Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6398/2020/1
Works approval holder	Mallokup Malt Pty Ltd
ACN	634 495 739
Registered business address	155 Spencer Street SOUTH BUNBURY WA 6230
DWER file number	DER2020/000190
Duration	28/01/2021 to 27/01/2026
Date of issue	27/01/2021
Premises details	Lot 51 Ludlow Road North STIRLING ESTATE WA 6271 Legal description - Lot 51 on Deposited Plan 61595 As depicted in Schedule 1

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**	**Assessed throughput capacity**
Category *18*: Food processing premises (a) on which vegetables are, or fruit or meat is, preserved, cooked, dried, canned, bottled or processed; and (b) from which liquid waste is or to be discharged onto land or into waters.	Not more than 500 tonnes of malt produced per annual period

This works approval is granted to the works approval holder, subject to the attached conditions, on 27 January 2021, by:

Fiona Roser
Digitally signed by Fiona Roser
Date: 2021.01.27 16:37:14 +08'00'

Fiona Roser
A/MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
27/01/2021	*W6398/2020/1*	*New works approval*

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

  (i) if dated, refers to that particular version; and

  (ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location; and

(d) within the corresponding timeframe,

as set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure	Design and construction / installation requirements	Infrastructure location
1.	Malt production shed (enclosed) housing the following equipment: Stainless steel steep tank, 10.82m^3 (1660mm diameter x 5000mm high) 2x Stainless steel germination – kilning vessels (GKV) 240m^3 (12 x 4 x 5m). Vacuum transfer machine. Bagging machine.	• Shed to have concrete graded floor that gravity drains all liquid spills to the grated concrete floor drain that drains to the WWTP. • Filter baskets with 3mm aperture located within the grated drain, steep and GKV tanks.	As depicted in Schedule 1, Figure 2 labelled as: Gravity waste collection Steep Tank Germination Kilning Vessel Vacuum Transfer Machine Bagging Machine Grain silo Rain water tank
2.	WWTP consisting of the following: 30kL below ground concrete solids sump. 60kL aeration tank with removable cover 250kL fully enclosed wastewater reservoir (storage tank) Aeration and transfer pumps	• High level alarms installed in the sump, aeration and storage tanks. • Aeration tank located within a concrete bunded containment infrastructure.	As depicted in Schedule 1, Figure 2 labelled as: Solid sump Aeration tank Wastewater Reservoir 250kL Pumps
3.	0.9 Ha irrigation area consisting of the following : Computer controlled irrigation system. Pipeline connecting wastewater reservoir to the sprinkler lines. 5x Irrigation valves contained within the pipeline and connected to a computer to control irrigation discharges. Cultivated pasture.	• Flow meter to be installed on the pipeline between the wastewater reservoir and sprinkler lines to enable irrigation flows to be accurately measured • Sprinklers placed every 10 meters along the sprinkler lines. • Soil moisture probe located within irrigation area A1 (as depicted in Figure 3, Schedule 1) that measures soil moisture in kPA, 30 cm below the ground. • Computer monitoring programme installed that records soil moisture in kPA, soil salinity in µS /cm and temperature in 0C at 10cm increments and relays information	As depicted in Schedule 1, Figure 3 labelled as: Pipelines Flow meter Irrigation valve 1 – 5 Irrigation lines Soil moisture probe

	Infrastructure	Design and construction / installation requirements	Infrastructure location
		to a computer. • Weather Station that records daily rainfall in millimetres located on the Premises.	

2. The works approval holder must design, construct, and install groundwater monitoring wells in accordance with the requirements specified in Table 2.

Table 2: Infrastructure requirements – groundwater monitoring wells

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
Groundwater monitoring well(s) MB3 and MB 4	<u>Well design and construction:</u> Designed and constructed in accordance with *ASTM D5092/D5092M-16: Standard practice for design and installation of groundwater monitoring bores*. Wells must be constructed with a screened interval from a depth of 0.5 to 3.0 metres below the ground level.	As depicted in Schedule 1, Figures 1, monitoring locations depicted as MB3 and MB4	Must be constructed, developed (purged), and determined to be operational by no later than 30 calendar days/months prior to the commencement of time limited operations under Condition 8.
	<u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring wells. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	<u>Well construction log:</u> Well construction details must be documented within a well construction log to demonstrate compliance with *ASTM D5092/D5092M-16*. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	<u>Well development:</u> All installed monitoring wells must be developed after drilling to remove fine sand, silt, clay and any drilling mud residues from around the well screen to ensure the hydraulic functioning of the well. A detailed record should be kept of well development activities and included in the well construction log.		
	<u>Installation survey:</u> the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	<u>Well network map:</u> a well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells in the		

Infrastructure	Design, construction, and installation requirements	Monitoring well location(s)	Timeframe
	monitoring network and their respective identification numbers.		

Note 1: refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on well screen depth and length.

Compliance reporting

3. The works approval holder must within 30 calendar days of all the infrastructure or equipment required by conditions 1 and 2 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1;

(b) submit to the CEO a well construction report evidencing compliance with the requirements of condition 2; and

(c) prepare and submit to the CEO an Environmental Compliance Report on that compliance to both conditions 1 and 2.

4. The Environmental Compliance Report required by condition 3 must include as a minimum the following:

(a) certification by a Qualified Driller that the monitoring bores (MB3 and MB4) or component(s) thereof, as specified in condition 2, have been constructed in accordance with the relevant requirements specified in condition 2;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1; and

(c) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

5. Along with the requirements of condition 3, works approval holder must submit to the CEO copies of the bore logs recorded at the time of installation of each groundwater monitoring bore, which include the following:

(a) GPS coordinates of bore locations;

(b) start and finish times dates of installation;

(c) type of drilling method used;

(d) diameters and depth of hold drilled;

(e) complete strata details to include;

i) well completion diagram;

ii) lithological description, including strata depths, and

iii) standing water level.

(f) casing details to include:

i) type and diameter and

ii) class of pipe and wall thickness.

(g) slotted screening details to include:

i) length of slotted section and location:

ii) screen type, dimensions and location, and

iii) gravel pack material and size.

(h) bore development procedure and record, including total drilled depth; and

(i) surveyed height (AHD) of each bore.

Time limited operations phase

Commencement and duration

6. The works approval holder may only commence time limited operations for an item of infrastructure identified in condition 1 where the Environmental Compliance Report as required by condition 3 has been submitted by the works approval holder.

7. The works approval holder may conduct time limited operations for an item of infrastructure specified in condition 1 for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 6 for that item of infrastructure.

Time limited operations requirements and emission limits

8. During time limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 3 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 3.

Table 3: Infrastructure and equipment requirements during time limited operations

	Site infrastructure and equipment	Operational requirement	Infrastructure location
1.	Malt production shed Enclosed shed housing the following: • Concrete graded floor that gravity drains all liquid spills to the grated concrete floor drain that drains into the 30kL solids sump. • Stainless steel steep tank, 10.82m^3 • 2x Stainless steel germination – kilning vessels 240m^3 • Filter basket with 3mm aperture located within the grated drain • Vacuum transfer machine • Bagging machine	(a) All wastewater and liquid spills within the malt operational area are directed to the WWTP via the concrete drainage system. (b) Filter baskets are monitored daily and emptied once a week.	As shown in Schedule 1, Figure 2 labelled as: Gravity waste collection Steep Tank Germination Kilning Vessel Vacuum Transfer Machine Bagging Machine Grain silo Rain water tank
2.	WWTP consisting of the following: • 30kL concrete solids sump • 60kL aeration tank • 250kL wastewater reservoir (storage tank) • Aeration and transfer pumps	(a) The high level alarm system is maintained to alert of potential containment overtopping. (b) Wastewater undergoes pH and aeration treatment before being discharged to the storage tank. (c) Sampling point L1 within the 250kL storage tank is maintained to allow for periodic sampling of treated wastewater.	As shown in Schedule 1, Figure 2 labelled as: Solid sump Aeration tank Wastewater Reservoir 250kL Pumps

	Site infrastructure and equipment	Operational requirement	Infrastructure location
3.	0.9 Ha irrigation area A1 consisting of the following: • Pipeline connecting 250kL wasterwater reservoir to the sprinkler lines. • Cultivated pasture. • Flow meter located on the out-take pipeline from the 250kL wastewater reservoir. • 5x Irrigation valves • 5x sprinkler lines • Sprinklers located 10 metres apart along sprinkler line • Soil moisture probe located within irrigation area A1 (as depicted in Figure 3, Schedule 1) that measures soil moisture in kPA, 30 cm below the ground. • Computer monitoring programme that records soil moisture in kPA, soil salinity in µS /cm and temperature in ^{0}C at 10cm increments and relays information to a computer. • Weather Station that records daily rainfall in millimetres. • Monitoring Bore 1 • Monitoring Bores 3 and 4	(a) Flow meter maintained to enable the cumulative volume of wastewater discharged from the storage tank to the irrigation area to be measured. (b) Irrigation system valves, pumps, pipelines, and other fittings must be maintained and inspected daily for ruptures or leaks when irrigating. (c) Automated sprinklers to be maintained to ensure no blockages to allow even and effective spray production and ensure stopping and cut-off mechanisms are functioning as per equipment design. (d) Integrated computer controlled irrigation system maintained so that irrigation ceases when the soil moisture probe detects ≥5kPA at 30cm below ground level. (e) Monitoring bores are maintained and capable of taking water level readings and water samples.	As shown in Schedule 1, Figure 1 & 3 labelled as: Pipelines Flow meter Irrigation valve 1 – 5 Irrigation lines Soil moisture probe MB1 MB3 and MB 4

9. During time limited operations, the works approval holder must ensure that the emission(s) specified in Table 4, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 4: Authorised discharge of treated wastewater via irrigation

Emission point reference as specified in Schedule 1	Discharge via irrigation requirements
A1 as specified in Figure 3, Schedule 1	(a) wastewater must be treated in the wastewater treatment system, which includes pH buffering, aerobic treatment and settling, prior to discharge to land; (b) only treated wastewater from the storage tank in the WWTP is irrigated; (c) irrigation occurs on a rotational basis ensuring that areas are dry for 24 hours between applications; (d) no irrigation occurs between 1 June to 30 September (inclusive); (e) no irrigation generated run-off, spray drift or discharge occurs beyond the boundary of the irrigation area A1; (f) irrigation is not undertaken 12 hours before, during or 24 hours immediately after a rainfall event; (g) wastewater is evenly distributed over the irrigation area; (h) irrigation does not occur on land that has a soil moisture greater

Emission point reference as specified in Schedule 1	Discharge via irrigation requirements
	than 10 kPA when measured 30cm below ground level; (i) there are daily visual inspections of the irrigation area including sprinklers, pipeline; valves and pump, when irrigation is occurring; (j) vegetation in the irrigation area A1 is harvested at least once during time limited operations; (k) no livestock is permitted to graze the irrigation area; (l) no soil erosion occurs, and (m) healthy vegetation cover is maintained over the irrigated area.

10. During time limited operations, the works approval holder must ensure that the emissions from the discharge point listed in Table 5 do not exceed the corresponding limit(s) when monitored in accordance with condition 10.

Table 5: Emission and discharge limits during time limited operations

Discharge point	Parameter	Loading Limit
A1 As shown in Figure 3, Schedule 1	Total nitrogen	<300kg/ha/annual period
	Total phosphorus	<50kg/ha/annual period

Monitoring during time limited operations

11. The works approval holder must ensure that:

(a) monitoring is undertaken in each monthly period such that there are at least 15 days in between the days on which samples are taken in successive months, and

(b) monitoring is undertaken each quarterly period such that there are a least 45 days in between the days on which samples are taken in successive months.

12. The works approval holder must ensure that all samples required for collection by Conditions 14, and 15 are submitted to and tested by a laboratory with current NATA Accreditation for the parameters being measured unless indicated otherwise in the relevant table.

13. The works approval holder shall undertake the monitoring in Table 6 according to the specifications in that table.

Table 6: Process monitoring of malt during time limited operations

Input / Output	Parameter	Units	Averaging period	Frequency
Grain Input	Processed through malt facility	tonnes	Monthly	Each batched produced
Malt Output				

14. The works approval holder must monitor emissions during time limited operations in accordance with Table 7.

Table 7: Emissions and discharge monitoring

Monitoring point reference and location	Parameter	Frequency	Unit	Method	
				Sampling	Analysis
L2 as shown in Figures 2 & 3 in Schedule 1 (outflow of storage tank in the WWTP)	Volumetric flow rate	Continuous when discharging	m^3/day	n/a	n/a
L1 as shown in Figures 2 & 3 in Schedule 1 (the storage tank in the WWTP)	pH[1]	Monthly	-	Spot sample	AS/NZS5667.1-1998 and AS/NZS5667.10-1998
	Electrical conductivity[1]		µS/cm		
	Total nitrogen		mg/L		
	Total phosphorus				
	Total dissolved solids				
	Total suspended solids				
	COD				

[1] In field non-NATA accredited analysis permitted.

15. The works approval holder must monitor the groundwater during time limited operations for concentrations of the identified parameters in accordance with Table 8.

Table 8: Groundwater monitoring operations

Monitoring well location Shown in Figures 1, 3 & 4 Schedule 1	Parameter	Unit	Frequency	Method	
				Sampling	Analysis
MB1, MB3 and MB4	Standing water level	m(AHD) and mbgl	Monthly	n/a	n/a
MB3 and MB4	pH[1]	pH units	Each quarterly period during time limited operations that fall within the months of March, June, September and December.	Spot sample	Spot and grab samples, in accordance with AS/NZS 5667.11.
	Electrical conductivity[1]	µS / cm			
	Total nitrogen	mg/L		Grab samples	
	Ammonia nitrogen				
	Nitrate nitrogen				
	Total				

Monitoring well location Shown in Figures 1, 3 & 4 Schedule 1	Parameter	Unit	Frequency	Method	
				Sampling	Analysis
	phosphorus				
	Reactive phosphorus				

[1] In field non-NATA accredited analysis permitted.

16. The works approval holder must record the results of all monitoring activity required by conditions 13, 14 and 15

Compliance reporting

17. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days of the completion date of time limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

18. The works approval holder must ensure the report required by condition 17 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of grain processed and malt produced;

(b) a summary of monitoring results obtained during time limited operations under conditions 10, 13, 14 and 15.

(c) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable), which includes records detailing performance against the irrigation operational requirements;

(d) a review of performance and compliance against the conditions of the works approval; and

(e) where the manufacturer's design specifications and the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

19. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

20. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 8;

(c) monitoring programmes undertaken in accordance with conditions 13, 14 and 15; and

(d) complaints received under condition 19.

21. The books specified under condition 20 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 9 have the meanings defined.

Table 9: Definitions

Term	Definition
ACN	Australian Company Number
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
AS 1726	means Australian Standard *AS 1726 Geotechnical site investigations*, as amended from time to time.
ASTM D5092/D5092M-16	means the ASTM international standard for *Standard practice for design and installation of groundwater monitoring wells (Designation: ASTM D5092/D5092M-16)*, as amended from time to time.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
COD	Chemical Oxygen Demand
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA).
EP Regulations	*Environmental Protection Regulations 1987* (WA).
l/hr	means litres per hour
harvest	means cutting and removing from the site such as hay or silage making.

Term	Definition
kPA	means kiloPascal
licensed contractor	means an individual or company registered or otherwise approved to store, treat, reuse or dispose of a controlled waste.
monthly period	means a one-month period commencing from first of a month until first day minus one of the immediately following month. *e.g. "means a one-month period commencing from the seventh day of a month until the sixth day of the immediately following month."*
mBGL	means meters below ground level.
mg/L	means milligrams per litre
n/a	means not applicable
premises	the premises to which this works approval applies, as specified at the front of this works approval and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
qualified driller	means a driller who holds a Class 1 licence as per the Drillers' Classification System outlined in Minimum Construction Requirements for Water Bores in Australia (AIH 2012)
time limited operations	refers to the operation of the infrastructure and equipment identified under this works approval that is authorised for that purpose, subject to the relevant conditions.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.
WWTP	means wastewater treatment plant
µS / cm	means micro Siemens per centimetre

END OF CONDITION

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in orange in the map below (Figure 1).

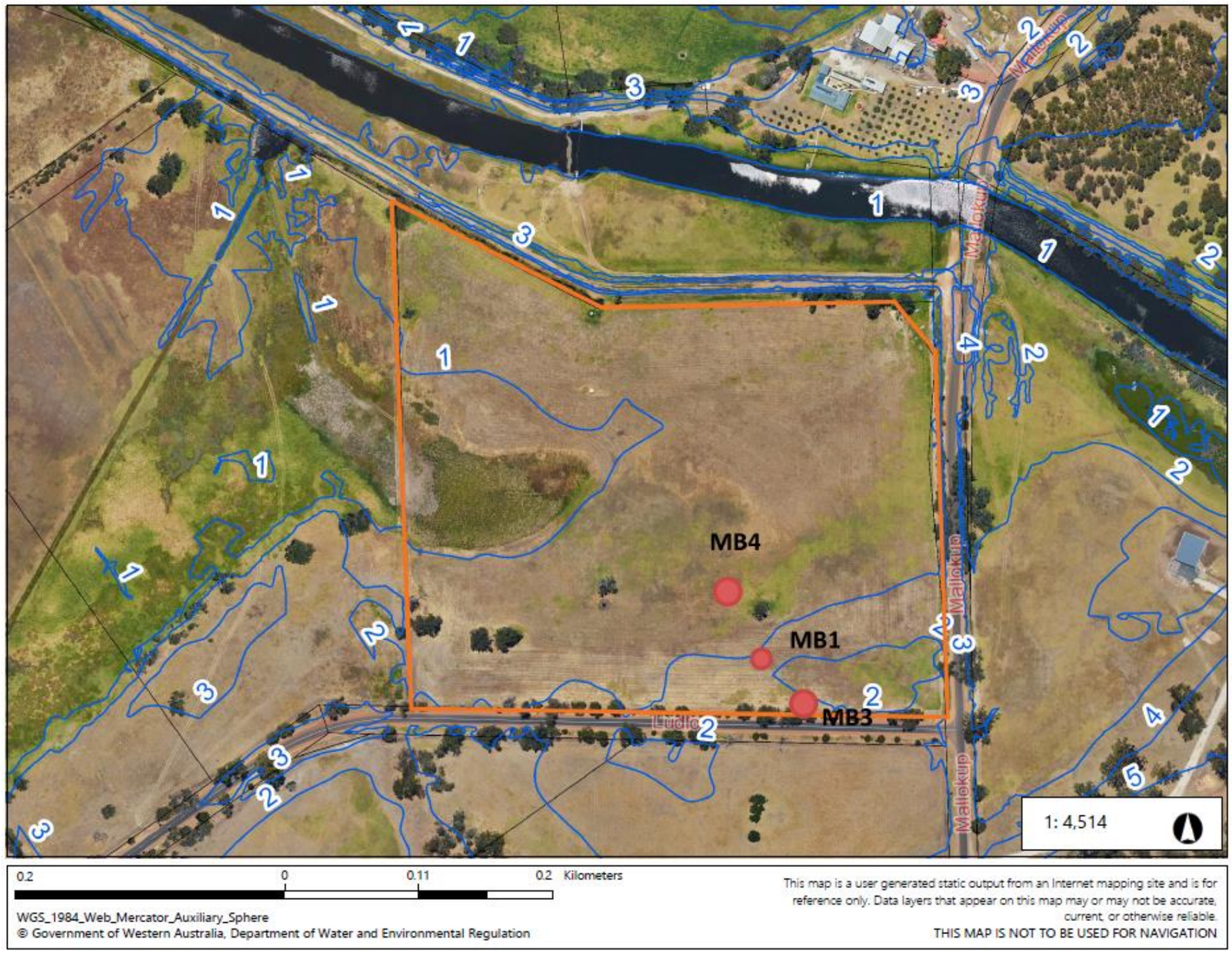

Figure 1: Map of premises.

Monitoring bore locations are outlined as red circles. MB1 located within the irrigation area, MB3 is up gradient and MB4 is down gradient of the irrigation area.

Malt Infrastructure map

The malt infrastructure of the prescribed premises is shown in the map below (Figure 2).

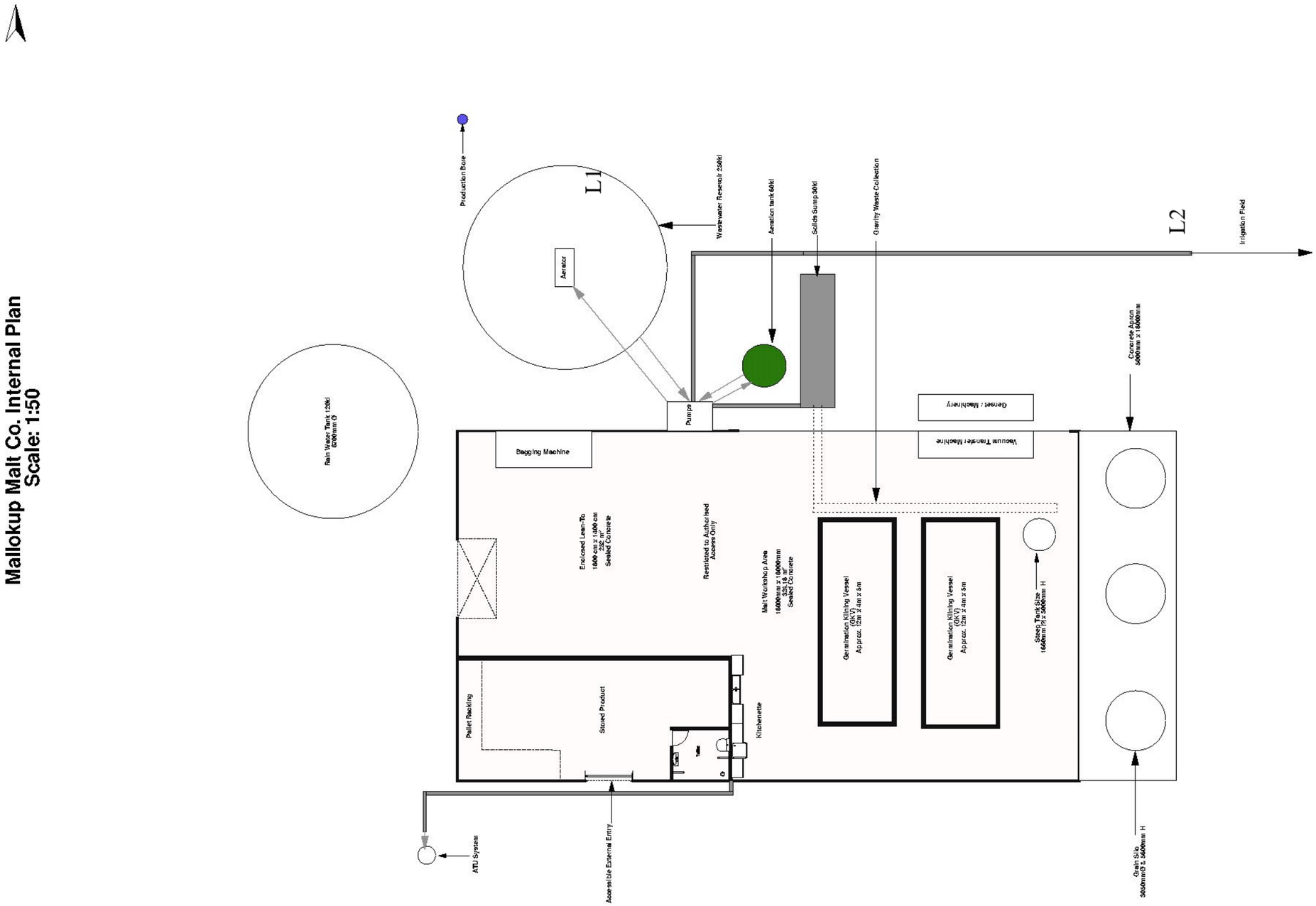

Figure 2: Map of the malt processing infrastructure within the prescribed premises.

WWTP and Irrigation map

The WWTP and Irrigation layout of the prescribed premises is shown in the map below (Figure 1).

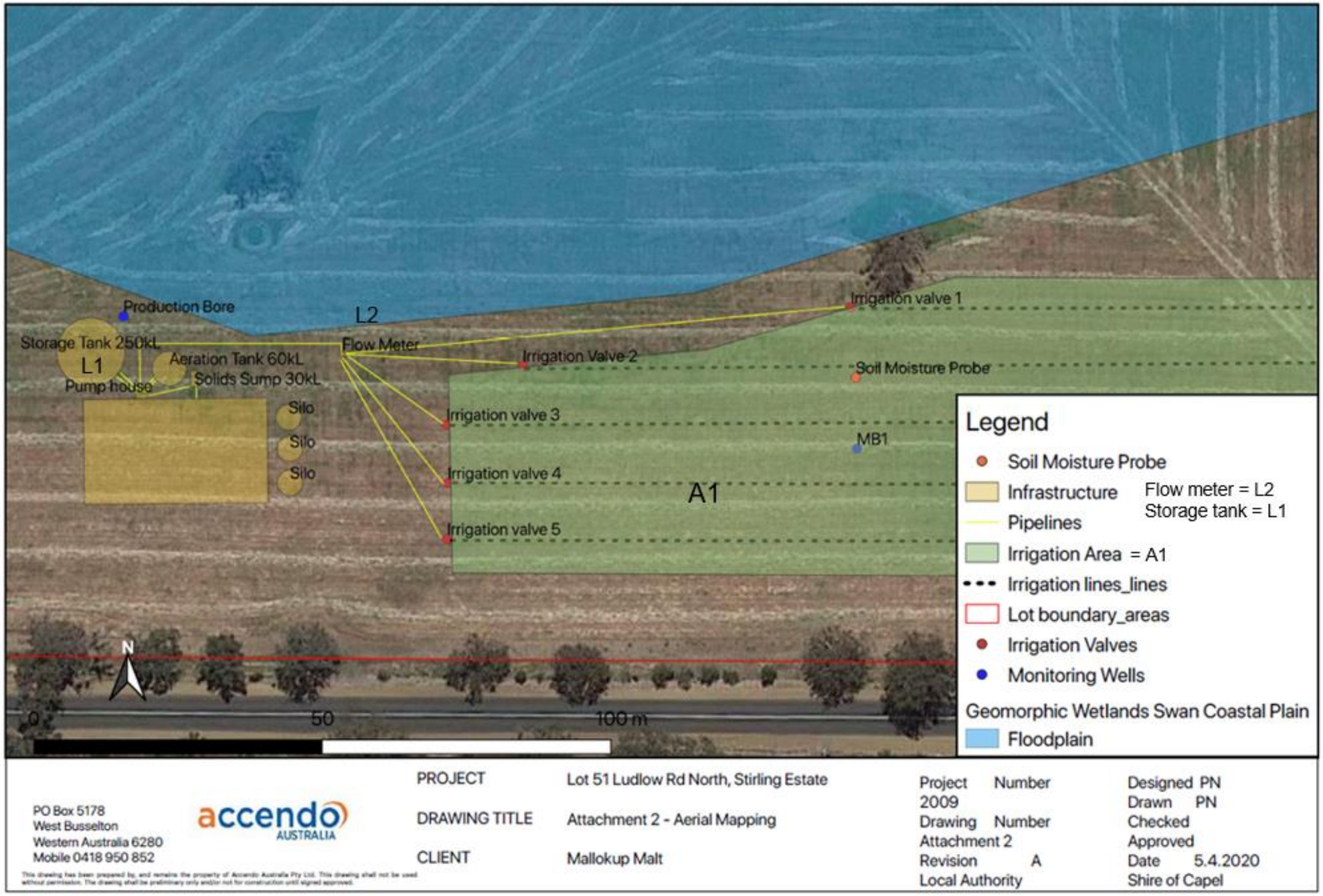

Figure 3: Map of the WWTP and irrigation area within the prescribed premise. (Sampling points are outlined as L1 and L2 and A1 is the irrigation area.)