Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6679/2022/1
Works approval holder	FBROS Pty Ltd
ACN	ACN 634 416 078
Registered business address	Valencia Complex, 55 Benara Road, Caversham WA 6055
DWER file number	DER2022/000183
Duration	01/12/2022 to 30/11/2025
Date of amendment	24 July 2023
Premises details	Funk Cider 38 Swan St, Henley Brook, WA 6055 Legal description - Lot 123 on Plan 3820 Certificate of Title Volume 2761 Folio 567

Prescribed premises category description (Schedule 1, ***Environmental Protection Regulations 1987***)	**Assessed production capacity**
Category 24: Non-Alcoholic Beverage Manufacturing	Not more than 50 kL per year (fruit juice)
Category 25: Alcoholic Beverage Manufacturing	Not more than 350 kL per year (beer and cider)

This works approval is granted to the works approval holder, subject to the attached conditions, on 24 July 2023, by:

Caron Goodbourn

Digitally signed by Caron Goodbourn
Date: 2023.07.24 08:59:09 +08'00'

MANAGER PROCESS INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
01/12/2022	W6676/2022/1	Works approval granted.
24/07/2023	W6676/2022/1	Amendment application for upgrades to the wastewater treatment plant allow environmental commissioning and extend time limited operations

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

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and install the infrastructure and equipment;

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

(c) at the corresponding infrastructure location,

as set out in Table 1.

Table 1 Design and construction / installation requirements

	Infrastructure	**Design and construction / installation requirements**	**Infrastructure location- Schedule 1 Maps**
1	Beverage production shed housing the following processing equipment: ▪ Apple belt press, including bin tipper, washer / elevator / crusher and belt press ▪ Citrus Line, including bin tipper and citrus pressing machine ▪ Mango destoner ▪ Coolroom and Freezer ▪ Refrigeration units located externally to Coolroom in the southwest of the production shed. ▪ Noise attenuating wall ▪ Fermentation tanks: ▪ 3 x 600 L ▪ 2 x 850 L ▪ 1 x 1,700 L ▪ 4 x 2,000 L ▪ 1 x 2,500 L ▪ 1 x 3,000 L ▪ 2 x 3,500 L ▪ Juice settling tank: ▪ 1 x 10,000 L ▪ Carbonation / brite tanks: ▪ 2 x 1,000 L ▪ 1 x 1,200 L	a) Production shed to be fully enclosed and constructed with an impervious concrete floor with drains designed to convey all wastewater generated to the wastewater treatment plant; b) All plant and equipment used for beverage production and packaging must be installed and operated within the production shed; c) A noise attenuating wall composed of Colorbond steel paneling, 100 mm thick, 1.2m in height and 8m in length to be constructed abutting external refrigeration units.	Figure 1- Proposed cidery Figure 2 - Cidery shed

	Infrastructure	Design and construction / installation requirements	Infrastructure location- Schedule 1 Maps
	▪ 2 x 2,000 L ▪ 2 x 4,000 L ▪ Beer tanks: ▪ 3 x 1,200 L ▪ 4 x 1,200L Uni-tank (fermentation/carbonation) ▪ 1 x 2,000L Lauter Slash/Mash Tank ▪ 1 X 2,000L Kettle (Whirlpool) tank • Waste Tank: ▪ 10 x 500 kg waste bins with plastic liners		
2	Wastewater treatment plant (WWTP), designed to treat up to 7 kl of wastewater per day. WWTP comprises: ▪ Holding tank (7 kL, below ground enclosed and sealed polyethylene) ▪ pH closed-loop dosing system ▪ Sequence Batch Reactor unit (23 kL enclosed and sealed polyethylene fitted with overflow outlet, sensors, and warning alarms) with submersible aerator. ▪ Irrigation tank (5 kL enclosed and sealed polyethylene) ▪ Water storage tanks (2 x 23 kL). ▪ Pumps, pipes and associated overflow drainage infrastructure	a) WWTP designed to be capable of achieving the following final wastewater treatment quality: - pH 6.5 to 8.5 - TSS < 30mg/L - TN < 30mg/L - TP< 2 mg/L - BOD < 500mg/L; b) Poly strainers to be fitted in all drains to remove gross solids from wastewater; c) High level audio-visual warning alarms to be installed within each tank to prevent overtopping; d) Install high level audio-visual warning alarms to be provided to indicate a malfunction in the pumps in the surge control and effluent discharge tanks. The audio alarm shall have a muting device and shall be fitted to the control panel; e) Wastewater sampling point to be fitted post-WWTP exit, prior to discharge (M2); and f) Flow meter capable of measuring cumulative flows of treated wastewater discharged to the wastewater irrigation area to be installed	Figure 1- Wastewater treatment plant

	Infrastructure	Design and construction / installation requirements	Infrastructure location- Schedule 1 Maps
3	Wastewater treatment plant (WWTP), upgrades comprise: ▪ Drum filter and 1 kL solid waste collector ▪ 2 x 23 kL enclosed and sealed polyethylene balance tanks with lift pumps ▪ Multicyclone with back flush draining to the holding tank ▪ Disc filter on the outflow pipe ▪ Post treatment telemetered flow meter (M1) with batching controller	a) High level audio-visual warning alarms to be installed within each tank to prevent overtopping; b) Install high level audio-visual warning alarms to be provided to indicate a malfunction in the pumps in the surge control and effluent discharge tanks. The audio alarm shall have a muting device and shall be fitted to the control panel; c) Wastewater sampling point to be fitted post-WWTP exit, prior to discharge (M2); and d) Flow meter (M1) capable of measuring cumulative flows of treated wastewater discharged to the wastewater irrigation area to be installed	Figure 1- Wastewater treatment plant
4	Wastewater irrigation area (1193m^2 above ground drip irrigation) consisting of: • rows of vines with inter-row voids for planting of summer and winter crops. • wastewater distribution 50 mm mainline pipe with 40 mm submain lines installed at each irrigation zone, including integral drip lines along vines (surface) and inter-row voids ~~(subsurface)~~	a) Must be designed to enable wastewater to be evenly irrigated over the whole irrigation area with the layout of pipelines and drippers in accordance with the irrigation layout map in Figure 1; and b) The perimeter of the irrigation area to be bunded with a 0.5m high earth bund to prevent surface water runoff.	Figure 1 - Irrigation system layout
5	Groundwater monitoring wells MW1 and MW2	<u>Timeframe:</u> Each bore must be constructed, developed (purged), and determined to be operational by no later than **30 calendar days** prior to the commencement of irrigation activities authorised during time limited operations (see Condition **Error! Reference source not found.**). <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 the water table to a depth of 2 m below the water table and 1 m above the water table. <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	Figure 1 - Groundwater monitoring bores

	Infrastructure	Design and construction / installation requirements	Infrastructure location- Schedule 1 Maps
		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.	
		Well development: 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.	
		Installation survey: the vertical (top of casing) and horizontal position of each monitoring well must be surveyed and subsequently mapped by a suitably qualified surveyor.	
		Well network map: a well location map (using aerial image overlay) must be prepared and include the location of all monitoring wells in the monitoring network and their respective identification numbers.	

Compliance reporting

2. The works approval holder must within 30 calendar days of the infrastructure required by condition 1 being constructed or installed:

undertake an audit of their compliance with the requirements of condition 1; and

(a) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification that the infrastructure or component(s) thereof, as specified in condition1, have been constructed in accordance with the relevant requirements specified in condition 1;

(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.

4. Subject to condition 3(a), where the infrastructure or component of infrastructure has been certified as not being constructed, or does not comply with the corresponding requirements, or contains material defects, the works approval holder must:

(a) correct the non-compliant or defective works, prior to re-certifying in accordance with condition 3(a); or

(b) provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 1 that do not require rectification and do not constitute a material defect along with the Environmental Compliance Report required by condition 2.

Environmental commissioning

Commencement and duration

5. The works approval holder must only commence environmental commissioning of the wastewater treatment plant infrastructure identified in condition 1 Table 1 Item 3 (wastewater treatment upgrades) where the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder.

6. The works approval holder may conduct environmental commissioning operations for the wastewater treatment plant infrastructure specified in condition 1 Table 1 until 15 October 2023.

7. During environmental commissioning, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 2 and located at the corresponding infrastructure location are maintained and operated in accordance with the corresponding operational requirement set out in Table 2**Error! Reference source not found.**.

Table 2 Infrastructure and equipment requirements during environmental commissioning

Site infrastructure and equipment	Operational requirement	Infrastructure location- Schedule 1 Maps
Wastewater treatment plant (WWTP), comprising: • 7 kl raw wastewater holding tank (below ground) • pH closed-loop dosing system • 23 kL Sequence Batch Reactor unit with submersible aerator • 2 x 23 kL balance tanks with lift pumps • Multicyclone • 5 kL irrigation tank • 2 x 23 kL water storage tanks • Pumps, pipes and associated infrastructure • Disk filter • Telemetered flow	a) No more than 4,631L per day of beverage production effluent may be directed to the WWTP; b) Only beverage production wastewater may be directed to the WWTS; c) Sludge from the WWTP to be disposed off-site by a licensed liquid waste contractor; d) Sampling point at the exit (M2) of the WWTP to be maintained to allow for periodic sampling of treated wastewater; e) High level sensors within each tank must be operational and maintained to enable the wastewater level within each tank to be determined; f) Submersible aerators within the Sequence Batch Reactor to be maintained to enable the aeration of wastewater within the unit; and g) Alarms, connected to visible flashing lights on top of the tanks, must be operational and maintained to alert of any pump, aeration or electrical failure.	Figure 1- Wastewater treatment plant

meter (M1		

8. The works approval holder must submit to the CEO a report on the environmental commissioning in condition 7 by 15 November 2023.

9. The works approval holder must ensure the report required by condition 8 includes the following

   (a) a summary of the environmental commissioning operations, including timeframes, the daily volume of wastewater treated, and the total volume of treated wastewater irrigated to land;

   (b) a review of operational performance and compliance against the conditions of the works approval, including Condition 1 Table 1 Item 2, 2(a);

   (c) 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.

Time limited operations phase

Commencement and duration

10. The works approval holder may only commence time limited operations of the infrastructure identified in condition 1 where the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder.

11. The works approval holder may conduct time limited operations for the infrastructure specified in condition 1:

   (a) for a period not exceeding 15 April 2024 from the day the works approval holder meets the requirements of condition 10 or

   (b) until such time as a licence is granted in accordance with Part V of the *Environmental Protection Act 1986*, if one is granted before 15 April 2024.

12. 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 are 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
1	Beverage production shed	a) Beverage production may only occur within the beverage production shed b) All liquid waste from the beverage production must be directed through the grated drainage system to the WWTP holding tank; and c) Waste bins to be emptied at least weekly for off-site disposal.
2	Wastewater treatment plant (WWTP), comprising: • 7 kl raw wastewater	a) No more than 4,631L per day of beverage production effluent may be directed to the WWTP; b) Only beverage production wastewater may be directed to the WWTS;

	holding tank (below ground) • pH closed-loop dosing system • 23 kL Sequence Batch Reactor unit with submersible aerator • 2 x 23 kL balance tanks with lift pumps • Multicyclone • 5 kL irrigation tank • 2 x 23 kL water storage tanks • Pumps, pipes and associated infrastructure • Disk filter • Telemetered flow meter (M1)	c) Sludge from the WWTP to be disposed off-site by a licensed liquid waste contractor; d) Sampling point at the exit (M2) of the WWTP to be maintained to allow for periodic sampling of raw and treated wastewater; e) High level sensors within each tank must be operational and maintained to enable the wastewater level within each tank to be determined; f) Submersible aerators within the Sequence Batch Reactor to be maintained to enable the aeration of wastewater within the unit; and g) Alarms, connected to visible flashing lights on top of the tanks, must be operational and maintained to alert of any pump, aeration or electrical failure.
3	1.193Ha wastewater irrigation area (L1)	a) Irrigation of wastewater not permitted during a rainfall event or within 24 hours after a rainfall event of greater than 6 mm; b) Irrigation of wastewater may only occur onto actively growing vegetation, vines or crops; c) No wastewater irrigation on land that is visibly waterlogged; d) No wastewater irrigation generated runoff, spray drift or discharge occurs beyond the boundary of L1; e) The perimeter bunding of the irrigation area to be maintained to prevent surface water runoff f) All wastewaters directed to L1 must flow through the flow meter; g) Summer crops, sunflowers and sorghum, shall be planted between inter-row voids each year in November prior to summer wastewater irrigation commencing. h) Winter crops, Canola Brassica and oats, shall be planted between inter-row voids in the last week of April each year prior to winter wastewater irrigation commencing. i) Summer crops to be harvested/ pruned in February and winter crops to be harvested in September and October; j) Record crop biomass (tonnes) removed during each crop harvest and vine coppicing / pruning event. k) Biomass removed from the irrigation area must be disposed off-site and evidence of disposal provided; l) Visual inspection to be undertaken daily to ensure the irrigation system is working effectively with no leaks or blockages; and m) Maintain flow meter (M1) to be capable of continuous, accurate monitoring of wastewater volumes discharged to the irrigation area.

Emissions and discharges

13. The licence holder must ensure that all emissions specified in Table 4, are

discharged to land only from the corresponding discharge point and only at the corresponding discharge point location and in accordance with the corresponding requirements.

Table 4: Authorised discharge areas

Emission	Discharge areas	Discharge via irrigation requirements
Treated brewery wastewater	L1, as depicted in Figure 1, Schedule 1	In accordance with Condition 12 Table 2

14. The works approval holder must remove all wastewater that cannot be irrigated or stored onsite:

(a) by a licenced controlled waste carrier, and

(b) record the volume (in kilolitres) of wastewater removed by the carrier.

15. During time limited operation, 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 17.

Table 5 Emission and discharge limits during time limited operations

Discharge point	Parameter	Limit
L1	TN	<100 kg/ha/annual period
	TP	<8 kg/ha/annual period
	BOD	<1,500 kg/ha/month

Monitoring

16. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;

(b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;

(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;

(d) all soil sampling is conducted in accordance with AS/NZS 4482.1; and

(e) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.

17. The works approval holder must monitor emissions during time limited operations accordance with Table 6.

Table 6 Emissions and discharge monitoring during time limited operations

Discharge point	Monitoring location	Parameter	Frequency	Averaging Period	Unit
L1	WWTP outflow	Volumetric flow	Continuous	Daily	kL
		pH[1]	monthly	Spot	-

	M1 and M2	Electrical conductivity		sample	mS/cm
		TP			mg/L
		TP			
		TSS			
		BOD			
		TDS			

[1] In field non-NATA accredited analysis permitted for pH and electrical conductivity.

18. The works approval holder must monitor soil during environmental time limited operations for concentrations of the identified parameters in accordance with Table 7.

Table 7 Monitoring of ambient soil concentrations during time limited operations

Monitoring location	Parameter	Unit	Frequency
Zone 1, Zone 2, Zone 3, Zone 4: Surface composite sample, comprising 10 samples collected from 0-10 cm across each irrigation zone **SB1, SB2, SB3, SB4**: Soil profile composite sample, comprising a sample of each major soil horizon to a depth of 100 cm. Sampling bore must be relocated each year, within a 5 m diameter plot	pH	-	Once within the time limited operations period and thereafter annually.
	Electrical conductivity	dS/cm	
	TN	mg/kg	
	TP	mg/kg	
	Sodium	mg/kg	
	Calcium	mg/kg	
	Magnesium	mg/kg	
	Phosphorus buffering index (PBI)	mg/kg	

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

Table 8 Monitoring of ambient groundwater concentrations during time limited operations

Monitoring location	Parameter	Unit	Frequency	Averaging period
MB1 MB2	Standing water level	m(AHD) mBGL	Once within time limited operations period and thereafter 6 monthly.	In-field measurement
	pH	-		
	Electrical conductivity	µS/cm		
	Total nitrogen	mg/L		Spot sample
	TP			
	BOD			
	TDS			

20. The works approval holder must ensure that:

(a) the results of all monitoring activity required by conditions 17, 18 and 19 are recorded;

(b) monitoring is undertaken in each daily period such that there are at least 12 hours in between the time on which samples are taken in successive days;

(c) 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

(d) monitoring is undertaken in each six-monthly period such that there are at least five months in between sampling events.

Compliance reporting

21. The works approval holder must submit to the CEO a report on the time limited operations within 30 calendar days following the completion date of time limited operations.

22. The works approval holder must ensure the report required by condition 21 includes the following:

(a) a summary of the time limited operations, including timeframes and amount of alcoholic beverage produced;

(b) a summary of wastewater, soil and groundwater quality results obtained during time limited operations under conditions 17, 18 and 19;

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

(d) a summary of the biomass including estimated tonnages removed from the irrigation area; 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)

23. 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.

24. 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 while complying with conditions 7 and 12;

(c) monitoring programmes undertaken in accordance with conditions 17, 18 and 19; and

(d) complaints received under condition 23.

25. The books specified under condition 24: 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
annual period	a 12-month period commencing from 1 July until 30 June of the immediately following year.
AS/NZS 5667.1	means the current version of Australian / New Zealand Standard AS/NZS 5667.1 *Water Quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.10	means the current version of Australian / New Zealand Standard AS/NZS 5667.10 *Water Quality – Sampling, Part 10: Guidance on sampling of waste waters*
AS/NZS 5667.11	means the current version of Australian/New Zealand Standard AS/NZS 5667.11 *Water quality – Sampling – Guidance on sampling of groundwaters*
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.
BOD	Biochemical oxygen demand
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
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 commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
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).
monthly period	means a one-month period from the first day of the month until the last day of that same month

Term	Definition
premises	the premises to which this licence applies, as specified at the front of this licence 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.
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.
TDS	Total dissolved solids
TLO	Time Limited Operations
TSS	Total suspended solids
TP	Total phosphorus
TN	Total nitrogen
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.

END OF CONDITIONS

Schedule 1: Maps

Premises boundary and key infrastructure

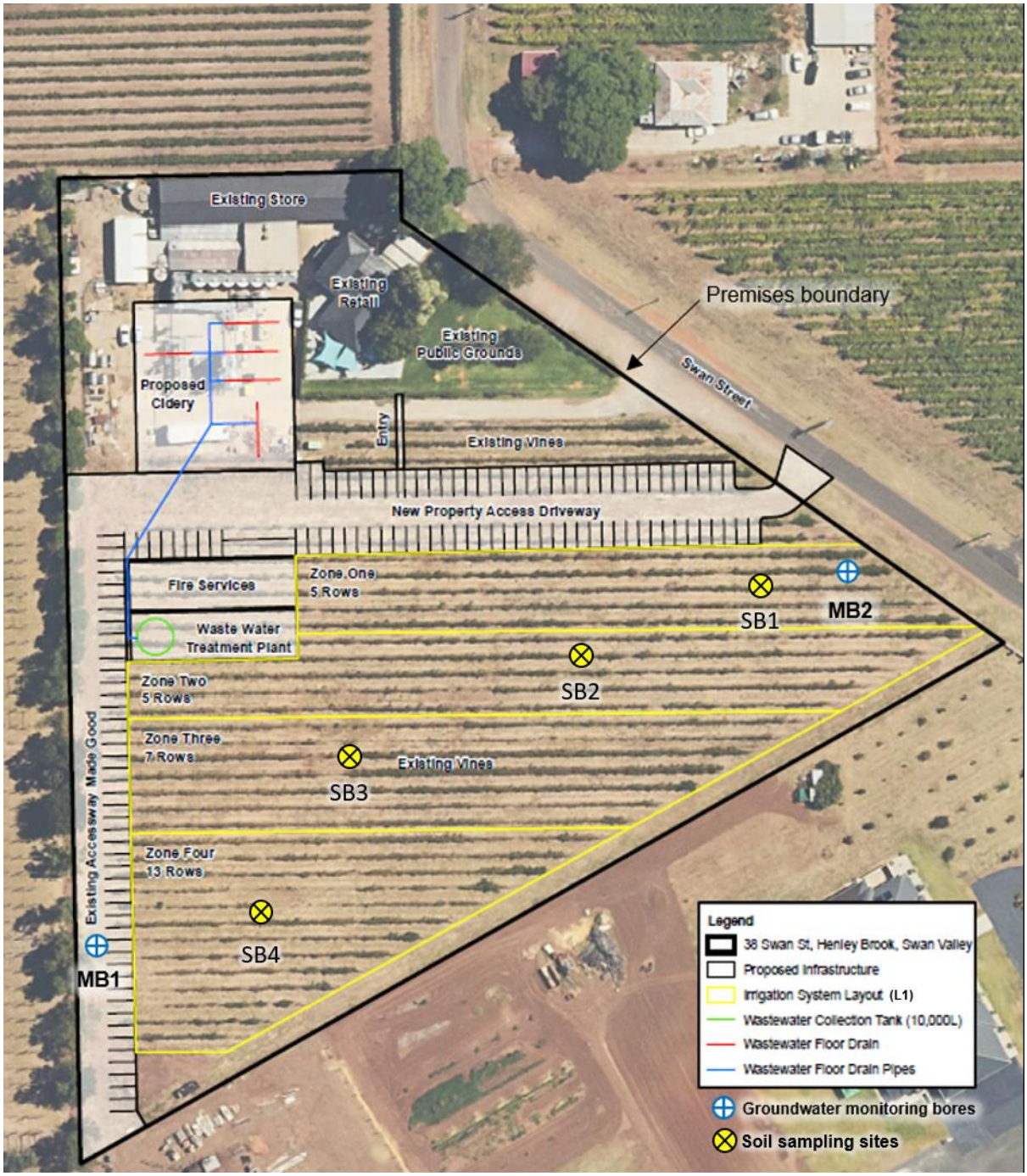

Figure 1 Prescribed premises boundary and key infrastructure layout, including irrigation infrastructure and proposed groundwater monitoring bores

Cidery shed infrastructure and equipment map

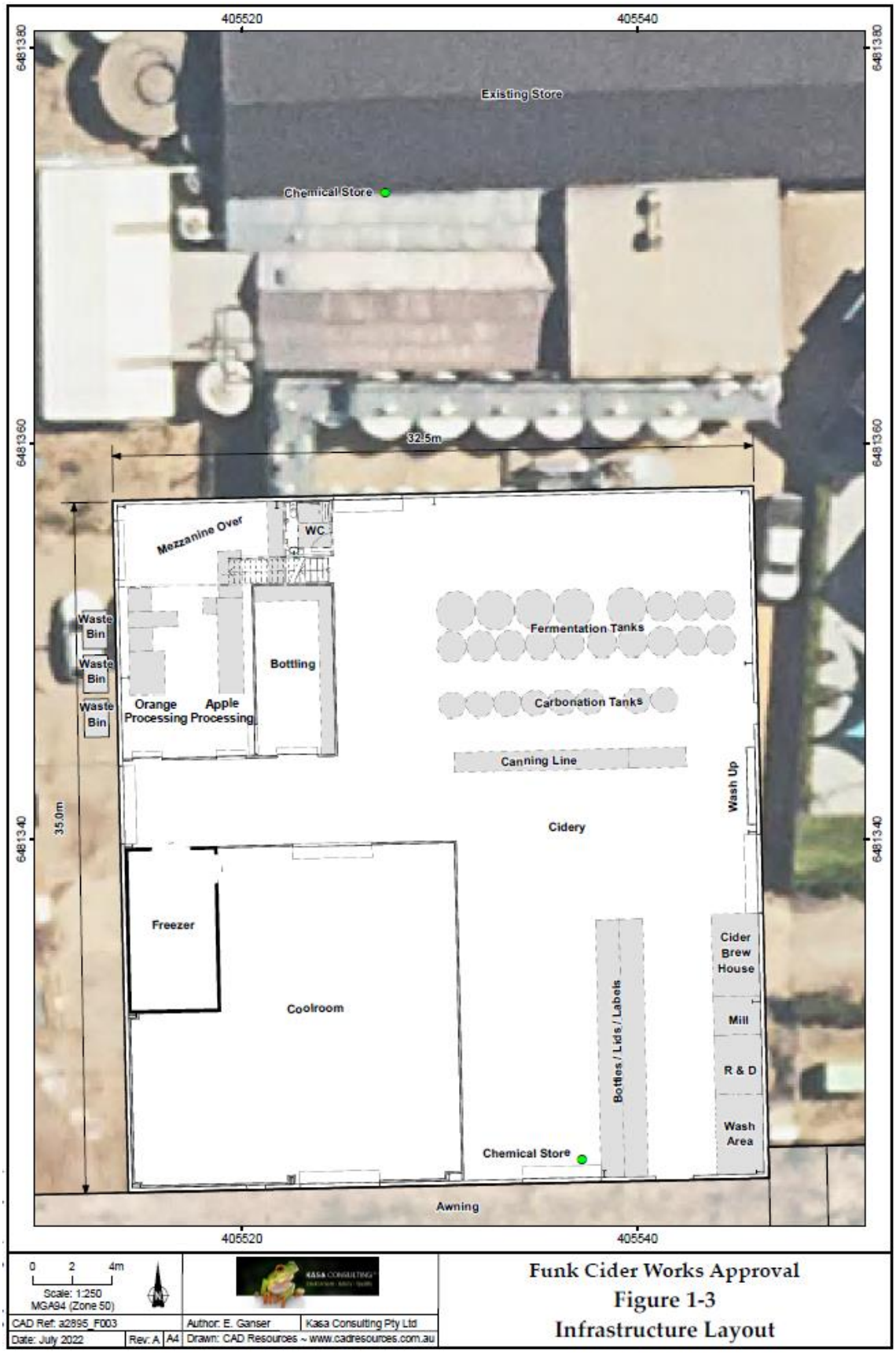

Figure 2 Cidery shed infrastructure layout

Proposed Crop Cover Area and Indicative Irrigation Perimeter Bund

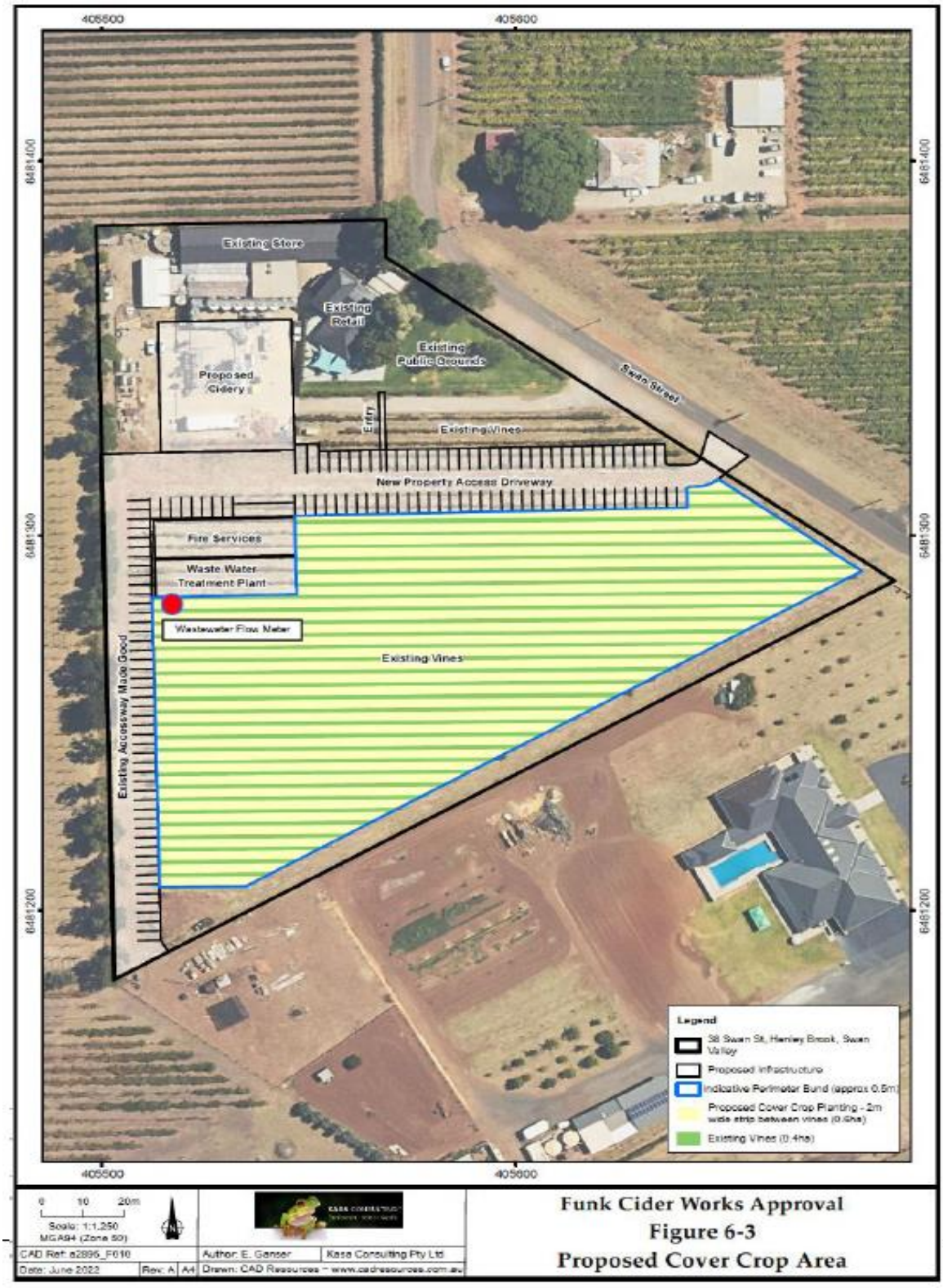

Figure 3 Proposed Crop Cover Area and Indicative Irrigation Perimeter Bund