Monitoring	Trigger	Action
Dwelling Strain		
 Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP as per DC Schedule 4 Condition 6(h). Centennial to arrange pre-mining structural inspection of dwellings and buildings as per DC Schedule 4 Condition 6(h). Assessment includes structural integrity and any potential 	 LEVEL 1 – LOW Operation within prediction and approved impact Development of subsidence (U95% CL) and impact as expected. Strain < 5mm/m Strain Category 0-2 (AS2870-2011). No noticeable impact to dwelling. Possible hairline to fine cracks noticeable that can be easily filled. Possible slightly sticking doors or windows.	 Centennial to conduct subsidence monitoring on dwelling to determine strains and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner.
 risks to health and safety. Centennial to arrange SA NSW premining inspection of dwelling and improvements. Centennial to establish subsidence monitoring on dwelling and improvements in consultation with Landowner. Centennial to conduct post-mining surveys following the development of subsidence (majority of subsidence 	 LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence greater than predicted (U95% CL), but impact as expected Strains approaching 5 mm/m Strain Category 0-2 (AS2870-2011). Minor impact to dwelling. Possible hairline to fine cracks noticeable that can be easily filled. Possible slightly sticking doors or windows. 	 Centennial to conduct subsidence monitoring on dwelling to determine strains and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any SA NSW claim for damage to property. Centennial / SA NSW to arrange a structural inspection of the dwelling to insure that dwelling does not pose a risk to health and safety of occupants. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to review results and predictions as per Extraction Plan.
developed when LW face is 800m past dwelling). • Centennial to provide subsidence monitoring results to Landowner, RR and SA NSW.	 LEVEL 3 – HIGH Operations exceed approved impact Development of subsidence and impact greater than expected and beyond SSR Strain >5mm/m Beyond SSR Strain Category 3 to 5 (AS2870-2011) Crack width > 5mm/to 25mm Windows and door frames distorting Service pipes disrupted Roof and floor beams lose bearing Windows broken Severe buckling and bulging of roof and walls Will require partial or complete rebuild. 	 Centennial to conduct subsidence monitoring on dwelling to determine tilt and provide results to the Landowner, RR and SA NSW. Centennial to commence negotiations with Landowner as per the Acquisition and Compensation process consistent with DC Schedule 5 Conditions 3 and 4. Centennial / SA NSW to arrange structural inspection to assess if dwelling is repairable. Centennial to arrange alternate temporary accommodation for occupants if necessary. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to review results and predictions as per Extraction Plan.

Monitoring	Trigger	Action
Dwelling Tilt		
 and detail predicted impacts from subsidence in PSMP as per DC Schedule 4 Condition 6(h). Centennial to arrange pre-mining structural inspection of dwellings and buildings as per DC Schedule 4 Condition 6(h).). Assessment includes structural integrity and any potential risks to health and safety. 	Development of subsidence (U95% CL) and impact as expected Tilt < 5mm/m Tilt Category A (AS2870-2011) No noticeable impact to dwelling. Possible sticking doors or windows Unlikely remedial work will be required LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially	 Centennial to conduct subsidence monitoring on dwelling to determine tilt and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to conduct subsidence monitoring on dwelling to determine tilt and provide results to the Landowner, RR and SA
 Centennial to arrange SA NSW pre-mining inspection of dwelling and improvements. Centennial to establish subsidence monitoring on dwelling and improvements in consultation with Landowner Centennial to conduct post-mining 	 Operations within approved impact but exceed or potentially exceed predictions Development of subsidence greater than predicted (U95% CL), but impact as expected Tilt 5 to 7mm/m Tilt Category B (AS2870-2011) Roof drainage overflowing or wet areas not draining effectively Adjustment of roof drainage or wet areas might be required 	 NSW. Centennial to assist landowner with any claim for damage to property. Centennial / SA NSW to arrange a structural inspection of the dwelling to insure that dwelling does not pose a risk to health and safety of occupants. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner and Centennial
Centennial to provide pre and post mining subsidence monitoring results to Landowner, RR and SA NSW.	 LEVEL 3 – HIGH Operations exceed approved impact Development of subsidence and impact greater than expected and beyond Safe, Serviceable and Repairable (SSR). Tilt >7mm/m Beyond SSR. Tilt Category C & D (AS2870-2011). Tilt on dwelling may be noticeable. Minor structural work might be required to rectify tilt. Considerable structural work may be required to rectify tilt >10mm/m. 	 Centennial to provide alternate water supply if required. Centennial to conduct subsidence monitoring on dwelling to determine tilt and provide results to the Landowner, RR and SA NSW. Centennial / SA NSW to arrange structural inspection to assess if the dwelling is safe, serviceable and repairable. Centennial to commence negotiations with Landowner as per the Acquisition and Compensation process consistent with DC Schedule 5 Conditions 3 and 4. Centennial to arrange alternate temporary accommodation for occupants if necessary. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to provide alternate water supply if required. Centennial to review results and predictions as per Extraction Plan.

Monitoring	Trigger	Action
Surface Improvements Including: sheds, car ports, workshops, stables, fences, chicken sheds and greenhouses.		
 Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP. Centennial to arrange pre-mining structural inspection of dwellings and buildings for structural integrity and potential risks to health and safety. Centennial to arrange SA NSW premining inspection of dwelling and improvements. Centennial to establish subsidence monitoring on dwelling and improvements in consultation with Landowner and SA NSW. Centennial to conduct post-mining surveys following the development of 	 LEVEL 1 – LOW Operation within prediction and approved impact Development of subsidence (U95% CL) and impact as expected. Change in fence wire tension, needing adjustment No noticeable impact to structure. Possible slightly sticking doors or windows. Unlikely remedial work will be required. LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence greater than predicted (U95% CL), but impact as expected Minor cracking may be visible. Doors and windows may stick. Service pipes may be disrupted. Roof drainage may be ineffective and require adjustment Repair work may be required. 	 Centennial to conduct post mining inspection of property in consultation with the Landowner. Centennial to assist landowner with any SA NSW claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to conduct post mining inspections in consultation with Landowner. Centennial to assist landowner with any SA NSW claim for damage to property. Centennial to arrange any urgent repairs to improvements in consultation with Landowner. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner.
 subsidence (majority of subsidence developed when LW face is 800m past dwelling). Centennial to provide subsidence monitoring results to Landowner, RR and SA NSW. 	Development of subsidence and impact greater than expected	 Centennial to conduct post mining inspections in consultation with Landowner. Centennial to assist landowner with any SA NSW claim for damage to property. Centennial to arrange structural inspection to assess if the structure is safe, serviceable and repairable. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to review results and predictions as per Extraction Plan.

Monitoring and Controls	Trigger	Action	
Property Access Roads	Property Access Roads		
 Centennial to conduct flood modelling and assessment to identify potential changes to flooding as per DC Schedule 4 Condition 6(h). Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP. Centennial to arrange SA NSW premining inspection of property and improvements to detail pre-mining condition. Centennial to establish subsidence monitoring / inspection sites on property access if an increase in flood hazard is predicted. To be arranged in consultation with Landowner. Centennial to conduct post-mining surveys following the development of subsidence (majority of subsidence developed when LW is completed or LW face is 800m past feature). Centennial to provide pre and post mining subsidence monitoring results to Landowner, RR and SA NSW. CONTROLS Flood Modelling and Assessment LW30-31 (Umwelt 2020) determined that there was no predicted increase in flood hazard category on the access road at both the 1 year and 100 year ARI Storm Events. 	LEVEL 1 – LOW Operation within prediction and approved impact Development of subsidence and impact as expected. Subsidence within predicted range (U95% CL). Negligible visible impact on gravel access roads. Possible hairline cracking on sealed roads. No change to flood hazard category. LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence exceeding or potentially exceeding prediction (Upper 95% Confidence Limits). Minor cracking to gravel access roads, but remaining safe, serviceable and repairable. Tensile cracking or minor compression humps may develop on sealed roads. Repairs may be required to reseal pavement. No change to flood hazard category. LEVEL 3 – HIGH Operations exceed approved impact Development of subsidence and impact greater than predicted Tensile cracks and/or compression humps develop on access roads that need repairing to ensure public safety. Tensile cracks and/or compression humps develop on sealed roads. Repairs required, reshaping road, restoring drainage and resealing pavement.	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any SA NSW claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any SA NSW claim for damage to access road. Centennial to arrange prompt repairs to access roads to make safe and allow access to the property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with the Landowner. Centennial to arrange prompt temporary repairs to make road safe and allow access to property. Centennial to assist landowner with any SA NSW claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with the Landowner. Centennial to reassess flood hazard using actual subsidence data to determine if there is an increase in flood hazard at 1 year and 100 year ARI Storm Events. If flood modelling indicates an increase in flood hazard, Centennial to commence negotiations and carry out works as agreed by Landowner to provide suitable access to the property. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to review results and predictions as per Extraction Plan. 	

Monitoring	Trigger	Action
Farm Dams		
 Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP. Centennial to arrange pre-mining inspection of dam and drainage paths Centennial to arrange inspection of dam by a structural / civil engineer if considered necessary due to size, location or potential risk to property, occupants or public. Centennial to establish subsidence monitoring on dam and survey drainage paths if necessary (surface contours available LIDAR data). Centennial to conduct post-mining surveys following the development of subsidence (majority of subsidence developed when LW face is 800m past 	 Development of subsidence (U95% Confidence Limits) and impact as predicted. Tensile Strain < 4mm/m Not likely to impact dam seal. Drainage paths may need to be regraded. Possible minor reduction in dam capacity from tilting. LEVEL 2 - MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence exceeding or potentially exceeding prediction (Upper 95% Confidence Limits). Tensile Strain 4 mm/m to 10 mm/m. Possible minor leakage to dam structure, requiring resealing of dam 	 Centennial to conduct subsidence monitoring on dam and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs to dam and drainage paths in consultation with Landowner. Centennial to conduct subsidence monitoring on dam and provide results to the Landowner, RR and SA NSW. Centennial to assist landowner with any SA NSW claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs to dam and drainage paths in consultation with the Landowner. Centennial to provide alternate water supply if required.
(Upper 95% Confidence Limits).Substantial surface cracking greater t	Operations exceed approved impact • Development of subsidence or impact greater than expected	 Centennial to conduct subsidence monitoring on dam and provide results to the Landowner, RR and SA NSW. Centennial to arrange structural inspection by structural / civil engineer to provide assessment of the dam's integrity and safety if the size or the location of the dam causes a risk to the occupants, public or property. SA NSW to conduct post mining inspections and arrange any necessary repairs to dam and drainage paths in consultation with the Landowner. Centennial to provide alternate water supply. Centennial to review results and predictions as per Extraction Plan.

Monitoring and Controls	Trigger	Action
Creeks and watercourses		
 Centennial to conduct flood modelling and assessment to identify and potential changes to overland flow paths, channel alignments and remnant ponding. Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP. 	 LEVEL 1 – LOW Operation within prediction and approved impact Development of subsidence (Upper 95% Confidence Limits) and impact as predicted. Minor change to creek line gradients not affecting flows. Negligible change to channel alignment. Negligible change to existing ponding within creek channel. 	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner and RR. Centennial to assess subsidence impact against Flood Modelling Assessment LW30-33. Centennial to continue to monitor as per Water Management Plan LW30-31.
Centennial to monitor creek in accordance with the Water Management Plan - Extraction PlanLW30-31.	LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially exceed predictions	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner and RR. Centennial to monitor and investigate as per Water
Centennial to establish subsidence monitoring and observation points along creek line in consultation with landowner to assess subsidence, subsidence impact and grade changes to creek.	 Development of subsidence exceeding or potentially exceeding prediction (Upper 95% Confidence Limits). Vertical subsidence results are greater than predicted. Potential increase or decrease in ponding within channel. One or more areas of instabilities in watercourses. 	 Management Plan LW30-31. Centennial to assess subsidence impact against Flood Modelling Assessment LW30-33. Centennial to investigate and assess if remediation measures are necessary in consultation with geomorphic specialist and
Centennial to conduct six monthly flood path inspections along the creek line and report in the Flood Path Condition		Landowner. Report investigations, monitoring and any remediation measures in Annual Review.
 Centennial to conduct post-mining surveys following the development of subsidence (majority of subsidence developed when LW face is 800m past feature). Centennial to provide pre and post mining subsidence monitoring results to Landowner and RR. Centennial to provide monitoring results in the Annual Review. CONTROLS Flood Modelling and Assessment LW30-31 (Umwelt, 2020) determined there was no expected change in channel alignment or significant remnant ponding along Morans Creek and tributaries. 	 LEVEL 3 – HIGH Operations exceed approved impact Development of subsidence and impact greater than expected. Vertical subsidence results are greater than predicted (Upper 95% Confidence Limits). Change in creekline grades resulting in: Observable change in channel alignment. Observable erosion along creekline. Observable cracking on stream bed or banks. Increase or decrease in ponding above approved impact. Significant increase or decrease in ponding above approved impact. One or more areas of instabilities in watercourses causing sediment loads to migrate and impact riparian vegetation. Trend in declining biodiversity from mining related impacts. 	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner and RR. Centennial to monitor and investigate as per Water Management Plan LW30-31 and Extraction Plan. Centennial to investigate and assess possible remediation measures in consultation with geomorphic specialist, DPIE-Water and Landowner. Centennial to undertake remediation where it is determined the appropriate option in consultation with Landowner and DPIE-Water. Centennial to notify DPE as per S4 Condition 2 SSD-5144. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to report investigations, monitoring and any remediation measures in Annual Review. Centennial to review results and predictions as per Extraction Plan.

Monitoring and Controls	Trigger	Action	
Steep Slopes	Steep Slopes		
 Centennial to conduct pre mining steep slope inspection and assessment by Geotechnica Engineer. Centennial to conduct subsidence monitoring and inspections as per the Public Safety Management Plan and Subsidence Monitoring 	 LEVEL 1 – LOW Operation within prediction and approved impact Development of subsidence and impact as expected. Subsidence within predicted range (Upper 95% Confidence Limits). Negligible visible impact on gravel access roads. Negligible impact to steep slopes. Negligible indications down slope rock or bolder movements. No rock mass instability. Minor opening of rock joints that does not cause dislodgement of rocks. 	 Centennial to conduct weekly visual inspections of land when steep slope zones are located in active subsidence zone. Centennial to conduct post mining inspection and subsidence monitoring and provide results to the RR and Landowner. 	
 Centennial to conduct weekly visual inspections when steep slopes are within active subsidence zone. Centennial to provide pre and post mining subsidence monitoring results to RR and Landowners. 	 LEVEL 2 - MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence exceeding or potentially exceeding prediction (Upper 95% Confidence Limits). Cracking to gravel access roads, but remaining safe, serviceable and repairable. Cracking to surface not requiring major repairs or posing further risk to public safety. Opening of rock joints not likely to cause dislodgement of rocks. 	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the RR and Landowner. Centennial to inspect and erect warnings signs or barricades as per Public Safety Management Plan. Centennial to notify Landowner Centennial to arrange repairs to access roads or areas of potential rock instability in consultation with landowner. Centennial to notify Principal Subsidence Engineer of higher than expected subsidence. Centennial to arrange a Geotechnical Engineer to inspect any areas of suspected rock mass instability in consultation with Landowner. Centennial to review results and predictions as per Extraction Plan. 	
	LEVEL 3 – HIGH Operations exceed approved impact Development of subsidence and impact greater than expected. Surface cracking visible that may be dangerous to public safety. Opening of rock joints that may cause dislodgement of rocks. Rock fall and rollouts Overhang collapse Landslide Risks to public safety	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the RR and Landowner. Centennial to inspect and erect warnings signs or barricades as per Public Safety Management Plan. Centennial to notify Landowner. Centennial to notify Principal Subsidence Engineer of higher than expected subsidence and impact. Centennial to notify DPIE as per S4 Condition 2 SSD-5144. Centennial to arrange immediate repairs to dangerous surface cracking (eg backfilling) any necessary repairs in consultation with the Landowner and RR. Centennial to arrange a Geotechnical Engineer to inspect any areas of suspected rock mass instability. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10. Centennial to review results and predictions as per Extraction Plan. 	

Monitoring and Controls	Trigger	Action
Land Use Impacts		
 Centennial to conduct flood modelling and assessment to identify potential changes to flooding. Centennial to conduct property inventory and detail predicted impacts from subsidence in PSMP. Centennial to arrange Land and Agricultural Resource Assessment and detail predicted land impacts from subsidence in PSMP. Centennial to arrange SA NSW premining inspection of property and improvements to record pre-mining condition. Centennial to establish subsidence monitoring on property in consultation with Landowner. Centennial to conduct post-mining surveys following the development of 	Operation within prediction and approved impact Development of subsidence and impact as predicted. Vertical subsidence within predicted range (U95% CL). Negligible change to flood free agricultural land for stock storage or stock access. Negligible impact to agricultural productivity or use of the land or an enterprise. Negligible change to existing ponding or remnant ponding No or minor impact to buildings or improvements. Negligible increase in soil or tunnel erosion. LEVEL 2 – MEDIUM Operations within approved impact but exceed or potentially exceed predictions Development of subsidence exceeding or potentially exceeding prediction (Upper 95% Confidence Limits). Impact to landuse from subsidence or increased flooding or ponding within predicted or approved impacts Minor increase in ponding or changes to drainage systems that can be remediated. LEVEL 3 – HIGH Operations exceed approved impact	 Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner, RR and SA NSW. Review subsidence results and observed impacts against Land and Agricultural Resource Assessment and Land Management Plan. Centennial to assist landowner with any claim for damage to property. SA NSW to conduct post mining inspections and arrange any necessary repairs in consultation with Landowner. Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner, RR and SA NSW. Review subsidence results and observed impacts against Land and Agricultural Resource Assessment and Land Management Plan. Centennial to assist landowner with any claim for damage to property. SA NSW to conduct post mining inspections and arrange any
subsidence (majority of subsidence developed when LW is completed or LW face is 800m past feature). • Centennial to provide pre and post mining subsidence monitoring results to Landowner, RR and SA NSW.		 Centennial to ensure adequate water supply is available. Centennial to conduct post mining inspection and subsidence monitoring and provide results to the Landowner, RR and SA NSW. Review subsidence results and observed impacts against premining agricultural assessment and Land Management Plan. Centennial to commence negotiations with Landowner as per the Land Acquisition process (S5-Condition 3 & 4). Centennial to notify DPIE as per S4 Condition 2 SSD-5144. Centennial to notify external stakeholders including government agencies in accordance with Incident Reporting S6 Condition 10 (environmental impact). Centennial to review results and predictions as per Extraction Plan.