Twin Hills Wind Farm – Three Springs

WATER MANAGEMENT REPORT

B24045
V2
June 2026

DOCUMENT QUALITY CONTROL

Project Reference		B24036
Ver No.	**Purpose**	**Date**
Draft	Client Review	April 2026
V1	Submission for Project Team	April 2026
V2	Submission for Agency Review	June 2026

Prepared for Twin Hills Wind Farm Pty Ltd / Wind Prospect

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1 EXECUTIVE SUMMARY

This Water Management Report (WMR) has been produced to accompany for Twin Hill Wind Farm development. The proposed development is for a series of wind turbines and associated infrastructure, including a potential battery energy storage system (BESS), spread across the subject site with the layout shown in Figure 2.

The subject site is located approximately 260km north of Perth within the Shire of Three Springs. It traverses both sides of the Eneabba – Three Springs Road. It is also intersected by Kangaroo Road and First North Road.

It is approximately 9,903.93 hectares (ha) and composed predominately of cleared broad acre agricultural land for crops and livestock grazing, with areas of remnant native vegetation throughout. The subject site can be seen in Figure 1 and 2. The surrounding landuses are similar to those within the subject site, incorporating both broadscale agricultural farming as well as the Wilson and Wotto Nature Reserves.

The objective of this WMR is to detail the best management practices approach to water management that will be undertaken for the development. This will include managing, protecting and conserving the total water cycle of the local environment and the greater catchment. The practices will involve:

- Stormwater management that incorporates suitable options for wind farm developments;
- Flood protection from localised stormwater and the regional flood flows;
- Groundwater resource management;
- Protection of onsite and surrounding ecosystems; and
- Sustainable water servicing

The effectiveness, efficiency and benefits provided by the best management practices require a collaborative effort between local governments, developers and relevant regulatory authorities. The developers are committed to the concepts and outcomes outlined within the approved WMR for the subject site. This includes the implementation, monitoring and maintenance of the best management practices designed specifically for this site.

The following sections provide further details on the current site conditions as well as the proposed strategies. Appendix A includes further detailed figures.

Further detailed information will also be outlined in the Subdivision and Development Water Management Report (SDWMR), which will be undertaken as part of the detailed design process.

2 KEY ELEMENTS PLAN

Water management strategies for the subject land are based on best practice water management. The strategies will be achieved through the synthesis of planning and designs to manage, protect and conserve the total water cycle. The plans and designs for the development are appropriate for the subject sites' development, surrounding environment and local drainage characteristics. A summary of the water management elements that will be implemented within the development to achieve best management practices are outlined below.

Stormwater Management

- All infrastructure is to detain and infiltrate the 10%AEP onsite and/or manage flows so there are no adverse outcomes outside of the project area.
- Peak discharge for the site is to be at or below the pre development flow rates
- 1EY stormwater treatment is achieved through infiltration of stormwater within basins or similar detention structures.
- Stormwater infrastructures related to BESS areas are to incorporate suitable systems for managing firefighting runoff.

Flood Protection

- All infrastructure will be designed to be above critical flood levels and out of floodway flow paths
- All 1% AEP peak flows from developed portions are to be at or below the pre development peak flow rates.
- Internal flood flows generated within the subject site will be managed to protect infrastructure and human safety, with the flows being controlled throughout the subject site.

Groundwater Management

- Groundwater quality is managed via infiltration of stormwater through the basins as well as industrial best practice being implemented.
- The natural separation to groundwater in combination with the filling of the site provides suitable post development separation to groundwater for the majority of the subject site.
- Groundwater usage will be in line with all licenced requirements

Water Servicing

- The site is to be serviced with water sourced predominately from onsite or nearby groundwater sources.
- Wastewater is to be managed through an approved onsite treatment systems.

Ecosystem Protection

- The best practice strategies used within the subject site will improve discharging water quality, assisting with protecting and enhancing on site and downstream ecosystems.

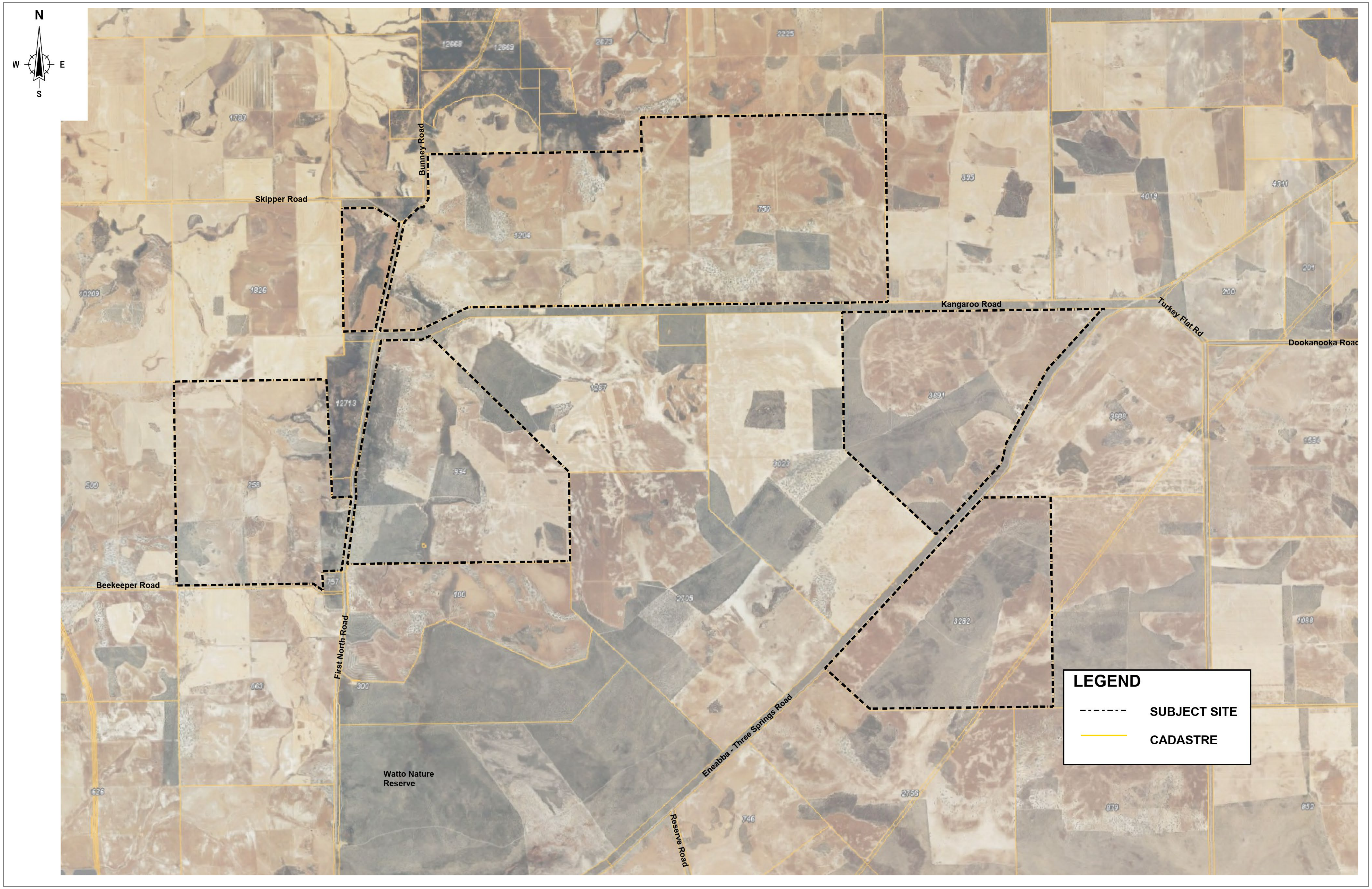


Figure 1 Location Plan

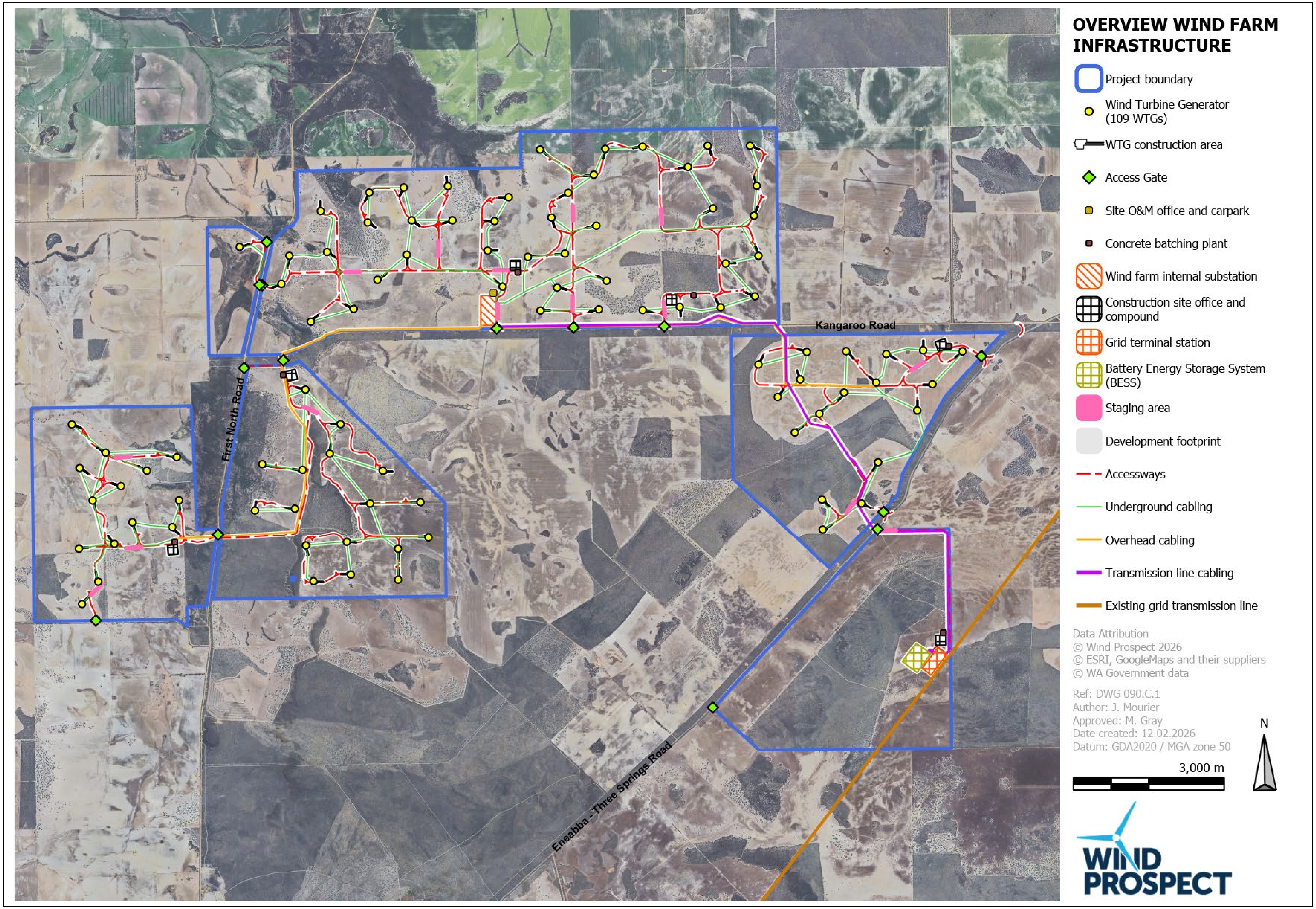


Figure 2 Infrastructure Plan

3 LANDFORM AND GEOTECHNICAL CHARACTERISTICS

The subject site contains a range of landforms including undulating sandplains, lateritic plateaus and breakaways, rises and low hills, and sandy drainage lines and springs. These are further detailed in Table 1.

Table 1 Subject Site landforms

Land system	Description	Area within Subject Site (ha)	% within Subject Site
Coalara System	Partially dissected plateau with lateritic caps and intervening sandy drainage lines; Pale and yellow deep sand, sandy gravels and sand over gravel	6,424.98	64.29
Otorowiri System	Undulating to rolling sandplain and low hills. Gentle to moderately steep valley sides at margins of Mooladara Hill System. Spring lines are a common occurrence	2,515.35	25.17
Mount Adams System	Gently undulating sandplain with low gravel ridges and occasional laterite breakaways	1,045.98	10.47
Mooladara Hill System	Sandplain with dissected lateritic outcrops on margins and prominent dry valleys and drainages; Yellow, pale and brown deep sands, sand over gravel, minor sandy gravel, sandy duplexes	6.97	0.07

The predominately sandy and gravelly soils will generally have a high permeability, meaning that low intensity rainfall will generally infiltrate into the soil profile. The areas of lateritic cap rock are likely to sheet water off during minor storms; however the surrounding sandy soils will generally infiltrate the localised runoff from the rock portions. Once the infiltration capacity of the soil has been exceeded, there is likely a high runoff rate for the steeper slopes around the edge of the hill systems, especially those within contributing cap rock catchments and incised channels that concentrate flows.

4 CLIMATE

The climate of the subject site is characterised as a semi-arid Mediterranean climate. Based on the long-term rainfall data from Bureau of Meteorology Carnamah Station (located 35km to the east), the mean annual rainfall is approximately 376.2 mm. The majority of the rainfall in is winter, between the months of May and August. The warmest months of the year are between November and March, with daily maximum temperatures averaging above 30°C. The coolest months occur from June to August, with minimum temperatures consistently falling below 9°C.

5 EXISTING DRAINAGE AND WATER FEATURES

5.1 MAJOR CATCHMENTS

The Subject site is located across two broad catchments which generally splits the subject site in half from northeast to southwest. The northwestern portion is within the Arrowsmith River Catchment, with the main Arrowsmith River channel being located approximately 8km from the edge of the subject site. The subject site discharges flows via numerous small waterways to Donkey Creek and other un-named creeks in a north westerly direction before entering the Arrowsmith River. This river tends to run west, then northwest, to the Indian Ocean.

The southeastern portion is within the Hill River Catchment. The subject site initially discharges to the Warradarge Creek and its associated tributaries. The Warradarge Creek begins upstream of the subject site (to the northeast), before traversing the subject site in south westerly direction. From here, the Warradarge Creek flows south for approximately 50km, before discharging into the Coomallo Creek and ultimately the Hill River.

5.2 SUBJECT SITE WATERWAYS

The subject site's landforms result in two main waterway types being present: *Concentrated flow routes* and *Broad flow channels*. These are outlined in more detail below. There are also numerous small dams located across the subject site, with a few being associated with the concentrated flow routes. The two types of waterways and dams can be seen in Figure 3.

5.2.1 Concentrated flow routes

The concentrated flow routes run through well defined, often steep valleys, that generally start near the upper portions of the hill systems. These are fed by small, localised catchments. These channels tend to run after high intensity storms, as well as sometimes containing minor spring flows. The channels tend to dissipate once they enter the areas of broad valleys, with the water generally infiltrating into the soil profile or spreading out into sheet flow with no or ill-defined channels.

5.2.2 Broad flow routes

The broad flow routes travers the wide valley floors, often with little definition to the main flow channel, especially through areas containing intact native vegetation. The broad flow routes are fed by numerous concentrated flow route systems from within the subject site. The main flow routes are also fed by significant upstream catchments. Due to the flat grade and generally pervious sandy soils, these channels predominately only flow after large, long duration storm events across the majority of the catchment. They are therefore generally dry and are considered ephemeral. These systems include the Warradarge Creek.

6 DRAINAGE MANAGEMENT STRATEGY

The aim of drainage management for the subject site is to generally manage the water flows so that water treatment is achieved where necessary and that the major storms are managed through the subject site.

The majority of the 1EY is to be treated to sediments and other contaminant prior to discharge offsite. Above the 1EY, the main function is to control the flow of drainage water throughout the subject site and its release in a controlled manner.

Furthermore, infrastructure is to be protected from flooding, from both concentrated channel flows and broad scale flood flows. The following sections show in more detail how water is treated and conveyed, while also protecting key infrastructure from flooding.

6.1 MANAGEMENT OF CURRENT WATERWAYS

The management of the subject site's two main waterway types; Concentrated flow routes and Broad flow channels, are based on minimal impact to the current flow path and regime, while also protecting critical infrastructure. The strategies used to achieve this are outlined below.

6.1.1 Concentrated flow routes

As the concentrated flow routes tend to be confined to localised channels, the main strategy is to set all critical infrastructure back from the channel. The exact setback is to be determined as part of detailed design and survey of the water way and surrounds. Generally, a setback of 30m from the top of the channel is to be adopted. As such there is unlikely to be any disturbance of these waterways. Where there may be a need to cross the waterway, appropriate stabilisation is to be installed, that minimises any modification to the flow of water along the channel. This includes access tracks or underground services. Where there is evidence of erosion within the channel currently, that may potentially result in future impact on critical infrastructures or crossings, this erosion is to be remedied through appropriate stabilisation. This may include rock placement installation of geotextiles, vegetation planting and stock exclusion fencing.

6.1.2 Broad flow routes

The management of the broad flow channels is generally the same as for the concentrated flow channels. The main additional item is appropriate management of the large flood flows which may travers the flood plain during extreme rainfall. These rainfall events may result in wide shallow floodplains, composed of a flood fringe with slow moving water, within which is located a fast moving floodway. All critical infrastructure is to be located outside of the floodway portion. This will minimise the potential for erosion around the infrastructure and the deflection of flood water flows to new locations, with the associated risk of erosion or other detrimental impacts to other areas.

Infrastructure located within the flood fringe area is to generally be designed so that the infrastructure is raised above the 1% AEP water level (see Section 6.3). It is also to be designed so that the cross-sectional area of the flood fringe is not filled by more than 25%. This is to minimise impounding water and the potential increased flooding of other areas. It will also minimise the risk of increased flow velocities within the remaining cross sections area, with the associated risk of increased erosion. Any potential modification to the broad channel flow areas is to be analysed in more detailed as part of the detailed design process to determine the potential risks and associated mitigation strategies.

6.2 MANAGEMENT OF DEVELOPMENT AREA RUNOFF

The management of runoff from the turbines and supporting developed areas is to focus on both water quality management and the peak runoff rates.

6.2.1 Water quality

General

The main potential contaminants that may be present during general construction and operations are fine sediments from hardstand areas. There is also the possibility for some chemical substances to be present, including hydrocarbons. These chemicals are generally to be contained within infrastructures and are unlikely to contaminate stormwater runoff during standard operations. Where there may be maintenance practices onsite that could result in these chemicals coming in contact with the subject site's ground surfaces, specific procedures are to be developed to manage the risk. This may include but not be limited to;

- Installing oil/contaminant barriers around work site
- Spill kits being available
- Not undertaking works during periods of high intensity rain.
- Installing contaminant specific separator systems in locations where the risk may be ongoing and constant.

Due to the high permeability of the subject site's soils, the majority of water running off developed impervious areas is to be infiltrated within designed basins. The basins are to be composed of sandy material within the base and be planted with grass/pasture species, so that there is a constant vegetation cover.

The infiltration basins will remove sediments, and the majority of other minor contaminates that may be present form general vehicle movement and infrastructure operations. Generally, water quality structures are designed so that the entire 1EY storm event is captured and treated. As the development is utilising a full 10% AEP capture and infiltration strategy, the system will also be able to fully contain the 1EY.

Oil Filled Transformers

To manage the potential for oil leakage from any oil filled transformers installed, suitable bunding is to be incorporated at the required locations. This is to include AS 1940-compliant reinforced concrete bunds around all oil-filled transformers. These bunds must be sized to contain both the total oil volume and 20 minutes of fire suppression water. Furthermore, they are to be equipped with automated, sensor-driven bund dewatering systems to safely manage rainfall.

Battery Energy Storage System

Where Battery Energy Storage System's (BESS) may be located, additional management and infrastructure are to be incorporated. This is primarily related to the management of potential contaminants associated with runoff generated during firefighting activities. The infrastructure and management is to be in line with the appropriate Australian standards at the time of construction and operation. The following is a guide to assist with future design.

The stormwater infrastructure downgradient of any BESS is to be designed for a dual-mode stormwater/firewater system. This is to include:

- Stormwater attenuation basins must be lined with an impervious geomembrane (such as high-density polyethylene) to completely prevent the deep percolation of toxic heavy metals and fluorides into the groundwater.
- The drainage network must integrate an automated firewater isolation valve (such as a penstock or sluice gate) at the basin outlet. This must be configured to close instantaneously upon the activation of the site's fire detection or thermal runaway alarm systems.
- The containment basin must be sized to accommodate the maximum hydraulic demand of the fire suppression system for a minimum of 4 hours (as per DWER and AS 2419.1 baseline requirements) occurring simultaneously with the required critical storm event, while maintaining adequate freeboard to prevent overtopping

6.2.2 Flow rate

An analysis of the pre and post development flow rate was undertaken for the areas of the subject site where the landuse is proposed to change. This analysis reviewed the modification of permeable soils to impervious surfaces such as hard packed gravel, concrete, bitumen and rooves. From this suitable detention systems were determined. The proposed landuse change areas (e.g. development areas) included the turbine and surrounds as well as the supporting infrastructure locations. These areas can be seen in Figure 2. This analysis was undertaken in DRAINS modelling software. As part of the analysis the following parameters and assumptions were used.

- Horton/ ILSAX drainage modelling method.
- ARR 2019 methodology and rainfall figures.
- A conservative soil factor of 2 was applied (moderate infiltration with potentially some restriction by lower hydraulic conductivity deeper soils) to reflect the sand soil over heavier soils and some areas of shallow rock/gravels.
- Antecedent Moisture Condition 3 used (12-25mm of rainfall in preceding 5 days).
- Relevant catchments areas were as per Table 2 and Figure 2.
- For pervious areas, a retardance coefficient of 0.1 was used to reflect low paddock grass.
- All pre development catchments were considered 100% impervious.
- Developed areas were considered to be 80% impervious, with 5% not directly connected.

The storms modelled were the 5min,10min,15min, 20min, 25min, 30min, 45min, 1 hr, 1.5hr, 2hr, 3hr, 4.5hr, 6hr and 9hr. Longer events were not modelled as the events peaked at 45min or less. These were modelled for the 10% AEP and 1%AEP

6.2.3 Stormwater Detention – Non Turbine areas

The stormwater for each of the non-turbine supporting infrastructure areas is generally considered to be directed into a single basin. As part of detailed design, multiple basins or other infiltration systems may be utilised for each location The basins were assumed to have the following parameters:

- 1.1 – 1.2m deep
- Outlet pit at 0.8m deep
- Overflow weir at 1.0m
- Storage areas have an infiltration rate of 2m/day (likely conservative), with infiltration from base and sides
- The basins are sized to detain the entire 10% AEP with no discharge. This was to match the pre development runoff for the same locations, which showed no significant discharge in the 10% AEP. It is noted that there is likely to be some discharge in the steeper, rockier portions of the overall subject site.

The modelled storms were run in DRAINS using increasing basin storage volumes until there was no outflow in the 10% AEP. Using these assumptions, the storage required for each location was determined to be approximately 1m^3 of storage for every 35m^2 of total development area (includes pervious and impervious areas within provided development footprints). The preliminary storage for each location is outlined in Table 2. This is to be refined for each location as part of the detailed design process.

With the total capture and infiltration of the 10% AEP, the 1% AEP discharge rate is also managed so that the peak flow is below pre-development rates.

The comparison between pre and post-construction flow rates can be seen in Table 2.

6.2.4 Stormwater Detention - Turbine Locations

For each turbine location the stormwater is to generally be sheeted to the downslope area of the turbine footprint. It is likely that the stormwater runoff could be dispersed within a grassed shallow swale that wraps around a portion of the perimeter. Based on a conservatively large, typical footprint of approximately 8340m^2, if it was 80% hardstand and needed to be stored in a basin, the detention volume would be around 230 - 240m^3, to contain the 10% AEP. The 1% AEP post development peak flow rate is also managed to approximately 0.075m^3/s (with the pre-development flow rate for a same area being 0.132m^3/s). It is likely that the final footprint of impervious area will be smaller for the majority of the turbines.

The exact requirement for detention for each turbine is to be determined as part of the detailed design for each turbine. This will include determining the most appropriate detention volume and critical event to which stormwater is to be managed. The main focus will be to ensure there is no erosion surrounding the turbine area, or unsuitable impact on any downstream susceptible areas, including drainage infrastructure or environmentally sensitive areas. Suitable water quality management, in line with the potential risk associated with each turbine location is to also be designed and implemented.

As an initial general guide, the stormwater management, within areas of high permeable soils is likely to be shallow, gently sloping cut-off swales /basins that infiltrate the required stormwater event. Top over points, for larger events are to be broad and discharge the flow over wide grassed areas. This will provide a low maintenance outcome, while reducing potential erosion and management of any pollutants.

Table 2 Preliminary Storage requirements

Site	Total Development Area (m^2)	Preliminary storage volume (m^3)	Pre development discharge rate (m^3/s)		Post development discharge rate (m^3/s)	
			10% AEP	1% AEP	10% AEP	1% AEP
1	44,505	1,272	0	0.359	0	0.266
2	57,103	1,632	0	0.461	0	0.278
3	165,039	4,715	0	1.330	0	0.594
4	145,145	4,147	0	1.17	0	0.546
5	58,179	1,662	0	0.470	0	0.282
6	57,342	1,638	0	0.463	0	0.279
7	50,821	1,452	0	0.410	0	0.253
8	181,757	5,193	0	1.470	0	0.598
9	130,076	3,716	0	1.050	0	0.508
10	55,589	1,588	0	0.499	0	0.272

6.3 FLOOD SEPARATION AND MANAGEMENT

6.3.1 Turbines and main development areas

Critical electrical infrastructure is to be maintained a minimum of 1.0m above the flood levels within the subject site. This includes floods/flows generated by the development as well as existing waterway floods. For non-electrical infrastructure, the finished floor level is to be a minimum of 0.5m above the subject site's waterway flood levels and 0.3m above any internal stormwater flow paths (within the development footprints) or basin top water levels.

The flood levels of the numerous waterways have not yet been determined through flood modelling. To allow for the determination of potential flood risks to guide future development, the following conservative parameters should be assumed;

- All concentrated flood routes less than 1km long will have a vertical flood level of 1m higher than the top of any defined channel, or where there is no defined channel, 1.5m above the low point of the valley.

- For concentrated flood routes greater than 1km and less than 5km, the vertical flood level is to be set 1.5m higher than the top of any defined channel, or where there is no defined channel, 2m above the low point of the valley.

- For concentrated flood routes greater than 1.5km, the vertical flood level is to be set 2.5m higher than the top of any defined channel, or where there is no defined channel, 3m above the low point of the valley. There is also to be a minimum horizontal setback of 30m from the top of the channel.

- For the broad flow channels the minimum flood risk area is to be set as the area 50m either side of the top of the main channel as well or 1.5m vertically above the top of the main channel.
- For the locations where the broad flow channels intersect with the road reserves, the flood risk area is to be set as the 1.5m vertically above the crest of the road. This level is to also apply to the backwater areas upstream of the road.

Where there may be a need to locate critical infrastructure within flood prone areas, the infrastructure is to be confined to the flood fringe areas only, with no infrastructure within the floodway (the faster moving portion of the flooded areas). Analysis is also to be undertaken so that any potential restriction to the flow or loss of flood storage area does not have a significant impact on surrounding infrastructure or sensitive vegetation.

6.3.2 Other infrastructure

Where possible, any new potential stormwater detention areas or stormwater flow routes should be located outside of the existing powerline easements. This is to reduce the potential for risks associated with the increased electrical conductivity within flooded areas.

Where proposed access tracks are likely to travers flow channels, an analysis is to be undertaken to determine the potential erosion risk. Appropriate stabilisation of the crossing point and potentially the installation of culverts is to be undertaken as determined through the detailed design process. The analysis is to also review the impact of any increase in flood water levels on critical infrastructure, native vegetation and sensitive farmland immediately upstream of any crossing. Suitable mitigation strategies are to be adopted to minimise any negative impacts.

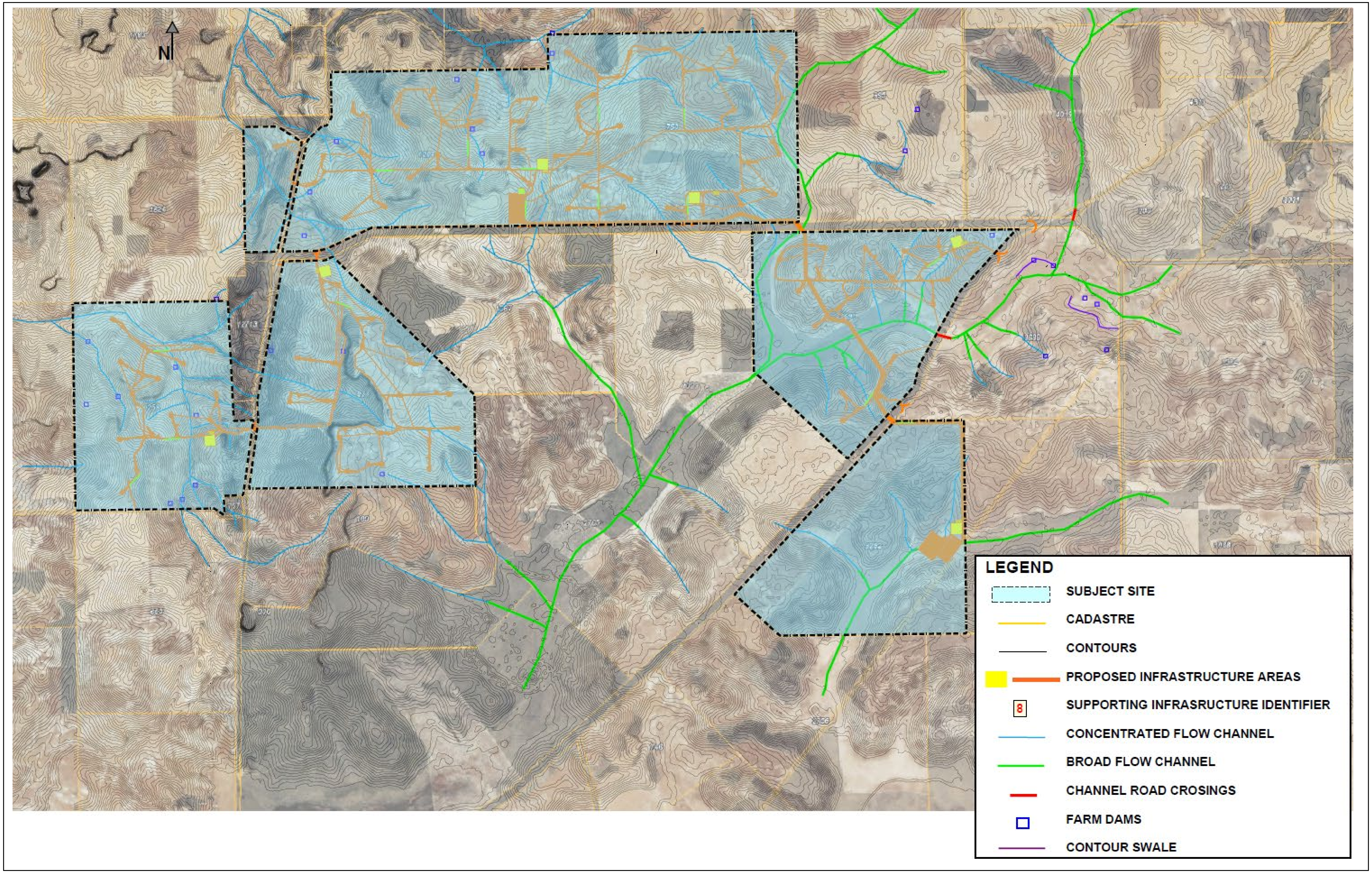


Figure 3 Hydrology and infrastructure plan

7 GROUNDWATER

The following is a summary of the current groundwater characteristics of the site. This information is based on groundwater information contained within *Northern Perth Basin: Geology, hydrogeology and groundwater resources* report (DoW, 2017) as well as data collected from within the subject site.

7.1 GROUNDWATER AQUIFERS AND LEVELS

There are 3 main aquifers below the majority of the subject site. In order of increasing depth these are the Surfical, Parmelia and Yarragadee. Between the Parmelia and Yarragadee sits the confining Otorowiri formation, which sometimes has small pockets of low yielding groundwater. On the western side of the subject land, the Parmelia is no longer present. In this area the Yarragadee is overlaid by a Surfical/ Superficial aquifer. A diagram of the deeper aquifer relationships is noted in Figures 4 and 5. These figures excludes the Surficial/Superficial aquifers. The following is a summary of each aquifer.

Surficial Aquifer – eastern portion of subject site

Groundwater in the surficial aquifer can predominately be found in paleochannels, weathered lateritic profiles and valley-fill, colluvial, alluvial, lacustrine, swamp and eolian deposits. Within the subject site the most likely area would be on the paleochannel beneath the plain containing Warradarge Creek and its associated tributaries. The depth and thickness will vary in relationship to the channel deposits. The water level is generally near the surface and is recharged from direct rainfall and local runoff.

Superficial Aquifer – western portion of subject site

The Superficial aquifer is typically 20–30 m thick and is generally unsaturated within the subject site. It is recharged mainly by direct infiltration from rainfall, predominantly during winter and early spring. As such there is a seasonal fluctuations in levels, if it reaches a state of saturation. The general flow is westward.

Parmelia and Otorowiri Formation

The Parmelia aquifer, within the Carnac and Charlot Sandstone Formations, tends to flow in a westerly direction under the subject land. The potentiometric head is approximately 220 - 225mAHD, however the actual depth may be lower due to confining layers above. In general, the depth from the surface is between approximately 75m and 0m within the subject site. The underlying Otorowiri Formation forces water upwards in the western portion of the subject site, which contributes to the expression of the Parmelia aquifer at the surface. A series of springs resulting from this, are located within the western portion. Their location can be seen on Figure 6 while Figure 4 shows a cross section of this interaction and the various aquifers.

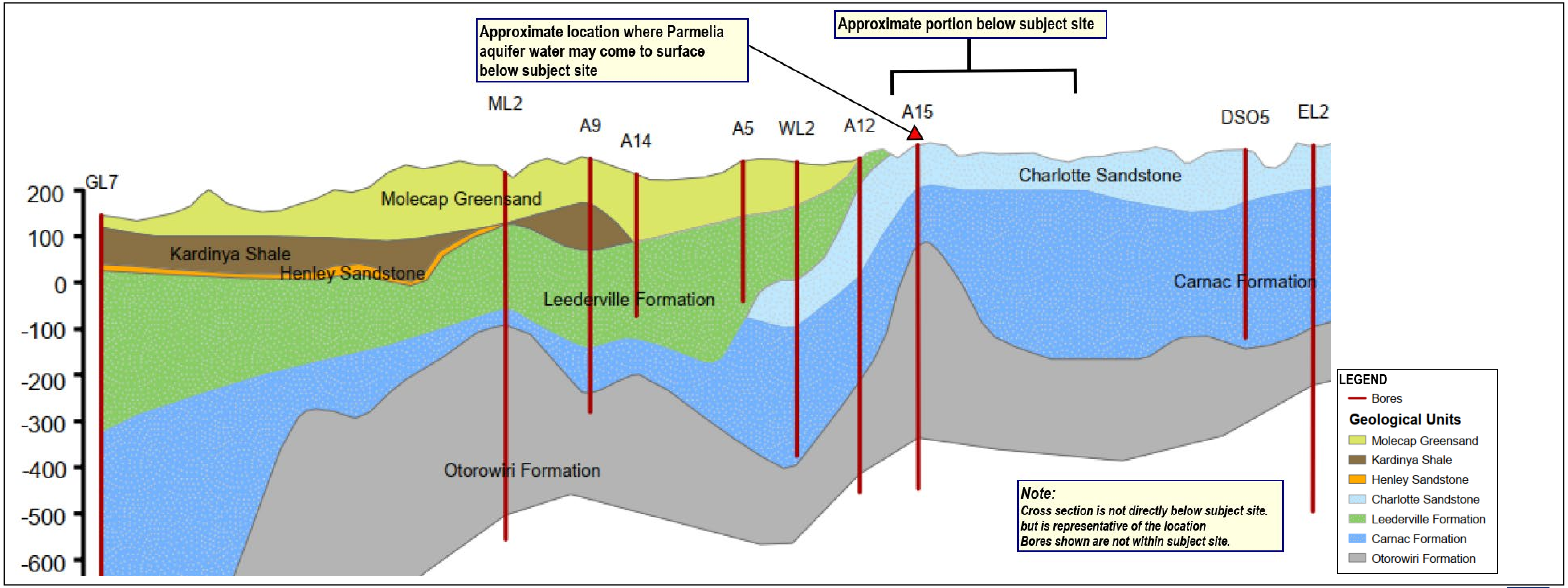
The thick shale of the Otorowiri Formation forms a significant regional aquitard that hydraulically separates most of the Leederville–Parmelia aquifer from the underlying Yarragadee aquifer. Faulted displacement of the Otorowiri Formation may allow hydraulic connection between these aquifers at some locations. Generally, the groundwater level in the Parmelia aquifer is rising over time, predominately due to increased recharge from removal of deep-rooted vegetation in the recharge area.

Yarragadee Aquifer

The Yarragadee aquifer is the largest regional aquifer in the northern Perth Basin

Under the subject site it is generally confined by the Otorowiri Formation and flows north westward to westward. It's potentiometric head is approximately 80 - 85mAHD, making it approximately 135m – 210m below the surface. There is no interaction with the surface within the subject site.

Figure 4 Cross Section of Parmelia and Otorowiri formations



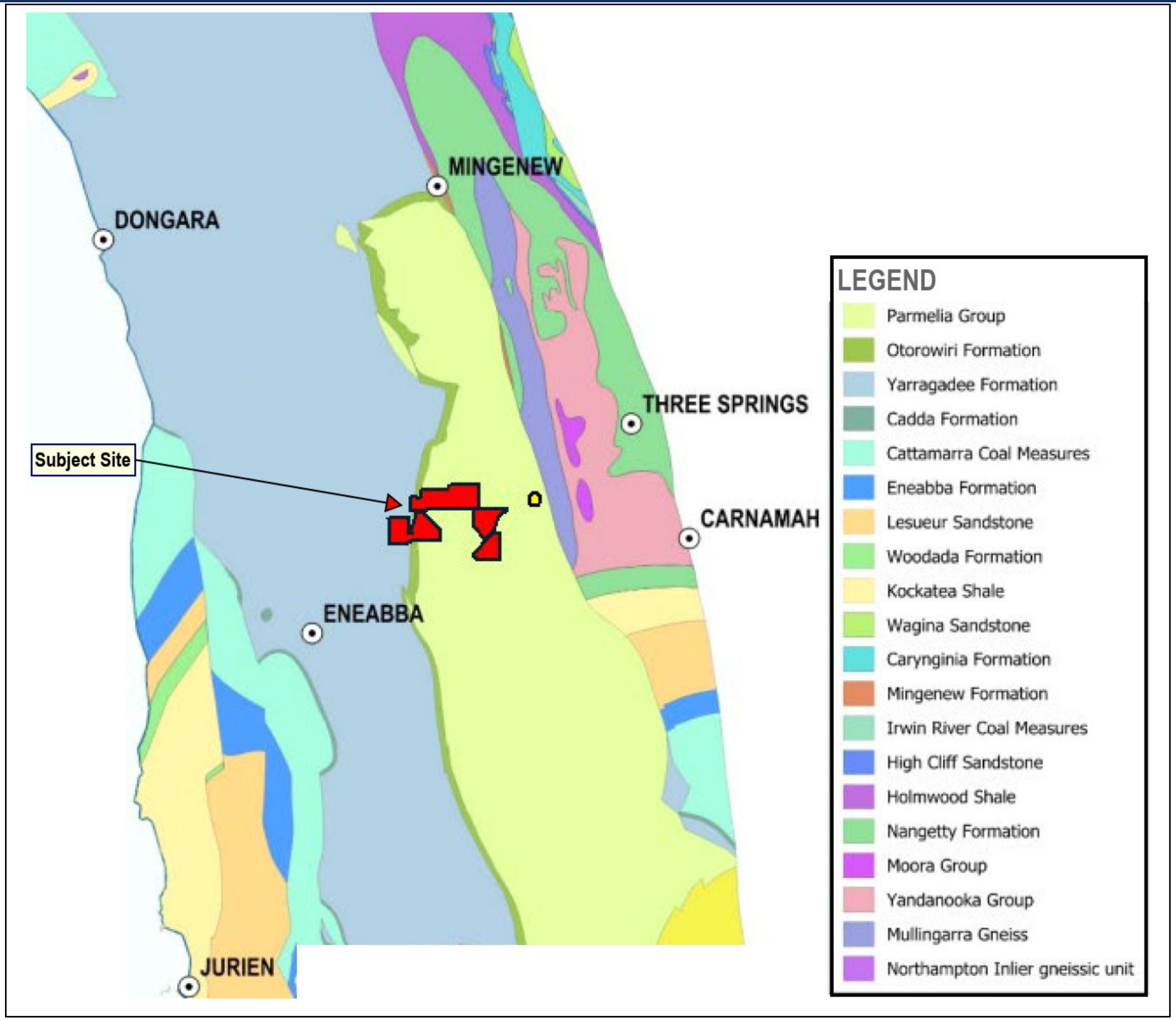


Figure 5 Main aquifer (excluding Surficial/superficial)

7.2 GROUNDWATER QUALITY

7.2.1 Subject Site testing

Initial groundwater quality testing has been undertaken within the subject site. The sampling was conducted in March and April 2026 from 7 locations. This includes 5 bores and 2 springs. The sampling locations can be seen in Figure 6, with a summary of the results in Tables 3. The samples are likely to be from the Parmelia, although this has not been confirmed for all samples.

These initial results suggest that the groundwater water is generally fresh to slightly brackish. It is also mildly acidic. While the testing to date has not identified the items contributing to the elevated Grains per Gallon, it is likely to include bicarbonate with some calcium and magnesium, based on regional analysis.

Table 3 Groundwater Sampling March and April 2026

Location number	Reference Name	pH	Parts Per Million	Groundwater Level (m Below surface)	Comments
1	Clayton Park Grazing A	6.4	860		Bore
2	Clayton Park Grazing B	6.2	810		Surface Spring
3	One Tree Hill A	5.6	940	75	Bore. Grains per Gallon = 46 Electrical conductivity = 1.2mS/cm
4	One Tree Hill B	6.2	1000	75	Surface Spring
5	Teakle Full Flag	5.7	790		Bore
6	Gold Sands Farms / Donkey Spring	5.2	1000	70.8	Bore
7	Whytes	6.3	1158	80-90	Bore

7.2.2 Regional groundwater quality

Surfical

Groundwater quality of the Surfical aquifer within the subject site is not known. Given the localised nature of this aquifer, it will be highly related to the general chemistry of the local surface soil types.

Parmelia

The salinity of the Parmelia within the portion covered by the subject site is generally between 500 – 1000mg/L, with this predominately composed of sodium and magnesium chloride. There can be significant levels of calcium and bicarbonate

The pH is generally slightly acidic but can vary depending on the location. Iron levels are generally high and frequently exceed 1 mg/L, while noting that the levels can be highly variable, with reported values ranging from less than 0.1 mg/L) up to 20 mg/L around the Arrowsmith River area.

Calcium and magnesium cation concentrations are usually low. The bicarbonate concentration is typically greater in the deeper, confined portion of the aquifer, with concentrations to 204 mg/L observed, with levels across the shallower aquifer varying between 24.4 to 198.2 mg/L with an average of 78 mg/L (Egis 1999).

Nitrate concentrations are generally less than 2 mg/L.

Yarragadee

Groundwater within the Yarragadee aquifer is generally fresh to marginally brackish but varies considerably both laterally and with depth. Under the subject site, the salinity is generally 500 – 1000mgL TDS, however there may be portions where it is below 500mg/L

Groundwater in the Yarragadee aquifer tends to be slightly acidic. It is also likely to become more enriched in calcium bicarbonate with depth.

Dissolved iron concentrations vary considerably throughout the Yarragadee aquifer. Within the nearby Arrowsmith region, dissolved iron values of up to about 10 mg/L have been measured, but concentrations are commonly less than 0.3 mg/L.

Groundwater nitrate concentrations in the Yarragadee aquifer are generally less than 1 mg/L,

Other chemical constituents of groundwater are typically within guideline limits for potable water.

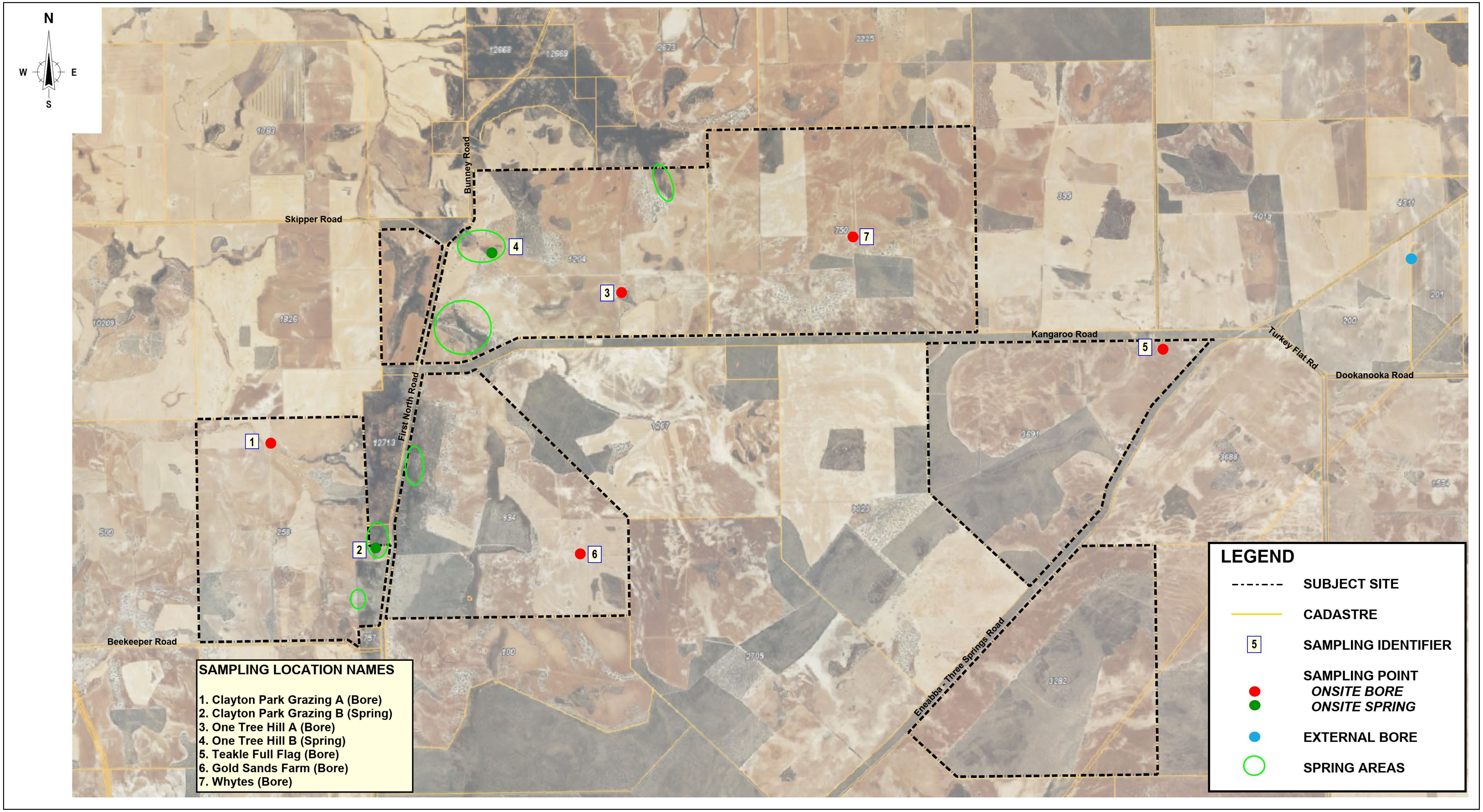


Figure 6 Sampling Points and Springs

7.3 GROUNDWATER ALLOCATION AND AVAILABILITY

7.3.1 Aquifers

The subject site is located within the Arrowsmith Groundwater Area. The majority of the subject site is within the Tathra Subarea while the western portion is within the Twin Hills Subarea. These sub areas can be seen in Figure 7. This shows the relative portions of the 2 licenses that cover the subject land as well as the full portion for the 2 external licenses adjoining the subject site to the east.

Within the Tathra Subarea, there are 4 aquifers subject to licensing. The aquifers are:

Perth - Surficial,
Perth – Parmelia
Perth - Otorowiri
Perth – Yarragadee North.

As of April 2026, there is allocation available in the Yarragadee North. The Surficial and Otorowiri have limited information on are unlikely to generally yield significant rates of groundwater. The Parmelia is currently fully allocated.

In the Twin Hills Subarea the aquifers are:

Perth - Surficial,

Perth – Yarragadee North

There is currently allocation available in both aquifers within this subarea.

7.3.2 Licenses

There are currently 2 existing groundwater licence within the subject site. It is noted that these licenses are not specifically limited to landholdings within the subject site and are linked to multiple properties including land outside of the subject site. The details of these 2 licenses are outlined below. Figure 7 shows a portion of the areas covered by these licenses (where they cross the subject land and immediate surrounds).

Licence 1.
Licence Number: 206386
Expiry Date: 10/5/2028
Licence Allocation: 10000 KL
Parties: Strike Energy Limited
Groundwater Area: Arrowsmith
Groundwater Subarea: Twin Hills
Aquifer: Perth - Yarragadee North.
Licence Address: EP 503; LOT 10710 ON PLAN 209764 Volume/Folio 1644/605 Lot 10710 Tomkins Rd Arrowsmith East; L 24

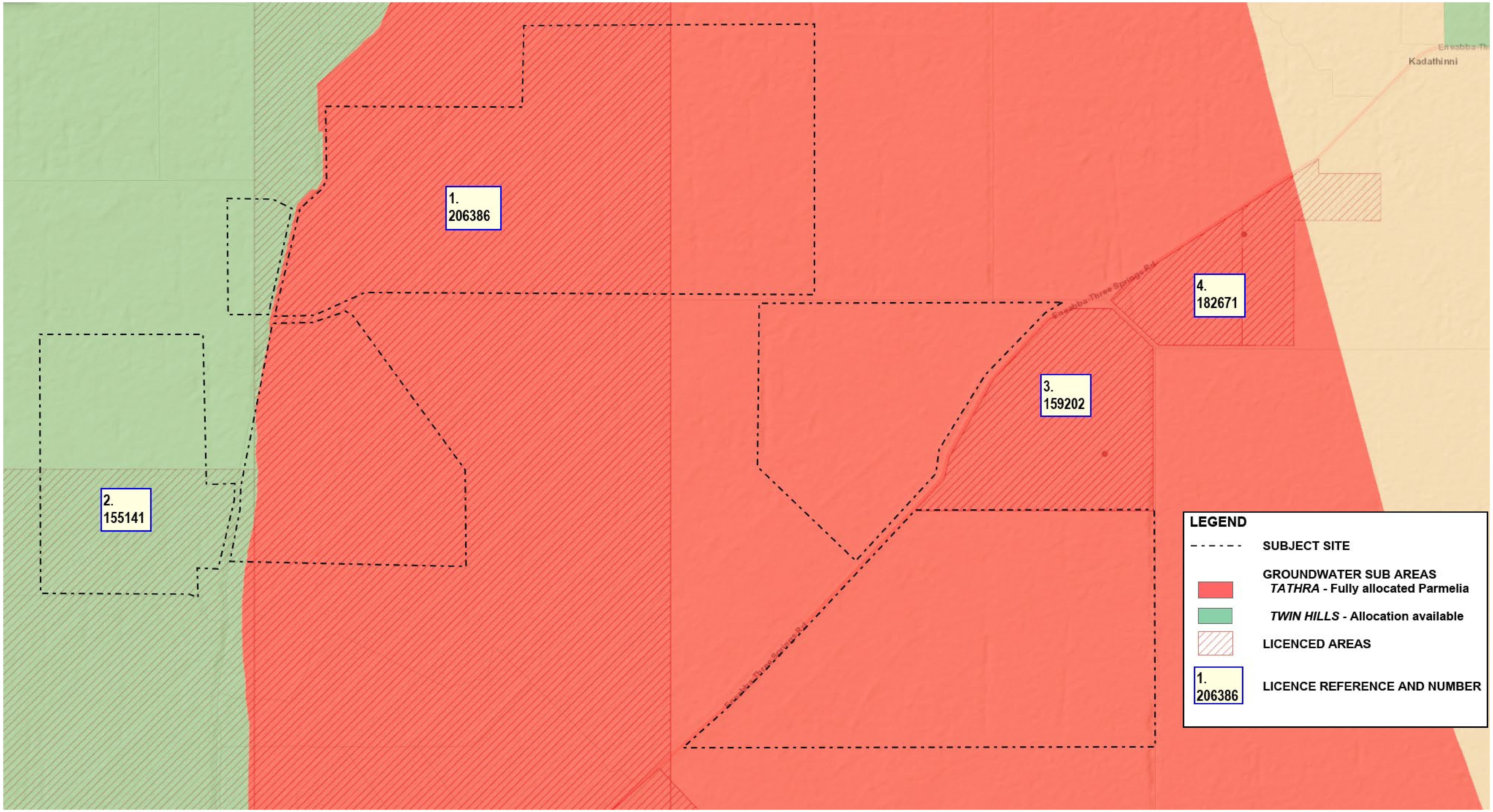
Licence 2.
Licence Number: 155141
Expiry Date: 26/7/2033
Licence Allocation: 20600 KL
Parties: Beach Energy (Operations) Limited
Groundwater Area: Arrowsmith
Groundwater Subarea: Eneabba Plains
Aquifer: Perth - Yarragadee North.
Licence Address: L11 ; EP 320 R5

It is noted that this licence is technically in a sub area that extends outside of the subject land.

There are also 2 groundwater licenses for the land parcels located for the property's adjoining the eastern boundary. These can be also be seen in Figure 7. The details for these are as follows:

Licence 3.
Licence Number: 159202
Expiry Date: 14/7/2035
Licence Allocation: 5500000 KL
Parties: Extension Hill Pty Ltd
Groundwater Area: Arrowsmith
Groundwater Subarea: Tathra
Aquifer: Perth - Parmelia.
Licence Address: L59/63; M59/338I; L59/88; L59/89; G59/31; L70/157; G59/34; G59/36; M59/339 I; G59/50; L70/153; G59/49; G59/45; G59/62; L59/68; L59/87; L59/69; LOT 10897 ON PLAN 210818 Volume/Folio 2066/34 Lot 10897 Eneabba Three Springs Rd Kadathinni; G59/33; G59/41

Licence 4.
Licence Number: 182671
Expiry Date: 25/4/2026
Licence Allocation: 250000 KL
Parties: Auscarbon Pty Ltd
Groundwater Area: Arrowsmith
Groundwater Subarea: Tathra
Aquifer: Perth - Parmelia.
Licence Address: Lot 201 On Diagram 74650 Volume/Folio 1823/572 Lot 201 Dookanooka Rd Kadathinni; Lot 200 Dookanooka Road Kadathinni 6519; Lot 10433 on Plan 207347



Base Map: DWER. Water Register

Figure 7 Local groundwater sub areas and licences

8 GROUNDWATER MANAGEMENT STRATEGY

The aim of groundwater management for the subject site is to maintain groundwater as close as possible to existing levels, while maintaining adequate separation from infrastructure. By maintaining the groundwater at a level similar to the current level, the development will have minimal impact on any groundwater dependent ecosystems that exist within or down gradient of the subject land. Groundwater will still be fed from the soil profile at similar rates to the current situation. The following provides further information on groundwater management.

8.1 INFRASTRUCTURE SEPARATION

A suitable vertical separation between significant infrastructure and the onsite groundwater is to be implemented. The majority of the subject site has a separation distance in excess of 3m to groundwater. The localised areas associated with known shallow groundwater are predominately the spring locations in the western portion. These locations are generally excluded from any future development.

There is a small possibility of shallow groundwater within the lower flat plain areas. Checking the groundwater levels during peak seasonal levels (generally August) will be undertaken via test pits and/or shallow monitoring bores in proposed development locations that present a possibility of shallow groundwater. Should the groundwater separation be less than 1.5m then suitable adaptations are to be incorporated into the detailed design phase. These will predominately involve filling with clean sand to lift key infrastructure above the necessary separation distance for the infrastructure. Any fill of imported sands will require compaction to relevant standards.

8.2 GROUNDWATER LEVELS DUE TO WATER USEAGE

The use of groundwater for construction and ongoing operations is currently being investigated (see Section 9 for further information on groundwater usage). The use of groundwater presents the possibility of lowering groundwater levels. To minimise this risk the following strategies are proposed:

- All extraction is to be in accordance with a groundwater allocation licence as issued by DWER.
- Groundwater levels within the aquifer being drawn from are to be monitored and reviewed during the period of extraction. If there is a significant change in levels, extraction is to cease until they rise again or as determined by DWER.
- Extraction may be undertaken from multiple points across the subject site of nearby to minimise the impact of a localised drawdown around a single borehole
-

8.3 QUALITY MANAGEMENT

Groundwater quality will be managed through the treatment of stormwater through the strategies outlined in Section 6. This means that any infiltrating stormwater will be treated to suitable levels prior to migrating through to the groundwater aquifer.

All wastewater treatment systems are also to be in line with the approved Site and Soil Evaluation report and current guidelines. This will minimise the risk of contaminants infiltrating from the Land Application area (where these may be utilised).

All Bores are also the be suitably managed so that surface contaminants can not enter the bore hole. This includes raising the inlet above the ground surface and having a sealed lid. The suitable plug is also to be established around the outside of the bore casing to stop the migration of surface water and associated contaminants from migrating down the outside of the bore casing.

All new bores are also to be installed to appropriate standards to minimise contaminants being introduced into the aquifer during the drilling and installation process.

8.4 PROTECTION OF GROUNDWATER DEPENDENT ECOSYSTEMS

Potential threats to groundwater dependent ecosystems will be managed by:

- Management of surface contaminants to maintain current groundwater quality
- Infiltrate surface water close to source to minimise hydrological changes (eg stormwater basins located at each development site)
- Minimisation of any works around existing springs
- No clearing of native vegetation within at least 50m of any groundwater dependent ecosystem
- Monitoring of water levels to determine if there are changes outside of standard seasonal and long-term variations

As part of the detailed design process all potential areas containing groundwater dependent ecosystems are to be determined, with suitable pre construction monitoring undertaken. This will be set base line information on each site as well as determining appropriate setbacks from any proposed development and groundwater extraction.

8.5 DEWATERING

While unlikely, dewatering may be required throughout the construction phase of the development. Prior to the commencement of any dewatering, a licence to take water will be required through application to DWER. If possible, site preparation should occur during dry periods to reduce or eliminate dewatering requirements.

Should it be required, a dewatering management plan is to be produced as part of detailed design. It is to cover the treatment and management of groundwater including but is not limited to pH monitoring and neutralisation, heavy metal monitoring and hydrocarbon analysis. The management plan is to set monitoring parameters so that levels are to remain within set guidelines and have contingency plans enacted if guidelines are exceeded. All dewatering effluent is to be infiltrated as close to source as possible to limit groundwater drawdown outside the area required for excavation.

9 WATER SERVICING STRATEGY

9.1 CONSTRUCTION WATER

The construction phase is predicted to extend over 2-3 years. The current proposed water usage for this period is approximately 95ML/annum, assuming a 2 year construction timeframe. Of this, approximately 5.6ML/annum is to be suitable for concrete batching, while the remaining 89.4ML/annum is for general onsite construction requirements including dust suppression and wash down as well as potable usages.

The initial testing of groundwater quality of the onsite bores and springs suggests that the Parmelia Aquifer is likely to be suitable for the general construction water. It may require some treatment on-site to allow for concrete batching. This will be determined through more detailed water quality testing. The use of the Parmelia Aquifer for potable use will require treatment. Given the likely low volumes this water may be separately sourced.

Initial discussions have been undertaken with DWER and a neighbouring water licence holder (Auscarbon Pty Ltd – Licence number 182671, see Section 8) to potentially utilise a portion of their current allocation. It is also noted that there are other nearby licence holders that may have the ability to provide a portion of their allocation for the construction phase.

The proponent is currently in the process of submitting an application to take groundwater from the Parmelia Aquifer from within the subject site. Furthermore, the proponent is continuing to work with Auscarbon as part of their allocation renewal.

Should the full groundwater allocation from the Parmelia aquifer not be available from within the subject site or Auscarbon’s allocation, alternative water sources have been identified to support the construction phase. These include:

- Negotiation with other Parmelia Aquifer licenced holders to trade a portion of their licenced allocation
- Use of onsite farm dam water
- Use of farm dam water from nearby landholdings
- Licenced allocation from the Yarragadee (currently allocation available)
- Licence allocation from the surficial – Tathara sub area (allocation information currently limited)
- Licence allocation from the surficial/superficial – Twin Hills sub area (noting may be unsaturated within the subject site)
- Trucking of water from other external sources including Mains water specifically for potable usage or other high quality requirements.

A combination of the above options may be utilised to provide the required water, with different sources matched to the quality it is best suited to. This will be determined through the detailed design process and outlined in the SDWMR.

9.2 OPERATIONAL WATER

The requirement for ongoing operational water is significantly less than that required during the construction phase. The current assessment is for approximately 2ML/annum. This is primarily for domestic type and general operational washdown. As a significant portion of this water will likely need to be of a potable standard or similar, the water source is proposed to be obtained from a combination of Parmelia Aquifer bore water and onsite roof runoff capture and storage. Both sources would incorporate appropriate treatment systems to allow for their required usage.

The exact volume and source are to be determined as part of the detailed design process and outlined in the SDWMR.

9.3 WASTEWATER MANAGEMENT

Wastewater is likely to be managed via onsite treatment and disposal, with potentially some temporary transportable ablutions, with associated offsite disposal during the construction phase. The exact requirements for wastewater management will depend on the type of onsite construction process undertaken and the number of individuals onsite. These will need to comply with the recommendations of a future Site and Soil Evaluation (SSE), as well as other detailed investigations undertaken as part to detailed design phase.

As an interim strategy, the following are be considered to be minimum requirements for the design and installation of any onsite effluent management systems:

- Generated effluent should be treated using a secondary treatment system (STS).
- The land application areas shall achieve a minimum vertical separation of 1.5 m between the discharge point of the application system and the peak groundwater level.
- Where fill is imported, the material shall be a sandy loam with an approximate clay content between 10-20% and achieve a minimum PRI of 20. The soil shall be able to be classified as a Category 2 soil in accordance with AS 1547.
- The treated wastewater irrigation and surrounding area shall be vegetated immediately following the system's installation, with suitable plants that are able to absorb nutrients and excess water.
- The area should be fenced or otherwise delineated (such as landscaping) to prevent vehicle access; signs should be erected to inform owners/tenants and visitors of the effluent irrigation area's extent and limit their access and impact on the area.
- Stormwater must not be disposed of in the wastewater treatment system or the land application area.

These design parameters are only applicable to the disposal of domestically generated wastewater and does not allow for the disposal of trade waste or industrial wastewater within the system. Specific assessments relevant to any industrial process will need to be undertaken, where required.

10 MONITORING & MAINTENANCE

10.1 PREDEVELOPMENT MONITORING

10.1.1 Groundwater and springs

LEVELS

Level monitoring of onsite Parmelia aquifer bores should be undertaken 6 times per year to determine if there are any changes over the course of the year. Spring levels are also to be recorded at the same time to allow for cross referencing.

Where infrastructure is proposed in the valley floors, test pits should be excavated to 3m below the surface or refusal during late winter or early spring (August – September). If groundwater is encountered within 2m of the surface, monitoring bores should be installed to allow for checking and refinement of levels. This is to assist with setting the finished level of infrastructure within these localised areas.

QUALITY

Additional quality testing of the Parmelia aquifer and springs is to be undertaken to determine its suitability for the final chosen usages. The tested parameters will be tailored to the usage requirements including potable usage and concrete batching. Bore quality may only require a single testing round. Springs are to be monitored at least twice; in late winter and in early autumn to determine any seasonal changes.

The predevelopment monitoring is to be recorded and reported in the detailed SDWMR to allow for future reference during the construction phase and approval by relevant authorities. As part of this analysis, appropriate trigger values are to be determined. The trigger values are to focus on water quality and level modifications that may impact water users of the Parmelia aquifer or any relevant groundwater dependent ecosystems.

10.2 CONSTRUCTION PHASE MONITORING

10.2.1 Groundwater and springs

Level monitoring of onsite Parmelia aquifer bores should be undertaken 6 times per year to determine if there are any changes over the course of the year due to extraction of groundwater. Spring levels are also to be recorded at the same time. Water quality is to be undertaken 3 times a year for the springs,

These levels and quality readings are to be reviewed against the predevelopment monitoring and any trigger values set as part of the pre development analysis. Should trigger values be reached, then appropriate actions are to be undertaken as set out in the SDWMR.

10.2.2 Stormwater runoff

Installation of drainage control structures ahead of the construction phase will be utilised. This will include the use of stormwater and sediment control design techniques such as sediment curtains, hydro mulching and temporary detention basins. These will maintain the quality of the water leaving the development area during construction.

Any temporary basins will be monitored for any damage, including compaction, sediment build up, oils and litter during and at the completion of construction to ensure the structure's effectiveness is not diminished.

10.3 POST-DEVELOPMENT

10.3.1 Water source

The value of post development groundwater monitoring is to be determined as part of the SDWMR. If this is determined to be useful for monitoring level changes or water quality variations, then a monitoring program can be determined in consultation with the relevant authority.

General water quality monitoring of any water source that continues to be utilised will be undertaken in line with standard requirements.

10.3.2 Stormwater Infrastructure

Maintenance inspections should be scheduled to be conducted quarterly as well as after significant storm events. Inspections should focus on ponding time for the different systems eg are they draining as designed, contaminants present, scouring/erosion and sedimentation.

Performance monitoring of the basins will be undertaken to ensure the effective working of the system. Indicators will be used to provide cost effective methods to evaluate the adequacies of the operation and performance

The key aspects monitored will include:

- ensuring the inlet and outlet structures are free of debris;
- vegetative cover of the systems is maintained;
- sediment build up is not impeding the functionality;
- erosion is not present;
- soils are not compacted;
- litter is removed; and
- excessive hydrocarbons are not present in the system
- weeds controlled
- infiltration of stormwater is maintained
- groundwater is not present in the systems for extended periods

These are outlined further in Table 4.

Table 4 Monitoring and Maintenance Schedule

Function	Item to Monitor	Details Monitored	Trigger for Immediate Action	Maintenance Action Required	Monitoring Frequency	Responsible Authority (Timeline)
CONSTRUCTION PHASE & POST-DEVELOPMENT						
Drainage Management Systems (includes traditional and WSUD systems)	Structural Design	Systems are constructed to engineer detailed design specification	Systems constructed differs to design specifications.	Remedial work to rectify systems to meet design specifications.	During and after construction	Developer
	Structural Effectiveness (inlets, traps and outlets)	Inspection for debris, litter and sediments surrounding structural components	Debris, litter or sediments causing blockages or impairing functions.	Remove any debris or blockages. Inspect systems for any erosion related issues.	Quarterly and after significant rain events	Developer
	Erosion	Inspection for erosion.	Presence of severe erosion or erosion impairing functions.	Investigate, identify and rectify the cause of the erosion. Replace filter media as required.	Quarterly and after significant rain events	Developer
	Sediment Build Up	Inspection for sediment accumulation within pits, on the surface of bioretention systems and within basins.	Accumulation of large volumes of sediments and/or silts in pits or on the surface (according to Shire standards).	Investigate, identify and stabilise cause of sediment source. Remove accumulated sediments and replace filter media or plants removed. Undertake street sweeping	Quarterly and after significant rain events	Developer
	Compaction	Inspection of filter media for compaction, could include being driven on.	Water remains ponding longer than designed in bioretention system after a storm event.	Investigate cause of compaction. If localised, remove top 500mm of filter media, break up the filter and then return to system without	Quarterly and after significant rain events	Developer
	Weeds	Inspection for the presence of weeds.	Weeds are noxious or highly invasive or if weeds cover more than 25% of area.	Manual removal or targeting herbicide application, with waterway approved products.	Quarterly and after significant rain events	Developer
	Plant Condition	Inspection of vegetation health and cover, and presence of dead plants.	Plants dying or a pattern of plant deaths in excess of general seasonal conditions.	Investigate cause of plant deaths and rectify. Infill planting may be required.	Quarterly and after significant rain events	Developer
	Organic Litter	Inspection for the presence of organic litter (e.g.. leaves) on surface.	Organic litter coverage is thick or extensive, or detracting from the visual appearance of the system.	Investigate source of litter and undertake appropriate response e.g. alter landscaping maintenance practices, community education).Remove litter.	Quarterly and after significant rain events	Developer
	Rubbish	Inspection for the presence of rubbish.	Rubbish is blocking structures or detracting from the visual appearance of the system.	Identify source of rubbish and undertake appropriate responses, including removal.	Quarterly and after significant rain events	Developer
	Oil/Hydrocarbons	Inspection for the occurrence of oil on surface.	Oil coverage persists for more than 3 weeks.	Notify the EPA of the spill, if significant and clean up requirements.	Quarterly and after significant rain events	Developer
	Infiltration/Standing water	Inspection of basins to determine if water is infiltrating after rain events in basins	Water is still present after 96 hours, excluding small volumes of groundwater inflow from subsoil	Check subsoil network and filter media is functioning as designed and repair/upgrade.	Quarterly and after significant rain events	Developer

11 IMPLEMENTATION PLAN

The developer is committed to undertaking the water management strategies outlined in this report. The following information details the actions and works to be undertaken by the developer and relevant authorities as part of the development of the subject land.

Implementation of the strategies outlined in this report will be undertaken prior to developmental works, as part of subdivisional works and into the post development phase. The relevant items are to be included in SDWMR's or development applications for the subject site. This is to include:

COMMITMENTS BY DEVELOPERS

- Refinement of drainage modelling including connections to surrounding waterways.
- Refinement of infrastructure placement in relation to on-site flow paths and flooding.
- Design and construction of overall drainage systems.
- Acquire suitable water sources for construction and long-term operation.
- Appropriate fill used across the site where required.
- Sediment control during construction.
- Maintenance during agreed maintenance periods of the stormwater drainage systems and infrastructure.
- Produce and implement Construction and Sediment Control reports.
- Produce a Dewatering Management Plan, if required
- Produce a SSE report to guide onsite wastewater management
- Implement and maintain an on-site wastewater system suitable for both the construction and ongoing operations.

REQUIREMENTS OF THE SHIRE OF Three Springs

- Review and approval of the WMR and future water related strategies.
- Approval of drainage design and other water management works.

REQUIREMENTS OF THE DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION

- Review and approval of the WMR.
- Assist the Shire in relation to assessing future water strategies as required.
- Approval of any groundwater licencing required

APPENDIX A : FIGURES

LEGEND

- SUBJECT SITE
- CADASTRE

REV	DATE	ISSUE DESCRIPTION	DRAWN	DESIGN	CHECK
A	3/3/26	ISSUED FOR APPROVAL	KJB	BO	BO

STATUS

PRELIMINARY

NOT FOR CONSTRUCTION

SCALE

0 400 800 1200 1600 2000

SCALE 1:40000

CLIENT

TWINHILLS WIND FARM PTY LTD

DISCLAIMER

ALL DIMENSIONS TO BE CHECKED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION. USE WRITTEN DIMENSIONS ONLY, DO NOT SCALE. NOT FOR CONSTRUCTION UNLESS STAMPED BY CERTIFYING AUTHORITY

Oversby Consulting

PROJECT

TWINHILLS WIND FARM, THREE SPRINGS

DRAWING TITLE

SITE PLAN

PROJECT No.	DRAWING No.	REVISION
B24045	001	A

LEGEND

- SUBJECT SITE
- CADASTRE
- CONTOURS
- PROPOSED INFRASTRUCTURE AREAS
- 8 SUPPORTING INFRASRUCTURE IDENTIFIER
- CONCENTRATED FLOW CHANNEL
- BROAD FLOW CHANNEL
- CHANNEL ROAD CROSINGS
- FARM DAMS
- CONTOUR SWALE

REV	DATE	ISSUE DESCRIPTION	DRAWN	DESIGN	CHECK
A	3/3/26	ISSUED FOR APPROVAL	KJB	BO	BO

STATUS

PRELIMINARY
NOT FOR CONSTRUCTION

SCALE
0 400 800 1200 1600 2000
SCALE 1:40000

CLIENT
TWINHILLS WIND FARM PTY LTD

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Oversby Consulting

PROJECT
TWINHILLS WIND FARM,
THREE SPRINGS

DRAWING TITLE
HYDROLOGY PLAN

PROJECT No.	DRAWING No.	REVISION
B24045	002	A

SAMPLING LOCATION NAMES

1. Clayton Park Grazing A (Bore)
2. Clayton Park Grazing B (Spring)
3. One Tree Hill A (Bore)
4. One Tree Hill B (Spring)
5. Teakle Full Flag (Bore)
6. Gold Sands Farm (Bore)
7. Whytes (Bore)

LEGEND

- SUBJECT SITE
- CADASTRE
- SAMPLING IDENTIFIER
- SAMPLING POINT
  - *ONSITE BORE*
  - *ONSITE SPRING*
- EXTERNAL BORE
- SPRING AREAS

REV	DATE	ISSUE DESCRIPTION	DRAWN	DESIGN	CHECK
A	3/3/26	ISSUED FOR APPROVAL	KJB	BO	BO

STATUS
PRELIMINARY
NOT FOR CONSTRUCTION

SCALE
0 400 800 1200 1600 2000
SCALE 1:40000

CLIENT
TWINHILLS WIND FARM PTY LTD

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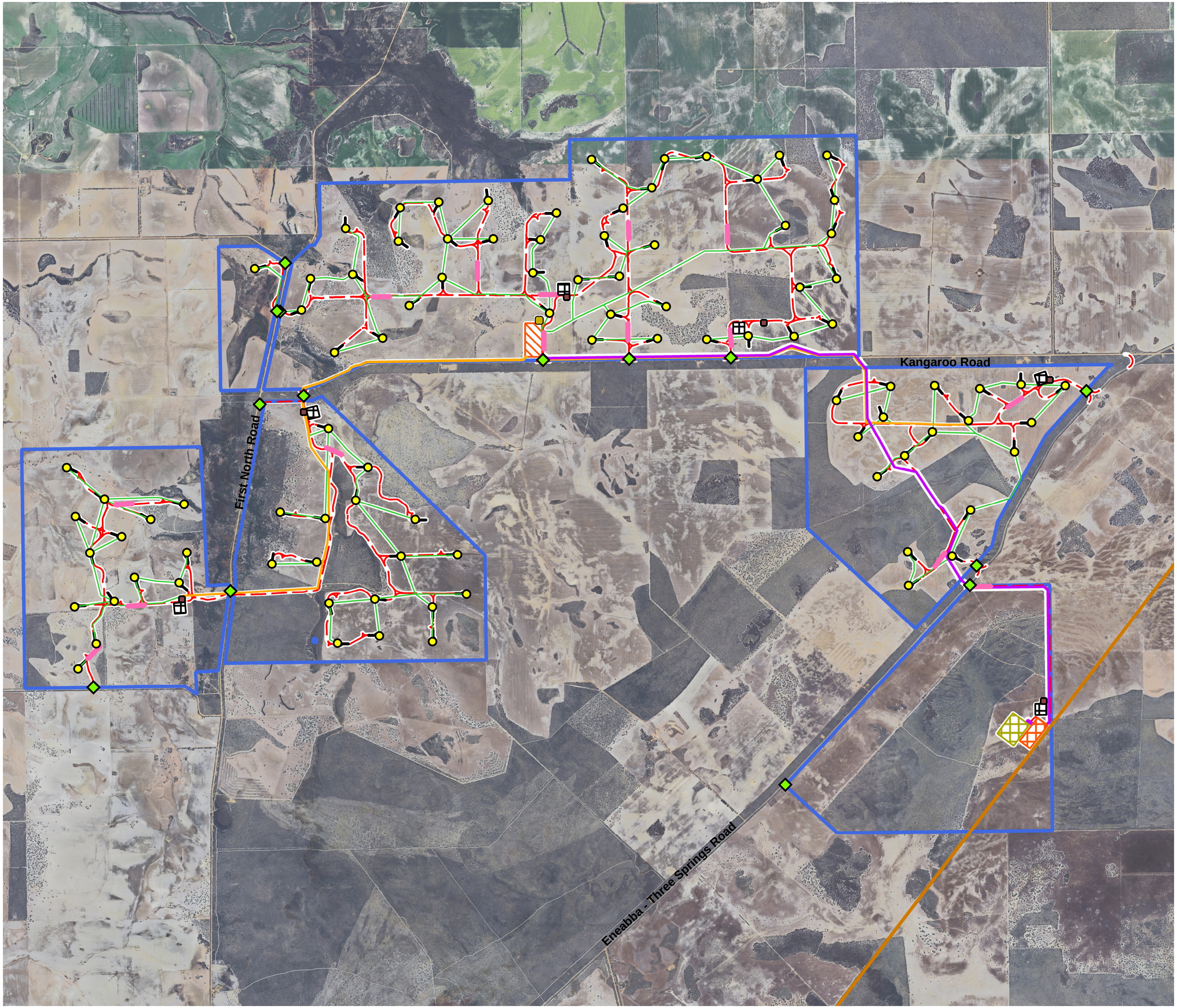
Oversby Consulting

PROJECT
TWINHILLS WIND FARM,
THREE SPRINGS

DRAWING TITLE
EXISTING GROUND WATER PLAN

PROJECT No.	DRAWING No.	REVISION
B24045	003	A



OVERVIEW WIND FARM INFRASTRUCTURE

- Project boundary
- Wind Turbine Generator (109 WTGs)
- WTG construction area
- Access Gate
- Site O&M office and carpark
- Concrete batching plant
- Wind farm internal substation
- Construction site office and compound
- Grid terminal station
- Battery Energy Storage System (BESS)
- Staging area
- Development footprint
- Accessways
- Underground cabling
- Overhead cabling
- Transmission line cabling
- Existing grid transmission line

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Ref: DWG 090.C.1
Author: J. Mourier
Approved: M. Gray
Date created: 12.02.2026
Datum: GDA2020 / MGA zone 50

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WIND PROSPECT

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