



Works Approval

Works approval number WXXXX/XXXX/X

Works approval holder Name
ACN ACN (if applicable)

Registered business address Address

Application number APP-XXXX/XXXXXX

Duration DD/MM/20YY to DD/MM/20YY

Date of issue DD/MM/20YY

Premises details
Name of premises
Street address
Legal description -
Part of/Lot XX on Deposited Plan XXXXX
Certificate of Title Volume XXXX Folio XX
As defined by the coordinates in Schedule 2 (delete if not applicable)

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i>)	Assessed design capacity
Category 54: Sewage facility premises: (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	XXX m ³ per day (Officer to insert assessed capacity as per the application - note that it must be less than 500 m ³ per day Officer to include this value in Table 1, 2 and 5 below)

This works approval is granted to the works approval holder, subject to the attached conditions, on Day Month Year, by:

[insert digital signature here][Name]
[Position title]

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

Works approval history

Date	Reference number	Summary of changes
xx/xx/20xx	Wxxxx/xxxx/x	<i>Standardised Approval granted for the listed premises</i>

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 conditions are expressed in tables or otherwise:
 - (i) each row in a table constitutes a separate requirement; and
 - (ii) where a condition or table cell includes requirements set out in paragraphs, sub-paragraphs, dot points or items identified by letters or Roman numerals, each such item constitutes a separate and enforceable requirement;
- (d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:
 - (iii) if dated, refers to that particular version; and
 - (iv) 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.

A Standardised Approval works approval does not provide any authorisation for the clearing of native vegetation. The clearing of native vegetation requires a clearing permit under the EP Act, unless an exemption applies.

Standardised 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 ensure that the specified infrastructure or equipment is designed, constructed and/or installed in accordance with the requirements set out in Table 1.

Table 1: Design and construction / installation requirements

	Infrastructure / equipment	Design and construction / installation requirements	Location
1.	Wastewater treatment plant (WWTP) and pipeline(s)	(a) WWTP operational design capacity must not exceed XXX m³ of sewage per day. (b) WWTP must be capable of treating wastewater to comply with the water quality limits specified in condition 16. (c) All sewage and storage treatment tanks, vessels, transfer pipelines and conveyance infrastructure must be impermeable and free of leaks or defects. (d) Above ground infrastructure must be installed on a hardstand surrounded by an earthen bund. (e) Sealed tanks must be used for the containment and temporary storage of sludge. (f) Final effluent irrigation storage tank must be capable of storing all wastewater not able to be discharged to the irrigation spray field. (g) WWTP must include an alarm system capable of notifying the operator of any pump failures, high tank levels, and/or tank overflows. (h) WWTP must be equipped with a telemetry system and pressure sensors along pipelines to detect leaks and failures. (i) WWTP must be equipped with automatic cut-outs for pipe failure. (j) Irrigation tanks must be fitted with a circulation pump, and chemical dosing and control measurement devices.	As shown in Schedule 1: Premises map

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	Infrastructure / equipment	Design and construction / installation requirements	Location
		(k) Flow meters must be installed on the WWTP inlet and outlet to the irrigation spray field.	
2.	Irrigation spray field	(a) The irrigation spray field must be suitably sized using the methodology specified in Schedule X. (b) The irrigation spray field must be enclosed by fencing (including visible safety signage) to prevent fauna and public access to the irrigation spray field.	As shown in Schedule 1: Premises map
3.	Stormwater drainage	(a) Bunds and diversion drains must be installed where required to divert uncontaminated stormwater away from the irrigation spray field.	Not applicable

Compliance reporting

2. Within 30 calendar days of all the equipment and infrastructure required by condition 1 being constructed and/or installed and commissioned, the works approval holder must:
 - (a) undertake an audit of their compliance with the requirements of condition 1; and
 - (b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.
3. The Environmental Compliance Report required by condition 2 must include the following:
 - (a) certification by a suitably qualified engineer that the items of infrastructure as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1; and
 - (b) be signed by a person authorised to represent the works approval holder and contain the printed name and position of that person.

Environmental commissioning phase

Environmental commissioning requirements and emission limits

4. The works approval holder may only commence environmental commissioning of an item of infrastructure listed in condition 1 once an Environmental Compliance Report has been submitted for that item of infrastructure in accordance with condition 3 of this works approval.
5. Any environmental commissioning activities undertaken for an item of infrastructure specified in Table 2, may only be carried out:
 - (a) in accordance with the corresponding commissioning requirements; and
 - (b) for the corresponding authorised commissioning duration.

Table 2: Environmental commissioning requirements

	Infrastructure	Commissioning requirements	Authorised commissioning duration
1.	WWTP and pipeline(s)	(a) WWTP operational design capacity not to exceed XXX m ³ of sewage per day. (b) Volumetric flow metres are maintained on the WWTP outlet to the irrigation spray field. (c) Sludge is contained within the sealed sludge tanks prior to removal by a licensed waste carrier for disposal to a waste facility. (d) Spills of wastewater or chemicals outside of a vessel or container must be cleaned up immediately, with any contaminated soils and/or materials disposed of or treated.	For a period not exceeding XX calendar days
2.	Irrigation spray field	(a) Not more than X per day of treated wastewater to be applied to the designated irrigation spray field. (b) Maintained and operated in accordance with the requirements as specified in condition 1. (c) Irrigation is managed to prevent ponding and pooling of effluent on the ground surface of the irrigation spray field.	For a period not exceeding XX calendar days

6. During environmental commissioning, the works approval holder must ensure that the emission(s) specified in Table 3, are discharged only from the corresponding discharge point(s) and only at the corresponding discharge point location(s).

Table 3: Authorised discharge points during commissioning

Emission	Discharge point	Discharge point location
Treated wastewater	Sprinklers within the irrigation spray field	As shown in Schedule X

Monitoring during environmental commissioning

7. The works approval holder must monitor emissions during environmental commissioning in accordance with Table 4.

Table 4: Emissions and discharge monitoring during environmental commissioning

Monitoring location	Parameter	Units	Frequency	Method
WWTP outlet	Biochemical Oxygen Demand	mg/L	Weekly	Sample collection and preservation in accordance with AS/NZS 5667.1 and AS/NZS 5667.10
	Total Suspended Solids ¹		Weekly	
	Total Dissolved Solids			
	Total Nitrogen			
	Total Phosphorus			
	<i>E.coli</i>	CFU/100 mL or MPN	Continuous	Spot sample in accordance with AS/NZS 5667.1
	pH ²	mg/L		
	Residual free chlorine ¹			
	Volumetric flow rate ²	m ³ /day	Continuous	Continuous flow metering device

8. The works approval holder must ensure that all sample analysis undertaken pursuant to condition 7 is undertaken by a holder of a current accreditation from NATA for the methods of analysis relevant to the corresponding parameter.
9. The works approval holder must ensure that all monitoring equipment used in relation to condition 7 is operated and calibrated in accordance with manufacturer specifications for that equipment with records kept in accordance with conditions 26 and 27.
10. The works approval holder must record the results of all monitoring activities required by condition 7.

Environmental commissioning report

11. The works approval holder must submit to the CEO an Environmental Commissioning Report within 30 calendar days of the completion date of environmental commissioning of all items of infrastructure specified in Table 1.
12. The works approval holder must ensure the Environmental Commissioning Report required by condition 11 of this works approval includes the following:
 - (a) a summary of the environmental commissioning activities undertaken, including timeframes;
 - (b) a comparison of the treated wastewater monitoring results against water quality limits specified in condition 17;
 - (c) a summary of monitoring parameter results for the WWTP recorded in accordance with condition 7;

¹ In-field non-NATA accredited analysis permitted.

² Reference to NPUG water quality standards.

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- (d) copies of laboratory reports for the monitoring results recorded in accordance with condition 7;
- (e) a review of the works approval holder's performance and compliance against the conditions of this works approval; and
- (f) 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

- 13.** The works approval holder must not commence time-limited operations before the Environmental Commissioning Report required by condition 11 has been submitted to the CEO by the works approval holder.
- 14.** The works approval holder may conduct time-limited operations:
 - (a) for a period not exceeding 180 calendar days commencing from the date that the Environmental Commissioning Report required by condition 11, is submitted to the CEO for that infrastructure and/or equipment; or
 - (b) until the date that an applicable licence is granted by the CEO in accordance with Part V of the EP Act, if one is granted before the end of the specified period specified in condition 14(a).

Time limited operations requirements

- 15.** During time-limited operations, the works approval holder must ensure that infrastructure and equipment is maintained and operated in accordance with the requirements set out in Table 5.

Table 5: Operational requirements during time-limited operations

	Infrastructure / equipment	Operational requirements
1.	WWTP and pipeline(s)	(a) WWTP operational capacity must not exceed XXX m³ of sewage per day. (b) Infrastructure and equipment must be maintained in accordance with manufacturer specifications. (c) By-products of the wastewater treatment process, such as sludge, must be kept in sealed containment tanks prior to removal by a licensed waste carrier for disposal to a waste facility. (d) When the plant is in operation, daily visual inspections of the WWTP (including connections to the irrigation system) are to be undertaken to check if the WWTP is operating in accordance with manufacturer specifications. (e) Chemicals must be stored in accordance with AS 3780. (f) Spills of wastewater or chemicals outside of a vessel or container must be cleaned up immediately, with any contaminated soils and/or materials disposed of or treated.
2.	Irrigation spray field	(a) The irrigation spray field must be suitably sized and maintained using the methodology specified in Schedule X. (b) Must be fenced to exclude fauna and public access to the irrigation spray field. Fence with visible safety signage must be maintained. (c) Only treated wastewater from the WWTP is to be discharged on the irrigation spray field. (d) Treated wastewater to be discharged evenly across the irrigation spray field. (e) Discharge to the irrigation spray field must be managed to prevent: (i) soil erosion; (ii) soil waterlogging; (iii) ponding or pooling of wastewater; and (iv) irrigation generated runoff, spray drift or discharge occurring beyond the boundary of the irrigation spray field.

- 16.** During time-limited operations, the works approval holder must ensure that any sludges or solids removed from the wastewater treatment plant must be taken offsite for disposal at a facility authorised to dispose of it.

Discharges during time limited operations

- 17.** During time-limited operations, the works approval holder must ensure that treated wastewater is not discharged to the environment unless it is done via the listed discharge point and meets the water quality limits as specified in Table 6.

Table 6: Water quality limits for discharge of treated wastewater

Discharge point	Parameter	Water quality limits ²
Sprinklers within the irrigation spray field as shown in Schedule X, Figure Y	5-day biochemical oxygen demand (BOD ₅)	< 20 mg/L
	Total suspended solids (TSS)	< 30 mg/L
	Total nitrogen (TN)	< 30 mg/L
	Total phosphorus (TP)	< 8 mg/L
	Thermotolerant coliforms (<i>Escherichia coli</i>)	< 1,000 CFU/100mL or MPN
	pH	6.5 to 8.5
	Residual chlorine	0.2-2.0 mg/L

Monitoring during time limited operations

18. During time-limited operations, the works approval holder must monitor and record the water quality of the treated wastewater for the specified parameters in accordance with the requirements in Table 7.

Table 7: Treated wastewater monitoring

Monitoring location	Parameter	Units	Frequency	Method
WWTP outlet	Biochemical Oxygen Demand	mg/L	Quarterly	Sample collection and preservation in accordance with AS/NZS 5667.1 and AS/NZS 5667.10
	Total Suspended Solids ¹		Weekly for the first month, then monthly thereafter	
	Total Nitrogen			
	Total Phosphorus			
	<i>E.coli</i>	CFU/100 mL or MPN	Continuous	Spot sample in accordance with AS/NZS 5667.1
	pH ²	pH units		
	Residual free chlorine ¹	mg/L		
	Volumetric flow rate ²	m ³ /day	Continuous	Continuous flow metering device

19. During time-limited operations, the works approval holder must ensure that all sample analysis undertaken pursuant to condition 18 is undertaken by a holder of a current accreditation from NATA for the methods of analysis relevant to the corresponding parameter.
20. During time-limited operations, the works approval holder must investigate any instance where a sample exceeds any of the specified water quality limits of condition 17 and increase the sampling frequency to weekly, where not already required under condition 18. This increased frequency must be maintained until samples consistently comply with the specified water quality limits in condition 17.

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21. During time-limited operations, the works approval holder must ensure that all monitoring equipment used in relation to condition 18 is operated and calibrated in accordance with manufacturer specifications for that monitoring equipment with records kept in accordance with conditions 26 and 27.
22. During time-limited operations, the works approval holder must record the results of all monitoring activities required by condition 18.

Compliance reporting

23. 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 sooner.
24. The works approval holder must ensure the report required by condition 23 of this works approval includes the following:
 - (a) a summary of the time limited operations, including timeframes and the amount of wastewater processed;
 - (b) a summary of monitoring parameter results obtained during time limited operations under condition 18;
 - (c) a summary of the environmental performance of all infrastructure as constructed or installed (as applicable);
 - (d) a review of operational performance and compliance against the conditions of the works approval and the Environmental Commissioning Report; 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

Complaints management

25. 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 concern/s 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.

Retention of Records

26. 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 constructed and/or installed in accordance with condition 1;
 - (b) any maintenance of infrastructure and/or equipment that is performed in the course of complying with the conditions of this approval;

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- (c) records of any visual inspections that are performed in accordance with condition 15;
 - (d) monitoring undertaken in accordance with condition 18; and
 - (e) complaints received under condition 25.
- 27.** The books specified under condition 26 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

The terms in Table 8 have the corresponding meanings ascribed to them in the Definition column.

Table 8: Definitions

Term	Definition
ACN	Australian Company Number
AS 3780	means the Australian Standard AS 3780 <i>The storage and handling of corrosive substance</i>
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples</i>
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.10 <i>Water Quality – Sampling – Guidance on sampling of waste waters</i>
books	has the same meaning given to that term under section 3(1) of the EP Act.
CEO	means Chief Executive Officer. “submit to / notify the CEO” (or similar), means: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
CFU	means colony-forming unit
condition	means a restriction or limitation as stated and applied under a works approvals or licence.
Department; DWER	means the Department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of the <i>Environmental Protection Act 1986</i> .
discharge	has the same meaning given to that term under section 3(1) of the EP Act.
emission	has the same meaning given to that term under section 3(1) of the EP Act.
Environmental Commissioning Report	means a report on any commissioning activities that have taken place and a demonstration that they have concluded, with focus on emissions and discharges, waste containment, and other environmental factors.

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Term	Definition
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 this approval.
EP Act	means the <i>Environmental Protection Act 1986</i> (WA).
EP Regulations	means the <i>Environmental Protection Regulations 1987</i> (WA).
hardstand	means permeability by having a hydraulic conductivity of less than $1 \times 10^{-9} \text{m/s}$ or equivalent.
inspector	means an inspector appointed by the CEO in accordance with section 88 of the EP Act.
instrument	means works approval, licence or registration for prescribed premises.
licensed water carrier	means a carrier licensed to transport waste under regulation 5 of the Environmental Protection (Controlled Waste) Regulations 2004.
m	means metres
mg/L	means milligrams per litre
mL	means milliliters
monthly	means a one-month period commencing from day one of a month until the last day of the same month
MPN	means most probable number
m/s	means metres per second
NATA	means the National Association of Testing Authorities, Australia.
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis.
NPUG	means non-potable groundwater use
pollution	has the same meaning given to that term under section 3(1) of the EP Act.
premises	means 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 X) in Schedule 1 to this works approval. <i>[Note: specify which figure, if multiple maps in Schedule 1.]</i>
prescribed premises	has the same meaning given to that term under the EP Act, being the premises specified in Schedule 1 to the EP Regulations.
quarterly	means a period of three consecutive months in a calendar year,

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Term	Definition
	being one of the following: • 1 January to 31 March • 1 April to 30 June • 1 July to 30 September; or • 1 October to 31 December Each period must be at least 45 days apart.
sewage	has the same meaning given to the term <i>sewage</i> under regulation 2 of the <i>Environmental Protection (Controlled Waste) Regulations 2004</i> .
sludge	means unstabilised concentrated organic solids produced during a wastewater treatment process.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
Standardised Approval	means this pathway provides a standardised assessment process for certain prescribed premises categories that meet defined eligibility criteria and present a low risk to human and environmental receptors.
suitably qualified engineer	means a person who: (a) holds a qualification in engineering or equivalent; and (b) has a minimum of a least three years of experience working in civil, structural, environmental or wastewater engineering or is otherwise approved in writing by the CEO to act in this capacity.
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 section 3(1) of the EP Act.
wastewater	has the same meaning given to the term <i>wastewater</i> in regulation 3 of the Health (Treatment of Sewage and Disposal of Effluent and Liquid Waste) Regulations 1974 (WA)
works approval	means a works approval granted and in force under Part V Division 3.
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.

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Term	Definition
WWTP	means wastewater treatment plant.

END OF CONDITIONS

Schedule 1: Maps [Heading 1]

Premises map [Heading 2]

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

DRAFTING NOTE: Maps included in this section, whether internally generated or supplied by the applicant, must have the following minimum characteristics:

- a north arrow;
- a scale;
- a key;
- a clearly visible pink line demarcating the premises boundary;
- be of a sufficiently high photographic resolution to visually identify the key features / infrastructure / equipment relevant to the works approval;

Ensure that all infrastructure and equipment referred to in the conditions have had their location(s) marked clearly on the relevant map(s), using the correct labels referenced in the conditions.

Premises that are particularly large and/or where the features / infrastructure / equipment relevant to the works approval are very densely packed together will need to include additional more-zoomed-in maps.

Figure 1: Map of the boundary of the prescribed premises

DRAFTING NOTE: Where appropriate, it may be beneficial to include additional separate maps relating to specific types of equipment / infrastructure (e.g. discharge points map, monitoring bores map, air quality monitoring sites map, etc.).

Schedule 2: Premises boundary [Heading 1]

DRAFTING NOTE: Subject to delegated officer approval, this Schedule is generally only required where the premises boundary does not precisely match the relevant cadastral and/or mining tenement boundaries.

The corners of the premises boundary are the coordinates listed in Table 1.

Table 1: Premises boundary coordinates (GDA2020)

	Easting	Northing	Zone
1.			
2.			
3.			
4.			

Schedule X: A methodology for estimating the land area required for disposing of wastewater by irrigation at mine sites

Finding a suitable location

Select land for wastewater irrigation with a suitable slope and low risk of erosion. Avoid land that is subject to seasonal flooding, waterlogging, contains acid sulfate soils, needs to be artificially drained, or requires waterways to be redirected.

Wastewater should not be disposed of to salt lakes or clay pans. If there are rock outcrops on the site, the area required for wastewater irrigation will need to be increased accordingly.

The site should have a slope of no more than 10 % (a fall of 1 m for every 10 m distance). The slope should be measured in the field with a clinometer.

How to calculate the land area required

A significant physical constraint for siting a wastewater irrigation scheme is ensuring that the selected area of land is sufficiently large to allow water and its dissolved constituents to be taken up by vegetation or retained within the soil profile without excessive seepage into groundwater.

The area required to meet this condition will depend on the volume and quality of wastewater produced, soil conditions, and local climatic factors at the site. However, as a first approximation, the area of land required for irrigating a given production rate of wastewater is given by the following equation (US EPA, 2006):

$$A = (3.65 \times Q) / (L \times T_{app})$$

Where: A = land area (hectares)
 Q= flow rate of wastewater (m³/day)
 L= wastewater hydraulic loading to soil (cm/week)
 T_{app} = period of wastewater application each year (weeks)

In the absence of site-specific information about soil properties, the loading rate in the above equation can be assumed to be about **4 cm/week** for irrigating turf, and about **2.5 cm/week** for irrigating tree plantations (US EPA, 2006). These values assume that the wastewater salinity is sufficiently low to be suitable for irrigation without harming the irrigated vegetation or adversely affecting the underlying groundwater salinity. For remote mine sites irrigating to native vegetation the lower figure of **2.5 cm/week** should be used for maximum irrigation rate.

For most mining areas outside the South West region, the pan evaporation rate exceeds rainfall throughout the year. That is, T_{app} can be assumed to be 52 weeks for most mine sites.

References

US EPA, 2006. Process design manual, land treatment of municipal wastewater effluents.

Report EPA/625/R-06/016. Report available at

https://www.researchgate.net/publication/264300380_Process_Design_Manual_Land_Treatment_of_Municipal_Wastewater_Effluents.

Schedule X: [insert title]

[use for additional schedules if required – e.g. for infrastructure or monitoring tables and the like that are longer than a page and need to be separated out]

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