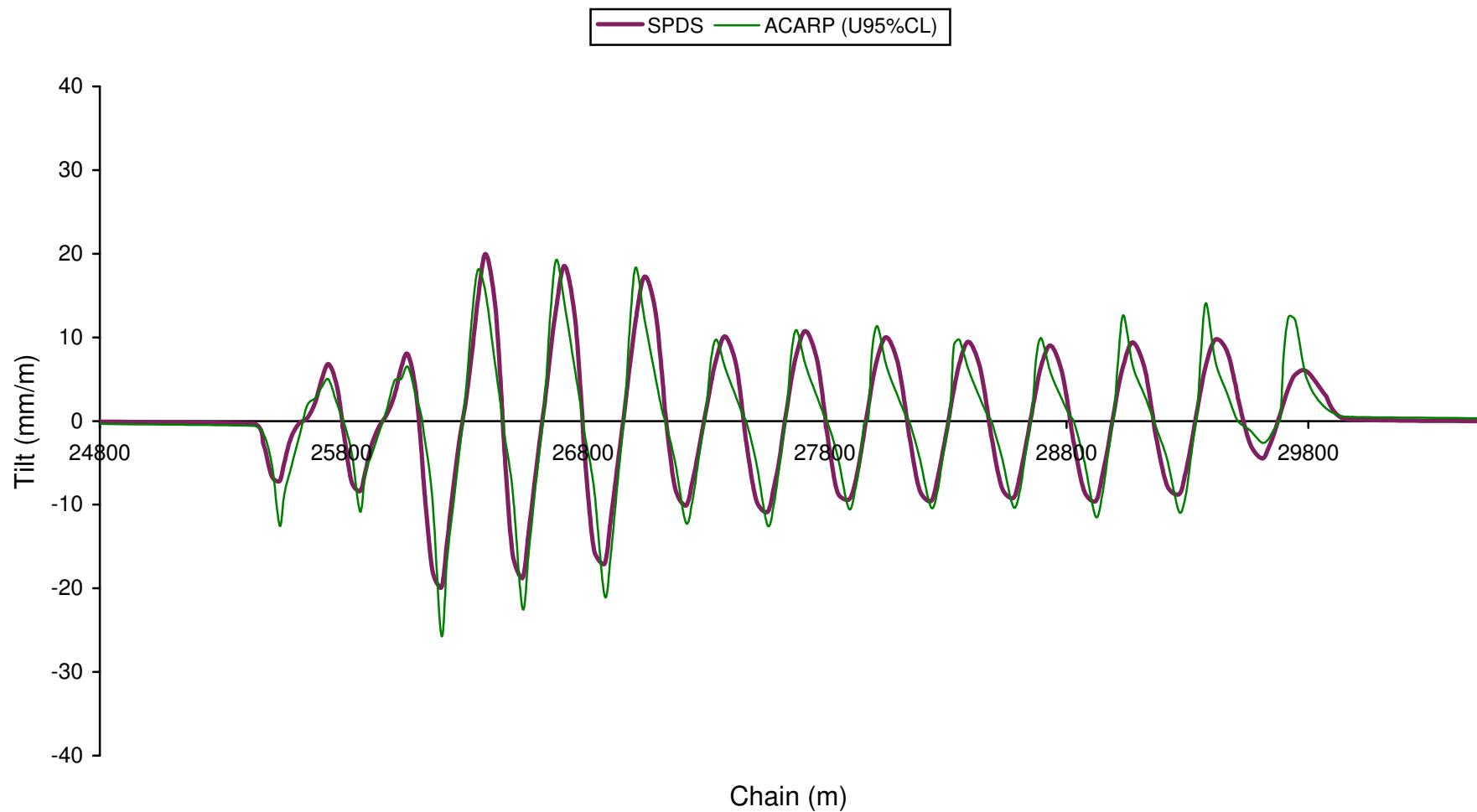
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Tilt Predictions Along			
	Ditton Geotechnical			XL 4 After LWs 1 to 13: Case 1 (non-spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	27



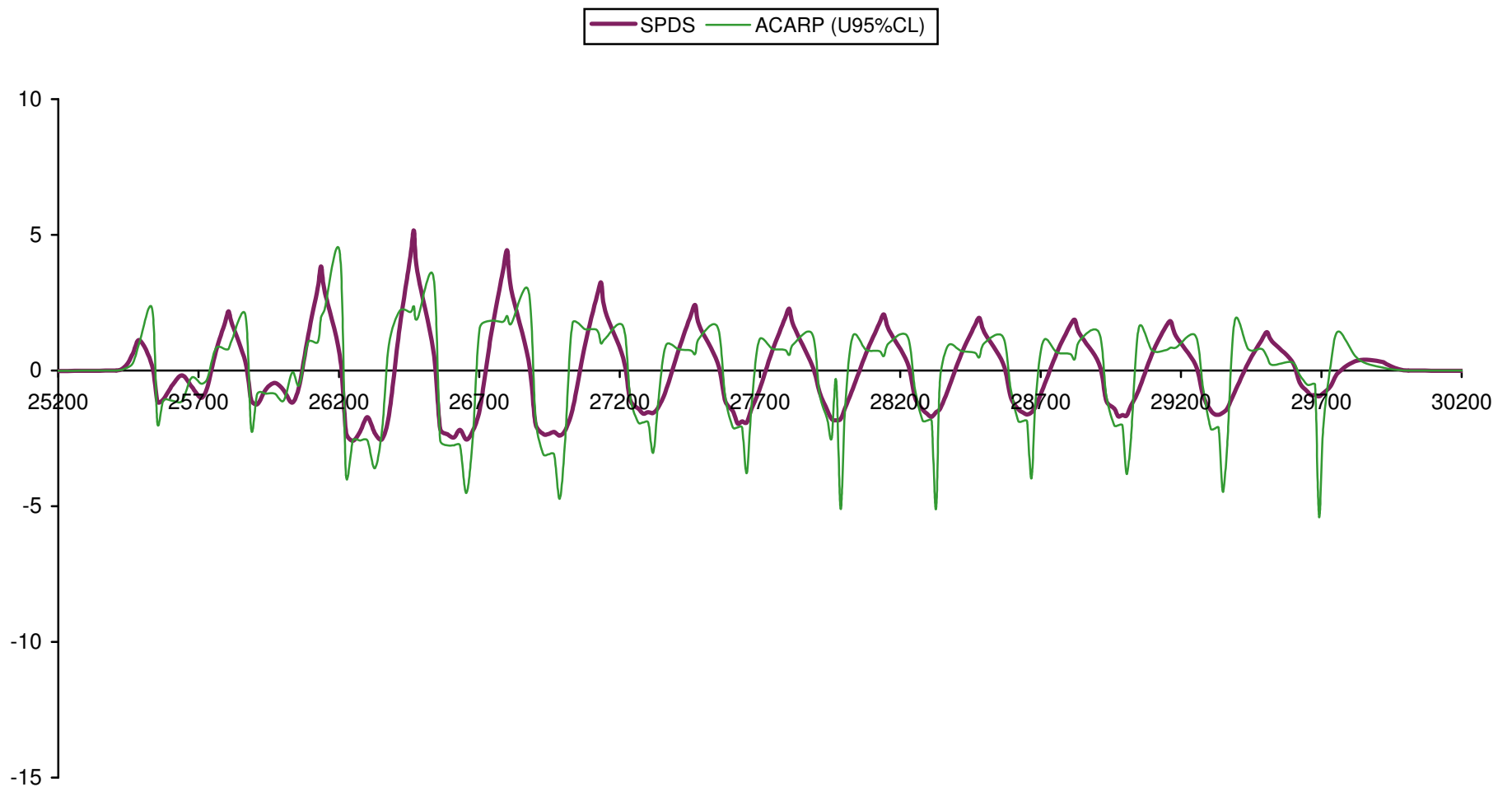
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Strain Predictions Along			
	Ditton Geotechnical			XL 4 After LWs 1 to 13: Case 1 (non-spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	28



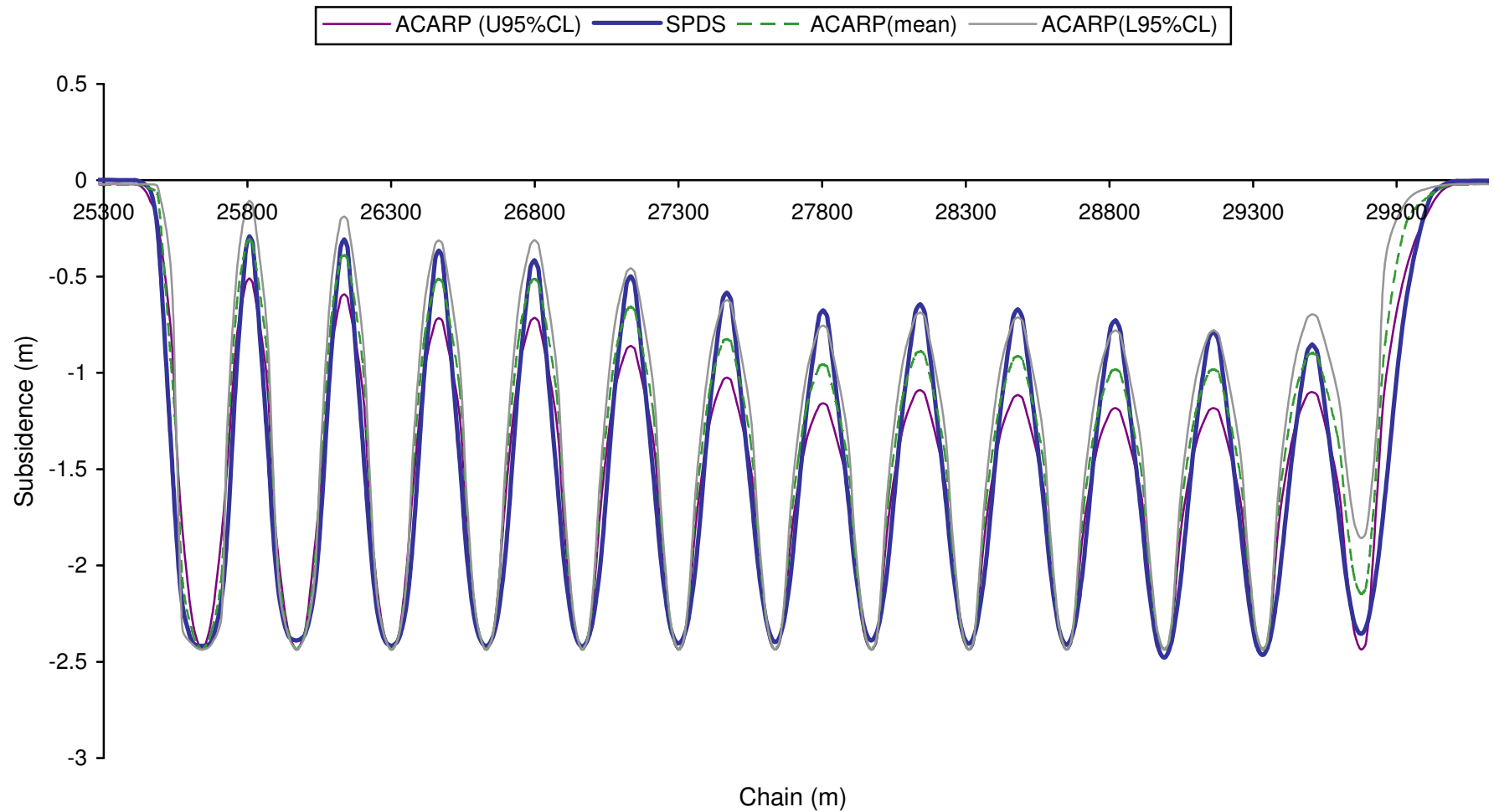
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Subsidence Predictions Along			
	Ditton Geotechnical			XL 4 After LWs 1 to 13: Case 2 (with spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	29



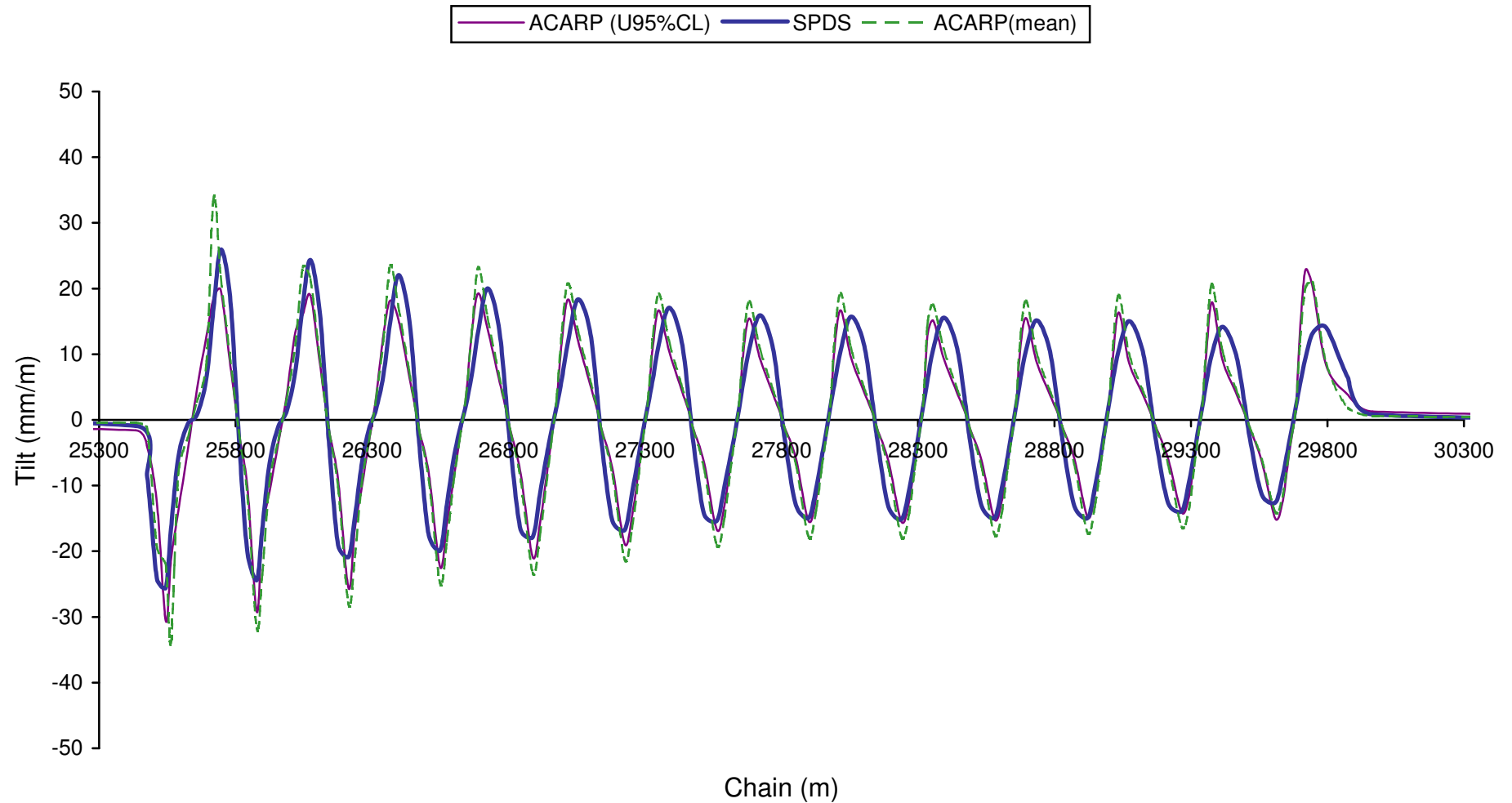
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Tilt Predictions Along			
	Ditton Geotechnical			XL 4 After LWs 1 to 13: Case 2 (with spanning Garrawilla Volcanics)			
	Services Pty Ltd		Scale:	NTS		Figure No:	30



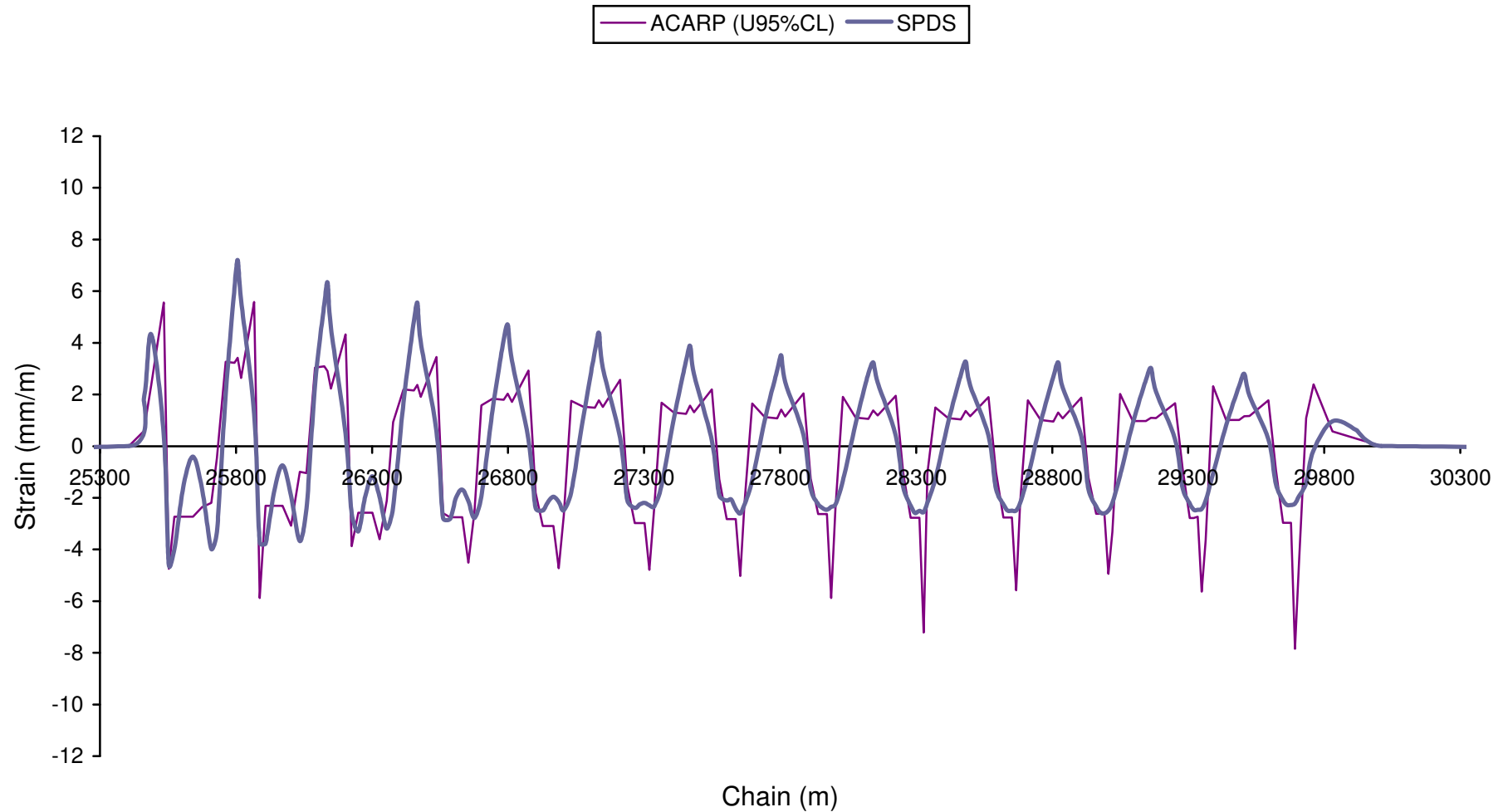
	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Strain Predictions Along			
	Ditton Geotechnical Services Pty Ltd			XL 4 After LWs 1 to 13: Case 2 (with spanning Garrawilla Volcanics)			
Scale:			NTS		Figure No:	31	



	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)			
	Drawn:	S.Ditton		NAR-001/1			
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Subsidence Predictions Along			
	Ditton Geotechnical Services Pty Ltd			XL 4 After LWs 1 to 13: Case 3 (min. chain pillar subsidence & no spanning Garra's)			
	Scale:	NTS			Figure No:	32	



	Engineer:	S.Ditton	Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)				
	Drawn:	S.Ditton		NAR-001/1				
	Date:	08.08.08	Title:	SPDS Calibrated Model v. Modified ACARP, 2003 Model Tilt Predictions Along				
	Ditton Geotechnical Services Pty Ltd			XL 4 After LWs 1 to 13: Case 3 (minimum chain pillar subsidence & no spanning Garrawillas)				
			Scale:	NTS			Figure No:	33



DgS



Engineer: S.Ditton

Drawn: S.Ditton

Date: 08.08.08

Ditton Geotechnical
Services Pty Ltd

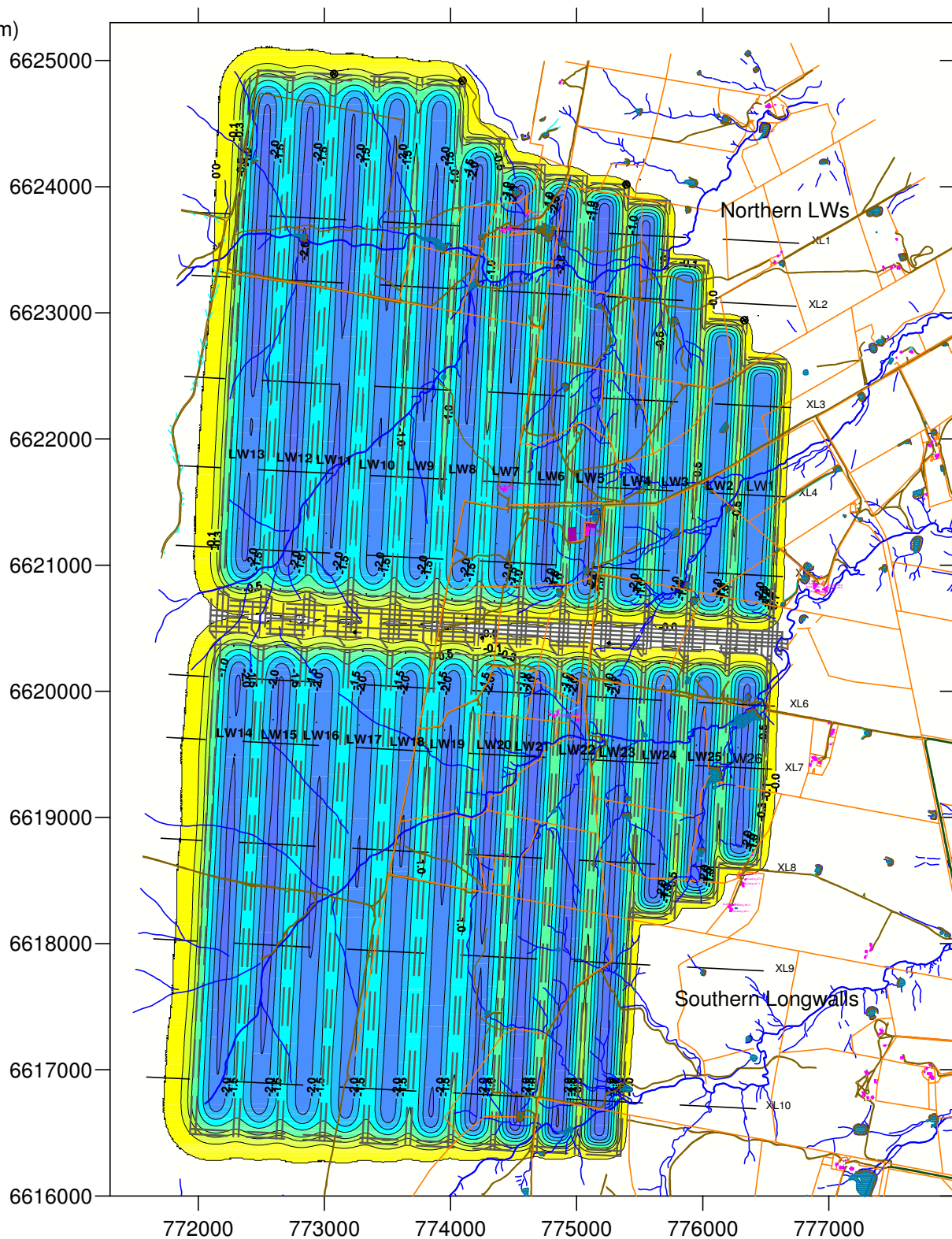
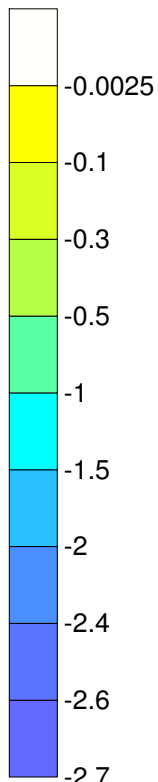
Client: Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)
NAR-001/1

Title: SPDS Calibrated Model v. Modified ACARP, 2003 Model Strain Predictions Along
XL 4 After LWs 1 to 13: Case 3 (min. chain pillar subsidence & no spanning Garra's)

Scale: NTS

Figure No: 34

Subsidence (m)



Key:



DgS

Engineer:	S.Ditton
Drawn:	S.Ditton
Date:	12.06.08

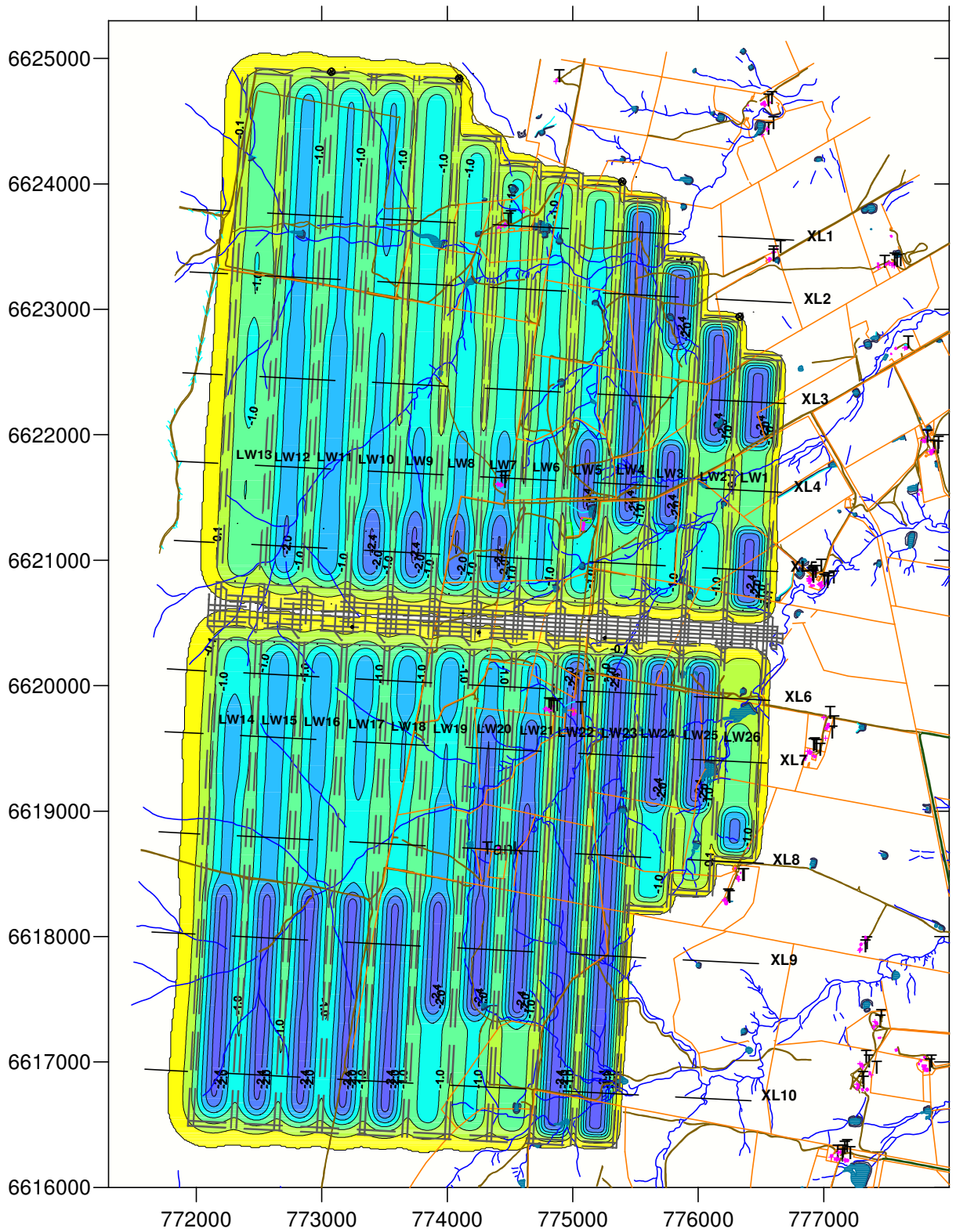
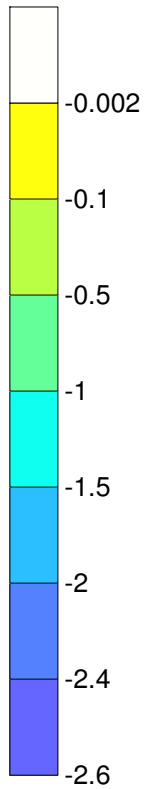
Ditton Geotechnical
Services Pty Ltd

Client:	Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2) NAR-001/1
---------	--

Title:	Predicted Mine Subsidence Contours above Longwall Layout for Case 1 (Maximum subsidence with no spanning volcanic units) and 4.2 m Extraction Height
Scale:	1:60,000

Figure No:	35
------------	----

Subsidence (m)



Key:

- Subsidence Contours
- Main Creeks
- Fences
- Unsealed Roads/ Tracks
- Farm Dams
- Buildings
- Orchards

DgS

Engineer: S.Ditton
 Drawn: S.Ditton
 Date: 12.06.08

Ditton Geotechnical
 Services Pty Ltd

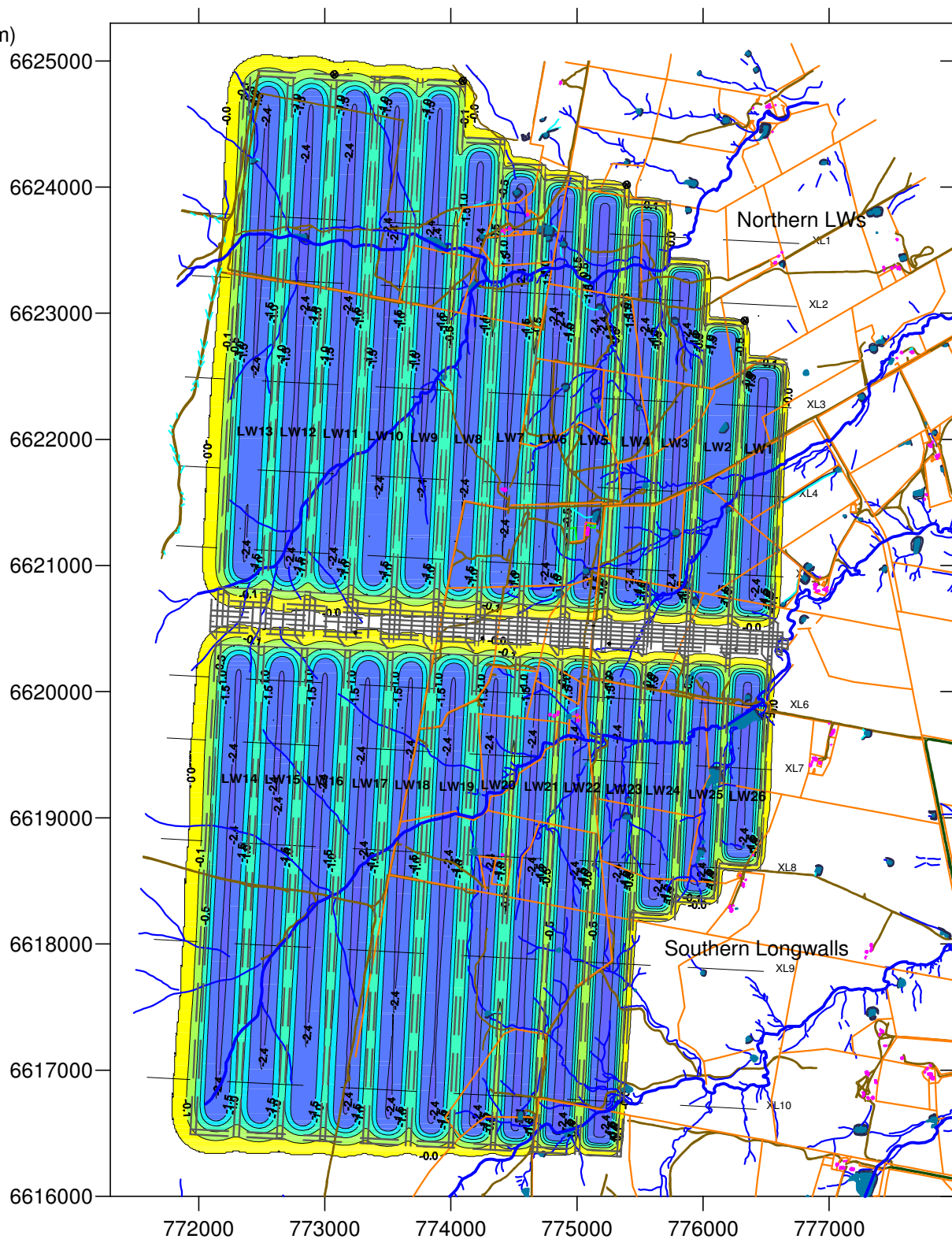
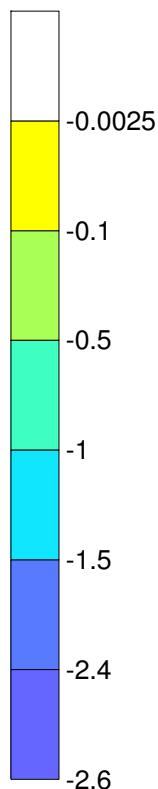
Client: Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)
 NAR-001/1

Title: Predicted Mine Subsidence Contours above Longwall Layout
 for Case 2 (Spanning Garrawilla Volcanics and Maximum Chain
 Pillar Subsidence) and 4.2 m Extraction Height

Scale: 1:50,000

Figure No: 36

Subsidence (m)



Key:

- Subsidence Contours
- Main Creeks
- Fences
- Unsealed Roads/ Tracks
- Farm Dams
- Buildings
- Orchards

DgS

Engineer: S.Ditton
Drawn: S.Ditton
Date: 12.06.08

Ditton Geotechnical
Services Pty Ltd

Client: Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)
NAR-001/1

Title: Predicted Mine Subsidence Contours above Longwall Layout
for Case 3 (Non-spanning Garrawilla Volcanics and Mean
Chain Pillar Subsidence)

Scale: 1:60,000

Figure No: 37