



APPENDIX A – UCFL4

Site UCFL4 Site 1 (Removed from 2020 monitoring by UC MPL)

Site Attributes					
Date Sampled	14 February 2019				
Approximate Easting	757299				
Approximate Northing	6434118				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>				
2019 Monitoring Photo	 <p align="center">Notes: GPS locations incorrect on image due to loss of GPS signal</p>				
Year	March 2014	December 2015	December 2016	October 2017	February 2019
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 1 is approximately 600m to the east from the GOAF edge of LW1. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to its location outside LW1 and there has been no perceptible change since the completion of LW1 in May 2015. - During the 2019 inspection, the appearance of recent flood debris in the flow channel and a fallen tree were noted. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		
2018	 <p data-bbox="297 1377 405 1406">UCFL4-01</p> <p data-bbox="898 1377 1093 1406">14 Feb 2019, 09:26</p> <p data-bbox="383 1426 1010 1455">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1200 1377 1308 1406">UCFL4-01</p> <p data-bbox="1800 1377 1995 1406">14 Feb 2019, 09:27</p> <p data-bbox="1285 1426 1912 1455">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Site UCFL4 Site 2 (Removed from 2020 monitoring by UCMPL)

Site Attributes					
Date Sampled	14 February 2019				
Approximate Easting	757188				
Approximate Northing	6434123				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>				
2019 Monitoring Photo	 <p align="center">Notes: GPS locations incorrect on image due to loss of GPS signal</p>				
Year	March 2014	December 2015	December 2016	October 2017	February 2019
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 2 is approximately 500m to the east from the GOAF edge of LW1. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to its location outside LW1 and there has been no perceptible change since the completion of LW1 in May 2015. - During the 2019 inspection, an active wombat burrow in the flow line was noted. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		
2018	 <p data-bbox="405 1370 1032 1394">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1308 1370 1935 1394">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Site UCFL4 Site 3 (Removed from 2020 monitoring by UCMLP)

Site Attributes					
Date Sampled	14 February 2019				
Approximate Easting	757013				
Approximate Northing	6434076				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>				
2019 Monitoring Photo	 <p align="center">Notes: GPS locations incorrect on image due to loss of GPS signal</p>				
Year	March 2014	December 2015	December 2016	October 2017	February 2019
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 3 is approximately 300m to the east from the GOAF edge of LW1. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to its location outside LW1 and there has been no perceptible change since the completion of LW1 in May 2015. - During the 2019 inspection, the appearance of recent flood debris in the flow channel was noted. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		
2019	 <p data-bbox="309 1358 416 1385">UCFL4-03</p> <p data-bbox="907 1358 1099 1385">14 Feb 2019, 09:45</p> <p data-bbox="383 1406 1010 1433">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1202 1358 1310 1385">UCFL4-03</p> <p data-bbox="1800 1358 1993 1385">14 Feb 2019, 09:43</p> <p data-bbox="1292 1406 1919 1433">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Site UCFL4 Site 4 (Removed from 2020 monitoring by UC MPL)

Site Attributes					
Date Sampled	14 February 2019				
Approximate Easting	756800				
Approximate Northing	6434107				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>				
2019 Monitoring Photo	 <p align="center">Notes: GPS locations incorrect on image due to loss of GPS signal</p>				
Year	March 2014	December 2015	December 2016	October 2017	February 2019
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 4 is approximately 100m to the east from the GOAF edge of LW1. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to its location outside LW1 and there has been no perceptible change since the completion of LW1 in May 2015. - During the 2019 inspection, the appearance of recent flood debris in the flow channel was noted. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2015	 A photograph of an upstream forest in 2015. The ground is covered with a thick layer of fallen branches and dry leaves. Several trees with light-colored bark and green foliage are visible, with shadows cast across the forest floor.	 A photograph of a downstream forest in 2015. The ground is heavily littered with fallen branches and debris. The trees are similar to those in the upstream photo, but the overall appearance is more cluttered and less open.
2016	 A photograph of an upstream forest in 2016. The ground is clearer than in 2015, with less debris. The trees are more prominent, and the overall scene appears more open and less cluttered.	 A photograph of a downstream forest in 2016. The ground is clearer than in 2015, with less debris. The trees are more prominent, and the overall scene appears more open and less cluttered.

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Year	Upstream	Downstream
2017		
2019	<div data-bbox="293 794 1099 901"> <p>S 180 SW 210 W 240 NW 270 300 330</p> <p>📶 262°W (T) 📍 55 S 771835 6439982 ±18009m ▲ 0m</p> </div>  <p data-bbox="293 1361 405 1385">UCFL4-04</p> <p data-bbox="898 1361 1093 1385">14 Feb 2019, 09:53</p> <p data-bbox="383 1409 1010 1433">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	<div data-bbox="1196 794 2002 901"> <p>N 0 NE 30 E 60 SE 90 120 150</p> <p>📶 87°E (T) 📍 31 N 166021 0 ▲ 0m</p> </div>  <p data-bbox="1196 1361 1308 1385">UCFL4-04</p> <p data-bbox="1800 1361 1995 1385">14 Feb 2019, 09:55</p> <p data-bbox="1285 1409 1912 1433">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Site UCFL4 Site 5 (Removed from 2021 monitoring by UCMPL)

Site Attributes						
Date Sampled	10 November 2020					
Approximate Easting	756576					
Approximate Northing	6434188					
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>					
2020 Monitoring Photo						
Year	March 2014	December 2015	December 2016	October 2017	February 2019	November 2020
Result	Pre-mining inspection	No perceptible change	No perceptible change	To be confirmed	No perceptible change	No perceptible change
Comments / Interpretation						
<ul style="list-style-type: none"> - UCFL4 Site 5 is centrally located above LW1. No perceptible change has been identified as a result of longwall mining at this monitoring site. - During the 2019 inspection, the appearance of recent flood debris in the flow channel was noted. No evidence of subsidence related impacts were identified. - During the 2020 inspection the flow line displayed signs of a high flow event/s (when compared to 2019) (refer to Section 4). The high flow event/s had cleared fallen timber and other flood debris within the channel recorded previously. There was no water flowing or pooling at this location. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 						
Recommendations						
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 						
Photographic Recording (see below)						

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017	Image not available	Image not available
2019	 <p data-bbox="383 1329 1010 1351">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1279 1329 1906 1351">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Year	Upstream	Downstream
2020	 <p data-bbox="293 169 1099 236"> SW W NW N 210 240 270 300 330 0 252°W (T) 55 S 756559 6434190 ±5m ▲ 479m </p> <p data-bbox="293 751 1099 778"> FL4- Site 5 10 Nov 2020, 13:37:24 </p>	 <p data-bbox="1196 169 2002 236"> NE E SE S 60 90 120 150 180 210 84°E (T) 55 S 756553 6434190 ±5m ▲ 478m </p> <p data-bbox="1196 751 2002 778"> FL4- Site 5 10 Nov 2020, 13:37:56 </p>

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Site UCFL4 Site 6 (Removed from 2021 monitoring by UCMPL)

Site Attributes						
Date Sampled	10 November 2020					
Approximate Easting	756513					
Approximate Northing	6434179					
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW1) at Ulan West commenced on the 19 May 2014. Longwall (LW1) at Ulan West completed in May 2015.</p>					
2020 Monitoring Photo						
Year	March 2014	December 2015	December 2016	October 2017	February 2019	November 2020
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation						
<ul style="list-style-type: none"> - UCFL4 Site 6 is centrally located above LW1 and approximately 60m to the west of Site 5. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - During the 2019 inspection, the appearance of recent flood debris in the flow channel was noted. No evidence of subsidence related impacts were identified. - During the 2020 inspection the flow line displayed signs of material movement from both banks in the form of minor undercutting and slumping (when compared to 2019), likely exacerbated by high flow event/s (refer to Section 4). The high flow event/s had cleared some of the fallen timber recorded previously. Although there were signs of erosion and instabilities, however they were minimal compared to some of the other sites. There was water pooling at this location. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 						
Recommendations						
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 						
Photographic Recording (see below)						



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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		
2019	<div data-bbox="300 794 1104 863"> <p>E 150 S 180 SW 210 240 W 270 300 NW</p> </div> <div data-bbox="300 863 1104 895"> <p>📶 242°SW (T) 📍 55 S 756505 6434166 ±100m ▲ 479m</p> </div>  <div data-bbox="300 1358 1104 1401"> <p>UCFL4-06 14 Feb 2019, 10:20</p> </div> <p data-bbox="383 1401 1010 1425">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	<div data-bbox="1202 794 2007 863"> <p>N 0 NE 30 60 E 90 SE 120 150</p> </div> <div data-bbox="1202 863 2007 895"> <p>📶 78°E (T) 📍 55 S 756503 6434180 ±50m ▲ 478m</p> </div>  <div data-bbox="1202 1358 2007 1401"> <p>UCFL4-06 14 Feb 2019, 10:21</p> </div> <p data-bbox="1285 1401 1912 1425">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Year	Upstream	Downstream
2020	 <p>210 SW 240 W 270 NW 300 330 N 0</p> <p>236°SW (T) 55 S 756511 6434178 ±6m ▲ 479m</p> <p>FL4-Site 6 10 Nov. 2020, 13:34:43</p>	 <p>30 NE 60 E 90 SE 120 S 150 180 210</p> <p>77°E (T) 55 S 756509 6434179 ±4m ▲ 479m</p> <p>FL4-Site 6 10 Nov 2020, 13:35:25</p>

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Site UCFL4 Site 7 (Removed from 2021 monitoring by UCMPL)

Site Attributes						
Date Sampled	10 November 2020					
Approximate Easting	756390					
Approximate Northing	6434142					
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW2) at Ulan West commenced in May 2015. Longwall (LW2) at Ulan West completed in May 2016.</p>					
2020 Monitoring Photo						
Year	March 2014	December 2015	December 2016	October 2017	February 2019	November 2020
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation						
<ul style="list-style-type: none"> - UCFL4 Site 7 is approximately located on the eastern edge above LW2 and approximately 120m to the west of Site 6 and displays signs of natural instability. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - During the 2019 inspection, the appearance of recent flood debris and signs of erosion in the flow channel was noted. No evidence of subsidence related impacts was identified. - During the 2020 inspection the flow line displayed signs of material movement from both banks in the form of slight undercutting and slumping (when compared to 2019), likely exacerbated by high flow event/s (refer to Section 4). The high flow event/s had cleared the channel of leaf and other timber material. Although there were signs of erosion and instabilities, however they were minimal compared to some of the other sites. There was no water flowing. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 						
Recommendations						
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 						
Photographic Recording (see below)						

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		

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Year	Upstream	Downstream
2019	 <p data-bbox="383 762 1010 783">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1285 762 1912 783">Notes: GPS locations incorrect on image due to loss of GPS signal</p>
2020		

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Site UCFL4 Site 8 (Removed from 2021 monitoring by UCMPL)

Site Attributes						
Date Sampled	10 November 2020					
Approximate Easting	756176					
Approximate Northing	6434169					
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW2) at Ulan West commenced in May 2015. Longwall (LW2) at Ulan West completed in May 2016.</p>					
2020 Monitoring Photo						
Year	March 2014	December 2015	December 2016	October 2017	February 2019	November 2020
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation						
<ul style="list-style-type: none"> - UCFL4 Site 8 is located towards the western edge of LW2 and approximately 200m to the west of Site 7 and displays signs of natural instability. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - During the 2019 inspection, the appearance of recent flood debris in the flow channel was noted. No evidence of subsidence related impacts were identified. No signs of recent erosion was noted. - During the 2020 inspection the flow line displayed signs of material movement from both banks in the form of undercutting and slumping (when compared to 2019), likely exacerbated by high flow event/s (refer to Section 4). The high flow event/s had cleared fallen timber recorded previously. Although there were signs of erosion and instabilities, however they were minimal compared to some of the other sites. There was no water flowing. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 						
Recommendations						
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 						
Photographic Recording (see below)						

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Year	Upstream	Downstream
2015		
2016		

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Year	Upstream	Downstream
2017		
2019	 <p data-bbox="383 1401 1010 1425">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1294 1401 1921 1425">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Year	Upstream	Downstream
2020	 <p data-bbox="302 742 403 766">FL4 Site 8</p> <p data-bbox="907 742 1108 766">10 Nov 2020, 13:12:47</p>	 <p data-bbox="1198 742 1299 766">FL4 Site 8</p> <p data-bbox="1803 742 2004 766">10 Nov 2020, 13:12:17</p>

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Site UCFL4 Site 1A (Removed from 2022 monitoring by UCMLP)

Site Attributes				
Date Sampled	20 October 2021			
Approximate Easting	756151			
Approximate Northing	6434160			
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW2) at Ulan West commenced in May 2015. Longwall (LW2) at Ulan West completed in May 2016.</p>			
2021 Monitoring Photo				
Year	October 2017	February 2019	November 2020	October 2021
Result	Perceptible impacts	Perceptible impacts (no change)	Perceptible impacts	Perceptible impacts (no change)
Comments / Interpretation				
<ul style="list-style-type: none"> - UCFL4 Site 1A is above LW2 and was identified during the 2017 monitoring program. Perceptible impacts in the form of channel bed and bank cracking was observed. Recommend continued monitoring, as this site displays signs of instability. - During the 2019 inspection, there was no observed changes since the 2017 monitoring. There were signs of recent sediment deposits and flood debris noted in the flow channel, however no active erosion was noted. - During the 2020 inspection the flow line displayed signs of material movement from both banks in the form of undercutting and slumping (when compared to 2019) as a result of high flow event/s (refer to Section 4). A piece of dislodged rock material first noted in 2017 was carried downstream. Fine sediments may have commenced infilling the cracked channel bedrock, as no cracking in the channel bed was obvious. There was no water flowing. - The erosion impacts as described from a high flow creek event may have been exacerbated by a change in the longitudinal gradients from subsidence. This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable. 				
Recommendations				
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 				
Photographic Recording (see below)				

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Year	Upstream	Downstream
2017		
2019		

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Year	Upstream	Downstream
2020		
2021		





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Site UCFL4 Site 9 (Removed from 2023 monitoring by UCMLP)

Site Attributes								
Date Sampled	12 October 2022							
Approximate Easting	756091							
Approximate Northing	6434137							
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW2) at Ulan West commenced in May 2015. Longwall (LW2) at Ulan West completed in May 2016.</p>							
2022 Monitoring Photo								
Year	Mar 2015	Dec 2015	Dec 2016	Oct 2017	Feb 2019	Nov 2020	Oct 2021	Oct 2022
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change	Perceptible impacts ¹	Perceptible impacts ¹	No change to P. Impacts ¹
Comments / Interpretation								
<ul style="list-style-type: none"> - UCFL4 Site 9 is located approximately on the western edge of LW2 and approximately 85m to the west of Site 8 and displays signs of natural instability. To date no perceptible change has been identified as a result of longwall mining at this monitoring site. - During the 2019 inspection no evidence of subsidence related impacts were identified. No signs of recent erosion was noted. A tree had fallen within the flow channel. - During the 2020 inspection the flow line displayed signs of mass material movement from both banks in the form of undercutting, slumping and channel widening (when compared to 2019), likely aggravated by high flow event/s (refer to Section 4). There was water pooling, slightly turbid in appearance. - The erosion impacts as described from a high flow creek event in 2020 may have been exacerbated by a change in the longitudinal gradients from subsidence (an example of nick point erosion)¹. - This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2022 and 2021 inspection the instabilities first noted in 2020 appeared comparable. - Water was flowing at the time of the inspection in 2022. 								
Recommendations								
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 								
Photographic Recording (see below)								

¹ Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars (SCT, 2022)

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Year	Upstream	Downstream
2015		
2016		



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Year	Upstream	Downstream
2017	 <p>Ulan Ck_Flow Line 4_09 27 Oct 2017, 10:12</p>	 <p>Ulan Ck_Flow Line 4_09 27 Oct 2017, 10:11</p>
2019	 <p>UCFL4-09 14 Feb 2019, 11:17</p> <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p>UCFL4-09 14 Feb 2019, 11:17</p> <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>

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Year	Upstream	Downstream
2020		
2021		

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Year	Upstream	Downstream
2022	 <p>UCFL4 Site 9 12 Oct 2022 11:33:19</p>	 <p>UCFL4 Site 9 12 Oct 2022 11:32:32</p>

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Site UCFL4 Site 10 (Removed from 2021 monitoring by UCMLP)

Site Attributes						
Date Sampled	10 November 2020					
Approximate Easting	755875					
Approximate Northing	6434041					
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW3) at Ulan West commenced on the 26 June 2016. Longwall (LW3) at Ulan West completed in October 2017.</p>					
2020 Monitoring Photo						
Year	March 2015	December 2015	December 2016	October 2017	February 2019	November 2020
Result	Pre-mining inspection	No perceptible change	No perceptible change	No perceptible change	No perceptible change	No perceptible change
Comments / Interpretation						
<ul style="list-style-type: none"> - UCFL4 Site 10 (just down from Site 4A) is located centrally above LW3 and approximately 200m to the west of Site 9 and displays signs of natural instability. To date no perceptible change has been identified as a result of longwall mining at this monitoring site, however there were signs of recent deposited material. - During the 2019 inspection no evidence of subsidence related impacts were identified. No signs of recent erosion were noted. A tree had fallen within the flow channel. - During the 2020 inspection high flow events had removed fallen timber and cleared the flow line. An increase in fine sediments deposited in the channel was noted. Although there were signs of erosion and instabilities, however they were minimal compared to some of the other sites. No water was flowing or pooling. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 						
Recommendations						
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 						
Photographic Recording (see below)						



APPENDIX A – UCFL4

Year	Upstream	Downstream
2015		
2016		

APPENDIX A – UCFL4


Year	Upstream	Downstream
2017		
2019	 <p data-bbox="383 1401 1010 1423">Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p data-bbox="1301 1401 1928 1423">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020	 <p>SW 210 240 W 270 300 NW 330 N 0 30 259°W (T) ● 55 S 755875 6434037 ±5m ▲ 491m</p> <p>FL4-Site 4A & Site 10 10 Nov 2020 12:32:58</p>	 <p>NE 30 60 E 90 120 SE 150 S 180 71°E (T) ● 55 S 755877 6434043 ±11m ▲ 492m</p> <p>FL4-Site 4A & Site 10 10 Nov 2020 12:32:10</p>


APPENDIX A – UCFL4

Site UCFL4 Site 3A (Removed from 2023 monitoring by UCMLP)





Site Attributes					
Date Sampled	12 October 2022				
Approximate Easting	755814				
Approximate Northing	6434028				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW3) at Ulan West commenced on the 26 June 2016. Longwall (LW3) at Ulan West completed in October 2017.</p>				
2022 Monitoring Photo					
Year	October 2017	February 2019	November 2020	October 2021	October 2022
Result	Perceptible impacts	Monitor perceptible impacts	Perceptible impacts ²	Perceptible impacts ² (no change)	Perceptible impacts ² (no change)
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 3A is above LW3 and was identified during the 2017 monitoring program. Perceptible impacts in the form of recent material deposited within existing channel bed erosion were observed. Recommend continued monitoring, as this site displays signs of instability potentially subsidence related. - During the 2019 inspection, there were signs of bank erosion along the RHB since the 2017 monitoring. - During the 2020 inspection the flow line displayed signs of mass material movement from both banks in the form of undercutting, slumping and channel widening (when compared to 2019) as a result of high flow event/s (refer to Section 4). There was water flowing and pooling and it was slightly turbid in appearance. - The erosion impacts as described from a high flow creek event may have been exacerbated by a change in the longitudinal gradients from subsidence. This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable, although monitoring to continue in 2022 to confirm no change to 2020 impacts. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

² Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars (SCT, 2022)


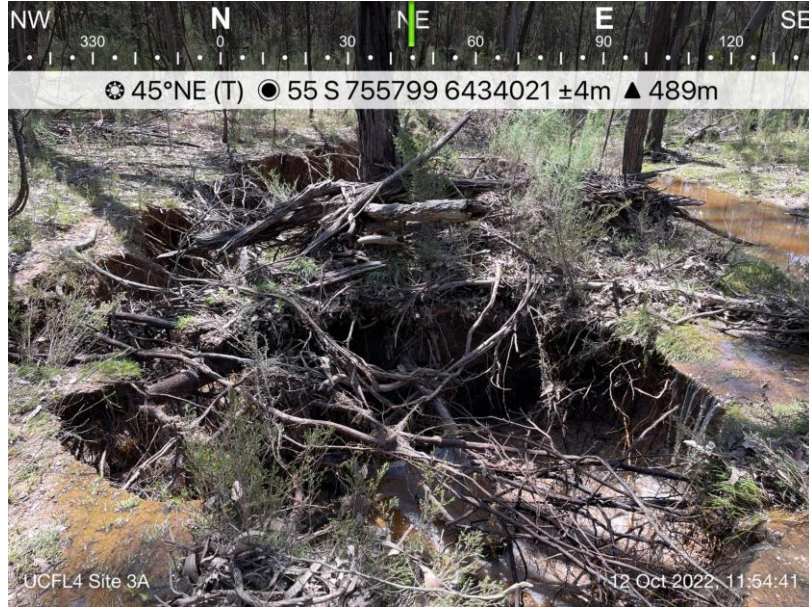
APPENDIX A – UCFL4

Year	Upstream	Downstream
2017		
2019		 <p data-bbox="1214 1342 1335 1369">UCFL4-3A</p> <p data-bbox="1818 1342 2011 1369">14 Feb 2019, 11:45</p> <p data-bbox="1290 1390 1912 1414">Notes: GPS locations incorrect on image due to loss of GPS signal</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020		
2021		

APPENDIX A – UCFL4

Year	Upstream	Downstream
2022		

APPENDIX A – UCFL4



Site UCFL4 Site 4A (Removed from 2021 monitoring by UCMLP)

Site Attributes				
Date Sampled	10 November 2020			
Approximate Easting	755870			
Approximate Northing	6434041			
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW3) at Ulan West commenced on the 26 June 2016. Longwall (LW3) at Ulan West completed in October 2017.</p>			
2020 Monitoring Photo				
Year	October 2017	February 2019	November 2020	
Result	Perceptible impacts	Perceptible impacts (no change)	Perceptible impacts (no change)	
Comments / Interpretation				
<ul style="list-style-type: none"> - UCFL4 Site 4A is above LW3 at Site UCFL4 Site 10. Perceptible impacts in the form of recent material deposited within the channel were observed. Recommend continued monitoring, as this site displays signs of instability potentially from subsidence. - During the 2019 inspection, there were signs of recent material deposited within the channel. - During the 2020 inspection a high flow event had removed fallen timber and cleared the flow line. There appeared to be additional fine sediments deposited in the channel. Although there were signs of erosion and instabilities, however they were minimal compared to some of the other sites. No water was flowing. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change other than natural processes identified in 2020. 				
Recommendations				
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 				
Photographic Recording (see below)				

APPENDIX A – UCFL4


Year	Upstream	Downstream
2017		 <p>A photograph showing a stream bed covered in dry leaves and twigs. A GPS overlay at the top shows a compass rose with 'NE', 'E', and 'SE' markers. The data reads: 78°E (T), 55 S 755870 6434041 ±10m, ▲ 489m. The bottom of the image contains the text 'Ujan Ek Flow Line # 10' and '21 Oct 2017 09:45'.</p>
2019		 <p>A photograph showing a stream bed with a large pile of sticks and debris. A GPS overlay at the top shows a compass rose with 'N', 'NE', 'E', and 'SE' markers. The data reads: 68°E (T), 31 N 166021 0 ▲ 0m. The bottom of the image contains the text 'UCFL4- 4A (Site 10)' and '14 Feb 2019 11:40'.</p> <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020	 <p>SW W NW N 210 240 270 300 330 0 30 ☉ 259°W (T) ● 55 S 755875 6434037 ±5m ▲ 491m</p> <p>FL4-Site 4A & Site 10 10 Nov 2020 12:32:58</p>	 <p>NE E SE S 30 60 90 120 150 180 ☉ 71°E (T) ● 55 S 755877 6434043 ±11m ▲ 492m</p> <p>FL4-Site 4A & Site 10 10 Nov 2020 12:32:10</p>



APPENDIX A – UCFL4

Site UCFL4 Site 5A (Removed from 2023 monitoring by UC MPL)

Site Attributes					
Date Sampled	12 October 2022				
Approximate Easting	755830				
Approximate Northing	6434031				
Monitoring Requirement	Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW3) at Ulan West completed in October 2017.				
2022 Monitoring Photo					
Year	October 2017	February 2019	November 2020	October 2021	October 2022
Result	Perceptible impacts	Perceptible impacts (no change)	Perceptible impacts ³ (change)	Perceptible impacts ³ (no change)	Perceptible impacts ³ (no change)
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 5A was identified during the 2017 monitoring program. Perceptible impacts in the form of cracking along the channel bank were observed. Recommend continued monitoring, as this site may become unstable, as a result from subsidence. - During the 2019 inspection, the surface cracking noted in 2017 was not detected and site appears stable. Recent tree fall was noted in the flow lined. - During the 2020 inspection the flow line displayed signs of mass material movement from both banks in the form of undercutting, slumping and channel widening (when compared to 2019), as a result of high flow event/s (refer to Section 4). There was water flowing and pooling and it was slightly turbid in appearance. - During the 2020 inspection there were signs of a high flow event. The erosion impacts as described (Appendix A) from a high flow creek event may have been exacerbated by a change in the longitudinal gradients from subsidence. This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable, although monitoring to continue in 2022 to confirm no change to 2020 impacts. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

³ Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars (SCT, 2022)



APPENDIX A – UCFL4

Year	Upstream	Downstream
2017		 <p>101°E (T) ● 55 S 755830 6434031 ±5m ▲ 484m</p> <p>Ulan Ck - Flow Line 4 - crack 27 Oct 2017 09:49</p>
2019		 <p>108°E (T) ● 55 S 755804 6434041 ±50m ▲ 489m</p> <p>UCFL4 SA 14 Feb 2019 11:53</p> <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020		
2021		

APPENDIX A – UCFL4

Year	Upstream	Downstream
2022	 <p>UCFL4 Site 5A 12 Oct 2022, 11:59:13</p>	 <p>UCFL4 Site 5A 12 Oct 2022, 11:58:15</p>

APPENDIX A – UCFL4

Site UCFL4 Site 2A (Removed from 2021 monitoring by UCMLP)



Site Attributes				
Date Sampled	10 November 2020			
Approximate Easting	755635			
Approximate Northing	6433931			
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW3) at Ulan West commenced on the 26 June 2016. Longwall (LW3) at Ulan West completed in October 2017.</p>			
2020 Monitoring Photo				
Year	October 2017	February 2019	November 2020	
Result	Perceptible impacts	Perceptible impacts (no change)	Perceptible impacts (no change)	
Comments / Interpretation				
<ul style="list-style-type: none"> - UCFL4 Site 2A is above LW3 and was identified during the 2017 monitoring program. Perceptible impacts in the form a potential ponding site were observed. Recommend continued monitoring, as this site displays signs of ponding. - During the 2019 inspection, there was no observed changes since the 2017 monitoring. - During the 2020 inspection, confirmation this site was not ponding based on the flowing water observed, which at the time of the inspection there was unobstructed flow within the existing flow line. High flow events had removed fallen timber and cleared the flow line, flattening some of the ground vegetation. Water was flowing and clear in appearance. - This site could be considered for removal from the post mining monitoring program of Ulan Creek tributaries due to no perceptible change identified in 2020. 				
Recommendations				
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 				
Photographic Recording (see below)				

APPENDIX A – UCFL4

Year	Upstream	Downstream
2017		
2019		

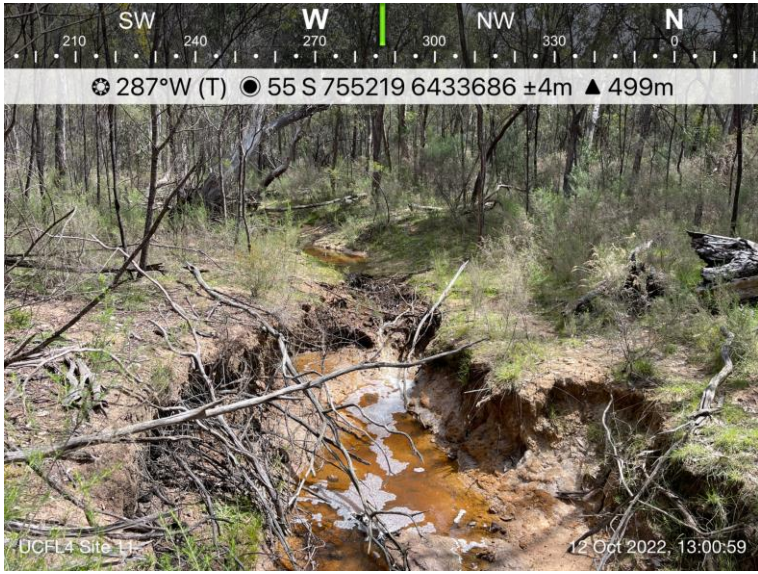
Notes: GPS locations incorrect on image due to loss of GPS signal

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020	 <p>227°SW (T) ● 55 S 755655 6433943 ±4m ▲ 493m</p> <p>FL4- Site 2A 10 Nov 2020, 12:11:20</p>	 <p>51°NE (T) ● 55 S 755649 6433945 ±4m ▲ 493m</p> <p>FL4- Site 2A 10 Nov 2020, 12:10:36</p>





APPENDIX A – UCFL4

Site UCFL4 Site 11 (Removed from 2023 monitoring by UCML)


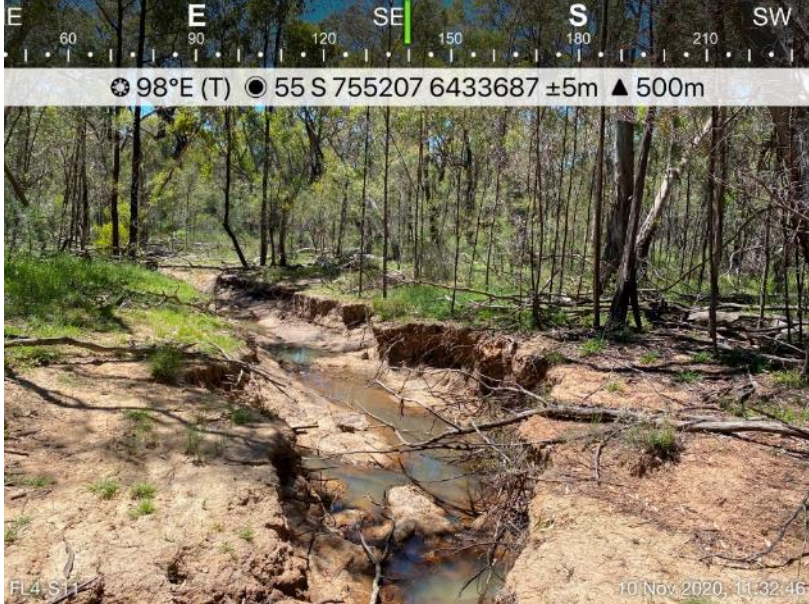
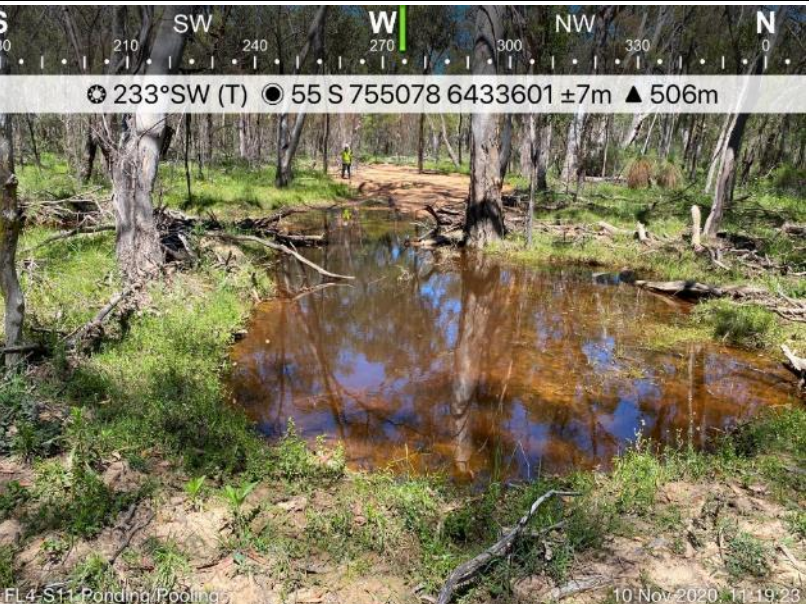

Site Attributes					
Date Sampled		12 October 2022			
Approximate Easting		755206			
Approximate Northing		6433683			
Monitoring Requirement		Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW4) at Ulan West completed in December 2018.			
2022 Monitoring Photo					
Year	February 2019	November 2020	October 2021	October 2022	
Result	Perceptible impacts	Perceptible impacts ⁴ (change)	Perceptible impacts ⁴ (no change)	Perceptible impacts ⁴ (no change)	
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 11 is located above LW4 near the western edge of the panel and displays signs of natural instability and was added to the monitoring program in 2019. - During the 2019 inspection, there was evidence of subsidence related impacts including cracking in the creek bed and less extensive cracking noted along the LHB and RHB. - During the 2020 inspection, additional cracking and potential ponding sites were identified. - The flow line did display signs of mass material movement from both banks in the form of undercutting, slumping and channel widening (when compared to 2019) as a result of high flow event/s (refer to Section 4). There was water flowing and pooling and it was clear with a reddish/brown appearance. - The erosion impacts as described from a high flow creek event in 2020 may have been exacerbated by a change in the longitudinal gradients from subsidence (an example of nick point erosion)⁴. - This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable, although monitoring to continue in 2022 to confirm no change to 2020 impacts. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

⁴ Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars

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Year	Upstream	Downstream
2019	 <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>	 <p>Notes: GPS locations incorrect on image due to loss of GPS signal</p>
2019		

APPENDIX A – UCFL4



Year	Upstream	Downstream
2020		
2020		

Ponding sites identified in 2020

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Year	Upstream	Downstream
2020	 <p data-bbox="797 772 1503 794">Cracking creating an erosion hole in channel bed identified in 2020</p>	
2021		

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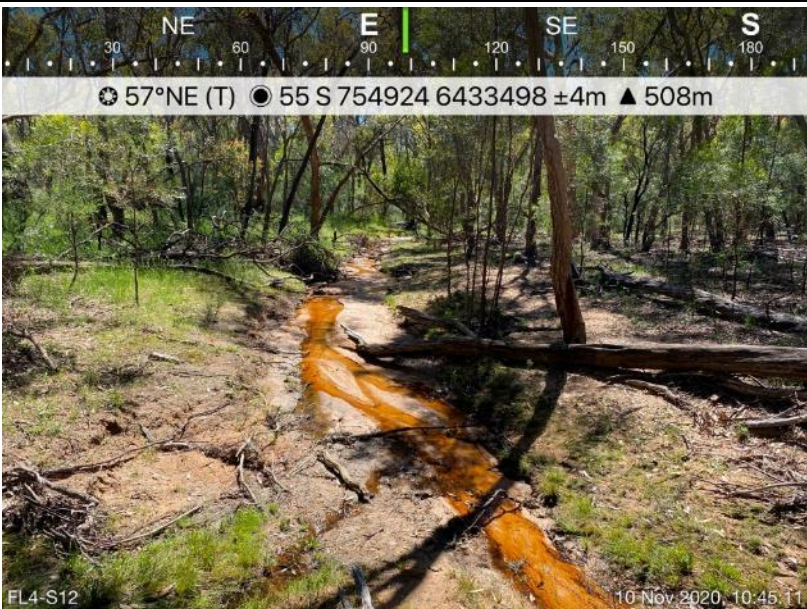
Year	Upstream	Downstream
2022	 <p>287°W (T) ● 55 S 755219 6433685 ±4m ▲ 499m</p> <p>UCFL4 Site 11 12 Oct 2022, 13:00:55</p>	 <p>91°E (T) ● 55 S 755209 6433687 ±4m ▲ 498m</p> <p>UCFL4 Site 11 12 Oct 2022, 13:02:12</p>

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Site UCFL4 Site 12 (Removed from 2023 monitoring by UCMLP)

Site Attributes					
Date Sampled	12 October 2022				
Approximate Easting	754925				
Approximate Northing	6433495				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW5) at Ulan West completed in June 2020.</p>				
2022 Monitoring Photo					
Year	October 2018	November 2020	October 2021	October 2022	
Result	Pre-Mining	No Perceptible Change	No Perceptible Change	No Perceptible Change	
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 12 is located above LW5 near the eastern edge of the panel (at a confluence of another flow line) and displays signs of natural instability (refer to pre-mining photos in 2018) and was added to the monitoring program in 2020. - During the 2020 inspection there was no perceptible change (i.e. no indications of subsidence related impacts as a result of longwall mining), however the flow line did display signs of erosion (not as severe as recorded at other sites) as a result of high flow event/s (refer to Section 4). At the time of the inspection water was flowing in both flow lines. Both the water in the flowlines was clear with a reddish/brown appearance. - During the 2021 inspection the instabilities noted in 2020 appeared comparable to the previous monitoring, although there was increased vegetation within the flowline. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

APPENDIX A – UCFL4

Year	Upstream	Downstream
2018	 <p>256°W (T) 55 S 754928 6433496 ±5m ▲ 508m</p> <p>UW_FL4_Site 12 LW5 31 Oct 2018, 10:32</p> <p>Pre-mining 31 October 2018</p>	 <p>46°NE (T) 55 S 754923 6433491 ±5m ▲ 507m</p> <p>LW_FL4_Site 12 LW5 31 Oct 2018, 10:32</p> <p>Pre-mining 31 October 2018</p>
2020	 <p>227°SW (T) 55 S 754922 6433492 ±4m ▲ 508m</p> <p>FL4-S12 10 Nov 2020, 10:45:54</p>	 <p>57°NE (T) 55 S 754924 6433498 ±4m ▲ 508m</p> <p>FL4-S12 10 Nov 2020, 10:45:11</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2021		
2022		




APPENDIX A – UCFL4

Site UCFL4 Site 13 (Removed from 2023 monitoring by UCMLP)





Site Attributes					
Date Sampled	12 October 2022				
Approximate Easting	754925				
Approximate Northing	6433495				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW5) at Ulan West completed in June 2020.</p>				
2022 Monitoring Photo					
Year	October 2018	November 2020	October 2021	October 2022	
Result	Pre-Mining	Perceptible impacts ³	Perceptible impacts ⁵ (no change)	Perceptible impacts ⁵ (no change)	
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 13 is located on an internal road, historically disturbed to install a pipe culvert within the flowline to allow the formation on an unsealed track and was added to the monitoring program in 2020. - During the 2020 inspection the flow line did display signs of mass material movement from both banks in the form of undercutting and slumping as a result of high flow event/s (refer to Section 4). A section of the road was also washed out exposing the concrete pipe culvert. At the time of the inspection water was flowing and was clear with a reddish/brown appearance. - The erosion impacts as described from a high flow creek event in 2020 may have been exacerbated by a change in the longitudinal gradients from subsidence (an example of nick point erosion)⁵. - This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable, although monitoring to continue in 2022 to confirm no change to 2020 impacts. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

⁵ Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars


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Year	Upstream	Downstream
2018	 <p>SE S SW 120 150 180 210 240 175°S (T) ● 55 S 754811 6433307 ±5m ▲ 510m UW_FL4_Site 5 LW5 31 Oct 2018, 10:26</p> <p>Pre-mining 31 October 2018</p>	 <p>NW NE 300 330 360 390 1°N (T) ● 55 S 754807 6433311 ±5m ▲ 511m UW_FL4_Site 13 LW5 31 Oct 2018, 10:25</p> <p>Pre-mining 31 October 2018</p>
2020	 <p>SE S SW W 120 150 180 210 240 270 300 167°S (T) ● 55 S 754821 6433295 ±5m ▲ 510m FL4_S13 10 Nov 2020, 10:51:22</p>	 <p>NW N NE E SE 330 0 30 60 90 120 4°N (T) ● 55 S 754819 6433290 ±5m ▲ 511m FL4_S13 10 Nov 2020, 10:51:41</p>

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Year	Upstream	Downstream
2021	 <p>171°S (T) 55 S 754818 6433293 ±4m ▲ 501m</p> <p>UCFL4 Site 13 20 Oct 2021, 13:13:46</p>	 <p>359°N (T) 55 S 754818 6433289 ±4m ▲ 511m</p> <p>UCFL4 Site 13 20 Oct 2021, 13:14:15</p>
2022	 <p>166°S (T) 55 S 754817 6433299 ±4m ▲ 509m</p> <p>UCFL4 Site 13 12 Oct 2022, 13:26:48</p>	 <p>4°N (T) 55 S 754821 6433289 ±4m ▲ 509m</p> <p>UCFL4 Site 13 12 Oct 2022, 13:28:18</p>

Site **UCFL4 Site 14** (Removed from 2023 monitoring by UCML)



Site Attributes					
Date Sampled		12 October 2022			
Approximate Easting		754770			
Approximate Northing		6433177			
Monitoring Requirement		Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW5) at Ulan West completed in June 2020.			
2022 Monitoring Photo					
Year	November 2020	October 2021	October 2022		
Result	Perceptible impacts ⁶	Perceptible impacts ⁶ (no change)	Perceptible impacts ⁶ (no change)		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 14 is located above LW5 near the western edge of the panel and displays signs of natural instability (refer to 2018 pre-mining photos at Sites 12 & 13) and was added to the monitoring program in 2020. - During the 2020 inspection the flow line did display signs of mass material movement from both banks in the form of undercutting and slumping as a result of high flow event/s (refer to Section 4). At the time of the inspection water was flowing and was clear with a reddish/brown appearance. - The erosion impacts as described from a high flow creek event in 2020 may have been exacerbated by a change in the longitudinal gradients from subsidence (an example of nick point erosion)⁴. - This potential change in grade may be exacerbating the natural eroding processes within the flowline at this location. - During the 2021 inspection the instabilities noted in 2020 appeared comparable, although monitoring to continue in 2022 to confirm no change to 2020 impacts. - During the 2022 inspection the instabilities noted in 2020 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

⁶ Nick point erosion begins at points of increased grade caused by subsidence and regresses upstream to erode the stream bed through the zone of less subsidence above chain pillars

APPENDIX A – UCFL4


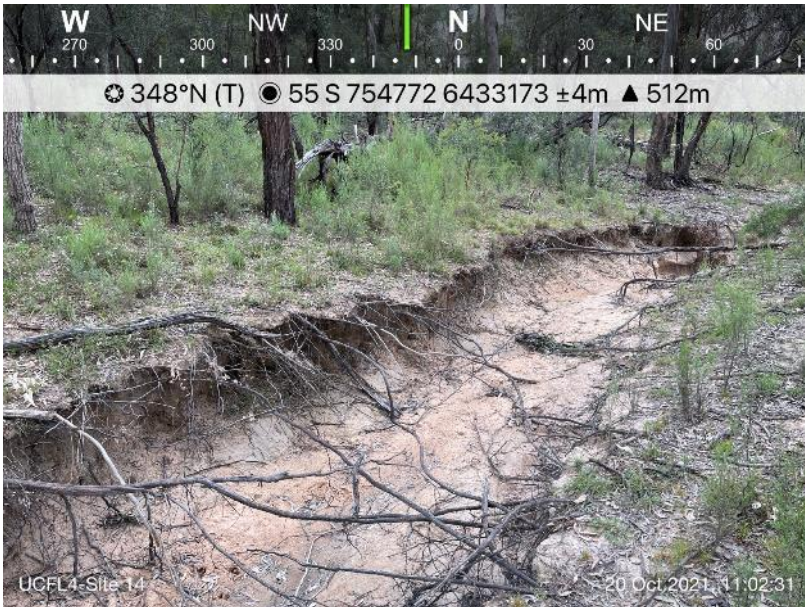


Year	Upstream	Downstream
2020	 <p>Upstream view of a stream. The image includes a compass overlay at the top with directions S, SW, W, NW and a scale from 180 to 330. Below the compass, the text reads: 212°SW (T) ● 55 S 754766 6433180 ±4m ▲ 514m. The stream is surrounded by trees and has a brownish-orange color. A timestamp '10 Nov 2020: 10:21:07' and the identifier 'FL4-S14' are visible at the bottom.</p>	 <p>Downstream view of a stream. The image includes a compass overlay at the top with directions NW, N, E, SE and a scale from 330 to 120. Below the compass, the text reads: 2°N (T) ● 55 S 754764 6433175 ±4m ▲ 515m. The stream is surrounded by trees and has a brownish-orange color. A timestamp '10 Nov 2020: 10:21:34' and the identifier 'FL4-S14' are visible at the bottom.</p>

APPENDIX A – UCFL4

Year	Upstream	Downstream
2020		

Signs of recent erosion along the banks of the flow line FL4 during the 2020 inspection at site 14 and downstream between Sites 14 and 13

APPENDIX A – UCFL4



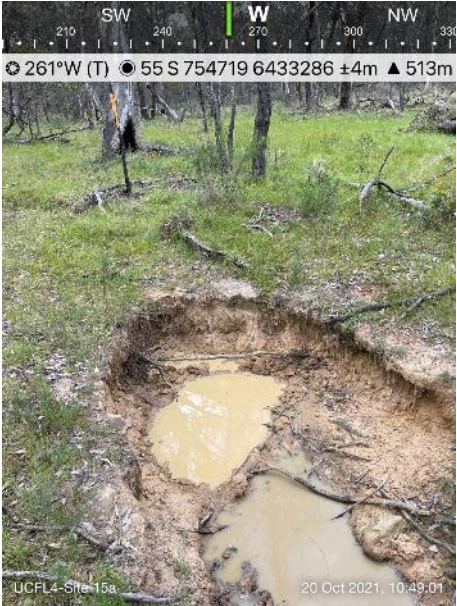
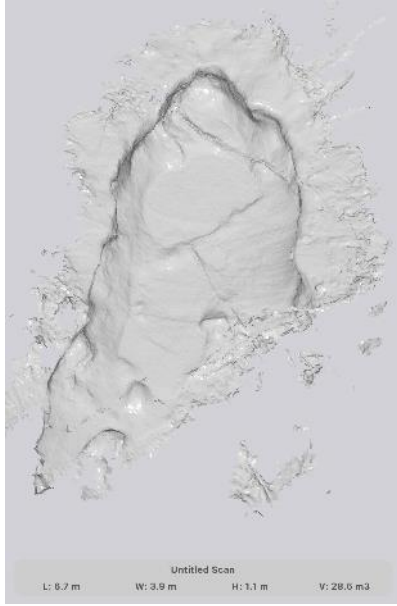
Year	Upstream	Downstream
2021		
2022		

APPENDIX A – UCFL4




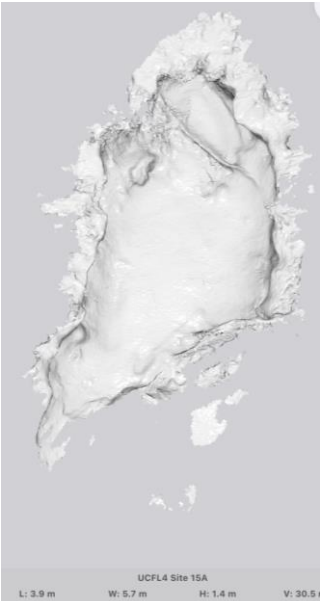
Site UCFL4 Site 15A (Removed from 2024 monitoring by UC MPL)

Site Attributes					
Date Sampled	15A October 2022				
Approximate Easting	754719				
Approximate Northing	6433286				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)</p>				
2023 Monitoring Photo					
Year	October 2021	October 2022	October 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 15A is located above the chain pillar between LW5 and LW6 and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was defined and characterised by a scour that was displaying sign of instabilities. The flow line and surrounds were well vegetated. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. - During the 2023 inspection the instabilities noted in 2021 had increased when compared to previous monitoring. The existing scour had widened. - No water was observed flowing. Small volume of water remained within the scour. There was decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					




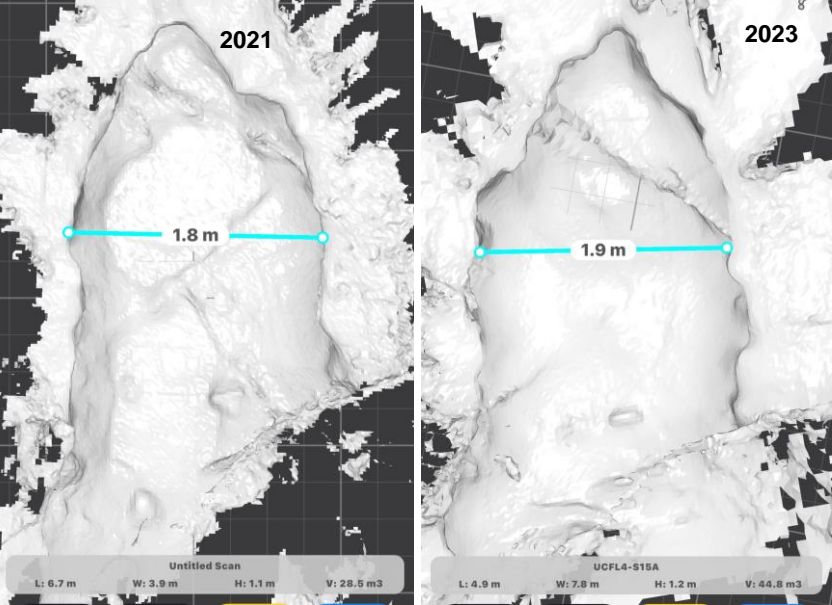
APPENDIX A – UCFL4

Year	Upstream	Downstream
2021	 <p>UCFL4-Site 15a 20 Oct 2021, 10:49:16</p>	 <p>UCFL4-Site 15a 20 Oct 2021, 10:48:48</p>
2021	 <p>UCFL4-Site 15a 20 Oct 2021, 10:49:01</p>	 <p>Untitled Scan L: 8.7 m W: 3.9 m H: 1.1 m V: 28.0 m3</p>

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Year	Upstream	Downstream
2022		
2022		

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Year	Upstream	Downstream
2023		
2023		

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Site UCFL4 Site 15 (Removed from 2024 monitoring by UCML)

Site Attributes					
Date Sampled		27 October 2023			
Approximate Easting		754672			
Approximate Northing		6433249			
Monitoring Requirement		Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW6) at Ulan West (Pre Mining – 20 Oct 2021)			
2023 Monitoring Photo					
Year	October 2021	October 2022	October 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts*		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 15 is located above LW6 towards the eastern edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was defined and the bed was partially vegetated with signs of instabilities. A scour was noted in the flow line with instabilities. Surrounding the flow line was well vegetated. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was flowing at the time of the inspection in 2022. - During the 2023 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - No water was observed flowing or pooling in 2023. There was decreasing groundcover. - * To the east of Site 15 extensive cracking across the creek line was identified in 2023 (see below) 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2021	 <p>SE 150 S 180 SW 210 240 W 270 300 NW</p> <p>226°SW (T) ● 55 S 754672 6433249 ±3m ▲ 512m</p> <p>UCFL4 Site 15 20 Oct 2021 10:38:07</p>	 <p>NW 330 N 0 NE 30 60 E 90 120 S</p> <p>39°NE (T) ● 55 S 754665 6433243 ±4m ▲ 514m</p> <p>UCFL4 Site 15 20 Oct 2021 10:38:35</p>
2022	 <p>E 150 S 180 SW 210 240 W 270 300 NW</p> <p>230°SW (T) ● 55 S 754675 6433253 ±4m ▲ 504m</p> <p>UCFL4 Site 15 12 Oct 2022 14:04:01</p>	 <p>NW 330 N 0 NE 30 60 E 90 120 S</p> <p>42°NE (T) ● 55 S 754667 6433247 ±4m ▲ 512m</p> <p>UCFL4 Site 15 12 Oct 2022 14:04:46</p>

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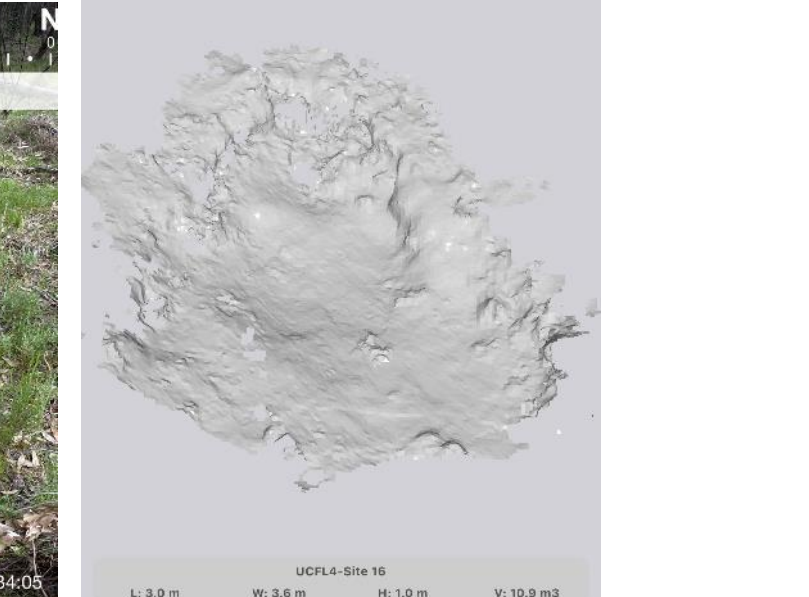
Year	Upstream	Downstream
2023		
2023		

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Site UCFL4 Site 16 (Removed from 2024 monitoring by UCML)

Site Attributes					
Date Sampled	27 October 2023				
Approximate Easting	754599				
Approximate Northing	6433194				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)</p>				
2023 Monitoring Photo					
Year	October 2021	October 2022	October 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 16 is located above LW6 towards the eastern edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was defined, well vegetated and stable. A very small scour was noted in the flow line and appeared stable at this location. Further downstream a larger scour has formed. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. Partial infilling of the scour with flood debris and vegetation in 2022. - During the 2023 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - No water was observed flowing or pooling in 2023. There was decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

APPENDIX A – UCFL4

Year	Upstream	Downstream
2021		
2021		

APPENDIX A – UCFL4

Year	Upstream	Downstream
2022	 <p>Compass overlay: S (180), SW (210), W (270), NW (330). 245°SW (T) ● 55 S 754604 6433202 ±4m ▲ 517m</p> <p>UCFL4 Site 16 12 Oct 2022, 14:08:05</p>	 <p>Compass overlay: NW (330), N (0), NE (60), E (90), SE (120). 48°NE (T) ● 55 S 754598 6433196 ±4m ▲ 517m</p> <p>UCFL4 Site 16 12 Oct 2022, 14:08:39</p>
2022	 <p>Compass overlay: S (180), SW (210), W (270), NW (330). 245°SW (T) ● 55 S 754604 6433202 ±4m ▲ 517m</p> <p>UCFL4 Site 16 12 Oct 2022, 14:08:05</p>	 <p>UCFL4 Site 16 L: 4.6 m W: 3.0 m H: 1.8 m V: 25.5 m3</p>

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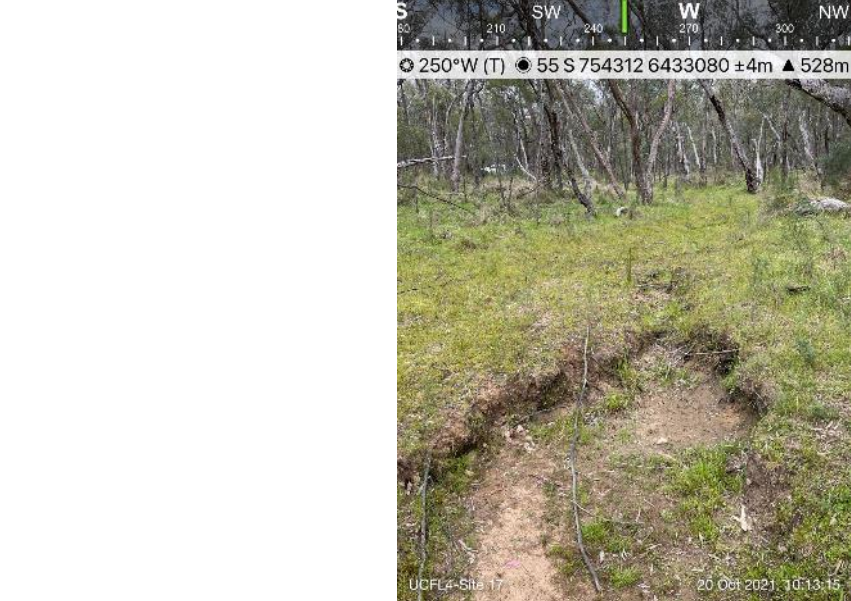
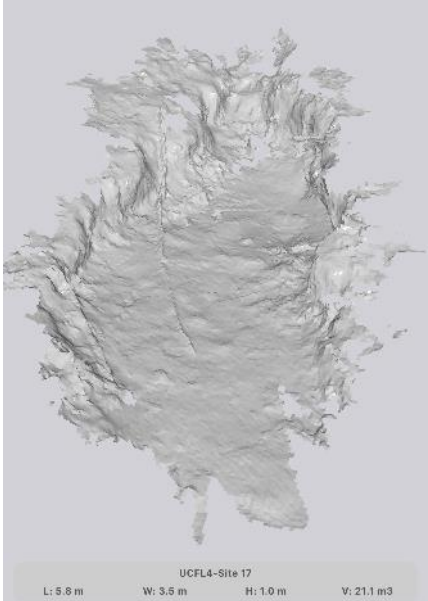
Year	Upstream	Downstream
2023	 <p>UCFL4-Site 16 27 Oct 2023, 11:08:15</p>	 <p>UCFL4-Site 16 27 Oct 2023, 11:07:12</p>
2023	 <p>UCFL4-Site 16 20 Oct 2021, 10:34:05</p>	 <p>UCFL4-Site 16 27 Oct 2023, 11:09:54</p>

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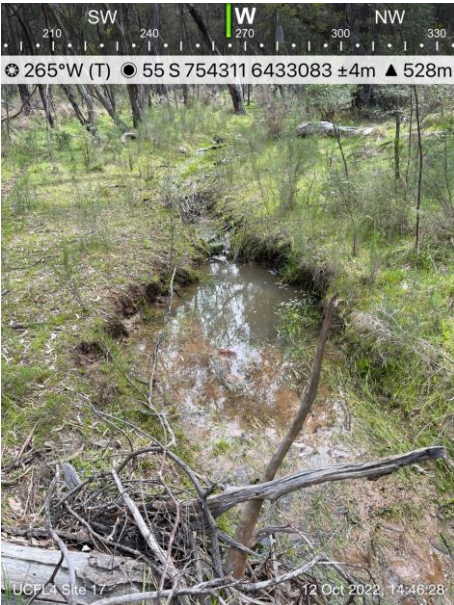
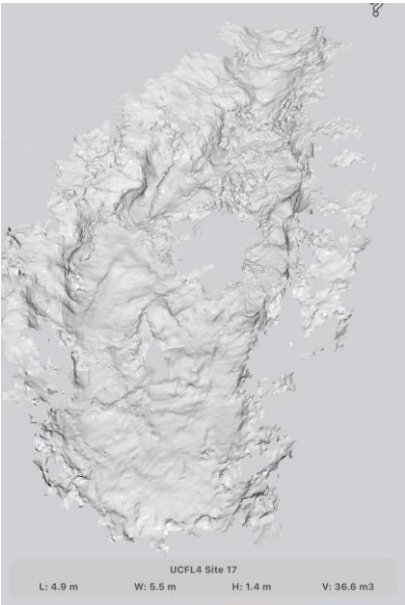
Site UCFL4 Site 17 (Removed from 2024 monitoring by UCML)

Site Attributes					
Date Sampled	27 October 2023				
Approximate Easting	754314				
Approximate Northing	6433081				
Monitoring Requirement	Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)				
2023 Monitoring Photo					
Year	October 2021	October 2022	October 2023		
Result	Pre Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 17 is located above LW6 towards the western edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was defined within an existing scour displaying signs of instabilities. The flow line and surrounds were well vegetated and generally stable. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. - During the 2023 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - No water was observed flowing or pooling in 2023. There was decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					




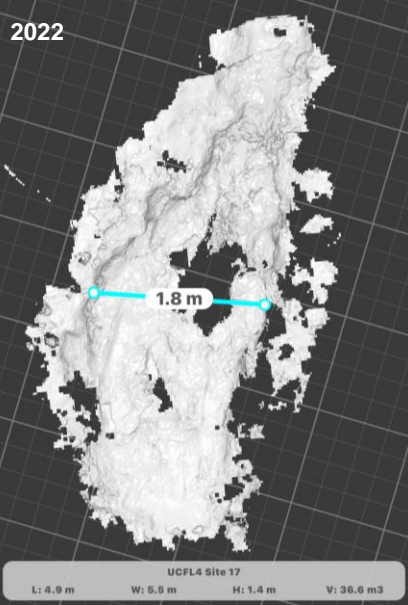
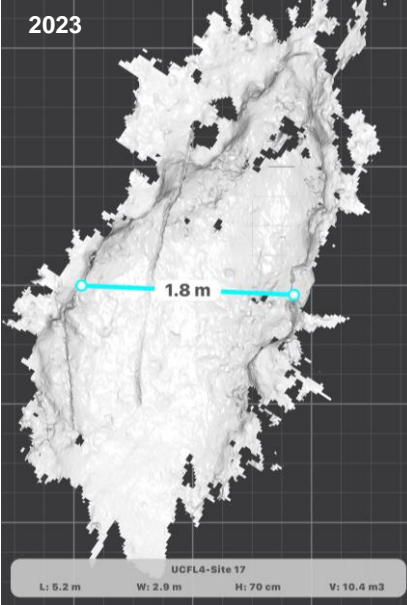
APPENDIX A – UCFL4

Year	Upstream	Downstream
2021	 <p>UCFL4-Site 17 20 Oct 2021 10:13:23</p>	 <p>UCFL4-Site 17 20 Oct 2021 10:13:50</p>
2021	 <p>UCFL4-Site 17 20 Oct 2021 10:13:15</p>	 <p>UCFL4-Site 17 L: 8.8 m W: 3.5 m H: 1.0 m V: 21.1 m³</p>

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Year	Upstream	Downstream
2022	 <p>UCFL4 Site 17 12 Oct 2022, 14:46:17</p>	 <p>UCFL4 Site 17 12 Oct 2022, 14:47:22</p>
2022	 <p>UCFL4 Site 17 12 Oct 2022, 14:46:28</p>	 <p>UCFL4 Site 17 L: 4.9 m W: 5.5 m H: 1.4 m V: 36.6 m3</p>

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Year	Upstream	Downstream	
2023	 <p>Compass: S (180), SW (210), W (270), NW (330). Coordinates: 258°W (T) ● 55 S 754309 6433080 ±4m ▲ 528m UCFL4-Site 17 27 Oct 2023 10:51:58</p>	 <p>Compass: N (0), NE (45), E (90), SE (135). Coordinates: 75°E (T) ● 55 S 754305 6433081 ±4m ▲ 525m UCFL4-Site 17 27 Oct 2023 10:50:59</p>	
2023	 <p>Compass: SW (210), W (270), NW (330). Coordinates: 259°W (T) ● 55 S 754311 6433080 ±4m ▲ 528m UCFL4-Site 17 27 Oct 2023 10:51:53</p>	 <p>2022 UCFL4 Site 17 L: 4.9 m W: 5.5 m H: 1.4 m V: 36.6 m3</p>	 <p>2023 UCFL4-Site 17 L: 5.2 m W: 2.9 m H: 70 cm V: 10.4 m3</p>

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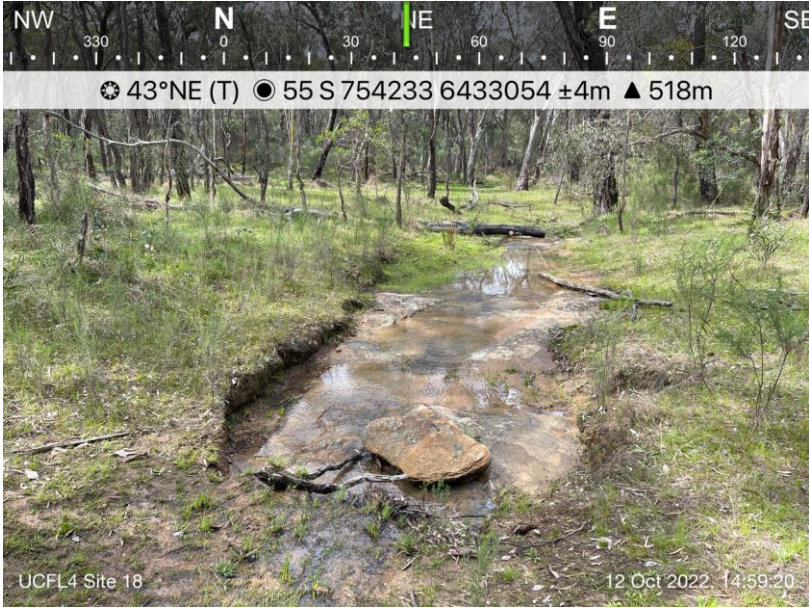

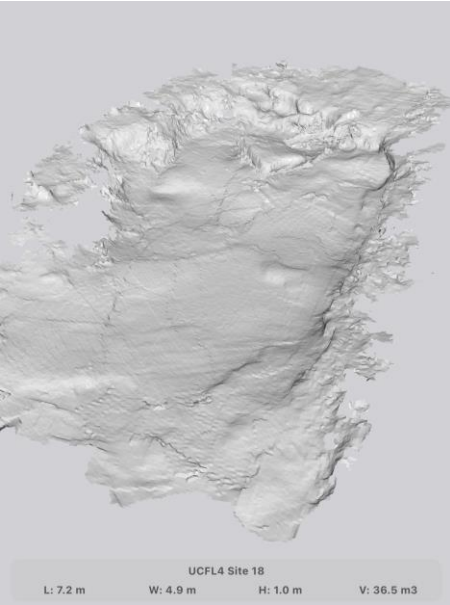
Site UCFL4 Site 18

Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	754231				
Approximate Northing	6433051				
Monitoring Requirement	Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW7) had only commenced in July 2022				
2024 Monitoring Photo					
Year	October 2021	October 2022	October 2023	November 2024	
Result	Pre Mining	Pre Mining	Pre Mining	Perceptible Impacts	
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 18 is located above LW7 towards the eastern edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was well defined with an exposed bedrock channel, well vegetated banks and surrounds and generally stable, only minor instabilities noted. Further downstream a scour has formed. - At the time of the October 2022 inspection LW7 was approximately 6km to the north and considered pre – mining, water was observed flowing in 2022. - At the time of the November 2023 inspection LW7 was approximately 0.8km to the north and considered pre – mining, no water was observed flowing in 2023. - During the 2024 inspection minor cracking was observed along the edge of the LHB. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					




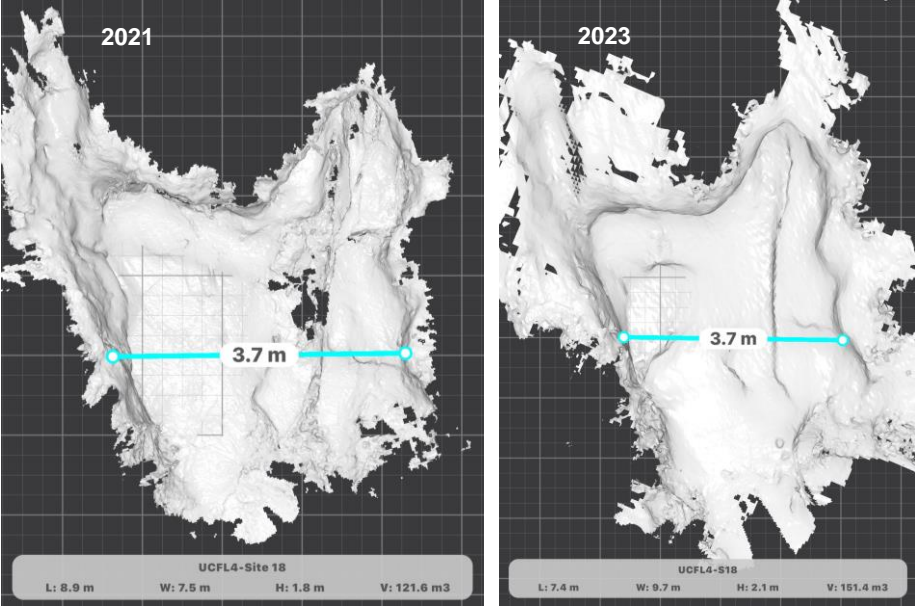
APPENDIX A – UCFL4

Year	Upstream	Downstream
2021	 <p> S 150 180 210 240 270 300 330 SW W NW 239°SW (T) 55 S 754234 6433055 ±4m ▲ 527m UCFL4-Site 18 20 Oct 2021 10:02:17 </p>	 <p> NW 330 0 30 60 90 120 SE N E 44°NE (T) 55 S 754401 6432402 ±4m ▲ 530m UCFL4-Site 21 20 Oct 2021 14:03:00 </p>
2021	 <p> S 180 210 240 270 300 SW W 235°SW (T) 55 S 754219 6433040 ±4m ▲ 529m UCFL4-Site 19 20 Oct 2021 10:03:05 </p>	 <p> UCFL4-Site 18 L: 8.9 m W: 7.5 m H: 1.8 m V: 121.6 m3 </p>

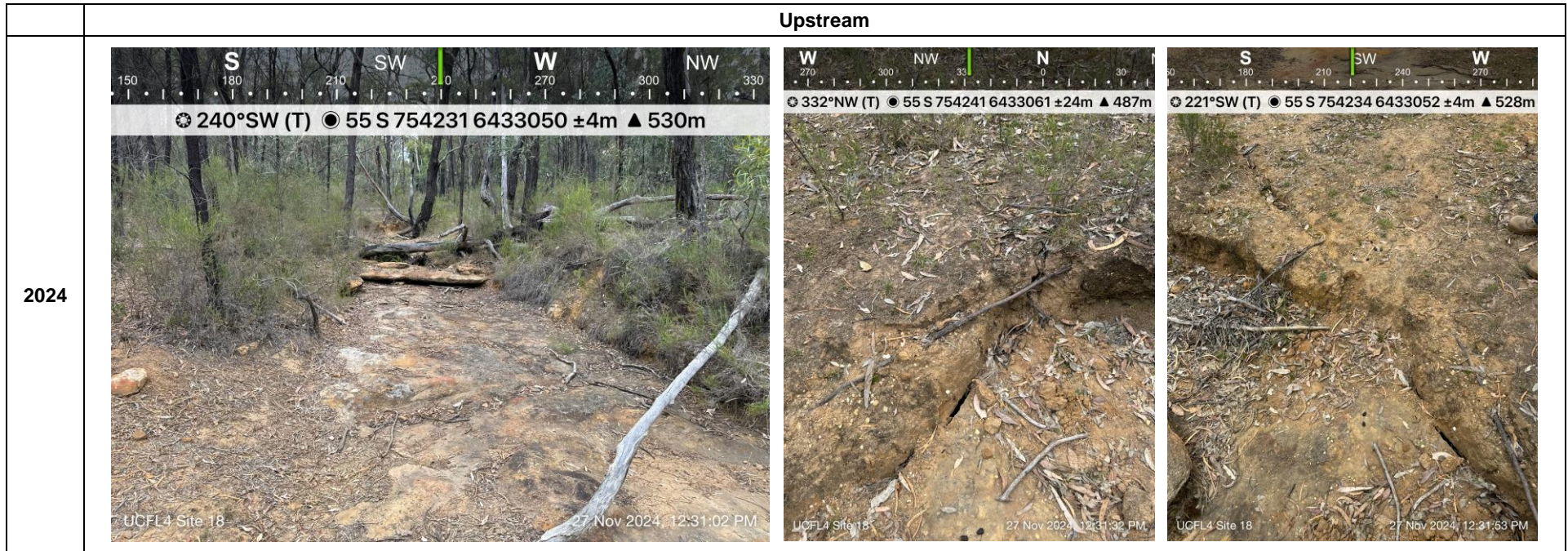
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Year	Upstream	Downstream
2022	 <p>UCFL4 Site 18 12 Oct 2022, 15:00:20</p>	 <p>UCFL4 Site 18 12 Oct 2022, 14:59:20</p>
2022	 <p>UCFL4 Site 18 12 Oct 2022, 15:01:33</p>	 <p>UCFL4 Site 18 L: 7.2 m W: 4.9 m H: 1.0 m V: 36.5 m3</p>

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Year	Upstream	Downstream
2023	 <p>UCFL4 - Site 18 27 Oct 2023, 10:38:10</p>	 <p>UCFL4 - Site 18 27 Oct 2023, 10:39:07</p>
2023	 <p>UCFL4 - Site 18 27 Oct 2023, 10:39:28</p>	 <p>UCFL4 - Site 18 L: 8.9 m W: 7.5 m H: 1.8 m V: 121.6 m3 UCFL4 - Site 18 L: 7.4 m W: 9.7 m H: 2.1 m V: 151.4 m3</p>

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APPENDIX A – UCFL4



Site UCFL4 Site 19 (Removed from 2024 monitoring by UCML)

Site Attributes					
Date Sampled		27 October 2023			
Approximate Easting		754692			
Approximate Northing		6433077			
Monitoring Requirement		<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)</p>			
2023 Monitoring Photo					
Year	October 2021	November 2022	October 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 19 is located above LW6 towards the eastern edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was well defined within a sand bed, well vegetated banks and surrounds and generally stable. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. - During the 2023 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - No water was observed flowing or pooling in 2023. There was decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2021	 <p>SE S SW W 120 150 180 210 240 270 300 205°SW (T) ● 55 S 754694 6433081 ±4m ▲ 519m</p> <p>UCFL4-Site 19 20 Oct 2021, 11:20:54</p>	 <p>NW N NE E 300 330 0 30 60 90 120 26°NE (T) ● 55 S 754693 6433076 ±4m ▲ 505m</p> <p>UCFL4-Site 19 20 Oct 2021, 11:20:32</p>
2022	 <p>SE S SW W NW 150 180 210 240 270 300 222°SW (T) ● 55 S 754694 6433079 ±4m ▲ 516m</p> <p>UCFL4-Site 19 15 Nov 2022, 14:00:00</p>	 <p>NW N NE E 300 330 0 30 60 90 120 27°NE (T) ● 55 S 754693 6433078 ±4m ▲ 516m</p> <p>UCFL4-Site 19 15 Nov 2022, 13:59:31</p>

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Year	Upstream	Downstream
2023	 <p data-bbox="309 156 1115 231"> SE 120 150 180 210 240 270 300 S SW W 211°SW (T) ● 55 S 754694 6433077 ±4m ▲ 517m </p> <p data-bbox="309 726 1115 762"> UCFL4 - Site 19 27 Oct 2023 11:44:10 </p>	 <p data-bbox="1182 156 1989 231"> NW 300 330 360 390 420 N NE E 32°NE (T) ● 55 S 754692 6433075 ±4m ▲ 517m </p> <p data-bbox="1182 726 1989 762"> UCFL4 - Site 19 27 Oct 2023 11:43:11 </p>

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Site UCFL4 Site 20 (Removed from 2024 monitoring by UCMLP)

Site Attributes					
Date Sampled		27 October 2023			
Approximate Easting		754663			
Approximate Northing		6433017			
Monitoring Requirement		Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW6) at Ulan West (Pre Mining – 20 Oct 2021)			
2023 Monitoring Photo					
Year	October 2021	November 2022	October 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 19 is located above LW6 towards the eastern edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was well defined within an eroded channel, displaying signs of instabilities. The flow line and surrounds were well vegetated. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. - During the 2023 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - No water was observed flowing or pooling in 2023. There was decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2021		
2022		

APPENDIX A – UCFL4



Year	Upstream	Downstream
2023	 <p>SE 120 150 S 180 SW 210 240 W 270 300</p> <p>213°SW (T) 55 S 754663 6433020 ±4m ▲ 516m</p> <p>UCFL4-Site20 27 Oct 2023, 11:39:33</p>	 <p>N 70 NW 300 330 N 0 NE 30 60 E 90</p> <p>4°N (T) 55 S 754659 6433015 ±4m ▲ 518m</p> <p>UCFL4-Site20 27 Oct 2023, 11:40:12</p>

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Site UCFL4 Site 21 (Removed from 2024 monitoring by UCML)

Site Attributes					
Date Sampled		28 November 2023			
Approximate Easting		754401			
Approximate Northing		6432402			
Monitoring Requirement		Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)			
2023 Monitoring Photo					
Year	October 2021	November 2022	November 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 21 is located above LW6 near the end of panel towards the western edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was not well defined, within a flood plain and was very well vegetated and stable. At the time of the inspection the ground was very saturated. A small scour was the only obvious instability noted. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. The ground was saturated with thick ground cover. - During the 2023 inspection the site appeared comparable with previous monitoring and the flow line was dry with decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					



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Year	Upstream	Downstream
2021	 <p>UCFL4-Site 21 20 Oct 2021, 14:02:28</p>	 <p>UCFL4-Site 21 20 Oct 2021, 14:03:00</p>

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Year	Upstream	Downstream
2022	 <p>UCFL4-Site 21 15 Nov 2022, 11:46:59</p>	 <p>UCFL4-Site 21 15 Nov 2022, 11:43:46</p>

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Year	Upstream	Downstream
2023	 <p>SE 150 S 180 SW 210 240 W 270 300 NW 226°SW (T) ● 55 S 754408 6432405 ±4m ▲ 529m UCFL4-Site 21 28 Nov 2023 13:10:59</p>	 <p>NW 330 N 0 NE 30 60 E 90 120 SE 44°NE (T) ● 55 S 754402 6432400 ±4m ▲ 530m UCFL4-Site 21 28 Nov 2023 13:12:15</p>

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Site UCFL4 Site 21A (Removed from 2024 monitoring by UCMLP)

Site Attributes					
Date Sampled	28 November 2023				
Approximate Easting	754477				
Approximate Northing	6432490				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)</p>				
2023 Monitoring Photo					
Year	October 2021	November 2022	November 2023		
Result	Pre-Mining	No Perceptible impacts	No Perceptible impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 21a is located above LW6 near the end of panel towards the center and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was not well defined, within a flood plain and was very well vegetated and stable. At the time of the inspection the ground was very saturated. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. The ground was saturated. A tree had fallen across the site since October 2021. - During the 2023 inspection the site appeared comparable with previous monitoring and the flow line was dry. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

APPENDIX A – UCFL4


Year	Upstream	Downstream
2021		
2022		

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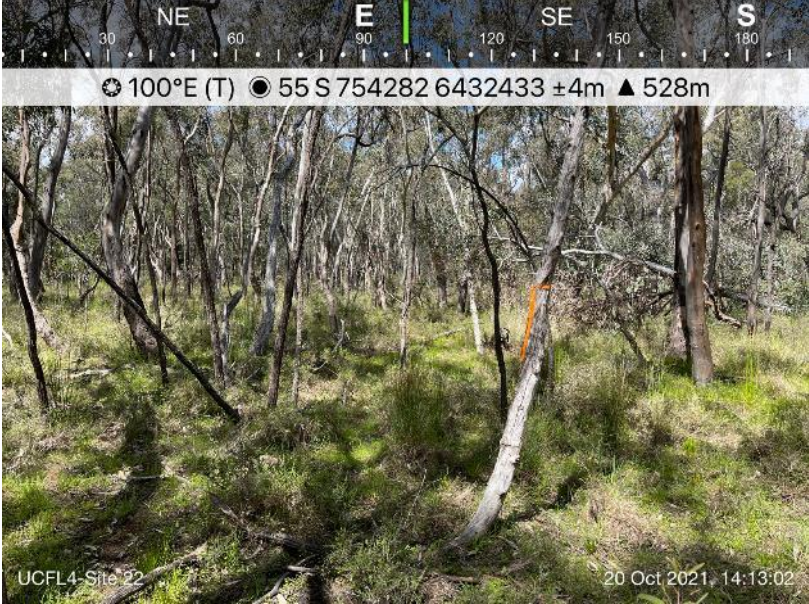
Year	Upstream	Downstream
2023	 <p>SE 120 150 180 210 240 270 300 S SW W 204°SW (T) ● 55 S 754477 6432496 ±4m ▲ 526m UCFL4 Site 21a 28 Nov 2023, 13:07:00</p>	 <p>N 330 0 30 60 90 120 SE NE E 53°NE (T) ● 55 S 754473 6432484 ±4m ▲ 528m UCFL4 Site 21a 28 Nov 2023, 13:07:25</p>

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Site UCFL4 Site 22 (Removed from 2024 monitoring by UCMLP)

Site Attributes					
Date Sampled	28 November 2023				
Approximate Easting	754282				
Approximate Northing	6432433				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW6) at Ulan West (Pre-Mining – 20 Oct 2021)</p>				
2023 Monitoring Photo					
Year	October 2021	October 2022	November 2023		
Result	Pre-Mining	No Perceptible Impacts	No Perceptible Impacts		
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 22 is located above LW6 near the end of panel on the western edge and was added to the monitoring program in 2021. - At the time of the October 2021 inspection, LW6 had 2968m of longwall retreat remaining (approximately 1.9km to the north of Site 15A). - The pre mining inspection noted the flow line was not well defined, within a flood plain and was very well vegetated and stable. At the time of the inspection the ground was very saturated. - During the 2022 inspection the instabilities noted in 2021 appeared comparable with previous monitoring. - Water was observed flowing in 2022. - During the 2023 inspection the site appeared comparable with previous monitoring and the flow line was dry with decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2021	 <p>UCFL4-Site 22 20 Oct 2021, 14:13:23</p>	 <p>UCFL4-Site 22 20 Oct 2021, 14:13:02</p>
2022	<p>Images Not Available</p>	

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Year	Upstream	Downstream
2023	 <p>UCFL4 Site 22 28 Nov 2023, 13:27:28</p>	 <p>UCFL4 Site 22 28 Nov 2023, 13:27:50</p>

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Site UCFL4 Site 23

Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	754234				
Approximate Northing	6432411				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW7) had only commenced in July 2022</p>				
2024 Monitoring Photo					
Year	November 2022	November 2024			
Result	Pre Mining	No Perceptible Impacts			
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 23 is located above LW7 near the end of panel on the eastern edge and was added to the monitoring program in 2022. - The pre mining inspection noted the flow line was not well defined, within a flood plain and was very well vegetated and stable. At the time of the inspection the ground was very saturated. - During the 2024 inspection the site appeared comparable with previous monitoring and the flow line was dry with decreasing groundcover. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2022	 <p>240°SW (T) ● 55 S 754234 6432393 ±5m ▲ 536m</p> <p>UCFL4-Site 21b 15 Nov 2022, 11:25:42</p>	 <p>11°N (T) ● 55 S 754237 6432396 ±3m ▲ 510m</p> <p>UCFL4-Site 21b 15 Nov 2022, 11:25:26</p>
2024	 <p>207°SW (T) ● 55 S 754223 6432413 ±6m ▲ 537m</p> <p>UCFL4 Site 23 27 Nov 2024, 1:03:55 PM</p>	 <p>53°NE (T) ● 55 S 754223 6432412 ±5m ▲ 534m</p> <p>UCFL4 Site 23 27 Nov 2024, 1:04:16 PM</p>

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Site UCFL4 Site 24

Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	754084				
Approximate Northing	6432940				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW7) had only commenced in July 2022</p>				
2024 Monitoring Photo					
Year	November 2022	November 2024			
Result	Pre Mining	Perceptible Impacts			
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 24 is located above LW7 and is near the middle of the panel and was added to the monitoring program in 2022. - The pre mining inspection noted the flow line is not well defined, although a small scour was a notable feature. Water was flow at the time of the inspection. - During the November 2024 inspection a minor crack in the bedrock was observed in the vicinity of UCFL4 Site 24 (downstream). 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2022		
2024		

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Site UCFL4 Site 25


Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	7543858				
Approximate Northing	6432893				
Monitoring Requirement	Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years. Notes: Longwall (LW7) had only commenced in July 2022				
2024 Monitoring Photo					
Year	November 2022	November 2024			
Result	Pre Mining	No Perceptible Impacts			
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 25 is located above LW7 and is near the western edge of the panel and was added to the monitoring program in 2022. - The pre mining inspection noted the flow line is not well defined with some exposed bedrock. - During the November 2024 inspection no perceptible impacts were observed. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2022		
2024		

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Site UCFL4 Site 26


Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	7543803				
Approximate Northing	6432888				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW8B) not commenced at time of inspection</p>				
2024 Monitoring Photo	 <p>UCFL4 Site 26 27 Nov 2024 12:14:17 PM</p>				
Year	November 2022	November 2024			
Result	Pre Mining	Pre Mining			
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 26 is located above LW8B and is a UCMLPL owned farm dam near the eastern edge of the panel and was added to the monitoring program in 2022. - At the time of the November 2022 inspection, LW8B had not commenced. - The pre mining inspection noted the dam was at near capacity and the dam wall embankment at the eastern edge had been compromised, potentially many years ago, reducing the holding capacity of the dam. - During the November 2024 inspection no perceptible impacts were observed. Animal diggings were noted in the middle of the dam. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2022		
2024		

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Site UCFL4 Site 26

Site Attributes					
Date Sampled	27 November 2024				
Approximate Easting	753675				
Approximate Northing	6432917				
Monitoring Requirement	<p>Monitoring to distinguish between natural erosion and erosion from mine subsidence instability, surface cracking, surface ponding and out of channel flows. Monitoring before longwall retreats and annually for a period of two years.</p> <p>Notes: Longwall (LW8B) not commenced at time of inspection</p>				
2024 Monitoring Photo					
Year	November 2024				
Result	Pre Mining				
Comments / Interpretation					
<ul style="list-style-type: none"> - UCFL4 Site 27 is located above LW8B near the centre of the panel and was added to the monitoring program in 2024. - At the time of the November 2024 inspection, LW8B had not commenced. - The pre mining inspection noted there is no defined channel at this location and the groundcover was extensive. 					
Recommendations					
<ul style="list-style-type: none"> - If unchanged and past two year recommend remove from annual monitoring program (yes/no) - Recommend recording cross sections at locations identified with channel and/or channel bank cracking as a result of subsidence, to monitor for erosion and/or changes to the channel width (yes/no) 					
Photographic Recording (see below)					

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Year	Upstream	Downstream
2024		 <p>NE E SE S 30 60 90 120 150 180</p> <p>109°E (T) 55 S 753675 6432917 ±4m ▲ 563m</p> <p>UCFL4 Site 27 27 Nov 2024 12:10:00 PM</p>