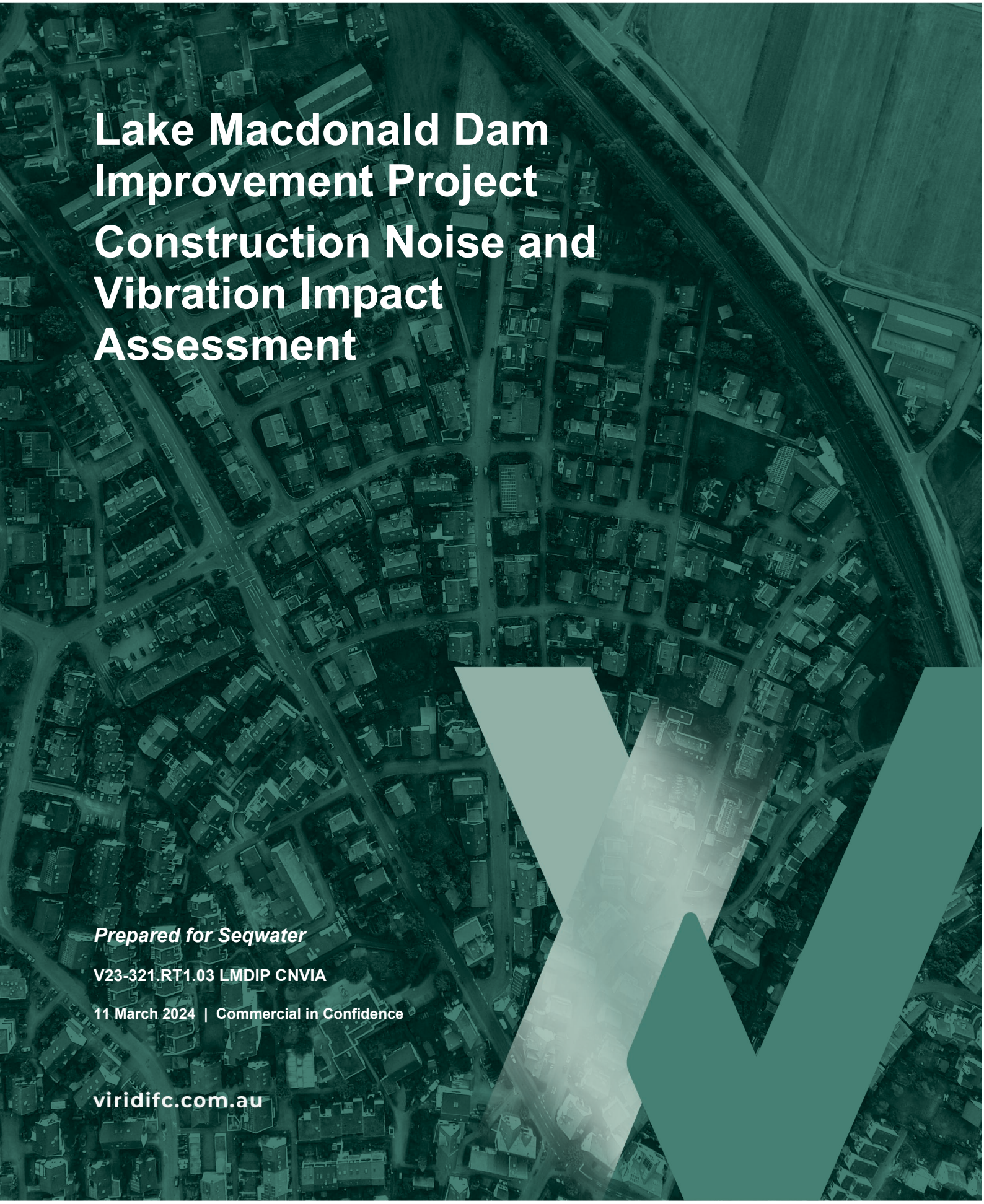
ViridIFC

Lake Macdonald Dam Improvement Project Construction Noise and Vibration Impact Assessment



Prepared for Seqwater

V23-321.RT1.03 LMDIP CNVIA

11 March 2024 | Commercial in Confidence

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Address

Project Site Address:

Lake Macdonald, Noosa Shire QLD

Virid IFC Address:

L1 38 Fisher Street, East Brisbane, QLD 4169

Project Commencement Date:

3 October 2023

Virid IFC ABN:

32 630 644 423

Document Information

Document No.	
Project Name	Lake Macdonald Dam Improvement Project CNVIA
Client Name	Seqwater
Project Manager	Robert Grant

Revisions and Authorisation

Document Version

Version	Date	Revision Description
01	20/12/2023	Draft
02	19/02/2024	Final
03	11/03/2024	Final – updated construction methodology

Document Authorisation

Role	Name	Position	Signature	Date Signed
Author	Robert Grant	Senior Acoustic Engineer (RPEQ 12407)		11/03/2024
Reviewer	Chloe Maher	Compliance Advisor		11/03/2024

Terms and abbreviations

Abbreviation	Definition of term
A-weighting	A standard electronic weighting network within a sound level meter, designed to approximate the loudness response of the average human ear to sounds of different frequencies at moderate sound pressure levels.
Ambient noise level	The totally encompassing sound in a given situation at a given time, composed of sound from all sources near and far, measured by the totally encompassing time average A-weighted sound pressure level in a given situation at a given time.
dB / dB(A)	Decibel / A-weighted decibel. A frequency-weighted noise unit that corresponds to the A-weighted response of the human ear and generally correlates with loudness.
Facade affected	A monitoring location which is influenced by facade reflections. Measurements at facades are typically taken at a distance of 1 m away and the measured noise level taken as +2.5 dB higher than 'free field'.
Free field	A monitoring location where the microphone is positioned sufficiently far from nearby surfaces for the measured data to not be influenced by reflected noise.
L_{A90}, L_{A10}, etc.	Statistical exceedance levels, where L_N is the sound pressure level exceeded for N% of a given measurement period.
L_{AE} (or SEL)	Sound Exposure Level. This is the constant sound pressure level that has the same amount of energy in one second as the original noise event.
$L_{Aeq,T}$	The A-weighted equivalent noise level over a time interval (T). It is defined as the steady sound pressure level that contains the same amount of acoustical energy as the corresponding time-varying sound.
$L_{Amax,T}$	The A' weighted maximum sound pressure level of an event over a time interval (T).
Low frequency	Noise containing energy in the low frequency range from 20 Hz to 200 Hz: A unit of frequency equal to one cycle per second.
L_P (or SPL)	Sound Pressure Level
L_W (or SWL)	Sound Power Level
Noise logger	A self-contained, battery powered item of equipment that is used to measure noise levels over several days.
Noise reduction	The difference in sound pressure level between any two areas or building envelope, wall, enclosure or other partition.
NR noise rating	Single number evaluation of the noise level at a location. The noise rating of a given noise is found by plotting the sound pressure levels versus octave-band spectrum on the same diagram and selecting the highest noise rating curve to which the spectrum is tangent. The NR is typically around 5 to 6 dB below the A-weighted noise level.
Octave-band	A frequency band where the highest frequency is twice the lowest frequency.
Offensive noise	Noise that is considered harmful or which interferes unreasonably with affected receptors.
Rating background level (RBL)	The overall single-figure background level representing each assessment period (for example, Standard hours, Non-Standard hours, etc.). RBLs are derived from the noise monitoring results and correspond to the median of the 90th percentile of the background (L_{A90}) noise levels for each daytime, evening and night period. The recommended RBLs for each of the noise sensitive receptors are based on the dominant land use of each site.
R_W	Weighted Sound Reduction Index of a building element. That is, the laboratory tested (or theoretically calculated) sound insulation performance of a single element.
Sound insulation	A reference to the degree of acoustical separation between any two areas or building elements.

Abbreviation	Definition of term
Steady state noise	Noise which remains relatively constant in level over time, as opposed to time-varying noise which fluctuates over time.
Time weighting	Sound level meters can be set to 'fast' response, 'slow' response, 'impulse', and 'peak hold'. 'Fast' corresponds to a 125 ms time constant and 'Slow' corresponds to a 1 second time constant.
Sound transmission loss or sound reduction index	The result of a test which determines the sound transmission properties of a wall, floor or roof construction.
Habitable Rooms	According to the "Building Code of Australia" a Habitable Room is: " a room used for normal domestic activities and includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre, and sunroom, but excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods."
Peak particle velocity (PPV)	PPV is a measurement of maximum velocity of ground particle movement specified in millimetres per second (mm/sec). This quantity is measured in all three perpendicular directions ("axes") of the seismograph's "geophones". PPV is a "vector" quantity (i.e. it has both a value and an associated direction).
Sensitive receptors	Noise and vibration sensitive receptors are locations/areas where there is a potential for human perception or structural damage from the proposed works.
Utility material types	PVC polyvinyl chloride PVC-U unplasticized polyvinyl chloride PE polyethylene S mild steel LS lined steel AC asbestos concrete RC reinforced concrete DICL ductile iron cement lined pipes VC vitrified clay CP concrete pipe
Geotechnical terms	SPT N-Value standard penetration test S*u* undrained shear strength E*u* soil modulus *v* Poisson's ratio *c'* effective cohesion
T	tonne
Ute	1T light truck

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1 Executive Summary

Virid IFC Pty Ltd (Virid) was commissioned by Seqwater to undertake a construction noise and vibration impact assessment (CNVIA) for the Lake Macdonald Dam Improvement Project (LMDIP) project.

With major changes to the LMDIP construction methodology, the original noise assessment completed by SLR in 2019 was no longer fit for purpose and a new assessment was needed. This assessment, was initially completed in December 2023 and reflects the construction methods currently proposed. In February 2024 further refinement in the modelling was made after discussions with the proposed construction contractor and Seqwater regarding specific machinery and task planning. The changes in noise modelling assumptions between the original 2019 assessment, 2023 and this assessment are summarised in Table 1:

Table 1: Major changes in noise model from 2019 to 2024

SLR Model 2019	Virid IFC 2023	Virid IFC 2024
Dam demolition noise level (120dB)	Same as 2019	Spillway noise (95dB)
		dam crest (120dB) over a shorter period and smaller area
Locations of concrete batch plant and stockpile areas	relocated	same as 2023
Low level (~RL89) cofferdam noise level 135dB only	small cofferdam same	small cofferdam same
	New large coffer dam at RL 93(135dB)	Vibration sheet piling (95dB)
		Impact sheet piling (if required) (108dB) over a shorter period
		Time-of-day of key piling activities examined
water level of dam 89.5m	93m	93m

The noise impacts from the proposed LMDIP construction work activities, were assessed against the Environmental Protection (Noise) Policy dated 2019 (EPP(Noise)) acoustic objectives.

Noise and vibration modelling was conducted to predict the external noise and vibration levels at each receptor for all the main works. The work activities have been separated into six (6) construction scenarios that account for different work activities occurring at the same time, and the loudest work activities separated to allow for specific mitigation controls. The predicted levels were then compared with the relevant criteria for each receptor. The predicted construction noise levels are intended to be conservative and represent a worst-case noise level where the equipment within the nominated work activity is operating simultaneously.

Construction vibration limits set human comfort during standard and non-standard hour periods are not predicted to be exceeded with sheet piling work activities. The vibration limits for all building structures and Public Utility Plant (PUP) are also not predicted to exceed their respective vibration limits due to sheet piling vibration.

Construction noise limits are predicted to be exceeded at approximately 7 residential properties during daytime sheet piling works and 45 residents during nighttime works, with the loudest work activities planned to be working as follows:

- Dam wall demolition
  - existing dam wall crest demolition - operating 24 hours a day over a smaller area and for a shorter duration
    - Use of excavator with hydraulic hammer attachment and concrete saws
  - spillway removal operating 24 hours a day at a reduced noise level
    - cranes and trucks mainly with excavator with hydraulic hammer (if required)
- Sheet piling works
  - vibration piling 7am to 6pm at up to 15min each. 10m height to a height 2.5m above water level
    - crane with vibrating attachment Vibrodriver 30HV
  - impact piling 7 am to 6pm - 12 piles per day at 15min each. 2.5m height to 0.5m above water level. This activity is only required if vibration piling doesn't get the sheet to the required depth
    - crane with impact attachment Hydrohammer S-40
  - trucks unloading rockfill into cofferdam between 6pm to 10pm

The two most significant construction noise activities are the sheet piling during the cofferdam construction (3 months), and the use of hydraulic hammers in the existing dam spillway demolition works (6 weeks). Reducing the noise to the night-time criteria may not be possible in all instances with recommended noise mitigation measures including a temporary 2m noise barrier detailed in Section 9.3.1.

The study shows that sensitive receivers have the potential to be impacted by noise from the construction activities for this project. Sequencing of activities of concern has been able to significantly mitigate impacts by largely containing impact to daylight hours and providing respite in between periods of noisy activity.

Regardless of the above mitigations, it is recommended that adjacent land users be engaged with and provided with an outline of the works being undertaken and working hours which the LMDIP will operate. Communication is the best avenue to address potential concerns and ensure a proactive stance on mitigating adverse complaints.

The development of construction noise and vibration management plans is recommended to help manage both construction noise and vibration impacts on the community throughout the proposed construction works.

2 Introduction

2.1 Project overview

Lake Macdonald is located in the Noosa Shire, about four kilometres northeast of the township of Cooroy. It is an important drinking water source in the South East Queensland Water Grid and one of two main water sources supplying drinking water to the Sunshine Coast and Noosa regions. The Lake Macdonald Dam Improvement Project (LMDIP) aims to bring the dam in line with the latest engineering standards and dam safety guidelines and will be the first major upgrade since the dam walls were raised in 1980.

The dam's full supply level and water impoundment footprint will not change as part of the LMDIP and the dam infrastructure (spillway and embankments) will largely occupy the existing footprint. The existing operation of the dam will effectively be reinstated once the LMDIP is complete.

As a part of the Seqwater Dam Improvement Program, Lake Macdonald Dam has undergone various options assessments since 2013 to develop an upgrade design that addresses unacceptable levels of risk related to piping, liquefaction and overtopping. The LMDIP is replacing the existing spillway with a concrete labyrinth spillway supported on concrete monoliths and upgrade the existing earth-fill embankments to address potential piping and stability failure modes.

To enable construction whilst maintaining water in the storage, a temporary cofferdam will be constructed incorporating a 150m long crest at RL93.5m AHD and spillway at 93m AHD. Once complete, a section of the existing dam will be lowered to 89.5m AHD. When this occurs, the main body of the dam will be retained by the temporary cofferdam.

Figure 1 provides the location and extents of the upgrades to the Lake Macdonald Dam Improvement Project.

2.2 Limitations

The limitations of this report are as follows:

- Publicly available data/design information provided by the Queensland Government, Geoscience Australia and PSMA Australia Ltd were used as inputs developed for this assessment. Various assumptions were made, and these are provided as part of the assessment methodology.
- The assessment is limited to noise sensitive buildings and areas within 350 m of the upgrade works.

This assessment was based on best practice methodologies at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this document. Where this document indicates that information has been provided by third parties, no independent verification of this information has been completed except as stated. No liability is assumed for any inaccuracies in, or omissions to, that information. Furthermore, this assessment should be read in its entirety. No responsibility is accepted for use of any part of this document in any other context or for any other purpose or by third parties.

Figure 1 - Lake Macdonald site area and proposed LMDIP

3 Definition of noise

Noise is defined as unwanted sound transmitted through air or another medium. Sound is defined as any pressure variation (in air, water or some other medium) that human ears can detect. Noise is complex and it is difficult to determine its impact. Human response to noise, as with any human response to environmental factors, is highly variable. For this reason, it is difficult to predict the response of any individual. A person's perception of noise is subjective not objective. Quite legitimately, a person's perception can be psychologically affected. At high noise exposures, there may be individuals who are not annoyed. Alternatively, at low noise exposures, there may be some individuals who are highly annoyed.

To ensure measured levels approximate human response, a weighting scale known as the 'A' scale is used. The 'A' weighting scale interprets sounds in a similar manner to human ears.

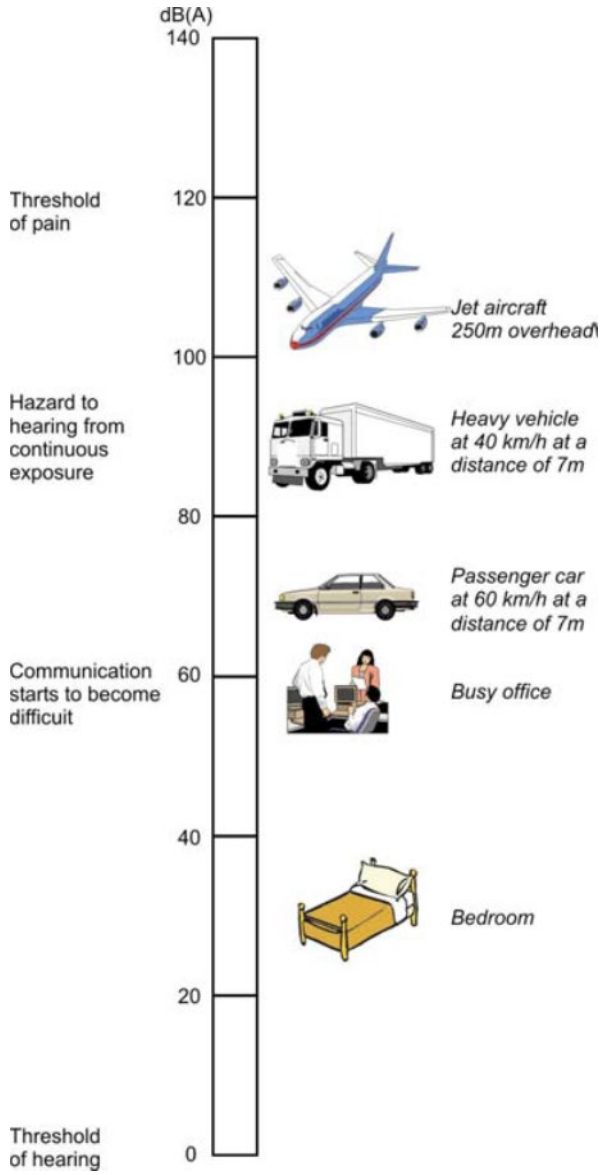


Figure 2: The level of common sounds on the dB(A) scale

4 Sensitive Receptors

Sensitive land uses have the potential to be impacted by noise and vibration from the construction of the proposed LMDIP. These include:

4.1.1 Noise Receptors

Sensitive land uses/receptors considered for construction noise include:

- Residential sensitive receivers (i.e., dwellings). Figure 3 in Appendix D provides details of the identified building uses throughout the project study area.
- Non-residential sensitive receivers, including educational, community (including places of public worship) and health buildings (ECH). This category also includes hotels, motels, or other premises which provides accommodation for the public. No ECH have been identified in the assessment are
- The closest retail/commercial (Noosa Beverages) area located 1km from works and are separated by residential dwellings with a lower criteria level the retail area is not considered further in this assessment.
- Recreation parks located within 1km of the Macdonald Dam's spillway are not considered noise sensitive in this instance of required remedial works and with other parks available at a further distance from the proposed.

4.1.2 Vibration receptors

The residential, non-residential, and commercial receivers potentially impacted by vibration emissions from the construction of the project are the same as those listed in Section 4.1.1 for noise. These are generally assessed per established assessment standards for cosmetic building damage. In addition, vibration sensitive structures also include all buried services (utilities), Public Utility Plant (PUP), and any other assets potentially susceptible to vibration, such as swimming pools.

4.1.2.1 Buried services and PUP

The buried services and PUP identified in close proximity to the LMDIP have been assessed for the vibration impacts from the cofferdam construction. These services are presented as an overlay to the relevant vibration impact maps within Appendix F. All utilities include pipes or conduits, that run under/adjacent to Lake MacDonald Drive, with direct impacts from the proposed cofferdam piling works are detailed in Table 1.

Table 2. Identified buried services and PUP

Utility	Asset owner/authority	Distance to works (m) for each utility
Treated and Raw Water pipes	Seqwater	>20 m
Data/communications	Telstra	>30 m
Trunk and Reticulation main	Unity water	>20 m

Table 2 summarises potential PUP conflicts and remedial notes sourced from the constructability report provided by the utility asset representative.

4.1.2.2 Heritage listed receptors, receptors of intrinsic value and sensitive equipment.

A review of report Aboriginal Heritage Due Diligence Assessment Historical Heritage Assessment (niche Environment and Heritage) dated November 2018 found several areas of local significance

that are outside of the zone of influence for vibration, and no items of heritage significance to assess in the LMDIP area.

Table 3. PUP conflicts and remedial notes.

Type of utility	Location	Comments
Unitywater - Water Assets	Lake MacDonald Drive	Construction piling near existing water assets have potential for damage and service interruption. Where possible for construction at a safe distance from the existing assets. Potholing is required to confirm location of pipes and a mechanical cover (20mm steel plate) over the pipes where heavy vehicles plan to cross over.
Seqwater	Lake MacDonald Drive	Where possible the work activity needs to operate at a safe distance (>20 m) from the existing assets. Potholing is required to confirm location of pipes and a mechanical cover (20mm steel plate) over the pipes where heavy vehicles plan to cross over.
Telstra	Lake MacDonald Drive	**Regarding high risk telecommunication assets:** • Works near any trunk fibre related asset should be avoided where possible due to the significant time required to get design and construction completed and the associated high cost • The existing occupied conduit infrastructure is generally identified as PVC material and as such, adaptation of protective measures are not required. If the conduit material is found to be concrete or asbestos a likely relocation or replacement will be required where applicable • Existing telecommunication assets that are aged and / or directly buried provide little opportunity for the asset(s) to be retained and are to be replaced where applicable. Construction operations near existing assets have potential for damage and service interruption. Telstra have existing pit and conduit infrastructure throughout the project area that includes significant trunk fibre assets for Telstra. The civil design intent for the project is to maintain the alignment and location of existing telecommunication infrastructure by avoidance and protection of the existing assets within the civil design, however, some pit lids may require minor adjustment to suit slight changes in proposed verge levels. Potholing validation is required for a number of existing PUP assets, Deconstruction, demolition and removal operations of existing pavements, redundant pressure main thrust blocks etc near to Telstra telecommunication assets will require vibration restrictions at maximum Peak Particle Velocity (PPV) 20 mm/sec measured at the asset. Refer PUP Supplementary Specification document for details. Operation and maintenance access to the existing telecommunications pits are to be maintained with no worsening of the existing operation and maintenance access configuration.

4.2 Geotechnical

The geotechnical report *LMDD Geotechnical Baseline Report Doc No. GBR-001* dated *16 April 2020* has been assessed with the details summarised in Table 3. The details of which have been used in the cofferdam sheet piling vibration propagation model calculations in Section 8.12.

Table 4. Summary of the geotechnical areas

GeoSection No. & location	Ground model		
	Geological unit & formation	Design SPT N-Value and General material descriptions	Approx. depth (m) below the ground level)
Bore Holes 301 to 308	Alluvium soil	N2 to N22: low strength alluvium underlain by stiff to very stiff residual clay soils.	0 - 8 m
	Residual soil	N46: basalt	8 – 9 m
	CW Rock	N43 to N100: Bedrock Conglomerate	8 – 18 m

5 Noise measurements

Noise monitoring was undertaken at two locations from 29 May to 7 June 2018 by SLR Consulting.

The ambient noise levels are not expected to have changed since 2018, so the measurements have not been repeated and the noise monitoring data presented in the SLR report (see Appendix A) has been used. Ambient noise levels usually increase with new housing or infrastructure developments in an area and increases to the road traffic flows on, for example, Lake MacDonald Road. With minimal changes to development and or changes to traffic flows, the ambient noise are expected to remain the same as 2018.

The aim of the monitoring was to quantify the existing baseline noise levels in the area and assist in determining appropriate noise targets for construction of the LMDIP.

6 Noise and Vibration Criteria

6.1 Construction noise and vibration

The LMDIP is to be assessed against the Acoustic Quality Objectives (AQOs) set out in the Environment Protection (Noise) Policy 2019 (EPP Noise) – as per A01.1. The relevant AQOs, for residences, have been extracted and are presented in Table 5 below.

Table 5: EPP Noise acoustic quality objectives

Sensitive Receptors	Time of day	Acoustic quality objective (dB(A))			Environmental Value
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
Residence (for outdoors)	Daytime and evening	50	55	65	Health and wellbeing
Residence (for indoors)	Daytime and evening	35	40	45	Health and wellbeing
	Night-time	30	35	40	Health and wellbeing, in relation to the ability to sleep

The EPP Noise 2019 advises the following times for the day, evening, and night periods:

daytime: 7 am – 6 pm

evening: 6 pm – 10 pm

night: 10 pm – 7 am.

6.1.1 Work periods

Table 6 outlines the various work periods nominated for construction activities on LMDIP.

Table 6. Work periods for construction activities

Work period	General construction & construction traffic
Standard hours	Monday – Friday 6:30 am to 6:30 pm Saturday 6:30 am to 4:00 pm
Non-Standard hours – day/evening	Monday – Friday 6:30 pm to 10:00 pm Saturday 4:00 pm to 10:00 pm Sunday 7:00 am to 10:00 pm
Non-Standard hours – night-time	Monday – Sunday 10:00 pm to 6:30 am

Note that public holiday periods are taken to be the same periods as defined for Sundays. Permission shall be requested for any work during non-standard hours from Seqwater at least 14 days prior to the proposed activity to allow for an out of hours noise and/or vibration risk assessment to be completed. An exception may occur when, in the interests of safety under the Contract or to protect life or property, the contractor finds it necessary to undertake work outside standard hours or on days other than those specified in the Contract. In such cases the contractor will notify Seqwater in writing of the circumstances as soon as practical after the event.

6.1.2 Airborne construction noise

Health, retail and commercial buildings are also considered noise sensitive but are outside the 1km assessment area for LMDIP.

6.1.3 Construction traffic noise

Haulage/transportation associated with construction activities on public roads within the LMDIP area or beyond has the potential to create traffic noise issues for existing sensitive receptors. The following criterion shall be used to limit traffic noise caused by construction traffic:

- Construction traffic should not increase the $L_{A10,1h}$ traffic noise level by more than 3 dB(A) above pre-construction traffic noise levels.

The increase in noise levels due to construction traffic should be considered against the median minimum $L_{A10,1h}$ noise levels for each of the relevant hours within each work period.

To increase road traffic noise levels by more than 3 dB(A) would typically require road traffic volumes to at least double, assuming the same mix of passenger and heavy vehicles. It is acknowledged that construction traffic would have a different mix, being dominated by heavy vehicles; is likely be required to elevate noise levels by more than 3 dB(A).

It is assumed that construction traffic will not utilise minor local roads but keep to Lake MacDonald Road.

6.1.4 Ground-borne construction vibration – human comfort

For human comfort, to minimise annoyance due to ground-borne construction vibration, this assessment adopts vibration levels with lower and upper limits as presented in Table 3.3.1.1(a) within the CoP Vol 2. The lower limits are generally considered to be just perceptible. The upper limits are considered to cause significant annoyance if exceeded. The limits are provided in Table 7.

All reasonable and practicable measures should be implemented to achieve the lower limit. Exceedance of the upper limit requires immediate action and extensive community consultation to determine further mitigation measures. Human comfort vibration limits are set using the vibration descriptor of peak particle velocity (PPV), being the peak vibration velocity components in the x, y, and z axis.

Table 7. Ground-borne Construction Vibration – Human Comfort

Building	Work Period	Resultant PPV, mm/s	
		Lower limit	Upper limit
Dwellings (including hotels and motels)	Standard hours	1.0	2.0
	Non-Standard hours – evening	0.3	1.0
	Non-Standard hours – night time		
Medical/health buildings (wards, surgeries, operating theatres, consulting rooms)	All	0.3	1.0
Educational/research facilities (rooms designated for teaching/research purposes)	While in use		
Community buildings (libraries, places of worship)	While in use	1.0	2.0

6.1.5 Ground-borne construction vibration – cosmetic damage

6.1.5.1 Structures

This assessment references two standards regarding potential building damage criteria for vibration:

- British Standard BS7385-2 Evaluation and measurement of vibration in buildings – Part 2: Guide to damage levels from groundborne vibration 1993 (BS7385-2).
- DIN 4150-3:1999 Structural vibration Part 3: Effects of vibration on structures (DIN 4150-3).

These vibration criteria are presented in Table 8 and Table 9 respectively.

DIN 4150-3 addresses residential, commercial, and intrinsically valuable structures, whereas BS7385-2 only addresses residential and commercial reinforced structures. Additionally, DIN 4150-3 provides guideline values for underground services. The guideline vibration criterion levels provided in DIN 4150-3 for structures are more stringent than those presented in BS7385-2 and therefore, to ensure a conservative assessment, DIN 4150-3 has been adopted for the vibration damage limits for the LMDIP.

The values provided in Table 8 are for long-term and/or continuous sources of vibration and are applicable to all floors of structures.

Table 8. BS 5228-2:2009:2014

Line	Type of structure	Peak component particle velocity in frequency range of predominant pulse
1	Reinforced or framed structures and heavy commercial buildings	50 mm/s at 4 Hz and above

Table 9. DIN 4150-3 1999 Guideline vibration levels and adopted project vibration damage limits

Line	Type of structure	Guideline values for velocity, in mm/s of vibration in the horizontal plane of the highest floor at all frequencies
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	10
2	Dwellings and buildings of similar design and/or occupancy	5
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. heritage listed buildings)	2.5

6.1.5.2 Swimming Pools

No vibration limits are available for swimming pools specifically, however, for the purposes of this assessment a vibration limit of 5 mm/s has been adopted, in line with that for a dwelling construction.

6.1.5.3 Buried services

Additional vibration limits are required for buried services. Virid has been informed that there are multiple buried services within the vicinity of the LMDIP. DIN 4150-3 notes that guideline vibration levels should be halved for continuous vibration sources, such as vibratory rollers and jackhammers. The continuous vibration guideline values for damage to buried services are provided in Table 10. These values will be used as vibration limit guides where no other information is available.

Table 10. Guideline vibration limits for buried services

Buried service type	Peak particle velocity guideline damage levels (mm/s) [1]
Masonry and plastic pipes	25
Clay, concrete, reinforced concrete, pre-stressed concrete, and metal (with or without flange)	40
Steel pipes (included welded pipes)	50

[1] Criteria presented are halved, appropriate for continuous vibration sources.

DIN 4150-3 advises that these guideline vibration levels are to be used for pipes constructed using ‘modern techniques’. Where pipes or buried services are dated, consultation should be made with the asset owner regarding acceptable vibration levels. This aligns with Virid’s previous experience where aged pipes have had criteria imposed as low as 2 mm/s. Where aged, buried services are identified near to the site it is recommended that the asset owner be contacted.

6.1.5.4 *Buried electrical services*

A vibration limit for buried electrical services was sourced from Energex and Ergon's Electrical Entity Requirements: *Working near overhead of underground electric lines* (dated 9 June 2015) which prescribes a PPV vibration limit of 25 mm/s, which was previously provided to Virid for use.

6.1.5.5 *Utility and asset communications*

Underground utility location services are to be utilised to provide the locations for all underground utilities within the LMDIP extents with the Dial Before You Dig (DBYD) search naming the utilities. As part of this assessment, nominated values have been detailed in Table 11. A description of existing PUP is provided in Table 11 that provides additional information used for determining vibration criteria.

Table 11. Buried services and PUP vibration limits

Utility	Asset Owner/Authority	Notified of works	Supplied vibration limit PPV (mm/s)[1]	Material type	Nominated vibration limit PPV (mm/s)[1]
Data/communications	Telstra	Yes	25	PVC	25
Trunk water main	Unitywater	Yes	2	unknown	2
Reticulated main	Unitywater	Yes	2	unknown	2
Raw water pipe	Seqwater	Yes	2	unknown	2
Treated water pipe	Seqwater	Yes	2	unknown	2

[1] The nominated vibration limits are for continuous vibration sources. .

7 Noise modelling inputs and methodology

7.1 Calculation standards and assessment scenarios

7.1.1 Construction noise

The construction noise models were developed using SoundPLAN v8.2, an environmental noise modelling software suite from SoundPLAN GmbH. SoundPLAN facilitates the development of detailed 3D models comprising ground contours, noise sources, building footprints and heights, noise barriers and other factors that influence the emission and propagation of construction noise levels. Modelled equipment and associated sound power levels as well as construction scenarios were based on information provided by Arup. The model considered noise sources, receivers and the effect of distance, ground topography, atmospheric attenuation, and obstacles such as barriers and buildings.

To predict airborne construction noise emissions, SoundPLAN implements the international standard ISO 9613-2:1996 'Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation', comprising approved algorithms within the CoP Vol 2. The proposed construction work activities and proposed working hours have been categorised into six (6) construction scenarios as described in Table 12, based on the type of construction work. All scenarios and plant assumptions were formulated in collaboration with Seqwater and the preferred construction contractor John Holland.

The proposed hours for construction have been assumed based on a typical 8-hour day for 5 days per week for most activities, and 10-hour days for 5 days per week for earthworks. Allowing for the 10-hour workdays and some overlapping works on weekends, the construction hours have been assigned as follows:

- Monday to Friday, 7:00 am to 6:00 pm, not including public holidays.
- Saturday, 8:00 am to 1:00 pm, not including public holidays.

Most construction works are expected to be carried out during standard hours. Any works outside of these hours will only be undertaken as approved by Seqwater.

Table 12. Summary of work activities and construction scenarios for the noise assessment

Item	Activity	Proposed period [1]		
		Day	Evening	Night
CS1	Clearing and grubbing	Yes	No	No
CS2	Site gravel road construction	Yes	No	No
CS3a	Cofferdam vibration sheet piling	Yes	No	No
CS3b	Cofferdam impact sheet piling	Yes	No	No
CS3c	Cofferdam rock fill	Yes	Yes	No
CS4	Reservoir lowering	Yes	Yes	Yes
CS5a	Dam crest demolition & excavation	Yes	Yes	Yes
CS5b	Spillway demolition & excavation	Yes	Yes	Yes
CS6	Dam construction included	Yes	No	No

[1] Day - Standard hours 7am to 6pm

Evening – Non-standard hours 6pm to 10pm

Night - Non-Standard hours 10pm to 7am.

Additionally, a summary of the approximate duration of each construction activity, based on the program scheduling detailed in the document *Schedule 9.4 Construction Methodology Lake Macdonald Dam Improvement Project – Stage 2 dated 27/10/23*. The days to complete each activity have been assumed as the maximum for that activity, noting activity times vary depending on the specific work area and the specific areas for each scenario.

7.2 Terrain

A digital elevation model (DEM) based on light detection and ranging (LiDAR) was sourced from the Intergovernmental Committee on Surveying and Mapping with GeoScience Australia. The DEM was merged with a survey of the LMDIP corridor with the survey extents replacing the underlying DEM. The combined DEM was converted from a raster file format to a comma separate value (CSV) file format with each line within the CSV file specifying elevation heights at corresponding spatial coordinates. The CSV file was imported into SoundPLAN as elevation heights allowing SoundPLAN's triangulation algorithms to generate a digital ground model (DGM).

This DGM is adopted to be representative of the study area's terrain for the year 2023. The 1 m resolution of the DEM is retained for the DGM.

The water level of the dam was adjusted to a height of 93.0m

7.3 Buildings

7.3.1 Existing

The location, footprint, and height of all buildings within 1000 m of the study area were sourced from the PSMA Australia GeoScape© dataset. This dataset includes building footprints that were created using a combination of automated and manual processes to extract and orthogonalise building roof outlines via remote sensing. This process uses imagery to classify pixels based on known patterns of signal combinations from various building roof types. The horizontal accuracy of the dataset is typically within ±1.0 m. The building height was attributed through a 0.5 m resolution digital surface model. The estimated, relative accuracy of the building heights for the project is also documented to be within ±1.0 m.

Buildings 350 m to 600 m from the corridor were obtained from the Microsoft / Bing buildings footprint dataset, developed from the Open Source CNTK Unified Toolkit (Microsoft). Building footprints were created from Bing imagery spanning from 2013 to 2018 with a reported accuracy that the quality is comparable to data hand digitized buildings. Whilst the dataset is not considered as accurate as the GeoScape buildings dataset, for buildings beyond 300 m, the accuracy has been considered acceptable.

7.4 Ground absorption and vegetation

Large areas of hard ground (including large car parks, water bodies) were digitised from high resolution aerial photography. These areas, in addition to the modelled lake surface, were modelled as acoustically ‘hard’ (i.e. reflective) and the remaining areas were modelled as acoustically ‘soft’ (i.e. absorbent) throughout the project study area. Areas of significant vegetation, such as trees or bushland have been considered in the noise model.

7.5 Construction noise program, plant, and timings

7.5.1 Construction equipment and scenarios

Construction scenarios were modelled as per Section 7.5.1. Table 13 presents the construction equipment list, sound power levels, and applicable construction assessment scenarios modelled for this assessment. Sound power levels were primarily taken from the NSW Roads and Maritime’s *Construction Noise and Vibration Guideline* (CNVG) (Roads and Maritime, 2016) which used a reference distance of 7m. For spectral content and where the CNVG did not have suitable data, other published sources were used including the DEFRA *Construction Noise Database* (UK Department of Environmental and Rural Affairs, 2006) and British Standard *BS 5228 Code of practice for noise and vibration control on construction and open sites* (British Standard, 2014).

The noise levels described in Table 13 are a worst case scenario of a piece of equipment operating at full power and using machinery that may not have the latest technologies inbuilt, which may allow it to operate at a lower noise level than those listed below. Construction noise monitoring is always recommended to validate the model with the machinery being used.

Table 13. Modelled construction activities and key plant noise levels

Scenario	Item	% of operation within 15-minute period	Equipment L_{wA} dB (at 7m)	Total $L_{wA15min}$ dB (at 7m)
CS1	excavator (30 T)	50	103	110

Scenario	Item	% of operation within 15-minute period	Equipment L_{wA} dB (at 7m)	Total $L_{wA15min}$ dB (at 7m)
Clearing and grubbing	chipper	50	110	
	Utes (x3)	20	85	
	tip-truck	50	105	
	street sweeper	5	91	
	skid steer	25	95	
	chain saws (x2)*	80	105	
CS2 Site gravel road construction	12 T single drum roller (low vib)	100	111	111
	dozer	50	110	
	wheeled loader	50	91	
	grader	50	87	
	trucks (incl water trucks)	20	91	
	skid steer	100	83	
	utes (4)	10	92	
CS3a Cofferdam piling-vibration	40T Crane track and Vibrodriver (30HV)	100	95	95
CS3b Cofferdam piling-impact	40T Crane track and Hydrohammer (S-40)	25	108	108
CS3c Cofferdam, construction and removal, and rockfill	20T rigid dump trucks	100	101	103
	30T Articulated haul truck	25	102	
	skid steer	50	91	
	45t excavator	25	95	
	12T vibratory roller (low vib)	20	90	
CS4 Reservoir lowering	Ten (10) x 12” diesel pumps	100	113	86.9
CS5a Dam crest demolition & excavation	Skid steer	50	91	120
	45t excavator with hydraulic hammer	100	120	
	skid steer	100	83	
	hand tools (battery)	50	87	
	concrete saw	25	103	
	generator	100	85	

Scenario	Item	% of operation within 15-minute period	Equipment L_{wA} dB (at 7m)	Total $L_{wA15min}$ dB (at 7m)
	stockpile area	50	105	
	haul route	10	86	
CS5b Spillway demolition	40T Crane track	100	82	92
	45t excavator (with hydraulic hammer)	10	92	
	30T haul truck x4)	100	86	
CS6 Dam construction	concrete batch plant	100	71	101
	tower crane (x2)	100	95	
	Secant bored piling	100	101	
	concrete agitator (x4)	100	98	
	concrete vibrators (x3)	50	95	
	EWP	10	75	
	concrete saw	10	100	
	10T vibratory roller	20	95	
	haul route (x4 trucks)	100	86	
	hand tools	80	80	
	skid steer	100	76	

* Note: a +5 dB adjustment has been applied to the chain saw sound power level to account for the annoyance factor from narrow band tonal noise where the centre frequency of the band containing the tone is above 400 Hz.

7.6 Calculation parameters and assumptions

When predicting the construction noise level at any given point, the study accounted for:

- The contribution of any noise sources within 1,000 m of each point
- The contribution of any acoustic waves reflected off surfaces either:
  - Within 200 m of each point, or
  - Up to 50 m from the line source.

Noise contours were interpolated from a 10 m grid. Noise levels were calculated with a tolerance of ±0.1 dB(A). Additionally, all noise predictions include a +2.5 dB(A) facade correction.

8 Construction vibration methodology

8.1 Vibration generating equipment and associated work activities

8.1.1 Vibration scenarios

Certain construction scenarios discussed in 7.5.1 require the use of vibration-generating equipment that may affect the receivers discussed in Section 4.2.2.

The exact plant and model numbers for the vibration intensive equipment was not known at the time of this assessment, but a range of different sized items of equipment have been allowed for. However, in lieu of specific information on plant selection, vibration predictions have been based on the similar drill rigs, which are based on information provided by John Holland and previous project experience:

8.1.2 Forecast setback distances

The conditions which form the basis for parametric/empirical formulae may not represent the particular condition of the LMDIP geology as well as the specific items of vibration generating equipment. Where the consequences of an under-prediction of a result would be critical in terms of cosmetic damage, or where the predictions imply major modification to the proposed work method (particularly where experience would suggest such modification is likely to be necessary), further and more detailed investigations may be warranted to remove as far as is practicable the uncertainties involved in the prediction process.

Prediction of vibration levels from construction activities have been drawn from empirical formulae within British Standard BS 5228-2:2009+A1:2014 – Code of practice of noise and vibration control on construction and open sites – Part 2: Vibration as shown in Table 14 for ground compaction and piling. Parameters have been selected based on values, in BS 5228-2, which result in the highest levels of predicted vibration.

Table 14. Empirical predictors for groundborne vibration arising from mechanised construction works

Operation	Formula	Description of terms	Parameters used in assessment
Vibratory (sheet) piling	Equation 3	k_v – scaling factor (and probability of being exceeded) x – distance measured along the ground surface, in metres (m) °δ – 1.3 all operations, 1.2 start up and 1.4 steady state operations v_{res} – resultant PPV, in millimetres per second (mm/s)	k_v =266 (5%) δ = 1.2

Vibration levels at various distances have been forecast based on BS 5228-2 where it uses the following formula which is described in the California Department of Transportation – Transportation and Construction Vibration Guidance Manual 2020 (FTA):

Equation 4

$$PPV_{equip} = PPV_{ref} \times (\frac{D_{ref}}{D})^n$$

Where:

PPV_{equip} = the peak particle velocity of the equipment adjusted for distance, mm/s

PPV_{ref} = the source reference vibration level at distance D_{ref}, mm/s]

D = distance from the equipment to the receptor, m

D_{ref} = distance from the equipment to the reference source level measurement point, m

n = value related to the attenuation rate through ground. The California Department of Transportation – Transportation and Construction Vibration Guidance Manual 2020 suggests a value of 1.1 for n.

8.2 Vibration Methodology

8.2.1.1 Sheet piling

A reference vibration level for bored piling was taken from the CNVG, the distance is provided where the bored piling vibration level meets the BS7358 continuous cosmetic damage level. The corresponding vibration value at this distance is summarised in Table 15. The values provided in the CNVG are noted to be nominal, so it is expected that vibration levels may be even lower than those provided.

Table 15. Vibration prediction inputs for bored piling

Construction activity	Distance (m)	Continuous piling Vibration level PPV (mm/s)
Sheet piling	20	7.5

The tabulated distance detailed in Table 14 was derived from the prediction formula 7-2:

($v_{res} = \frac{K_v}{x^\delta}$) from the BS 5228, and used as a reference input into the FTA vibration prediction formula

8.2.1.2 Simultaneous plant operation

Two identical vibration generating plant items may operate during vibratory rolling work activities. It is assumed these plant items are to operate in different areas over the construction alignment in this assessment. However, if these items are required to operate in the general vicinity of each other, then further assessment and/or consideration is required. There is the potential that two vibratory plant items operating in the same area could generate constructive interference of vibration waves, potentially increasing (theoretically doubling) vibration emissions from the site at the receptor. Where two (2) plant items, i.e. vibratory rollers, are required to operate within the same work area, the offset distances provided in should be doubled.

9 Construction noise and vibration impacts and mitigation measures

9.1 Predicted construction impacts and activity specific mitigation measures

9.1.1 Overview

9.1.1.1 Construction noise

Noise modelling was conducted to predict external noise levels at each receptor for each construction scenario. The predicted noise levels were then compared to the relevant noise criteria for each receptor. The predicted construction noise levels are intended to be conservative and represent a worst-case noise level where the equipment within the nominated work activity are operating simultaneously.

The property details and the predicted noise levels for each construction scenario are tabulated within Appendix C and mapped as noise contour figures in Appendix D. A summary of the noise limit exceedances are shown in Table 16.

Table 16. Summary table of the number of residential receptors that may have noise exceedances

Category	CS1	CS2	CS3a	CS3b	CS3c	CS4	CS5a	CS5b	CS6
Day	4	0	0	0	0	0	7	0	0
Night	NA	NA	NA	NA	NA	1	45	12	NA

9.1.1.2 Construction vibration

Modelling indicated that no receptors are likely to experience vibration in excess of the nominated criteria. Predicted vibration levels at all receptors are displayed in Appendix F with tabulated results presented in Appendix E.

9.1.1.3 Minimum working distances for vibration intensive plant

As a guideline, minimum working distances from sensitive receptors for typical items of plant are presented in Table 17 and Table 18 for cosmetic building damage and human response respectively. They present the predicted minimum working distances for the nominated construction plant to minimise the risk of building damage and human comfort (as described in Sections 6.4.4 and 6.4.5). Where two (2) plant items are required to operate within the same work area, the offset distances provided in Table 17 should be doubled.

Minimum working distances may be included in information provided by asset owners in the DBYD responses. Where asset owners confirm their distances are to be used, then they should be implemented instead of those provided in this report, assuming that the communications with owners clearly stipulate the works and plant items being used as well as the expected work areas.

Table 17. Guideline working distances for vibration intensive plant (class) from sensitive receptors for cosmetic building damage

Asset/receptor	Asset owner	Continuous vibration limit PPV (mm/s)	Vib Roller 1-2 T (very light) (m)	Vib Roller 2-4 tonnes (light) (m)	45 T excavator 900 kg hammer (m)	Sheet piling (m)
Residential buildings	Private	5	9	10	2	3
Swimming Pools	Private	5	9	10	2	3
Large reinforced commercial and industrial buildings	Private	10	6	7	1	2
Data/Communications	Telstra	10	6	7	1	2
Trunk water main and Reticulated main	Unitywater	2	14	17	20	20
Raw water pipe and treated water pipe	Seqwater	2	14	17	20	20

Table 18. Predicted offset distances for human comfort lower limit (1mm/s) during standard hours

Receptor	Continuous vibration limit PPV (mm/s)	Vib roller 1-2 tonnes (Very light) (m)	Vib roller 2-4 tonnes (Light – medium) (m)	Vib Roller <18 tonnes (heavy) (m)	45 T excavator 900 kg hammer (m)	Sheet piling (m)
Standard hours upper limit	2	15	18	33	20	20

Receptor	Continuous vibration limit PPV (mm/s)	Vib roller 1-2 tonnes (Very light) (m)	Vib roller 2-4 tonnes (Light – medium) (m)	Vib Roller <18 tonnes (heavy) (m)	45 T excavator 900 kg hammer (m)	Sheet piling (m)
Standard hours lower limit	1	24	29	52	30	30

9.1.1.3.1 Dwellings, structures, and above ground assets

Based on a review of the minimum offset distances between the proposed works and the receptors, there are exceedances of the cosmetic damage limit as detailed in Table 19.

Table 19. Summary of the number of receptors predicted to exceed the cosmetic damage limit during standard hours

Work activity	Residential PPV (5 mm/s)	ECH PPV (5 mm/s)	Office/Retail PPV (5 mm/s)	Garage / Shed PPV (10 mm/s)
Sheet piling	No predicted vibration exceedances			

9.1.1.3.2 Buried services and PUP

Multiple buried services are located within the minimum predicted offset distances for vibratory rolling work activities. It is understood that these services are to remain as part of the works. As these services involve measures including being replaced, relocated, or upgraded, the minimum offset distances must be revised on site, with implementation of the mitigation and management measures detailed in Section 1.14 and 1.15. Potentially affected sensitive receptors located within the minimum recommended vibration buffer distances for various equipment are detailed in Table 20 and mapped in the vibration impact figures within Appendix F.

Table 20. High risk work activities adjacent to PUP

Utility	Predicted plant to exceed
All water pipes	No PUP are predicted to exceed 2mm/s vibration levels
Telecommunications	

9.1.1.4 Human comfort

Human comfort standard hours lower vibration limits (and non-standard hours upper vibration limits) are not predicted to be exceeded during the works.

9.2 Activity specific construction impacts and mitigation measures

The noise and vibration impacts and mitigation measures for the six (6) construction scenarios are as follows:

9.2.1 CS1 Clearing and grubbing

Construction noise exceedances for CS1 activities are predicted at four (4) dwellings with the nearest of these detailed in Table 21.

Table 21. Proximity of CS1 works to the nearest noise sensitive locations

Usage	Address	Distance
Residential	415 Lake Macdonald Drive	30m

The environmental noise and vibration impacts from CS1, that may cause nuisance, include high noise levels generated by the operation of a chipper machine (110 dB(A)), excavator (103 dB(A)), tip truck (105 dB(A)) and the operation of chainsaws (105 dB(A)). No vibration exceedances are predicted from CS1 work activities. Practicable noise control measures for CS1 include:

- Community consultation – this is a short duration (1-2 days) activity in proximity to sensitive receivers
- Use of battery chainsaws where practical
- Undertake chainsaw works during non-noise sensitive time periods for those properties which are predicted to exceed the criteria.
- The relocation of the chipper work activities to an area of the site further away from sensitive receivers – e.g. borrow pit area.
- Provide a temporary noise fence to block the noise between the chipper and noise sensitive receptors. Only required if a noise complaint is raised.
- Operate plant efficiently to minimise the time the equipment is operational to undertake required works.
- Turn chipper and chain saws off when not in use.

9.2.2 CS2 Site gravel road construction

There are no predicted noise exceedances for CS2 activities. Noise sensitive locations are near the CS2 work activities, with the nearest of these detailed in Table 22.

Table 22: Proximity of CS2 works to the nearest noise sensitive locations

Usage	Address	Distance
Residential	62 Highland Drive Lake Macdonald	77 m

No vibration issues are predicted from CS2 work activities. Practicable noise and vibration control measures for CS2 should include:

- Minimise high noise plant/equipment operations.
- Operate plant efficiently to minimise the time the equipment is operational to undertake required works.
- Turn plant/equipment off when not in use.

9.2.3 CS3(a,b,c) Cofferdam construction and removal

There are no construction noise exceedances for CS3 activities with the updated construction methodology. The nearest properties to CS3 is detailed in Table 23.

Table 23. Proximity of CS3 works to the nearest noise sensitive locations

Usage	Address	Distance
Residential	415 Lake Macdonald Drive	28 m

The environmental noise and vibration impacts from CS3 is likely to cause nuisance, with no properties predicted to exceed the daytime noise criteria. The works include high noise levels generated by the operation of two sheet piling cranes and hydraulic hammers.

Two hammers are proposed with the sheet pile to be vibrated in from 10m (above waterline) to approximately 2.5m. If necessary, the piles may be driven home to 0.5m using a hydraulic hammer. The use of the hydraulic hammer will only occur if the pile doesn't reach the required depth via

vibration. It is likely, but cannot be guaranteed, that many of the piles will require much less hammering than described above, even none in some cases. Under worst case assumptions, impact driving will be active for no more than 25% of the time piling is being undertaken.

Modelling predicts no exceedance when using the vibration hammer with the impact hammer being the main source of noise at (108 dB(A)), 45T excavator (103 dB(A)), and the use of the 30T haul trucks (102 dB(A)). No vibration exceedances are predicted from the CS3 work activities.

Practicable noise control measures for CS3 should include:

- Limiting piling activities to daytime only
- Maximising the pile penetration using vibratory as opposed to impact piling
- Providing periods of respite between high noise (i.e. hammering) activities.
- Minimising truck and excavator movements.
- Operate plant efficiently to minimise the time the equipment is operational undertaking required works.
- Choose the quietest sheet piling equipment that can supply the required power load with auto start so it only runs when required.
- Investigate the use of acoustic curtains around impact hammer
- Turn trucks and cranes off when not in use.

9.2.4 CS4 Reservoir lowering

Construction noise exceedances for CS4 activities are predicted at 1 residential property as detailed in Table 24.

Table 24. Proximity of CS4 works to the nearest noise sensitive locations

Usage	Address	Distance
Residential	415 Lake Macdonald Drive	47 m

Practicable noise control measures for CS4 include:

- Locate a temporary acoustic fence on the dam wall adjacent to Macdonald Drive
- Relocate pumps to locations further from sensitive receivers
- operate plant efficiently to minimise the time the equipment is operational when undertaking required works
- Throttle-back pumps during evening and night (if schedule permits)
- Use of syphons during night periods

9.2.5 CS5(a,b) Spillway demolition & excavation

Construction noise exceedances for CS5a and CS5b dam crest and spillway demolition activities are predicted at seven (7) properties during day works and up to 45 residential properties during the night-time work period and with the nearest property detailed in Table 25.

Table 25. Proximity of CS5(a,b) works to the nearest noise sensitive locations

Usage	Address	Distance
Residential	419 Lake Macdonald Drive	28

Principal equipment driving the exceedances for CS5a will be rock breakers and concrete saws, with

CS5b activities including excavators and trucks. These work activities will be ongoing for a period of 6 weeks and operating for 24 hours a day. However the use of rock-breakers and saws will be concentrated within the first week of the demolition process. The environmental noise and vibration impacts from CS5a, that may cause nuisance, include noise levels generated by the operation of a rock breakers (120 dB(A)), excavator (95 dB(A)), tip truck (105 dB(A)) and the operations within the stockpile area (105 dB(A)). The CS5b noise impacts will be from the cranes (82dB), excavators (92dB) and haul trucks (86dB). No vibration exceedances are predicted from CS5 work activities.

Practicable noise control measures for CS5 include:

- scheduling noisiest activities to occur during normal construction hours where practicable
- complete the use of the concrete demolition, using the hydraulic hammer, of existing spillway as quickly as practicable
- review the use of acoustic curtains around breaker where practicable
- operate plant efficiently to minimise the time the equipment is operational when undertaking required works.
- minimising vehicle movements
- turn trucks off when not in use.

9.2.6 CS6 Dam construction

There are no construction noise exceedances for CS6 activities. Noise sensitive locations are also near the CS6 work activities, with the nearest of these at 419 Lake Macdonald Drive at 28 m from works.

The environmental noise and vibration impacts from CS6, that may cause nuisance, include high noise levels generated by the operation of a secant piling (101 dB(A)), concrete saw (100 dB(A)), concrete vibrators (95 dB(A)), tower cranes and the operation of agi and pump (98 dB(A)). No vibration exceedances are predicted from CS6 work activities. Practicable noise control measures for CS6 include:

- Minimising vehicle movements where practicable
- Locate equipment so the dam wall blocks the view to residential properties
- Operate plant efficiently to minimise the time the equipment is operational when undertaking required works
- Turn plant and equipment off when not in use.

9.3 Whole of project mitigation and management measures

Noise and vibration generated from construction activities associated with the LMDIP have the potential to adversely impact nearby sensitive receptors. Adjacent land users should be engaged and provided with an outline of the works being undertaken and working hours which the LMDIP will operate. Communication is the best avenue to address potential concerns and ensure a proactive stance on mitigating adverse complaints.

Common administrative controls, such as project specific on-site training to raise awareness about the noise and vibration issues should be included in site inductions and daily pre-start meetings. This assessment also addresses more specific measures which may be required for the works.

Noise mitigation and management procedures should follow the general controls:

- Administrative controls/project planning

- Engineering/plant controls
- Respite controls
- Alternative arrangements.

Generally, a minimum combination of administrative and engineering controls are required to adequately manage and mitigate noise and vibration emissions from construction works. Where these measures do not suffice and valid complaints are received, management of noise and vibration emissions may then be required through offering respite periods. Where all the above-mentioned measures are still not sufficient, then alternative arrangements with critical receptors should be made.

Given the anticipated duration of the noise and vibration intensive works, alternative arrangements (i.e. temporary relocation of receptors) have not been considered as practicable for this project. Should the duration of works extend beyond those anticipated, this may need to be reviewed.

9.3.1 Project specific measures

The following project specific construction noise and vibration measures apply to the LMDIP.

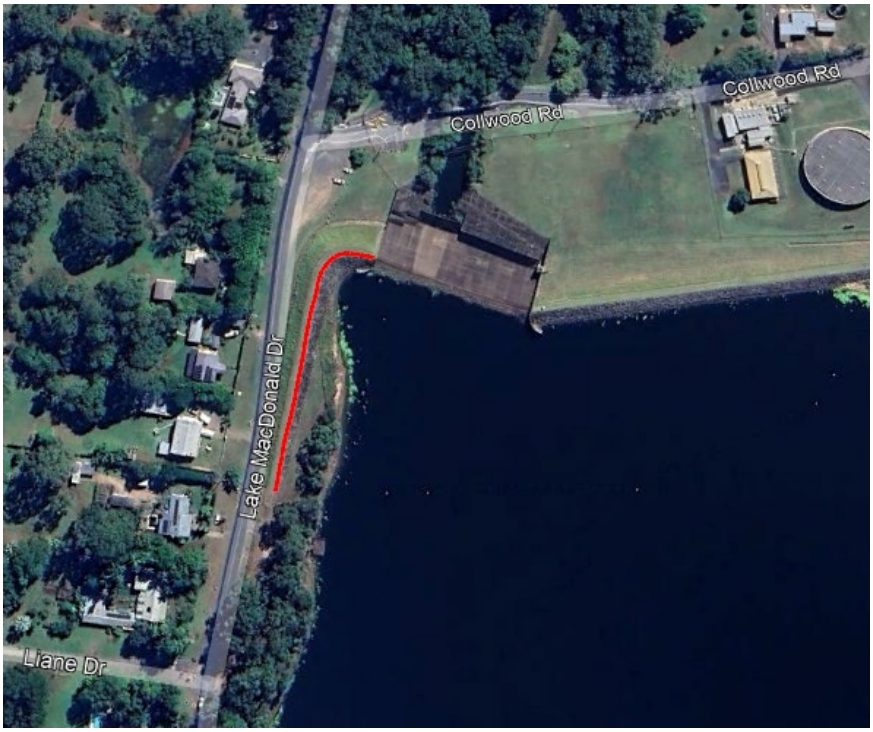
9.3.1.1 Noise

The potential exists that noise levels within the LMDIP area will be intrusive during the construction works. For this reason, utilisation of high noise generating equipment like chain saws, piling and the use of a hydraulic hammer should be restricted to the day work periods where possible.

For the residential buildings identified within the study area that are predicted to exceed the relevant construction noise limits, care should be given to staged works such that the nearest works are done outside of sensitive hours for each receptor type or, for example, during break periods.

9.3.1.2 Temporary noise barrier

Provision of a temporary acoustic barrier is highly recommended on the Lake Macdonald berm. The suggested location is shown in Figure 3 with the dimension being a continuous length of 150m at a height of 2m.



9.3.1.3 Vibration

The calculated vibration levels generated from the construction works at the nearest residences show that no adverse structural impacts are expected for nearby residences due to vibration from the construction activities and human comfort limits are unlikely to be exceeded.

Even though exceedances are unlikely, it is recommended that vibration monitoring be undertaken during piling and demolition activities. Dilapidation surveys of properties along Lake Macdonald drive may be undertaken at the discretion of Seqwater but are not specifically recommended unless monitoring identifies unexpected exceedances.

Liaison with PUP and asset owners prior to the commencement of compaction and piling is required to determine the specific works to be conducted within close proximity to their assets, including:

- Seqwater water pipes
- Unitywater: mains water
- Telstra underground communications conduits

Vibratory impacts have been assessed as a low risk with no potential for vibration emissions which may cause cosmetic building/structural damage to adjacent buildings and underground utilities.

Several utilities and services are noted as being within the works area. All services and utilities within the works area should be positively identified prior to works proceeding. No vibratory compaction (only a small handheld compactor or static roller is permitted) should occur within 3 m of Energex power cables, Telstra communications conduits or Unitywater mains water, Seqwater water infrastructure unless greater required separation distances are provided by the owning entity prior to commencement of construction. The vibration impact area for the utilities is shown in Appendix F.

9.3.1.4 Dilapidation surveys

No dilapidation surveys are required for the LMDIP.

9.3.1.5 Property noise environment surveys

The internal noise levels at residential properties are predicted to be exceeded over a 3 month period and with operations running 24 hours a day, the construction noise is likely to impact on sleep and annoyance levels. With very little noise reduction possible at the noise source or along the transmission path to the noise sensitive dwellings, there maybe a reliance on the dwelling façade to assist in reducing internal noise levels.

A general assumption is that with windows open, a dwelling façade can reduce noise levels up to 15dB. This assumption is based on a timber stud house with no wall insulation. From a Google Street view audit of the local dwellings, the majority are of a brick construction and maybe air-conditioned, allowing for the windows facing the dam to be closed.

It is recommended that a survey of individual dwellings undertaken which would allow an acoustic consultant to determine:

- the noise reduction from the dwelling façade,
- where the noise sensitive rooms are located
- are the windows facing the construction be closed and fresh air still enter rooms
- dwelling construction type, and
- residents sensitivity to noise

9.3.1.6 Noise and vibration monitoring

Due to the level of noise exceedances and the long duration, it is recommended that noise monitoring be undertaken at three locations including two permanent locations and a floating location based on the work activity and it's location. The third logger could also be used for complaint monitoring.

Vibration monitoring is also recommended as a floating logger to measure the impacts from the cofferdam sheet piling onto adjacent up, the demolition of the Spillway works, and around the low level roller compaction works.

9.3.2 Mitigation and management measures on site

Further noise and vibration mitigation and management measures are outlined in Table 26 to Table 32 on the following page.

9.4 Community Liaison and Complaint

9.4.1 Community Liaison

Proactive community liaison and consultation is essential for the management of potential disruption from construction activities. Prior to construction commencing, clear communication channels should be established between the Construction Contractor and the community local to the LMDIP works. Additional planned communications should be delivered to the community members potentially affected by:

- Noise and vibration resulting from the construction works in non-standard hours
- Potentially significant noise and vibration impacts.

The dissemination of information regarding potential noise and vibration impacts can be conducted via:

- Letterbox drops
- Community meetings
- Newsletters
- Websites
- A point of contact for information (dedicated phone line).

Information provided to the community should include the following details:

- The reasons for the activity.
- Types of equipment required.
- The expected hours of operation, including any permitted site preparation works which will occur outside of standard hours.
- The likely duration and impact of operations at the site and any requirement for subsequent additional works.
- Contact details for further information and complaints.

During the community consultation phase consideration of receptors, occupiers of residences may be required where they have individual noise and vibration sensitive time periods (i.e. exam periods for schools, times of worship for places of worship). Communications should aim to confirm any such periods with receptor occupiers to allow for appropriate management of noise and vibration emissions.

Table 26. Control options – administrative procedures

Control	Timing	Methodology	Responsibility	Monitoring
Program where the timing of potentially intrusive construction noise activities to occur outside of noise sensitive periods with surrounding local properties.	Prior to construction activities	Consider during work planning and in response to monitoring exceedances / complaints.	Project Engineer	Noise from construction not to exceed project guidelines
Education on noise and vibration related impacts for staff and subcontractors.	Prior to construction activities	As a part of the site induction and/or included in pre-starts and toolbox talks. Include clauses that require minimization of noise and vibration in subcontractor agreements.	Project Foreman	Induction, pre-start, and toolbox records
Prior to commencement of works undertake dilapidation surveys at nominated existing / adjoining buildings. Undertake post construction dilapidation surveys on the completion of works.	Prior to works commencing / post completion of works	Appoint a consultant to undertaken dilapidation surveys.	Project Engineer / Third party surveyor	As dictated by Consultant
Notify potentially affected residents and stakeholders of construction works. As a guide, the properties detailed in Appendix B show all exceedances of the lower noise criteria, recommended to be notified.	Prior to construction activities	Notification as per construction contractors Communication Procedures.	Project Engineer	Feedback from affected stakeholders
Adopt alternative (quieter, lower potential vibration impact) methods for construction considered where reasonable or feasible.	Prior to construction activities	Consider during work planning and in response to monitoring exceedances / complaints.	Project Engineer	Noise and vibration from construction does not exceed project guidelines
Administrative procedures should be developed and implemented that: • avoid the use of radios or stereos outdoors where neighbours may be affected	Prior to construction activities	Consider during work planning	Project Engineer	No complaints received

Control	Timing	Methodology	Responsibility	Monitoring
• avoid the overuse of external public address systems or link these systems to the telephone system where neighbours may be affected • avoid shouting and minimise talking loudly and slamming vehicle doors • avoid the use of horns within the construction area, except in the case of emergency or a requirement for safety.				
Standard construction hours shall be Monday to Friday (7:00am to 6:00pm) and Saturday (8:00am to 1:00pm).	At all times	Approval should be obtained and consultation with the community conducted for works outside of these times Works with higher potential vibration impacts should only be scheduled during standard hours	Project Engineer	Environmental auditing

Table 27. Construction traffic and deliveries

Controls	Timing	Methodology	Responsibility	Monitoring
Positioning loading and unloading points away from sensitive and critical receptors. Minimise drop height of materials when transferring (for example, dumping fill).	Prior to and during construction activities	Consider during work planning and in response to monitoring exceedances / complaints	Project Foreman	Continuous inspection of operators and activities
Ensure traffic movement is kept to a minimum (for example, ensuring trucks are fully loaded so that the volume of each delivery is maximized)	Prior to and during construction activities	Consider during work planning and in response to monitoring exceedances / complaints	Project Foreman	Continuous inspection of operators and activities

Table 28. Plant and equipment - general

Control Measure	Timing	Methodology	Responsibility	Monitoring
Select plant and equipment based on noise and vibration levels and that they are appropriately sized for the tasks	Prior to and during construction activities	Consider during work planning and in response to monitoring exceedances / complaints	Project Engineer	Noise and vibration from construction does not exceed project guidelines
Plant and equipment to be operated in a proper and efficient manner	At all times	Safe Work Method Statements followed and verification of competency available for operators of plant and equipment.	Project Foreman	Continuous inspection of operators and activities
Consider adding broadband reverse warning system in place of beeper, plus minimise reverse movements through site vehicle movement paths	At all times	Consider during work planning and in response to monitoring exceedances / complaints	Project Foreman	Continuous inspection of operators and activities
Noisy plant working simultaneously close together to be avoided to the greatest extent practical adjacent to noise affected receptors	At all times	Consider during work planning and in response to monitoring exceedances / complaints	Project Engineer	Noise and vibration from construction does not exceed project guidelines
Minimise vehicles and plant idling when not in use Avoid unnecessary revving of engines, prevent vehicles and plant queuing and idling outside the site, particularly prior to the construction starting time	At all times	Turn off plant and vehicles when not in use Include in site induction and/or included in pre-starts and toolbox talks	Project Foreman / Plant Operators	Continuous inspection of operators and activities Induction, pre-start and toolbox records
Use mufflers and engine covers / acoustic screens where appropriate	At all times	Include in site induction and/or included in pre-starts and toolbox talks	Project Foreman / Plant Operators	Continuous inspection of operators and activities Induction, pre-start and toolbox records
Ensure equipment is operated in the correct manner and correctly maintained including replacement of engine covers,	At all times	Include in site induction and/or included in pre-starts and toolbox talks	Project Foreman / Plant Operators	Continuous inspection of operators and activities Induction, pre-start and toolbox records

Control Measure	Timing	Methodology	Responsibility	Monitoring
repair of defective silencing equipment, and tightening of rattling components.				

Table 29. Plant and equipment – high impact

Process	Control
Vibration – Roller	
Apply the vibratory roller settings which give the lowest levels of vibration impact as far as practical within the LMDIP (e.g. low amplitude, high frequency).	• Timing - Prior to construction activities • Methodology » As a part of the site induction and/or included in pre-starts and toolbox talks » Include clauses that require minimization of vibration in subcontractor agreements • Responsibility Project Engineer • Monitoring - As dictated by noise and vibration consultant
Where vibratory plant is being utilised near to sensitive receptors, judicious selection of plant and equipment will be necessary. Vibratory rollers within the LMDIP must operate at the low amplitude, high frequency setting to ensure minimal vibratory impacts and be sized as recommended above.	
Minimise the number of compaction passes as far as practical.	
Utilise low vibratory compaction methods within the minimum buffer distances to underground assets.	
Avoid turning the vibration mode on/off when stationary or moving too slowly, or when close to buildings or underground assets.	
Vibration – Excavator	
Use a flat edge bucket when excavating and have a spotter present at all times around utilities	• Timing - Prior to construction activities • Methodology » As a part of the site induction and/or included in pre-starts and toolbox talks » Include clauses that require minimization of noise and vibration in subcontractor agreements • Responsibility Project Engineer • Monitoring - As dictated by noise and vibration consultant
Minimise the amount of hammering as far as practical.	
Consider using a handheld jack hammer where practical	
Vibration – Sheet Piling	

Process	Control
Alternative piling method with a lower impact to be reviewed	• Timing - Prior to construction activities • Methodology » As a part of the site induction and/or included in pre-starts and toolbox talks » Include clauses that require minimization of noise and vibration in subcontractor agreements • Responsibility Project Engineer • Monitoring - As dictated by noise and vibration consultant
Crane cables and chain guides should be in good condition and have absorptive material liners where possible to reduce noise from cable slap.	
Where practicable, plant items should be selected which have both silencers and squawker-style reversing alarms to minimise noise emissions as far as practicably possible.	
Piling rig and drill rigs hydraulics should be in good condition.	
Consider acoustic screens where appropriate	
Impact hammers should be fitted with acoustic screens at hammer head and top of pile.	

Table 30. Respite

Control Measure	Timing	Methodology	Responsibility	Monitoring
Respite measure: where possible, investigate scheduling works for when premises are not in use.	Pending valid complaints	Respite measure: if evening/night works are required, restrict the number of nights per week that the works are undertaken near residences. Approval should be obtained and consultation with the community conducted for works outside of standard hours. Additionally, consideration of respite for receptors occupiers may be required where they have individual noise sensitive time periods (i.e. exam periods for schools, times of worship for places of worship). A mitigation strategy should be prepared for equipment with a high potential for noise or vibration impacts being scheduled during standard hours where practicable. Potential respite periods during the standard hours period could include three (3) hours of work with no less than one (1) hour of light or no work activities near to sensitive occupied receptors where valid complaints have been received. Potential respite periods during the non-standard hours period could include no more than three (3) nights of work within one (1) week, with night works to occur on non-consecutive nights to allow occupied receptors to catch up on sleep.	Project Engineer	Environmental Auditing

Table 31. Alternative mitigation and management

Control Measure	Timing	Responsibility
Temporary acoustic screen that will break the line-of-site of the construction works towards the noise sensitive location. Site sheds, materials and stockpiles should be used to increase acoustic shielding, where feasible. Acoustic shielding from existing topography, buildings and structures and buildings associated	As required	Project Engineer

Control Measure	Timing	Responsibility
with the facility will be maximised (for example, storage units and temporary offices may be grouped together to form an effective acoustic barrier), for the nearest adjacent sensitive sites.		
Temporary relocation involves the relocation of affected, NOTE occupants, for short periods of time where all reasonable and practicable measures and respite periods are implemented, and further mitigation is impractical. Examples of temporary relocation may involve the offer of an alternative activity during noisy construction works or alternate accommodation during the most intensive works.	As required	Project Engineer
Architectural treatments may involve the provision of alternative ventilation where the windows are to remain closed. However, the performance of the building envelope may be limited by specific elements (for example, windows and doors) and architectural treatments should primarily focus on those elements.	As required	Project Foreman

Table 32. Monitoring and complaints

Control Measure	Timing	Methodology	Responsibility	Monitoring
Ongoing noise monitoring is not considered to be required. Vibration monitoring is recommended when excavation with the hydraulic hammer are operating in close proximity to locations noise sensitive receptors)	As required	Conduct regular vibration monitoring in locations applicable to works.	Project Engineer	Continuous vibration monitoring throughout project
Monitoring to be conducted in the event a complaint is received	As required	Identify works responsible for source of vibration. Identify possible mitigation measures and implement if feasible. Review monitoring recommended and revise construction methodology as required.	Project Foreman	Noise and vibration monitoring requirements reviewed and adjusted as required.
Complaints will be taken seriously and dealt with expeditiously	On receipt of a complaint	The construction contractor is to communicate the complaint to the relevant authority	Project Engineer	Complaint records in register

9.4.2 Complaint Management

If a complaint is received on any activity or incident on the LMDIP relating to noise and vibration management, a Complaint Handling Procedure is to be instigated as follows:

- A dedicated phone line should be provided to enable the community to contact a central project representative.
- A central point of contact should have the authority to alter mitigation, management, and construction activities onsite.
- A register of complaints should be maintained, including time, date, location, persons contact details and any details regarding the construction activities which are associated with the complaint.
- Complaints received must be reported to Seqwater within 24 hours of any complaints occurring or within 24 hours of becoming aware of any damage caused by construction activities.
- The Site Foreman must report the incident to the applicable Seqwater representative.
- Reporting procedures to notify the DES within 24 hours of any material environmental harm or serious environmental harm caused by construction activities.

The timeframe for response as well as likely actions should be provided immediately to the complainant by the recipient of the complaint. Where possible, the complaint should be resolved quickly using all reasonable and practicable mitigation and management measures. Reporting procedures do not override the LMDIP's legislative obligations with respect to notifications presented in the Environmental Protection Act 1994.

10 Conclusion

10.1 Summary

Virid was commissioned by Seqwater to undertake a construction noise and vibration assessment for the Lake Macdonald Dam Improvement Project (LMDIP), which includes the removal for the existing dam crest and spillway and replacing with a current standard spillway design.

Sensitive land uses have the potential to be impacted by noise from the construction of the upgrade and to understand the predicted impacts to these sensitive receptors construction noise and vibration emissions have been assessed against EPP(Noise) Guidelines.

Noise generated from construction activities associated with the LMDIP also have the potential to adversely impact nearby sensitive receptors. The development of construction noise and vibration management plans is recommended to help manage both construction noise impacts to the community throughout the proposed construction works.

Construction noise limits are not predicted to be exceeded at any residential properties for the daytime/evening criteria during cofferdam piling, and 45 properties exceeding the night time criteria during dam demolition works. However it should be noted that the duration of the noisiest night-time activities is brief (likely 1-2 weeks).

It is noted that it is not feasible to eliminate the noise exceedances given the logistical and safety constraints associated with the critical noise generating activities (i.e. coffer-dam piling and demolition works). All reasonable efforts will be made to undertake the loudest work activities during the least sensitive times of day (daytime/Evening). The two most significant construction noise activities are the sheet piling during the cofferdam construction (3-4 months), and the use of hydraulic hammers in the existing dam spillway/crest demolition works (6 weeks – clustered in the first 2 weeks). Reducing the noise to the nighttime sleep area criteria may not be possible in all instances with recommended noise mitigation measures detailed in Section 9.3.1.

Appendix A

Noise monitoring site sheets

4.2 Unattended Noise Monitoring

In order to quantify the existing acoustic environment within the receptor catchment adjacent to the Project, SLR conducted attended noise surveys from 29 May to 7 June 2018 at two locations:

- Location 1: 43 Highland Drive, and
- Location 2: 407 Lake Macdonald Drive

The objective of the unattended noise monitoring was to quantify the existing "baseline" noise levels in the area surrounding the Project and to assist in determining appropriate noise targets for construction and operation of the Project.

The locations of the unattended noise monitoring are shown in **Figure 3**.

Figure 3 Background Noise Monitoring Locations

Monitoring was carried out using a SVAN 957 Noise Logger (Serial number 23816) and a Ngara Noise Logger (Serial number 87801E). The noise loggers were configured to record a range of A-weighted fast-response statistical noise levels, including the L_{A1}, L_{A10}, L_{A90}, and L_{Aeq} noise levels over consecutive 15 minute periods. The loggers were checked for calibration before and after the monitoring, using a Bruel and Kjaer Sound Level Calibrator (Serial number 2594716) and no significant drift in calibration was detected. The noise loggers were both located in the free-field with a microphone height of 1.5 m above the existing ground level.

A summary of baseline ambient noise levels is presented in **Table 5** with daily noise statistics presented graphically in **Appendix B**.

Table 5 Summary of Measured Noise Levels (Baseline)

Parameter	Period	Average Noise Levels (dBA)	
		43 Highland Drive	407 Lake Macdonald Drive
L_{A1}	Daytime (7am-6pm)	63	52
	Evening (6pm-10pm)	59	47
	Night (10pm-7am)	54	43
L_{A10}	Daytime (7am-6pm)	56	46
	Evening (6pm-10pm)	46	42
	Night (10pm-7am)	45	36
Rating Background Level (RBL) [1]	Daytime (7am-6pm)	40	34
	Evening (6pm-10pm)	40	30
	Night (10pm-7am)	40	28
L_{Aeq}	Daytime (7am-6pm)	55	47
	Evening (6pm-10pm)	47	47
	Night (10pm-7am)	49	40

Note 1: The RBL is the median of the 90th percentile of the daily background (LA90) noise levels in each assessment period (day, evening and night) over the duration of the monitoring.

It can be seen from **Table 5** that measured steady-state background noise level (RBL) at 43 Highland Drive was the same for all time periods. It was observed during the operator attended noise surveys that the dominant noise source in the local ambient environment was generated by water flowing over the spillway at the dam spillway, approximately 100 m from the noise monitoring location, refer **Section 4.3**. Therefore, the RBLs from 407 Lake Macdonald Drive were considered more typical, with the daytime and evening noise levels being higher than that for the night-time period.

4.2.1 Weather Conditions

Local weather conditions were recorded during the noise monitoring period with a weather station located near to the noise logger at 43 Highland Drive. The evening period of 30 May 2018 included a short period of rainfall of approximately 0.2 mm, and a short period in the early morning of 3 June 2018 included rainfall of approximately 0.2 mm. Consequently, two short periods of noise level data were excluded from the assessment. The measured wind speeds were less than 5 m/s during the monitoring period. The measured statistical noise levels, including the exclusion periods (shown as yellow bands), are displayed graphically in **Appendix B**.

4.3 Attended Noise Measurements

Operator attended noise measurements were undertaken at the noise logger locations on 29 May 2018 during the daytime period. The measurements were carried out with a Brüel and Kjær Type 2250 Sound Level Meter (SLM) (Serial number 3007914) with the microphone positioned at a height of 1.5 m above ground level. The settings of the SLM were A-weighted and fast time response. Calibration checks were performed both before and after the measurements using a Brüel and Kjær Calibrator (Serial number 2594716). Calibration drift was insignificant.

All significant noise sources were identified during the operator attended measurements and therefore the attended noise measurements allowed for the characterisation of the existing noise environment.

The results of the operator attended noise measurement are shown in **Table 6**.

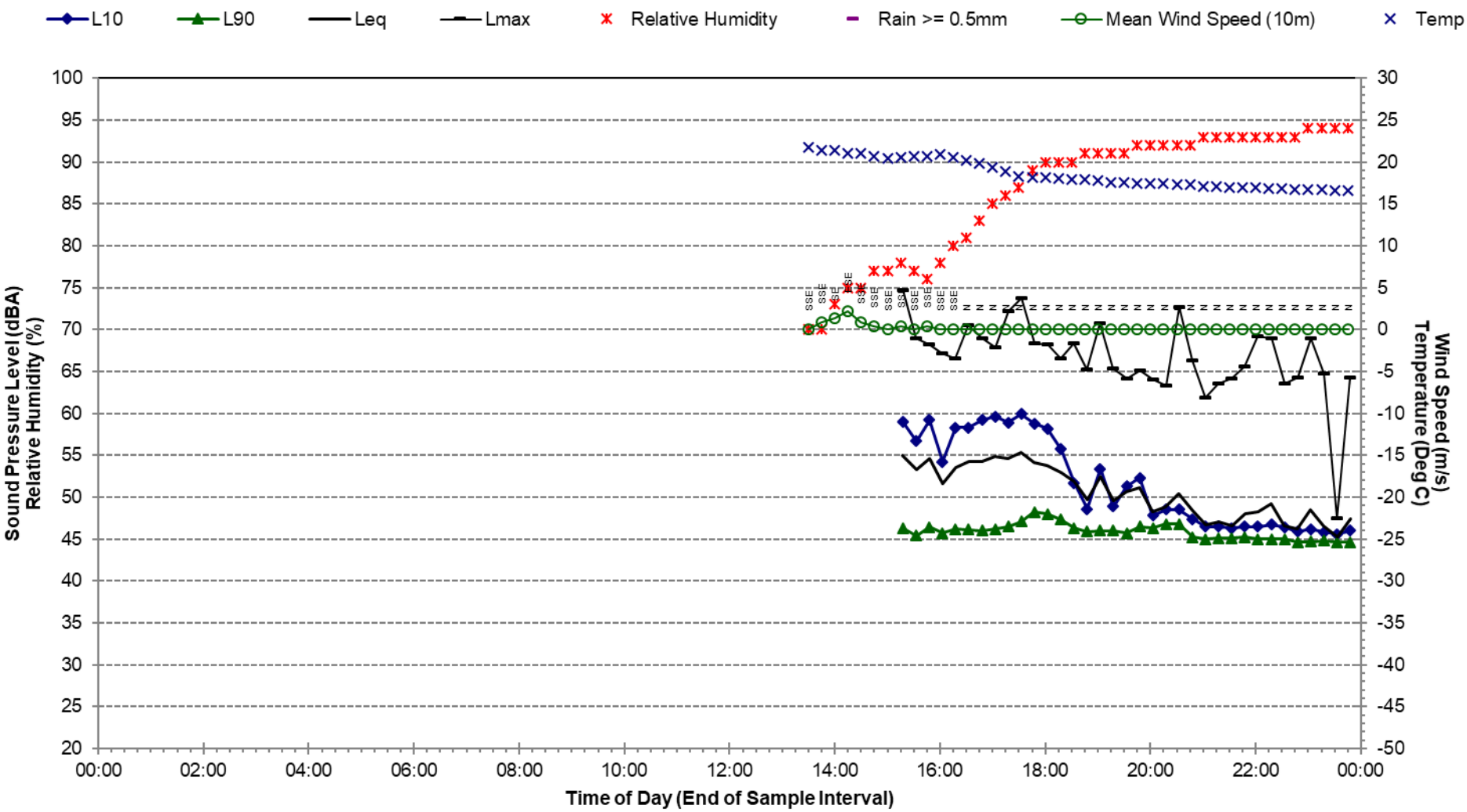
Table 6 Attended Noise Measurement Results

Location	Date & Time	Measured Noise Level in dBA				Description of Acoustic Environment
		L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	
43 Highland Drive	29/05/18 1:16 pm	62	54	46	51	Noise generated by water rushing over the dam spillway was dominant (45 dBA SPL). Road traffic noise audible during vehicle passby on Lake Macdonald Drive (52 to 63 dBA SPL). Insect noise clearly audible. Intermittent bird noise audible at times. No mechanical plant noise from water treatment plant was audible.
407 Lake Macdonald Drive	29/05/18 1:50 pm	51	45	35	42	Insect noise was dominant (centred around 4KHz). Road traffic noise audible during vehicle passby on Lake Macdonald Drive (44 to 46 dBA SPL). Intermittent bird noise and dog bark audible at times. Wind generated noise in trees audible at times. No mechanical plant noise from water treatment plant was audible.

It can be seen from **Table 6** that ambient noise environment at 43 Highland Drive was dominated by noise generated by water rushing over the dam spillway. Insect noise and road traffic noise were features of the ambient noise environment at both monitoring locations.

Statistical Ambient Noise Levels

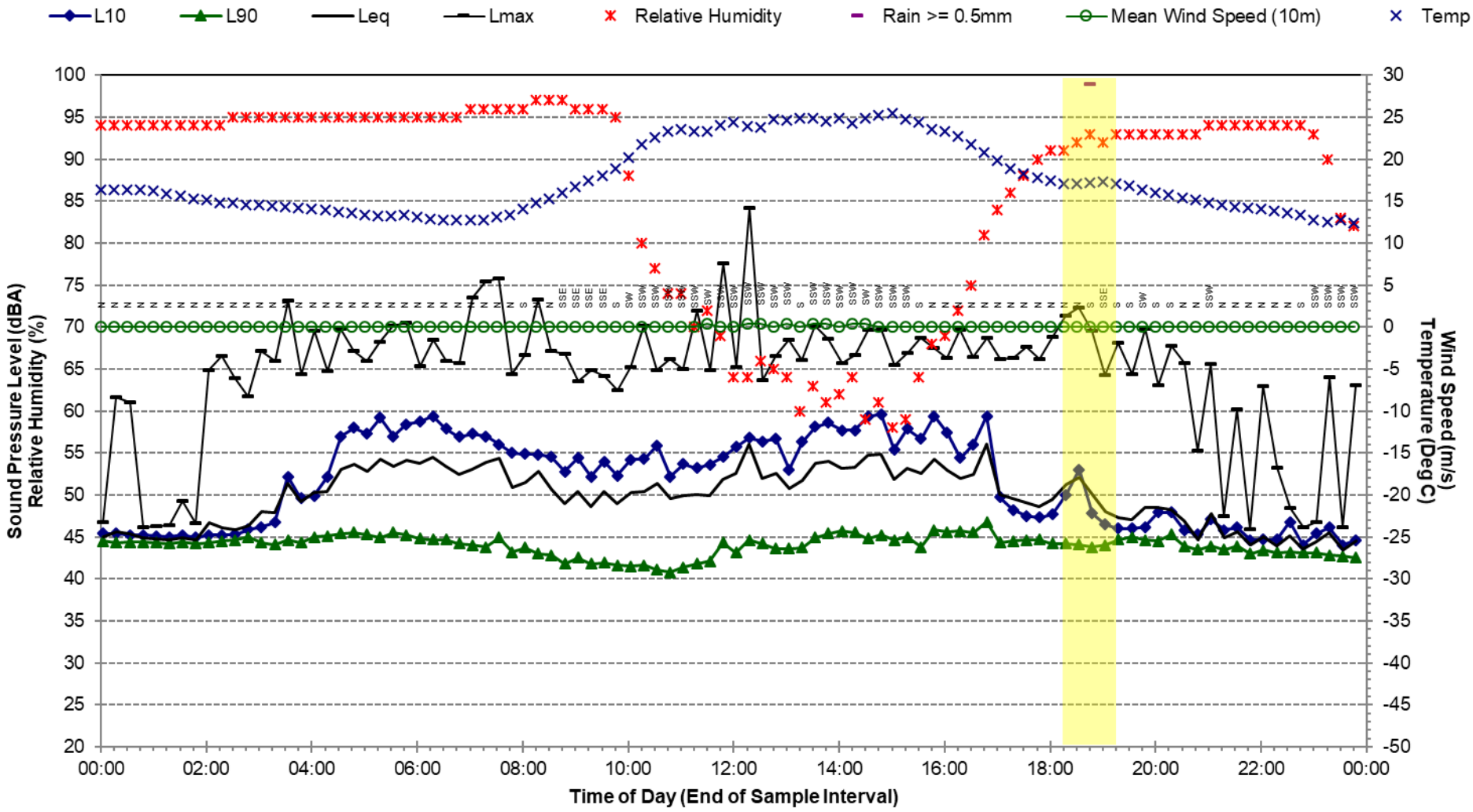
43 Highland Drive - Tuesday, 29 May 2018



SLR

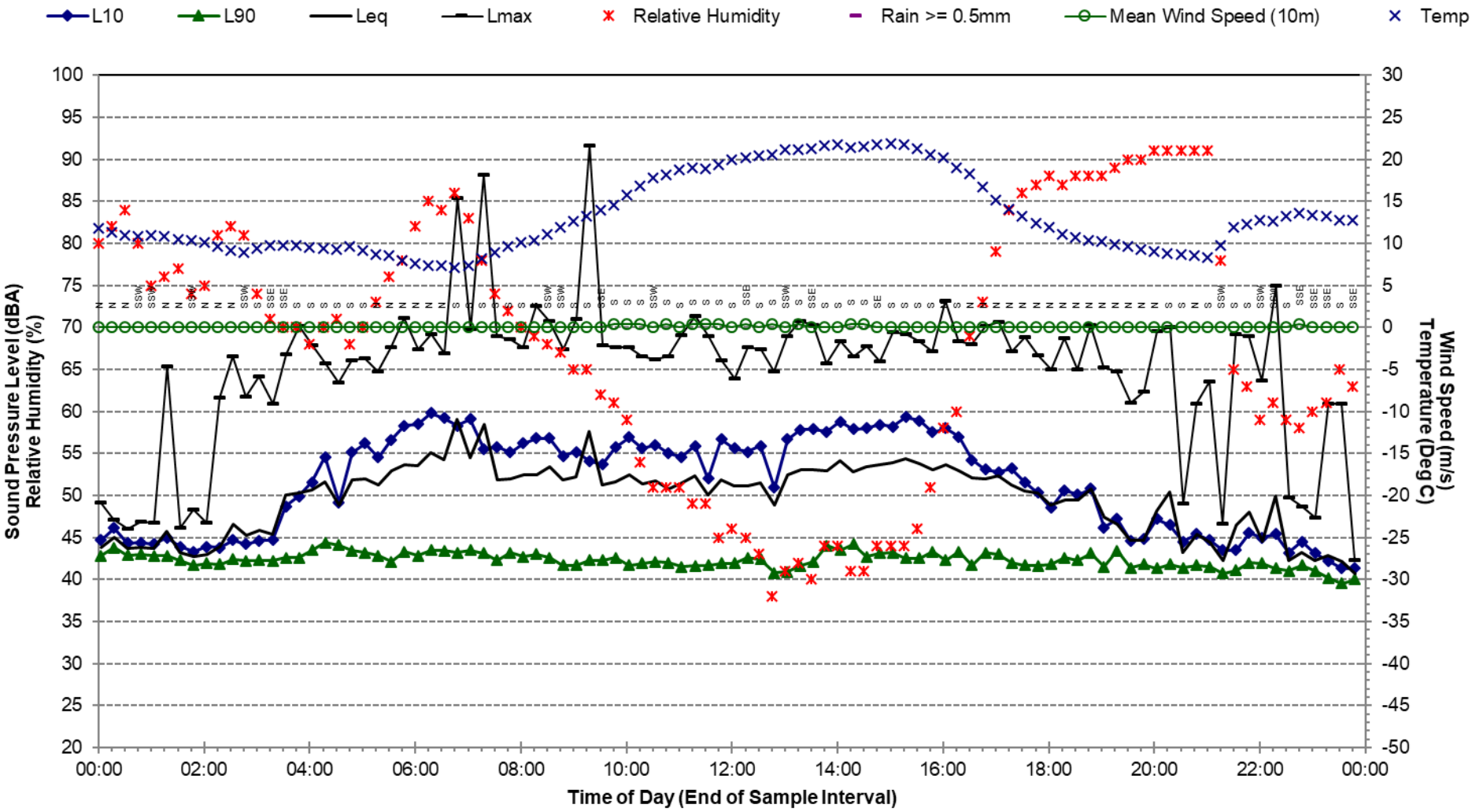
Statistical Ambient Noise Levels

43 Highland Drive - Wednesday, 30 May 2018



Statistical Ambient Noise Levels

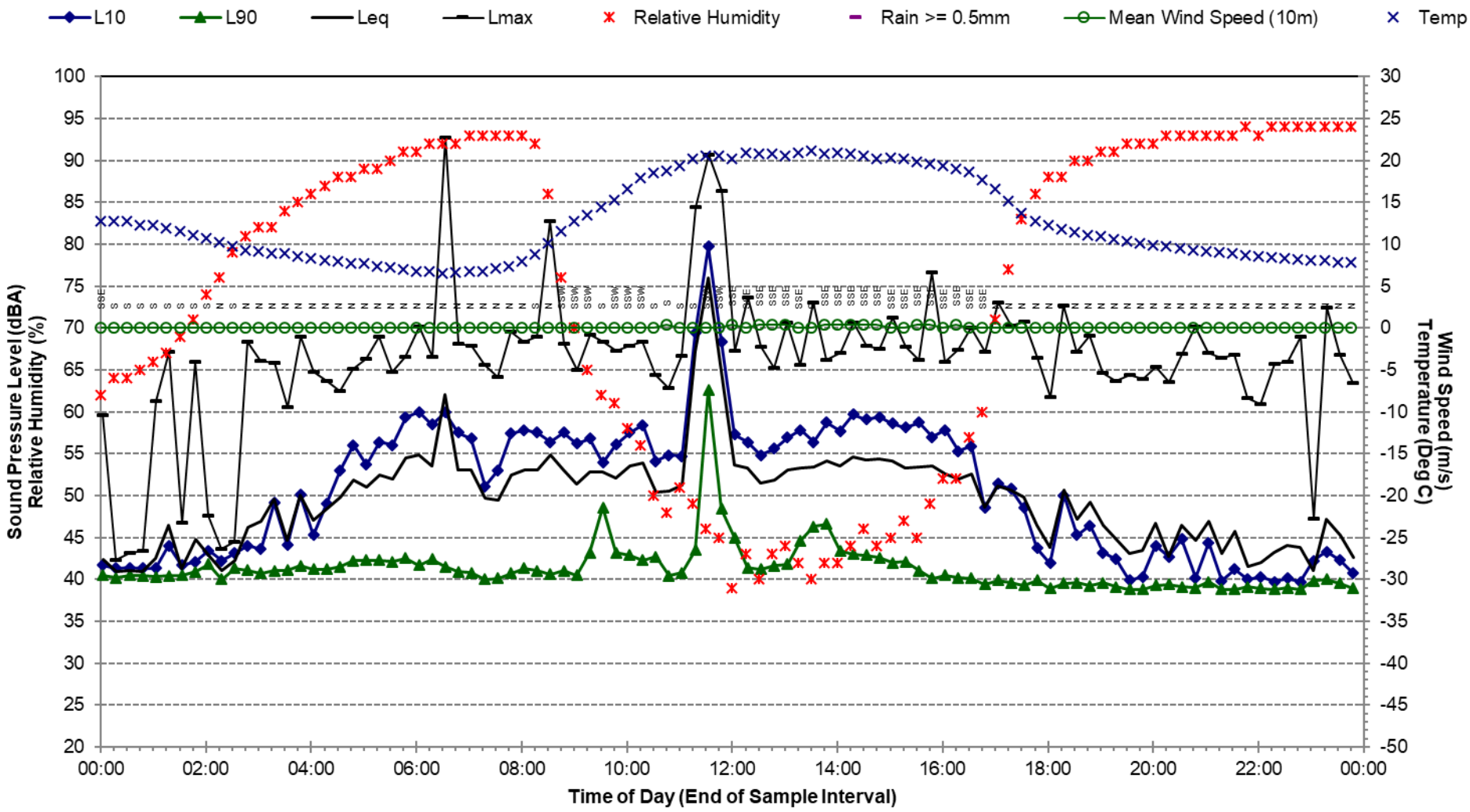
43 Highland Drive - Thursday, 31 May 2018



SLR

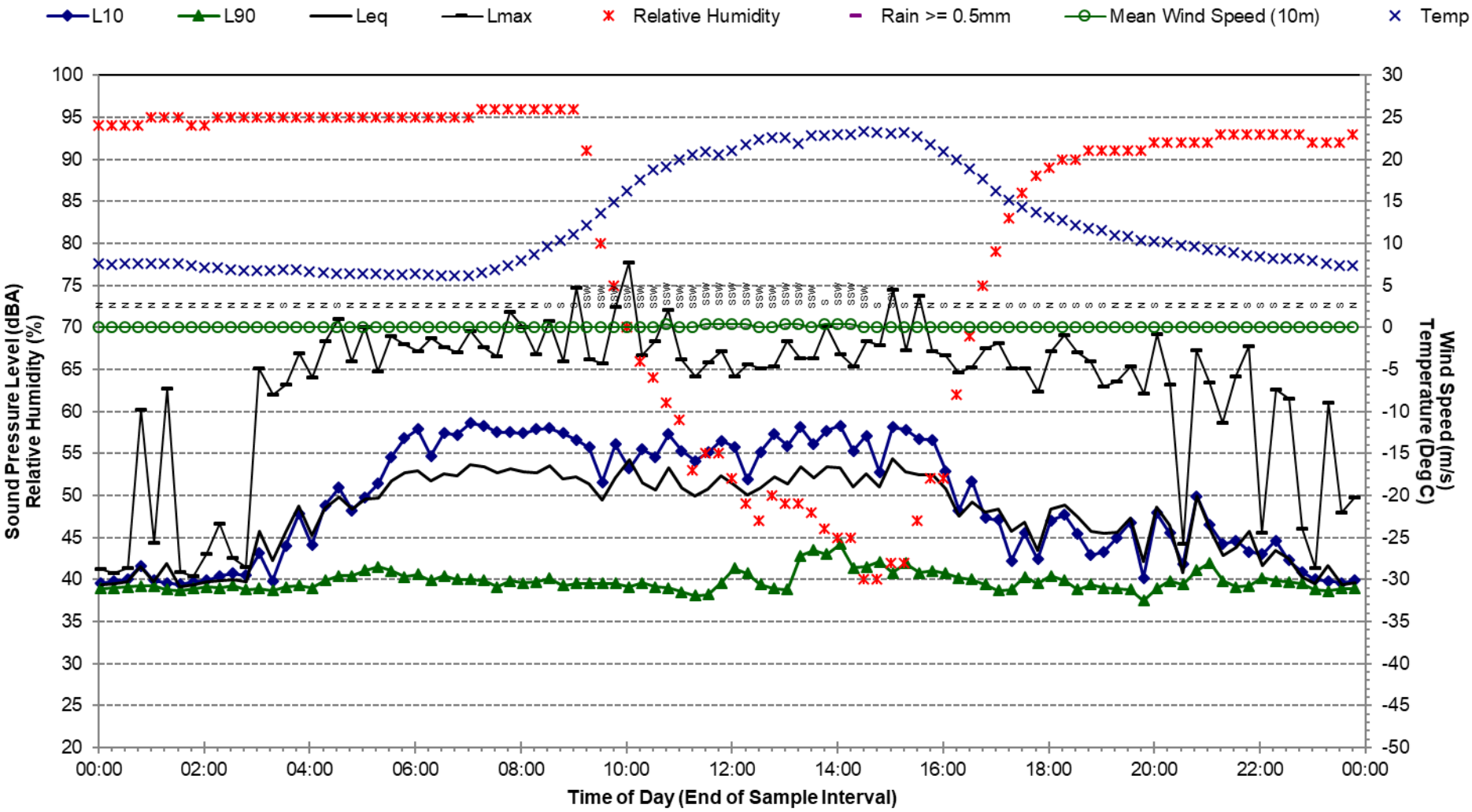
Statistical Ambient Noise Levels

43 Highland Drive - Friday, 1 June 2018



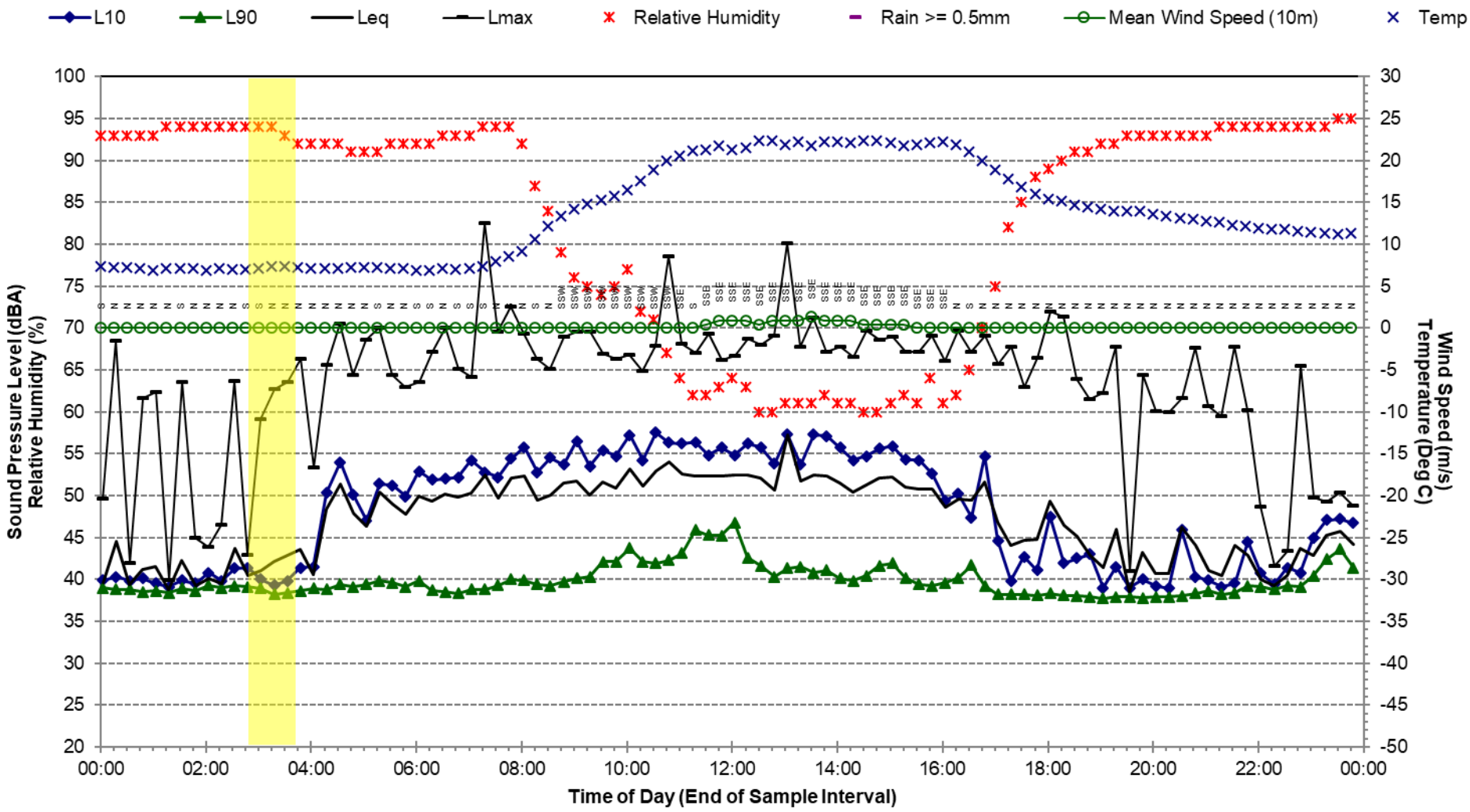
Statistical Ambient Noise Levels

43 Highland Drive - Saturday, 2 June 2018



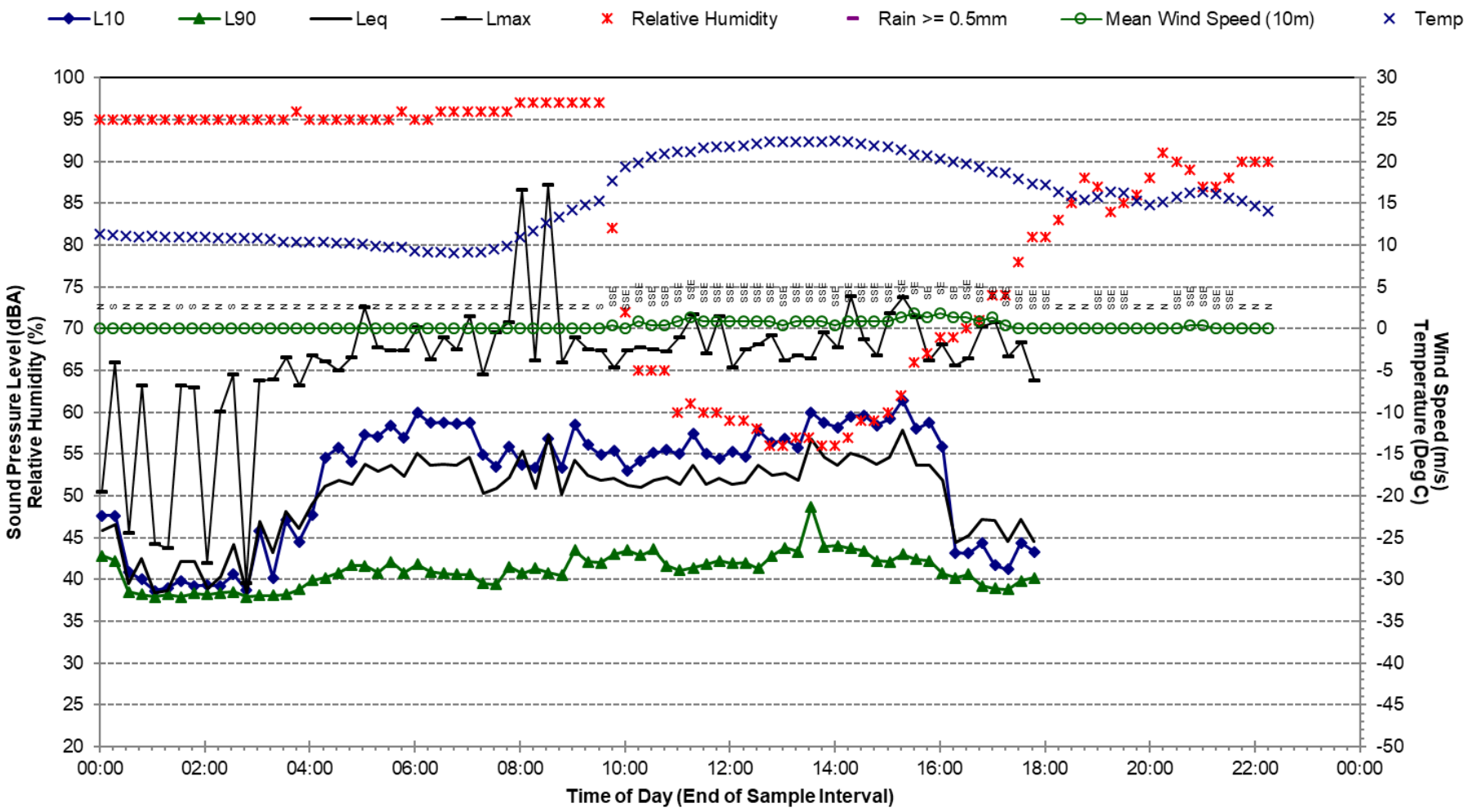
Statistical Ambient Noise Levels

43 Highland Drive - Sunday, 3 June 2018



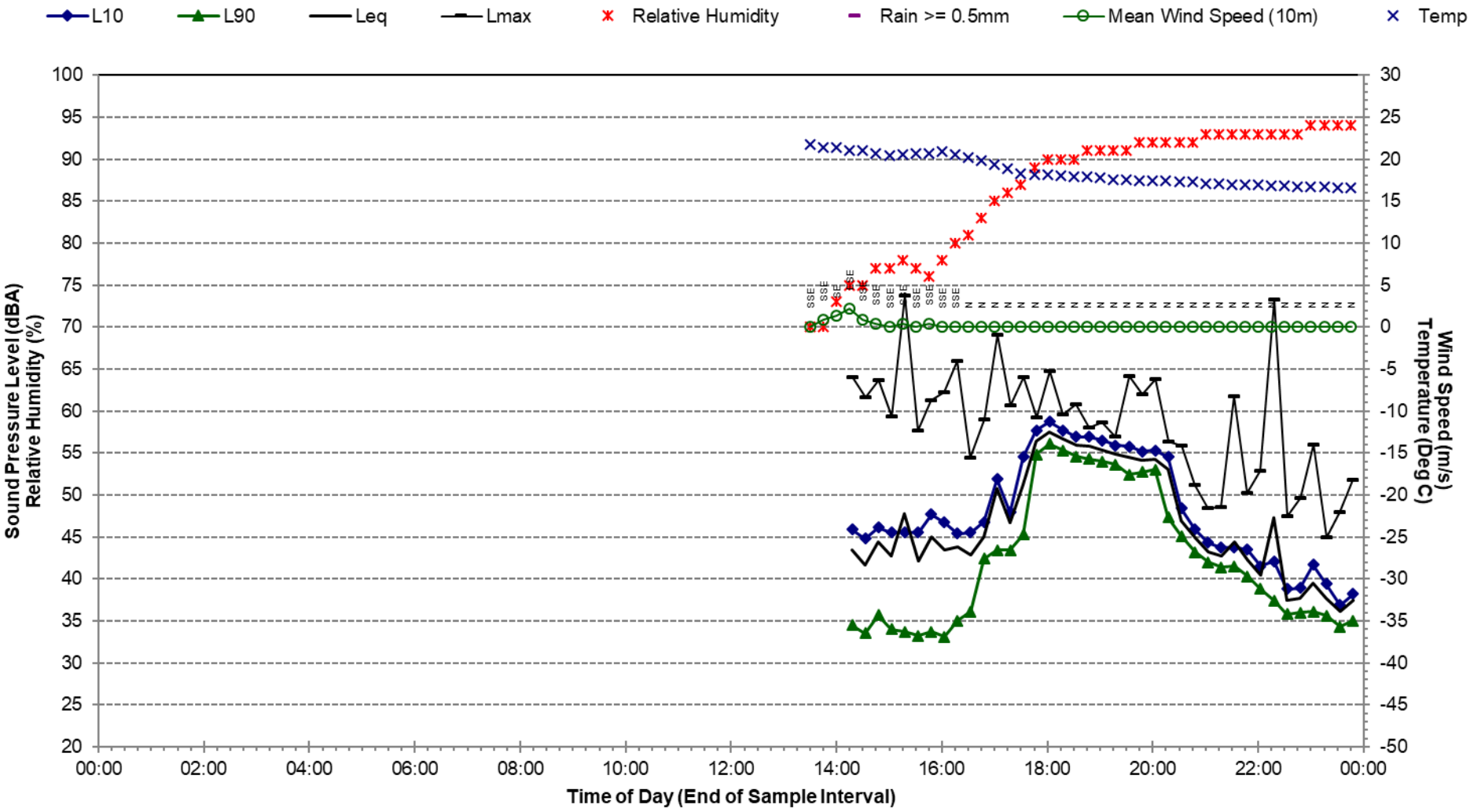
Statistical Ambient Noise Levels

43 Highland Drive - Monday, 4 June 2018



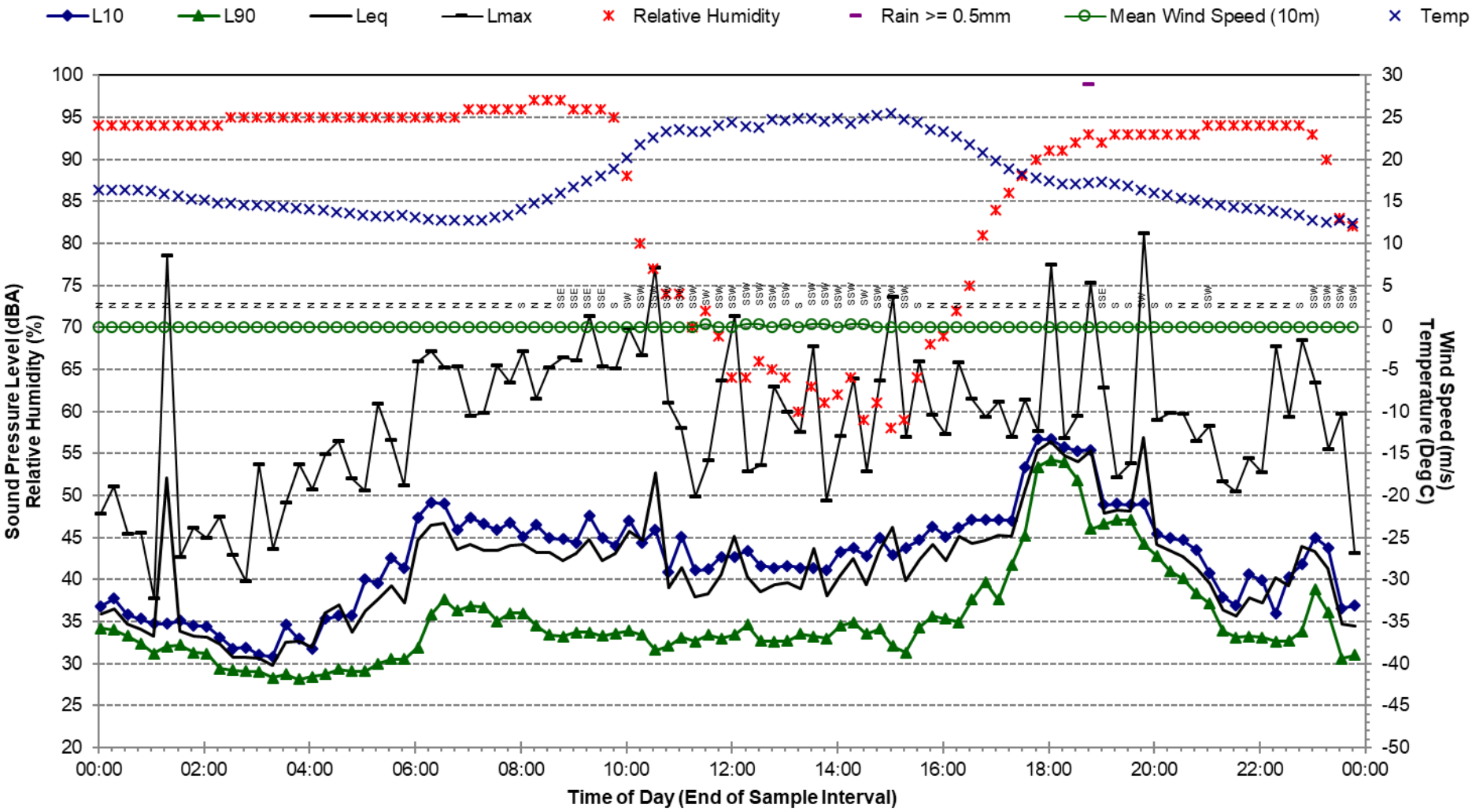
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Tuesday, 29 May 2018



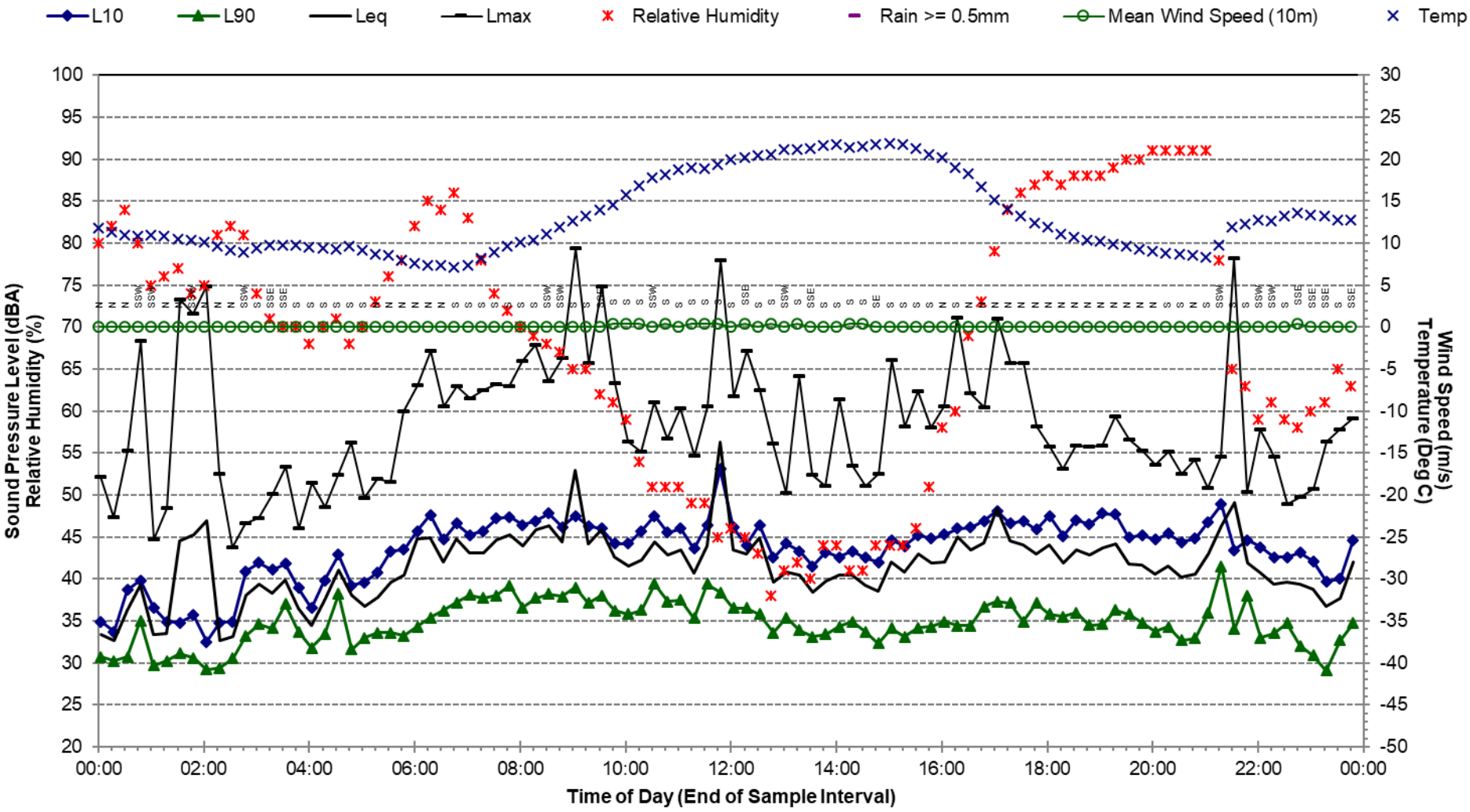
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Wednesday, 30 May 2018



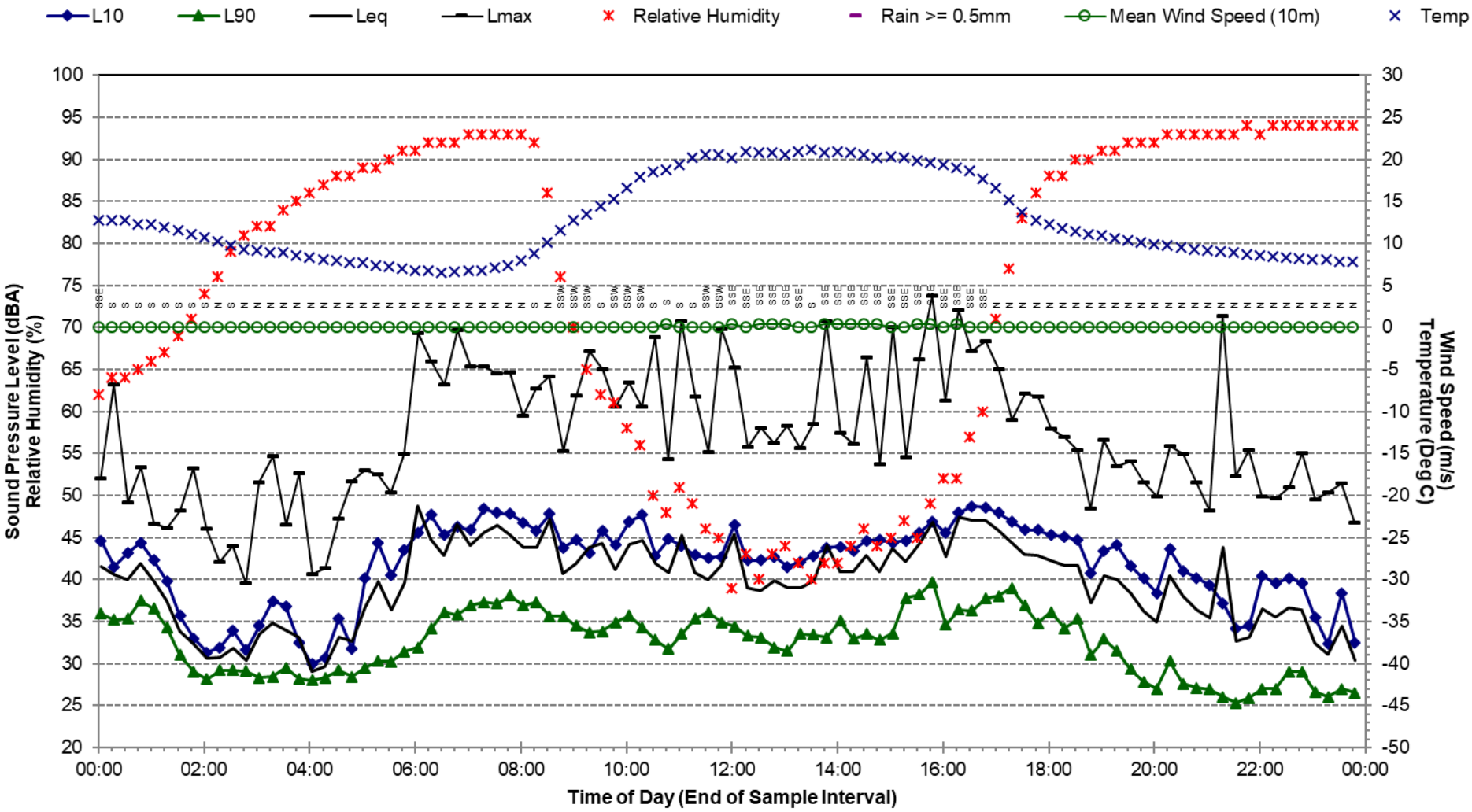
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Thursday, 31 May 2018



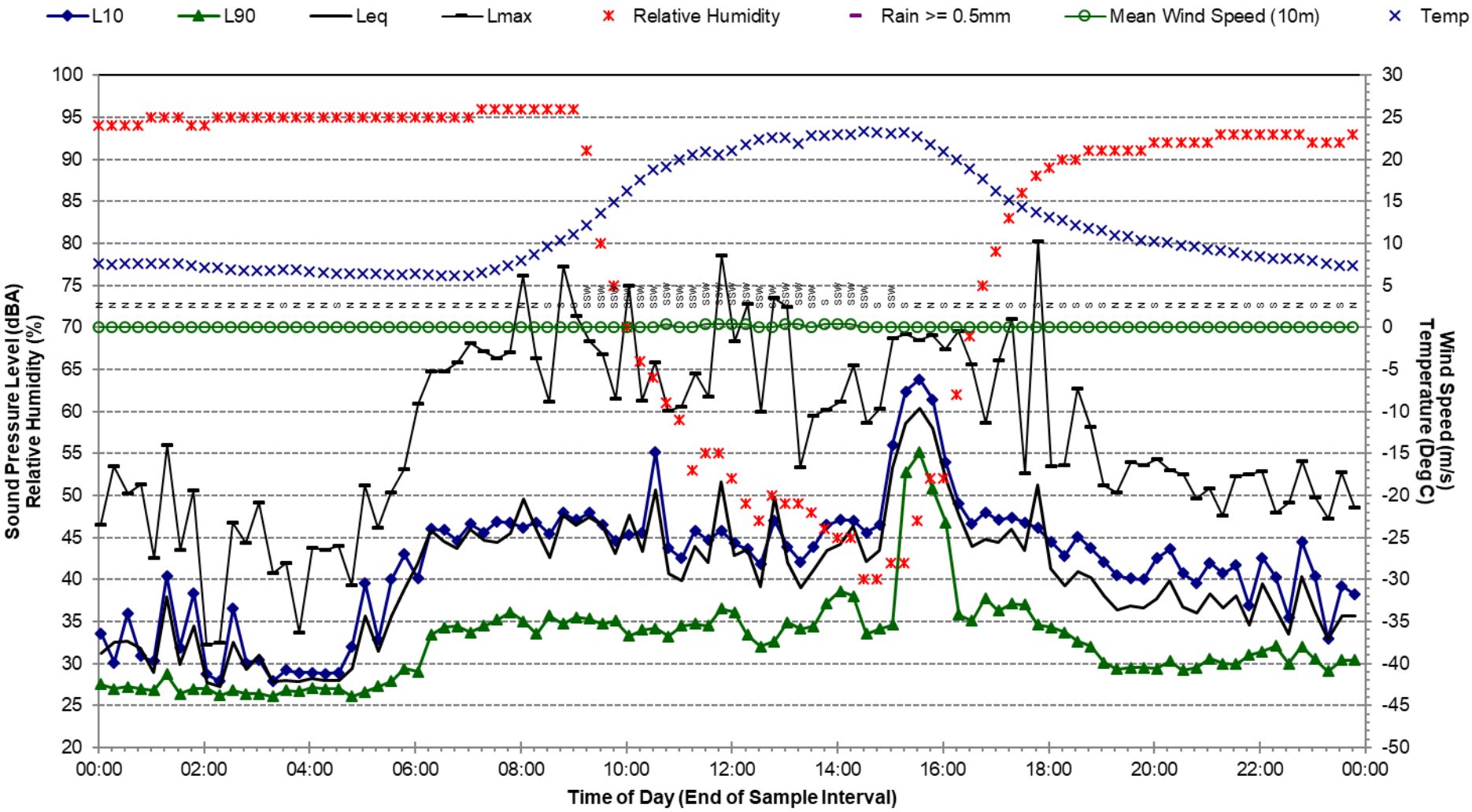
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Friday, 1 June 2018



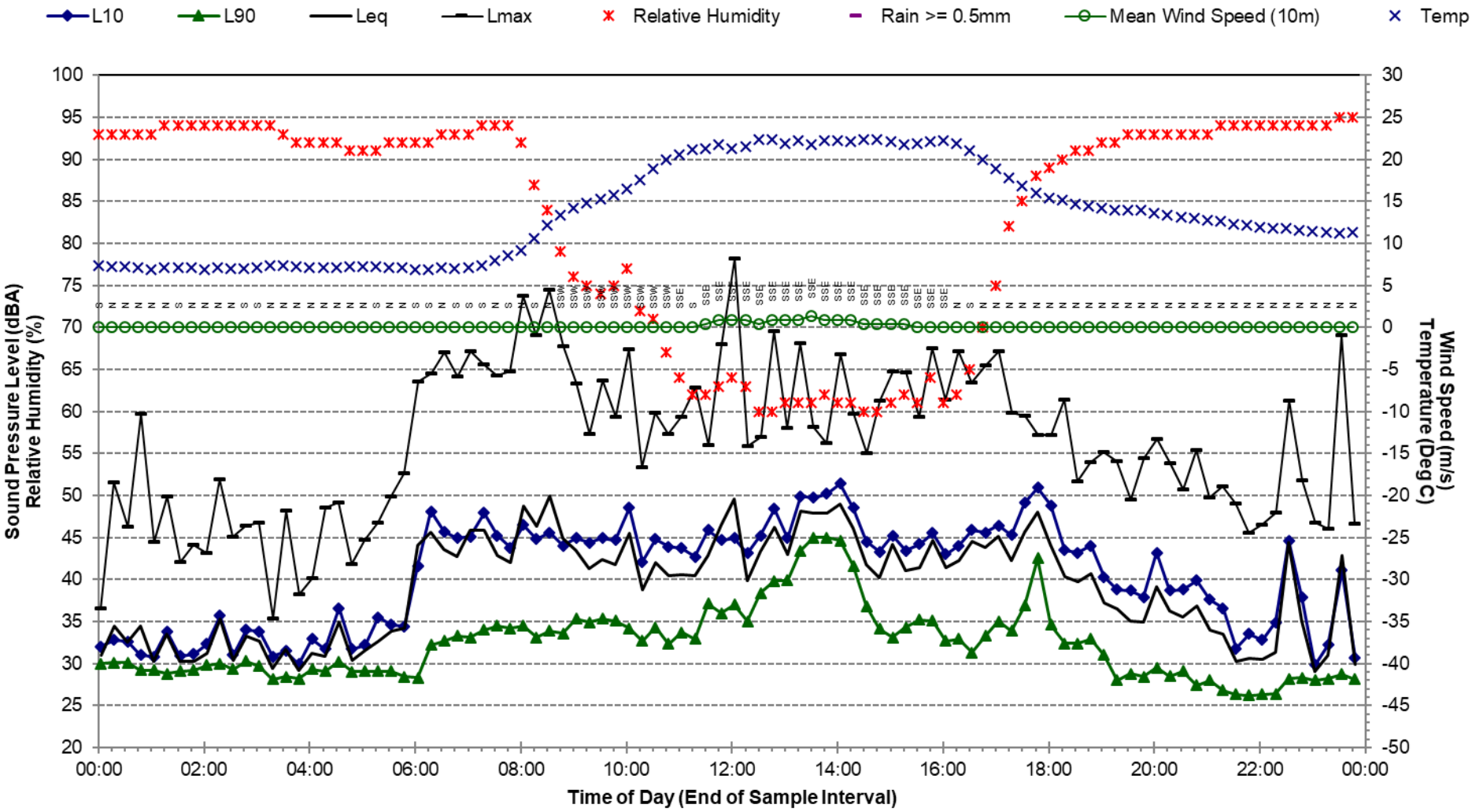
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Saturday, 2 June 2018



Statistical Ambient Noise Levels

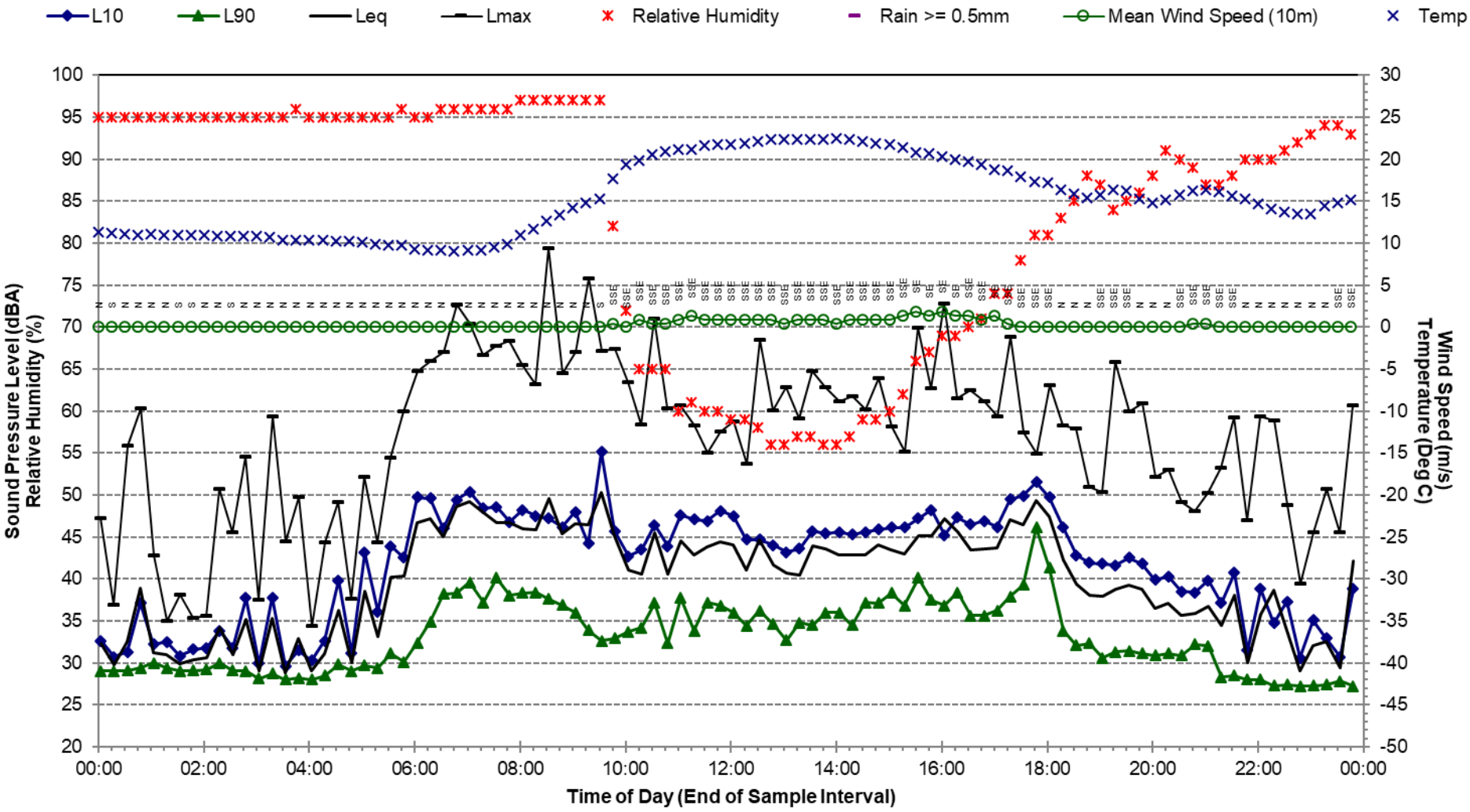
407 Lake MacDonald Drive - Sunday, 3 June 2018



SLR

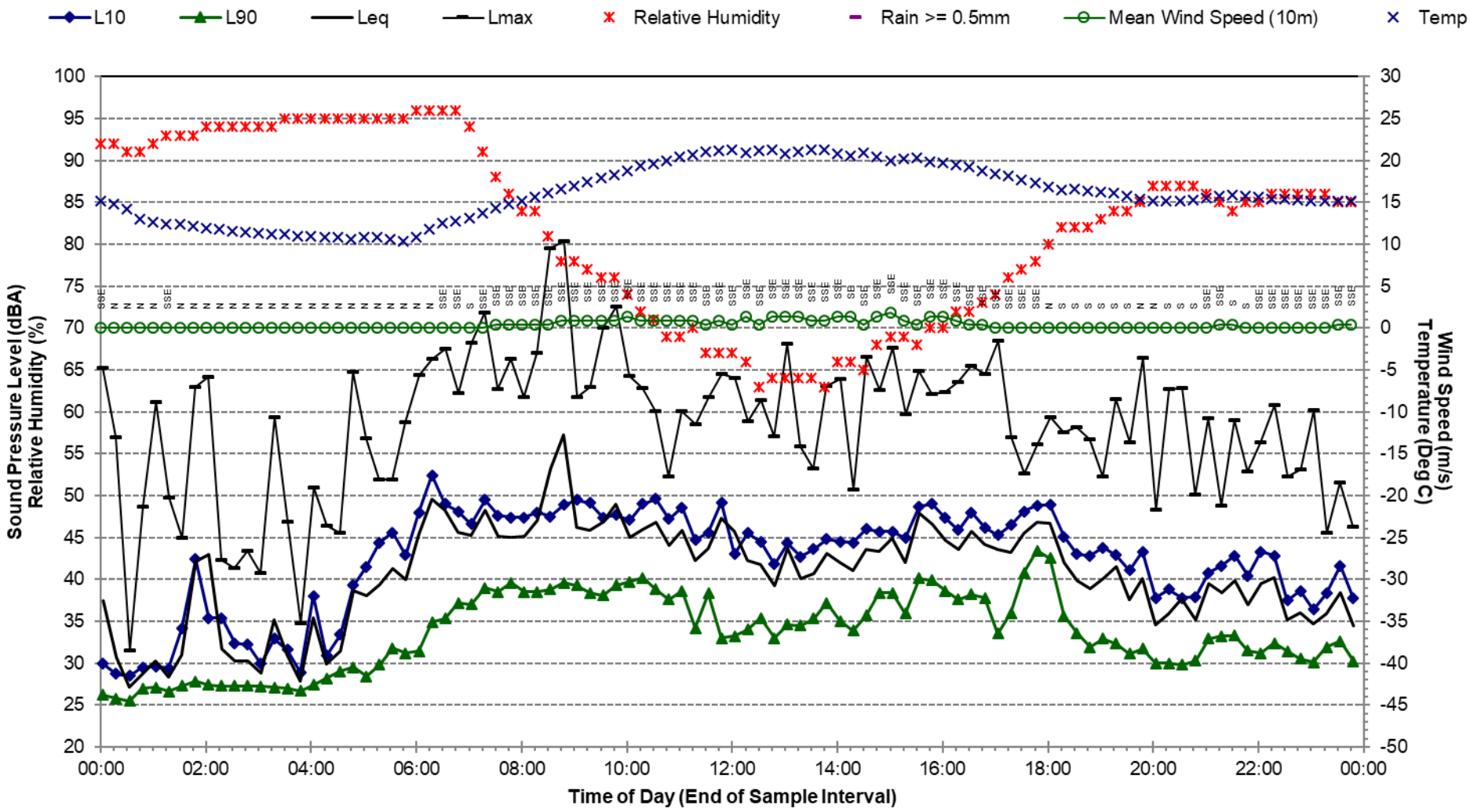
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Monday, 4 June 2018



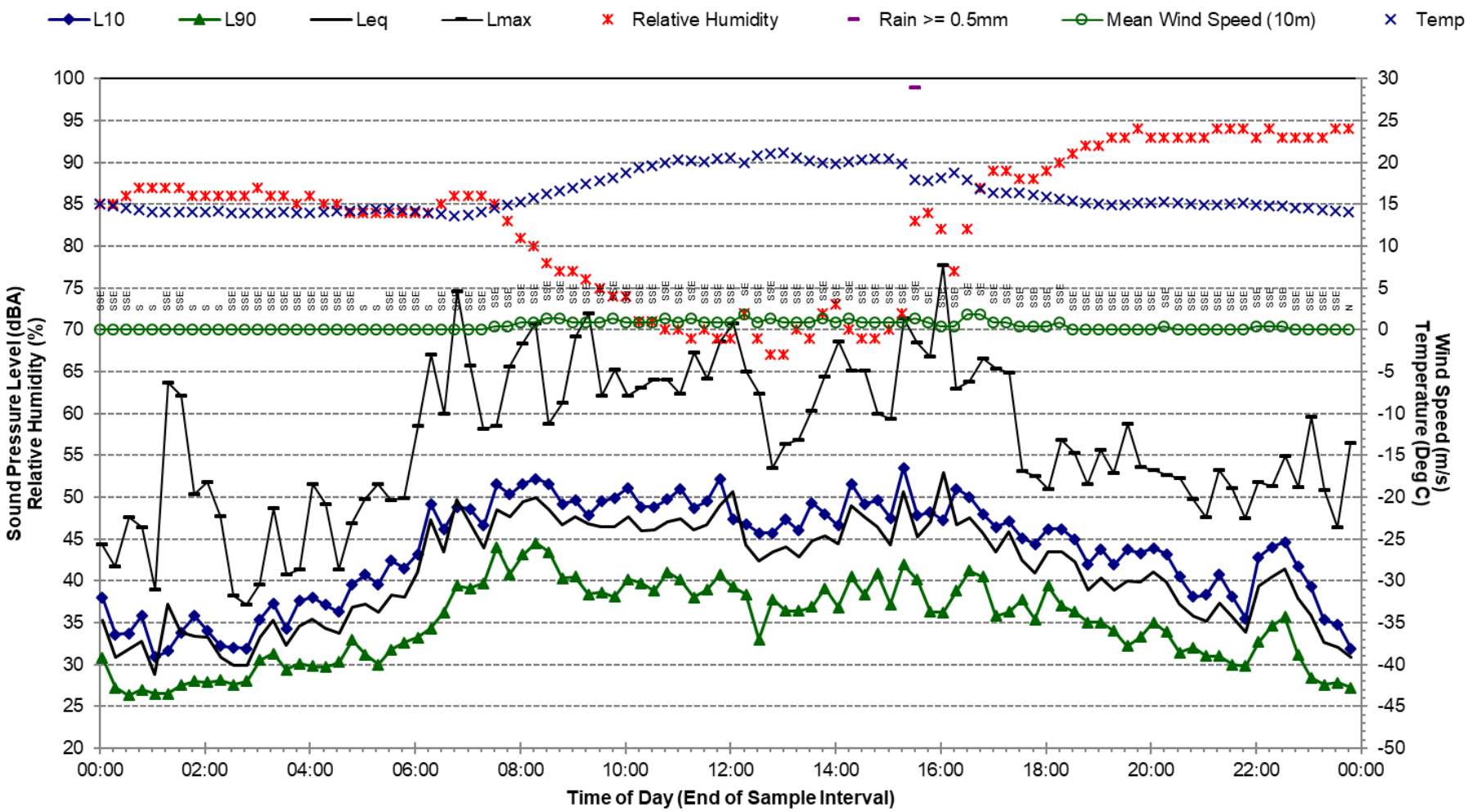
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Tuesday, 5 June 2018



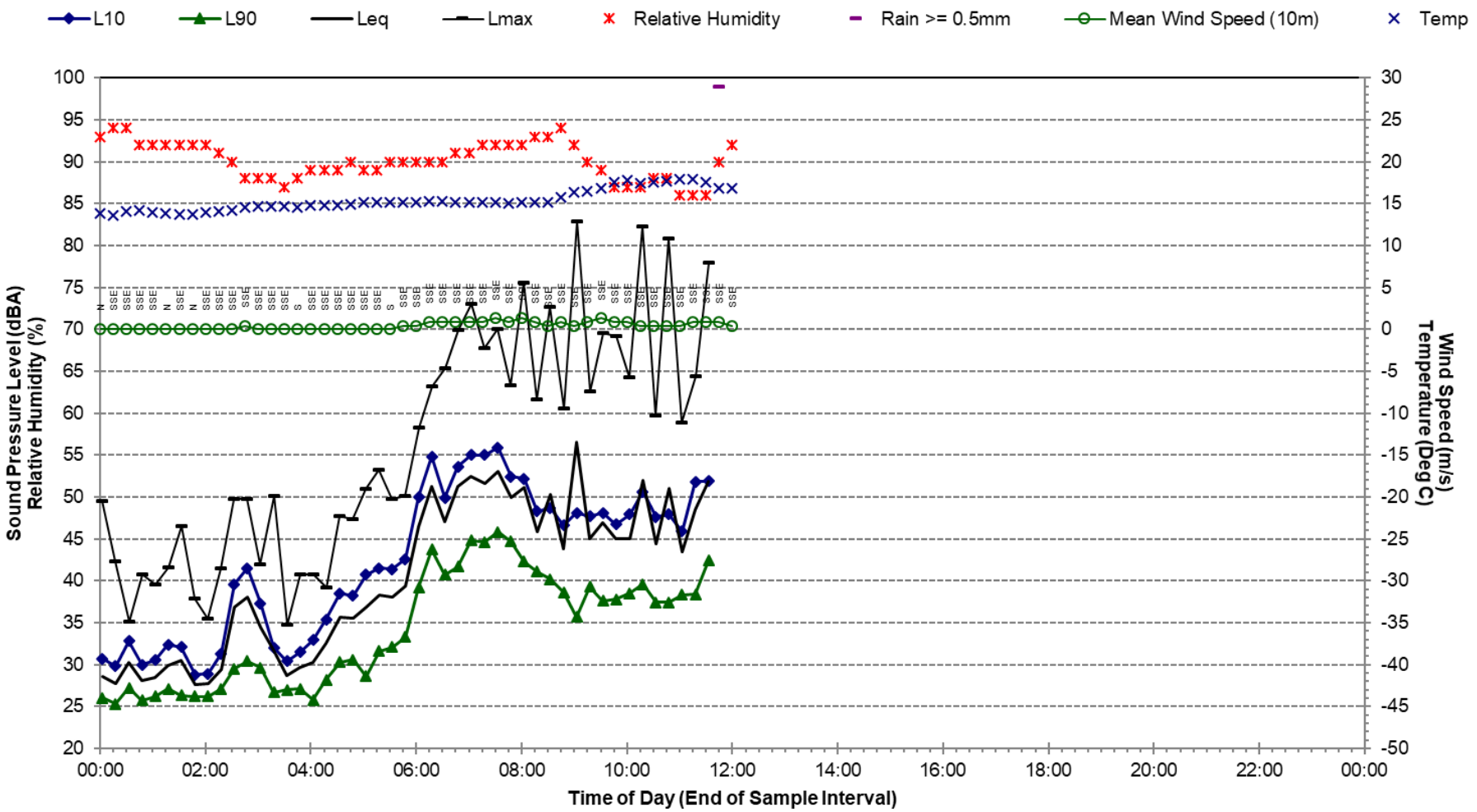
Statistical Ambient Noise Levels

407 Lake MacDonald Drive - Wednesday, 6 June 2018



Statistical Ambient Noise Levels

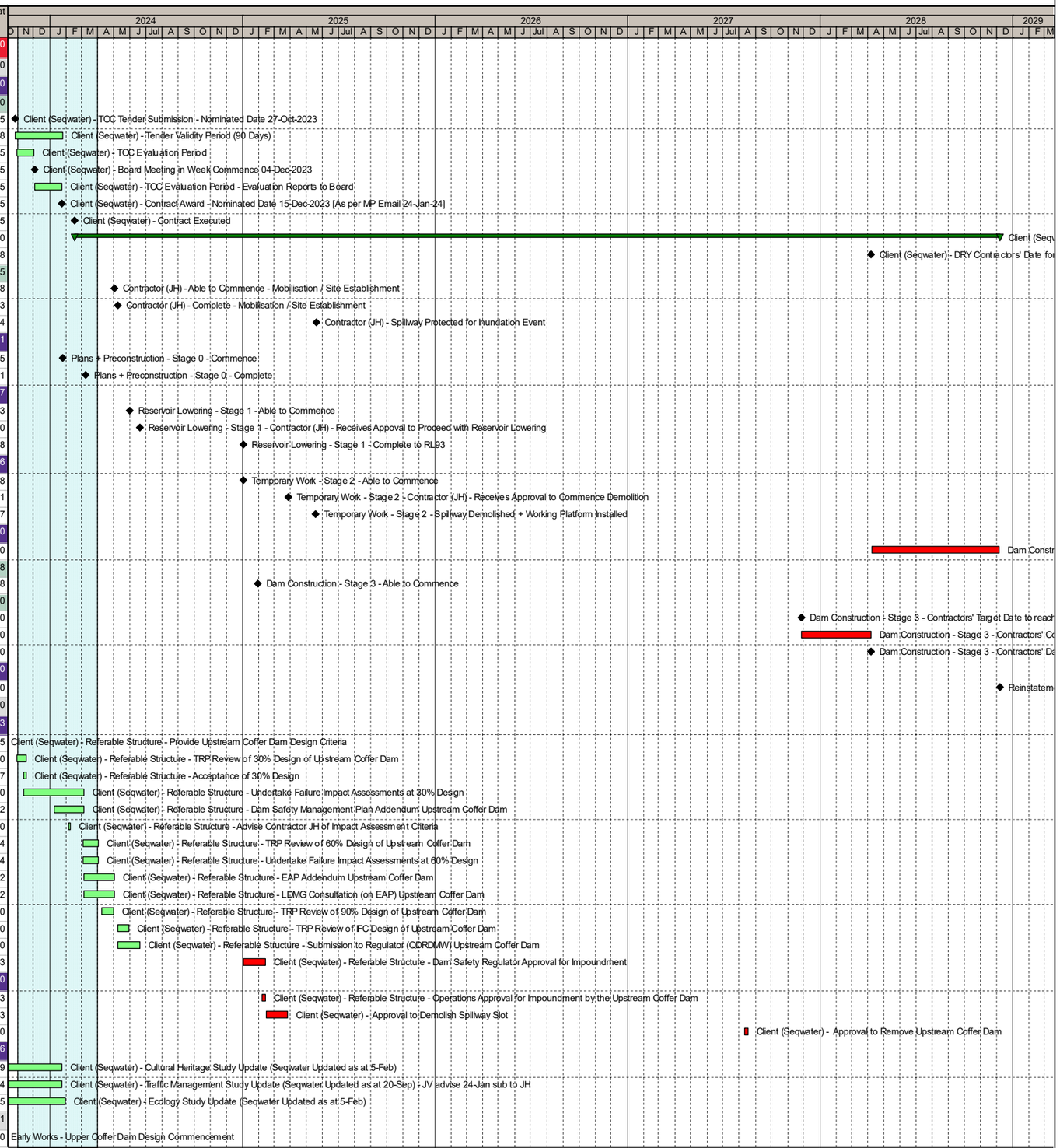
407 Lake MacDonald Drive - Thursday, 7 June 2018



Appendix B

Program schedule for construction

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCEN		858	03-Oct-23	07-Dec-28	0
MILESTONES		839	27-Oct-23	07-Dec-28	0
Key Milestones		839	27-Oct-23	07-Dec-28	0
Client		839	27-Oct-23	07-Dec-28	0
MIL-CL-0960	Client (Seqwater) - TOC Tender Submission - Nominated Date 27-Oct-2023	0		27-Oct-23*	5
MIL-CL-1640	Client (Seqwater) - Tender Validity Period (90 Days)	90	28-Oct-23	25-Jan-24	1778
MIL-CL-0980	Client (Seqwater) - TOC Evaluation Period	25	30-Oct-23	01-Dec-23	5
MIL-CL-1600	Client (Seqwater) - Board Meeting in Week Commence 04-Dec-2023	0	04-Dec-23		5
MIL-CL-1620	Client (Seqwater) - TOC Evaluation Period - Evaluation Reports to Board	27	04-Dec-23	24-Jan-24	5
MIL-CL-1000	Client (Seqwater) - Contract Award - Nominated Date 15-Dec-2023 [As per MP Email 24-Jan-24]	0		24-Jan-24	5
MIL-CL-1020	Client (Seqwater) - Contract Executed	0		16-Feb-24	5
MIL-CL-1580	Client (Seqwater) - Contract Duration (Calendar Days)	1756	17-Feb-24	07-Dec-28	0
MIL-CL-1660	Client (Seqwater) - DRY Contractors' Date for Practical Completion	0		07-Apr-28	168
Contractor		171	02-May-24	20-May-25	575
MIL-CO-1080	Contractor (JH) - Able to Commence - Mobilisation / Site Establishment	0	02-May-24		338
MIL-CO-1120	Contractor (JH) - Complete - Mobilisation / Site Establishment	0		09-May-24	213
MIL-CO-1140	Contractor (JH) - Spillway Protected for Inundation Event	0		20-May-25	804
Stage 0 - Plans + Preconstruction		30	25-Jan-24	08-Mar-24	471
MIL-CO-0900	Plans + Preconstruction - Stage 0 - Commence	0	25-Jan-24		5
MIL-CO-0920	Plans + Preconstruction - Stage 0 - Complete	0		08-Mar-24	471
Stage 1 - Resevoir Lowering		98	31-May-24	02-Jan-25	37
MIL-CO-1060	Reservoir Lowering - Stage 1 - Able to Commence	0	31-May-24		-3
MIL-CO-1100	Reservoir Lowering - Stage 1 - Contractor (JH) - Receives Appoval to Proceed with Reservoir Lowering	0		19-Jun-24	20
MIL-CO-1200	Reservoir Lowering - Stage 1 - Complete to RL93	0		02-Jan-25	58
Stage 2 - Temporary Works (Spillway Demolition + Working Platform)		56	02-Jan-25	19-May-25	146
MIL-CO-1180	Temporary Work - Stage 2 - Able to Commence	0	02-Jan-25		58
MIL-CO-1220	Temporary Work - Stage 2 - Contractor (JH) - Receives Approval to Commence Demolition	0	28-Mar-25		11
MIL-CO-1620	Temporary Work - Stage 2 - Spillway Demolished + Working Platform Installed	0		19-May-25	207
Stage 3 - Dam Construction		621	29-Jan-25	06-Dec-28	0
MIL-CO-1640	Dam Construction - Stage 3 - Weather Contingency (Wet Weather + Heat + Humidity + BPIC etc)	243	08-Apr-28	06-Dec-28	0
Stage 3 - Dam Construction - Commence		0	29-Jan-25	29-Jan-25	188
MIL-CO-1240	Dam Construction - Stage 3 - Able to Commence	0	29-Jan-25		188
Stage 3 - Dam Construction - Practical Completion		51	26-Nov-27	07-Apr-28	0
MIL-CO-1500	Dam Construction - Stage 3 - Contractors' Target Date to reach Practical Completion	0		26-Nov-27	0
MIL-CO-1520	Dam Construction - Stage 3 - Contractors' Contingency (Cal Days) SRA-03 - P80	133	27-Nov-27	07-Apr-28	0
MIL-CO-1420	Dam Construction - Stage 3 - Contractors' Date for Practical Completion (DRY)	0		07-Apr-28	0
Stage 4 - Reinstatement + Close Out		0	07-Dec-28	07-Dec-28	0
MIL-CO-1480	Reinstatement + Close Out - Stage 4 - Contractors' Date for Completion	0		07-Dec-28	0
APPROVALS + REPORTS + STUDIES		944	03-Oct-23	18-Aug-27	0
Referable Structure Approval		329	03-Oct-23	13-Feb-25	-3
RSA-1000	Client (Seqwater) - Referable Structure - Provide Upstream Coffer Dam Design Criteria	1	03-Oct-23	03-Oct-23	35
RSA-1040	Client (Seqwater) - Referable Structure - TRP Review of 30% Design of Upstream Coffer Dam	15	30-Oct-23	17-Nov-23	20
RSA-1060	Client (Seqwater) - Referable Structure - Acceptance of 30% Design	5	13-Nov-23	17-Nov-23	57
RSA-1020	Client (Seqwater) - Referable Structure - Undertake Failure Impact Assessments at 30% Design	70	13-Nov-23	05-Mar-24	20
RSA-1180	Client (Seqwater) - Referable Structure - Dam Safety Management Plan Addendum Upstream Coffer Dam	40	09-Jan-24	05-Mar-24	22
RSA-1280	Client (Seqwater) - Referable Structure - Advise Contractor JH of Impact Assessment Criteria	5	05-Feb-24	09-Feb-24	20
RSA-1080	Client (Seqwater) - Referable Structure - TRP Review of 60% Design of Upstream Coffer Dam	20	04-Mar-24	02-Apr-24	24
RSA-1160	Client (Seqwater) - Referable Structure - Undertake Failure Impact Assessments at 60% Design	20	04-Mar-24	02-Apr-24	24
RSA-1200	Client (Seqwater) - Referable Structure - EAP Addendum Upstream Coffer Dam	40	06-Mar-24	03-May-24	22
RSA-1220	Client (Seqwater) - Referable Structure - LDMG Consultation (on EAP) Upstream Coffer Dam	40	06-Mar-24	03-May-24	22
RSA-1100	Client (Seqwater) - Referable Structure - TRP Review of 90% Design of Upstream Coffer Dam	15	09-Apr-24	30-Apr-24	20
RSA-1120	Client (Seqwater) - Referable Structure - TRP Review of IFC Design of Upstream Coffer Dam	15	09-May-24	29-May-24	20
RSA-1140	Client (Seqwater) - Referable Structure - Submission to Regulator (QDRDMW) Upstream Coffer Dam	30	09-May-24	19-Jun-24	20
RSA-1240	Client (Seqwater) - Referable Structure - Dam Safety Regulator Approval for Impoundment	30	02-Jan-25	13-Feb-25	-3
Dam Operation Approvals		620	07-Feb-25	18-Aug-27	0
DOA-1000	Client (Seqwater) - Referable Structure - Operations Approval for Impoundment by the Upstream Coffer Dam	5	07-Feb-25	13-Feb-25	-3
DOA-1020	Client (Seqwater) - Approval to Demolish Spillway Slot	30	14-Feb-25	27-Mar-25	-3
DOA-1040	Client (Seqwater) - Approval to Remove Upstream Coffer Dam	5	12-Aug-27	18-Aug-27	0
2023 (Sept - Oct) - Study Updates		74	03-Oct-23	30-Jan-24	256
SU-1000	Client (Seqwater) - Cultural Heritage Study Update (Seqwater Updated as at 5-Feb)	71	03-Oct-23	24-Jan-24	259
SU-1040	Client (Seqwater) - Traffic Management Study Update (Seqwater Updated as at 20-Sep) - JV advise 24-Jan sub to	71	03-Oct-23	24-Jan-24	244
SU-1020	Client (Seqwater) - Ecology Study Update (Seqwater Updated as at 5-Feb)	74	03-Oct-23	30-Jan-24	35
EARLY WORKS / LIMITED NOTICE TO PROCEED (LNTP)		127	03-Oct-23	30-May-24	101
EW-CL-1060	Early Works - Upper Coffer Dam Design Commencement	0	03-Oct-23		-20



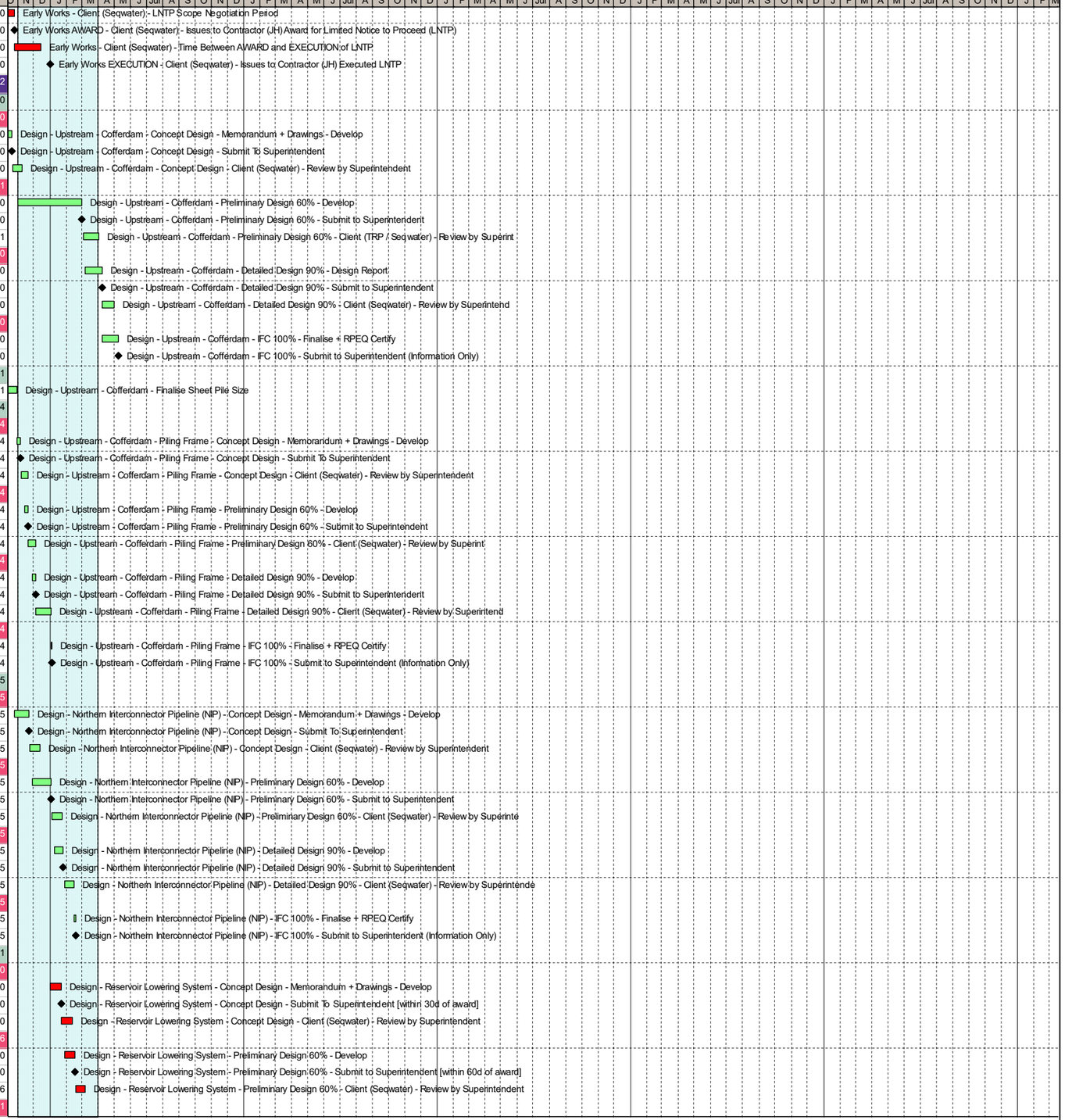
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

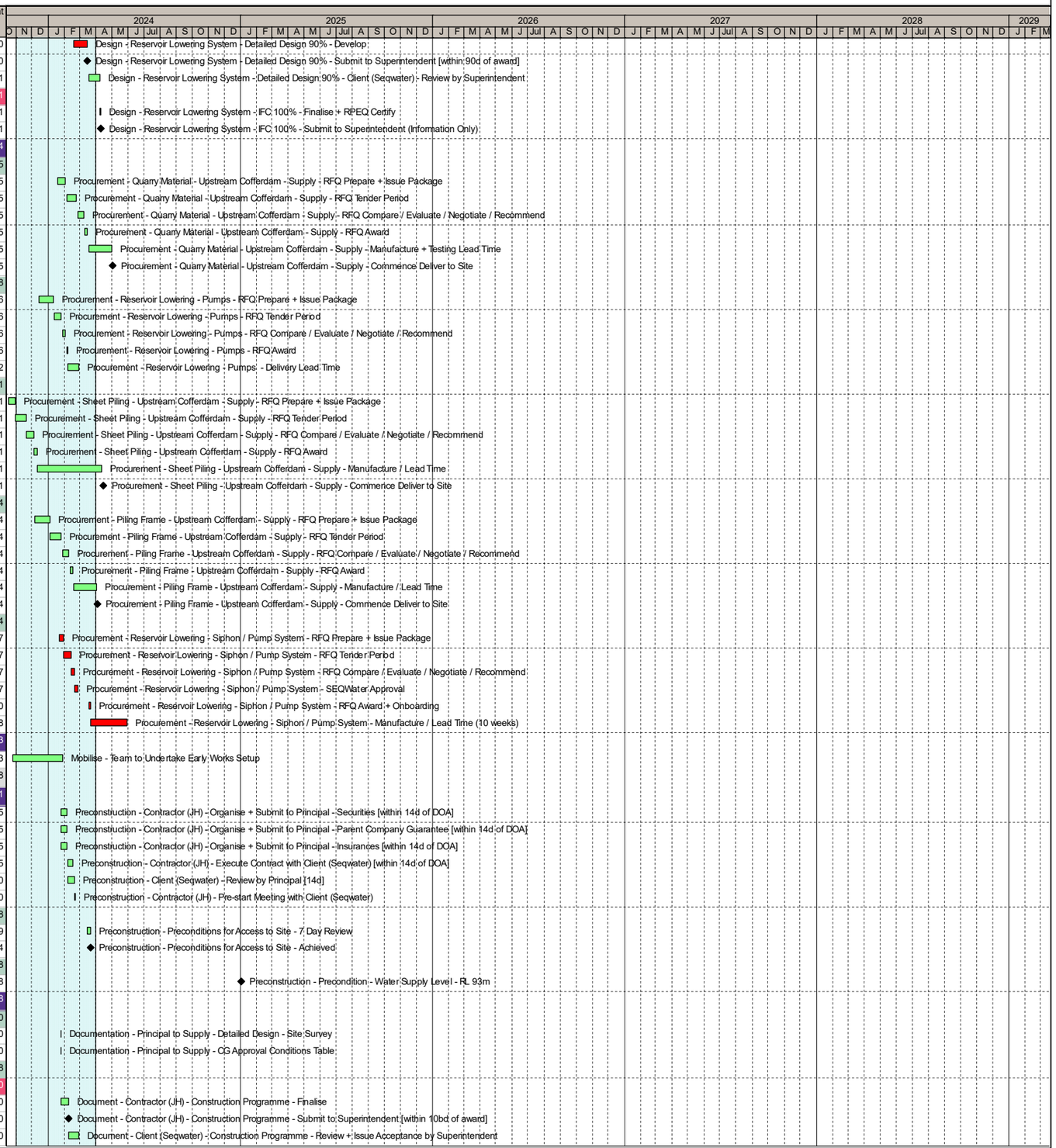
JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
EW-CL-1080	Early Works - Client (Seqwater) - LNTP Scope Negotiation Period	17	03-Oct-23	25-Oct-23	-20
EW-CL-1000	Early Works AWARD - Client (Seqwater) - Issues to Contractor (JH) Award for Limited Notice to Proceed (LNTP)	0	26-Oct-23		-20
EW-CL-1040	Early Works - Client (Seqwater) - Time Between AWARD and EXECUTION of LNTP	37	26-Oct-23	15-Dec-23	-20
EW-CL-1020	Early Works EXECUTION - Client (Seqwater) - Issues to Contractor (JH) Executed LNTP	0	02-Jan-24		-20
Design		141	03-Oct-23	08-May-24	162
Upstream Cofferdam		141	03-Oct-23	08-May-24	20
Concept Design		28	03-Oct-23	09-Nov-23	20
EW-DES-D-001-100	Design - Upstream - Cofferdam - Concept Design - Memorandum + Drawings - Develop	14	03-Oct-23	20-Oct-23	20
EW-DES-D-001-102	Design - Upstream - Cofferdam - Concept Design - Submit To Superintendent	0		20-Oct-23	20
EW-DES-D-001-104	Design - Upstream - Cofferdam - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Oct-23	09-Nov-23	20
Preliminary Design		95	02-Nov-23	02-Apr-24	21
EW-DES-D-001-106	Design - Upstream - Cofferdam - Preliminary Design 60% - Develop	75	02-Nov-23	01-Mar-24	20
EW-DES-D-001-108	Design - Upstream - Cofferdam - Preliminary Design 60% - Submit to Superintendent	0		01-Mar-24	20
EW-DES-D-001-110	Design - Upstream - Cofferdam - Preliminary Design 60% - Client (TRP / Seqwater) - Review by Superint	20	04-Mar-24	02-Apr-24	21
Detail Design		35	08-Mar-24	30-Apr-24	20
EW-DES-D-001-112	Design - Upstream - Cofferdam - Detailed Design 90% - Design Report	20	08-Mar-24	08-Apr-24	20
EW-DES-D-001-114	Design - Upstream - Cofferdam - Detailed Design 90% - Submit to Superintendent	0		08-Apr-24	20
EW-DES-D-001-116	Design - Upstream - Cofferdam - Detailed Design 90% - Client (Seqwater) - Review by Superintend	15	09-Apr-24	30-Apr-24	20
Issue For Construction (IFC)		20	09-Apr-24	08-May-24	20
EW-DES-D-001-118	Design - Upstream - Cofferdam - IFC 100% - Finalise + RPEQ Certify	20	09-Apr-24	08-May-24	20
EW-DES-D-001-120	Design - Upstream - Cofferdam - IFC 100% - Submit to Superintendent (Information Only)	0		08-May-24	20
Sheet Piles		20	03-Oct-23	30-Oct-23	21
EW-DES-SP-1000	Design - Upstream - Cofferdam - Finalise Sheet Pile Size	20	03-Oct-23	30-Oct-23	21
Upstream Cofferdam - Piling Frame		37	31-Oct-23	04-Jan-24	74
Concept Design		15	31-Oct-23	20-Nov-23	74
EW-DES-D-008-200	Design - Upstream - Cofferdam - Piling Frame - Concept Design - Memorandum + Drawings - Develop	5	31-Oct-23	06-Nov-23	74
EW-DES-D-008-202	Design - Upstream - Cofferdam - Piling Frame - Concept Design - Submit To Superintendent	0		06-Nov-23	74
EW-DES-D-008-204	Design - Upstream - Cofferdam - Piling Frame - Concept Design - Client (Seqwater) - Review by Superintendent	10	07-Nov-23	20-Nov-23	74
Preliminary Design		15	14-Nov-23	04-Dec-23	74
EW-DES-D-008-206	Design - Upstream - Cofferdam - Piling Frame - Preliminary Design 60% - Develop	5	14-Nov-23	20-Nov-23	74
EW-DES-D-008-208	Design - Upstream - Cofferdam - Piling Frame - Preliminary Design 60% - Submit to Superintendent	0		20-Nov-23	74
EW-DES-D-008-210	Design - Upstream - Cofferdam - Piling Frame - Preliminary Design 60% - Client (Seqwater) - Review by Superint	10	21-Nov-23	04-Dec-23	74
Detail Design		15	28-Nov-23	02-Jan-24	74
EW-DES-D-008-212	Design - Upstream - Cofferdam - Piling Frame - Detailed Design 90% - Develop	5	28-Nov-23	04-Dec-23	74
EW-DES-D-008-214	Design - Upstream - Cofferdam - Piling Frame - Detailed Design 90% - Submit to Superintendent	0		04-Dec-23	74
EW-DES-D-008-216	Design - Upstream - Cofferdam - Piling Frame - Detailed Design 90% - Client (Seqwater) - Review by Superintend	10	05-Dec-23	02-Jan-24	74
Issue For Construction (IFC)		2	03-Jan-24	04-Jan-24	74
EW-DES-D-008-218	Design - Upstream - Cofferdam - Piling Frame - IFC 100% - Finalise + RPEQ Certify	2	03-Jan-24	04-Jan-24	74
EW-DES-D-008-220	Design - Upstream - Cofferdam - Piling Frame - IFC 100% - Submit to Superintendent (Information Only)	0		04-Jan-24	74
Existing Infrastructure - Northern Interconnector Pipeline & Clear Water Tank		71	26-Oct-23	19-Feb-24	215
Concept Design		34	26-Oct-23	12-Dec-23	215
ST0-DES-D-011-100	Design - Northern Interconnector Pipeline (NIP) - Concept Design - Memorandum + Drawings - Develop	20	26-Oct-23	22-Nov-23	215
ST0-DES-D-011-102	Design - Northern Interconnector Pipeline (NIP) - Concept Design - Submit To Superintendent	0		22-Nov-23	215
ST0-DES-D-011-104	Design - Northern Interconnector Pipeline (NIP) - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Nov-23	12-Dec-23	215
Preliminary Design		29	29-Nov-23	23-Jan-24	215
ST0-DES-D-011-106	Design - Northern Interconnector Pipeline (NIP) - Preliminary Design 60% - Develop	15	29-Nov-23	03-Jan-24	215
ST0-DES-D-011-108	Design - Northern Interconnector Pipeline (NIP) - Preliminary Design 60% - Submit to Superintendent	0		03-Jan-24	215
ST0-DES-D-011-110	Design - Northern Interconnector Pipeline (NIP) - Preliminary Design 60% - Client (Seqwater) - Review by Superinte	14	04-Jan-24	23-Jan-24	215
Detail Design		26	10-Jan-24	15-Feb-24	215
ST0-DES-D-011-112	Design - Northern Interconnector Pipeline (NIP) - Detailed Design 90% - Develop	12	10-Jan-24	25-Jan-24	215
ST0-DES-D-011-114	Design - Northern Interconnector Pipeline (NIP) - Detailed Design 90% - Submit to Superintendent	0		25-Jan-24	215
ST0-DES-D-011-116	Design - Northern Interconnector Pipeline (NIP) - Detailed Design 90% - Client (Seqwater) - Review by Superintende	14	29-Jan-24	15-Feb-24	215
Issue for Construction (IFC)		2	16-Feb-24	19-Feb-24	215
ST0-DES-D-011-118	Design - Northern Interconnector Pipeline (NIP) - IFC 100% - Finalise + RPEQ Certify	2	16-Feb-24	19-Feb-24	215
ST0-DES-D-011-120	Design - Northern Interconnector Pipeline (NIP) - IFC 100% - Submit to Superintendent (Information Only)	0		19-Feb-24	215
Reservoir Lowering - Siphon / Pump System		69	02-Jan-24	10-Apr-24	31
Concept Design		29	02-Jan-24	12-Feb-24	-20
ST0-DES-D-010-100	Design - Reservoir Lowering System - Concept Design - Memorandum + Drawings - Develop	15	02-Jan-24	22-Jan-24	-20
ST0-DES-D-010-122	Design - Reservoir Lowering System - Concept Design - Submit To Superintendent [within 30d of award]	0		22-Jan-24	-20
ST0-DES-D-010-120	Design - Reservoir Lowering System - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Jan-24	12-Feb-24	-20
Preliminary Design		29	29-Jan-24	07-Mar-24	-16
ST0-DES-D-010-126	Design - Reservoir Lowering System - Preliminary Design 60% - Develop	15	29-Jan-24	16-Feb-24	-20
ST0-DES-D-010-180	Design - Reservoir Lowering System - Preliminary Design 60% - Submit to Superintendent [within 60d of award]	0		16-Feb-24	-20
ST0-DES-D-010-180	Design - Reservoir Lowering System - Preliminary Design 60% - Client (Seqwater) - Review by Superintendent	14	19-Feb-24	07-Mar-24	-16
Detail Design		34	19-Feb-24	08-Apr-24	31



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-DES-D-010-19(	Design - Reservoir Lowering System - Detailed Design 90% - Develop	20	19-Feb-24	15-Mar-24	-20
ST0-DES-D-010-25-	Design - Reservoir Lowering System - Detailed Design 90% - Submit to Superintendent [within 90d of award]	0		15-Mar-24	-20
ST0-DES-D-010-25(	Design - Reservoir Lowering System - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	18-Mar-24	08-Apr-24	31
Issue For Construction (IFC)		2	09-Apr-24	10-Apr-24	31
ST0-DES-D-010-28-	Design - Reservoir Lowering System - IFC 100% - Finalise + RPEQ Certify	2	09-Apr-24	10-Apr-24	31
ST0-DES-D-010-30-	Design - Reservoir Lowering System - IFC 100% - Submit to Superintendent (Information Only)	0		10-Apr-24	31
Procurement		117	17-Oct-23	30-May-24	24
S56 - 006 - Quarry Material - Upstream Cofferdam		70	19-Jan-24	02-May-24	35
EW-PRO-S56-1000	Procurement - Quarry Material - Upstream Cofferdam - Supply - RFQ Prepare + Issue Package	10	19-Jan-24	02-Feb-24	35
EW-PRO-S56-1020	Procurement - Quarry Material - Upstream Cofferdam - Supply - RFQ Tender Period	15	05-Feb-24	23-Feb-24	35
EW-PRO-S56-1040	Procurement - Quarry Material - Upstream Cofferdam - Supply - RFQ Compare / Evaluate / Negotiate / Recommenc	10	26-Feb-24	08-Mar-24	35
EW-PRO-S56-1060	Procurement - Quarry Material - Upstream Cofferdam - Supply - RFQ Award	5	11-Mar-24	15-Mar-24	35
EW-PRO-S56-1080	Procurement - Quarry Material - Upstream Cofferdam - Supply - Manufacture + Testing Lead Time	30	18-Mar-24	01-May-24	35
EW-PRO-S56-1100	Procurement - Quarry Material - Upstream Cofferdam - Supply - Commence Deliver to Site	0	02-May-24		35
C26 - 005 - Reservoir Lowering - Pumps Only		38	14-Dec-23	28-Feb-24	8
EW-PRO-C26-3580	Procurement - Reservoir Lowering - Pumps - RFQ Prepare + Issue Package	10	14-Dec-23	11-Jan-24	16
EW-PRO-C26-3600	Procurement - Reservoir Lowering - Pumps - RFQ Tender Period	10	12-Jan-24	25-Jan-24	16
EW-PRO-C26-3620	Procurement - Reservoir Lowering - Pumps - RFQ Compare / Evaluate / Negotiate / Recommend	5	29-Jan-24	02-Feb-24	16
EW-PRO-C26-3640	Procurement - Reservoir Lowering - Pumps - RFQ Award	3	05-Feb-24	07-Feb-24	16
EW-PRO-C26-3660	Procurement - Reservoir Lowering - Pumps - Delivery Lead Time	21	08-Feb-24	28-Feb-24	22
S - 002 - Sheet Piling - Upstream Cofferdam		115	17-Oct-23	15-Apr-24	61
EW-PRO-S-002-100(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - RFQ Prepare + Issue Package	10	17-Oct-23	30-Oct-23	61
EW-PRO-S-002-102(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - RFQ Tender Period	15	31-Oct-23	20-Nov-23	61
EW-PRO-S-002-104(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	21-Nov-23	04-Dec-23	61
EW-PRO-S-002-106(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - RFQ Award	5	05-Dec-23	11-Dec-23	61
EW-PRO-S-002-108(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - Manufacture / Lead Time	75	12-Dec-23	12-Apr-24	61
EW-PRO-S-002-110(	Procurement - Sheet Piling - Upstream Cofferdam - Supply - Commence Deliver to Site	0	15-Apr-24		61
S - 007 - Piling Frame - Upstream Cofferdam		70	07-Dec-23	03-Apr-24	74
EW-PRO-S-007-100(	Procurement - Piling Frame - Upstream Cofferdam - Supply - RFQ Prepare + Issue Package	10	07-Dec-23	04-Jan-24	74
EW-PRO-S-007-102(	Procurement - Piling Frame - Upstream Cofferdam - Supply - RFQ Tender Period	15	05-Jan-24	25-Jan-24	74
EW-PRO-S-007-104(	Procurement - Piling Frame - Upstream Cofferdam - Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	29-Jan-24	09-Feb-24	74
EW-PRO-S-007-106(	Procurement - Piling Frame - Upstream Cofferdam - Supply - RFQ Award	5	12-Feb-24	16-Feb-24	74
EW-PRO-S-007-108(	Procurement - Piling Frame - Upstream Cofferdam - Supply - Manufacture / Lead Time	30	19-Feb-24	02-Apr-24	74
EW-PRO-S-007-110(	Procurement - Piling Frame - Upstream Cofferdam - Supply - Commence Deliver to Site	0	03-Apr-24		74
S - 004 - Reservoir Lowering - Siphon / Pump System		54	23-Jan-24	30-May-24	-14
ST0-PRO-S-004-130	Procurement - Reservoir Lowering - Siphon / Pump System - RFQ Prepare + Issue Package	5	23-Jan-24	30-Jan-24	-7
ST0-PRO-S-004-154	Procurement - Reservoir Lowering - Siphon / Pump System - RFQ Tender Period	10	31-Jan-24	13-Feb-24	-7
ST0-PRO-S-004-186	Procurement - Reservoir Lowering - Siphon / Pump System - RFQ Compare / Evaluate / Negotiate / Recommend	5	14-Feb-24	20-Feb-24	-7
ST0-PRO-S-004-220	Procurement - Reservoir Lowering - Siphon / Pump System - SEQWater Approval	5	21-Feb-24	27-Feb-24	-7
ST0-PRO-S-004-206	Procurement - Reservoir Lowering - Siphon / Pump System - RFQ Award + Onboarding	4	18-Mar-24	21-Mar-24	-20
ST0-PRO-S-004-218	Procurement - Reservoir Lowering - Siphon / Pump System - Manufacture / Lead Time (10 weeks)	70	22-Mar-24	30-May-24	-28
Early Works Setup		56	26-Oct-23	29-Jan-24	93
EW-MOB-1000	Mobilise - Team to Undertake Early Works Setup	56	26-Oct-23	29-Jan-24	93
STAGE 0 - PRECONSTRUCTION WORKS		250	03-Oct-23	26-Feb-25	608
CONTRACT EXECUTION / PRECONDITIONS		151	25-Jan-24	02-Jan-25	41
ST0-PRE-1000	Preconstruction - Contractor (JH) - Organise + Submit to Principal - Securities [within 14d of DOA]	8	25-Jan-24	06-Feb-24	5
ST0-PRE-1020	Preconstruction - Contractor (JH) - Organise + Submit to Principal - Parent Company Guarantee [within 14d of DOA]	8	25-Jan-24	06-Feb-24	5
ST0-PRE-1040	Preconstruction - Contractor (JH) - Organise + Submit to Principal - Insurances [within 14d of DOA]	8	25-Jan-24	06-Feb-24	5
ST0-PRE-1060	Preconstruction - Contractor (JH) - Execute Contract with Client (Seqwater) [within 14d of DOA]	8	07-Feb-24	16-Feb-24	5
ST0-PRE-1100	Preconstruction - Client (Seqwater) - Review by Principal [14d]	10	07-Feb-24	20-Feb-24	270
ST0-PRE-1120	Preconstruction - Contractor (JH) - Pre-start Meeting with Client (Seqwater)	1	21-Feb-24	21-Feb-24	270
Precondtions: Access to Site [22 (b)]		2	15-Mar-24	21-Mar-24	168
ST0-PRE-1140	Preconstruction - Preconditions for Access to Site - 7 Day Review	7	15-Mar-24	21-Mar-24	379
ST0-PRE-1160	Preconstruction - Preconditions for Access to Site - Achieved	0		21-Mar-24	254
Preconditions: Stage 2 [26B]		0	02-Jan-25	02-Jan-25	58
ST0-PRE-1180	Preconstruction - Precondition - Water Supply Level - RL 93m	0	02-Jan-25		58
DOCUMENTATION		328	03-Oct-23	12-Feb-25	938
Client Supplied Documentation		1	25-Jan-24	25-Jan-24	20
ST0-DOC-1420	Documentation - Principal to Supply - Detailed Design - Site Survey	1	25-Jan-24	25-Jan-24	20
ST0-DOC-1440	Documentation - Principal to Supply - CG Approval Conditions Table	1	25-Jan-24	25-Jan-24	20
Submittals		328	03-Oct-23	12-Feb-25	938
Construction Programme		24	25-Jan-24	28-Feb-24	220
ST0-DOC-1600	Document - Contractor (JH) - Construction Programme - Finalise	10	25-Jan-24	08-Feb-24	220
ST0-DOC-1680	Document - Contractor (JH) - Construction Programme - Submit to Superintendent [within 10bd of award]	0		08-Feb-24	220
ST0-DOC-1760	Document - Client (Seqwater) - Construction Programme - Review + Issue Acceptance by Superintendent	14	09-Feb-24	28-Feb-24	220



Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

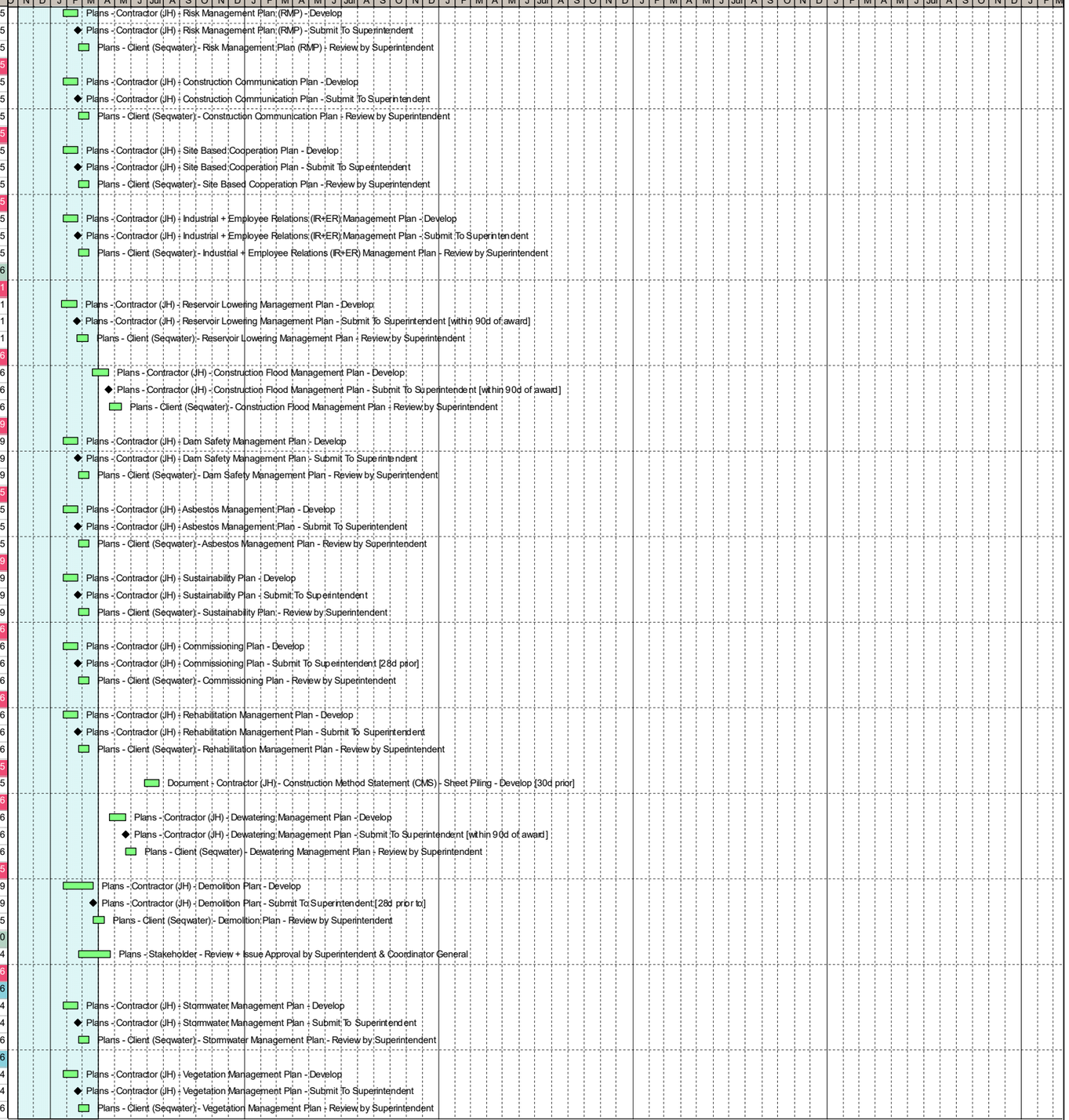
20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
Ground Water Dewatering		150	03-Oct-23	21-May-24	290
ST0-DOC-1080	Document - Contractor (JH) - Groundwater Dewatering - Develop Dewatering Trial Report	10	03-Oct-23	16-Oct-23	430
ST0-DOC-1000	Document - Contractor (JH) - Submit Specialist Structural Engineer Details to Superintendent [within 90d of award]	1	25-Jan-24	25-Jan-24	288
ST0-DOC-1020	Document - Contractor (JH) - Submit Groundwater Specialist Details to Superintendent [within 90d of award]	1	25-Jan-24	25-Jan-24	288
ST0-DOC-1040	Document - Contractor (JH) - Groundwater Dewatering - Develop + Submit Construction Method [within 90d of awar	20	22-Apr-24	21-May-24	210
ST0-DOC-1060	Document - Contractor (JH) - Groundwater Dewatering - Develop + Submit Detailed Programme [within 90d of awar	20	22-Apr-24	21-May-24	210
Reservoir Lowering System		34	25-Jan-24	13-Mar-24	49
ST0-DOC-1620	Document - Contractor (JH) - Adaptive Management Plan - Update	10	25-Jan-24	08-Feb-24	33
ST0-DOC-1640	Document - Contractor (JH) - Reservoir Lowering - Construction Procedure - Develop	20	25-Jan-24	22-Feb-24	49
ST0-DOC-1740	Document - Contractor (JH) - Reservoir Lowering - Stage 1 Develop Detailed Programme	10	29-Jan-24	09-Feb-24	58
ST0-DOC-1700	Document - Contractor (JH) - Adaptive Management Plan - Submit to Superintendent [56 days prior to commencem	0		08-Feb-24	33
ST0-DOC-1820	Document - Client (Seqwater) - Adaptive Management Plan - Review + Issue Approval by Superintendent	14	09-Feb-24	28-Feb-24	59
ST0-DOC-2300	Document - Contractor (JH) - Reservoir Lowering - Construction Procedure - Submit to Superintendent	0		22-Feb-24	49
ST0-DOC-2780	Document - Client (Seqwater) - Reservoir Lowering - Constructin Procedure - Review + Issue Approval by Superinten	14	23-Feb-24	13-Mar-24	49
Concrete Batch Plant		114	30-Apr-24	09-Oct-24	414
ST0-DOC-3020	Document - Contractor (JH) - Concrete Batch Plant - Submit to Superintendent [90d after award]	2	30-Apr-24	01-May-24	474
ST0-DOC-3100	Document - Contractor (JH) - Concrete Batch Plant Trial Results - Submit to Superintendent	2	17-Sep-24	18-Sep-24	414
ST0-DOC-3120	Document - Client (Seqwater) - Concrete Batch Plant - Trial Results - Review + Issue Acceptance by Superintendent	14	19-Sep-24	09-Oct-24	414
Mass Concrete		29	02-Jan-25	12-Feb-25	289
ST0-DOC-3140	Document - Contractor (JH) - Mass Concrete - Construction Method Statement (CMS) - Develop	15	02-Jan-25	22-Jan-25	275
ST0-DOC-3180	Document - Contractor (JH) - Mass Concrete - CMS - Submit to Superintendent [28d prior]	0		22-Jan-25	275
ST0-DOC-3200	Document - Client (Seqwater) - Mass Concrete - CMS - Review + Issue Acceptance by Superintendent	14	23-Jan-25	12-Feb-25	289
Site Access & Construction Facilities		34	19-Feb-24	08-Apr-24	244
ST0-DOC-1780	Document - Contractor (JH) - Site Access + Construction Facilities - Construction Method Statement (CMS) - Develop	20	19-Feb-24	15-Mar-24	238
ST0-DOC-1800	Document - Contractor (JH) - Temporary Fencing + Security - Develop	20	19-Feb-24	15-Mar-24	238
ST0-DOC-2840	Document - Contractor (JH) - Site Access + Construction Facilities (CMS) - Submit to Superintendent [28d prior to mo	0		15-Mar-24	238
ST0-DOC-2860	Document - Contractor (JH) - Temporary Fencing + Security - Submit to Superintendent [28d prior to mob]	0		15-Mar-24	238
ST0-DOC-2880	Document - Client (Seqwater) - Site Access + Construction Facilities (CMS) - Review + Issue Acceptance by Superint	14	18-Mar-24	08-Apr-24	244
ST0-DOC-2900	Document - Client (Seqwater) - Temporary Fencing + Security - Review + Issue Acceptance by Superintendent	14	18-Mar-24	08-Apr-24	244
Sheet Piling		1	02-May-24	02-May-24	1128
ST0-DOC-3080	Document - Contractor (JH) - Sheet Piling - Supervisor Details - Submit to Superintendent	1	02-May-24	02-May-24	1128
Erosion Protection Works		29	30-Jan-24	08-Mar-24	515
ST0-DOC-3260	Document - Contractor (JH) - Erosion Protection Works - Construction Method Statement (CMS) - Develop	15	30-Jan-24	19-Feb-24	515
ST0-DOC-3280	Document - Contractor (JH) - Erosion Protection Works - CMS - Submit to Superintendent [45d prior]	0		19-Feb-24	515
ST0-DOC-3300	Document - Client (Seqwater) - Erosion Protection Works - CMS - Review + Issue Acceptance by Superintendent	14	20-Feb-24	08-Mar-24	515
Embankments Construction		29	02-Jan-25	12-Feb-25	61
ST0-DOC-3160	Document - Contractor (JH) - Embankment Construction - Construction Method Statement (CMS) - Develop	15	02-Jan-25	22-Jan-25	61
ST0-DOC-3220	Document - Contractor (JH) - Embankment Construction - CMS - Submit to Superintendent [28d prior]	0		22-Jan-25	61
ST0-DOC-3240	Document - Client (Seqwater) - Embankment Construction - CMS - Review + Issue Acceptance by Superintendent	14	23-Jan-25	12-Feb-25	61
Management Plans [28d after award]		35	25-Jan-24	14-Mar-24	254
Construction Project Management Plan (PMP)		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1120	Plans - Contractor (JH) - Construction Project Management Plan (PMP) - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-1860	Plans - Contractor (JH) - Construction Project Management Plan (PMP) - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2340	Plans - Client (Seqwater) - Construction Project Management Plan (PMP) - Review + Issue Acceptance by Superinte	14	23-Feb-24	13-Mar-24	255
Work Health & Safety Management Plan (WHSP)		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1140	Plans - Contractor (JH) - Work Health + Safety (WHS) Management Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-1880	Plans - Contractor (JH) - Work Health + Safety (WHS) Management Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2360	Plans - Client (Seqwater) - Work Health + Safety (WHS) Management Plan - Review + Issue Acceptance by Superin	14	23-Feb-24	13-Mar-24	255
Subcontractor & Supplier Management Plan		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1160	Plans - Contractor (JH) - Subcontractor + Supplier Management Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-1900	Plans - Contractor (JH) - Subcontractor + Supplier Management Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2380	Plans - Client (Seqwater) - Subcontractor + Supplier Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Traffic Management Plan		34	29-Jan-24	14-Mar-24	254
ST0-DOC-MP-1180	Plans - Contractor (JH) - Traffic Management Plan (TMP) - Develop	20	29-Jan-24	23-Feb-24	254
ST0-DOC-MP-1920	Plans - Contractor (JH) - Traffic Management Plan (TMP) - Submit To Superintendent	0		23-Feb-24	254
ST0-DOC-MP-2400	Plans - Client (Seqwater) - Traffic Management Plan (TMP) - Review by Superintendent	14	26-Feb-24	14-Mar-24	254
Environmental Management Plan (EMP)		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1200	Plans - Contractor (JH) - Environmental Management Plan (EMP) - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-1940	Plans - Contractor (JH) - Environmental Management Plan (EMP) - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-2420	Plans - Client (Seqwater) - Environmental Management Plan (EMP) - Review by Superintendent + STATE + FEDS	14	23-Feb-24	13-Mar-24	255
Quality Management Plan (QMP)		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1220	Plans - Contractor (JH) - Quality Management Plan (QMP) - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-1960	Plans - Contractor (JH) - Quality Management Plan (QMP) - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2440	Plans - Client (Seqwater) - Quality Management Plan (QMP) - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Risk Management Plan		34	25-Jan-24	13-Mar-24	255

Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-DOC-MP-1240	Plans - Contractor (JH) - Risk Management Plan (RMP) - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-1980	Plans - Contractor (JH) - Risk Management Plan (RMP) - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2460	Plans - Client (Seqwater) - Risk Management Plan (RMP) - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Construction Communication Plan		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1260	Plans - Contractor (JH) - Construction Communication Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-2000	Plans - Contractor (JH) - Construction Communication Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2480	Plans - Client (Seqwater) - Construction Communication Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Site Based Cooperation Plan		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1280	Plans - Contractor (JH) - Site Based Cooperation Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-2020	Plans - Contractor (JH) - Site Based Cooperation Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2500	Plans - Client (Seqwater) - Site Based Cooperation Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Industrial & Employee Relations Management Plan (IERMP)		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1300	Plans - Contractor (JH) - Industrial + Employee Relations (IR+ER) Management Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-2040	Plans - Contractor (JH) - Industrial + Employee Relations (IR+ER) Management Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2520	Plans - Client (Seqwater) - Industrial + Employee Relations (IR+ER) Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Execution Plans		126	23-Jan-24	23-Jul-24	326
Reservoir Lowering Management Plan		34	23-Jan-24	11-Mar-24	51
ST0-DOC-MP-1720	Plans - Contractor (JH) - Reservoir Lowering Management Plan - Develop	20	23-Jan-24	20-Feb-24	51
ST0-DOC-MP-2800	Plans - Contractor (JH) - Reservoir Lowering Management Plan - Submit To Superintendent [within 90d of award]	0		20-Feb-24	51
ST0-DOC-MP-2820	Plans - Client (Seqwater) - Reservoir Lowering Management Plan - Review by Superintendent	14	21-Feb-24	11-Mar-24	51
Construction Flood Management Plan		34	21-Mar-24	13-May-24	216
ST0-DOC-MP-2960	Plans - Contractor (JH) - Construction Flood Management Plan - Develop	20	21-Mar-24	19-Apr-24	216
ST0-DOC-MP-3040	Plans - Contractor (JH) - Construction Flood Management Plan - Submit To Superintendent [within 90d of award]	0		19-Apr-24	216
ST0-DOC-MP-3060	Plans - Client (Seqwater) - Construction Flood Management Plan - Review by Superintendent	14	22-Apr-24	13-May-24	216
Dam Safety Management Plan		34	25-Jan-24	13-Mar-24	49
ST0-DOC-MP-1320	Plans - Contractor (JH) - Dam Safety Management Plan - Develop	20	25-Jan-24	22-Feb-24	49
ST0-DOC-MP-2060	Plans - Contractor (JH) - Dam Safety Management Plan - Submit To Superintendent	0		22-Feb-24	49
ST0-DOC-MP-2540	Plans - Client (Seqwater) - Dam Safety Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	49
Asbestos Management Plan		34	25-Jan-24	13-Mar-24	255
ST0-DOC-MP-1340	Plans - Contractor (JH) - Asbestos Management Plan - Develop	20	25-Jan-24	22-Feb-24	255
ST0-DOC-MP-2080	Plans - Contractor (JH) - Asbestos Management Plan - Submit To Superintendent	0		22-Feb-24	255
ST0-DOC-MP-2560	Plans - Client (Seqwater) - Asbestos Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	255
Sustainability Plan		34	25-Jan-24	13-Mar-24	49
ST0-DOC-MP-1360	Plans - Contractor (JH) - Sustainability Plan - Develop	20	25-Jan-24	22-Feb-24	49
ST0-DOC-MP-2100	Plans - Contractor (JH) - Sustainability Plan - Submit To Superintendent	0		22-Feb-24	49
ST0-DOC-MP-2580	Plans - Client (Seqwater) - Sustainability Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	49
Commissioning Plan		34	25-Jan-24	13-Mar-24	416
ST0-DOC-MP-1380	Plans - Contractor (JH) - Commissioning Plan - Develop	20	25-Jan-24	22-Feb-24	416
ST0-DOC-MP-2120	Plans - Contractor (JH) - Commissioning Plan - Submit To Superintendent [28d prior]	0		22-Feb-24	416
ST0-DOC-MP-2600	Plans - Client (Seqwater) - Commissioning Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	416
Rehabilitation Management Plan		34	25-Jan-24	13-Mar-24	416
ST0-DOC-MP-1400	Plans - Contractor (JH) - Rehabilitation Management Plan - Develop	20	25-Jan-24	22-Feb-24	416
ST0-DOC-MP-2140	Plans - Contractor (JH) - Rehabilitation Management Plan - Submit To Superintendent	0		22-Feb-24	416
ST0-DOC-MP-2620	Plans - Client (Seqwater) - Rehabilitation Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	416
Construction Method Statements		20	26-Jun-24	23-Jul-24	135
ST0-DOC-MP-2940	Document - Contractor (JH) - Construction Method Statement (CMS) - Sheet Piling - Develop [30d prior]	20	26-Jun-24	23-Jul-24	135
Dewatering Management Plan		34	22-Apr-24	10-Jun-24	196
ST0-DOC-MP-2920	Plans - Contractor (JH) - Dewatering Management Plan - Develop	20	22-Apr-24	21-May-24	196
ST0-DOC-MP-2980	Plans - Contractor (JH) - Dewatering Management Plan - Submit To Superintendent [within 90d of award]	0		21-May-24	196
ST0-DOC-MP-3000	Plans - Client (Seqwater) - Dewatering Management Plan - Review by Superintendent	14	22-May-24	10-Jun-24	196
Demolition Plan		54	25-Jan-24	12-Apr-24	235
ST0-DOC-MP-1100	Plans - Contractor (JH) - Demolition Plan - Develop	40	25-Jan-24	21-Mar-24	229
ST0-DOC-MP-1840	Plans - Contractor (JH) - Demolition Plan - Submit To Superintendent [28d prior to]	0		21-Mar-24	229
ST0-DOC-MP-2320	Plans - Client (Seqwater) - Demolition Plan - Review by Superintendent	14	22-Mar-24	12-Apr-24	235
Coordinator General Management Plan Requirements		60	25-Jan-24	22-Apr-24	450
ST0-DOC-MP-3320	Plans - Stakeholder - Review + Issue Approval by Superintendent & Coordinator General	40	23-Feb-24	22-Apr-24	234
Adaptive Construction Environmental Management Plans C3		34	25-Jan-24	13-Mar-24	476
Stormwater Management Plan		34	25-Jan-24	13-Mar-24	476
ST0-DOC-MP-150(	Plans - Contractor (JH) - Stormwater Management Plan - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-220(	Plans - Contractor (JH) - Stormwater Management Plan - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-268(	Plans - Client (Seqwater) - Stormwater Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	476
Vegetation Management Plan		34	25-Jan-24	13-Mar-24	476
ST0-DOC-MP-152(	Plans - Contractor (JH) - Vegetation Management Plan - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-222(	Plans - Contractor (JH) - Vegetation Management Plan - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-270(	Plans - Client (Seqwater) - Vegetation Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	476



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
	Lighting & Associated Light Spill Management Plan	34	25-Jan-24	13-Mar-24	476
ST0-DOC-MP-154(	Plans - Contractor (JH) - Lighting + Associated Light Spill Management Plan - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-224(	Plans - Contractor (JH) - Lighting + Associated Light Spill Management Plan - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-272(	Plans - Client (Seqwater) - Lighting + Associated Light Spill Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	476
	Traffic Management Plan	34	25-Jan-24	13-Mar-24	476
ST0-DOC-MP-156(	Plans - Contractor (JH) - Traffic Management Plan (TMP) - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-226(	Plans - Contractor (JH) - Traffic Management Plan (TMP) - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-274(	Plans - Client (Seqwater) - Traffic Management Plan (TMP) - Review by Superintendent	14	23-Feb-24	13-Mar-24	476
	Noise, Dust & Vibration Management Plan	34	25-Jan-24	13-Mar-24	476
ST0-DOC-MP-158(	Plans - Contractor (JH) - Noise + Dust + Vibration Management Plan - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-228(	Plans - Contractor (JH) - Noise + Dust + Vibration Management Plan - Submit To Superintendent	0		22-Feb-24	234
ST0-DOC-MP-276(	Plans - Client (Seqwater) - Noise + Dust + Vibration Management Plan - Review by Superintendent	14	23-Feb-24	13-Mar-24	476
	Community & Stakeholder Engagement Plan C4	55	25-Jan-24	15-Apr-24	229
ST0-DOC-MP-1460	Plans - Contractor (JH) - Community + Stakeholder Engagement Plan - Finalise	15	25-Jan-24	15-Feb-24	229
ST0-DOC-MP-2160	Plans - Client (Seqwater) - Community + Stakeholder Engagement Plan - Submit To Coordinator General [2mths pri	0		15-Feb-24	229
ST0-DOC-MP-2640	Plans - Stakeholder - Community + Stakeholder Engagement Plan - Review & Issue Approval by Coordinator Gener	40	16-Feb-24	15-Apr-24	229
	Flora & Fauna Management Plan C5	60	25-Jan-24	22-Apr-24	234
ST0-DOC-MP-1480	Plans - Contractor (JH) - Flora + Fauna Management Plan - Develop	20	25-Jan-24	22-Feb-24	234
ST0-DOC-MP-2180	Plans - Client (Seqwater) - Flora + Fauna Management Plan - Submit To Coordinator General	0		22-Feb-24	234
ST0-DOC-MP-2660	Plans - Stakeholder - Flora + Fauna Management Plan - Review & Issue Approval by Coordinator General	40	23-Feb-24	22-Apr-24	234
	DESIGN	123	25-Jan-24	15-Oct-24	661
	Safety in Design	20	25-Jan-24	22-Feb-24	43
ST0-DES-1160	Design - Safety in Design (SID) Report - Develop	20	25-Jan-24	22-Feb-24	43
ST0-DES-1180	Design - Construction Methodology Report - Develop	20	25-Jan-24	22-Feb-24	43
ST0-DES-1480	Design - Construction Methodology Report - Submit to Dam Safety Regulator [1 month prior to construction]	0		22-Feb-24	43
ST0-DES-1500	Design - Safety in Design (SID) Report - Submit to Dam Safety Regulator [1 month prior to construction]	0		22-Feb-24	43
	Temporary Design	90	25-Jan-24	08-Aug-24	694
	Flood Management / Staging	73	25-Jan-24	13-May-24	206
	Concept Design	34	25-Jan-24	13-Mar-24	206
ST0-DES-1300	Design - Construction Flood Management System - Concept Design - Memorandum + Drawings - Develop	20	25-Jan-24	22-Feb-24	206
ST0-DES-1920	Design - Construction Flood Management System - Concept Design - Submit To Superintendent [within 60d of awa	0		22-Feb-24	206
ST0-DES-1980	Design - Construction Flood Management System - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Feb-24	13-Mar-24	206
	Preliminary Design	29	29-Feb-24	11-Apr-24	206
ST0-DES-2000	Design - Construction Flood Management System - Preliminary Design 60% - Develop	15	29-Feb-24	20-Mar-24	206
ST0-DES-2580	Design - Construction Flood Management System - Preliminary Design 60% - Submit to Superintendent	0		20-Mar-24	206
ST0-DES-2620	Design - Construction Flood Management System - Preliminary Design 60% - Client (Seqwater) - Review by Superin	14	21-Mar-24	11-Apr-24	206
	Detail Design	26	02-Apr-24	09-May-24	206
ST0-DES-2640	Design - Construction Flood Management System - Detailed Design 90% - Develop	12	02-Apr-24	17-Apr-24	206
ST0-DES-3080	Design - Construction Flood Management System - Detailed Design 90% - Submit to Superintendent [within 90d of	0		17-Apr-24	206
ST0-DES-3120	Design - Construction Flood Management System - Detailed Design 90% - Client (Seqwater) - Review by Superinter	14	18-Apr-24	09-May-24	206
	Issue For Construction (IFC)	2	10-May-24	13-May-24	206
ST0-DES-3460	Design - Construction Flood Management System - IFC 100% - Finalise + RPEQ Certify	2	10-May-24	13-May-24	206
ST0-DES-3500	Design - Construction Flood Management System - IFC 100% - Submit to Superintendent (Information Only)	0		13-May-24	206
	Working Platform	91	25-Jan-24	06-Jun-24	198
	Concept Design	54	25-Jan-24	12-Apr-24	198
ST0-DES-D-050-1(	Design - Working Platform - Concept Design - Memorandum + Drawings - Develop	40	25-Jan-24	21-Mar-24	198
ST0-DES-D-050-1(	Design - Working Platform - Concept Design - Submit To Superintendent [within 60d of award]	0		21-Mar-24	198
ST0-DES-D-050-2(	Design - Working Platform - Concept Design - Client (Seqwater) - Review by Superintendent	14	22-Mar-24	12-Apr-24	198
	Preliminary Design	29	28-Mar-24	13-May-24	198
ST0-DES-D-050-2(	Design - Working Platform - Preliminary Design 60% - Develop	15	28-Mar-24	19-Apr-24	198
ST0-DES-D-050-2(	Design - Working Platform - Preliminary Design 60% - Submit to Superintendent	0		19-Apr-24	198
ST0-DES-D-050-2(	Design - Working Platform - Preliminary Design 60% - Client (Seqwater) - Review by Superintendent	14	22-Apr-24	13-May-24	198
	Detail Design	26	29-Apr-24	04-Jun-24	198
ST0-DES-D-050-2(	Design - Working Platform - Detailed Design 90% - Develop	12	29-Apr-24	15-May-24	198
ST0-DES-D-050-3'	Design - Working Platform - Detailed Design 90% - Submit to Superintendent	0		15-May-24	198
ST0-DES-D-050-3'	Design - Working Platform - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	16-May-24	04-Jun-24	198
	Issue For Construction (IFC)	2	05-Jun-24	06-Jun-24	198
ST0-DES-D-050-3(	Design - Working Platform - IFC 100% - Finalise + RPEQ Certify	2	05-Jun-24	06-Jun-24	198
ST0-DES-D-050-3(	Design - Working Platform - IFC 100% - Submit to Superintendent (Information Only)	0		06-Jun-24	198
	Ground Water Dewatering	91	25-Jan-24	06-Jun-24	1104
	Concept Design	54	25-Jan-24	12-Apr-24	148
ST0-DES-1020	Design - Ground Water Dewatering - Concept Design - Memorandum + Drawings - Develop	40	25-Jan-24	21-Mar-24	148
ST0-DES-1340	Design - Ground Water Dewatering - Concept Design - Submit To Superintendent	0		21-Mar-24	148
ST0-DES-1520	Design - Ground Water Dewatering - Concept Design - Client (Seqwater) - Review by Superintendent	14	22-Mar-24	12-Apr-24	148
	Preliminary Design	29	28-Mar-24	13-May-24	148

Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-DES-1540	Design - Ground Water Dewatering - Preliminary Design 60% - Develop	15	28-Mar-24	19-Apr-24	148
ST0-DES-2060	Design - Ground Water Dewatering - Preliminary Design 60% - Submit to Superintendent	0		19-Apr-24	148
ST0-DES-.2200	Design - Ground Water Dewatering - Preliminary Design 60% - Client (Seqwater) - Review by Superintendent	14	22-Apr-24	13-May-24	148
Detail Design		26	29-Apr-24	04-Jun-24	148
ST0-DES-2220	Design - Ground Water Dewatering - Detailed Design 90% - Develop	12	29-Apr-24	15-May-24	148
ST0-DES-2700	Design - Ground Water Dewatering - Detailed Design 90% - Submit to Superintendent	0		15-May-24	148
ST0-DES-2860	Design - Ground Water Dewatering - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	16-May-24	04-Jun-24	148
Issue for Construction (IFC)		2	05-Jun-24	06-Jun-24	1104
ST0-DES-3160	Design - Ground Water Dewatering - IFC 100% - Finalise + RPEQ Certify	2	05-Jun-24	06-Jun-24	148
ST0-DES-3320	Design - Ground Water Dewatering - IFC 100% - Submit to Superintendent (Information Only)	0		06-Jun-24	1104
Sheet Piling		90	25-Jan-24	08-Aug-24	683
Right Embankment		52	01-May-24	08-Aug-24	77
Concept Design		34	01-May-24	18-Jun-24	108
ST0-DES-D-048-1	Design - Right Embankment - Sheet Piling - Concept Design - Memorandum + Drawings - Develop	20	01-May-24	29-May-24	108
ST0-DES-D-048-1	Design - Right Embankment - Sheet Piling - Concept Design - Submit To Superintendent	0		29-May-24	108
ST0-DES-D-048-1	Design - Right Embankment - Sheet Piling - Concept Design - Client (Seqwater) - Review by Superintendent	14	30-May-24	18-Jun-24	108
Preliminary Design		29	05-Jun-24	15-Jul-24	111
ST0-DES-D-048-1	Design - Right Embankment - Sheet Piling - Preliminary Design 60% - Develop	15	05-Jun-24	25-Jun-24	108
ST0-DES-D-048-2	Design - Right Embankment - Sheet Piling - Preliminary Design 60% - Submit to Superintendent	0		25-Jun-24	108
ST0-DES-D-048-2	Design - Right Embankment - Sheet Piling - Preliminary Design 60% - Client (Seqwater) - Review by Superintendent	14	26-Jun-24	15-Jul-24	111
Detail Design		21	02-Jul-24	06-Aug-24	74
ST0-DES-D-048-2	Design - Right Embankment - Sheet Piling - Detailed Design 90% - Develop	12	02-Jul-24	17-Jul-24	111
ST0-DES-D-048-2	Design - Right Embankment - Sheet Piling - Detailed Design 90% - Submit to Superintendent	0		17-Jul-24	173
ST0-DES-D-048-2	Design - Right Embankment - Sheet Piling - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	18-Jul-24	06-Aug-24	111
Issue For Construction (IFC)		2	07-Aug-24	08-Aug-24	116
ST0-DES-D-048-3	Design - Right Embankment - Sheet Piling - IFC 100% - Finalise + RPEQ Certify	2	07-Aug-24	08-Aug-24	111
ST0-DES-D-048-3	Design - Right Embankment - Sheet Piling - IFC 100% - Submit to Superintendent (Information Only)	0		08-Aug-24	116
Spillway Working Platform		71	25-Jan-24	09-May-24	224
Concept Design		34	25-Jan-24	13-Mar-24	173
ST0-DES-D-048-1	Design - Spillway - Working Platform - Sheet Piling - Concept Design - Memorandum + Drawings - Develop	20	25-Jan-24	22-Feb-24	173
ST0-DES-D-048-1	Design - Spillway - Working Platform - Sheet Piling - Concept Design - Submit To Superintendent	0		22-Feb-24	173
ST0-DES-D-048-1	Design - Spillway - Working Platform - Sheet Piling - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Feb-24	13-Mar-24	173
Preliminary Design		29	29-Feb-24	11-Apr-24	224
ST0-DES-D-048-1	Design - Spillway - Working Platform - Sheet Piling - Preliminary Design 60% - Develop	15	29-Feb-24	20-Mar-24	173
ST0-DES-D-048-2	Design - Spillway - Working Platform - Sheet Piling - Preliminary Design 60% - Submit to Superintendent	0		20-Mar-24	173
ST0-DES-D-048-2	Design - Spillway - Working Platform - Sheet Piling - Preliminary Design 60% - Client (Seqwater) - Review by Superin	14	21-Mar-24	11-Apr-24	224
Detail Design		26	27-Mar-24	07-May-24	224
ST0-DES-D-048-2	Design - Spillway - Working Platform - Sheet Piling - Detailed Design 90% - Develop	12	27-Mar-24	15-Apr-24	224
ST0-DES-D-048-2	Design - Spillway - Working Platform - Sheet Piling - Detailed Design 90% - Submit to Superintendent	0		15-Apr-24	224
ST0-DES-D-048-2	Design - Spillway - Working Platform - Sheet Piling - Detailed Design 90% - Client (Seqwater) - Review by Superinter	14	16-Apr-24	07-May-24	224
Issue For Construction (IFC)		2	08-May-24	09-May-24	224
ST0-DES-D-048-3	Design - Spillway - Working Platform - Sheet Piling - IFC 100% - Finalise + RPEQ Certify	2	08-May-24	09-May-24	224
ST0-DES-D-048-3	Design - Spillway - Working Platform - Sheet Piling - IFC 100% - Submit to Superintendent (Information Only)	0		09-May-24	224
Downstream Right Embankment		71	01-May-24	08-Aug-24	1042
Concept Design		34	01-May-24	18-Jun-24	108
ST0-DES-D-048-1	Design - Downstream - Right Embankment - Sheet Piling - Concept Design - Memorandum + Drawings - Develop	20	01-May-24	29-May-24	108
ST0-DES-D-048-1	Design - Downstream - Right Embankment - Sheet Piling - Concept Design - Submit To Superintendent	0		29-May-24	108
ST0-DES-D-048-1	Design - Downstream - Right Embankment - Sheet Piling - Concept Design - Client (Seqwater) - Review by Superint	14	30-May-24	18-Jun-24	108
Preliminary Design		29	05-Jun-24	15-Jul-24	1042
ST0-DES-D-048-1	Design - Downstream - Right Embankment - Sheet Piling - Preliminary Design 60% - Develop	15	05-Jun-24	25-Jun-24	108
ST0-DES-D-048-2	Design - Downstream - Right Embankment - Sheet Piling - Preliminary Design 60% - Submit to Superintendent	0		25-Jun-24	108
ST0-DES-D-048-2	Design - Downstream - Right Embankment - Sheet Piling - Preliminary Design 60% - Client (Seqwater) - Review by S	14	26-Jun-24	15-Jul-24	1042
Detail Design		26	02-Jul-24	06-Aug-24	1042
ST0-DES-D-048-2	Design - Downstream - Right Embankment - Sheet Piling - Detailed Design 90% - Develop	12	02-Jul-24	17-Jul-24	1042
ST0-DES-D-048-2	Design - Downstream - Right Embankment - Sheet Piling - Detailed Design 90% - Submit to Superintendent	0		17-Jul-24	1042
ST0-DES-D-048-2	Design - Downstream - Right Embankment - Sheet Piling - Detailed Design 90% - Client (Seqwater) - Review by Sup	14	18-Jul-24	06-Aug-24	1042
Issue For Construction (IFC)		2	07-Aug-24	08-Aug-24	1042
ST0-DES-D-048-3	Design - Downstream - Right Embankment - Sheet Piling - IFC 100% - Finalise + RPEQ Certify	2	07-Aug-24	08-Aug-24	1042
ST0-DES-D-048-3	Design - Downstream - Right Embankment - Sheet Piling - IFC 100% - Submit to Superintendent (Information Only)	0		08-Aug-24	1042
Downstream Cofferdam		71	01-May-24	08-Aug-24	603
Concept Design		34	01-May-24	18-Jun-24	108
ST0-DES-D-048-1	Design - Downstream - Cofferdam - Sheet Piling - Concept Design - Memorandum + Drawings - Develop	20	01-May-24	29-May-24	108
ST0-DES-D-048-1	Design - Downstream - Cofferdam - Sheet Piling - Concept Design - Submit To Superintendent	0		29-May-24	108
ST0-DES-D-048-1	Design - Downstream - Cofferdam - Sheet Piling - Concept Design - Client (Seqwater) - Review by Superintendent	14	30-May-24	18-Jun-24	108
Preliminary Design		29	05-Jun-24	15-Jul-24	603

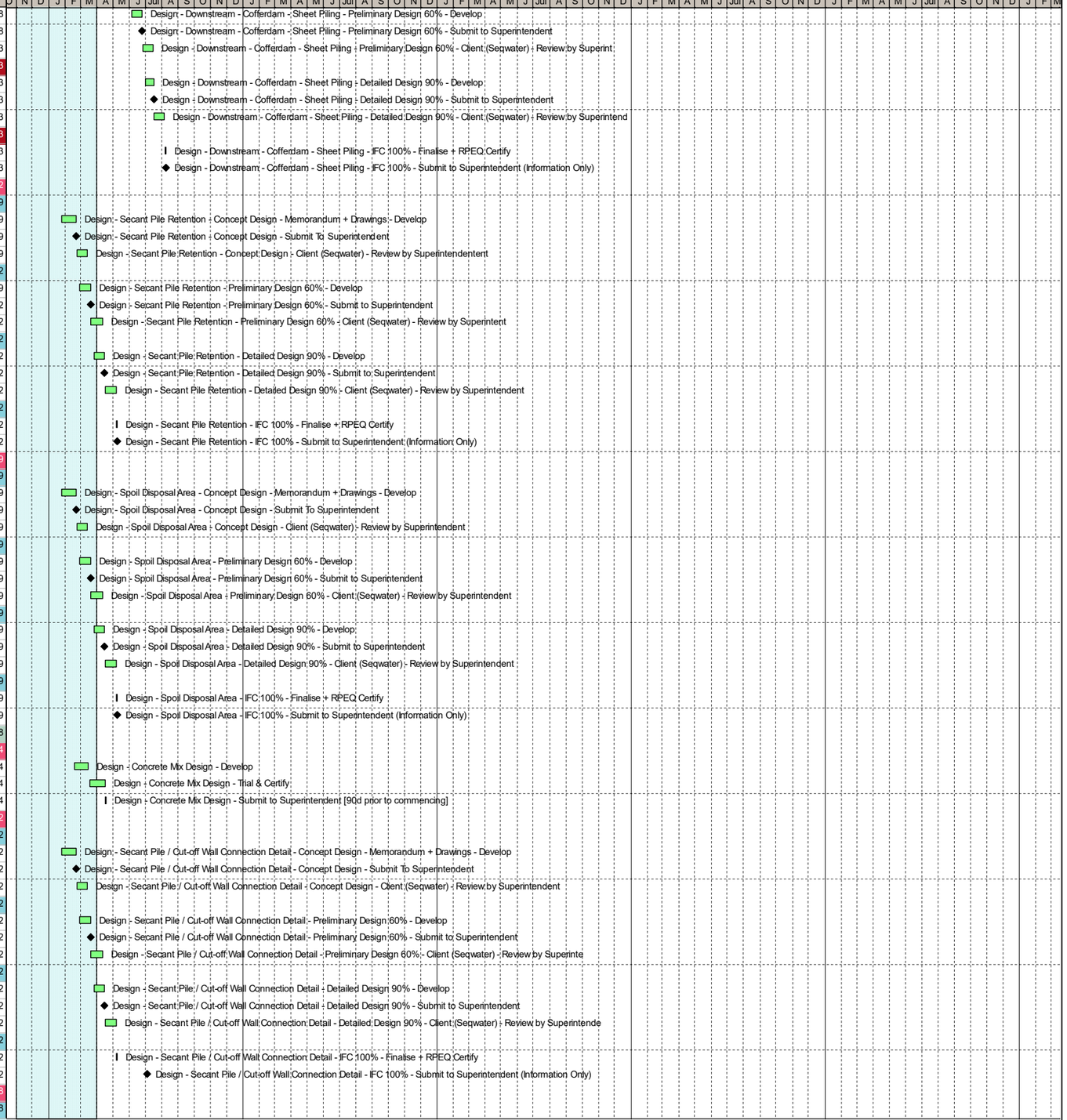
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-DES-D-048-1	Design - Downstream - Cofferdam - Sheet Piling - Preliminary Design 60% - Develop	15	05-Jun-24	25-Jun-24	108
ST0-DES-D-048-2	Design - Downstream - Cofferdam - Sheet Piling - Preliminary Design 60% - Submit to Superintendent	0		25-Jun-24	108
ST0-DES-D-048-2	Design - Downstream - Cofferdam - Sheet Piling - Preliminary Design 60% - Client (Seqwater) - Review by Superint	14	26-Jun-24	15-Jul-24	603
Detail Design		26	02-Jul-24	06-Aug-24	603
ST0-DES-D-048-2	Design - Downstream - Cofferdam - Sheet Piling - Detailed Design 90% - Develop	12	02-Jul-24	17-Jul-24	603
ST0-DES-D-048-3	Design - Downstream - Cofferdam - Sheet Piling - Detailed Design 90% - Submit to Superintendent	0		17-Jul-24	603
ST0-DES-D-048-3	Design - Downstream - Cofferdam - Sheet Piling - Detailed Design 90% - Client (Seqwater) - Review by Superintend	14	18-Jul-24	06-Aug-24	603
Issue For Construction (IFC)		2	07-Aug-24	08-Aug-24	603
ST0-DES-D-048-3	Design - Downstream - Cofferdam - Sheet Piling - IFC 100% - Finalise + RPEQ Certify	2	07-Aug-24	08-Aug-24	603
ST0-DES-D-048-3	Design - Downstream - Cofferdam - Sheet Piling - IFC 100% - Submit to Superintendent (Information Only)	0		08-Aug-24	603
Secant Pile Retention		71	25-Jan-24	09-May-24	252
Concept Design		34	25-Jan-24	13-Mar-24	249
ST0-DES-D-047-11	Design - Secant Pile Retention - Concept Design - Memorandum + Drawings - Develop	20	25-Jan-24	22-Feb-24	249
ST0-DES-D-047-14	Design - Secant Pile Retention - Concept Design - Submit To Superintendent	0		22-Feb-24	249
ST0-DES-D-047-16	Design - Secant Pile Retention - Concept Design - Client (Seqwater) - Review by Superintendentent	14	23-Feb-24	13-Mar-24	249
Preliminary Design		29	29-Feb-24	11-Apr-24	252
ST0-DES-D-047-17	Design - Secant Pile Retention - Preliminary Design 60% - Develop	15	29-Feb-24	20-Mar-24	249
ST0-DES-D-047-2	Design - Secant Pile Retention - Preliminary Design 60% - Submit to Superintendent	0		20-Mar-24	252
ST0-DES-D-047-2	Design - Secant Pile Retention - Preliminary Design 60% - Client (Seqwater) - Review by Superintent	14	21-Mar-24	11-Apr-24	252
Detail Design		26	27-Mar-24	07-May-24	252
ST0-DES-D-047-2	Design - Secant Pile Retention - Detailed Design 90% - Develop	12	27-Mar-24	15-Apr-24	252
ST0-DES-D-047-2	Design - Secant Pile Retention - Detailed Design 90% - Submit to Superintendent	0		15-Apr-24	252
ST0-DES-D-047-2	Design - Secant Pile Retention - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	16-Apr-24	07-May-24	252
Issue For Construction (IFC)		2	08-May-24	09-May-24	252
ST0-DES-D-047-3	Design - Secant Pile Retention - IFC 100% - Finalise + RPEQ Certify	2	08-May-24	09-May-24	252
ST0-DES-D-047-3	Design - Secant Pile Retention - IFC 100% - Submit to Superintendent (Information Only)	0		09-May-24	252
Spoil Disposal Area		71	25-Jan-24	09-May-24	359
Concept Design		34	25-Jan-24	13-Mar-24	359
ST0-DES-1120	Design - Spoil Disposal Area - Concept Design - Memorandum + Drawings - Develop	20	25-Jan-24	22-Feb-24	359
ST0-DES-1440	Design - Spoil Disposal Area - Concept Design - Submit To Superintendent	0		22-Feb-24	359
ST0-DES-1720	Design - Spoil Disposal Area - Concept Design - Client (Seqwater) - Review by Superintendent	14	23-Feb-24	13-Mar-24	359
Preliminary Design		29	29-Feb-24	11-Apr-24	359
ST0-DES-1740	Design - Spoil Disposal Area - Preliminary Design 60% - Develop	15	29-Feb-24	20-Mar-24	359
ST0-DES-2160	Design - Spoil Disposal Area - Preliminary Design 60% - Submit to Superintendent	0		20-Mar-24	359
ST0-DES-2400	Design - Spoil Disposal Area - Preliminary Design 60% - Client (Seqwater) - Review by Superintendent	14	21-Mar-24	11-Apr-24	359
Detail Design		26	27-Mar-24	07-May-24	359
ST0-DES-2420	Design - Spoil Disposal Area - Detailed Design 90% - Develop	12	27-Mar-24	15-Apr-24	359
ST0-DES-2800	Design - Spoil Disposal Area - Detailed Design 90% - Submit to Superintendent	0		15-Apr-24	359
ST0-DES-2960	Design - Spoil Disposal Area - Detailed Design 90% - Client (Seqwater) - Review by Superintendent	14	16-Apr-24	07-May-24	359
Issue For Construction (IFC)		2	08-May-24	09-May-24	359
ST0-DES-3260	Design - Spoil Disposal Area - IFC 100% - Finalise + RPEQ Certify	2	08-May-24	09-May-24	359
ST0-DES-3420	Design - Spoil Disposal Area - IFC 100% - Submit to Superintendent (Information Only)	0		09-May-24	359
Permanent Design		182	25-Jan-24	15-Oct-24	828
Mass Concrete Mix Design		41	19-Feb-24	17-Apr-24	414
ST0-DES-1240	Design - Concrete Mix Design - Develop	20	19-Feb-24	15-Mar-24	414
ST0-DES-1960	Design - Concrete Mix Design - Trial & Certify	20	18-Mar-24	16-Apr-24	414
ST0-DES-3060	Design - Concrete Mix Design - Submit to Superintendent [90d prior to commencing]	1	17-Apr-24	17-Apr-24	414
Secant Pile / Cut-off Wall Connection Detail		111	25-Jan-24	04-Jul-24	262
Concept Design		34	25-Jan-24	13-Mar-24	302
ST0-DES-1140	Design - Secant Pile / Cut-off Wall Connection Detail - Concept Design - Memorandum + Drawings - Develop	20	25-Jan-24	22-Feb-24	302
ST0-DES-1460	Design - Secant Pile / Cut-off Wall Connection Detail - Concept Design - Submit To Superintendent	0		22-Feb-24	302
ST0-DES-1760	Design - Secant Pile / Cut-off Wall Connection Detail - Concept Design - Client (Seqwater) - Review by Superintende	14	23-Feb-24	13-Mar-24	302
Preliminary Design		29	29-Feb-24	11-Apr-24	302
ST0-DES-1780	Design - Secant Pile / Cut-off Wall Connection Detail - Preliminary Design 60% - Develop	15	29-Feb-24	20-Mar-24	302
ST0-DES-2180	Design - Secant Pile / Cut-off Wall Connection Detail - Preliminary Design 60% - Submit to Superintendent	0		20-Mar-24	302
ST0-DES-2440	Design - Secant Pile / Cut-off Wall Connection Detail - Preliminary Design 60% - Client (Seqwater) - Review by Supe	14	21-Mar-24	11-Apr-24	302
Detail Design		26	27-Mar-24	07-May-24	302
ST0-DES-2460	Design - Secant Pile / Cut-off Wall Connection Detail - Detailed Design 90% - Develop	12	27-Mar-24	15-Apr-24	302
ST0-DES-2820	Design - Secant Pile / Cut-off Wall Connection Detail - Detailed Design 90% - Submit to Superintendent	0		15-Apr-24	302
ST0-DES-2980	Design - Secant Pile / Cut-off Wall Connection Detail - Detailed Design 90% - Client (Seqwater) - Review by Superint	14	16-Apr-24	07-May-24	302
Issue for Construction (IFC)		42	08-May-24	04-Jul-24	262
ST0-DES-3280	Design - Secant Pile / Cut-off Wall Connection Detail - IFC 100% - Finalise + RPEQ Certify	2	08-May-24	09-May-24	302
ST0-DES-3540	Design - Secant Pile / Cut-off Wall Connection Detail - IFC 100% - Submit to Superintendent (Information Only)	0		04-Jul-24	262
seqwater Permanent Facilities		71	05-Jul-24	15-Oct-24	828
Concept Design		34	05-Jul-24	22-Aug-24	828



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-DES-3560	Design - Seqwater Permanent Facilities - Concept Design - Memorandum + Drawings - Develop	20	05-Jul-24	01-Aug-24	828
ST0-DES-3580	Design - Seqwater Permanent Facilities - Concept Design - Submit To Superintendent	0		01-Aug-24	828
ST0-DES-3600	Design - Seqwater Permanent Facilities - Concept Design - Client (Seqwater) - Review by Superintendent	14	02-Aug-24	22-Aug-24	828
Preliminary Design		29	08-Aug-24	18-Sep-24	828
ST0-DES-3620	Design - Seqwater Permanent Facilities - Preliminary Design 60% - Develop	15	08-Aug-24	29-Aug-24	828
ST0-DES-3640	Design - Seqwater Permanent Facilities - Preliminary Design 60% - Submit to Superintendent	0		29-Aug-24	828
ST0-DES-3660	Design - Seqwater Permanent Facilities - Preliminary Design 60% - Client (Seqwater) - Review by Superinte	14	30-Aug-24	18-Sep-24	828
Detail Design		26	05-Sep-24	11-Oct-24	828
ST0-DES-3680	Design - Seqwater Permanent Facilities - Detailed Design 90% - Develop	12	05-Sep-24	20-Sep-24	828
ST0-DES-3700	Design - Seqwater Permanent Facilities - Detailed Design 90% - Submit to Superintendent	0		20-Sep-24	828
ST0-DES-3720	Design - Seqwater Permanent Facilities - Detailed Design 90% - Client (Seqwater) - Review by Superintende	14	23-Sep-24	11-Oct-24	828
Issue for Construction (IFC)		2	14-Oct-24	15-Oct-24	828
ST0-DES-3740	Design - Seqwater Permanent Facilities - IFC 100% - Finalise + RPEQ Certify	2	14-Oct-24	15-Oct-24	828
ST0-DES-3760	Design - Seqwater Permanent Facilities - IFC 100% - Submit to Superintendent (Information Only)	0		15-Oct-24	828
APPROVALS / CONDITIONS		66	25-Jan-24	01-May-24	474
Client Approvals		19	26-Mar-24	24-Apr-24	232
ST0-CL-APP-1000	Approval + Conditions - Client (Seqwater) - Provide - EPBC Controlled Action	0		26-Mar-24	251
ST0-CL-APP-1060	Approval + Conditions - Client (Seqwater) - Provide - Oper Works: Waterway Barrier (Permanent)	0		26-Mar-24	251
ST0-CL-APP-1020	Approval + Conditions - Client (Seqwater) - Provide - Coordinated Project	0		05-Apr-24	5
ST0-CL-APP-1040	Approval + Conditions - Client (Seqwater) - Provide - Aboriginal Cultural Heritage Mgment Agreement	0		24-Apr-24	232
Contractor (JH) Permits & Approvals		66	25-Jan-24	01-May-24	474
Material Change of Use: Concrete Batching Plant		50	19-Feb-24	01-May-24	474
ST0-CO-APP-1140	Permit + Approval - Contractor (JH) - Material Change of Use - Concrete Batching Plant - Develop	20	19-Feb-24	15-Mar-24	474
ST0-CO-APP-1600	Permit + Approval - Contractor (JH) - Material Change of Use - Concrete Batching Plant - Submit to Noosa Shire Cou	0		15-Mar-24	474
ST0-CO-APP-1620	Permit + Approval - Stakeholder (NSC) - Material Change of Use - Concrete Batching Plant - Assess	30	18-Mar-24	01-May-24	474
ST0-CO-APP-1820	Permit + Approval - Stakeholder (NSC) - Material Change of Use - Concrete Batching Plant - Issue Approval	0		01-May-24	474
Environmental Authority: ERA 16 2(a) Extractive & Screening Activities		50	19-Feb-24	01-May-24	223
ST0-CO-APP-1160	Permit + Approval - Contractor (JH) - ERA 16 2(a) Extractive & Screen Activities - Develop	20	19-Feb-24	15-Mar-24	223
ST0-CO-APP-1580	Permit + Approval - Contractor (JH) - ERA 16 2(a) Extractive & Screen Activities - Submit to DES	0		15-Mar-24	223
ST0-CO-APP-1640	Permit + Approval - Contractor (JH) - ERA 16 2(a) Extractive & Screen Activities - DES - Assess	30	18-Mar-24	01-May-24	223
ST0-CO-APP-1840	Permit + Approval - Contractor (JH) - ERA 16 2(a) Extractive & Screen Activities - DES - Issue Approval	0		01-May-24	223
Operational Works: Waterway Barrier Works (Temporary)		35	19-Feb-24	09-Apr-24	238
ST0-CO-APP-1180	Permit + Approval - Contractor (JH) - Operational Works: Waterway Barrier Works (Temp.) - Develop	15	19-Feb-24	08-Mar-24	238
ST0-CO-APP-1380	Permit + Approval - Contractor (JH) - Operational Works: Waterway Barrier Works (Temp.) - Submit to DAF	0		08-Mar-24	238
ST0-CO-APP-1480	Permit + Approval - Stakeholder (DAF) - Operational Works: Waterway Barrier Works (Temp.) - Assess	20	11-Mar-24	09-Apr-24	238
ST0-CO-APP-1700	Permit + Approval - Stakeholder (DAF) - Operational Works: Waterway Barrier Works (Temp.) - Issue Approval	0		09-Apr-24	238
Clearing Permit (Protected Plants)		35	19-Feb-24	09-Apr-24	243
ST0-CO-APP-1200	Permit + Approval - Contractor (JH) - Clearing Permit (Protected Plants) - Develop	15	19-Feb-24	08-Mar-24	243
ST0-CO-APP-1400	Permit + Approval - Contractor (JH) - Clearing Permit (Protected Plants) - Submit to DES	0		08-Mar-24	243
ST0-CO-APP-1500	Permit + Approval - Stakeholder (DES) - Clearing Permit (Protected Plants) - Assess	20	11-Mar-24	09-Apr-24	243
ST0-CO-APP-1720	Permit + Approval - Stakeholder (DES) - Clearing Permit (Protected Plants) - Issue Approval	0		09-Apr-24	243
Permit to Tamper with Animal Breeding Places: Least Concern Animals (Low Risk)		35	19-Feb-24	09-Apr-24	243
ST0-CO-APP-1220	Permit + Approval - Contractor (JH) - Permit to Tamper with Animal Breeding Places (Low Risk) - Develop	15	19-Feb-24	08-Mar-24	243
ST0-CO-APP-1420	Permit + Approval - Contractor (JH) - Permit to Tamper with Animal Breeding Places (Low Risk) - Submit to DES	0		08-Mar-24	243
ST0-CO-APP-1520	Permit + Approval - Stakeholder (DES) - Permit to Tamper with Animal Breeding Places (Low Risk) - Assess	20	11-Mar-24	09-Apr-24	243
ST0-CO-APP-1740	Permit + Approval - Stakeholder (DES) - Permit to Tamper with Animal Breeding Places (Low Risk) - Issue Approval	0		09-Apr-24	243
Permit to Tamper with Animal Breeding Places: EVNT Animals (High Risk)		45	19-Feb-24	23-Apr-24	22
ST0-CO-APP-1240	Permit + Approval - Contractor (JH) - Permit to Tamper with Animal Breeding Places (High Risk) - Develop	15	19-Feb-24	08-Mar-24	22
ST0-CO-APP-1440	Permit + Approval - Contractor (JH) - Permit to Tamper with Animal Breeding Places (High Risk) - Submit to DES	0		08-Mar-24	22
ST0-CO-APP-1540	Permit + Approval - Stakeholder (DES) - Permit to Tamper with Animal Breeding Places (High Risk) - Assess	30	11-Mar-24	23-Apr-24	22
ST0-CO-APP-1780	Permit + Approval - Stakeholder (DES) - Permit to Tamper with Animal Breeding Places (High Risk) - Issue Approval	0		23-Apr-24	22
Dangerous Goods, Excess Dimensions, Excess Mass Permit		45	19-Feb-24	23-Apr-24	228
ST0-CO-APP-1260	Permit + Approval - Contractor (JH) - Dangerous Goods, Excess Dimensions, Excess Mass Permit - Develop	15	19-Feb-24	08-Mar-24	228
ST0-CO-APP-1460	Permit + Approval - Contractor (JH) - Dangerous Goods, Excess Dimensions, Excess Mass Permit - Submit to DTMR	0		08-Mar-24	228
ST0-CO-APP-1560	Permit + Approval - Stakeholder (DTMR) - Dangerous Goods, Excess Dimensions, Excess Mass Permit - Assess	30	11-Mar-24	23-Apr-24	228
ST0-CO-APP-1800	Permit + Approval - Stakeholder (DTMR) - Dangerous Goods, Excess Dimensions, Excess Mass Permit - Issue Appr	0		23-Apr-24	228
Coordinator General Approval Conditions		65	25-Jan-24	30-Apr-24	445
ST0-CO-APP-1120	CG Approval - Client (Seqwater) - Principal to Supply Road Impact Assessment S1C7	1	25-Jan-24	25-Jan-24	254
ST0-CO-APP-1320	CG Approval - Seqwater - Submit to Coordinator General - Site EMP [2 months prior to commencement of project a	0	23-Feb-24		234
ST0-CO-APP-1340	CG Approval - Stakeholder (Coordinator General) - Site Environmental Management Plan S1C1 - Issues Approval	40	23-Feb-24	22-Apr-24	234
ST0-CO-APP-1360	CG Approval - Seqwater - Submit to Coordinator General - CSE Plan [2 months prior to commencement of project a	0	04-Mar-24		228
ST0-CO-APP-1660	CG Approval - Provide Approved Adaptive CEMPs to Noosa Shire Council (with materials change application) S1C3	0	14-Mar-24		476
ST0-CO-APP-1680	CG Approval - Contractor (JH) - Upload to Project Website & Notify CG - CSE Plan S1C4 [within 2 weeks of approval	10	16-Apr-24	30-Apr-24	229
PROCUREMENT		176	25-Jan-24	26-Feb-25	540
Consultant		50	19-Feb-24	01-May-24	228

Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

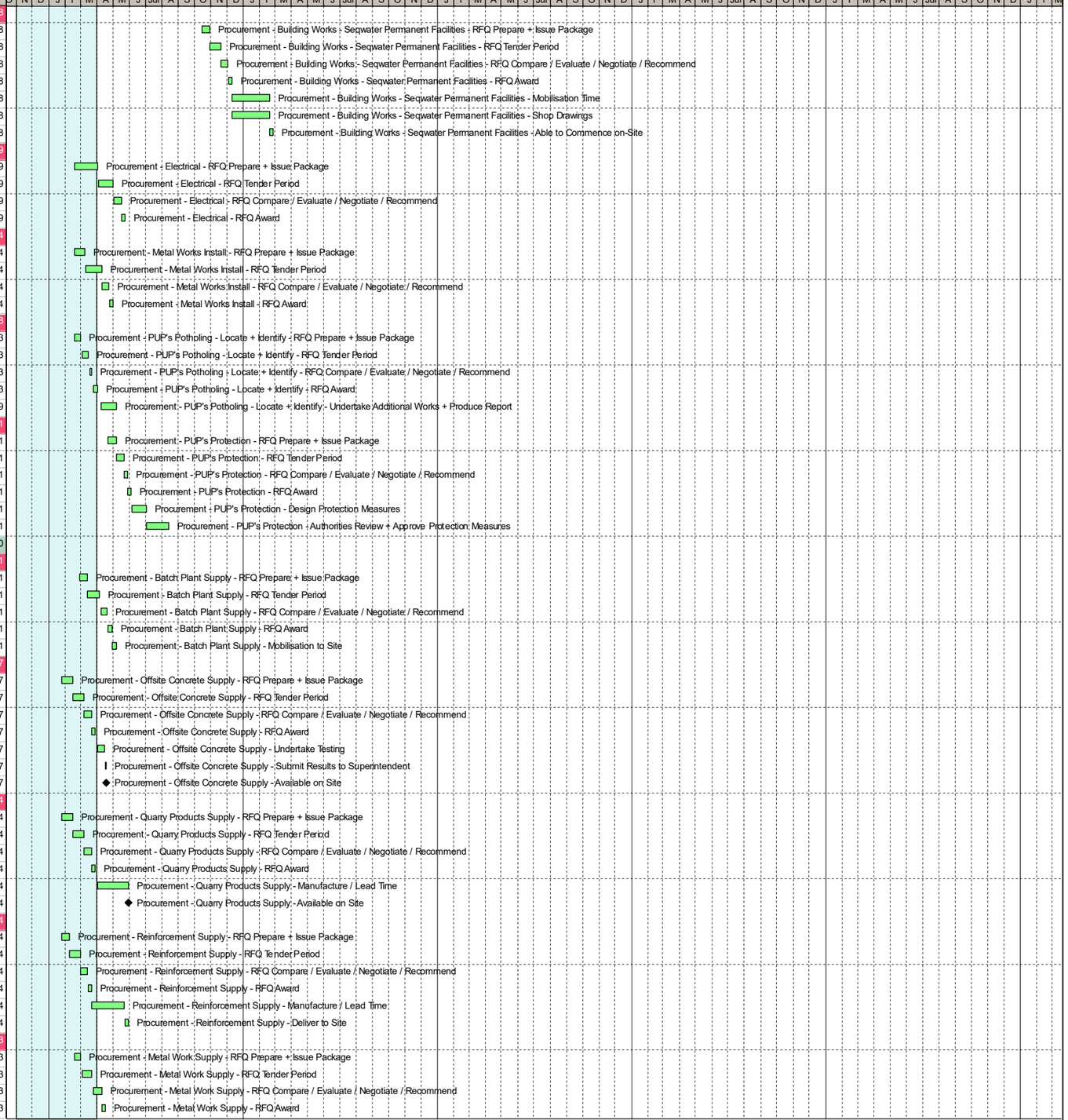
20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
Aquatic Rescue		50	19-Feb-24	01-May-24	54
ST0-PRO-1200	Procurement - Aquatic Rescue Consultant - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	54
ST0-PRO-1600	Procurement - Aquatic Rescue Consultant - RFQ Tender Period	20	11-Mar-24	09-Apr-24	54
ST0-PRO-2440	Procurement - Aquatic Rescue Consultant - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	54
ST0-PRO-2860	Procurement - Aquatic Rescue Consultant - RFQ Award	5	24-Apr-24	01-May-24	54
Temporary Works Engineer		50	19-Feb-24	01-May-24	223
ST0-PRO-1220	Procurement - Temporary Works Engineer - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	223
ST0-PRO-1620	Procurement - Temporary Works Engineer - RFQ Tender Period	20	11-Mar-24	09-Apr-24	223
ST0-PRO-2460	Procurement - Temporary Works Engineer - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	223
ST0-PRO-2880	Procurement - Temporary Works Engineer - RFQ Award	5	24-Apr-24	01-May-24	223
Environmental Management (Fauna Spotting / Management)		50	19-Feb-24	01-May-24	228
ST0.PRO.1280	Procurement - Fauna Spotter + Management - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	228
ST0.PRO.1680	Procurement - Fauna Spotter + Management - RFQ Tender Period	20	11-Mar-24	09-Apr-24	228
ST0.PRO.2520	Procurement - Fauna Spotter + Management - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	228
ST0.PRO.2940	Procurement - Fauna Spotter + Management - RFQ Award	5	24-Apr-24	01-May-24	228
Environmental Monitoring (Water, Air, Noise & Vibration)		50	19-Feb-24	01-May-24	228
ST0-PRO-1180	Procurement - Environment Monitoring - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	228
ST0-PRO-1580	Procurement - Environment Monitoring - RFQ Tender Period	20	11-Mar-24	09-Apr-24	228
ST0-PRO-2420	Procurement - Environment Monitoring - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	228
ST0-PRO-2840	Procurement - Environment Monitoring - RFQ Award	5	24-Apr-24	01-May-24	228
Traffic Management		50	19-Feb-24	01-May-24	228
ST0-PRO-1260	Procurement - Traffic Management - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	228
ST0-PRO-1660	Procurement - Traffic Management - RFQ Tender Period	20	11-Mar-24	09-Apr-24	228
ST0-PRO-2500	Procurement - Traffic Management - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	228
ST0-PRO-2920	Procurement - Traffic Management - RFQ Award	5	24-Apr-24	01-May-24	228
Survey		50	19-Feb-24	01-May-24	228
ST0-PRO-1240	Procurement - Survey - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	228
ST0-PRO-1640	Procurement - Survey - RFQ Tender Period	20	11-Mar-24	09-Apr-24	228
ST0-PRO-2480	Procurement - Survey - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	228
ST0-PRO-2900	Procurement - Survey - RFQ Award	5	24-Apr-24	01-May-24	228
Subcontract		165	19-Feb-24	26-Feb-25	540
C01 - 118 / 122 / 037 Lake Aquatic - Salvage + Relocation		25	19-Feb-24	22-Mar-24	7
ST0-PRO-C01-100(	Procurement - Lake Aquatics - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	7
ST0-PRO-C01-102(	Procurement - Lake Aquatics - RFQ Tender Period	5	04-Mar-24	08-Mar-24	7
ST0-PRO-C01-104(	Procurement - Lake Aquatics - RFQ Compare / Evaluate / Negotiate / Recommend	5	11-Mar-24	15-Mar-24	7
ST0-PRO-C01-106(	Procurement - Lake Aquatics - RFQ Award	5	18-Mar-24	22-Mar-24	7
C06 - 016 - Demolition Works		65	19-Feb-24	23-May-24	208
ST0-PRO-C06-136(	Procurement - Demolition Works - RFQ Prepare + Issue Package	30	19-Feb-24	02-Apr-24	208
ST0-PRO-C06-174(	Procurement - Demolition Works - RFQ Tender Period	20	03-Apr-24	01-May-24	208
ST0-PRO-C06-258(	Procurement - Demolition Works - RFQ Compare / Evaluate / Negotiate / Recommend	10	02-May-24	16-May-24	208
ST0-PRO-C06-300(	Procurement - Demolition Works - RFQ Award	5	17-May-24	23-May-24	208
C15 - FRP Subcontractor		30	19-Feb-24	02-Apr-24	163
ST0-PRO-C15-100(	Procurement - FRP - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	163
ST0-PRO-C15-102(	Procurement - FRP - RFQ Tender Period	10	04-Mar-24	15-Mar-24	163
ST0-PRO-C15-104(	Procurement - FRP - RFQ Compare / Evaluate / Negotiate / Recommend	5	18-Mar-24	22-Mar-24	163
ST0-PRO-C15-106(	Procurement - FRP - RFQ Award	5	25-Mar-24	02-Apr-24	163
C29 - 038 - Onsite Materials Testing Labarotory		50	19-Feb-24	01-May-24	474
ST0-PRO-C29-132(	Procurement - Onsite Materials Testing Lab - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	474
ST0-PRO-C29-170(	Procurement - Onsite Materials Testing Lab - RFQ Tender Period	20	11-Mar-24	09-Apr-24	474
ST0-PRO-C29-254(	Procurement - Onsite Materials Testing Lab - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	474
ST0-PRO-C29-296(	Procurement - Onsite Materials Testing Lab - RFQ Award	5	24-Apr-24	01-May-24	474
C32 - 081 - Piling - Secant		85	21-Mar-24	23-Jul-24	249
ST0-PRO-C32-196(	Procurement - Secant Piling Install - RFQ Prepare + Issue Package	10	21-Mar-24	05-Apr-24	249
ST0-PRO-C32-232(	Procurement - Secant Piling Install - RFQ Tender Period	15	08-Apr-24	29-Apr-24	249
ST0-PRO-C32-318(	Procurement - Secant Piling Install - RFQ Compare / Evaluate / Negotiate / Recommend	10	30-Apr-24	14-May-24	249
ST0-PRO-C32-308(	Procurement - Secant Piling Install - Shop Drawings	40	10-May-24	04-Jul-24	262
ST0-PRO-C32-330(	Procurement - Secant Piling Install - RFQ Award	5	15-May-24	21-May-24	249
ST0-PRO-C32-338(	Procurement - Secant Piling Install - Manufacture / Lead Time	40	22-May-24	16-Jul-24	249
ST0-PRO-C32-356(	Procurement - Secant Piling Install - Deliver to Site	5	17-Jul-24	23-Jul-24	249
C32 - 009 - Piling - Sheet Pile - Install - Upstream Cofferdam		50	07-Mar-24	22-May-24	21
ST0-PRO-C32-100(	Procurement - Sheet Piling - Install - RFQ Prepare + Issue Package	15	07-Mar-24	27-Mar-24	21
ST0-PRO-C32-102(	Procurement - Sheet Piling - Install - RFQ Tender Period	15	28-Mar-24	19-Apr-24	21
ST0-PRO-C32-104(	Procurement - Sheet Piling - Install - RFQ Compare / Evaluate / Negotiate / Recommend	15	22-Apr-24	14-May-24	21
ST0-PRO-C32-108(	Procurement - Sheet Piling - Install - RFQ Award	5	15-May-24	21-May-24	21
ST0-PRO-C32-114(	Procurement - Sheet Piling - Install - Commence Mobilise Piling Equipment to Site	0	22-May-24		21

Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
Building - Seqwater Permanent Facilities		85	16-Oct-24	26-Feb-25	828
ST0-PRO-3580	Procurement - Building Works - Seqwater Permanent Facilities - RFQ Prepare + Issue Package	10	16-Oct-24	29-Oct-24	828
ST0-PRO-3600	Procurement - Building Works - Seqwater Permanent Facilities - RFQ Tender Period	15	30-Oct-24	19-Nov-24	828
ST0-PRO-3620	Procurement - Building Works - Seqwater Permanent Facilities - RFQ Compare / Evaluate / Negotiate / Recommen	10	20-Nov-24	03-Dec-24	828
ST0-PRO-3640	Procurement - Building Works - Seqwater Permanent Facilities - RFQ Award	5	04-Dec-24	10-Dec-24	828
ST0-PRO-3680	Procurement - Building Works - Seqwater Permanent Facilities - Mobilisation Time	40	11-Dec-24	19-Feb-25	828
ST0-PRO-3700	Procurement - Building Works - Seqwater Permanent Facilities - Shop Drawings	40	11-Dec-24	19-Feb-25	828
ST0-PRO-3660	Procurement - Building Works - Seqwater Permanent Facilities - Able to Commence on-Site	5	20-Feb-25	26-Feb-25	828
E - 091 - Electrical		65	19-Feb-24	23-May-24	369
ST0-PRO-E-091-13	Procurement - Electrical - RFQ Prepare + Issue Package	30	19-Feb-24	02-Apr-24	369
ST0-PRO-E-091-17	Procurement - Electrical - RFQ Tender Period	20	03-Apr-24	01-May-24	369
ST0-PRO-E-091-25	Procurement - Electrical - RFQ Compare / Evaluate / Negotiate / Recommend	10	02-May-24	16-May-24	369
ST0-PRO-E-091-29	Procurement - Electrical - RFQ Award	5	17-May-24	23-May-24	369
M - 093 - Metal Work		50	19-Feb-24	01-May-24	384
ST0-PRO-M-093-13	Procurement - Metal Works Install - RFQ Prepare + Issue Package	15	19-Feb-24	08-Mar-24	384
ST0-PRO-M-093-17	Procurement - Metal Works Install - RFQ Tender Period	20	11-Mar-24	09-Apr-24	384
ST0-PRO-M-093-26	Procurement - Metal Works Install - RFQ Compare / Evaluate / Negotiate / Recommend	10	10-Apr-24	23-Apr-24	384
ST0-PRO-M-093-30	Procurement - Metal Works Install - RFQ Award	5	24-Apr-24	01-May-24	384
C - xxx - PUP's - Potholing		30	19-Feb-24	07-May-24	358
ST0-PRO-S-017-31	Procurement - PUP's Potholing - Locate + Identify - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	543
ST0-PRO-S-017-31	Procurement - PUP's Potholing - Locate + Identify - RFQ Tender Period	10	04-Mar-24	15-Mar-24	543
ST0-PRO-S-017-31	Procurement - PUP's Potholing - Locate + Identify - RFQ Compare / Evaluate / Negotiate / Recommend	5	18-Mar-24	22-Mar-24	543
ST0-PRO-S-017-31	Procurement - PUP's Potholing - Locate + Identify - RFQ Award	5	25-Mar-24	02-Apr-24	543
ST0-PRO-S-017-32	Procurement - PUP's Potholing - Locate + Identify - Undertake Additional Works + Produce Report	20	08-Apr-24	07-May-24	499
C - xxx - PUP's - Protection		80	22-Apr-24	13-Aug-24	541
ST0-PRO-C-0xy-10(	Procurement - PUP's Protection - RFQ Prepare + Issue Package	10	22-Apr-24	07-May-24	541
ST0-PRO-C-0xy-10:	Procurement - PUP's Protection - RFQ Tender Period	10	08-May-24	21-May-24	541
ST0-PRO-C-0xy-10-	Procurement - PUP's Protection - RFQ Compare / Evaluate / Negotiate / Recommend	5	22-May-24	28-May-24	541
ST0-PRO-C-0xy-10(	Procurement - PUP's Protection - RFQ Award	5	29-May-24	04-Jun-24	541
ST0-PRO-C-0xy-10(	Procurement - PUP's Protection - Design Protection Measures	20	05-Jun-24	02-Jul-24	541
ST0-PRO-C-0xy-11(	Procurement - PUP's Protection - Authorities Review + Approve Protection Measures	30	03-Jul-24	13-Aug-24	541
Supply		184	25-Jan-24	17-Oct-24	520
P30 - 042 - Concrete Onsite Batch Plant		45	29-Feb-24	07-May-24	471
ST0-PRO-P30-1440	Procurement - Batch Plant Supply - RFQ Prepare + Issue Package	10	29-Feb-24	13-Mar-24	471
ST0-PRO-P30-1780	Procurement - Batch Plant Supply - RFQ Tender Period	15	14-Mar-24	05-Apr-24	471
ST0-PRO-P30-2200	Procurement - Batch Plant Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	08-Apr-24	19-Apr-24	471
ST0-PRO-P30-2720	Procurement - Batch Plant Supply - RFQ Award	5	22-Apr-24	29-Apr-24	471
ST0-PRO-P30-3120	Procurement - Batch Plant Supply - Mobilisation to Site	5	30-Apr-24	07-May-24	471
S50 - 025 - Concrete Offsite Supply		57	25-Jan-24	18-Apr-24	237
ST0-PRO-S50-1020	Procurement - Offsite Concrete Supply - RFQ Prepare + Issue Package	15	25-Jan-24	15-Feb-24	237
ST0-PRO-S50-1420	Procurement - Offsite Concrete Supply - RFQ Tender Period	15	16-Feb-24	07-Mar-24	237
ST0-PRO-S50-1840	Procurement - Offsite Concrete Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	08-Mar-24	21-Mar-24	237
ST0-PRO-S50-2140	Procurement - Offsite Concrete Supply - RFQ Award	5	22-Mar-24	28-Mar-24	237
ST0-PRO-S50-2380	Procurement - Offsite Concrete Supply - Undertake Testing	10	02-Apr-24	15-Apr-24	237
ST0-PRO-S50-2820	Procurement - Offsite Concrete Supply - Submit Results to Superintendent	2	16-Apr-24	17-Apr-24	237
ST0-PRO-S50-3040	Procurement - Offsite Concrete Supply - Available on Site	0	18-Apr-24		237
S56 - 073 / 074 / 075 - Quarry Products		85	25-Jan-24	30-May-24	204
ST0-PRO-S56-1000	Procurement - Quarry Products Supply - RFQ Prepare + Issue Package	15	25-Jan-24	15-Feb-24	204
ST0-PRO-S56-1400	Procurement - Quarry Products Supply - RFQ Tender Period	15	16-Feb-24	07-Mar-24	204
ST0-PRO-S56-1820	Procurement - Quarry Products Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	08-Mar-24	21-Mar-24	204
ST0-PRO-S56-2120	Procurement - Quarry Products Supply - RFQ Award	5	22-Mar-24	28-Mar-24	204
ST0-PRO-S56-2360	Procurement - Quarry Products Supply - Manufacture / Lead Time	40	02-Apr-24	29-May-24	204
ST0-PRO-S56-3460	Procurement - Quarry Products Supply - Available on Site	0	30-May-24		204
S57 - 076 - Reinforcement		85	25-Jan-24	29-May-24	204
ST0-PRO-S57-1040	Procurement - Reinforcement Supply - RFQ Prepare + Issue Package	10	25-Jan-24	08-Feb-24	204
ST0-PRO-S57-1140	Procurement - Reinforcement Supply - RFQ Tender Period	15	09-Feb-24	29-Feb-24	204
ST0-PRO-S57-1560	Procurement - Reinforcement Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	01-Mar-24	14-Mar-24	204
ST0-PRO-S57-2000	Procurement - Reinforcement Supply - RFQ Award	5	15-Mar-24	21-Mar-24	204
ST0-PRO-S57-2160	Procurement - Reinforcement Supply - Manufacture / Lead Time	40	22-Mar-24	22-May-24	204
ST0-PRO-S57-3420	Procurement - Reinforcement Supply - Deliver to Site	5	23-May-24	29-May-24	204
C42 - xxx - Metal Work (Handrails, Baulks, Gates, Walkways etc.)		105	19-Feb-24	18-Jul-24	583
ST0-PRO-C42-116(	Procurement - Metal Work Supply - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	583
ST0-PRO-C42-152(	Procurement - Metal Work Supply - RFQ Tender Period	15	04-Mar-24	22-Mar-24	583
ST0-PRO-C42-202(	Procurement - Metal Work Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	25-Mar-24	09-Apr-24	583
ST0-PRO-C42-240(	Procurement - Metal Work Supply - RFQ Award	5	10-Apr-24	16-Apr-24	583



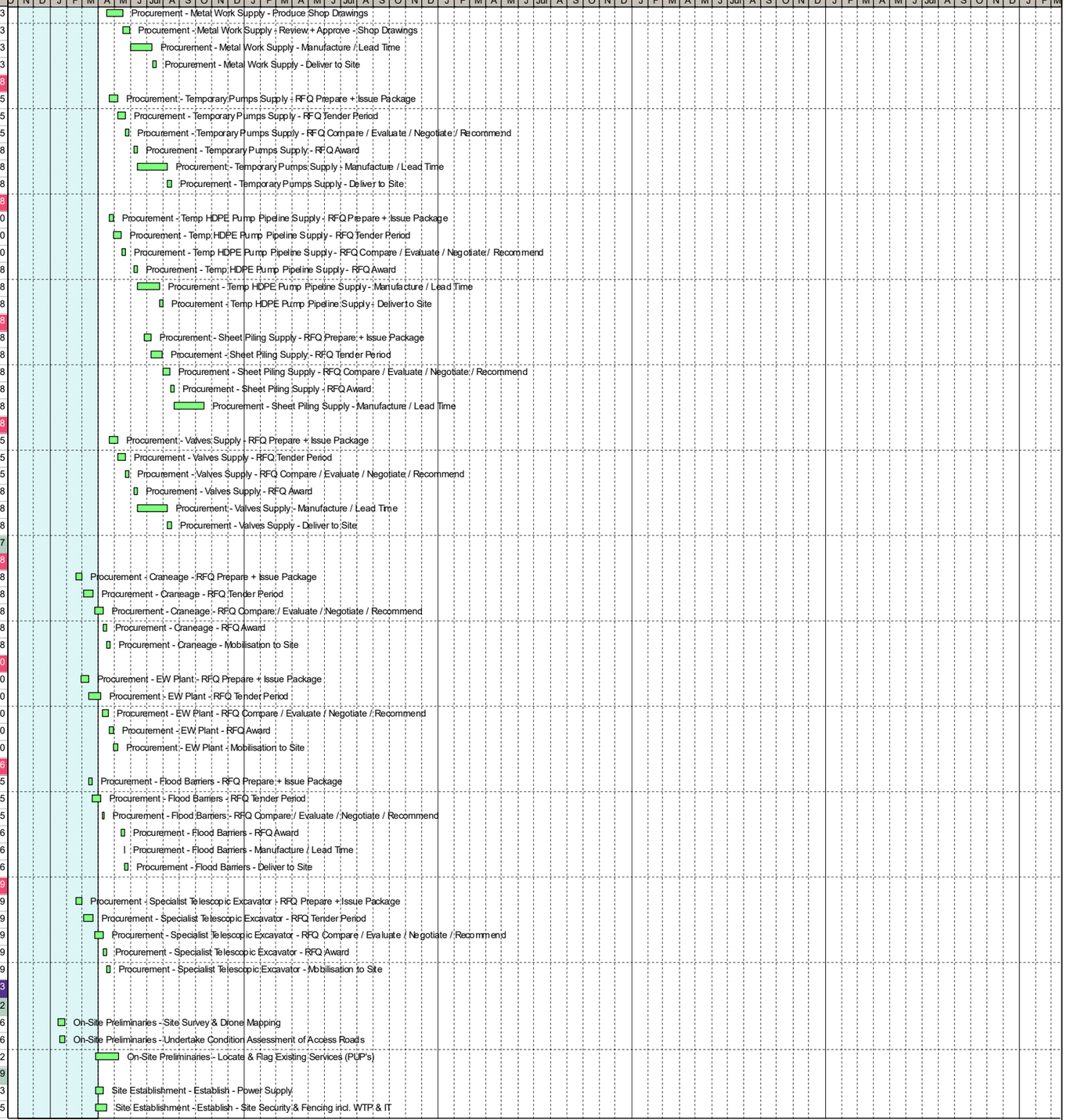
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-PRO-C42-3460	Procurement - Metal Work Supply - Produce Shop Drawings	20	17-Apr-24	16-May-24	583
ST0-PRO-C42-3480	Procurement - Metal Work Supply - Review + Approve - Shop Drawings	10	17-May-24	30-May-24	583
ST0-PRO-C42-2700	Procurement - Metal Work Supply - Manufacture / Lead Time	30	31-May-24	11-Jul-24	583
ST0-PRO-C42-3440	Procurement - Metal Work Supply - Deliver to Site	5	12-Jul-24	18-Jul-24	583
C07 - 030 - Temporary Pumps - Ground Water Dewatering		82	22-Apr-24	16-Aug-24	148
ST0-PRO-C07-1900	Procurement - Temporary Pumps Supply - RFQ Prepare + Issue Package	10	22-Apr-24	07-May-24	155
ST0-PRO-C07-2260	Procurement - Temporary Pumps Supply - RFQ Tender Period	10	08-May-24	21-May-24	155
ST0-PRO-C07-2760	Procurement - Temporary Pumps Supply - RFQ Compare / Evaluate / Negotiate / Recommend	5	22-May-24	28-May-24	155
ST0-PRO-C07-3140	Procurement - Temporary Pumps Supply - RFQ Award	5	07-Jun-24	13-Jun-24	148
ST0-PRO-C07-3240	Procurement - Temporary Pumps Supply - Manufacture / Lead Time	40	14-Jun-24	08-Aug-24	148
ST0-PRO-C07-3500	Procurement - Temporary Pumps Supply - Deliver to Site	5	09-Aug-24	16-Aug-24	148
C07 - 030 - Temporary Pumping Pipeline - Ground Water Dewatering		72	22-Apr-24	01-Aug-24	158
ST0-PRO-C07-1920	Procurement - Temp HDPE Pump Pipeline Supply - RFQ Prepare + Issue Package	5	22-Apr-24	29-Apr-24	170
ST0-PRO-C07-2080	Procurement - Temp HDPE Pump Pipeline Supply - RFQ Tender Period	10	30-Apr-24	14-May-24	170
ST0-PRO-C07-2660	Procurement - Temp HDPE Pump Pipeline Supply - RFQ Compare / Evaluate / Negotiate / Recommend	5	15-May-24	21-May-24	170
ST0-PRO-C07-3060	Procurement - Temp HDPE Pump Pipeline Supply - RFQ Award	5	07-Jun-24	13-Jun-24	158
ST0-PRO-C07-3220	Procurement - Temp HDPE Pump Pipeline Supply - Manufacture / Lead Time	30	14-Jun-24	25-Jul-24	158
ST0-PRO-C07-3480	Procurement - Temp HDPE Pump Pipeline Supply - Deliver to Site	5	26-Jul-24	01-Aug-24	158
C - xxx - Sheet Piling - Supply - Embankments + Spillway + Downstream Cofferdam		80	26-Jun-24	17-Oct-24	108
ST0-PRO-C-002-20	Procurement - Sheet Piling Supply - RFQ Prepare + Issue Package	10	26-Jun-24	09-Jul-24	108
ST0-PRO-C-002-26	Procurement - Sheet Piling Supply - RFQ Tender Period	15	10-Jul-24	30-Jul-24	108
ST0-PRO-C-002-32	Procurement - Sheet Piling Supply - RFQ Compare / Evaluate / Negotiate / Recommend	10	31-Jul-24	13-Aug-24	108
ST0-PRO-C-002-33	Procurement - Sheet Piling Supply - RFQ Award	5	15-Aug-24	21-Aug-24	108
ST0-PRO-C-002-34	Procurement - Sheet Piling Supply - Manufacture / Lead Time	40	22-Aug-24	17-Oct-24	108
S - xxx - Valves - Ground Water Dewatering		82	22-Apr-24	16-Aug-24	148
ST0-PRO-C-020-19	Procurement - Valves Supply - RFQ Prepare + Issue Package	10	22-Apr-24	07-May-24	155
ST0-PRO-C-020-22	Procurement - Valves Supply - RFQ Tender Period	10	08-May-24	21-May-24	155
ST0-PRO-C-020-27	Procurement - Valves Supply - RFQ Compare / Evaluate / Negotiate / Recommend	5	22-May-24	28-May-24	155
ST0-PRO-C-020-31	Procurement - Valves Supply - RFQ Award	5	07-Jun-24	13-Jun-24	148
ST0-PRO-C-020-32	Procurement - Valves Supply - Manufacture / Lead Time	40	14-Jun-24	08-Aug-24	148
ST0-PRO-C-020-35	Procurement - Valves Supply - Deliver to Site	5	09-Aug-24	16-Aug-24	148
Plant		67	19-Feb-24	27-May-24	367
P34 - 125 - Craneage		45	19-Feb-24	23-Apr-24	228
ST0-PRO-P34-1100	Procurement - Craneage - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	228
ST0-PRO-P34-1460	Procurement - Craneage - RFQ Tender Period	15	04-Mar-24	22-Mar-24	228
ST0-PRO-P34-1880	Procurement - Craneage - RFQ Compare / Evaluate / Negotiate / Recommend	10	25-Mar-24	09-Apr-24	228
ST0-PRO-P34-2220	Procurement - Craneage - RFQ Award	5	10-Apr-24	16-Apr-24	228
ST0-PRO-P34-2640	Procurement - Craneage - Mobilisation to Site	5	17-Apr-24	23-Apr-24	228
P35 - 022 - Earthworks Plant		45	29-Feb-24	07-May-24	220
ST0-PRO-P35-1480	Procurement - EW Plant - RFQ Prepare + Issue Package	10	29-Feb-24	13-Mar-24	220
ST0-PRO-P35-1800	Procurement - EW Plant - RFQ Tender Period	15	14-Mar-24	05-Apr-24	220
ST0-PRO-P35-2240	Procurement - EW Plant - RFQ Compare / Evaluate / Negotiate / Recommend	10	08-Apr-24	19-Apr-24	220
ST0-PRO-P35-2740	Procurement - EW Plant - RFQ Award	5	22-Apr-24	29-Apr-24	220
ST0-PRO-P35-3100	Procurement - EW Plant - Mobilisation to Site	5	30-Apr-24	07-May-24	220
S - xxx - Flood Barriers		49	14-Mar-24	27-May-24	206
ST0-PRO-2100	Procurement - Flood Barriers - RFQ Prepare + Issue Package	5	14-Mar-24	20-Mar-24	225
ST0-PRO-2300	Procurement - Flood Barriers - RFQ Tender Period	10	21-Mar-24	05-Apr-24	225
ST0-PRO-2800	Procurement - Flood Barriers - RFQ Compare / Evaluate / Negotiate / Recommend	5	08-Apr-24	12-Apr-24	225
ST0-PRO-3280	Procurement - Flood Barriers - RFQ Award	5	14-May-24	20-May-24	206
ST0-PRO-3360	Procurement - Flood Barriers - Manufacture / Lead Time	0	21-May-24	21-May-24	206
ST0-PRO-3340	Procurement - Flood Barriers - Deliver to Site	5	21-May-24	27-May-24	206
P - 072 - Specialist Telescopic Excavator		45	19-Feb-24	23-Apr-24	389
ST0-PRO-C-072-11:	Procurement - Specialist Telescopic Excavator - RFQ Prepare + Issue Package	10	19-Feb-24	01-Mar-24	389
ST0-PRO-C-072-15	Procurement - Specialist Telescopic Excavator - RFQ Tender Period	15	04-Mar-24	22-Mar-24	389
ST0-PRO-C-072-19	Procurement - Specialist Telescopic Excavator - RFQ Compare / Evaluate / Negotiate / Recommend	10	25-Mar-24	09-Apr-24	389
ST0-PRO-C-072-23	Procurement - Specialist Telescopic Excavator - RFQ Award	5	10-Apr-24	16-Apr-24	389
ST0-PRO-C-072-26	Procurement - Specialist Telescopic Excavator - Mobilisation to Site	5	17-Apr-24	23-Apr-24	389
SITE ESTABLISHMENT		125	16-Jan-24	14-Oct-24	353
On-Site Preliminaries		71	16-Jan-24	09-May-24	582
ST0-EST-1000	On-Site Preliminaries - Site Survey & Drone Mapping	8	16-Jan-24	29-Jan-24	276
ST0-EST-1080	On-Site Preliminaries - Undertake Condition Assessment of Access Roads	5	19-Jan-24	29-Jan-24	276
ST0-EST-1020	On-Site Preliminaries - Locate & Flag Existing Services (PUP's)	25	26-Mar-24	09-May-24	582
Site Establishment		128	26-Mar-24	14-Oct-24	499
ST0-EST-1120	Site Establishment - Establish - Power Supply	5	26-Mar-24	09-Apr-24	233
ST0-EST-1060	Site Establishment - Establish - Site Security & Fencing incl. WTP & IT	10	26-Mar-24	16-Apr-24	445



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-EST-1140	Site Establishment - Establish - Stormwater Management Controlls	10	26-Mar-24	16-Apr-24	228
ST0-EST-1160	Site Establishment - Establish - Environmental Controlls	10	26-Mar-24	16-Apr-24	213
ST0-EST-1040	Site Establishment - Establish - Site Facilities	20	26-Mar-24	02-May-24	213
ST0-EST-1240	Site Establishment - Establish - Potable/General Water Supplies	5	10-Apr-24	16-Apr-24	445
ST0-EST-1260	Site Establishment - Protect Existing Services (PUP's) - Right Embankment	20	15-Aug-24	12-Sep-24	499
ST0-EST-1500	Site Establishment - Protect Existing Services (PUP's) - Left Embankment	20	13-Sep-24	14-Oct-24	499
Site Infrastructure		45	26-Mar-24	07-Jun-24	430
ST0-EST-1380	Site Establishment - Infrastructure - Construct Haul Roads & Access Roads	5	26-Mar-24	09-Apr-24	213
ST0-EST-1280	Site Establishment - Infrastructure - Construct Stockpile/Spoil Areas	5	26-Mar-24	09-Apr-24	213
ST0-EST-1340	Site Establishment - Infrastructure - Clearing and Grubbing Staging Area	5	10-Apr-24	16-Apr-24	213
ST0-EST-1360	Site Establishment - Infrastructure - Strip & Stockpile Topsoil Staging Area	5	17-Apr-24	23-Apr-24	213
ST0-EST-1400	Site Establishment - Infrastructure - Construct Hardstands incl. Batch Plant Area	10	24-Apr-24	09-May-24	213
ST0-EST-1480	Site Establishment - Infrastructure - Setup Onsite Materials Testing Facility	20	10-May-24	07-Jun-24	430
Concrete Batch Plant		100	10-May-24	10-Oct-24	380
ST0-EST-1420	Site Establishment - Batch Plant - Establish on Site Batch Plant & Commission	20	10-May-24	07-Jun-24	430
ST0-EST-1440	Site Establishment - Batch Plant - Undertake Batch Plant Trial [28d prior to commencing]	14	27-Aug-24	16-Sep-24	379
ST0-EST-1460	Site Establishment - Batch Plant - Batch Plant Available to Supply Site	0	10-Oct-24		380
Dewatering Requirements		10	30-Jan-24	20-Feb-24	65
ST0-EST-1100	Site Establishment - Dewatering - Undertake Dilapidation Survey of Seqwaters - CWR & CWPS	1	30-Jan-24	30-Jan-24	94
ST0-EST-1180	Site Establishment - Dewatering - Install & Commission - CWR & CWPS Monitoring Wells	7	31-Jan-24	06-Feb-24	148
ST0-EST-1200	Site Establishment - Dewatering - Record Baseline Readings - CWR & CWPS Monitoring Wells	7	07-Feb-24	13-Feb-24	155
ST0-EST-1220	Site Establishment - Dewatering - Install & Commission - CWR & CWPS Temporary Survey Markers	7	07-Feb-24	13-Feb-24	148
ST0-EST-1300	Site Establishment - Dewatering - Record Baseline Readings - CWR & CWPS Temporary Survey Markers	7	14-Feb-24	20-Feb-24	148
ST0-EST-1320	Site Establishment - Dewatering - Install & Commission - Data Loggers to Existing Standpipes	7	14-Feb-24	20-Feb-24	148
STAGE 1 - RESERVOIR LOWERING		200	30-Jan-24	06-May-25	582
Environmental Requirements		16	30-Jan-24	04-Mar-24	59
ST1-1000	Reservoir Lowering - Stage 1 - Enviro - Install Water Quality Monitoring Stations	5	30-Jan-24	05-Feb-24	85
ST1-1020	Reservoir Lowering - Stage 1 - Enviro - Establish Automated Stream Bed & Water Velocity Monitoring	5	30-Jan-24	05-Feb-24	85
ST1-1040	Reservoir Lowering - Stage 1 - Enviro - Install Erosion Pins on Creek Bank & Submit Report [1 week]	5	30-Jan-24	05-Feb-24	104
ST1-1260	Reservoir Lowering - Stage 1 - Enviro - Undertake Evaluation Survey in Lake Macdonald & Submit Report [1 week]	5	30-Jan-24	05-Feb-24	104
ST1-1280	Reservoir Lowering - Stage 1 - Enviro - Undertake Site Survey of Relocation Sites & Submit Report [4 weeks]	28	30-Jan-24	26-Feb-24	142
ST1-1120	Reservoir Lowering - Stage 1 - Enviro - Monitor Water Quality & Submit Baseline Reports [4 weeks]	28	06-Feb-24	04-Mar-24	135
ST1-1240	Reservoir Lowering - Stage 1 - Enviro - Assess Erosion, Substrate Composition, Aquatic Habitat Submit Report [4 w	28	06-Feb-24	04-Mar-24	135
ST1-1140	Reservoir Lowering - Stage 1 - Enviro - Monitor Submit Baseline Reports Stream Bed, Water Velocity Monitoring [4 v	28	06-Feb-24	04-Mar-24	135
Construct Reservoir Lowering System		33	01-May-24	19-Jun-24	19
ST1-1060	Reservoir Lowering - Stage 1 - Lowering Syst - Install Platforms & Access Stairs at Spillway	10	01-May-24	16-May-24	35
ST1-1080	Reservoir Lowering - Stage 1 - Lowering Syst - Construct Drop Structure	10	01-May-24	16-May-24	36
ST1-1160	Reservoir Lowering - Stage 1 - Lowering Syst - FRP Thrust Blocks & Diesel Pads	8	03-May-24	16-May-24	36
ST1-1180	Reservoir Lowering - Stage 1 - Lowering Syst - Install Plate Mounted Pumps & Discharge Lines	10	28-May-24	11-Jun-24	19
ST1-1100	Reservoir Lowering - Stage 1 - Lowering Syst - Install Siphons over Spillway	7	31-May-24	11-Jun-24	19
ST1-1200	Reservoir Lowering - Stage 1 - Lowering Syst - Haul Road over Discharge Lines	1	11-Jun-24	11-Jun-24	19
ST1-1220	Reservoir Lowering - Stage 1 - Lowering Syst - Commission	3	12-Jun-24	14-Jun-24	19
ST1-1300	Reservoir Lowering - Stage 1 - Lowering Syst - Provide Evidence of Minimum Flow Capacity to Superintendent	3	17-Jun-24	19-Jun-24	19
Reservoir Lowering		177	23-Mar-24	06-May-25	582
ST1-1600	Reservoir Lowering - Stage 1 - Lowering - Lake Aquatics - MMJ - Fish Survey Exercises	10	23-Mar-24	01-Apr-24	13
ST1-1520	Reservoir Lowering - Stage 1 - Lowering - Drawdown to RL93 - Setup Pumps Only	10	19-Apr-24	03-May-24	-14
ST1-1580	Reservoir Lowering - Stage 1 - Lowering - Lake Aquatics - Salvage + Relocate	258	19-Apr-24	01-Jan-25	-19
ST1-1540	Reservoir Lowering - Stage 1 - Lowering - Drawdown to RL93 - Commence Pumping	0	04-May-24		-19
ST1-1560	Reservoir Lowering - Stage 1 - Lowering - Drawdown to RL93 - Using Pumps Only	43	04-May-24	15-Jun-24	-19
ST1-1320	Reservoir Lowering - Stage 1 - Lowering - Drawdown to RL93 (maintenance lowering only)	200	16-Jun-24	01-Jan-25	-19
ST1-1340	Reservoir Lowering - Stage 1 - Lowering - Install Low Flow Pipe Works	6	10-Dec-24	02-Jan-25	890
ST1-1360	Reservoir Lowering - Stage 1 - Lowering - Install Erosion Protection	6	10-Dec-24	02-Jan-25	58
ST1-1500	Reservoir Lowering - Stage 1 - Lowering - Decommission Lowering System	5	29-Apr-25	06-May-25	582
Utilities Relocation / Protection		35	20-Feb-24	17-May-24	142
ST0-EST-1520	Utilities Relocation - Nominated Services (PUP's) (Comms / Water) Relocation By Others Completed [C-DWG-DLM-0	0		08-Mar-24	53
Northern Interconnector Pipeline (NIP)		35	20-Feb-24	17-May-24	142
NIP - Left Bank - Concrete Encase		19	20-Feb-24	12-Apr-24	152
ST0-NIP-1000	Utilities Relocation - NIP - Left Bank - Conc Encase - Detailed Excavation	10	20-Feb-24	04-Mar-24	198
ST0-NIP-1020	Utilities Relocation - NIP - Left Bank - Conc Encase - Install Pipeline Temp Protection	5	05-Mar-24	11-Mar-24	207
ST0-NIP-1040	Utilities Relocation - NIP - Left Bank - Conc Encase - FRP Encasement	10	12-Mar-24	26-Mar-24	207
ST0-NIP-1060	Utilities Relocation - NIP - Left Bank - Conc Encase - Cure + Strip Form	7	27-Mar-24	02-Apr-24	338
ST0-NIP-1080	Utilities Relocation - NIP - Left Bank - Conc Encase - Inital Backfill to Trench Encasement	5	08-Apr-24	12-Apr-24	210
NIP - Right Bank - Concrete Retaining Structure		21	05-Mar-24	02-May-24	146
ST0-NIP-2000	Utilities Relocation - NIP - Right Bank - Conc Retain Struct - Detailed Excavation	10	05-Mar-24	19-Mar-24	198
ST0-NIP-2020	Utilities Relocation - NIP - Right Bank - Conc Retain Struct - Install Pipeline Temp Protection	5	20-Mar-24	26-Mar-24	202

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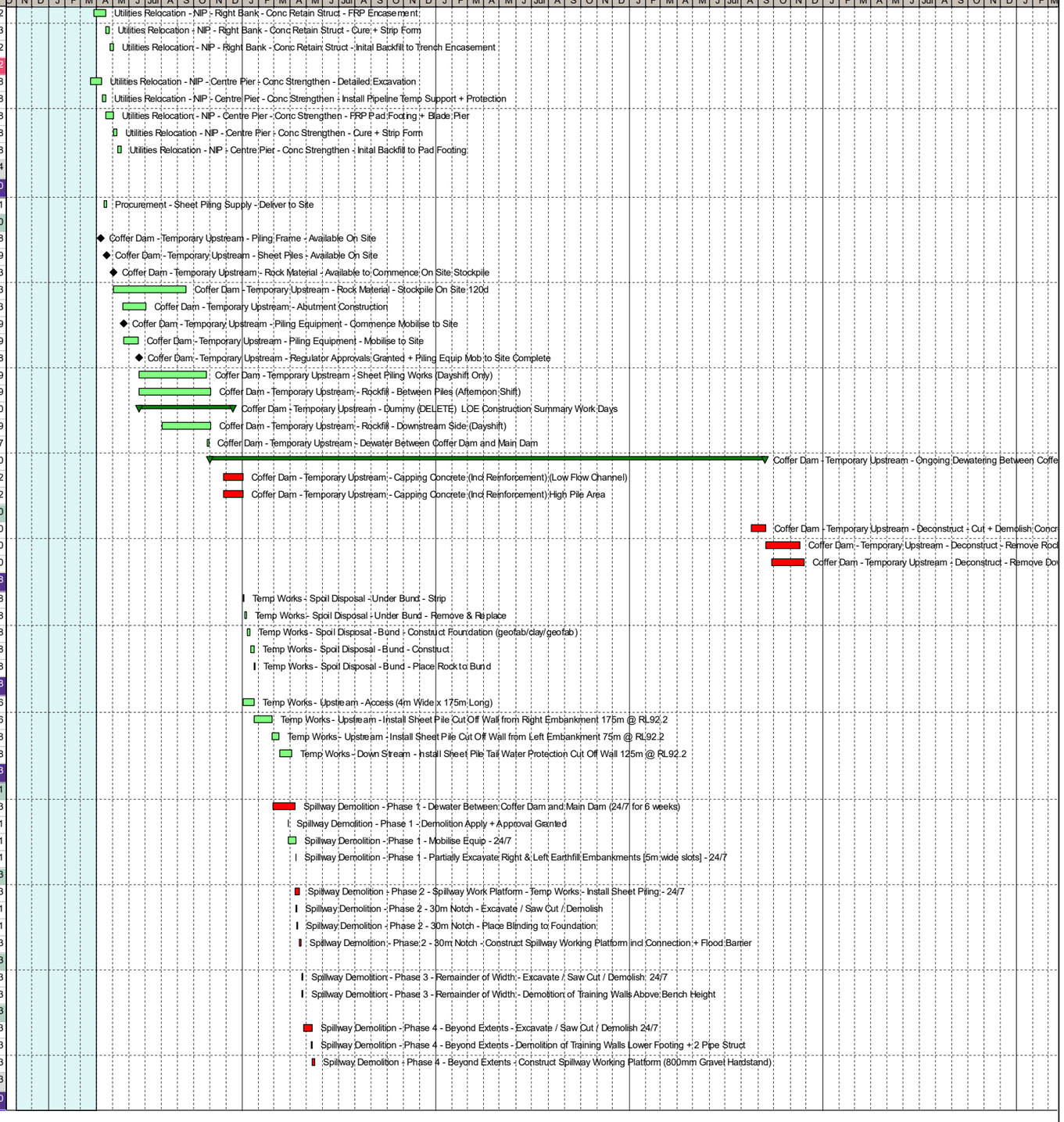
Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST0-NIP-2040	Utilities Relocation - NIP - Right Bank - Conc Retain Struct - FRP Encasement	10	27-Mar-24	17-Apr-24	202
ST0-NIP-2060	Utilities Relocation - NIP - Right Bank - Conc Retain Struct - Cure + Strip Form	7	18-Apr-24	24-Apr-24	323
ST0-NIP-2080	Utilities Relocation - NIP - Right Bank - Conc Retain Struct - Inital Backfill to Trench Encasement	5	26-Apr-24	02-May-24	202
NIP - Centre Pier - Concrete Strengthming		22	20-Mar-24	17-May-24	142
ST0-NIP-3000	Utilities Relocation - NIP - Centre Pier - Conc Strengthen - Detailed Excavation	10	20-Mar-24	10-Apr-24	198
ST0-NIP-3020	Utilities Relocation - NIP - Centre Pier - Conc Strengthen - Install Pipeline Temp Support + Protection	5	11-Apr-24	17-Apr-24	198
ST0-NIP-3040	Utilities Relocation - NIP - Centre Pier - Conc Strengthen - FRP Pad Footing + Blade Pier	10	18-Apr-24	02-May-24	198
ST0-NIP-3060	Utilities Relocation - NIP - Centre Pier - Conc Strengthen - Cure + Strip Form	7	03-May-24	09-May-24	318
ST0-NIP-3080	Utilities Relocation - NIP - Centre Pier - Conc Strengthen - Inital Backfill to Pad Footing	5	10-May-24	17-May-24	198
STAGE 2 - TEMPORARY WORKS		593	08-Apr-24	26-Nov-27	164
Temporary Upstream Coffer Dam		593	08-Apr-24	26-Nov-27	0
ST0-PRO-C-002-3540	Procurement - Sheet Piling Supply - Deliver to Site	5	15-Apr-24	19-Apr-24	61
Construct - Temporary Upstream Coffer Dam		558	08-Apr-24	13-Sep-27	0
ST2-CD-1000	Coffer Dam - Temporary Upstream - Piling Frame - Available On Site	0	08-Apr-24		68
ST2-CD-1020	Coffer Dam - Temporary Upstream - Sheet Piles - Available On Site	0	20-Apr-24		89
ST2-CD-1040	Coffer Dam - Temporary Upstream - Rock Material - Available to Commence On Site Stockpile	0	02-May-24		33
ST2-CD-1080	Coffer Dam - Temporary Upstream - Rock Material - Stockpile On Site 120d	90	02-May-24	16-Sep-24	33
ST2-CD-1100	Coffer Dam - Temporary Upstream - Abutment Construction	30	20-May-24	02-Jul-24	33
ST2-CD-1060	Coffer Dam - Temporary Upstream - Piling Equipment - Commence Mobilise to Site	0	22-May-24		29
ST2-CD-1220	Coffer Dam - Temporary Upstream - Piling Equipment - Mobilise to Site	28	22-May-24	18-Jun-24	29
ST2-CD-1120	Coffer Dam - Temporary Upstream - Regulator Approvals Granted + Piling Equip Mob to Site Complete	0	20-Jun-24		28
ST2-CD-1140	Coffer Dam - Temporary Upstream - Sheet Piling Works (Dayshift Only)	85	20-Jun-24	25-Oct-24	19
ST2-CD-1160	Coffer Dam - Temporary Upstream - Rockfill - Between Piles (Afternoon Shift)	90	20-Jun-24	01-Nov-24	19
ST2-CD-2100	Coffer Dam - Temporary Upstream - Dummy (DELETE) LOE Construction Summary Work Days	95	20-Jun-24	13-Dec-24	0
ST2-CD-1180	Coffer Dam - Temporary Upstream - Rockfill - Downstream Side (Dayshift)	60	02-Aug-24	01-Nov-24	19
ST2-CD-1240	Coffer Dam - Temporary Upstream - Dewater Between Coffer Dam and Main Dam	5	26-Oct-24	30-Oct-24	117
ST2-CD-2060	Coffer Dam - Temporary Upstream - Ongoing Dewatering Between Coffer Dam and Main Dam FOR SRA SET AS 11	1048	31-Oct-24	13-Sep-27	0
ST2-CD-1200	Coffer Dam - Temporary Upstream - Capping Concrete (Incl Reinforcement) (Low Flow Channel)	15	27-Nov-24	02-Jan-25	-2
ST2-CD-2080	Coffer Dam - Temporary Upstream - Capping Concrete (Incl Reinforcement) High Pile Area	15	27-Nov-24	02-Jan-25	-2
Deconstruct + Remove - Temporary Upstream Coffer Dam		66	19-Aug-27	26-Nov-27	0
ST2-CD-2000	Coffer Dam - Temporary Upstream - Deconstruct - Cut + Demolish Concrete Fill	20	19-Aug-27	15-Sep-27	0
ST2-CD-2020	Coffer Dam - Temporary Upstream - Deconstruct - Remove Rockfill + Tie Bars + Extract Piles	40	16-Sep-27	18-Nov-27	0
ST2-CD-2040	Coffer Dam - Temporary Upstream - Deconstruct - Remove Downstream Spillway	40	27-Sep-27	26-Nov-27	0
Spoil Disposal Area		17	02-Jan-25	24-Jan-25	188
ST2-1020	Temp Works - Spoil Disposal - Under Bund - Strip	2	02-Jan-25	03-Jan-25	188
ST2-1040	Temp Works - Spoil Disposal - Under Bund - Remove & Replace	4	06-Jan-25	09-Jan-25	188
ST2-1080	Temp Works - Spoil Disposal - Bund - Construct Foundation (geofab/clay/geofab)	4	10-Jan-25	15-Jan-25	188
ST2-1100	Temp Works - Spoil Disposal - Bund - Construct	5	16-Jan-25	22-Jan-25	188
ST2-1120	Temp Works - Spoil Disposal - Bund - Place Rock to Bund	2	23-Jan-25	24-Jan-25	188
EDG Upstream + Down Stream Cut Off Wall		62	02-Jan-25	03-Apr-25	828
ST2-EDG-1000	Temp Works - Upstream - Access (4m Wide x 175m Long)	15	02-Jan-25	22-Jan-25	46
ST2-EDG-1020	Temp Works - Upstream - Install Sheet Pile Cut Off Wall from Right Embankment 175m @ RL92.2	21	23-Jan-25	25-Feb-25	46
ST2-EDG-1040	Temp Works - Upstream - Install Sheet Pile Cut Off Wall from Left Embankment 75m @ RL92.2	10	26-Feb-25	11-Mar-25	438
ST2-EDG-1060	Temp Works - Down Stream - Install Sheet Pile Tail Water Protection Cut Off Wall 125m @ RL92.2	16	12-Mar-25	03-Apr-25	828
Spillway Demolition / Working Platform - 24/7 Operations No Weather Impacts		79	28-Feb-25	17-May-25	-3
Phase 1 - Relieve Training Walls		44	28-Feb-25	12-Apr-25	1
ST2-1620	Spillway Demolition - Phase 1 - Dewater Between Coffer Dam and Main Dam (24/7 for 6 weeks)	42	28-Feb-25	10-Apr-25	-3
ST2-1600	Spillway Demolition - Phase 1 - Demolition Apply + Approval Granted	1	28-Mar-25	28-Mar-25	1
ST2-1580	Spillway Demolition - Phase 1 - Mobilise Equip - 24/7	14	29-Mar-25	11-Apr-25	1
ST2-1340	Spillway Demolition - Phase 1 - Partially Excavate Right & Left Earthfill Embankments [5m wide slots] - 24/7	1	12-Apr-25	12-Apr-25	1
Phase 2 - Construct 30m Slot		12	11-Apr-25	22-Apr-25	-3
ST2-1260	Spillway Demolition - Phase 2 - Spillway Work Platform - Temp Works - Install Sheet Piling - 24/7	8	11-Apr-25	18-Apr-25	-3
ST2-1360	Spillway Demolition - Phase 2 - 30m Notch - Excavate / Saw Cut / Demolish	3	12-Apr-25	14-Apr-25	1
ST2-1380	Spillway Demolition - Phase 2 - 30m Notch - Place Blinding to Foundation	2	14-Apr-25	15-Apr-25	1
ST2-1400	Spillway Demolition - Phase 2 - 30m Notch - Construct Spillway Working Platform incl Connection + Flood Barrier	4	19-Apr-25	22-Apr-25	-3
Phase 3 - Excavation Stage 1		3	23-Apr-25	25-Apr-25	-3
ST2-1420	Spillway Demolition - Phase 3 - Remainder of Width - Excavate / Saw Cut / Demolish 24/7	2	23-Apr-25	24-Apr-25	-3
ST2-1440	Spillway Demolition - Phase 3 - Remainder of Width - Demolition of Training Walls Above Bench Height	2	24-Apr-25	25-Apr-25	-3
Phase 4 - Excavation Stage 2 + Works Platform		22	26-Apr-25	17-May-25	-3
ST2-1500	Spillway Demolition - Phase 4 - Beyond Extents - Excavate / Saw Cut / Demolish 24/7	17	26-Apr-25	12-May-25	-3
ST2-1520	Spillway Demolition - Phase 4 - Beyond Extents - Demolition of Training Walls Lower Footing + 2 Pipe Struct	2	11-May-25	12-May-25	-3
ST2-1560	Spillway Demolition - Phase 4 - Beyond Extents - Construct Spillway Working Platform (800mm Gravel Hardstand)	5	13-May-25	17-May-25	-3
STAGE 3 - DAM CONSTRUCTION		541	31-Oct-24	07-Apr-28	113
Spillway Diversion Staging		380	19-May-25	15-Sep-27	0



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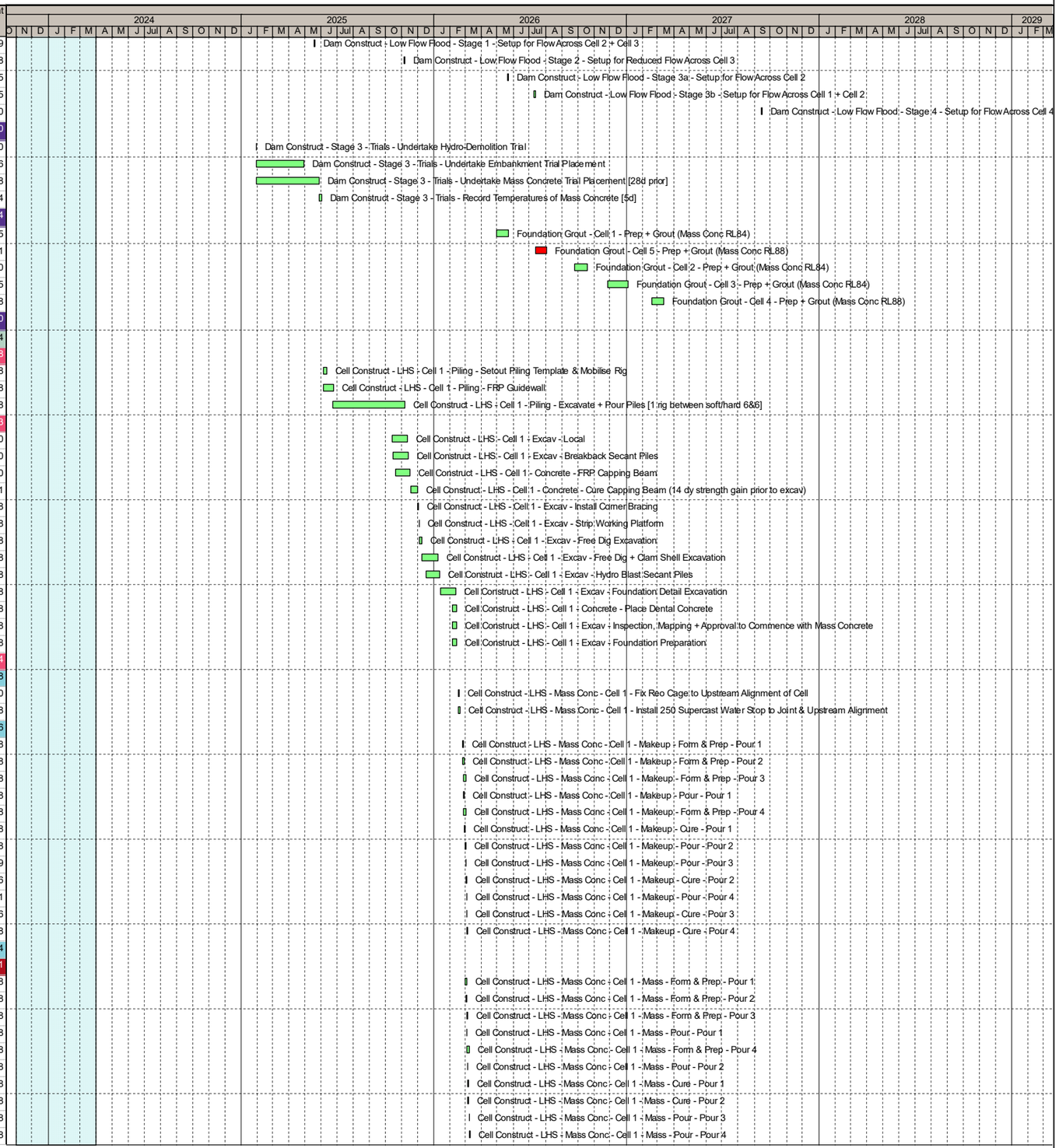
Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-LF-1000	Dam Construct - Low Flow Flood - Stage 1 - Setup for Flow Across Cell 2 + Cell 3	2	19-May-25	20-May-25	39
ST3-LF-1020	Dam Construct - Low Flow Flood - Stage 2 - Setup for Reduced Flow Across Cell 3	2	06-Nov-25	07-Nov-25	38
ST3-LF-1040	Dam Construct - Low Flow Flood - Stage 3a - Setup for Flow Across Cell 2	2	21-May-26	22-May-26	95
ST3-LF-1100	Dam Construct - Low Flow Flood - Stage 3b - Setup for Flow Across Cell 1 + Cell 2	2	10-Jul-26	13-Jul-26	265
ST3-LF-1080	Dam Construct - Low Flow Flood - Stage 4 - Setup for Flow Across Cell 4	2	14-Sep-27	15-Sep-27	0
Trials - Mass Concrete + Embankment + Hydro-Demolition		52	29-Jan-25	02-Jun-25	300
ST3-TR-5080	Dam Construct - Stage 3 - Trials - Undertake Hydro-Demolition Trial	1	29-Jan-25	29-Jan-25	280
ST3-TR-5100	Dam Construct - Stage 3 - Trials - Undertake Embankment Trial Placement	56	29-Jan-25	29-Apr-25	446
ST3-TR-5040	Dam Construct - Stage 3 - Trials - Undertake Mass Concrete Trial Placement [28d prior]	75	29-Jan-25	28-May-25	188
ST3-TR-5060	Dam Construct - Stage 3 - Trials - Record Temperatures of Mass Concrete [5d]	5	29-May-25	02-Jun-25	304
Foundation Grouting		198	30-Apr-26	12-Mar-27	84
ST3-FG-1000	Foundation Grout - Cell 1 - Prep + Grout (Mass Conc RL84)	15	30-Apr-26	22-May-26	95
ST3-FG-1080	Foundation Grout - Cell 5 - Prep + Grout (Mass Conc RL88)	15	13-Jul-26	03-Aug-26	-1
ST3-FG-1020	Foundation Grout - Cell 2 - Prep + Grout (Mass Conc RL84)	15	25-Sep-26	19-Oct-26	170
ST3-FG-1040	Foundation Grout - Cell 3 - Prep + Grout (Mass Conc RL84)	15	27-Nov-26	04-Jan-27	95
ST3-FG-1060	Foundation Grout - Cell 4 - Prep + Grout (Mass Conc RL88)	15	19-Feb-27	12-Mar-27	58
Cell Construction		273	05-Jun-25	18-Feb-27	60
Cell 1 - Left Hand Side		141	05-Jun-25	29-Apr-26	74
Piling		101	05-Jun-25	07-Nov-25	38
ST3-C1-1000	Cell Construct - LHS - Cell 1 - Piling - Setout Piling Template & Mobilise Rig	5	05-Jun-25	12-Jun-25	38
ST3-C1-1020	Cell Construct - LHS - Cell 1 - Piling - FRP Guidewall	12	06-Jun-25	24-Jun-25	38
ST3-C1-1040	Cell Construct - LHS - Cell 1 - Piling - Excavate + Pour Piles [1 rig between soft/hard 6&6]	90	23-Jun-25	07-Nov-25	38
Excavate + Capping Beam		46	14-Oct-25	13-Feb-26	53
ST3-C1-3140	Cell Construct - LHS - Cell 1 - Excav - Local	18	14-Oct-25	11-Nov-25	80
ST3-C1-3100	Cell Construct - LHS - Cell 1 - Excav - Breakback Secant Piles	18	16-Oct-25	13-Nov-25	80
ST3-C1-3080	Cell Construct - LHS - Cell 1 - Concrete - FRP Capping Beam	18	20-Oct-25	17-Nov-25	80
ST3-C1-3120	Cell Construct - LHS - Cell 1 - Concrete - Cure Capping Beam (14 dy strength gain prior to excav)	14	18-Nov-25	01-Dec-25	141
ST3-C1-3160	Cell Construct - LHS - Cell 1 - Excav - Install Corner Bracing	2	02-Dec-25	03-Dec-25	78
ST3-C1-2000	Cell Construct - LHS - Cell 1 - Excav - Strip Working Platform	1	04-Dec-25	04-Dec-25	78
ST3-C1-3000	Cell Construct - LHS - Cell 1 - Excav - Free Dig Excavation	3	05-Dec-25	09-Dec-25	78
ST3-C1-3200	Cell Construct - LHS - Cell 1 - Excav - Free Dig + Clam Shell Excavation	10	10-Dec-25	09-Jan-26	78
ST3-C1-3180	Cell Construct - LHS - Cell 1 - Excav - Hydro Blast Secant Piles	7	17-Dec-25	12-Jan-26	78
ST3-C1-3020	Cell Construct - LHS - Cell 1 - Excav - Foundation Detail Excavation	21	13-Jan-26	12-Feb-26	78
ST3-C1-3040	Cell Construct - LHS - Cell 1 - Concrete - Place Dental Concrete	6	06-Feb-26	13-Feb-26	78
ST3-C1-3060	Cell Construct - LHS - Cell 1 - Excav - Inspection, Mapping + Approval to Commence with Mass Concrete	6	06-Feb-26	13-Feb-26	78
ST3-C1-3220	Cell Construct - LHS - Cell 1 - Excav - Foundation Preparation	6	06-Feb-26	13-Feb-26	78
Mass Concrete		29	16-Feb-26	29-Apr-26	74
Cell Preparation		5	16-Feb-26	20-Feb-26	78
ST3-C1-CP-5000	Cell Construct - LHS - Mass Conc - Cell 1 - Fix Reo Cage to Upstream Alignment of Cell	3	16-Feb-26	18-Feb-26	80
ST3-C1-CP-5020	Cell Construct - LHS - Mass Conc - Cell 1 - Install 250 Supercast Water Stop to Joint & Upstream Alignment	5	16-Feb-26	20-Feb-26	78
Makeup Pours		5	24-Feb-26	06-Mar-26	56
ST3-C1-MP-5000	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Form & Prep - Pour 1	3	24-Feb-26	26-Feb-26	78
ST3-C1-MP-5060	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Form & Prep - Pour 2	3	25-Feb-26	27-Feb-26	78
ST3-C1-MP-5120	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Form & Prep - Pour 3	3	26-Feb-26	02-Mar-26	78
ST3-C1-MP-5020	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Pour - Pour 1	1	27-Feb-26	27-Feb-26	78
ST3-C1-MP-5180	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Form & Prep - Pour 4	3	27-Feb-26	03-Mar-26	78
ST3-C1-MP-5040	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Cure - Pour 1	2	28-Feb-26	01-Mar-26	128
ST3-C1-MP-5080	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Pour - Pour 2	1	02-Mar-26	02-Mar-26	78
ST3-C1-MP-5140	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Pour - Pour 3	1	03-Mar-26	03-Mar-26	79
ST3-C1-MP-5100	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Cure - Pour 2	2	03-Mar-26	04-Mar-26	126
ST3-C1-MP-5200	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Pour - Pour 4	1	04-Mar-26	04-Mar-26	81
ST3-C1-MP-5160	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Cure - Pour 3	2	04-Mar-26	05-Mar-26	126
ST3-C1-MP-5220	Cell Construct - LHS - Mass Conc - Cell 1 - Makeup - Cure - Pour 4	2	05-Mar-26	06-Mar-26	128
Mass Pours		23	02-Mar-26	29-Apr-26	74
Lift 1 - Pours 1 to 4		5	02-Mar-26	12-Mar-26	71
ST3-C1-MA-6000	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 1	3	02-Mar-26	04-Mar-26	78
ST3-C1-MA-6060	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 2	3	03-Mar-26	05-Mar-26	78
ST3-C1-MA-6120	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 3	3	04-Mar-26	06-Mar-26	78
ST3-C1-MA-6020	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 1	1	05-Mar-26	05-Mar-26	78
ST3-C1-MA-6180	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 4	3	05-Mar-26	09-Mar-26	78
ST3-C1-MA-6080	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 2	1	06-Mar-26	06-Mar-26	78
ST3-C1-MA-6040	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 1	2	06-Mar-26	07-Mar-26	128
ST3-C1-MA-6100	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 2	2	07-Mar-26	08-Mar-26	128
ST3-C1-MA-6140	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 3	1	09-Mar-26	09-Mar-26	78
ST3-C1-MA-6200	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 4	1	10-Mar-26	10-Mar-26	78



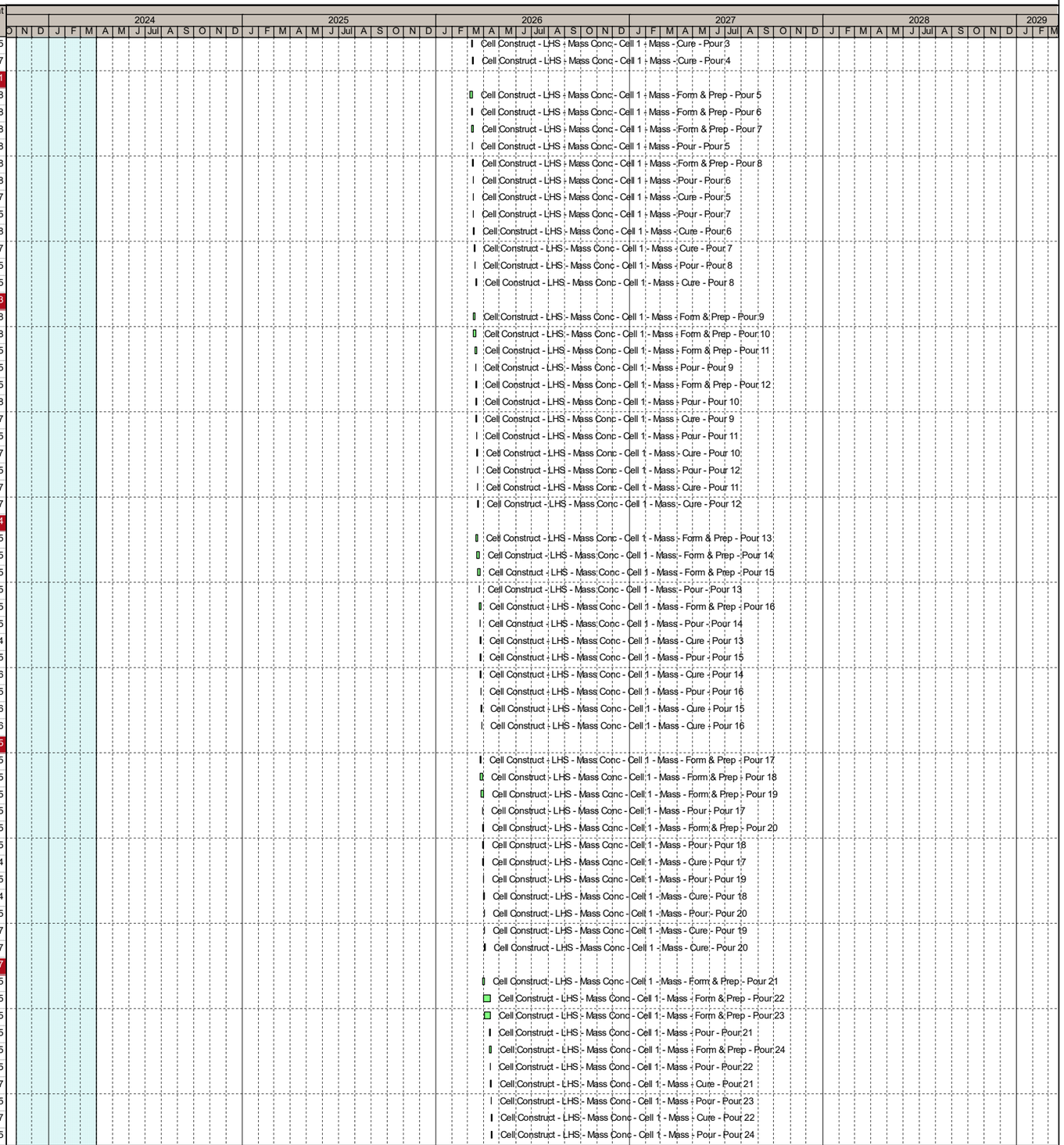
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C1-MA-6160	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 3	2	10-Mar-26	11-Mar-26	155
ST3-C1-MA-6220	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 4	2	11-Mar-26	12-Mar-26	157
Lift 2 - Pours 5 to 8		6	06-Mar-26	18-Mar-26	71
ST3-C1-MA-6240	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 5	3	06-Mar-26	10-Mar-26	78
ST3-C1-MA-6300	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 6	3	09-Mar-26	11-Mar-26	78
ST3-C1-MA-6360	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 7	3	10-Mar-26	12-Mar-26	78
ST3-C1-MA-6260	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 5	1	11-Mar-26	11-Mar-26	78
ST3-C1-MA-6420	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 8	3	11-Mar-26	13-Mar-26	78
ST3-C1-MA-6320	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 6	1	12-Mar-26	12-Mar-26	78
ST3-C1-MA-6280	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 5	2	12-Mar-26	13-Mar-26	157
ST3-C1-MA-6380	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 7	1	13-Mar-26	13-Mar-26	95
ST3-C1-MA-6340	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 6	2	13-Mar-26	14-Mar-26	128
ST3-C1-MA-6400	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 7	2	14-Mar-26	15-Mar-26	157
ST3-C1-MA-6440	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 8	1	16-Mar-26	16-Mar-26	95
ST3-C1-MA-6460	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 8	2	17-Mar-26	18-Mar-26	155
Lift 3 - Pours 9 to 12		4	12-Mar-26	22-Mar-26	73
ST3-C1-MA-6480	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 9	3	12-Mar-26	16-Mar-26	78
ST3-C1-MA-6540	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 10	3	13-Mar-26	17-Mar-26	78
ST3-C1-MA-6600	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 11	3	16-Mar-26	18-Mar-26	95
ST3-C1-MA-6500	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 9	1	17-Mar-26	17-Mar-26	95
ST3-C1-MA-6660	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 12	3	17-Mar-26	19-Mar-26	95
ST3-C1-MA-6560	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 10	1	18-Mar-26	18-Mar-26	78
ST3-C1-MA-6520	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 9	2	18-Mar-26	19-Mar-26	157
ST3-C1-MA-6620	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 11	1	19-Mar-26	19-Mar-26	95
ST3-C1-MA-6580	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 10	2	19-Mar-26	20-Mar-26	157
ST3-C1-MA-6680	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 12	1	20-Mar-26	20-Mar-26	95
ST3-C1-MA-6640	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 11	2	20-Mar-26	21-Mar-26	157
ST3-C1-MA-6700	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 12	2	21-Mar-26	22-Mar-26	157
Lift 4 - Pours 13 to 16		3	18-Mar-26	29-Mar-26	74
ST3-C1-MA-6720	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 13	3	18-Mar-26	20-Mar-26	95
ST3-C1-MA-6780	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 14	3	19-Mar-26	24-Mar-26	95
ST3-C1-MA-6840	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 15	3	20-Mar-26	25-Mar-26	95
ST3-C1-MA-6740	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 13	1	24-Mar-26	24-Mar-26	95
ST3-C1-MA-6900	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 16	3	24-Mar-26	26-Mar-26	95
ST3-C1-MA-6800	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 14	1	25-Mar-26	25-Mar-26	95
ST3-C1-MA-6760	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 13	2	25-Mar-26	26-Mar-26	154
ST3-C1-MA-6860	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 15	1	26-Mar-26	26-Mar-26	95
ST3-C1-MA-6820	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 14	2	26-Mar-26	27-Mar-26	156
ST3-C1-MA-6920	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 16	1	27-Mar-26	27-Mar-26	95
ST3-C1-MA-6880	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 15	2	27-Mar-26	28-Mar-26	156
ST3-C1-MA-6940	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 16	2	28-Mar-26	29-Mar-26	156
Lift 5 - Pours 17 to 20		4	25-Mar-26	04-Apr-26	75
ST3-C1-MA-6960	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 17	3	25-Mar-26	27-Mar-26	95
ST3-C1-MA-7020	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 18	3	26-Mar-26	30-Mar-26	95
ST3-C1-MA-7080	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 19	3	27-Mar-26	31-Mar-26	95
ST3-C1-MA-6980	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 17	1	30-Mar-26	30-Mar-26	95
ST3-C1-MA-7120	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 20	3	30-Mar-26	01-Apr-26	95
ST3-C1-MA-7040	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 18	1	31-Mar-26	31-Mar-26	95
ST3-C1-MA-7000	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 17	2	31-Mar-26	01-Apr-26	154
ST3-C1-MA-7100	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 19	1	01-Apr-26	01-Apr-26	95
ST3-C1-MA-7060	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 18	2	01-Apr-26	02-Apr-26	154
ST3-C1-MA-7160	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 20	1	02-Apr-26	02-Apr-26	95
ST3-C1-MA-7140	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 19	2	02-Apr-26	03-Apr-26	157
ST3-C1-MA-7180	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 20	2	03-Apr-26	04-Apr-26	157
Lift 6 - Pours 21 to 24		5	31-Mar-26	18-Apr-26	77
ST3-C1-MA-7200	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 21	3	31-Mar-26	02-Apr-26	95
ST3-C1-MA-7260	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 22	3	01-Apr-26	13-Apr-26	95
ST3-C1-MA-7320	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 23	3	02-Apr-26	14-Apr-26	95
ST3-C1-MA-7220	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 21	1	13-Apr-26	13-Apr-26	95
ST3-C1-MA-7380	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 24	3	13-Apr-26	15-Apr-26	95
ST3-C1-MA-7280	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 22	1	14-Apr-26	14-Apr-26	95
ST3-C1-MA-7240	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 21	2	14-Apr-26	15-Apr-26	147
ST3-C1-MA-7340	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 23	1	15-Apr-26	15-Apr-26	95
ST3-C1-MA-7300	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 22	2	15-Apr-26	16-Apr-26	147
ST3-C1-MA-7400	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 24	1	16-Apr-26	16-Apr-26	95



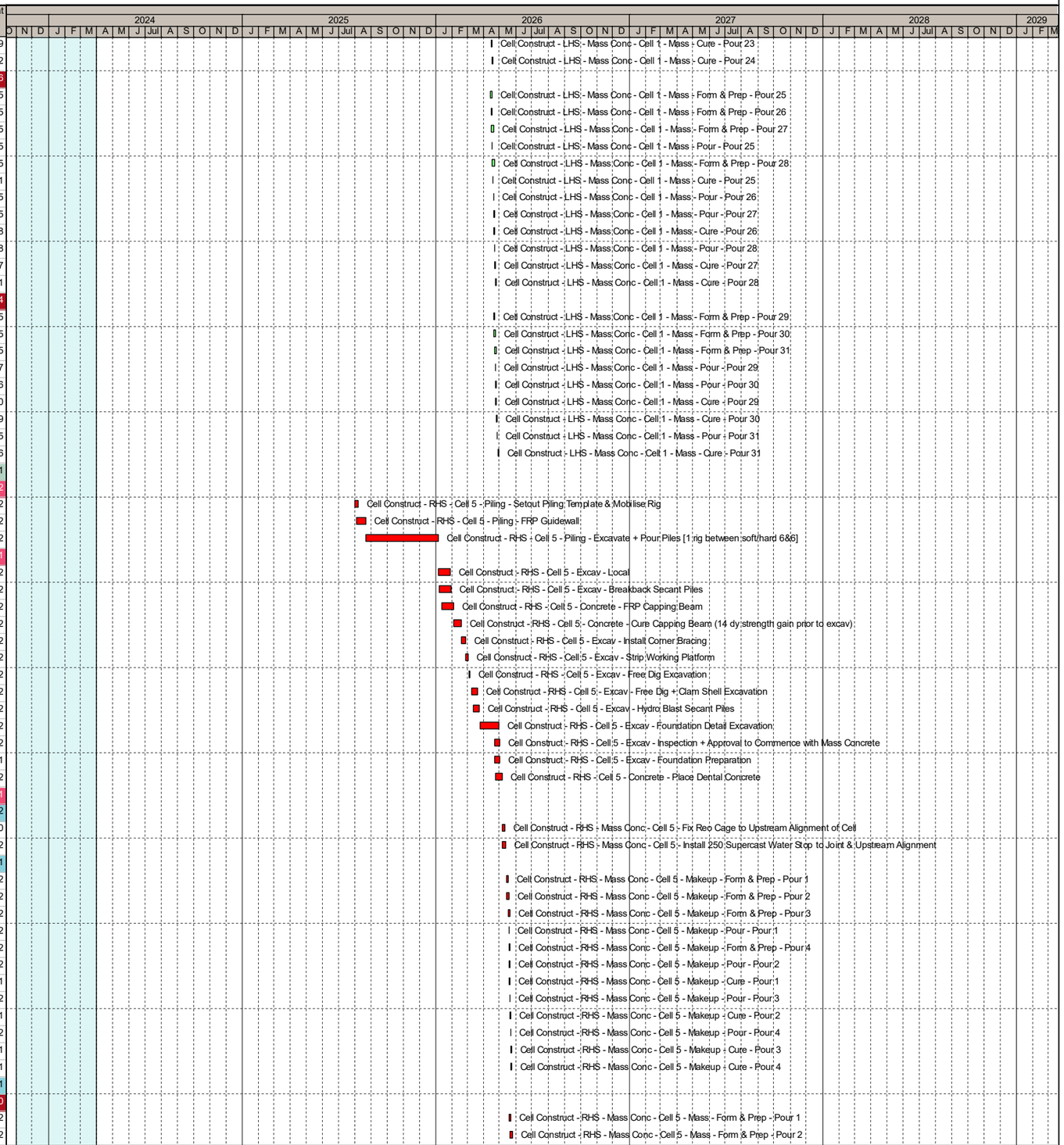
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

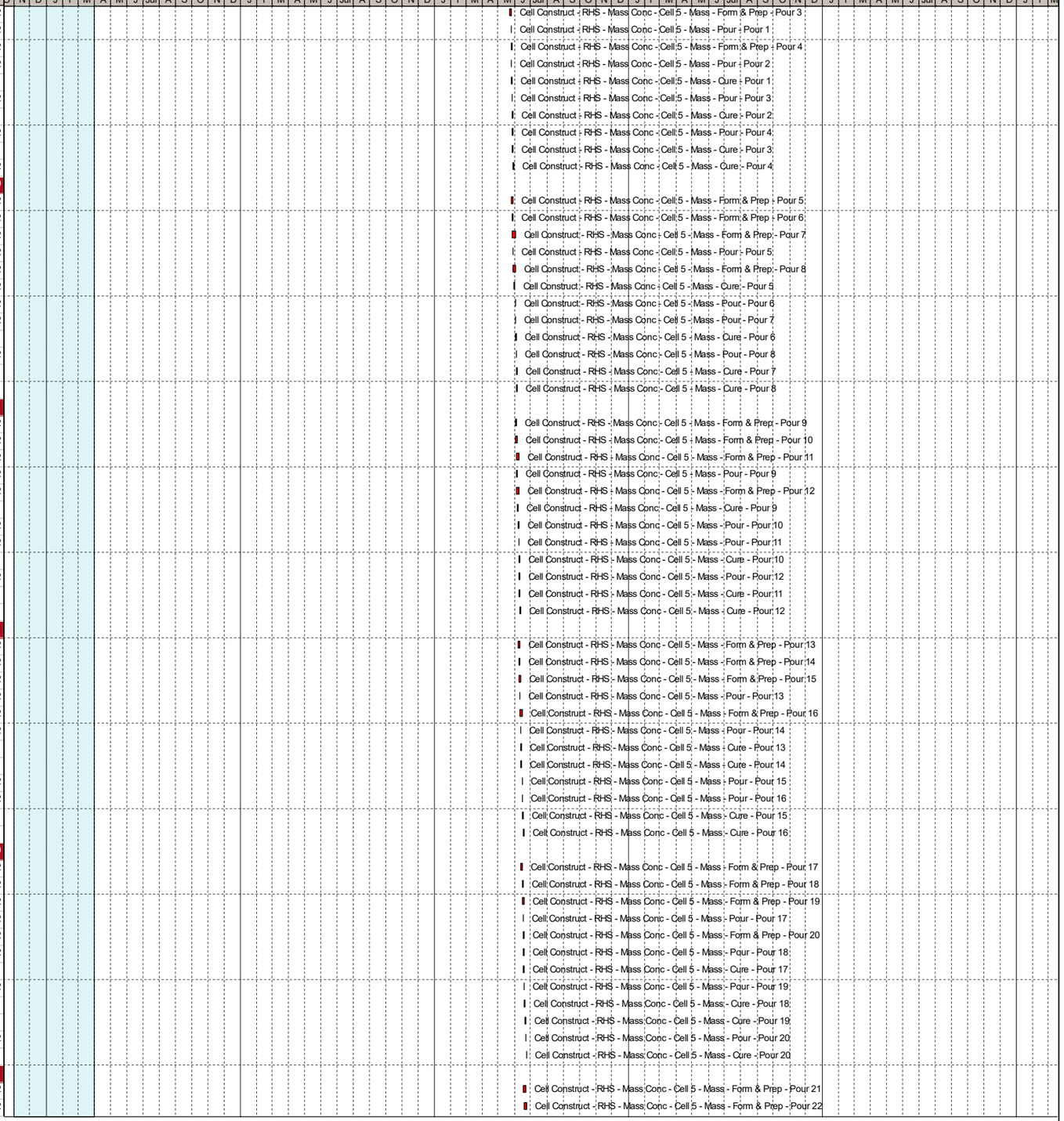
JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C1-MA-7360	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 23	2	16-Apr-26	17-Apr-26	149
ST3-C1-MA-7420	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 24	2	17-Apr-26	18-Apr-26	152
Lift 7 - Pours 25 to 28		6	14-Apr-26	24-Apr-26	76
ST3-C1-MA-7440	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 25	3	14-Apr-26	16-Apr-26	95
ST3-C1-MA-7500	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 26	3	15-Apr-26	17-Apr-26	95
ST3-C1-MA-7560	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 27	3	16-Apr-26	20-Apr-26	95
ST3-C1-MA-7460	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 25	1	17-Apr-26	17-Apr-26	95
ST3-C1-MA-7620	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 28	3	17-Apr-26	21-Apr-26	95
ST3-C1-MA-7480	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 25	2	18-Apr-26	19-Apr-26	151
ST3-C1-MA-7520	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 26	1	20-Apr-26	20-Apr-26	95
ST3-C1-MA-7580	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 27	1	21-Apr-26	21-Apr-26	95
ST3-C1-MA-7540	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 26	2	21-Apr-26	22-Apr-26	148
ST3-C1-MA-7640	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 28	1	22-Apr-26	22-Apr-26	98
ST3-C1-MA-7600	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 27	2	22-Apr-26	23-Apr-26	147
ST3-C1-MA-7660	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 28	2	23-Apr-26	24-Apr-26	151
Lift 8 - Pours 29 to 31		6	20-Apr-26	29-Apr-26	74
ST3-C1-MA-7680	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 29	3	20-Apr-26	22-Apr-26	95
ST3-C1-MA-7740	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 30	3	21-Apr-26	23-Apr-26	95
ST3-C1-MA-7800	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Form & Prep - Pour 31	3	22-Apr-26	24-Apr-26	95
ST3-C1-MA-7700	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 29	1	23-Apr-26	23-Apr-26	97
ST3-C1-MA-7760	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 30	1	24-Apr-26	24-Apr-26	96
ST3-C1-MA-7720	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 29	2	24-Apr-26	25-Apr-26	150
ST3-C1-MA-7780	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 30	2	25-Apr-26	26-Apr-26	149
ST3-C1-MA-7820	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Pour - Pour 31	1	27-Apr-26	27-Apr-26	95
ST3-C1-MA-7840	Cell Construct - LHS - Mass Conc - Cell 1 - Mass - Cure - Pour 31	2	28-Apr-26	29-Apr-26	146
Cell 5 - Right Hand Side		147	01-Aug-25	11-Jul-26	-1
Piling		89	01-Aug-25	05-Jan-26	-2
ST3-C5-1000	Cell Construct - RHS - Cell 5 - Piling - Setout Piling Template & Mobilise Rig	5	01-Aug-25	07-Aug-25	-2
ST3-C5-1020	Cell Construct - RHS - Cell 5 - Piling - FRP Guidewall	11	04-Aug-25	21-Aug-25	-2
ST3-C5-1040	Cell Construct - RHS - Cell 5 - Piling - Excavate + Pour Piles [1 rig between soft/hard 6&6]	77	22-Aug-25	05-Jan-26	-2
Excavate + Capping Beam		47	06-Jan-26	06-May-26	-1
ST3-C5-3140	Cell Construct - RHS - Cell 5 - Excav - Local	15	06-Jan-26	28-Jan-26	-2
ST3-C5-3100	Cell Construct - RHS - Cell 5 - Excav - Breakback Secant Piles	15	08-Jan-26	30-Jan-26	-2
ST3-C5-3080	Cell Construct - RHS - Cell 5 - Concrete - FRP Capping Beam	15	12-Jan-26	03-Feb-26	-2
ST3-C5-3120	Cell Construct - RHS - Cell 5 - Concrete - Cure Capping Beam (14 dy strength gain prior to excav)	14	04-Feb-26	17-Feb-26	-2
ST3-C5-3160	Cell Construct - RHS - Cell 5 - Excav - Install Corner Bracing	6	18-Feb-26	26-Feb-26	-2
ST3-C5-2000	Cell Construct - RHS - Cell 5 - Excav - Strip Working Platform	3	27-Feb-26	03-Mar-26	-2
ST3-C5-3000	Cell Construct - RHS - Cell 5 - Excav - Free Dig Excavation	3	04-Mar-26	06-Mar-26	-2
ST3-C5-3200	Cell Construct - RHS - Cell 5 - Excav - Free Dig + Clam Shell Excavation	10	09-Mar-26	20-Mar-26	-2
ST3-C5-3180	Cell Construct - RHS - Cell 5 - Excav - Hydro Blast Secant Piles	8	12-Mar-26	24-Mar-26	-2
ST3-C5-3020	Cell Construct - RHS - Cell 5 - Excav - Foundation Detail Excavation	21	25-Mar-26	30-Apr-26	-2
ST3-C5-3060	Cell Construct - RHS - Cell 5 - Excav - Inspection + Approval to Commence with Mass Concrete	8	22-Apr-26	01-May-26	-2
ST3-C5-3220	Cell Construct - RHS - Cell 5 - Excav - Foundation Preparation	8	22-Apr-26	01-May-26	-1
ST3-C5-3040	Cell Construct - RHS - Cell 5 - Concrete - Place Dental Concrete	8	23-Apr-26	06-May-26	-2
Mass Concrete		34	07-May-26	11-Jul-26	-1
Cell Preparation		5	07-May-26	13-May-26	-2
ST3-C5-CP-5000	Cell Construct - RHS - Mass Conc - Cell 5 - Fix Reo Cage to Upstream Alignment of Cell	3	07-May-26	11-May-26	0
ST3-C5-CP-5020	Cell Construct - RHS - Mass Conc - Cell 5 - Install 250 Supercast Water Stop to Joint & Upstream Alignment	5	07-May-26	13-May-26	-2
Makeup Pours		6	14-May-26	24-May-26	1
ST3-C5-MP-5000	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Form & Prep - Pour 1	3	14-May-26	18-May-26	-2
ST3-C5-MP-5060	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Form & Prep - Pour 2	3	15-May-26	19-May-26	-2
ST3-C5-MP-5120	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Form & Prep - Pour 3	3	18-May-26	20-May-26	-2
ST3-C5-MP-5020	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Pour - Pour 1	1	19-May-26	19-May-26	-2
ST3-C5-MP-5180	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Form & Prep - Pour 4	3	19-May-26	21-May-26	-2
ST3-C5-MP-5080	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Pour - Pour 2	1	20-May-26	20-May-26	-2
ST3-C5-MP-5040	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Cure - Pour 1	2	20-May-26	21-May-26	-1
ST3-C5-MP-5140	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Pour - Pour 3	1	21-May-26	21-May-26	-2
ST3-C5-MP-5100	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Cure - Pour 2	2	21-May-26	22-May-26	-1
ST3-C5-MP-5200	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Pour - Pour 4	1	22-May-26	22-May-26	-2
ST3-C5-MP-5160	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Cure - Pour 3	2	22-May-26	23-May-26	1
ST3-C5-MP-5220	Cell Construct - RHS - Mass Conc - Cell 5 - Makeup - Cure - Pour 4	2	23-May-26	24-May-26	1
Mass Pours		26	20-May-26	11-Jul-26	-1
Lift 1 - Pours 1 to 4		5	20-May-26	30-May-26	0
ST3-C5-MA-6000	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 1	3	20-May-26	22-May-26	-2
ST3-C5-MA-6060	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 2	3	21-May-26	25-May-26	-2



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C5-MA-6120	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 3	3	22-May-26	26-May-26	-2
ST3-C5-MA-6020	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 1	1	25-May-26	25-May-26	-2
ST3-C5-MA-6160	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 4	3	25-May-26	27-May-26	-2
ST3-C5-MA-6080	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 2	1	26-May-26	26-May-26	-2
ST3-C5-MA-6040	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 1	2	26-May-26	27-May-26	-1
ST3-C5-MA-6140	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 3	1	27-May-26	27-May-26	-2
ST3-C5-MA-6100	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 2	2	27-May-26	28-May-26	-1
ST3-C5-MA-6200	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 4	1	28-May-26	28-May-26	-2
ST3-C5-MA-6180	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 3	2	28-May-26	29-May-26	-1
ST3-C5-MA-6220	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 4	2	29-May-26	30-May-26	2
Lift 2 - Pours 5 to 8		4	26-May-26	06-Jun-26	0
ST3-C5-MA-6240	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 5	3	26-May-26	28-May-26	-2
ST3-C5-MA-6300	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 6	3	27-May-26	29-May-26	-2
ST3-C5-MA-6360	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 7	3	28-May-26	02-Jun-26	-2
ST3-C5-MA-6260	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 5	1	29-May-26	29-May-26	-2
ST3-C5-MA-6420	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 8	3	29-May-26	03-Jun-26	-2
ST3-C5-MA-6280	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 5	2	30-May-26	31-May-26	2
ST3-C5-MA-6320	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 6	1	02-Jun-26	02-Jun-26	-2
ST3-C5-MA-6380	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 7	1	03-Jun-26	03-Jun-26	-2
ST3-C5-MA-6340	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 6	2	03-Jun-26	04-Jun-26	-1
ST3-C5-MA-6440	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 8	1	04-Jun-26	04-Jun-26	-2
ST3-C5-MA-6400	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 7	2	04-Jun-26	05-Jun-26	-1
ST3-C5-MA-6460	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 8	2	05-Jun-26	06-Jun-26	1
Lift 3 - Pours 9 to 12		6	02-Jun-26	12-Jun-26	-1
ST3-C5-MA-6480	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 9	3	02-Jun-26	04-Jun-26	-2
ST3-C5-MA-6540	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 10	3	03-Jun-26	05-Jun-26	-2
ST3-C5-MA-6600	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 11	3	04-Jun-26	08-Jun-26	-2
ST3-C5-MA-6500	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 9	1	05-Jun-26	05-Jun-26	-2
ST3-C5-MA-6660	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 12	3	05-Jun-26	09-Jun-26	-2
ST3-C5-MA-6520	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 9	2	06-Jun-26	07-Jun-26	1
ST3-C5-MA-6560	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 10	1	08-Jun-26	08-Jun-26	-2
ST3-C5-MA-6620	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 11	1	09-Jun-26	09-Jun-26	-2
ST3-C5-MA-6580	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 10	2	09-Jun-26	10-Jun-26	-1
ST3-C5-MA-6680	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 12	1	10-Jun-26	10-Jun-26	-2
ST3-C5-MA-6640	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 11	2	10-Jun-26	11-Jun-26	-1
ST3-C5-MA-6700	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 12	2	11-Jun-26	12-Jun-26	-1
Lift 4 - Pours 13 to 16		7	08-Jun-26	18-Jun-26	-1
ST3-C5-MA-6720	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 13	3	08-Jun-26	10-Jun-26	-2
ST3-C5-MA-6780	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 14	3	09-Jun-26	11-Jun-26	-2
ST3-C5-MA-6840	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 15	3	10-Jun-26	12-Jun-26	-2
ST3-C5-MA-6740	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 13	1	11-Jun-26	11-Jun-26	-2
ST3-C5-MA-6900	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 16	3	11-Jun-26	15-Jun-26	-2
ST3-C5-MA-6800	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 14	1	12-Jun-26	12-Jun-26	-2
ST3-C5-MA-6760	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 13	2	12-Jun-26	13-Jun-26	1
ST3-C5-MA-6820	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 14	2	13-Jun-26	14-Jun-26	1
ST3-C5-MA-6860	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 15	1	15-Jun-26	15-Jun-26	-2
ST3-C5-MA-6920	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 16	1	16-Jun-26	16-Jun-26	-2
ST3-C5-MA-6880	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 15	2	16-Jun-26	17-Jun-26	-1
ST3-C5-MA-6940	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 16	2	17-Jun-26	18-Jun-26	-1
Lift 5 - Pours 17 to 20		7	12-Jun-26	24-Jun-26	0
ST3-C5-MA-6960	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 17	3	12-Jun-26	16-Jun-26	-2
ST3-C5-MA-7020	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 18	3	15-Jun-26	17-Jun-26	-2
ST3-C5-MA-7080	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 19	3	16-Jun-26	18-Jun-26	-2
ST3-C5-MA-6980	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 17	1	17-Jun-26	17-Jun-26	-2
ST3-C5-MA-7140	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 20	3	17-Jun-26	19-Jun-26	-2
ST3-C5-MA-7040	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 18	1	18-Jun-26	18-Jun-26	-2
ST3-C5-MA-7000	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 17	2	18-Jun-26	19-Jun-26	-1
ST3-C5-MA-7100	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 19	1	19-Jun-26	19-Jun-26	-2
ST3-C5-MA-7060	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 18	2	19-Jun-26	20-Jun-26	1
ST3-C5-MA-7120	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 19	2	20-Jun-26	21-Jun-26	1
ST3-C5-MA-7160	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 20	1	22-Jun-26	22-Jun-26	-2
ST3-C5-MA-7180	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 20	2	23-Jun-26	24-Jun-26	-1
Lift 6 - Pours 21 to 24		6	18-Jun-26	28-Jun-26	1
ST3-C5-MA-7200	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 21	3	18-Jun-26	22-Jun-26	-2
ST3-C5-MA-7260	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 22	3	19-Jun-26	23-Jun-26	-2



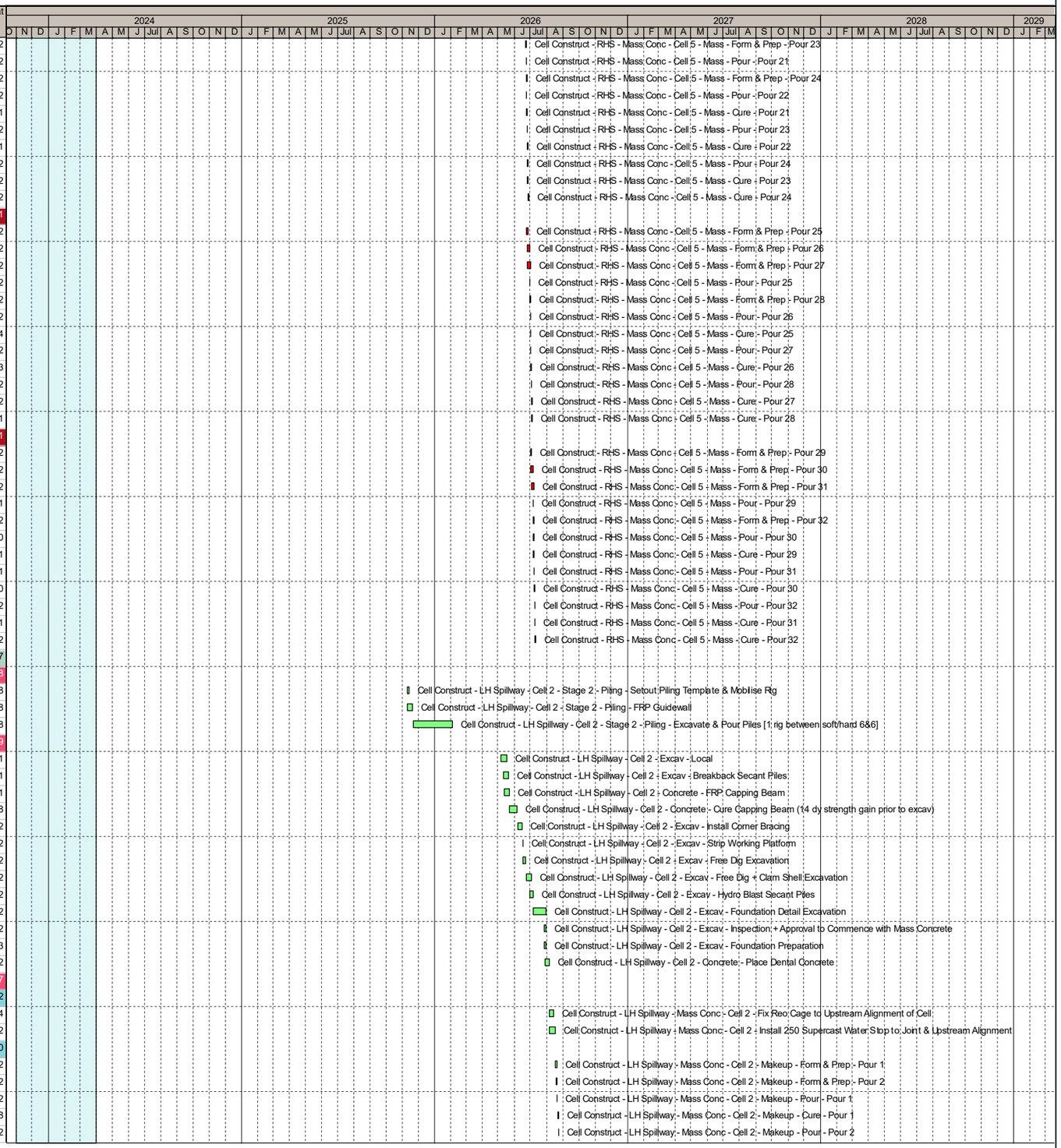
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C5-MA-7320	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 23	3	22-Jun-26	24-Jun-26	-2
ST3-C5-MA-7220	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 21	1	23-Jun-26	23-Jun-26	-2
ST3-C5-MA-7380	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 24	3	23-Jun-26	25-Jun-26	-2
ST3-C5-MA-7280	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 22	1	24-Jun-26	24-Jun-26	-2
ST3-C5-MA-7240	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 21	2	24-Jun-26	25-Jun-26	-1
ST3-C5-MA-7340	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 23	1	25-Jun-26	25-Jun-26	-2
ST3-C5-MA-7300	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 22	2	25-Jun-26	26-Jun-26	-1
ST3-C5-MA-7400	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 24	1	26-Jun-26	26-Jun-26	-2
ST3-C5-MA-7360	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 23	2	26-Jun-26	27-Jun-26	2
ST3-C5-MA-7420	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 24	2	27-Jun-26	28-Jun-26	2
Lift 7 - Pours 25 to 28		5	24-Jun-26	05-Jul-26	1
ST3-C5-MA-7440	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 25	3	24-Jun-26	26-Jun-26	-2
ST3-C5-MA-7500	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 26	3	25-Jun-26	30-Jun-26	-2
ST3-C5-MA-7560	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 27	3	26-Jun-26	01-Jul-26	-2
ST3-C5-MA-7460	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 25	1	30-Jun-26	30-Jun-26	-2
ST3-C5-MA-7620	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 28	3	30-Jun-26	02-Jul-26	-2
ST3-C5-MA-7520	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 26	1	01-Jul-26	01-Jul-26	-2
ST3-C5-MA-7480	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 25	2	01-Jul-26	02-Jul-26	4
ST3-C5-MA-7580	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 27	1	02-Jul-26	02-Jul-26	-2
ST3-C5-MA-7540	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 26	2	02-Jul-26	03-Jul-26	3
ST3-C5-MA-7640	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 28	1	03-Jul-26	03-Jul-26	-2
ST3-C5-MA-7600	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 27	2	03-Jul-26	04-Jul-26	2
ST3-C5-MA-7660	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 28	2	04-Jul-26	05-Jul-26	1
Lift 8 - Pours 29 to 32		6	01-Jul-26	11-Jul-26	-1
ST3-C5-MA-7680	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 29	3	01-Jul-26	03-Jul-26	-2
ST3-C5-MA-7740	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 30	3	02-Jul-26	06-Jul-26	-2
ST3-C5-MA-7800	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 31	3	03-Jul-26	07-Jul-26	-2
ST3-C5-MA-7700	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 29	1	06-Jul-26	06-Jul-26	1
ST3-C5-MA-7860	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Form & Prep - Pour 32	3	06-Jul-26	08-Jul-26	-2
ST3-C5-MA-7760	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 30	1	07-Jul-26	07-Jul-26	0
ST3-C5-MA-7720	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 29	2	07-Jul-26	08-Jul-26	1
ST3-C5-MA-7820	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 31	1	08-Jul-26	08-Jul-26	-1
ST3-C5-MA-7780	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 30	2	08-Jul-26	09-Jul-26	0
ST3-C5-MA-7880	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Pour - Pour 32	1	09-Jul-26	09-Jul-26	-2
ST3-C5-MA-7840	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 31	2	09-Jul-26	10-Jul-26	-1
ST3-C5-MA-7900	Cell Construct - RHS - Mass Conc - Cell 5 - Mass - Cure - Pour 32	2	10-Jul-26	11-Jul-26	-2
Cell 2 - Lefthand Spillway Stage 2		139	10-Nov-25	24-Sep-26	117
Piling		47	10-Nov-25	04-Feb-26	38
ST3-C2-1000	Cell Construct - LH Spillway - Cell 2 - Stage 2 - Piling - Setout Piling Template & Mobilise Rig	5	10-Nov-25	14-Nov-25	38
ST3-C2-1020	Cell Construct - LH Spillway - Cell 2 - Stage 2 - Piling - FRP Guidewall	8	11-Nov-25	20-Nov-25	38
ST3-C2-1040	Cell Construct - LH Spillway - Cell 2 - Stage 2 - Piling - Excavate & Pour Piles [1 rig between soft/hard 6&6]	38	21-Nov-25	04-Feb-26	38
Excavate + Capping Beam		47	07-May-26	05-Aug-26	119
ST3-C2-3140	Cell Construct - LH Spillway - Cell 2 - Excav - Local	8	07-May-26	18-May-26	171
ST3-C2-3100	Cell Construct - LH Spillway - Cell 2 - Excav - Breakback Secant Piles	8	11-May-26	20-May-26	171
ST3-C2-3080	Cell Construct - LH Spillway - Cell 2 - Concrete - FRP Capping Beam	8	13-May-26	22-May-26	171
ST3-C2-3120	Cell Construct - LH Spillway - Cell 2 - Concrete - Cure Capping Beam (14 dy strength gain prior to excav)	14	23-May-26	05-Jun-26	278
ST3-C2-3160	Cell Construct - LH Spillway - Cell 2 - Excav - Install Corner Bracing	7	08-Jun-26	16-Jun-26	172
ST3-C2-2000	Cell Construct - LH Spillway - Cell 2 - Excav - Strip Working Platform	1	17-Jun-26	17-Jun-26	172
ST3-C2-3000	Cell Construct - LH Spillway - Cell 2 - Excav - Free Dig Excavation	3	18-Jun-26	22-Jun-26	172
ST3-C2-3200	Cell Construct - LH Spillway - Cell 2 - Excav - Free Dig + Clam Shell Excavation	8	23-Jun-26	03-Jul-26	172
ST3-C2-3180	Cell Construct - LH Spillway - Cell 2 - Excav - Hydro Blast Secant Piles	5	30-Jun-26	06-Jul-26	172
ST3-C2-3020	Cell Construct - LH Spillway - Cell 2 - Excav - Foundation Detail Excavation	17	07-Jul-26	30-Jul-26	172
ST3-C2-3060	Cell Construct - LH Spillway - Cell 2 - Excav - Inspection + Approval to Commence with Mass Concrete	4	28-Jul-26	31-Jul-26	172
ST3-C2-3220	Cell Construct - LH Spillway - Cell 2 - Excav - Foundation Preparation	4	28-Jul-26	31-Jul-26	173
ST3-C2-3040	Cell Construct - LH Spillway - Cell 2 - Concrete - Place Dental Concrete	6	29-Jul-26	05-Aug-26	172
Mass Concrete		26	06-Aug-26	24-Sep-26	117
Cell Preparation		5	06-Aug-26	17-Aug-26	172
ST3-C2-CP-5000	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Fix Reo Cage to Upstream Alignment of Cell	3	06-Aug-26	13-Aug-26	174
ST3-C2-CP-5020	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Install 250 Supercast Water Stop to Joint & Upstream Alignment	5	06-Aug-26	17-Aug-26	172
Makeup Pours		5	18-Aug-26	26-Aug-26	120
ST3-C2-MP-5000	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Form & Prep - Pour 1	3	18-Aug-26	20-Aug-26	172
ST3-C2-MP-5060	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Form & Prep - Pour 2	3	19-Aug-26	21-Aug-26	172
ST3-C2-MP-5020	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Pour - Pour 1	1	21-Aug-26	21-Aug-26	172
ST3-C2-MP-5040	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Cure - Pour 1	2	22-Aug-26	23-Aug-26	288
ST3-C2-MP-5080	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Pour - Pour 2	1	24-Aug-26	24-Aug-26	172



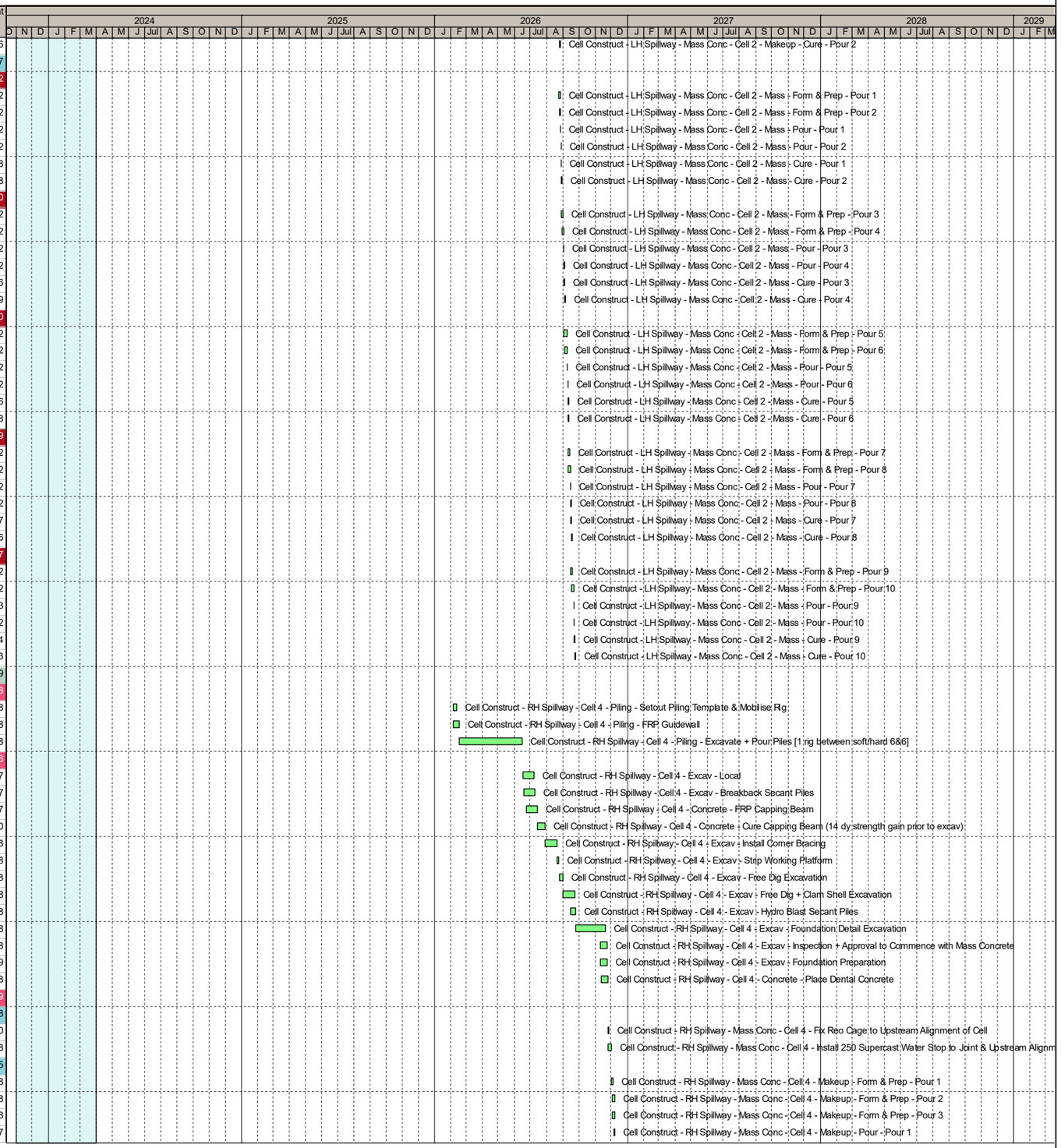
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C2-MP-5100	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Makeup - Cure - Pour 2	2	25-Aug-26	26-Aug-26	286
Mass Pours		18	24-Aug-26	24-Sep-26	117
Lift 1 - Pours 1 to 2		3	24-Aug-26	30-Aug-26	122
ST3-C2-MA-6000	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 1	3	24-Aug-26	26-Aug-26	172
ST3-C2-MA-6060	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 2	3	25-Aug-26	27-Aug-26	172
ST3-C2-MA-6020	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 1	1	27-Aug-26	27-Aug-26	172
ST3-C2-MA-6080	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 2	1	28-Aug-26	28-Aug-26	172
ST3-C2-MA-6040	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 1	2	28-Aug-26	29-Aug-26	288
ST3-C2-MA-6100	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 2	2	29-Aug-26	30-Aug-26	288
Lift 2 - Pours 3 to 4		6	28-Aug-26	05-Sep-26	120
ST3-C2-MA-6120	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 3	3	28-Aug-26	01-Sep-26	172
ST3-C2-MA-6180	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 4	3	31-Aug-26	02-Sep-26	172
ST3-C2-MA-6140	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 3	1	02-Sep-26	02-Sep-26	172
ST3-C2-MA-6200	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 4	1	03-Sep-26	03-Sep-26	172
ST3-C2-MA-6160	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 3	2	03-Sep-26	04-Sep-26	286
ST3-C2-MA-6220	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 4	2	04-Sep-26	05-Sep-26	289
Lift 3 - Pours 5 to 6		5	03-Sep-26	12-Sep-26	120
ST3-C2-MA-6240	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 5	3	03-Sep-26	08-Sep-26	172
ST3-C2-MA-6300	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 6	3	04-Sep-26	09-Sep-26	172
ST3-C2-MA-6260	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 5	1	09-Sep-26	09-Sep-26	172
ST3-C2-MA-6320	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 6	1	10-Sep-26	10-Sep-26	172
ST3-C2-MA-6280	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 5	2	10-Sep-26	11-Sep-26	286
ST3-C2-MA-6340	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 6	2	11-Sep-26	12-Sep-26	288
Lift 4 - Pours 7 to 8		6	10-Sep-26	18-Sep-26	119
ST3-C2-MA-6360	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 7	3	10-Sep-26	14-Sep-26	172
ST3-C2-MA-6420	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 8	3	11-Sep-26	15-Sep-26	172
ST3-C2-MA-6380	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 7	1	15-Sep-26	15-Sep-26	172
ST3-C2-MA-6440	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 8	1	16-Sep-26	16-Sep-26	172
ST3-C2-MA-6400	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 7	2	16-Sep-26	17-Sep-26	287
ST3-C2-MA-6460	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 8	2	17-Sep-26	18-Sep-26	286
Lift 5 - Pours 9 to 10		5	16-Sep-26	24-Sep-26	117
ST3-C2-MA-6480	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 9	3	16-Sep-26	18-Sep-26	172
ST3-C2-MA-6540	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Form & Prep - Pour 10	3	17-Sep-26	21-Sep-26	172
ST3-C2-MA-6500	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 9	1	21-Sep-26	21-Sep-26	173
ST3-C2-MA-6560	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Pour - Pour 10	1	22-Sep-26	22-Sep-26	172
ST3-C2-MA-6520	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 9	2	22-Sep-26	23-Sep-26	284
ST3-C2-MA-6580	Cell Construct - LH Spillway - Mass Conc - Cell 2 - Mass - Cure - Pour 10	2	23-Sep-26	24-Sep-26	283
Cell 4 - Righthand Spillway		165	05-Feb-26	18-Feb-27	39
Piling		83	05-Feb-26	16-Jun-26	38
ST3-C4-1000	Cell Construct - RH Spillway - Cell 4 - Piling - Setout Piling Template & Mobilise Rig	6	05-Feb-26	12-Feb-26	38
ST3-C4-1020	Cell Construct - RH Spillway - Cell 4 - Piling - FRP Guidewall	7	06-Feb-26	16-Feb-26	38
ST3-C4-1040	Cell Construct - RH Spillway - Cell 4 - Piling - Excavate + Pour Piles [1 rig between soft/hard 6&6]	75	17-Feb-26	16-Jun-26	38
Excavate + Capping Beam		80	17-Jun-26	24-Nov-26	36
ST3-C4-3140	Cell Construct - RH Spillway - Cell 4 - Excav - Local	15	17-Jun-26	08-Jul-26	57
ST3-C4-3100	Cell Construct - RH Spillway - Cell 4 - Excav - Breakback Secant Piles	15	19-Jun-26	10-Jul-26	57
ST3-C4-3080	Cell Construct - RH Spillway - Cell 4 - Concrete - FRP Capping Beam	15	23-Jun-26	14-Jul-26	57
ST3-C4-3120	Cell Construct - RH Spillway - Cell 4 - Concrete - Cure Capping Beam (14 dy strength gain prior to excav)	14	15-Jul-26	28-Jul-26	90
ST3-C4-3160	Cell Construct - RH Spillway - Cell 4 - Excav - Install Corner Bracing	14	29-Jul-26	20-Aug-26	58
ST3-C4-2000	Cell Construct - RH Spillway - Cell 4 - Excav - Strip Working Platform	2	21-Aug-26	24-Aug-26	58
ST3-C4-3000	Cell Construct - RH Spillway - Cell 4 - Excav - Free Dig Excavation	5	25-Aug-26	31-Aug-26	58
ST3-C4-3200	Cell Construct - RH Spillway - Cell 4 - Excav - Free Dig + Clam Shell Excavation	16	01-Sep-26	23-Sep-26	58
ST3-C4-3180	Cell Construct - RH Spillway - Cell 4 - Excav - Hydro Blast Secant Piles	7	16-Sep-26	24-Sep-26	58
ST3-C4-3020	Cell Construct - RH Spillway - Cell 4 - Excav - Foundation Detail Excavation	36	25-Sep-26	20-Nov-26	58
ST3-C4-3060	Cell Construct - RH Spillway - Cell 4 - Excav - Inspection + Approval to Commence with Mass Concrete	9	11-Nov-26	23-Nov-26	58
ST3-C4-3220	Cell Construct - RH Spillway - Cell 4 - Excav - Foundation Preparation	9	11-Nov-26	23-Nov-26	59
ST3-C4-3040	Cell Construct - RH Spillway - Cell 4 - Concrete - Place Dental Concrete	9	12-Nov-26	24-Nov-26	58
Mass Concrete		29	25-Nov-26	18-Feb-27	39
Cell Preparation		5	25-Nov-26	01-Dec-26	58
ST3-C4-CP-5000	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Fix Reo Cage to Upstream Alignment of Cell	3	25-Nov-26	27-Nov-26	60
ST3-C4-CP-5020	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Install 250 Supercast Water Stop to Joint & Upstream Alignment	5	25-Nov-26	01-Dec-26	58
Makeup Pours		6	02-Dec-26	12-Dec-26	45
ST3-C4-MP-5000	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Form & Prep - Pour 1	3	02-Dec-26	04-Dec-26	58
ST3-C4-MP-5060	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Form & Prep - Pour 2	3	03-Dec-26	07-Dec-26	58
ST3-C4-MP-5120	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Form & Prep - Pour 3	3	04-Dec-26	08-Dec-26	58
ST3-C4-MP-5020	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Pour - Pour 1	1	07-Dec-26	07-Dec-26	77



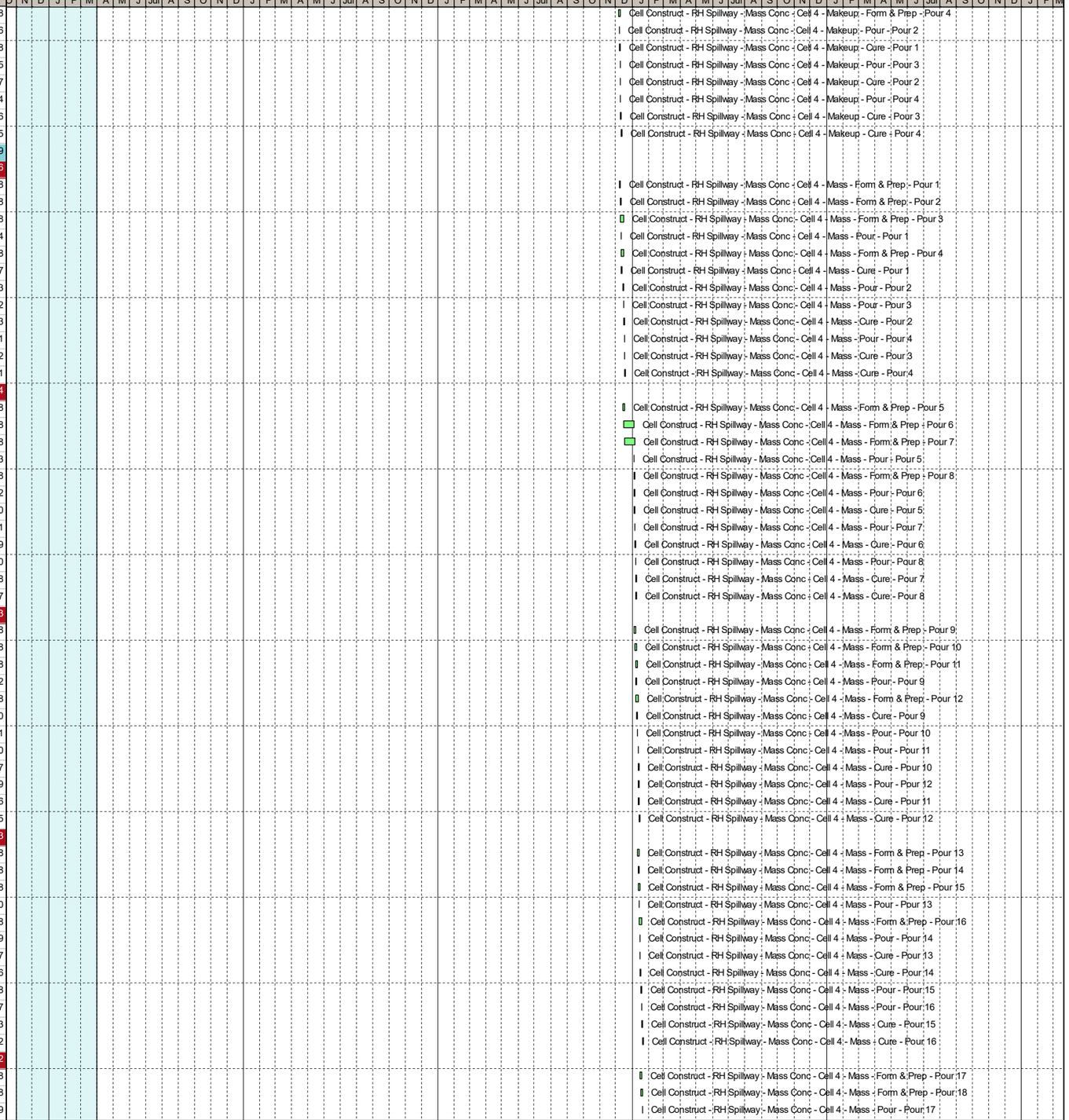
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

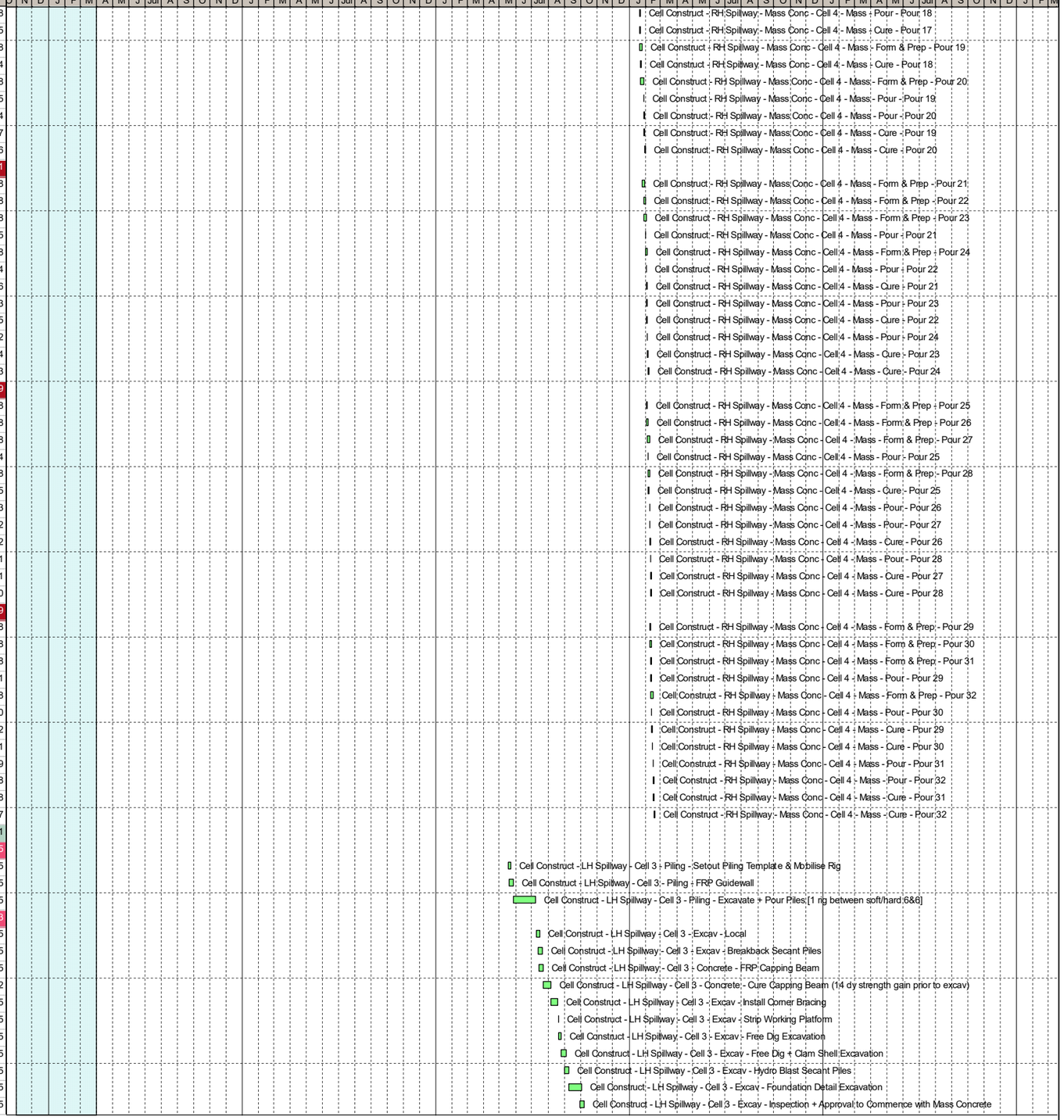
JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C4-MP-5180	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Form & Prep - Pour 4	3	07-Dec-26	09-Dec-26	58
ST3-C4-MP-5080	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Pour - Pour 2	1	08-Dec-26	08-Dec-26	76
ST3-C4-MP-5040	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Cure - Pour 1	2	08-Dec-26	09-Dec-26	138
ST3-C4-MP-5140	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Pour - Pour 3	1	09-Dec-26	09-Dec-26	75
ST3-C4-MP-5100	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Cure - Pour 2	2	09-Dec-26	10-Dec-26	137
ST3-C4-MP-5200	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Pour - Pour 4	1	10-Dec-26	10-Dec-26	74
ST3-C4-MP-5160	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Cure - Pour 3	2	10-Dec-26	11-Dec-26	136
ST3-C4-MP-5220	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Makeup - Cure - Pour 4	2	11-Dec-26	12-Dec-26	135
Mass Pours		23	08-Dec-26	18-Feb-27	39
Lift 1 - Pours 1 to 4		4	08-Dec-26	19-Dec-26	46
ST3-C4-MA-6000	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 1	3	08-Dec-26	10-Dec-26	58
ST3-C4-MA-6060	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 2	3	09-Dec-26	11-Dec-26	58
ST3-C4-MA-6120	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 3	3	10-Dec-26	15-Dec-26	58
ST3-C4-MA-6020	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 1	1	11-Dec-26	11-Dec-26	74
ST3-C4-MA-6180	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 4	3	11-Dec-26	16-Dec-26	58
ST3-C4-MA-6040	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 1	2	12-Dec-26	13-Dec-26	137
ST3-C4-MA-6080	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 2	1	15-Dec-26	15-Dec-26	73
ST3-C4-MA-6140	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 3	1	16-Dec-26	16-Dec-26	72
ST3-C4-MA-6100	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 2	2	16-Dec-26	17-Dec-26	133
ST3-C4-MA-6200	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 4	1	17-Dec-26	17-Dec-26	71
ST3-C4-MA-6160	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 3	2	17-Dec-26	18-Dec-26	132
ST3-C4-MA-6220	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 4	2	18-Dec-26	19-Dec-26	131
Lift 2 - Pours 5 to 8		4	15-Dec-26	09-Jan-27	44
ST3-C4-MA-6240	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 5	3	15-Dec-26	17-Dec-26	58
ST3-C4-MA-6300	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 6	3	16-Dec-26	04-Jan-27	58
ST3-C4-MA-6360	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 7	3	17-Dec-26	05-Jan-27	58
ST3-C4-MA-6260	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 5	1	04-Jan-27	04-Jan-27	73
ST3-C4-MA-6420	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 8	3	04-Jan-27	06-Jan-27	58
ST3-C4-MA-6320	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 6	1	05-Jan-27	05-Jan-27	72
ST3-C4-MA-6280	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 5	2	05-Jan-27	06-Jan-27	120
ST3-C4-MA-6380	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 7	1	06-Jan-27	06-Jan-27	71
ST3-C4-MA-6340	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 6	2	06-Jan-27	07-Jan-27	119
ST3-C4-MA-6440	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 8	1	07-Jan-27	07-Jan-27	70
ST3-C4-MA-6400	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 7	2	07-Jan-27	08-Jan-27	118
ST3-C4-MA-6460	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 8	2	08-Jan-27	09-Jan-27	117
Lift 3 - Pours 9 to 12		5	05-Jan-27	15-Jan-27	43
ST3-C4-MA-6480	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 9	3	05-Jan-27	07-Jan-27	58
ST3-C4-MA-6540	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 10	3	06-Jan-27	08-Jan-27	58
ST3-C4-MA-6600	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 11	3	07-Jan-27	11-Jan-27	58
ST3-C4-MA-6500	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 9	1	08-Jan-27	08-Jan-27	72
ST3-C4-MA-6660	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 12	3	08-Jan-27	12-Jan-27	58
ST3-C4-MA-6520	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 9	2	09-Jan-27	10-Jan-27	120
ST3-C4-MA-6560	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 10	1	11-Jan-27	11-Jan-27	71
ST3-C4-MA-6620	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 11	1	12-Jan-27	12-Jan-27	70
ST3-C4-MA-6580	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 10	2	12-Jan-27	13-Jan-27	117
ST3-C4-MA-6680	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 12	1	13-Jan-27	13-Jan-27	69
ST3-C4-MA-6640	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 11	2	13-Jan-27	14-Jan-27	116
ST3-C4-MA-6720	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 12	2	14-Jan-27	15-Jan-27	115
Lift 4 - Pours 13 to 16		5	11-Jan-27	21-Jan-27	43
ST3-C4-MA-6700	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 13	3	11-Jan-27	13-Jan-27	58
ST3-C4-MA-6780	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 14	3	12-Jan-27	14-Jan-27	58
ST3-C4-MA-6840	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 15	3	13-Jan-27	15-Jan-27	58
ST3-C4-MA-6740	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 13	1	14-Jan-27	14-Jan-27	70
ST3-C4-MA-6900	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 16	3	14-Jan-27	18-Jan-27	58
ST3-C4-MA-6800	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 14	1	15-Jan-27	15-Jan-27	69
ST3-C4-MA-6760	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 13	2	15-Jan-27	16-Jan-27	117
ST3-C4-MA-6820	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 14	2	16-Jan-27	17-Jan-27	116
ST3-C4-MA-6860	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 15	1	18-Jan-27	18-Jan-27	68
ST3-C4-MA-6920	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 16	1	19-Jan-27	19-Jan-27	67
ST3-C4-MA-6880	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 15	2	19-Jan-27	20-Jan-27	113
ST3-C4-MA-6940	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 16	2	20-Jan-27	21-Jan-27	112
Lift 5 - Pours 17 to 20		6	15-Jan-27	31-Jan-27	42
ST3-C4-MA-6960	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 17	3	15-Jan-27	19-Jan-27	58
ST3-C4-MA-7020	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 18	3	18-Jan-27	20-Jan-27	58
ST3-C4-MA-6980	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 17	1	20-Jan-27	20-Jan-27	69



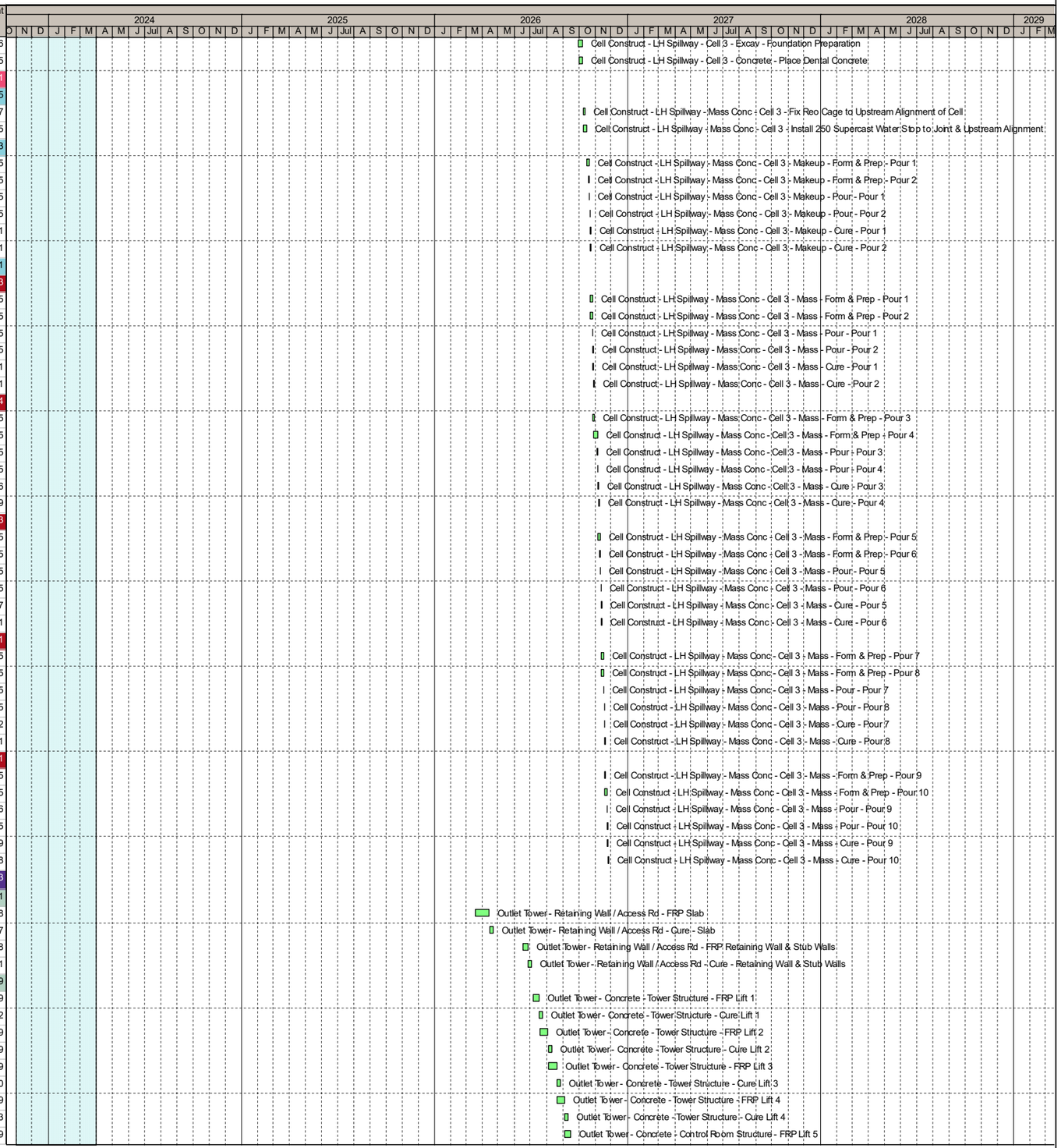
Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C4-MA-7040	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 18	1	21-Jan-27	21-Jan-27	68
ST3-C4-MA-7000	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 17	2	21-Jan-27	22-Jan-27	115
ST3-C4-MA-7080	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 19	3	21-Jan-27	25-Jan-27	58
ST3-C4-MA-7060	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 18	2	22-Jan-27	23-Jan-27	114
ST3-C4-MA-7140	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 20	3	22-Jan-27	28-Jan-27	58
ST3-C4-MA-7100	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 19	1	28-Jan-27	28-Jan-27	65
ST3-C4-MA-7160	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 20	1	29-Jan-27	29-Jan-27	64
ST3-C4-MA-7120	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 19	2	29-Jan-27	30-Jan-27	107
ST3-C4-MA-7180	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 20	2	30-Jan-27	31-Jan-27	106
Lift 6 - Pours 21 to 24		5	25-Jan-27	06-Feb-27	41
ST3-C4-MA-7200	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 21	3	25-Jan-27	29-Jan-27	58
ST3-C4-MA-7260	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 22	3	28-Jan-27	01-Feb-27	58
ST3-C4-MA-7320	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 23	3	29-Jan-27	02-Feb-27	58
ST3-C4-MA-7220	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 21	1	01-Feb-27	01-Feb-27	65
ST3-C4-MA-7380	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 24	3	01-Feb-27	03-Feb-27	58
ST3-C4-MA-7280	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 22	1	02-Feb-27	02-Feb-27	64
ST3-C4-MA-7240	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 21	2	02-Feb-27	03-Feb-27	106
ST3-C4-MA-7340	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 23	1	03-Feb-27	03-Feb-27	63
ST3-C4-MA-7300	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 22	2	03-Feb-27	04-Feb-27	105
ST3-C4-MA-7400	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 24	1	04-Feb-27	04-Feb-27	62
ST3-C4-MA-7360	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 23	2	04-Feb-27	05-Feb-27	104
ST3-C4-MA-7440	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 24	2	05-Feb-27	06-Feb-27	103
Lift 7 - Pours 25 to 28		5	02-Feb-27	12-Feb-27	39
ST3-C4-MA-7420	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 25	3	02-Feb-27	04-Feb-27	58
ST3-C4-MA-7500	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 26	3	03-Feb-27	05-Feb-27	58
ST3-C4-MA-7540	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 27	3	04-Feb-27	08-Feb-27	58
ST3-C4-MA-7460	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 25	1	05-Feb-27	05-Feb-27	64
ST3-C4-MA-7620	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 28	3	05-Feb-27	09-Feb-27	58
ST3-C4-MA-7480	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 25	2	06-Feb-27	07-Feb-27	105
ST3-C4-MA-7520	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 26	1	08-Feb-27	08-Feb-27	63
ST3-C4-MA-7580	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 27	1	09-Feb-27	09-Feb-27	62
ST3-C4-MA-7560	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 26	2	09-Feb-27	10-Feb-27	102
ST3-C4-MA-7640	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 28	1	10-Feb-27	10-Feb-27	61
ST3-C4-MA-7600	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 27	2	10-Feb-27	11-Feb-27	101
ST3-C4-MA-7660	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 28	2	11-Feb-27	12-Feb-27	100
Lift 8 - Pours 29 to 32		5	08-Feb-27	18-Feb-27	39
ST3-C4-MA-7680	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 29	3	08-Feb-27	10-Feb-27	58
ST3-C4-MA-7740	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 30	3	09-Feb-27	11-Feb-27	58
ST3-C4-MA-7800	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 31	3	10-Feb-27	12-Feb-27	58
ST3-C4-MA-7700	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 29	1	11-Feb-27	11-Feb-27	61
ST3-C4-MA-7860	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Form & Prep - Pour 32	3	11-Feb-27	15-Feb-27	58
ST3-C4-MA-7760	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 30	1	12-Feb-27	12-Feb-27	60
ST3-C4-MA-7720	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 29	2	12-Feb-27	13-Feb-27	102
ST3-C4-MA-7780	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 30	2	13-Feb-27	14-Feb-27	101
ST3-C4-MA-7820	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 31	1	15-Feb-27	15-Feb-27	59
ST3-C4-MA-7880	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Pour - Pour 32	1	16-Feb-27	16-Feb-27	58
ST3-C4-MA-7840	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 31	2	16-Feb-27	17-Feb-27	98
ST3-C4-MA-7900	Cell Construct - RH Spillway - Mass Conc - Cell 4 - Mass - Cure - Pour 32	2	17-Feb-27	18-Feb-27	97
Cell 3 - Lefthand Spillway Stage 1		95	18-May-26	26-Nov-26	61
Piling		36	18-May-26	08-Jul-26	95
ST3-C3-1000	Cell Construct - LH Spillway - Cell 3 - Piling - Setout Piling Template & Mobilise Rig	5	18-May-26	22-May-26	95
ST3-C3-1020	Cell Construct - LH Spillway - Cell 3 - Piling - FRP Guidewall	7	19-May-26	27-May-26	95
ST3-C3-1040	Cell Construct - LH Spillway - Cell 3 - Piling - Excavate + Pour Piles [1 rig between soft/hard 6&6]	28	28-May-26	08-Jul-26	95
Excavate + Capping Beam		47	09-Jul-26	08-Oct-26	63
ST3-C3-3140	Cell Construct - LH Spillway - Cell 3 - Excav - Local	6	09-Jul-26	16-Jul-26	95
ST3-C3-3100	Cell Construct - LH Spillway - Cell 3 - Excav - Breakback Secant Piles	6	13-Jul-26	20-Jul-26	95
ST3-C3-3080	Cell Construct - LH Spillway - Cell 3 - Concrete - FRP Capping Beam	6	15-Jul-26	22-Jul-26	95
ST3-C3-3120	Cell Construct - LH Spillway - Cell 3 - Concrete - Cure Capping Beam (14 dy strength gain prior to excav)	14	23-Jul-26	05-Aug-26	162
ST3-C3-3160	Cell Construct - LH Spillway - Cell 3 - Excav - Install Corner Bracing	7	06-Aug-26	19-Aug-26	95
ST3-C3-2000	Cell Construct - LH Spillway - Cell 3 - Excav - Strip Working Platform	1	20-Aug-26	20-Aug-26	95
ST3-C3-3000	Cell Construct - LH Spillway - Cell 3 - Excav - Free Dig Excavation	3	21-Aug-26	25-Aug-26	95
ST3-C3-3200	Cell Construct - LH Spillway - Cell 3 - Excav - Free Dig + Clam Shell Excavation	8	26-Aug-26	04-Sep-26	95
ST3-C3-3180	Cell Construct - LH Spillway - Cell 3 - Excav - Hydro Blast Secant Piles	5	01-Sep-26	08-Sep-26	95
ST3-C3-3020	Cell Construct - LH Spillway - Cell 3 - Excav - Foundation Detail Excavation	18	09-Sep-26	02-Oct-26	95
ST3-C3-3060	Cell Construct - LH Spillway - Cell 3 - Excav - Inspection + Approval to Commence with Mass Concrete	4	30-Sep-26	07-Oct-26	95



Date	Revision	Checked	Approved

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C3-3220	Cell Construct - LH Spillway - Cell 3 - Excav - Foundation Preparation	4	30-Sep-26	07-Oct-26	96
ST3-C3-3040	Cell Construct - LH Spillway - Cell 3 - Concrete - Place Dental Concrete	4	01-Oct-26	08-Oct-26	95
Mass Concrete		22	09-Oct-26	26-Nov-26	61
Cell Preparation		5	09-Oct-26	15-Oct-26	95
ST3-C3-CP-5000	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Fix Reo Cage to Upstream Alignment of Cell	3	09-Oct-26	13-Oct-26	97
ST3-C3-CP-5020	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Install 250 Supercast Water Stop to Joint & Upstream Alignment	5	09-Oct-26	15-Oct-26	95
Makeup Pours		4	16-Oct-26	24-Oct-26	63
ST3-C3-MP-5000	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Form & Prep - Pour 1	3	16-Oct-26	20-Oct-26	95
ST3-C3-MP-5060	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Form & Prep - Pour 2	3	19-Oct-26	21-Oct-26	95
ST3-C3-MP-5020	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Pour - Pour 1	1	21-Oct-26	21-Oct-26	95
ST3-C3-MP-5080	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Pour - Pour 2	1	22-Oct-26	22-Oct-26	95
ST3-C3-MP-5040	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Cure - Pour 1	2	22-Oct-26	23-Oct-26	171
ST3-C3-MP-5100	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Makeup - Cure - Pour 2	2	23-Oct-26	24-Oct-26	171
Mass Pours		16	22-Oct-26	26-Nov-26	61
Lift 1 - Pours 1 to 2		4	22-Oct-26	30-Oct-26	63
ST3-C3-MA-6000	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 1	3	22-Oct-26	26-Oct-26	95
ST3-C3-MA-6060	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 2	3	23-Oct-26	27-Oct-26	95
ST3-C3-MA-6020	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 1	1	27-Oct-26	27-Oct-26	95
ST3-C3-MA-6080	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 2	1	28-Oct-26	28-Oct-26	95
ST3-C3-MA-6040	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 1	2	28-Oct-26	29-Oct-26	171
ST3-C3-MA-6100	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 2	2	29-Oct-26	30-Oct-26	171
Lift 2 - Pours 3 to 4		3	28-Oct-26	08-Nov-26	64
ST3-C3-MA-6120	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 3	3	28-Oct-26	30-Oct-26	95
ST3-C3-MA-6180	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 4	3	29-Oct-26	05-Nov-26	95
ST3-C3-MA-6140	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 3	1	05-Nov-26	05-Nov-26	95
ST3-C3-MA-6200	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 4	1	06-Nov-26	06-Nov-26	95
ST3-C3-MA-6160	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 3	2	06-Nov-26	07-Nov-26	166
ST3-C3-MA-6220	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 4	2	07-Nov-26	08-Nov-26	169
Lift 3 - Pours 5 to 6		5	06-Nov-26	14-Nov-26	63
ST3-C3-MA-6240	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 5	3	06-Nov-26	10-Nov-26	95
ST3-C3-MA-6300	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 6	3	09-Nov-26	11-Nov-26	95
ST3-C3-MA-6260	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 5	1	11-Nov-26	11-Nov-26	95
ST3-C3-MA-6320	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 6	1	12-Nov-26	12-Nov-26	95
ST3-C3-MA-6280	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 5	2	12-Nov-26	13-Nov-26	167
ST3-C3-MA-6340	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 6	2	13-Nov-26	14-Nov-26	171
Lift 4 - Pours 7 to 8		6	12-Nov-26	20-Nov-26	61
ST3-C3-MA-6360	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 7	3	12-Nov-26	16-Nov-26	95
ST3-C3-MA-6420	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 8	3	13-Nov-26	17-Nov-26	95
ST3-C3-MA-6380	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 7	1	17-Nov-26	17-Nov-26	95
ST3-C3-MA-6440	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 8	1	18-Nov-26	18-Nov-26	95
ST3-C3-MA-6400	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 7	2	18-Nov-26	19-Nov-26	172
ST3-C3-MA-6460	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 8	2	19-Nov-26	20-Nov-26	171
Lift 5 - Pours 9 to 10		4	18-Nov-26	26-Nov-26	61
ST3-C3-MA-6480	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 9	3	18-Nov-26	20-Nov-26	95
ST3-C3-MA-6540	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Form & Prep - Pour 10	3	19-Nov-26	23-Nov-26	95
ST3-C3-MA-6500	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 9	1	23-Nov-26	23-Nov-26	96
ST3-C3-MA-6560	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Pour - Pour 10	1	24-Nov-26	24-Nov-26	95
ST3-C3-MA-6520	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 9	2	24-Nov-26	25-Nov-26	169
ST3-C3-MA-6580	Cell Construct - LH Spillway - Mass Conc - Cell 3 - Mass - Cure - Pour 10	2	25-Nov-26	26-Nov-26	168
Outlet Tower Works		143	19-Mar-26	08-Feb-27	23
Retaining Wall / Access Road		47	19-Mar-26	03-Jul-26	31
ST3-OTW-1020	Outlet Tower - Retaining Wall / Access Rd - FRP Slab	12	19-Mar-26	14-Apr-26	78
ST3-OTW-1040	Outlet Tower - Retaining Wall / Access Rd - Cure - Slab	7	15-Apr-26	21-Apr-26	117
ST3-OTW-1060	Outlet Tower - Retaining Wall / Access Rd - FRP Retaining Wall & Stub Walls	8	17-Jun-26	26-Jun-26	38
ST3-OTW-1080	Outlet Tower - Retaining Wall / Access Rd - Cure - Retaining Wall & Stub Walls	7	27-Jun-26	03-Jul-26	61
Tower Concrete		49	06-Jul-26	08-Oct-26	29
ST3-OTW-1100	Outlet Tower - Concrete - Tower Structure - FRP Lift 1	10	06-Jul-26	17-Jul-26	39
ST3-OTW-1120	Outlet Tower - Concrete - Tower Structure - Cure Lift 1	7	18-Jul-26	24-Jul-26	62
ST3-OTW-1300	Outlet Tower - Concrete - Tower Structure - FRP Lift 2	10	20-Jul-26	03-Aug-26	39
ST3-OTW-1320	Outlet Tower - Concrete - Tower Structure - Cure Lift 2	7	04-Aug-26	10-Aug-26	59
ST3-OTW-1340	Outlet Tower - Concrete - Tower Structure - FRP Lift 3	10	04-Aug-26	20-Aug-26	39
ST3-OTW-1360	Outlet Tower - Concrete - Tower Structure - Cure Lift 3	7	21-Aug-26	27-Aug-26	60
ST3-OTW-1140	Outlet Tower - Concrete - Tower Structure - FRP Lift 4	10	21-Aug-26	03-Sep-26	39
ST3-OTW-1160	Outlet Tower - Concrete - Tower Structure - Cure Lift 4	7	04-Sep-26	10-Sep-26	63
ST3-OTW-1380	Outlet Tower - Concrete - Control Room Structure - FRP Lift 5	7	04-Sep-26	15-Sep-26	39



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Project ID : P11383-PST-TOCSub-20
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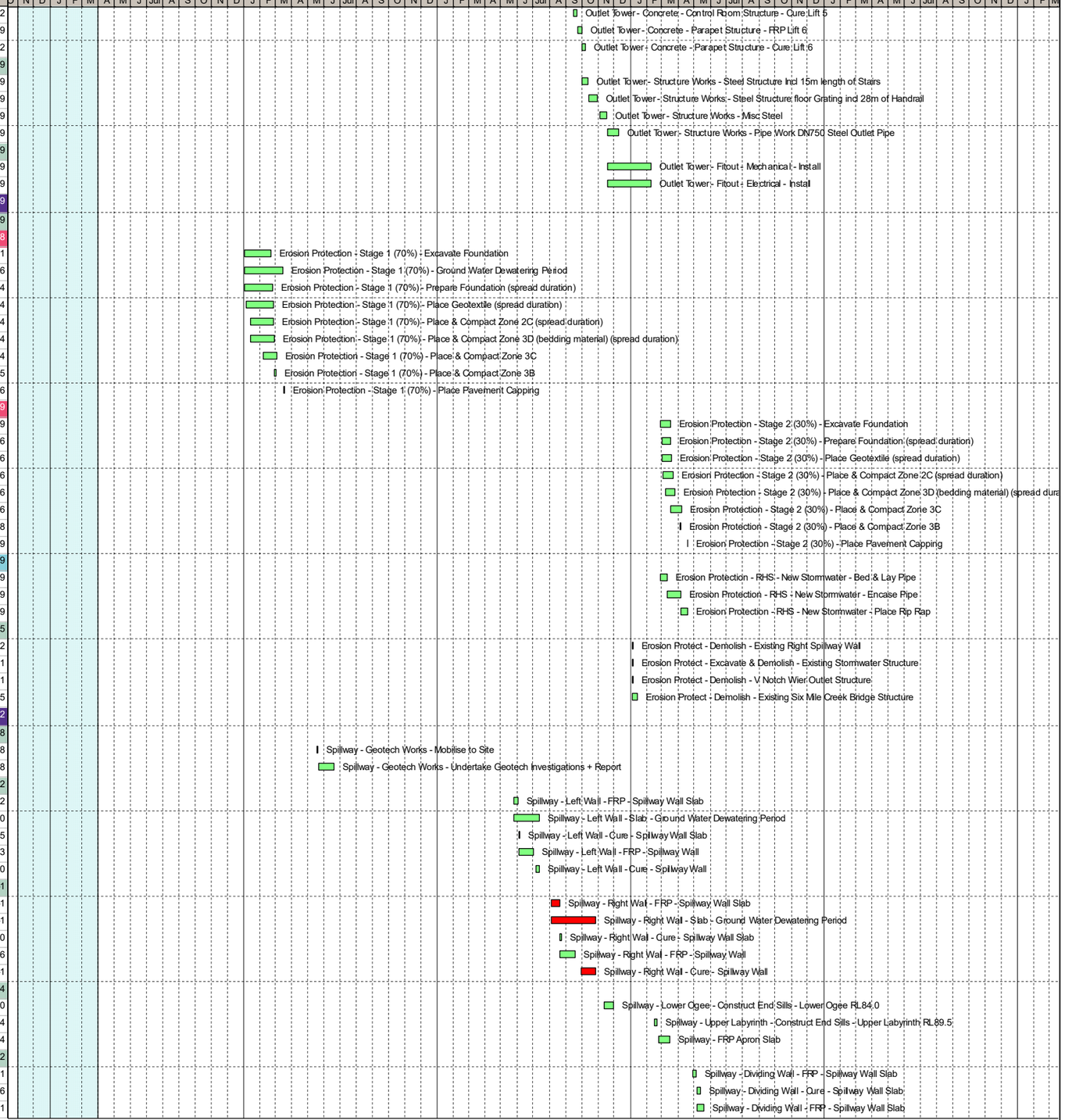
20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-OTW-1400	Outlet Tower - Concrete - Control Room Structure - Cure Lift 5	7	16-Sep-26	22-Sep-26	62
ST3-OTW-1420	Outlet Tower - Concrete - Parapet Structure - FRP Lift 6	7	23-Sep-26	01-Oct-26	39
ST3-OTW-1440	Outlet Tower - Concrete - Parapet Structure - Cure Lift 6	7	02-Oct-26	08-Oct-26	62
Tower Structure		45	02-Oct-26	10-Dec-26	39
ST3-OTW-1180	Outlet Tower - Structure Works - Steel Structure Incl 15m length of Stairs	6	02-Oct-26	13-Oct-26	39
ST3-OTW-1200	Outlet Tower - Structure Works - Steel Structure floor Grating incl 28m of Handrail	13	14-Oct-26	30-Oct-26	39
ST3-OTW-1220	Outlet Tower - Structure Works - Misc Steel	9	05-Nov-26	17-Nov-26	39
ST3-OTW-1240	Outlet Tower - Structure Works - Pipe Work DN750 Steel Outlet Pipe	17	18-Nov-26	10-Dec-26	39
Mechanical / Electrical Works		45	18-Nov-26	08-Feb-27	39
ST3-OTW-1260	Outlet Tower - Fitout - Mechanical - Install	45	18-Nov-26	08-Feb-27	39
ST3-OTW-1280	Outlet Tower - Fitout - Electrical - Install	45	18-Nov-26	08-Feb-27	39
Erosion Protection Works		360	02-Jan-25	19-Apr-27	29
Erosion Protection		360	02-Jan-25	19-Apr-27	29
Erosion Protection - Stage 1 (70%)		33	02-Jan-25	18-Mar-25	328
ST3-EP-1660	Erosion Protection - Stage 1 (70%) - Excavate Foundation	34	02-Jan-25	21-Feb-25	471
ST3-EP-1820	Erosion Protection - Stage 1 (70%) - Ground Water Dewatering Period	73	02-Jan-25	15-Mar-25	766
ST3-EP-1680	Erosion Protection - Stage 1 (70%) - Prepare Foundation (spread duration)	34	03-Jan-25	24-Feb-25	474
ST3-EP-1700	Erosion Protection - Stage 1 (70%) - Place Geotextile (spread duration)	34	06-Jan-25	25-Feb-25	474
ST3-EP-1720	Erosion Protection - Stage 1 (70%) - Place & Compact Zone 2C (spread duration)	30	13-Jan-25	26-Feb-25	474
ST3-EP-1740	Erosion Protection - Stage 1 (70%) - Place & Compact Zone 3D (bedding material) (spread duration)	30	14-Jan-25	27-Feb-25	474
ST3-EP-1760	Erosion Protection - Stage 1 (70%) - Place & Compact Zone 3C	18	06-Feb-25	04-Mar-25	474
ST3-EP-1780	Erosion Protection - Stage 1 (70%) - Place & Compact Zone 3B	2	28-Feb-25	03-Mar-25	475
ST3-EP-1800	Erosion Protection - Stage 1 (70%) - Place Pavement Capping	1	18-Mar-25	18-Mar-25	466
Erosion Protection - Stage 2 (30%)		30	26-Feb-27	19-Apr-27	39
ST3-EP-1120	Erosion Protection - Stage 2 (30%) - Excavate Foundation	14	26-Feb-27	17-Mar-27	39
ST3-EP-1180	Erosion Protection - Stage 2 (30%) - Prepare Foundation (spread duration)	14	01-Mar-27	18-Mar-27	46
ST3-EP-1280	Erosion Protection - Stage 2 (30%) - Place Geotextile (spread duration)	14	02-Mar-27	19-Mar-27	46
ST3-EP-1500	Erosion Protection - Stage 2 (30%) - Place & Compact Zone 2C (spread duration)	13	04-Mar-27	23-Mar-27	46
ST3-EP-1560	Erosion Protection - Stage 2 (30%) - Place & Compact Zone 3D (bedding material) (spread duration)	13	08-Mar-27	25-Mar-27	46
ST3-EP-1600	Erosion Protection - Stage 2 (30%) - Place & Compact Zone 3C	8	18-Mar-27	07-Apr-27	46
ST3-EP-1580	Erosion Protection - Stage 2 (30%) - Place & Compact Zone 3B	1	05-Apr-27	05-Apr-27	48
ST3-EP-1640	Erosion Protection - Stage 2 (30%) - Place Pavement Capping	1	19-Apr-27	19-Apr-27	39
Stormwater		30	26-Feb-27	19-Apr-27	39
ST3-EP-1100	Erosion Protection - RHS - New Stormwater - Bed & Lay Pipe	10	26-Feb-27	11-Mar-27	39
ST3-EP-1140	Erosion Protection - RHS - New Stormwater - Encase Pipe	10	12-Mar-27	05-Apr-27	39
ST3-EP-1160	Erosion Protection - RHS - New Stormwater - Place Rip Rap	10	06-Apr-27	19-Apr-27	39
Demolition		8	05-Jan-27	14-Jan-27	95
ST3-EP-1060	Erosion Protect - Demolish - Existing Right Spillway Wall	1	05-Jan-27	05-Jan-27	102
ST3-EP-1020	Erosion Protect - Excavate & Demolish - Existing Stormwater Structure	2	05-Jan-27	06-Jan-27	101
ST3-EP-1040	Erosion Protect - Demolish - V Notch Wier Outlet Structure	2	05-Jan-27	06-Jan-27	101
ST3-EP-1080	Erosion Protect - Demolish - Existing Six Mile Creek Bridge Structure	8	05-Jan-27	14-Jan-27	95
Spillway Works		321	19-May-25	26-May-27	92
Spillway Geotech Investigation Works		23	19-May-25	19-Jun-25	38
ST3-SP-3000	Spillway - Geotech Works - Mobilise to Site	3	19-May-25	21-May-25	38
ST3-SP-3020	Spillway - Geotech Works - Undertake Geotech Investigations + Report	20	22-May-25	19-Jun-25	38
Left Spillway Wall		25	25-May-26	13-Jul-26	142
ST3-SP-1080	Spillway - Left Wall - FRP - Spillway Wall Slab	7	25-May-26	03-Jun-26	202
ST3-SP-1240	Spillway - Left Wall - Slab - Ground Water Dewatering Period	50	25-May-26	13-Jul-26	330
ST3-SP-1100	Spillway - Left Wall - Cure - Spillway Wall Slab	3	04-Jun-26	06-Jun-26	335
ST3-SP-1120	Spillway - Left Wall - FRP - Spillway Wall	20	04-Jun-26	02-Jul-26	203
ST3-SP-1140	Spillway - Left Wall - Cure - Spillway Wall	7	07-Jul-26	13-Jul-26	330
Right Spillway Wall		42	04-Aug-26	27-Oct-26	-1
ST3-SP-1000	Spillway - Right Wall - FRP - Spillway Wall Slab	10	04-Aug-26	20-Aug-26	-1
ST3-SP-3040	Spillway - Right Wall - Slab - Ground Water Dewatering Period	85	04-Aug-26	27-Oct-26	-1
ST3-SP-1020	Spillway - Right Wall - Cure - Spillway Wall Slab	3	21-Aug-26	23-Aug-26	10
ST3-SP-1040	Spillway - Right Wall - FRP - Spillway Wall	20	21-Aug-26	18-Sep-26	6
ST3-SP-1060	Spillway - Right Wall - Cure - Spillway Wall	28	30-Sep-26	27-Oct-26	-1
Apron & End Sills		72	13-Nov-26	15-Mar-27	144
ST3-LO-1060	Spillway - Lower Ogee - Construct End Sills - Lower Ogee RL84.0	12	13-Nov-26	30-Nov-26	160
ST3-UL-1020	Spillway - Upper Labyrinth - Construct End Sills - Upper Labyrinth RL89.5	5	15-Feb-27	19-Feb-27	144
ST3-UL-1120	Spillway - FRP Apron Slab	15	23-Feb-27	15-Mar-27	144
Spillway Dividing Wall		13	28-Apr-27	26-May-27	92
ST3-SP-1160	Spillway - Dividing Wall - FRP - Spillway Wall Slab	4	28-Apr-27	05-May-27	121
ST3-SP-1180	Spillway - Dividing Wall - Cure - Spillway Wall Slab	7	06-May-27	12-May-27	186
ST3-SP-1200	Spillway - Dividing Wall - FRP - Spillway Wall Slab	10	06-May-27	19-May-27	121



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Layout : LMDU - Dry WBS Layout

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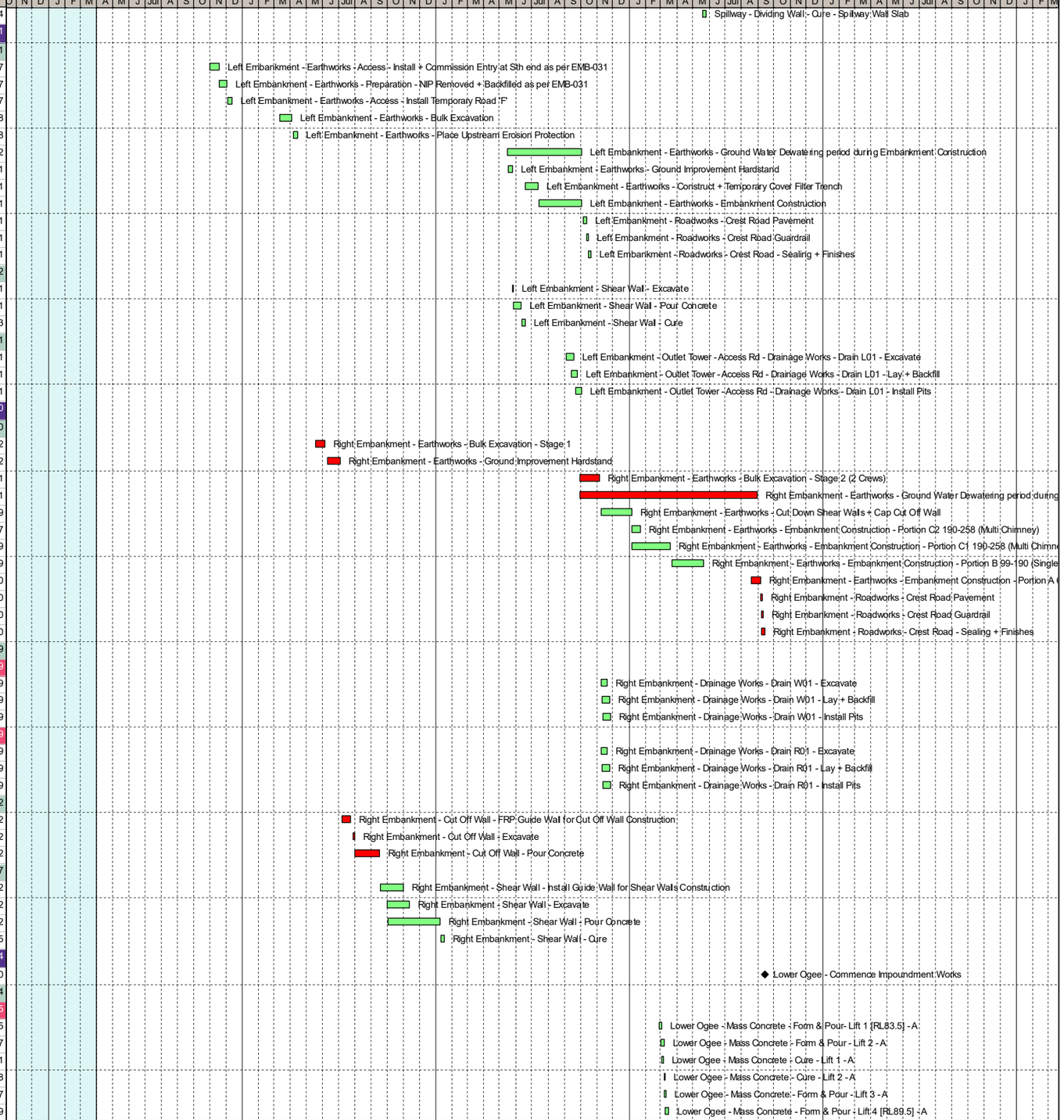
Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-SP-1220	Spillway - Dividing Wall - Cure - Spillway Wall Slab	7	20-May-27	26-May-27	184
Left Embankment Works		314	31-Oct-24	20-Oct-26	141
Earthworks		314	31-Oct-24	20-Oct-26	141
ST3-LEM-EW-1000	Left Embankment - Earthworks - Access - Install + Commission Entry at Sth end as per EMB-031	10	31-Oct-24	18-Nov-24	487
ST3-LEM-EW-1020	Left Embankment - Earthworks - Preparation - NIP Removed + Backfilled as per EMB-031	10	19-Nov-24	03-Dec-24	487
ST3-LEM-EW-1040	Left Embankment - Earthworks - Access - Install Temporary Road 'F'	7	04-Dec-24	12-Dec-24	487
ST3-LEM-EW-1060	Left Embankment - Earthworks - Bulk Excavation	17	12-Mar-25	04-Apr-25	438
ST3-LEM-EW-1080	Left Embankment - Earthworks - Place Upstream Erosion Protection	7	07-Apr-25	15-Apr-25	438
ST3-LEM-EW-1240	Left Embankment - Earthworks - Ground Water Dewatering period during Embankment Construction	140	16-May-26	02-Oct-26	332
ST3-LEM-EW-1100	Left Embankment - Earthworks - Ground Improvement Hardstand	6	18-May-26	25-May-26	201
ST3-LEM-EW-1140	Left Embankment - Earthworks - Construct + Temporary Cover Filter Trench	16	19-Jun-26	13-Jul-26	201
ST3-LEM-EW-1160	Left Embankment - Earthworks - Embankment Construction	54	14-Jul-26	02-Oct-26	201
ST3-LEM-EW-1180	Left Embankment - Roadworks - Crest Road Pavement	4	07-Oct-26	12-Oct-26	201
ST3-LEM-EW-1200	Left Embankment - Roadworks - Crest Road Guardrail	3	13-Oct-26	15-Oct-26	201
ST3-LEM-EW-1220	Left Embankment - Roadworks - Crest Road - Sealing + Finishes	3	16-Oct-26	20-Oct-26	201
Shear Wall		11	26-May-26	18-Jun-26	142
ST3-LEM-1060	Left Embankment - Shear Wall - Excavate	2	26-May-26	27-May-26	201
ST3-LEM-1080	Left Embankment - Shear Wall - Pour Concrete	10	28-May-26	11-Jun-26	201
ST3-LEM-1100	Left Embankment - Shear Wall - Cure	7	12-Jun-26	18-Jun-26	333
Drainage Works		20	04-Sep-26	02-Oct-26	201
ST3-LEM-OTW-DR-1	Left Embankment - Outlet Tower - Access Rd - Drainage Works - Drain L01 - Excavate	10	04-Sep-26	18-Sep-26	201
ST3-LEM-OTW-DR-1	Left Embankment - Outlet Tower - Access Rd - Drainage Works - Drain L01 - Lay + Backfill	10	14-Sep-26	25-Sep-26	201
ST3-LEM-OTW-DR-1	Left Embankment - Outlet Tower - Access Rd - Drainage Works - Drain L01 - Install Pits	10	21-Sep-26	02-Oct-26	201
Right Embankment Works		378	19-May-25	13-Sep-27	0
Earthworks		378	19-May-25	13-Sep-27	0
ST3-REM-EW-1080	Right Embankment - Earthworks - Bulk Excavation - Stage 1	15	19-May-25	06-Jun-25	-2
ST3-REM-EW-1100	Right Embankment - Earthworks - Ground Improvement Hardstand	19	10-Jun-25	04-Jul-25	-2
ST3-REM-EW-1180	Right Embankment - Earthworks - Bulk Excavation - Stage 2 (2 Crews)	23	30-Sep-26	06-Nov-26	-1
ST3-REM-EW-1360	Right Embankment - Earthworks - Ground Water Dewatering period during Embankment Construction	335	30-Sep-26	30-Aug-27	-1
ST3-REM-EW-1200	Right Embankment - Earthworks - Cut Down Shear Walls + Cap Cut Off Wall	30	09-Nov-26	05-Jan-27	59
ST3-REM-EW-1280	Right Embankment - Earthworks - Embankment Construction - Portion C2 190-258 (Multi Chimney)	12	06-Jan-27	21-Jan-27	97
ST3-REM-EW-1260	Right Embankment - Earthworks - Embankment Construction - Portion C1 190-258 (Multi Chimney)	50	06-Jan-27	19-Mar-27	59
ST3-REM-EW-1240	Right Embankment - Earthworks - Embankment Construction - Portion B 99-190 (Single Chimney)	34	23-Mar-27	20-May-27	59
ST3-REM-EW-1220	Right Embankment - Earthworks - Embankment Construction - Portion A 60-99 (No Upstream Rockfill)	12	19-Aug-27	06-Sep-27	0
ST3-REM-EW-1300	Right Embankment - Roadworks - Crest Road Pavement	4	06-Sep-27	09-Sep-27	0
ST3-REM-EW-1320	Right Embankment - Roadworks - Crest Road Guardrail	4	07-Sep-27	10-Sep-27	0
ST3-REM-EW-1340	Right Embankment - Roadworks - Crest Road - Sealing + Finishes	4	08-Sep-27	13-Sep-27	0
Drainage Works		14	09-Nov-26	26-Nov-26	159
Drain W01 Seepage		14	09-Nov-26	26-Nov-26	159
ST3-REM-DR-1000	Right Embankment - Drainage Works - Drain W01 - Excavate	10	09-Nov-26	20-Nov-26	159
ST3-REM-DR-1020	Right Embankment - Drainage Works - Drain W01 - Lay + Backfill	10	11-Nov-26	24-Nov-26	159
ST3-REM-DR-1080	Right Embankment - Drainage Works - Drain W01 - Install Pits	10	13-Nov-26	26-Nov-26	159
Drain R01 Surface		14	09-Nov-26	26-Nov-26	159
ST3-REM-DR-2000	Right Embankment - Drainage Works - Drain R01 - Excavate	10	09-Nov-26	20-Nov-26	159
ST3-REM-DR-2020	Right Embankment - Drainage Works - Drain R01 - Lay + Backfill	10	11-Nov-26	24-Nov-26	159
ST3-REM-DR-2080	Right Embankment - Drainage Works - Drain R01 - Install Pits	10	13-Nov-26	26-Nov-26	159
Cutoff Wall		48	08-Jul-25	17-Sep-25	-2
ST3-REM-1060	Right Embankment - Cut Off Wall - FRP Guide Wall for Cut Off Wall Construction	12	08-Jul-25	23-Jul-25	-2
ST3-REM-1120	Right Embankment - Cut Off Wall - Excavate	3	29-Jul-25	31-Jul-25	-2
ST3-REM-1140	Right Embankment - Cut Off Wall - Pour Concrete	30	01-Aug-25	17-Sep-25	-2
Shear Wall		48	18-Sep-25	16-Jan-26	117
ST3-REM-1020	Right Embankment - Shear Wall - Install Guide Wall for Shear Walls Construction	30	18-Sep-25	31-Oct-25	162
ST3-REM-1080	Right Embankment - Shear Wall - Excavate	25	02-Oct-25	12-Nov-25	162
ST3-REM-1100	Right Embankment - Shear Wall - Pour Concrete	52	03-Oct-25	09-Jan-26	162
ST3-REM-1160	Right Embankment - Shear Wall - Cure	7	10-Jan-26	16-Jan-26	255
Lower Ogee		143	13-Nov-26	03-Oct-27	24
ST3-LO-1200	Lower Ogee - Commence Impoundment Works	0	14-Sep-27		0
Mass Concrete		125	05-Jan-27	03-Oct-27	24
Mass Concrete - Monolith A		26	26-Feb-27	07-May-27	65
ST3-C1-7840	Lower Ogee - Mass Concrete - Form & Pour- Lift 1 [RL83.5] - A	4	26-Feb-27	03-Mar-27	95
ST3-C1-7880	Lower Ogee - Mass Concrete - Form & Pour - Lift 2 - A	4	02-Mar-27	08-Mar-27	97
ST3-C1-7860	Lower Ogee - Mass Concrete - Cure - Lift 1 - A	3	04-Mar-27	06-Mar-27	151
ST3-C1-7900	Lower Ogee - Mass Concrete - Cure - Lift 2 - A	3	08-Mar-27	10-Mar-27	158
ST3-C1-7920	Lower Ogee - Mass Concrete - Form & Pour - Lift 3 - A	4	08-Mar-27	11-Mar-27	97
ST3-C1-7960	Lower Ogee - Mass Concrete - Form & Pour - Lift 4 [RL89.5] - A	4	10-Mar-27	15-Mar-27	99



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20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

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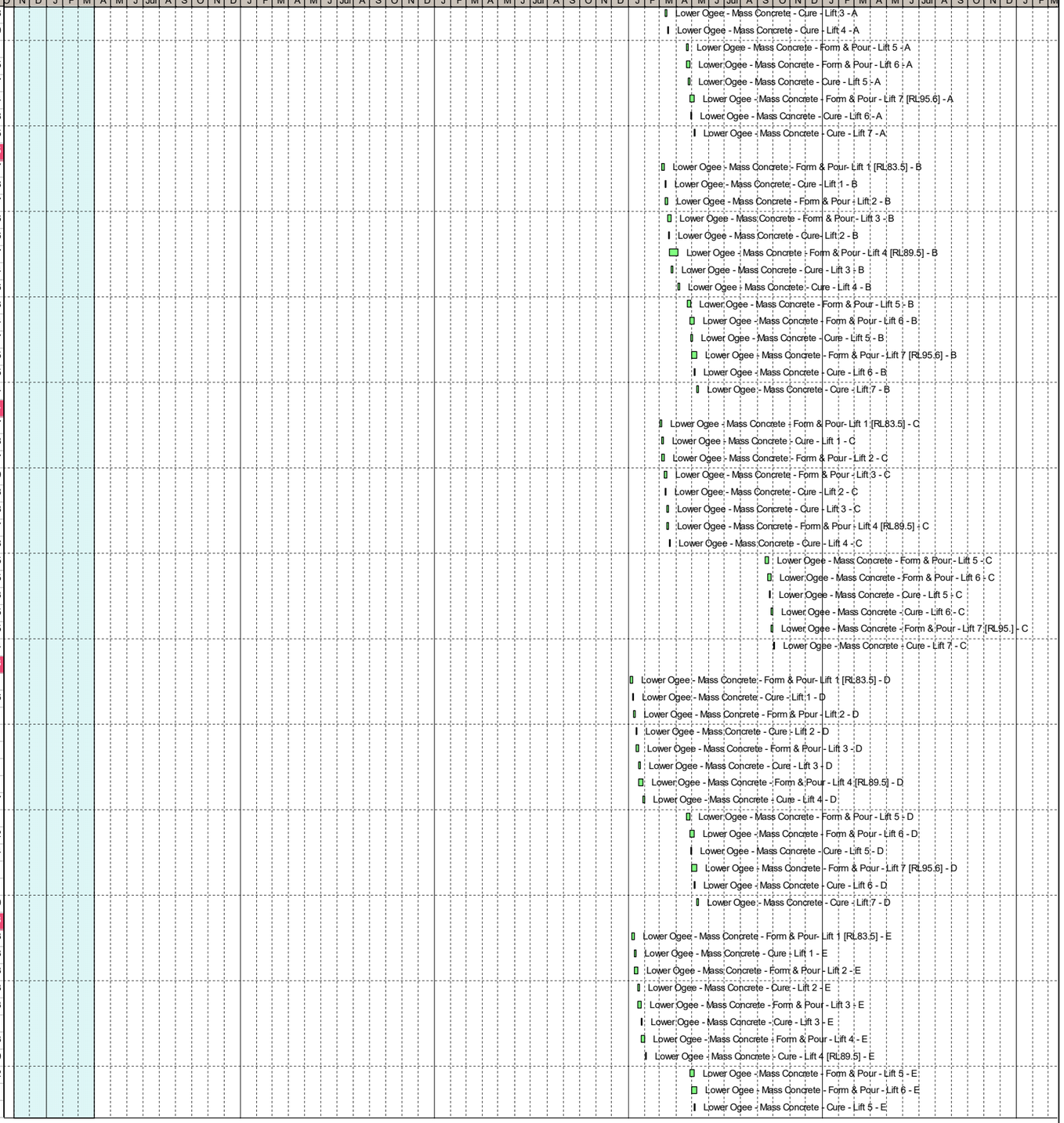
ST3-C1-7940	Lower Ogee - Mass Concrete - Cure - Lift 3 - A	3	12-Mar-27	14-Mar-27	158
ST3-C1-7980	Lower Ogee - Mass Concrete - Cure - Lift 4 - A	3	16-Mar-27	18-Mar-27	160
ST3-C1-8000	Lower Ogee - Mass Concrete - Form & Pour - Lift 5 - A	4	20-Apr-27	23-Apr-27	81
ST3-C1-8040	Lower Ogee - Mass Concrete - Form & Pour - Lift 6 - A	4	21-Apr-27	27-Apr-27	85
ST3-C1-8020	Lower Ogee - Mass Concrete - Cure - Lift 5 - A	3	24-Apr-27	26-Apr-27	127
ST3-C1-8080	Lower Ogee - Mass Concrete - Form & Pour - Lift 7 [RL95.6] - A	4	27-Apr-27	05-May-27	84
ST3-C1-8060	Lower Ogee - Mass Concrete - Cure - Lift 6 - A	3	28-Apr-27	30-Apr-27	128
ST3-C1-8100	Lower Ogee - Mass Concrete - Cure - Lift 7 - A	3	05-May-27	07-May-27	125
Mass Concrete - Monolith B		25	05-Mar-27	12-May-27	65
ST3-C1-7520	Lower Ogee - Mass Concrete - Form & Pour- Lift 1 [RL83.5] - B	4	05-Mar-27	10-Mar-27	97
ST3-C1-7540	Lower Ogee - Mass Concrete - Cure - Lift 1 - B	3	11-Mar-27	13-Mar-27	158
ST3-C1-7560	Lower Ogee - Mass Concrete - Form & Pour - Lift 2 - B	4	11-Mar-27	16-Mar-27	97
ST3-C1-7600	Lower Ogee - Mass Concrete - Form & Pour - Lift 3 - B	4	16-Mar-27	23-Mar-27	96
ST3-C1-7580	Lower Ogee - Mass Concrete - Cure- Lift 2 - B	3	17-Mar-27	19-Mar-27	156
ST3-C1-7640	Lower Ogee - Mass Concrete - Form & Pour - Lift 4 [RL89.5] - B	4	19-Mar-27	05-Apr-27	97
ST3-C1-7620	Lower Ogee - Mass Concrete - Cure - Lift 3 - B	3	23-Mar-27	25-Mar-27	154
ST3-C1-7660	Lower Ogee - Mass Concrete - Cure - Lift 4 - B	3	05-Apr-27	07-Apr-27	146
ST3-C1-7680	Lower Ogee - Mass Concrete - Form & Pour - Lift 5 - B	4	22-Apr-27	28-Apr-27	83
ST3-C1-7720	Lower Ogee - Mass Concrete - Form & Pour - Lift 6 - B	4	27-Apr-27	05-May-27	84
ST3-C1-7700	Lower Ogee - Mass Concrete - Cure - Lift 5 - B	3	29-Apr-27	01-May-27	127
ST3-C1-7760	Lower Ogee - Mass Concrete - Form & Pour - Lift 7 [RL95.6] - B	4	30-Apr-27	10-May-27	85
ST3-C1-7740	Lower Ogee - Mass Concrete - Cure - Lift 6 - B	3	05-May-27	07-May-27	125
ST3-C1-7780	Lower Ogee - Mass Concrete - Cure - Lift 7 - B	3	10-May-27	12-May-27	124
Mass Concrete - Monolith C		103	01-Mar-27	03-Oct-27	24
ST3-C1-7200	Lower Ogee - Mass Concrete - Form & Pour- Lift 1 [RL83.5] - C	4	01-Mar-27	04-Mar-27	97
ST3-C1-7220	Lower Ogee - Mass Concrete - Cure - Lift 1 - C	3	05-Mar-27	07-Mar-27	158
ST3-C1-7240	Lower Ogee - Mass Concrete - Form & Pour - Lift 2 - C	4	05-Mar-27	10-Mar-27	97
ST3-C1-7280	Lower Ogee - Mass Concrete - Form & Pour - Lift 3 - C	4	09-Mar-27	15-Mar-27	99
ST3-C1-7260	Lower Ogee - Mass Concrete - Cure - Lift 2 - C	3	11-Mar-27	13-Mar-27	158
ST3-C1-7300	Lower Ogee - Mass Concrete - Cure - Lift 3 - C	3	15-Mar-27	17-Mar-27	158
ST3-C1-7320	Lower Ogee - Mass Concrete - Form & Pour - Lift 4 [RL89.5] - C	4	15-Mar-27	18-Mar-27	97
ST3-C1-7340	Lower Ogee - Mass Concrete - Cure - Lift 4 - C	3	19-Mar-27	21-Mar-27	158
ST3-C1-7360	Lower Ogee - Mass Concrete - Form & Pour - Lift 5 - C	4	16-Sep-27	22-Sep-27	15
ST3-C1-7400	Lower Ogee - Mass Concrete - Form & Pour - Lift 6 - C	4	21-Sep-27	27-Sep-27	15
ST3-C1-7380	Lower Ogee - Mass Concrete - Cure - Lift 5 - C	3	23-Sep-27	25-Sep-27	23
ST3-C1-7420	Lower Ogee - Mass Concrete - Cure - Lift 6 - C	3	27-Sep-27	29-Sep-27	25
ST3-C1-7440	Lower Ogee - Mass Concrete - Form & Pour - Lift 7 [RL95.] - C	4	27-Sep-27	30-Sep-27	15
ST3-C1-7460	Lower Ogee - Mass Concrete - Cure - Lift 7 - C	3	01-Oct-27	03-Oct-27	54
Mass Concrete - Monolith D		49	05-Jan-27	12-May-27	63
ST3-C1-6880	Lower Ogee - Mass Concrete - Form & Pour- Lift 1 [RL83.5] - D	4	05-Jan-27	08-Jan-27	131
ST3-C1-6900	Lower Ogee - Mass Concrete - Cure - Lift 1 - D	3	09-Jan-27	11-Jan-27	206
ST3-C1-6920	Lower Ogee - Mass Concrete - Form & Pour - Lift 2 - D	4	11-Jan-27	14-Jan-27	131
ST3-C1-6940	Lower Ogee - Mass Concrete - Cure - Lift 2 - D	3	15-Jan-27	17-Jan-27	211
ST3-C1-6960	Lower Ogee - Mass Concrete - Form & Pour - Lift 3 - D	4	15-Jan-27	20-Jan-27	131
ST3-C1-6980	Lower Ogee - Mass Concrete - Cure - Lift 3 - D	3	21-Jan-27	23-Jan-27	211
ST3-C1-7000	Lower Ogee - Mass Concrete - Form & Pour - Lift 4 [RL89.5] - D	4	21-Jan-27	28-Jan-27	131
ST3-C1-7020	Lower Ogee - Mass Concrete - Cure - Lift 4 - D	3	29-Jan-27	31-Jan-27	207
ST3-C1-7040	Lower Ogee - Mass Concrete - Form & Pour - Lift 5 - D	4	21-Apr-27	27-Apr-27	81
ST3-C1-7080	Lower Ogee - Mass Concrete - Form & Pour - Lift 6 - D	4	27-Apr-27	05-May-27	82
ST3-C1-7060	Lower Ogee - Mass Concrete - Cure - Lift 5 - D	3	28-Apr-27	30-Apr-27	124
ST3-C1-7120	Lower Ogee - Mass Concrete - Form & Pour - Lift 7 [RL95.6] - D	4	30-Apr-27	10-May-27	81
ST3-C1-7100	Lower Ogee - Mass Concrete - Cure - Lift 6 - D	3	05-May-27	07-May-27	121
ST3-C1-7140	Lower Ogee - Mass Concrete - Cure - Lift 7 - D	3	10-May-27	12-May-27	120
Mass Concrete - Monolith E		50	07-Jan-27	16-May-27	63
ST3-C1-6560	Lower Ogee - Mass Concrete - Form & Pour- Lift 1 [RL83.5] - E	4	07-Jan-27	12-Jan-27	133
ST3-C1-6580	Lower Ogee - Mass Concrete - Cure - Lift 1 - E	3	13-Jan-27	15-Jan-27	213
ST3-C1-6600	Lower Ogee - Mass Concrete - Form & Pour - Lift 2 - E	4	13-Jan-27	18-Jan-27	133
ST3-C1-6620	Lower Ogee - Mass Concrete - Cure - Lift 2 - E	3	19-Jan-27	21-Jan-27	213
ST3-C1-6640	Lower Ogee - Mass Concrete - Form & Pour - Lift 3 - E	4	19-Jan-27	25-Jan-27	133
ST3-C1-6660	Lower Ogee - Mass Concrete - Cure - Lift 3 - E	3	25-Jan-27	27-Jan-27	211
ST3-C1-6680	Lower Ogee - Mass Concrete - Form & Pour - Lift 4 - E	4	25-Jan-27	01-Feb-27	133
ST3-C1-6700	Lower Ogee - Mass Concrete - Cure - Lift 4 [RL89.5] - E	3	02-Feb-27	04-Feb-27	209
ST3-C1-6720	Lower Ogee - Mass Concrete - Form & Pour - Lift 5 - E	4	27-Apr-27	05-May-27	82
ST3-C1-6760	Lower Ogee - Mass Concrete - Form & Pour - Lift 6 - E	4	30-Apr-27	10-May-27	81
ST3-C1-6740	Lower Ogee - Mass Concrete - Cure - Lift 5 - E	3	05-May-27	07-May-27	121

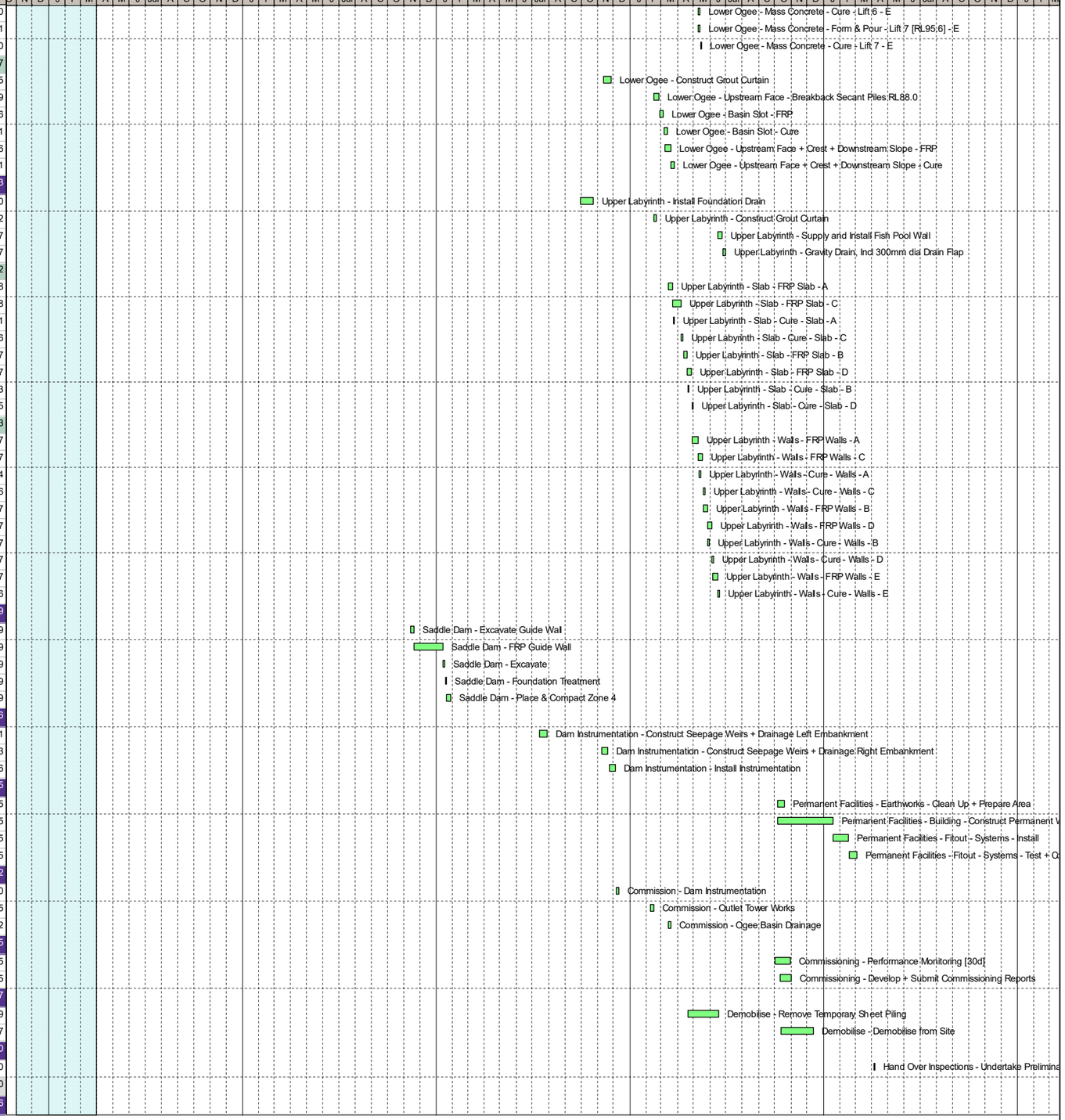


Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST3-C1-6780	Lower Ogee - Mass Concrete - Cure - Lift 6 - E	3	10-May-27	12-May-27	120
ST3-C1-6800	Lower Ogee - Mass Concrete - Form & Pour - Lift 7 [RL95.6] - E	4	10-May-27	13-May-27	81
ST3-C1-6820	Lower Ogee - Mass Concrete - Cure - Lift 7 - E	3	14-May-27	16-May-27	120
Upstream Face, Crest & Downstream Slope		50	13-Nov-26	26-Mar-27	117
ST3-LO-1040	Lower Ogee - Construct Grout Curtain	10	13-Nov-26	26-Nov-26	225
ST3-LO-1080	Lower Ogee - Upstream Face - Breakback Secant Piles RL88.0	7	16-Feb-27	25-Feb-27	39
ST3-LO-1160	Lower Ogee - Basin Slot - FRP	6	26-Feb-27	05-Mar-27	106
ST3-LO-1180	Lower Ogee - Basin Slot - Cure	7	06-Mar-27	12-Mar-27	171
ST3-LO-1000	Lower Ogee - Upstream Face + Crest + Downstream Slope - FRP	10	08-Mar-27	19-Mar-27	106
ST3-LO-1020	Lower Ogee - Upstream Face + Crest + Downstream Slope - Cure	7	20-Mar-27	26-Mar-27	171
Upper Labyrinth		112	30-Sep-26	30-Jun-27	73
ST3-UL-1040	Upper Labyrinth - Install Foundation Drain	16	30-Sep-26	23-Oct-26	140
ST3-UL-1000	Upper Labyrinth - Construct Grout Curtain	5	15-Feb-27	19-Feb-27	72
ST3-UL-1140	Upper Labyrinth - Supply and Install Fish Pool Wall	6	16-Jun-27	24-Jun-27	97
ST3-UL-1160	Upper Labyrinth - Gravity Drain, Incl 300mm dia Drain Flap	4	25-Jun-27	30-Jun-27	97
Slab		18	15-Mar-27	30-Apr-27	42
ST3-UL-1200	Upper Labyrinth - Slab - FRP Slab - A	6	15-Mar-27	23-Mar-27	58
ST3-UL-1280	Upper Labyrinth - Slab - FRP Slab - C	6	23-Mar-27	07-Apr-27	58
ST3-UL-1220	Upper Labyrinth - Slab - Cure - Slab - A	3	24-Mar-27	26-Mar-27	101
ST3-UL-1300	Upper Labyrinth - Slab - Cure - Slab - C	3	08-Apr-27	10-Apr-27	86
ST3-UL-1240	Upper Labyrinth - Slab - FRP Slab - B	6	12-Apr-27	19-Apr-27	57
ST3-UL-1320	Upper Labyrinth - Slab - FRP Slab - D	6	19-Apr-27	27-Apr-27	57
ST3-UL-1260	Upper Labyrinth - Slab - Cure - Slab - B	3	20-Apr-27	22-Apr-27	93
ST3-UL-1340	Upper Labyrinth - Slab - Cure - Slab - D	3	28-Apr-27	30-Apr-27	85
Walls		27	28-Apr-27	19-Jun-27	63
ST3-UL-2000	Upper Labyrinth - Walls - FRP Walls - A	7	28-Apr-27	10-May-27	57
ST3-UL-2020	Upper Labyrinth - Walls - FRP Walls - C	7	10-May-27	18-May-27	57
ST3-UL-2040	Upper Labyrinth - Walls - Cure - Walls - A	4	11-May-27	14-May-27	94
ST3-UL-2060	Upper Labyrinth - Walls - Cure - Walls - C	4	19-May-27	22-May-27	86
ST3-UL-2080	Upper Labyrinth - Walls - FRP Walls - B	7	19-May-27	27-May-27	57
ST3-UL-2100	Upper Labyrinth - Walls - FRP Walls - D	7	27-May-27	04-Jun-27	57
ST3-UL-2120	Upper Labyrinth - Walls - Cure - Walls - B	4	28-May-27	31-May-27	147
ST3-UL-2140	Upper Labyrinth - Walls - Cure - Walls - D	4	05-Jun-27	08-Jun-27	97
ST3-UL-2160	Upper Labyrinth - Walls - FRP Walls - E	7	07-Jun-27	15-Jun-27	57
ST3-UL-2180	Upper Labyrinth - Walls - Cure - Walls - E	4	16-Jun-27	19-Jun-27	86
Saddle Dam Works		39	13-Nov-25	28-Jan-26	419
ST3-SD-1000	Saddle Dam - Excavate Guide Wal	5	13-Nov-25	19-Nov-25	419
ST3-SD-1020	Saddle Dam - FRP Guide Wall	25	20-Nov-25	13-Jan-26	419
ST3-SD-1040	Saddle Dam - Excavate	3	14-Jan-26	16-Jan-26	419
ST3-SD-1060	Saddle Dam - Foundation Treatment	2	19-Jan-26	20-Jan-26	419
ST3-SD-1080	Saddle Dam - Place & Compact Zone 4	4	21-Jan-26	28-Jan-26	419
Dam Instrumentation		94	14-Jul-26	04-Dec-26	166
ST3-DI-1000	Dam Instrumentation - Construct Seepage Weirs + Drainage Left Embankment	10	14-Jul-26	28-Jul-26	201
ST3-DI-1040	Dam Instrumentation - Construct Seepage Weirs + Drainage Right Embankment	10	09-Nov-26	20-Nov-26	163
ST3-DI-1020	Dam Instrumentation - Install Instrumentation	10	23-Nov-26	04-Dec-26	166
SEQWater Permanent Facilities		90	06-Oct-27	03-Mar-28	175
ST3-PF-1000	Permanent Facilities - Earthworks - Clean Up + Prepare Area	10	06-Oct-27	19-Oct-27	175
ST3-PF-1020	Permanent Facilities - Building - Construct Permanent Works	60	06-Oct-27	18-Jan-28	175
ST3-PF-1160	Permanent Facilities - Fitout - Systems - Install	20	19-Jan-28	17-Feb-28	175
ST3-PF-1180	Permanent Facilities - Fitout - Systems - Test + Commission	10	18-Feb-28	03-Mar-28	175
Pre-Commissioning		63	07-Dec-26	19-Mar-27	122
ST3-PCO-1020	Commission - Dam Instrumentation	5	07-Dec-26	11-Dec-26	180
ST3-PCO-1000	Commission - Outlet Tower Works	5	09-Feb-27	15-Feb-27	45
ST3-PCO-1040	Commission - Ogee Basin Drainage	5	15-Mar-27	19-Mar-27	122
Commissioning		32	01-Oct-27	01-Nov-27	25
ST3-COM-1000	Commissioning - Performance Monitoring [30d]	30	01-Oct-27	30-Oct-27	25
ST3-COM-1020	Commissioning - Develop + Submit Commissioning Reports	21	12-Oct-27	01-Nov-27	25
Demobilisation		155	20-Apr-27	13-Dec-27	67
ST3-DEM-1000	Demobilise - Remove Temporary Sheet Piling	40	20-Apr-27	17-Jun-27	39
ST3-DEM-1020	Demobilise - Demobilise from Site	40	13-Oct-27	13-Dec-27	67
Hand Over Inspections		2	06-Apr-28	07-Apr-28	0
ST3-HOI-1000	Hand Over Inspections - Undertake Preliminary Inspections prior to Practical Completion	2	06-Apr-28	07-Apr-28	0
STAGE 4 - REINSTATEMENT AND CLOSE OUT		185	13-Oct-27	07-Dec-28	0
Reinstatement		29	13-Oct-27	13-Dec-27	156



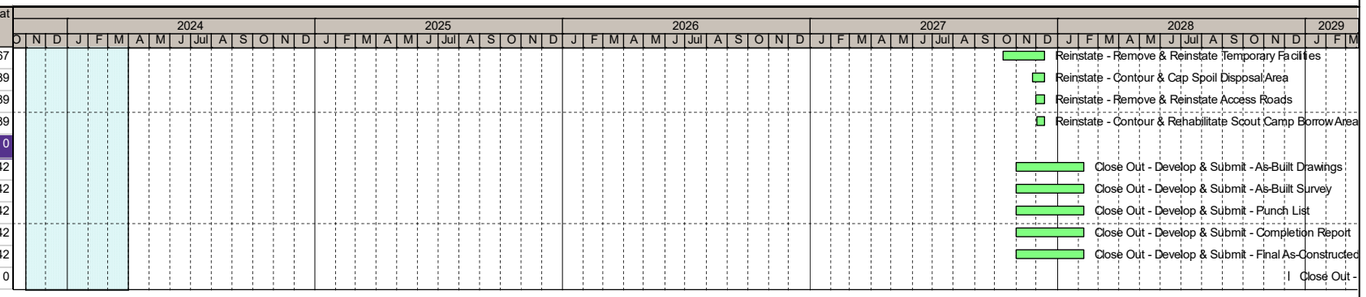
Date	Revision	Checked	Approved

Project ID : P11383-PST-TOCSub-20
Layout : LMDU - Dry WBS Layout

20240206 Lake Macdonald Dam Improvement Project - DRY + NO BPIC - POST TOC - SCENARIO 8

JOHN HOLLAND

Activity ID	Activity Name	Remaining Duration	Start	Finish	Total Float
ST4-1000	Reinstate - Remove & Reinstate Temporary Facilities	40	13-Oct-27	13-Dec-27	67
ST4-1140	Reinstate - Contour & Cap Spoil Disposal Area	12	26-Nov-27	13-Dec-27	239
ST4-1160	Reinstate - Remove & Reinstate Access Roads	10	30-Nov-27	13-Dec-27	239
ST4-1120	Reinstate - Contour & Rehabilitate Scout Camp Borrow Area	8	02-Dec-27	13-Dec-27	239
Close Out		270	02-Nov-27	07-Dec-28	0
ST4-1020	Close Out - Develop & Submit - As-Built Drawings	60	02-Nov-27	09-Feb-28	42
ST4-1040	Close Out - Develop & Submit - As-Built Survey	60	02-Nov-27	09-Feb-28	42
ST4-1060	Close Out - Develop & Submit - Punch List	60	02-Nov-27	09-Feb-28	42
ST4-1080	Close Out - Develop & Submit - Completion Report	60	02-Nov-27	09-Feb-28	42
ST4-1100	Close Out - Develop & Submit - Final As-Constructed Programme	60	02-Nov-27	09-Feb-28	42
ST4-1180	Close Out - Undertake Handover Inspections prior to Project Closeout	1	07-Dec-28	07-Dec-28	0



Date	Revision	Checked	Approved

Appendix C

Tabulated noise levels – construction noise

Ref	Address Residential	Floor	Clearing & demolition Day works CS1 dB(A)	Site gravel road construction (Day) CS2 dB(A)	Vibratory Piling CS3A dB(A)	Impact Piling CS3B dB(A)	Cofferdam Rockfill Day/Eve CS3C dB(A)	Reservior lowering Day/Eve CS4 dB(A)	Spillway demolition & excavation Day/Eve/Night CS5A dB(A)	Spillway demolition & excavation Day/Eve/Night CS5B dB(A)	Dam construction Day CS6 dB(A)	Assigned criteria dB(A)	
												Day	Evening
1	318 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	20	30	29	<20	<20	<20	<20	50	50
2	322 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	22	31	31	<20	<20	<20	<20	50	50
3	323 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	28	27	<20	<20	<20	<20	50	50
4	328 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	24	32	35	<20	<20	<20	<20	50	50
5	327 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	21	31	30	<20	<20	<20	<20	50	50
6	333 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	32	30	<20	<20	<20	<20	50	50
7	337 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	31	28	<20	<20	<20	<20	50	50
8	341 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	21	32	32	<20	<20	<20	<20	50	50
9	341 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	21	32	31	<20	<20	<20	<20	50	50
10	345 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	22	33	32	<20	<20	<20	<20	50	50
11	349 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	23	33	32	<20	<20	<20	<20	50	50
12	349 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	22	33	33	<20	<20	<20	<20	50	50
13	353 Lake Macdonald Drive Lake Macdonald	GF	25	<20	25	34	35	<20	<20	<20	<20	50	50
14	353 Lake Macdonald Drive Lake Macdonald	GF	23	<20	24	34	34	<20	<20	<20	<20	50	50
15	353 Lake Macdonald Drive Lake Macdonald	GF	24	<20	30	36	40	<20	<20	<20	<20	50	50
16	332 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	26	33	34	<20	<20	<20	<20	50	50
17	359 Lake Macdonald Drive Lake Macdonald	GF	24	<20	25	34	34	<20	<20	<20	<20	50	50
18	359 Lake Macdonald Drive Lake Macdonald	GF	29	<20	22	32	31	<20	<20	<20	<20	50	50
19	332 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	28	34	39	<20	<20	<20	<20	50	50
20	363 Lake Macdonald Drive Lake Macdonald	GF	21	<20	25	34	35	<20	<20	<20	<20	50	50
21	23 Liane Drive Lake Macdonald	GF	<20	<20	23	33	32	<20	<20	<20	<20	50	50
22	363 Lake Macdonald Drive Lake Macdonald	GF	29	<20	31	36	41	<20	<20	<20	<20	50	50
23	23 Liane Drive Lake Macdonald	GF	27	<20	24	33	33	<20	<20	<20	<20	50	50
24	367 Lake Macdonald Drive Lake Macdonald	1F	32	<20	28	37	38	<20	<20	<20	<20	50	50
25	373 Lake Macdonald Drive Lake Macdonald	GF	28	<20	25	35	35	<20	<20	<20	<20	50	50
26	371 Lake Macdonald Drive Lake Macdonald	GF	34	<20	31	37	43	<20	44	38	22	50	50
27	373 Lake Macdonald Drive Lake Macdonald	GF	28	<20	25	35	33	<20	<20	<20	<20	50	50
28	375 Lake Macdonald Drive Lake Macdonald	GF	34	<20	33	39	43	<20	44	38	24	50	50
29	379 Lake Macdonald Drive Lake Macdonald	GF	37	30	33	39	41	21	47	41	25	50	50
30	385 Lake Macdonald Drive Lake Macdonald	1F	38	30	36	41	46	23	48	42	26	50	50
31	385 Lake Macdonald Drive Lake Macdonald	GF	30	23	<20	31	29	<20	40	34	23	50	50
32	7 Figbird Court Lake Macdonald	GF	<20	<20	<20	<20	<20	<20	<20	<20	<20	50	50
33	Lake Macdonald Drive Lake Macdonald	GF	<20	<20	20	26	30	<20	<20	<20	<20	50	50
34	Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	26	28	<20	<20	<20	<20	50	50
35	389 Lake Macdonald Drive Lake Macdonald	GF	41	33	38	42	46	24	50	44	26	50	50
36	389 Lake Macdonald Drive Lake Macdonald	GF	33	29	25	35	36	<20	39	33	25	50	50
37	395 Lake Macdonald Drive Lake Macdonald	1F	47	39	41	46	48	28	51	45	29	50	50
38	12 Figbird Court Lake Macdonald	GF	<20	<20	<20	25	23	<20	<20	<20	<20	50	50
39	403 Lake Macdonald Drive Lake Macdonald	GF	48	37	42	45	45	26	51	45	29	50	50
40	59 Highland Drive Lake Macdonald	GF	36	31	32	38	36	<20	44	38	25	50	50
41	10 Figbird Court Lake Macdonald	GF	<20	<20	<20	25	23	<20	<20	<20	<20	50	50
42	10 Figbird Court Lake Macdonald	GF	<20	<20	<20	<20	<20	<20	<20	<20	<20	50	50
43	407 Lake Macdonald Drive Lake Macdonald	GF	53	39	43	47	46	28	55	49	31	50	50
44	62 Highland Drive Lake Macdonald	GF	34	34	28	37	31	<20	42	36	26	50	50
45	59 Highland Drive Lake Macdonald	GF	38	34	31	39	34	<20	44	38	26	50	50
46	411 Lake Macdonald Drive Lake Macdonald	1F	56	39	43	48	49	30	53	47	32	50	50
47	54 Highland Drive Lake Macdonald	GF	28	<20	24	32	30	<20	35	29	<20	50	50
48	60 Highland Drive Lake Macdonald	GF	32	26	27	36	35	<20	44	38	23	50	50
49	415 Lake Macdonald Drive Lake Macdonald	1F	58	42	43	48	46	32	52	46	34	50	50
50	60 Highland Drive Lake Macdonald	GF	36	30	27	36	34	<20	42	36	25	50	50
51	57 Highland Drive Lake Macdonald	GF	36	33	29	38	37	<20	46	40	25	50	50
52	54 Highland Drive Lake Macdonald	GF	28	<20	24	33	31	<20	32	26	<20	50	50
53	419 Lake Macdonald Drive Lake Macdonald	GF	53	40	35	42	38	25	51	45	33	50	50
54	58 Highland Drive Lake Macdonald	GF	31	23	26	35	32	<20	38	32	22	50	50
55	57 Highland Drive Lake Macdonald	GF	36	33	29	38	37	<20	45	39	25	50	50
57	58 Highland Drive Lake Macdonald	GF	31	30	26	35	31	<20	38	32	23	50	50

Ref	Address Residential	Floor	Clearing & demolition Day works CS1 dB(A)	Site gravel road construction (Day) CS2 dB(A)	Vibratory Piling CS3A dB(A)	Impact Piling CS3B dB(A)	Cofferdam Rockfill Day/Eve CS3C dB(A)	Reservior lowering Day/Eve CS4 dB(A)	Spillway demolition & excavation Day/Eve/Night CS5A dB(A)	Spillway demolition & excavation Day/Eve/Night CS5B dB(A)	Dam construction Day CS6 dB(A)	Assigned criteria dB(A)	
												Day	Evening
58	54 Highland Drive Lake Macdonald	GF	28	<20	23	32	28	<20	24	<20	<20	50	50
60	54 Highland Drive Lake Macdonald	GF	26	<20	23	32	28	<20	<20	<20	<20	50	50
61	53 Highland Drive Lake Macdonald	GF	36	36	29	38	36	<20	42	36	28	50	50
65	53 Highland Drive Lake Macdonald	GF	35	32	29	37	35	<20	40	34	25	50	50
66	48 Highland Drive Lake Macdonald	GF	31	26	26	35	31	<20	36	30	22	50	50
68	43 Highland Drive Lake Macdonald	GF	47	42	34	42	38	23	55	49	35	50	50
69	48 Highland Drive Lake Macdonald	GF	31	27	27	35	34	<20	38	32	23	50	50
70	47 Highland Drive Lake Macdonald	GF	35	33	29	37	35	<20	39	33	26	50	50
71	52 Highland Drive Lake Macdonald	GF	27	<20	<20	20	<20	<20	<20	<20	<20	50	50
72	52 Highland Drive Lake Macdonald	GF	29	26	23	32	26	<20	30	24	<20	50	50
73	42 Highland Drive Lake Macdonald	GF	31	24	26	35	29	<20	36	30	23	50	50
74	39 Highland Drive Lake Macdonald	GF	35	32	29	37	34	<20	47	41	26	50	50
75	38 Highland Drive Lake Macdonald	GF	26	<20	23	32	26	<20	<20	<20	<20	50	50
76	42 Highland Drive Lake Macdonald	GF	32	31	28	35	33	<20	39	33	25	50	50
77	39 Highland Drive Lake Macdonald	1F	35	34	31	37	35	<20	48	42	25	50	50
78	38 Highland Drive Lake Macdonald	GF	26	<20	23	32	25	<20	27	21	<20	50	50
79	31 Highland Drive Lake Macdonald	GF	35	32	29	37	31	<20	42	36	25	50	50
80	32 Highland Drive Lake Macdonald	GF	31	27	26	33	29	<20	42	36	22	50	50
81	36 Highland Drive Lake Macdonald	GF	21	<20	22	32	26	<20	<20	<20	<20	50	50
82	25 Highland Drive Lake Macdonald	GF	34	31	29	36	30	<20	47	41	24	50	50
83	26 Highland Drive Lake Macdonald	GF	31	27	25	34	27	<20	39	33	22	50	50
84	25 Highland Drive Lake Macdonald	GF	33	31	30	36	31	<20	45	39	24	50	50
85	19 Highland Drive Lake Macdonald	GF	34	31	29	36	32	<20	42	36	23	50	50
86	19 Highland Drive Lake Macdonald	GF	32	31	31	38	33	<20	40	34	24	50	50
87	18 Highland Drive Lake Macdonald	GF	29	27	26	34	25	<20	37	31	20	50	50
88	15 Highland Drive Lake Macdonald	GF	30	28	28	35	30	<20	38	32	21	50	50
89	15 Highland Drive Lake Macdonald	GF	30	29	29	35	31	<20	43	37	21	50	50
90	9 Highland Drive Lake Macdonald	GF	27	26	24	33	23	<20	35	29	<20	50	50
91	17 Hamilton Road Lake Macdonald	GF	24	24	22	32	23	<20	<20	<20	<20	50	50
92	5 Highland Drive Lake Macdonald	GF	<20	24	22	30	21	<20	<20	<20	<20	50	50
93	31 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30	26	<20	<20	<20	<20	50	50
94	31 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30	26	<20	<20	<20	<20	50	50
95	4 Anembo Place Lake Macdonald	GF	<20	<20	24	32	28	<20	<20	<20	<20	50	50
96	32 Hamilton Road Lake Macdonald	GF	<20	<20	<20	29	<20	<20	<20	<20	<20	50	50
97	11 Anembo Place Lake Macdonald	GF	<20	<20	<20	30	22	<20	<20	<20	<20	50	50
98	19 Anembo Place Lake Macdonald	GF	<20	<20	<20	29	21	<20	<20	<20	<20	50	50
99	18 Anembo Place Lake Macdonald	GF	<20	<20	<20	29	22	<20	<20	<20	<20	50	50

Ref	Address Residential	Floor	Reservior lowering Day/Eve/Night CS4 dB(A)	Spillway and crest demolition & excavation Day/Eve/night CS5A dB(A)	Spillway and crest demolition & excavation Day/Eve/night CS5B dB(A)	Assigned criteria dB(A)
						Night
1	318 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
2	322 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
3	323 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
4	328 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
5	327 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
6	333 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
7	337 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
8	341 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
9	341 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
10	345 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
11	349 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
12	349 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
13	353 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
14	353 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
15	353 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
16	332 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
17	359 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
18	359 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
19	332 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
20	363 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
21	23 Liane Drive Lake Macdonald	GF	<20	<20	<20	30
22	363 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
23	23 Liane Drive Lake Macdonald	GF	<20	<20	<20	30
24	367 Lake Macdonald Drive Lake Macdonald	1F	<20	<20	<20	30
25	373 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
26	371 Lake Macdonald Drive Lake Macdonald	GF	<20	44	27	30
27	373 Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
28	375 Lake Macdonald Drive Lake Macdonald	GF	<20	44	27	30
29	379 Lake Macdonald Drive Lake Macdonald	GF	21	47	30	30
30	385 Lake Macdonald Drive Lake Macdonald	1F	23	48	31	30
31	385 Lake Macdonald Drive Lake Macdonald	GF	<20	40	23	30
32	7 Figbird Court Lake Macdonald	GF	<20	<20	<20	30
33	Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
34	Lake Macdonald Drive Lake Macdonald	GF	<20	<20	<20	30
35	389 Lake Macdonald Drive Lake Macdonald	GF	24	50	33	30
36	389 Lake Macdonald Drive Lake Macdonald	GF	<20	39	22	30
37	395 Lake Macdonald Drive Lake Macdonald	1F	28	51	34	30
38	12 Figbird Court Lake Macdonald	GF	<20	<20	<20	30
39	403 Lake Macdonald Drive Lake Macdonald	GF	26	51	34	30
40	59 Highland Drive Lake Macdonald	GF	<20	44	27	30
41	10 Figbird Court Lake Macdonald	GF	<20	<20	<20	30
42	10 Figbird Court Lake Macdonald	GF	<20	<20	<20	30
43	407 Lake Macdonald Drive Lake Macdonald	GF	28	55	38	30
44	62 Highland Drive Lake Macdonald	GF	<20	42	25	30
45	59 Highland Drive Lake Macdonald	GF	<20	44	27	30
46	411 Lake Macdonald Drive Lake Macdonald	1F	30	53	36	30
47	54 Highland Drive Lake Macdonald	GF	<20	35	<20	30
48	60 Highland Drive Lake Macdonald	GF	<20	44	27	30
49	415 Lake Macdonald Drive Lake Macdonald	1F	29	52	35	30
50	60 Highland Drive Lake Macdonald	GF	<20	42	25	30
51	57 Highland Drive Lake Macdonald	GF	<20	46	29	30
52	54 Highland Drive Lake Macdonald	GF	<20	32	<20	30
53	419 Lake Macdonald Drive Lake Macdonald	GF	25	51	34	30
54	58 Highland Drive Lake Macdonald	GF	<20	38	21	30
55	57 Highland Drive Lake Macdonald	GF	<20	45	28	30
57	58 Highland Drive Lake Macdonald	GF	<20	38	21	30
58	54 Highland Drive Lake Macdonald	GF	<20	24	<20	30
60	54 Highland Drive Lake Macdonald	GF	<20	<20	<20	30
61	53 Highland Drive Lake Macdonald	GF	<20	42	25	30
65	53 Highland Drive Lake Macdonald	GF	<20	40	23	30
66	48 Highland Drive Lake Macdonald	GF	<20	36	<21	30
68	43 Highland Drive Lake Macdonald	GF	23	55	38	30
69	48 Highland Drive Lake Macdonald	GF	<20	38	21	30
70	47 Highland Drive Lake Macdonald	GF	<20	39	22	30
71	52 Highland Drive Lake Macdonald	GF	<20	<20	<20	30
72	52 Highland Drive Lake Macdonald	GF	<20	30	<20	30
73	42 Highland Drive Lake Macdonald	GF	<20	36	<20	30
74	39 Highland Drive Lake Macdonald	GF	<20	47	<20	30
75	38 Highland Drive Lake Macdonald	GF	<20	<20	<20	30
76	42 Highland Drive Lake Macdonald	GF	<20	39	22	30
77	39 Highland Drive Lake Macdonald	1F	<20	48	31	30
78	38 Highland Drive Lake Macdonald	GF	<20	27	<20	30
79	31 Highland Drive Lake Macdonald	GF	<20	42	25	30
80	32 Highland Drive Lake Macdonald	GF	<20	42	25	30
81	36 Highland Drive Lake Macdonald	GF	<20	<20	<20	30
82	25 Highland Drive Lake Macdonald	GF	<20	47	30	30
83	26 Highland Drive Lake Macdonald	GF	<20	39	22	30

Ref	Address Residential	Floor	Reservior lowering Day/Eve/Night CS4 dB(A)	Spillway and crest demolition & excavation Day/Eve/night CS5A dB(A)	Spillway and crest demolition & excavation Day/Eve/night CS5B dB(A)	Assigned criteria dB(A)
						Night
84	25 Highland Drive Lake Macdonald	GF	<20	45	28	30
85	19 Highland Drive Lake Macdonald	GF	<20	42	25	30
86	19 Highland Drive Lake Macdonald	GF	<20	40	23	30
87	18 Highland Drive Lake Macdonald	GF	<20	37	20	30
88	15 Highland Drive Lake Macdonald	GF	<20	38	21	30
89	15 Highland Drive Lake Macdonald	GF	<20	43	26	30
90	9 Highland Drive Lake Macdonald	GF	<20	35	<20	30
91	17 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30
92	5 Highland Drive Lake Macdonald	GF	<20	<20	<20	30
93	31 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30
94	31 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30
95	4 Anembo Place Lake Macdonald	GF	<20	<20	<20	30
96	32 Hamilton Road Lake Macdonald	GF	<20	<20	<20	30
97	11 Anembo Place Lake Macdonald	GF	<20	<20	<20	30
98	19 Anembo Place Lake Macdonald	GF	<20	<20	<20	30
99	18 Anembo Place Lake Macdonald	GF	<20	<20	<20	30

Appendix D

Noise contour maps – construction noise

17024000

17025000

-3027000

-3028000

Map legend

Kin Kin

Cooroibah

Pomona

Tewant

Cooroy

Doonan

Ridgewood

seqwater
WATER FOR LIFE

N

0 70 140 210 280 Meters

Legend

Predicted Façade Corrected noise levels

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

30 dB(A) LAeq noise level

35 dB(A) LAeq noise level

50 dB(A) LAeq noise level

Clearing and grubbing area

Dwellings

- Single storey
- Double storey

Buildings not assessed

- Garage or shed
- Water treatment plant

Figure 3 - Lake Macdonald CNVIA - CS1 - Clearing and Grubbing

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Clearing and grubbing Area
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

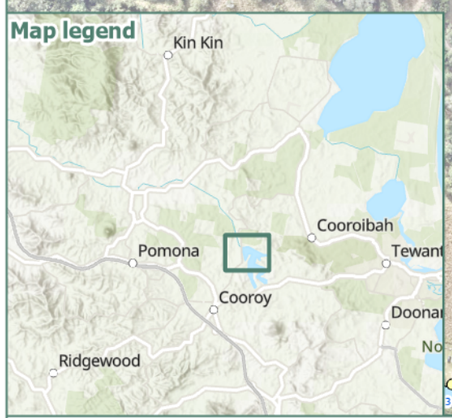
17024000

17025000

-3027000

-3028000

Map legend



seqwater
WATER FOR LIFE

N

0 70 140 210 280 Meters

Legend

Predicted Façade Corrected noise levels

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

- 30 dB(A) LAeq noise level
- 35 dB(A) LAeq noise level
- 50 dB(A) LAeq noise level
- Road and carpark construction area

Dwellings
- Single storey
- Double storey

Buildings not assessed
- Garage or shed
- Water treatment plant

Figure 4 - Lake Macdonald CNVIA - CS2 - Site gravel road construction

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Road and carpark construction area
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

17024000

Map legend

Kin Kin

Cooroy

Tewa

No

seqwater
WATER FOR LIFE

N

0 30 60 90 120
Meters

Legend

Predicted Façade Corrected noise levels - Vibratory Piling

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

50 dB(A) LAeq noise level

Cofferdam construction and removal area

Lorry Route

Sheet Piling Location

Dwellings

- Single storey
- Double storey

Buildings not assessed

- Garage or shed
- Water treatment plant

Figure 5 A - Lake Macdonald CNVIA - CS3A - Cofferdam vibratory sheet piling

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Vibratory piling Location & Lorry Route
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

17024000

Map legend

Kin Kin

Cooroy

seqwater
WATER FOR LIFE

N

0 30 60 90 120
Meters

Legend

Predicted Façade Corrected noise levels - Impact Piling

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

50 dB(A) LAeq noise level

Cofferdam construction and removal area
Lorry Route
Sheet Piling Location

Dwellings
- Single storey
- Double storey

Buildings not assessed
- Garage or shed
- Water treatment plant

Figure 5 B - Lake Macdonald CNVIA - CS3B - Cofferdam impact sheet piling

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Impact piling Location & Lorry Route
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

17024000

17025000

-3027000

-3028000

Map legend

Kin Kin

Cooroy

seqwater
WATER FOR LIFE

N

0 75 150 230 300 Meters

Legend

Predicted Façade Corrected noise levels

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

30 dB(A) LAeq noise level

35 dB(A) LAeq noise level

50 dB(A) LAeq noise level

Cofferdam construction and removal area

Dwellings

- Single storey
- Double storey

Buildings not assessed

- Garage or shed
- Water treatment plant

Figure 5 C - Lake Macdonald CNVIA - CS3C - Cofferdam rock fill

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Cofferdam construction and removal area
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

17024000

seqwater
WATER FOR LIFE

N

0 30 60 90 120
Meters

Legend

Predicted Façade Corrected noise levels
- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

- 30 dB(A) LAeq noise level
- 35 dB(A) LAeq noise level
- 50 dB(A) LAeq noise level
- Lake water level lowering pump location

Dwellings
- Single storey
- Double storey

Buildings not assessed
- Garage or shed
- Water treatment plant

Figure 6 - Lake Macdonald CNVIA - CS4 - Reservoir lowering

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Lake water level lowering pump
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

17024000

17025000

-3027000

-3028000

Map legend

Kin Kin

Cooroy

Tewa

No

seqwater
WATER FOR LIFE

N

0 75 150 230 300
Meters

Legend

Predicted Façade Corrected noise levels

- <30dB(A)
- 30-35dB(A)
- 35-40dB(A)
- 40-45dB(A)
- 45-50dB(A)
- >55dB(A)

- 30 dB(A) LAeq noise level
- 35 dB(A) LAeq noise level
- 50 dB(A) LAeq noise level
- Spillway demolition and excavation area
- Haul Route
- Disposal area

Dwellings
- Single storey
- Double storey

Buildings not assessed
- Garage or shed
- Water treatment plant

Figure 7 - Lake Macdonald CNVIA - CS5A & 5B Dam Crest and spillway demolition

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Spillway demolition and excavation area
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

Figure 8 - Lake Macdonald CNVIA - CS6 - Dam Construction

Building details include: a reference number, usage and the highest calculated noise noise level
Work activity location: Dam construction area
Noise contours: facade corrected modelled at 1.8m height - LAeq dB(A)
Lake Macdonald CNVIA

ViridIFC

Appendix E

Vibration levels – construction

REF	Address	Use	Distance to impact piling	Vibratory sheet piling to refusal
1	318 Lake Macdonald Drive Lake Macdonald	Residential	875.1	0.1
2	322 Lake Macdonald Drive Lake Macdonald	Residential	811.1	0.1
3	323 Lake Macdonald Drive Lake Macdonald	Residential	800.9	0.1
4	328 Lake Macdonald Drive Lake Macdonald	Residential	757.0	0.1
5	327 Lake Macdonald Drive Lake Macdonald	Residential	757.5	0.1
6	333 Lake Macdonald Drive Lake Macdonald	Residential	718.3	0.2
7	337 Lake Macdonald Drive Lake Macdonald	Residential	686.4	0.2
8	341 Lake Macdonald Drive Lake Macdonald	Residential	647.6	0.2
9	341 Lake Macdonald Drive Lake Macdonald	Residential	648.5	0.2
10	345 Lake Macdonald Drive Lake Macdonald	Residential	609.0	0.2
11	349 Lake Macdonald Drive Lake Macdonald	Residential	590.4	0.2
12	349 Lake Macdonald Drive Lake Macdonald	Residential	572.5	0.2
13	353 Lake Macdonald Drive Lake Macdonald	Residential	538.8	0.2
14	353 Lake Macdonald Drive Lake Macdonald	Residential	519.2	0.2
15	353 Lake Macdonald Drive Lake Macdonald	Residential	482.8	0.3
16	332 Lake Macdonald Drive Lake Macdonald	Residential	622.9	0.2
17	359 Lake Macdonald Drive Lake Macdonald	Residential	494.4	0.2
18	359 Lake Macdonald Drive Lake Macdonald	Residential	469.4	0.3
19	332 Lake Macdonald Drive Lake Macdonald	Residential	571.9	0.2
20	363 Lake Macdonald Drive Lake Macdonald	Residential	475.6	0.3
21	23 Liane Drive Lake Macdonald	Residential	523.2	0.2
22	363 Lake Macdonald Drive Lake Macdonald	Residential	421.7	0.3
23	23 Liane Drive Lake Macdonald	Residential	488.4	0.3
24	367 Lake Macdonald Drive Lake Macdonald	Residential	388.9	0.3
25	373 Lake Macdonald Drive Lake Macdonald	Residential	406.6	0.3
26	371 Lake Macdonald Drive Lake Macdonald	Residential	361.3	0.4
27	373 Lake Macdonald Drive Lake Macdonald	Residential	373.2	0.3
28	375 Lake Macdonald Drive Lake Macdonald	Residential	305.9	0.4
29	379 Lake Macdonald Drive Lake Macdonald	Residential	260.5	0.5
30	385 Lake Macdonald Drive Lake Macdonald	Residential	210.2	0.7
31	385 Lake Macdonald Drive Lake Macdonald	Residential	221.8	0.7
32	7 Figbird Court Lake Macdonald	Residential	1427.2	0.1
33	Lake Macdonald Drive Lake Macdonald	Residential	1153.7	0.1
34	Lake Macdonald Drive Lake Macdonald	Residential	1203.8	0.1
35	389 Lake Macdonald Drive Lake Macdonald	Residential	160.5	1.0
36	389 Lake Macdonald Drive Lake Macdonald	Residential	166.4	0.9
37	395 Lake Macdonald Drive Lake Macdonald	Residential	121.0	1.3
38	12 Figbird Court Lake Macdonald	Residential	1313.7	0.1
39	403 Lake Macdonald Drive Lake Macdonald	Residential	66.8	2.7
40	59 Highland Drive Lake Macdonald	Residential	200.4	0.7
41	10 Figbird Court Lake Macdonald	Residential	1293.5	0.1
42	10 Figbird Court Lake Macdonald	Residential	1355.5	0.1
43	407 Lake Macdonald Drive Lake Macdonald	Residential	53.0	2.6
44	62 Highland Drive Lake Macdonald	Residential	258.6	0.5
45	59 Highland Drive Lake Macdonald	Residential	182.5	0.8
46	411 Lake Macdonald Drive Lake Macdonald	Residential	59.9	2.2
47	54 Highland Drive Lake Macdonald	Residential	412.3	0.3
48	60 Highland Drive Lake Macdonald	Residential	315.2	0.4
49	415 Lake Macdonald Drive Lake Macdonald	Residential	73.9	2.4
50	60 Highland Drive Lake Macdonald	Residential	309.3	0.4
51	57 Highland Drive Lake Macdonald	Residential	247.8	0.6
52	54 Highland Drive Lake Macdonald	Residential	443.1	0.3
53	419 Lake Macdonald Drive Lake Macdonald	Residential	113.6	1.5
54	58 Highland Drive Lake Macdonald	Residential	347.4	0.4
55	57 Highland Drive Lake Macdonald	Residential	252.1	0.6
56	8 Collwood Road Lake Macdonald	Residential	1212.5	0.1
57	58 Highland Drive Lake Macdonald	Residential	319.6	0.4
58	54 Highland Drive Lake Macdonald	Residential	461.4	0.3
59	114 Collwood Road Lake Macdonald	Residential	560.3	0.2
60	54 Highland Drive Lake Macdonald	Residential	481.3	0.3
61	53 Highland Drive Lake Macdonald	Residential	265.8	0.5
62	114 Collwood Road Lake Macdonald	Residential	532.3	0.2
63	Collwood Road Lake Macdonald	Residential	335.4	0.4
64	114 Collwood Road Lake Macdonald	Residential	918.8	0.1

REF	Address	Use	Distance to impact piling	Vibratory sheet piling to refusal
65	53 Highland Drive Lake Macdonald	Residential	297.6	0.5
66	48 Highland Drive Lake Macdonald	Residential	373.5	0.3
67	114 Collwood Road Lake Macdonald	Residential	909.4	0.1
68	43 Highland Drive Lake Macdonald	Residential	191.2	0.8
69	48 Highland Drive Lake Macdonald	Residential	370.0	0.4
70	47 Highland Drive Lake Macdonald	Residential	310.6	0.4
71	52 Highland Drive Lake Macdonald	Residential	501.0	0.2
72	52 Highland Drive Lake Macdonald	Residential	478.7	0.3
73	42 Highland Drive Lake Macdonald	Residential	415.8	0.3
74	39 Highland Drive Lake Macdonald	Residential	328.7	0.4
75	38 Highland Drive Lake Macdonald	Residential	516.2	0.2
76	42 Highland Drive Lake Macdonald	Residential	393.4	0.3
77	39 Highland Drive Lake Macdonald	Residential	348.6	0.4
78	38 Highland Drive Lake Macdonald	Residential	511.2	0.2
79	31 Highland Drive Lake Macdonald	Residential	367.8	0.4
80	32 Highland Drive Lake Macdonald	Residential	437.4	0.3
81	36 Highland Drive Lake Macdonald	Residential	568.9	0.2
82	25 Highland Drive Lake Macdonald	Residential	417.9	0.3
83	26 Highland Drive Lake Macdonald	Residential	462.1	0.3
84	25 Highland Drive Lake Macdonald	Residential	432.5	0.3
85	19 Highland Drive Lake Macdonald	Residential	465.0	0.3
86	19 Highland Drive Lake Macdonald	Residential	481.4	0.3
87	18 Highland Drive Lake Macdonald	Residential	512.3	0.2
88	15 Highland Drive Lake Macdonald	Residential	522.6	0.2
89	15 Highland Drive Lake Macdonald	Residential	527.6	0.2
90	9 Highland Drive Lake Macdonald	Residential	566.4	0.2
91	17 Hamilton Road Lake Macdonald	Residential	630.8	0.2
92	5 Highland Drive Lake Macdonald	Residential	615.8	0.2
93	31 Hamilton Road Lake Macdonald	Residential	846.9	0.1
94	31 Hamilton Road Lake Macdonald	Residential	846.0	0.1
95	4 Anembo Place Lake Macdonald	Residential	730.7	0.2
96	32 Hamilton Road Lake Macdonald	Residential	928.8	0.1
97	11 Anembo Place Lake Macdonald	Residential	824.3	0.1
98	19 Anembo Place Lake Macdonald	Residential	923.5	0.1
99	18 Anembo Place Lake Macdonald	Residential	906.4	0.1
101	Collwood Road Lake Macdonald	Utilities	87.8	2.0
102	Collwood Road Lake Macdonald	Utilities	94.1	1.8
103	Collwood Road Lake Macdonald	Utilities	83.4	2.1
104	Collwood Road Lake Macdonald	Utilities	66.6	2.8
105	Collwood Road Lake Macdonald	Utilities	114.4	1.4
106	Collwood Road Lake Macdonald	Utilities	144.4	1.1
107	Collwood Road Lake Macdonald	Utilities	144.7	1.1
108	Collwood Road Lake Macdonald	Utilities	160.3	1.0
109	Collwood Road Lake Macdonald	Utilities	184.5	0.8
110	Collwood Road Lake Macdonald	Utilities	177.9	0.8
201	323 Lake Macdonald Drive Lake Macdonald	Shed	796.7	0.1
202	327 Lake Macdonald Drive Lake Macdonald	Shed	752.2	0.2
203	337 Lake Macdonald Drive Lake Macdonald	Shed	705.0	0.2
204	341 Lake Macdonald Drive Lake Macdonald	Shed	639.9	0.2
205	353 Lake Macdonald Drive Lake Macdonald	Shed	531.4	0.2
206	332 Lake Macdonald Drive Lake Macdonald	Shed	546.0	0.2
207	23 Liane Drive Lake Macdonald	Shed	501.7	0.2
208	375 Lake Macdonald Drive Lake Macdonald	Shed	332.2	0.4
209	379 Lake Macdonald Drive Lake Macdonald	Shed	276.7	0.5
210	7 Figbird Court Lake Macdonald	Shed	1411.2	0.1
211	389 Lake Macdonald Drive Lake Macdonald	Shed	175.0	0.9
212	12 Figbird Court Lake Macdonald	Shed	1344.1	0.1
213	12 Figbird Court Lake Macdonald	Shed	1309.4	0.1
214	59 Highland Drive Lake Macdonald	Shed	176.2	0.9
215	54 Highland Drive Lake Macdonald	Shed	400.3	0.3
216	407 Lake Macdonald Drive Lake Macdonald	Shed	68.0	2.7
217	407 Lake Macdonald Drive Lake Macdonald	Shed	76.4	2.3
218	411 Lake Macdonald Drive Lake Macdonald	Shed	79.3	2.2
219	62 Highland Drive Lake Macdonald	Shed	304.3	0.4

REF	Address	Use	Distance to impact piling	Vibratory sheet piling to refusal
220	415 Lake Macdonald Drive Lake Macdonald	Shed	93.6	1.8
221	415 Lake Macdonald Drive Lake Macdonald	Shed	90.5	1.9
222	8 Collwood Road Lake Macdonald	Shed	1225.5	0.1
223	8 Collwood Road Lake Macdonald	Shed	1242.8	0.1
224	419 Lake Macdonald Drive Lake Macdonald	Shed	119.1	1.4
225	Collwood Road Lake Macdonald	Shed	34.4	3.4
226	Collwood Road Lake Macdonald	Shed	68.8	2.7
227	48 Highland Drive Lake Macdonald	Shed	413.4	0.3
228	53 Highland Drive Lake Macdonald	Shed	283.9	0.5
229	Collwood Road Lake Macdonald	Shed	122.1	1.3
230	Collwood Road Lake Macdonald	Shed	125.6	1.3
231	8 Collwood Road Lake Macdonald	Shed	1260.8	0.1
232	47 Highland Drive Lake Macdonald	Shed	279.6	0.5
233	8 Collwood Road Lake Macdonald	Shed	1251.7	0.1
234	47 Highland Drive Lake Macdonald	Shed	294.7	0.5
235	Collwood Road Lake Macdonald	Shed	159.3	1.0
236	43 Highland Drive Lake Macdonald	Shed	236.2	0.6
237	42 Highland Drive Lake Macdonald	Shed	430.2	0.3
238	Collwood Road Lake Macdonald	Shed	197.2	0.7
239	Collwood Road Lake Macdonald	Shed	198.3	0.7
240	Collwood Road Lake Macdonald	Shed	211.1	0.7
241	38 Highland Drive Lake Macdonald	Shed	529.3	0.2
242	38 Highland Drive Lake Macdonald	Shed	543.0	0.2
243	32 Highland Drive Lake Macdonald	Shed	447.2	0.3
244	26 Highland Drive Lake Macdonald	Shed	536.2	0.2
245	Lake Macdonald Drive Lake Macdonald	Shed	474.7	0.3
246	19 Highland Drive Lake Macdonald	Shed	478.5	0.3
247	19 Highland Drive Lake Macdonald	Shed	480.5	0.3
248	9 Highland Drive Lake Macdonald	Shed	548.0	0.2
249	17 Hamilton Road Lake Macdonald	Shed	613.5	0.2
250	17 Hamilton Road Lake Macdonald	Shed	632.9	0.2
251	5 Highland Drive Lake Macdonald	Shed	605.3	0.2
252	17 Hamilton Road Lake Macdonald	Shed	676.6	0.2
253	32 Hamilton Road Lake Macdonald	Shed	919.1	0.1
254	32 Hamilton Road Lake Macdonald	Shed	923.7	0.1
255	32 Hamilton Road Lake Macdonald	Shed	956.6	0.1
256	11 Anembo Place Lake Macdonald	Shed	855.7	0.1
257	11 Anembo Place Lake Macdonald	Shed	885.1	0.1
258	18 Anembo Place Lake Macdonald	Shed	884.7	0.1
259	18 Anembo Place Lake Macdonald	Shed	961.4	0.1

Appendix F

Vibration contour maps

seqwater
WATER FOR LIFE

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0 13 25 50 75 100 Meters

Legend

Dwellings
- Single storey
- Double storey

Buildings not assessed
- Garage or shed
- Water treatment plant

- Sheet piling Locations
- Building (within structural damage exclusion zone - 10 mm/s)
- Buildings (within 2mm/s exclusion zone)
- Exclusion zone to Cosmetic damage limit – Sheet Piling (2 mm/s - 20 m)
- Water Main
- Telecommunication
- Drainage

Figure 9 - Lake Macdonald - Sheet Piling Exclusion Zones

Forecast vibration emission levels and predicted setbacks to achieve ground borne vibration criteria

ViridIFC

Figure 10 - Lake Macdonald - Utilities Location