Friday 21st April 2023

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Department of Planning
Housing and Infrastructure

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 23/2747

Granted on the 11 April 2024

Signed D James

Sheet No 9 of 11

Dear Daniel, Anthony & Dr Jones,

RE: REQUEST FOR ADDITIONAL INFORMATION, DA 23/2747 – RECYCLED WATER, 213 KINGS CROSS ROAD, KIANDRA, SELWYN SNOW RESORT (LOT 36 DP 46316)

Please find attached the additional supporting information requested by *the Department of Planning, National Parks & Wildlife Service* and *Environmental Protection Agency* for Development Application DA23/2747 for the beneficial reuse of recycled water at *Selwyn Snow Resort*.

Please refer to the following attachments:

Attachment A – Additional information requested by DPE (31st March 2023)

Attachment B – Additional information requested by NPWS (31st March 2023).

Attachment C – Additional information requested by NSW EPA (4th April 2023).

As you are all aware, this DA is the final step required to ensure the successful reopening of the resort for the 2023 snow season. Our team stand ready to assist in any way to ensure the DA can be considered and approved in a timely manner.

Should you require clarification on any information provided or wish to discuss anything further, please don't hesitate to contact me.

Kind Regards,

Joshua Elliott

Chief Operating Officer

Selwyn Snow Resort Pty Ltd

Attachment A – Additional information requested by DPE (31st March 2023)

DPE comments		Response
ID	DA	
1	Provide a scaled plan with a surface flow catchment analysis that clearly identifies where surface water and/or snow melt enters the creek above the potable water intake. ○ Please also estimate the volumes and frequency of potable water pumping events during ski season.	Response by Advisian/Water Futures: The level of dilution of the highly treated recycled water within the broader drinking water catchment is sufficient that this can be considered a conventional drinking water supply situation. A minimum dilution level of between 8 (worst case that assume 10 days consecutive of peak storage), to 80 will be achieved in the quarry dam. This assumes that a 500kL reserve is included in Quarry Dam.
2	Provide an analysis of the relationship between the snowmaking operating season when compared to the Sewage Treatment Plan (STP) operating season. It is assumed that snowmaking conditions can end in late August while the STP would continue to operate into late October (i.e. after the closure for the resort). This difference will influence the concentrations of treated effluent within the quarry dam and the volume of storage necessary to get through to the end of the ski season.	Response by Selwyn: SSR's intention is to ensure that as much treated effluent is removed from the Quarry Dam as part of the snowmaking activities during the season. Any remaining water in the quarry would be discharged onto the slopes in a controlled manner at the end of the snow season. This would occur during the period of natural snow melt at the conclusion of the snow season, ensuring that additional dilution occurs prior to water entering any nearby watercourses. Outside of the winter operating period, SSR propose to hibernate the STP.
3	Provide a scaled plan, for a summer discharge scenario, showing the location of spread from all snow guns. It is assumed that the water would be spread further during summer. ○ How will the spread be impact by wind during discharge events? ○ Please provide more information in relation to the ability to isolate the snowmaking guns during summer.	Response by Selwyn: SSR's intention is to ensure that as much treated effluent is removed from the Quarry Dam as part of the snowmaking activities during the season. Any remaining water in the quarry would be discharged onto the slopes in a controlled manner at the end of the snow season. This would occur during the period of natural snow melt at the conclusion of the snow season, ensuring that additional dilution occurs prior to water entering any nearby watercourses.

	DPE comments	Response
		Outside of the winter operating period, SSR propose to hibernate the STP.
4	A number of key contingencies were included within DA 22/5248 which approved the installation of the STP. The Department considers that the following contingencies must be properly implemented prior to any water reuse: • Construction of the tanker parking area and turning area • Upgrading of the NPWS access track that services the STP • Compliance with the following conditions: ○ G1(a) the STP must have the necessary infrastructure to facilitate the tinkering away of treated and/or untreated effluent ○ G2 reversing into (or out of) the STP is not permitted. Forward entry and exit must be achievable ○ G3 the vehicle turning area must be provided prior to winter 2023 ○ G4 the NPWS services track must be upgraded prior to winter 2023 ○ G6 and G7 must be satisfied prior to accepting guests	Response by Selwyn: SSR discussed with the Department in October/November 2022 its intention not to construct the tanker turning area to the East of the STP, on the basis that: • It would be unnecessary with the implementation of a Recycled Water scheme, which would negate the need for daily tankers • That the STP could already be accessed by the Selwyn Service road to the South of the STP facility. This road is already cleared by SSR on a daily basis, to ensure clear access to the Resort Operations Centre and Ski Patrol facilities. The Selwyn Service road already includes a turning area to the west of the ROC that would facilitate the turning of a tanker if required. • That the cost to construct the tanker turning area was prohibitive (in excess of $500,000) and the outlay couldn't be justified. In all discussions with the Department, it has been supportive of the use of the Selwyn Service road for tanker access if required. At no point has the Department raised that it expected the STP tanker turning area to still be constructed. SSR has further re-iterated this in correspondence to the Department dated 24th February 2023, which clearly outlined our intention not to construct the tanker turning bay and provided the reasoning behind this. SSR can confirm the tanker parking area to the north of the STP has been constructed. Discussions with NPWS have confirmed that they do not require any upgrades to be undertaken to the NPWS access track prior to the 2023 snow season.
5	Monitoring plans and baseline data will be necessary to demonstrate the human health and environmental impacts are being appropriately managed during water reuse. It will be	Response by Advisian:

	DPE comments	Response
	necessary for Selwyn Snow Resort (SSR) to prepare both groundwater and soil monitoring plans. The plans should be prepared in consultation with NPWS. The Department also recommends that SSR seeks the necessary authorisations from NPWS to implement any infrastructure that is required to facilitate ongoing monitoring (e.g. monitoring wells).	The RWMP includes the environmental monitoring program. Over the next month prior to commissioning, the proposed environmental monitoring program can be refined and provided to the EPA for comment. It is also expected that the STP EPL will outline the required monitoring program. Response by SSR: In discussions with the EPA, it has been agreed that the existing monitoring wells can be utilised for the purposes of testing groundwater. SSR propose to undertake the required baseline testing of the soil, with a commitment to finalise and submit permanent monitoring plans within 90 days of the scheme commencing. As long as baseline data is established prior to the scheme commencing, there should be no reason why the monitoring plans can't be developed and refined over the 2023 snow season period.
6	The following additional items are required in relation to the quarry dam: • What is the minimum capacity of the dam based on the location and depth of pump intake? • How much treated effluent could remain in the dam after summer discharge occurs? • To avoid seepage out of the dam into the ground water the Department is considering the inclusion of a condition of consent that would require lining of the dam prior to winter 2024.	Response by Selwyn: As the Department is aware, SSR is required to keep a minim of approximately 600,000 litres of water in the Quarry for firefighting purposes. On the basis that SSR can 'flush' the quarry towards the end of the snow season, we envisage minimal quantities of treated effluent would remain in the dam. As has been communicated and advised previously, there is no requirement for a lining of the dam. Advision has also previously addressed this in the Dilution Study. Response by Advisian: There will be contingencies to ensure that unsuitable quality recycled water is not stored in the dam. Based on the anticipated quality in Quarry Dam it is not considered that there are risks for impacts on groundwater. Groundwater monitoring can be undertaken using the existing wells with addition of relevant parameters.

	DPE comments	Response
		For the reasons previously discussed, it is not considered necessary to line the dam to prevent leaching into groundwater.
7	Please provide water licencing and water metering details including: • Confirmation that the proposal (dilution of treated effluent) is allowable under the current water licence and that sufficient water volumes are available for the extent of dilution required. • What water metering either currently exists or is proposed at the Clear Creek pumps, at the STP and at the quarry (both intake and outtake)?	Response by Selwyn: There is nothing in any water licence that would prevent the dilution of treated effluent. SSR is confident that sufficient water volumes are available to support the extent of dilution required. Flow Metering will be in place to record quantities of treated effluent transferred from the STP to the Quarry.

Attachment B – Additional information requested by NPWS (31st March 2023).

NPWS comment		Response
Comment	Dilution Study	
8	Dilution in Clear Creek o Table 3.2 in the Dilution Study provides adopted interim water quality guidelines for Clear Creek. Given baseline monitoring data seems limited, do the values proposed take a suitably precautionary approach? o Is it appropriate that extraction volumes were not included in the dilution estimates? o Is the baseline monitoring data sufficient to draw the conclusion that there will be "no changes to receiving ambient waters beyond natural variability"?	Response by Advisian: There is not a suitable timeframe to collect a long-term baseline data to develop site specific guidelines and all reasonable attempts have been made to source data from the snowy hydro scheme project. In other projects, it is uncommon that the full 2-year baseline dataset is able to feasibly be collected and the approach of using interim guidelines is commonly adopted. The rationale of why extraction volumes are not included in the dilution estimates is considered in Section 4.4 of the Dilution Study report. The overall balance of water in the catchment over the season will not change as waters are extracted for snow making and then returned as snow melts. It would not be appropriate to subtract the extraction volumes from the creek flow as that assumes they are not returned to the creek. Extraction is not continuous and collected for short periods that are separate to when snow melts and as such this would not affect dilution. The conclusion that there will be no changes to ambient receiving waters is considered valid based on the assumptions that have been applied in the dilution assessment. However, as all modelling is theoretical based on assumptions about the real world it is recommended that a validation study is undertaken as part of the annual water quality report to reassess with actual data and in consideration of a longer-term baseline dataset (from the three-mile creek reference site).
9	Dilution factor in the Quarry Dam: o Has the proponent adequately addressed how the water in the Quarry Dam will be diluted in a "controlled manner"?	Response by Advisian: Please refer to the response to the EPA for Comment #25.

	NPWS comment	Response
	o Has the proponent demonstrated appropriate modelling of the detention time and dilution factor in the dam, including for when the dam may not be at capacity?	
10	Prior to discharge to the Quarry Dam: o Is there adequate storage for poor quality events and early season start-up to ensure that poor quality effluent will not be discharged into the quarry and then from there to the environment? o Alternatively, is there adequate monitoring and infrastructure to identify and remove poor quality effluent from the Quarry Dam, including during bad weather events, i.e., to ensure that poor quality effluent will not be discharged into the environment?	Response by Advisian: Please refer to the responses to the EPA for Comment #23 and #26.
11	Chlorine disinfection is proposed as one of the treatment barriers. Does the proposal adequately address the environmental risks from chlorine and chlorine by-products? We understand that other snowmaking schemes in Victoria that use recycled water test for chlorine by-products and endocrine disrupting chemicals annually.	Response by Advisian: In regard to the potential environmental risks from chlorine, please refer to response to Comment #19. In addition, the Dilution Study estimates that chlorine will be below the limit of detection and water quality guideline in the Quarry Dam for all scenarios. The snow making schemes in Victoria are much larger in comparison to what is being proposed for Selwyn Snow Resort. For example, 2ML per day in comparison to 25kL per day. Based on experience in this field, monitoring of Endocrine Disrupting Chemicals (EDCs) is not considered necessary given the small scale of the operation, the type of treatment processes and disinfection methods. The main anticipated EDCs present in influent would be derived from the sewage (natural and synthetic estrogens and androgens), of which the combination of MBR, UV and chlorine is highly effective at removing. Industrial EDCs (such as Bisphenol A from plastics, or alkylphenols from detergents) are more resistant to degradation.

	NPWS comment	Response
		Considering dilution that will be achieved in the Quarry Dam, no human health or ecological impacts are anticipated from disinfection by products or EDCs.
12	Does the Dilution Study adequately assess the potential impacts on the recycling program of weather and rainfall patterns (including annual variability) that may occur while use of recycled water is occurring: (1) for snowmaking throughout the snow season; and (2) for land application outside of the snow season? Is there sufficient validation that the longest period without snowmaking during peak demand would be 10 days (for temperature, mechanical or other reasons)? Is there sufficient information to assess the dilution factor if snowmaking occurs while there is no natural snow on the ground?	Response by Advisian: As the Dilution Study considers that the dilution within Quarry Dam meets the ANZG guidelines (except for nitrogen and phosphorous which already exceed in ambient baseline water quality), then no impacts are expected for land application *regardless* of the dilution that occurs on the snow field. As such, it would be appropriate for application where there is no natural snow, or when there is variability in rain/snowfall. The dilution within the Quarry Dam will be undertaken in a controlled manner and the dilution study has considered the book end of scenarios from best to worst case. The scenarios of 10 days during peak usage with no snow making is representative of school holiday period but is considered worst case. Please refer to the responses to the EPA for Comment #23 and #26.
13	Is there a reasonable possibility that groundwater quality and quantity could be impacted beyond what the dilution study has considered? For example, through leaching from the Quarry Dam storage or as a result of land application.	Response by Advisian: There will be contingencies to ensure that unsuitable quality recycled water is not stored in the dam. Based on the anticipated quality in Quarry Dam it is not considered that there are risks for impacts on groundwater. Groundwater monitoring can be undertaken using the existing wells with addition of relevant parameters. For the reasons previously discussed, it is not considered necessary to line the dam to prevent leaching into groundwater.
14	Australian Guidelines for Water Recycling: Phase 1 (NHMRC 2006) do not seem to offer detailed guidance for where the recycled water is being discharged onto and into environmentally sensitive areas. Has the proponent adequately addressed where deficiencies in these guidelines may exist?	Response by Advisian: The Australian Guidelines for Water Recycling Phase 1 do factor in how to assess environmental impacts for sensitive environment receptors including water bodies and sensitive plants (sodium, chloride, boron, phosphorous). These will be included

	NPWS comment	Response
		in future monitoring program. As a conservative approach the most sensitive thresholds were applied in the Dilution Study and environmental risk assessment. Additional controls have been built into the RWMP and risk assessment to account for the sensitive nature of the environment. The process of mixing within the Quarry Dam rather than directly applying the recycled water as snow, provides a controlled process to be able to meet water quality guidelines within the dam prior to its application, following which there will be additional dilution and degradation over land.
15	Is the proposed monthly monitoring of surface waters and the Quarry Dam during discharge (equating to three monitoring events per year) adequate to both prevent and monitor environmental impacts?	Response by Advisian: This is considered adequate based on the size of the scheme, and it is also noted that the frequency of environmental monitoring will be determined on the EPA license.
16	What are the risks of collecting data for site specific guidelines while effluent reuse is already occurring?	Response by Advisian: This is considered appropriate given that reference data will continue to be collected from Three Mile Creek as a reference site which is outside of the catchment area of recycled water application. Water quality data from Clear Creek that is collected while effluent reuse is occurring should not be used to derive site specific guidelines.
	RWMP	
17	Should the Australian Guidelines for Water Recycling: Augmentation of Drinking Water Supplies (Phase 2) apply given that the recycled effluent will melt/flow into the Clear Creek catchment above the potable water intake? We note that in the Victorian schemes where recycled effluent is used for snowmaking that the resort potable water intake is located in a separate catchment that is unaffected by the snowmaking scheme.	Response by Advisian/Water Futures: The level of dilution of the highly treated recycled water within the broader drinking water catchment is sufficient that this can be considered a conventional drinking water supply situation. A minimum dilution level of between 8 (worst case that assume 10 days consecutive of peak storage), to 80 will be achieved in the quarry dam. This assumes that a 500kL reserve is included in Quarry Dam.

	NPWS comment	Response
18	Is the plant capable of meeting the target criteria outlined in table 4-1, including during the start-up phase each season? We note at Mt Hotham several years of monitoring data was collected to validate the performance of the plant before the recycled effluent scheme was implemented.	Response by Advisian/Water Futures: The treatment plant has been designed to meet the target criteria outlined in Table 4-1. If the treatment plant cannot meet its critical limits, (or if the monitoring systems do not demonstrate that the plant is doing so due to process monitoring problems), then recycled water will not be supplied and product water will be diverted to off-specification. Response by SSR: It is important to note that the Mt Hotham Wastewater Treatment Plant was an existing plant that was then retrofitted to enable beneficial reuse of recycled water. The Selwyn WWTP has been specifically designed and constructed to meet these guidelines from Day 1 of its operation.
19	Should there be a Critical Control Point at the Quarry Dam before discharge into the environment for a maximum concentration of chlorine?	Response by Water Futures: Chlorination is a 'critical control point' (CCP) 4. Chlorination is required to control pathogens, and achievement of the lower bound chlorine concentration critical limit cannot be compromised. It is acknowledged that dosing excessive chlorine could have environmental impacts in the Quarry Dam or at other recycled water discharge locations. There is no driver, incentive or purpose to overdose chlorine. Therefore, the risk of environmental impacts from excessive chlorine is low, not necessitating special consideration. However, to provide confidence that chlorine will not be dosed excessively into the Quarry Dam a target criterion of < 5 mg/L has been added to Table 4-1. This value of 5 mg/L is consistent with that used in chlorination plants supply drinking water based on possible health impacts arising from direct consumption by drinking water consumers and is aligned to the QAP for drinking water noting that the potable water supply can also feed the Quarry Dam.
20	Given that the level of nutrients (N, P, NH4 and TSS) can be altered by environmental influences, should there also be monitoring for these parameters in the Quarry Dam? (Table 5.1)	Response by Advisian:

	NPWS comment	Response
		Monitoring of physical quality, nutrients, pathogens, chlorine and chlorophyll-a (as surrogate for algae) are already included in the Quarry Dam as part of the environmental monitoring program that is outlined in Table 9-2.
21	What signage and visitor communication to the effect that 'recycled water is in use' on the ski slopes would ordinarily be expected for such a scheme?	Response by Water Futures: Recycled water is commonly used on publicly accessible sites, such as sporting facilities and golf courses. The signage is required to meet the relevant Australian Standards for size and clarity and the Plumbing Code of Australia for its content. There is no firm position on how many signs are required and at what location. Response by SSR: The test for adequacy of the overall package of signage and visitor communication is that it is sufficient to ensure awareness. We propose to implement an information campaign through our website and printed materials that promotes the environmentally friendly benefits of beneficially reusing recycled water. In addition, recycled water would be mentioned as part of site orientation, induction, or briefings, as supplied or provided to visitors.

Attachment C – Additional information requested by NSW EPA (4th April 2023).

ID	NSW EPA Comment	Response
22	Action: The EPA requires the Proponent to review and update the interim guidelines applied in the dilution study noting the following: 1. Consistent with ANZG (2018), the high conservation value objective of no change from natural variation applies for all physical chemical parameters including (but not limited to) dissolved oxygen, conductivity, salinity, and turbidity. 2. Where data is also assessed against the ANZECC (2000) default guideline values, dissolved oxygen (mg/L) has been incorrectly assessed against the %saturation guideline, and no guideline has been identified for conductivity. 3. Several toxicants have no guideline value applied when there is an ANZG (2018) guideline available (e.g. chromium and manganese) 4. Where no moderate or high reliability guideline is available for toxicants, the ANZECC (2000) low reliability trigger values or ANZG (2018) draft Default Guideline Values should be applied.	Response by Advisian: 1. The objective of no change from natural variation has been expanded for all physical chemical parameters. 2. There is no ANZECC 2000 guideline for dissolved oxygen in mg/L only %saturation which is correctly listed. The baseline monitoring was undertaken in units of mg/L so has not been compared to the water quality guideline. Dissolved oxygen should be recorded in %saturation for future monitoring to allow for comparison to the guideline. The ANZECC 2000 guideline for conductivity of 30-350 µS/cm for upland rivers in NSW has been included. 3. Guideline values for chromium, manganese and mercury have been included in the table. 4. This has been undertaken.
23	Action: Appropriate validation of the dilution study will be required once discharges commence. This validation program will require an increased sampling frequency until a more comprehensive dataset of the water quality variability during operation has been collected.	Response by Advisian: We agree that a Modelling Validation Study should be undertaken once operational, and this is proposed in the Dilution Study. The validation will be important to demonstrate that the modelling was appropriate based on actual data, but also to obtain a longer-term baseline dataset. It is proposed that this is undertaken as part of the first and second annual water quality reports. It is assumed that this would be a requirement in the EPL. A methodology can be provided to the EPA prior to undertaking this validation study.
24	Action: The Proponent is required to provide: 1. A water balance for a range of scenarios that demonstrates:	Response by Advisian: **Discharge Scenarios**

ID	NSW EPA Comment	Response
	o all reasonable and practicable measures to avoid uncontrolled overflows from the Quarry Dam in the event of poor water quality and extended periods of no snow application, or higher than normal rainfall and snow. o the modelled dilution study scenarios are appropriate 2. Further information on the dilution control and monitoring process and the anticipated further reduction of pollutants due to detention time, snowmaking processes and over-land travel. 3. Consideration of pollutant loads and the downstream eutrophication risk	The discharge scenarios were designed to book end between the minimum and maximum dilution range that would feasibly occur. Additional conservatism is built into the worst-case scenario to ensure that impacts do not occur. Scenario 1 – is the best-case scenario which assumes 1 day of recycled water storage that would be diluted with 1975kL prior to application as snow making. Scenario 3 – is the worst-case scenario as this assumes peak visitation for 10 days consecutive days with no snow making which would be representative of school holidays during winter. Based on historical visitation, the peak visitation has only previously occurred for several days during a snow season with these peak days being during the school holidays or on weekends. However, this is extrapolated to 10 days being representative of school holiday period. Unlike other snow fields in NSW, Selwyn does not receive sufficient natural snowfall that there would be 10 consecutive days where no snowmaking is needed. However, this is considered as a 'worst case' scenario. Regarding the potential for 'uncontrolled overflows from Quarry Dam', the dam does not have a catchment so will not receive wet weather infiltration apart from the rain that falls into the actual dam surface area. Based on the area of the dam and assuming an extreme rain event of 100 mm this could result in additional 200kL increase. **Receiving Environment** All scenarios were based on minimum dilution in Clear Creek at site 2 which is upstream of the water extraction point. Noting that the dilution capacity is approximately double at site 6. The snow melt would runoff and entry into Clear Creek will be between site 2 and site 6 based on where the snow will be applied. **Dilution in the Quarry Dam & potential accumulation of pollutants within Quarry Dam**

ID	NSW EPA Comment	Response
		Regarding the EPA comments on the dilution assessment, this has been redone to account for: • A 500 kL 'reserve storage' capacity in case that snowmaking cannot occur or to account for increases in water dam level associated with extreme rainfall events. • The assessment previously only considered concentrations associated with the dilution of the recycled waters, and not by mixing with the extracted waters from Clear Creek. This has been recalculated to account for the final concentration considering mixing and the various scenarios with different recycled water contributions. This approach means that concentrations can also be estimated for parameters that were measured in the water quality monitoring program. • As identified in the Dilution Study and in comments by EPA, total nitrogen and total phosphorous concentrations in Clear Creek baseline program exceed the default water quality guidelines. On this basis it is acknowledged that it will be important to develop site specific water quality guidelines from the three-mile creek reference location. And in addition, any exceedances will need to be considered regarding the reference location concentrations. • A reduction factor of 20% losses overland has been included (i.e. all values were multiplied by 0.8). The reduction of parameters over land was not previously considered as this is complex to predict given it's a function of many factors including at minimum the soil storage capacity, interactions with physical chemistry, vegetation, temperature and time. All of which would vary between parameters. • The EPA has noted "The Quarry Dam will be diluted with 'potable water' extracted from Clear Creek; however the dilution study does not appear to have accounted for pollutants already present within Clear Creek or subsequent accumulation of pollutants within the Quarry Dam, noting that

ID	NSW EPA Comment	Response
		a maximum of 25kL per day can be applied as snow." Note that the 25kL per day is the maximum recycled water volumes based on STP production in peak visitation (2000 pple), the majority of the capacity of the Quarry Dam (i.e. 2000 kL) would be drained and used for snow on snowmaking days. **Potential impacts on Tumut Pond** At the eastern side of Selwyn Snow Resort, Clear Creek becomes much steeper and faster flowing. This part of the creek was not accessible during fieldwork due to the steep terrain. Using aerial imagery (Nearmap), it can be seen after leaving Selwyn Snow Resort, Clear Creek immediately converges with another four channels and becomes significantly wider with higher flows (based on pers. communication with Selwyn workers). It can be seen that the creek meanders and flows the valley between mountains with inflowing multiple large channels (>10) merging into the creek, which continues for 8 km before reaching Tumut Pond. No impacts to water quality in Tumut Pond would occur on the basis: • The fact that the estimated quality is met prior to drainage into Clear Creek assuming minimum dilution. • In consideration of the high recycled water quality that will be achieved using the modern STP. • The small volumes of recycled water that will be applied and the nature/scale of the operation. • Recycled water will enter Clear Creek when snow melts.
25	Water quality concentrations used in the dilution study are based on the 90%ile values provided by NSW EPA and using average concentrations from the National Health and Medical Research Council (NHMRC 2006). The 90%ile values were provided as a guide only, and any licence limits will be based on site specific	Response by Advisian: Justification for the reasons on why pollutants are likely to be lower include: • The STP for Selwyn was designed to reliably be below the 90% license limits that were provided by the NSW EPA. This included the selection of the

ID	NSW EPA Comment	Response
	assessment and in consideration of the receiving environment. The NHMRC study is now over 17 years old and was based on a limited dataset that no longer represents modern STP performance. The Proponent has identified that the estimated effluent quality is conservative, and the actual concentrations are likely to be lower than the specified limits and should not result in changes to ambient water quality beyond natural variability. Justification for this has not been provided. Action: The Proponent should provide justification on why pollutant concentrations are likely to be lower than the specified limits.	process train and equipment for a membrane bioreactor plant including the biological treatment, filtration, UV disinfection and chlorine disinfection for a specified 40 kL per day (peak). The STP is designed to be below these upper limits as per the Demem Akwa STP design report. We modelled the license limits in the absence of having actual data. • It is acknowledged that the NHMRC 2006 review of recycled water quality is based on outdated dataset potentially not representative of modern STP performance that will be used at Selwyn. We undertook a literature review for representative recycled water quality data for MBR plants and could not locate newer data or specific for MBR plants. This type of data is not typically publicly available.
	RWMP	
26	Action: The Proponent should provide further information on appropriate contingencies during commissioning phase and the 'ramp-up' phase each season if effluent quality does not meet the required standard. Information on the appropriate validation sampling that will be undertaken during the commissioning phase and prior to discharge of effluent to the Quarry Dam needs to be provided.	Response by Water Futures: Wastewater not meeting a specification suitable for either environmental discharge or recycling would need to be carted off site. For the control of pathogens, the selected treatment process relies largely on simple engineered barriers that don't need a significant commissioning or ramp up phase. Dependence is not placed on the maturity of the biological process to achieve sufficient pathogen reduction. Therefore, it is expected that the treatment process will be able to meet its pathogen control objectives from the point of beginning commissioning. Note that the pathogens are controlled via critical control points that are monitored continually against their performance specifications. Response by Advisian: Mature biological material is being imported to avoid the variable start up process. The treatment process includes heating elements to ensure that optimal biological activity is supported. Validation will be undertaken at the STP via continuous online

ID	NSW EPA Comment	Response
		monitoring of a suite of parameters (turbidity, pH, chlorine, UV performance) and will not release effluent for recycled water into the tank unless these requirements of online monitoring are met. In the circumstances that this occurs, and the wastewater cannot be treated to appropriate quality it would need to be carted offsite during start-up or any other time during the operation. Additional monitoring of turbidity, pH and chlorine can be undertaken on a daily within the recycled water tank and quarry dam during the commissioning phase.
27	Action: The Proponent should review the frequency of the verification monitoring in the recycled water tank and within the Quarry Dam to ensure sufficient time to respond to deviations in effluent quality. Indicative testing should be undertaken daily during the operation of the STP to assist operational decisions.	Response by Advisian: Online monitoring of turbidity, free chlorine residual, flow rate, UV and pH with automated controls will be used to stop the supply of recycled water should any exceedances arise within the process train. Apart from chlorine, pH and turbidity, the parameters within the verification monitoring program of the recycled water tank and Quarry Dam require NATA laboratory analysis which would not be suitable to undertake at a daily frequency. The laboratory will provide an SMS and email alert to the SSR representative within an agreed timeframe if an exceedance is reported (within one hour for exceedances related to microbial risk and process control (*E. coli*, free and total chlorine, pH and turbidity) and within 24 hours for other exceedances).
28	The applicant has not undertaken a soil assessment to determine the soils capacity to assimilate the increased nutrient and salt loads and the proposed soil testing program is unclear. The applicant has proposed 'an annual soil testing program and assessment to assess the potential long-term effect of recycled water on soils within the distribution area, including the cumulative thresholds for salinity in soils for the protection of Australian Native Species. Assessment of cumulated impacts on salinity, nitrates and phosphorous rely on testing soil extracts during operation and comparing to baseline thresholds.'	Response by Advisian: Selwyn will undertake a baseline soil sampling event will be undertaken in May 2023 prior to the operation of the STP and the recycled water application. Groundwater monitoring can be undertaken using the existing wells with addition of relevant parameters. The RWMP includes the environmental monitoring program. Over the next month prior to commissioning, the proposed environmental monitoring program can be refined and provided to the EPA for comment. In the interim, it is noted that the

ID	NSW EPA Comment	Response
	Action: Prior to commencement of the reuse options an appropriate soil monitoring program needs to be developed, including baseline sampling. A literature review may be required to demonstrate the salt and nutrient assimilation capacity for Australian alpine environments.	most sensitive salinity and nutrients tolerances have been adopted in the environmental risk assessment but noting that some of the measures do require soil testing. Response by SSR: In a subsequent discussion with the EPA, it was agreed that the existing monitoring wells can be utilised for the purposes of testing groundwater. SSR propose to undertake the required baseline testing of the soil, with a commitment to finalise and submit permanent monitoring plans within 90 days of the scheme commencing. As long as baseline data is established prior to the scheme commencing, there should be no reason why the monitoring plans can't be developed and refined over the 2023 snow season period.
	Contingencies	
29	Action: The Proponent must demonstrate a commitment to robust contingency measures for a wide range of scenarios that may occur during the operation of reuse options. This may include, but need not be limited to contingency storage tanks, additional treatment through the STP or offsite tankering for disposal at a lawful facility in the event of poor water quality or if snow making cannot occur.	Response by Advisian: The robust contingency measures for a wide range of scenarios that may occur are considered as part of the RWMP and risk assessments. The STP is designed to have online monitoring of key indicators of turbidity, chlorine and UV performance and would not release recycled water to the holding tank if any of these parameters do not meet target performance. Additional contingency measures include the contingency storage tank at the STP, recirculation back through STP is quality is not sufficient and pump out to tanker offsite to a licensed facility if required. The additional step of storage and dilution in the Quarry Dam (shandying) is another additional measure taken to protect the sensitive ecosystem. Refer to the RWMP and Risk Assessment. Response by SSR: SSR is committed to ensuring robust contingency measures are in place. These include but are not limited to:

ID	NSW EPA Comment	Response
		• Increasing the size of the Balance Tanks at the start of the STP system to facilitate multiple days of storage • Construction of a tanker pull in bay to the North of the STP facility, to enable offsite tankering • Ensuring that a tanker can also access the STP facility via the Selwyn Access Road to the South of the STP. This road is cleared by SSR on a daily basis and will ensure that year-round access is always available to the STP in the event that pump out is required. • STP has been designed to re-circulate effluent back through the system in the event it does not meet the required parameters to support being transferred to the Quarry
	Off Season Effluent Management	
30	Action: The Proponent needs to provide further information on how the Quarry Dam and treated effluent will be managed through the off-season.	Response by Selwyn: SSR's intention is to ensure that as much treated effluent is removed from the Quarry Dam as part of the snowmaking activities during the season. Any remaining water in the quarry would be discharged onto the slopes in a controlled manner at the end of the snow season. This would occur during the period of natural snow melt at the conclusion of the snow season, ensuring that additional dilution occurs prior to water entering any nearby watercourses. Outside of the winter operating period, SSR propose to hibernate the STP.