



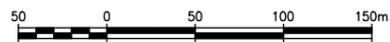
NEARMAP PTY LTD AERIAL DATED 06 MAY 2021

PLANS AND DOCUMENTS
referred to in the
SDA APPROVAL



SDA approval: AP2023/004

NOTES:
1. WORKS NOT PROPERLY SURVEYED



SCALE 1:2000 FOR A1 SIZE
SCALE 1:4000 FOR A3 SIZE
GDA94 / MGA ZONE 55

FOR INFORMATION

STUART LANDFILL BIOENERGY FACILITY

**POWER STATION
LOCATION PLAN**

No	DATE	DRN	DESIGNER	CHKD	APP	DESCRIPTION
B	09/05/23	AAH	WB			HV CONNECTION DETAILS ADDED
A	17/02/23	AAH	WB			FI - ISSUED FOR INFORMATION

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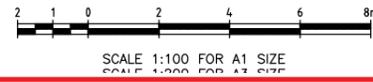
DRAWN:	AAH
DATE:	17/02/23
DESIGN:	WB
DATE:	17/02/23
APPRVD:	
DATE:	
A.B.N.	39 059 428 474

SCALE	1:2000	DRAWING NUMBER	40041-DA-002	PAGE	1 OF 1	SIZE	A1	REV	B
LAST PLOTTED TIME:		PLOTTED DATE:		LAST MODIFIED TIME:		MODIFIED DATE:			



LEGEND

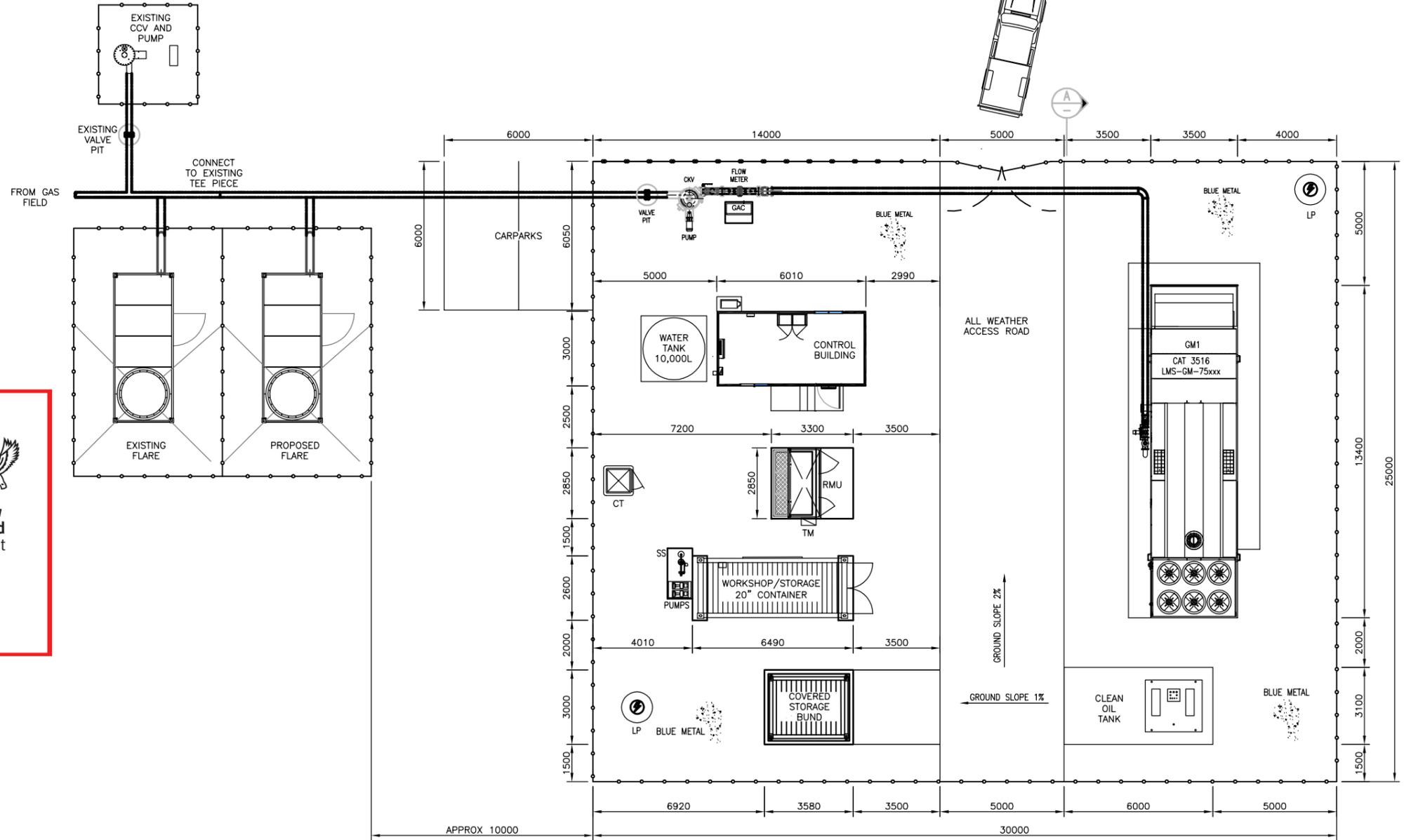
- 2m CHAINWIRE FENCE
- — — PIPEWORK ABOVE GROUND
- — — PIPEWORK BELOW GROUND
- CCV CONDENSATE COLLECTION VESSEL
- CKV CONDENSATE KNOCKOUT VESSEL
- CT CHEMICAL TOILET
- GAC GAS ANALYSER CUBICLE
- GM GENERATOR MODULE
- LP 22m LIGHTNING POLE
- RMU RING MAIN UNIT (HIGH VOLTAGE SWITCHBOARD)
- SS SAFETY SHOWER
- TM TARIFF METER
- VP VALVE PIT



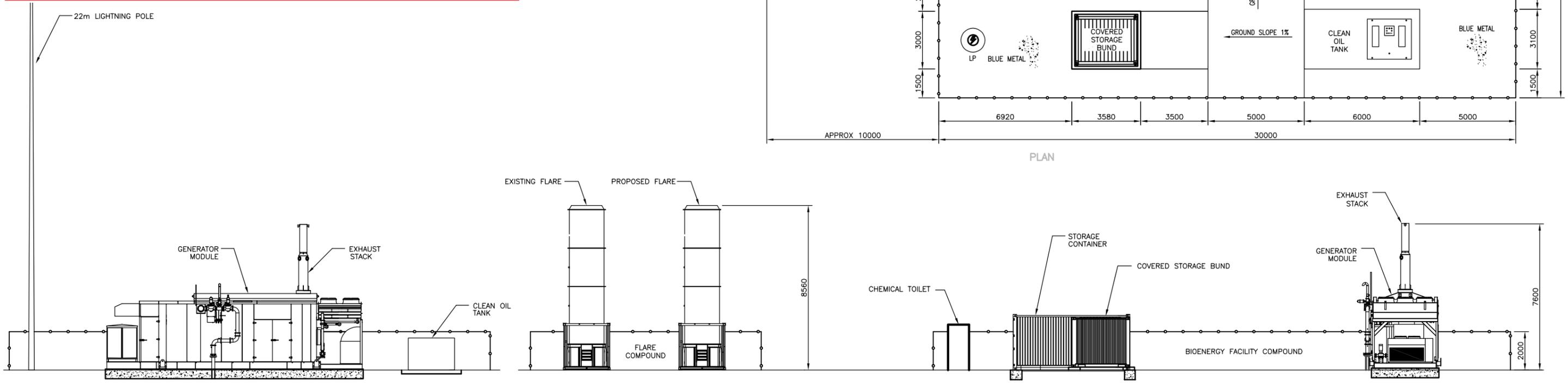
PLANS AND DOCUMENTS referred to in the SDA APPROVAL



SDA approval: AP2023/004



PLAN



ELEVATION

CLEAN OIL TANK, LIGHTNING POLES, CKV, GAC, FUEL RAIL, RMU WATER TANK AND CONTROL BUILDING REMOVED FOR CLARITY

FOR INFORMATION
STUART LANDFILL BIOENERGY FACILITY

POWER STATION
SITE LAYOUT

No	DATE	DRN	DES	CHK	APP	DESCRIPTION	No	DATE	DRN	DES	CHK	APP	DESCRIPTION
C	17/02/23	AAH	WB			LAYOUT REVISED FOR 1X CAT 3516 GM.							
B	04/08/22	SA	WB			FOR INFORMATION - JENBACHER REFERENCE REMOVED							
A	13/07/22	SA	WB			FOR INFORMATION							

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DRAWN: S.A.
 DATE: 13/07/22
 DESIGN: W.B.
 DATE: 13/07/22
 APPRVD:
 DATE:
 A.B.N. 39 059 428 474



SCALE	DRAWING NUMBER	SHEET	SIZE	REV
1:100	40041-DA-001	1 OF 1	A1	C

PLANS AND DOCUMENTS
referred to in the
SDA APPROVAL



SDA approval: AP2023/004



Stuart Landfill BioEnergy Facility

Risk Assessment For Development Approval Application

Report Date:	14/11/2023
Report Reference:	40041-RG-032
Version:	B

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Report Title:	Stuart Landfill BioEnergy Facility - Risk Assessment - For Development Approval
Report Reference:	40041-RG-032 - Rev B
Written/Submitted By:	Jason Achatz
Reviewed/Approved By:	Chris Kennedy - RPEQ PE0010358

IMS #: TP1 Rev 5

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REVISION STATUS

Revision No.	Status	Date	Writer	Reviewer	Approver
A	Issued for Development Approval Application	18/09/2023	Jason Achatz	Chris Kennedy RPEQ PE0010358	Chris Kennedy RPEQ PE0010358
B	Revised to address TMR RFI	14/11/2023	Jason Achatz	Chris Kennedy RPEQ PE0010358	Chris Kennedy RPEQ PE0010358

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RISK ASSESSMENT MATRIX

Likelihood	Perception
Almost Certain	Expected to occur; more than 75% chance of occurring
Likely	Will probably occur; 50 - 75% chance of occurring
Possible	Might occur; 25 - 50% chance of occurring
Unlikely	Could occur; less than 25% chance of occurring
Rare	May only occur in exceptional circumstances

Rating	Insignificant	Minor	Moderate	Major	Catastrophic
OH&S	Incident but no injury	Medical treatment only	Lost Time Injury	Death or permanent disability	Multiple Fatalities
Environment	Impact can easily be rectified with on-site resources	Impact can be rectified but requires off-site resources	Serious environmental impact resulting in a fine	Major impact resulting in prosecution and media attention	Catastrophic impact resulting in prosecution and public outcry

Risk Matrix	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood					
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Low	Medium	High	High	Extreme
Possible	Low	Low	Medium	High	High
Unlikely	Negligible	Low	Low	Medium	High
Rare	Negligible	Negligible	Low	Low	Medium

Refer LMS Safety Management System located on the LMS Intranet Site for all Policies, Procedures and Forms

- PR23 Hand Tools Procedure
- PR25 Housekeeping Procedure
- PR27 Manual Handling Procedure
- PR28 Personal Protective Equipment Procedure
- PR85 Leachate Handling Procedure
- PR89 LMS Safety Tag System Procedure

- FM13 Job Safety Analysis (JSA) /Safe Work Method Statement (SWMS) Worksheet
- FM64 Toolbox meetings

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BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	REASSESSED RISK RATING
BIOGAS FACILITY AND FLARE COMPOUNDS								
Power Generation	Stuart Landfill	Creation of Hazardous Areas within the Renewable Energy Facility and Flare compound	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Major	Possible	High	Creation of Hazardous Area Dossiers Creation of Hazardous Area Drawings Electrical equipment must be suitably rated and effectively earthed to mitigate ignition risks Scheduled maintenance and inspection program Suitably experienced and qualified electricians only to work on or modify electrical equipment	Low
Power Generation	Stuart Landfill	Ignition sources emanating from the adjacent rail corridor such as or caused by the following: - Passing railway traffic emanating sparks from general operation such as application of brakes. - Passing railway traffic emanating sparks from engine exhaust. - Hot works such as grinding, welding and cutting being conducted in the rail corridor.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Major	Possible	High	Creation of Hazardous Area Dossiers. Hazardous Areas comply with relevant standards. Creation of Hazardous Area Drawings. Electrical equipment must be suitably rated and effectively earthed to mitigate ignition risks. Scheduled maintenance and inspection program. Gas field wells and associated pipelines are under constant vacuum. (not pressurised). Low pressure and low fuel methane concentration (due to ingress of air) triggers plant shutdown. Refer Cause and Effect Matrix. Fire protection (smoke and UV detectors) installed to generator module initiate shutdown of modules. Instrumentation monitors integrity and alarms in accordance with Cause and Effect Matrix. A fire inside the generator module the gas engine and associated gas blower will result in an immediate shut down via hard-wired controls and the gas supply from the gas field will be immediately isolated by safety shutoff valves. Facility finished in non-combustible material (i.e. blue chip metal). Vegetation to be cleared up to 15m from the facility boundary. Clearance zone between facility and rail corridor. Generator modules ventilated to prevent methane build up.	Low
BIOGAS HEADER DELIVERY LINE								
Power Generation	Stuart Landfill	Damaged pipe (due to puncture, excavation, failure of welds, or traffic movements) resulting in ingress of air.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Major	Possible	High	Low pressure and low fuel methane concentration (due to ingress of air) triggers plant shutdown. Refer Cause and Effect Matrix. Blower design incorporates relief valve for high suction pressure. Facility built on virgin land therefore no subsidence anticipated. Permit to work system.	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
CONDENSATE KNOCKOUT VESSEL								
Power Generation	Stuart Landfill	Release of gas / condensate due to damaged vessel wall from high pressure or weld failure.	Allergic reaction or illness due to skin contact with condensate. Land and water contamination.	Moderate	Unlikely	Low	Pressure relief valve provided on blower. High pressure alarms lead to plant shutdown. Refer Cause and Effect Matrix. Suitably qualified and experienced contractors and employees used to undertake PE welding.	Negligible
Power Generation	Stuart Landfill	Release of condensate due to overflow.	Allergic reaction or illness due to skin contact with condensate. Land / water contamination.	Minor	Possible	Medium	High level alarm. Refer Cause and Effect Matrix. Overfull would lead to low pressure at blower triggering plant shut down. Use of PPE. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Maintenance of CKV i.e. Change of pumps, pipework, cleanout of sludge.	Human exposure to condensate may lead to illness. Explosive atmosphere may exist if air ingress into vessel. Fire hazard if hot work / welding required.	Major	Possible	High	Specialist contractor engaged to pump out system. Use of PPE. Leachate Handling Permit to Work System. Task Specific Job Safety Analysis (JSEA) \ Safe Work Method Statement (SWMS) Worksheet. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Damaged to vessel due to high vacuum pressure resulting in ingress of air.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Major	Possible	High	Pressure relief valve provided on blower. Low pressure alarms lead to plant shutdown. Refer Cause and Effect Matrix. Suitably qualified and experienced contractors and employees used to undertake PE welding.	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
FUEL RAIL								
Power Generation	Stuart Landfill	Static electricity build up on pipework creates an ignition source.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Electric shock.	Major	Unlikely	Medium	Above ground fuel rail constructed from stainless steel and earthed. HDPE pipe buried therefore no voltage potential. Inherent safety from static charge build up due to wet fuel source.	Low
Power Generation	Stuart Landfill	Dropped engine on fuel rail during removal from generator module during major maintenance or repair campaign.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Gas leak. Damage to plant and equipment.	Major	Rare	Low	Suitably experienced and qualified crane contractors to be utilised. Lifting gear certified and inspections up to date. Use of PPE. Permit to Work System. Task Specific Job Safety & Environment Analysis (ISEA) \ Safe Work Method Statement (SWMS) Worksheet. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Vehicle / mobile plant collision with fuel rail / on site personnel.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Gas leak. Damage to plant and equipment. Fatality	Moderate	Unlikely	Medium	Facility located within a fenced compound. Restricted vehicle access. Use spotters where risk of collision is present. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Severe weather affecting operation of plant including cyclone, flood and lightening strike.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Inundation and damage to plant and equipment. Dangerous road conditions leading to accident.	Moderate	Likely	High	Lightning poles located within Facility. Plant and equipment suitably anchored to slab/foundation. Stormwater design undertake by suitable qualified and experienced engineer. Facility can be remotely monitored and controlled (for limited situations).	Low
Power Generation	Stuart Landfill	Release of gas resulting from line failure due to stress cracking or corrosion.	Fire and explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Unlikely	Low	Above ground fuel rail constructed from stainless steel. Expansion bellows incorporated into line. Pressure gauges installed and in the event of high or low pressure shutdown and isolation sequence initiated. Double block and bleed valving. Suitably experienced and qualified welders / gasfitters employed during construction and during major maintenance / repair campaigns.	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
GENERATOR MODULE								
Power Generation	Stuart Landfill	Electrical fault causes fire.	Fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Personal Injury.	Major	Possible	High	<p>Facility fence, generator module, fuel rail earthed. Earth grid buried and extends at least 1m beyond metal boundary fence. Instrumentation monitors electrical integrity and alarms in accordance with Cause and Effect Matrix. Generator modules ventilated to prevent methane build up. Methane detectors installed. Immediate generator module shutdown if methane concentration reaches 20%LEL. Fire protection (smoke and UV detectors) installed. Fire extinguishers located outside of entry. Facility finished in non combustible material (i.e. blue chip metal). Fire fighting and equipment safety equipment plan. Earth leakage devices provided on portable tools and switchboards.</p> <p>Refer Document: Fire Safety Drawing - 40041-DA-003</p>	Low
Power Generation	Stuart Landfill	Oil fire within generator module.	Fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Personal Injury.	Major	Unlikely	Medium	<p>Generator module earthed. Copy of hazardous area dossiers and hazardous area drawing kept on site. Instrumentation monitors integrity and alarms in accordance with Cause and Effect Matrix. Fire protection (smoke and UV detectors) installed. Fire extinguishers located outside of generator module entry. Fire fighting and equipment safety equipment plan. Fuel source can be isolated during maintenance. Double block and bleed valve. Site monitored remotely. Oil storage designed and maintained to Australian Standards. All oil spills from general operation and maintenance activities promptly cleaned up and disposed of in accordance with Australian standards / legislation / licence requirements as appropriate. House Keeping. Refer Safety Management System.</p> <p>Refer Document: Fire Safety Drawing - 40041-DA-003</p>	Low
Power Generation	Stuart Landfill	Operation and maintenance of rotating equipment.	Burns. Crush injury. Cuts and bruises.	Major	Possible	High	<p>All rotating parts and guards painted yellow (as appropriate). Safety manual, which includes all operating and maintenance procedures, maintained and kept on site. Long sleeves and pants must be worn on site. PPE used. All personnel provided with adequate training prior to using / working on rotating equipment. Training matrix prepared and kept up to date. Toolbox / Pre-start talks undertaken. Task Specific Job Safety & Environment Analysis (JSEA) \ Safe Work Method Statement (SWMS) Worksheet. Appropriate safety signage erected. Refer Safety Management System.</p>	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
GENERATOR MODULE CONTINUED								
Power Generation	Stuart Landfill	Release of gas resulting from working on pressurised equipment including overpressure event.	Fire or explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Personal injury.	Major	Possible	High	Pressure relief provided in accordance with Australian standards (as appropriate). High pressure alarms lead to plant shutdown. Refer Cause and Effect Matrix. Double block and bleed valving. Suitably experienced and qualified welders / gasfitters employed during construction and during major maintenance / repair campaigns. PPE used. Permit to Work System. Isolations. Task Specific Job Safety & Environment Analysis (JSEA) \ Safe Work Method Statement (SWMS) Worksheet. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Gas leak from venting instruments / seals.	Fire or explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Asphyxiation. Greenhouse gas emissions.	Moderate	Possible	Medium	Low pressure downstream of blower initiates fuel supply isolation. Generator module ventilation hardwired to shut off if not operating. Refer Cause and Effect Matrix. Methane detectors installed. Immediate generator module shutdown if methane concentration reaches 20%LEL. Emergency shutdown if methane concentration reaches 40%LEL. Fire protection (smoke and UV detectors) installed. Fire extinguishers located outside of entry. Refer Document: Fire Safety Drawing - 40041-DA-003	Low
Power Generation	Stuart Landfill	Vibration of generator causes fuel, coolant or oil line rupture.	Fire or explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Personal injury.	Major	Possible	Medium	Braided flexible stainless steel gas lines. Coolant lines braided stainless steel. Engine installed on rubber mount. Generator module is self banded and capable of storing 110% of oil inventory. Low pressure alarms (on coolant or gas lines) initiate shutdown. Refer Cause and Effect Matrix. Methane detectors installed. Immediate generator module shutdown if methane concentration reaches 20%LEL. Emergency shutdown if methane concentration reaches 40%LEL. Fire protection (smoke and UV detectors) installed. Fire extinguishers located outside of entry. PPE Used. Refer Safety Management System. Refer Document: Fire Safety Drawing - 40041-DA-003	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
GENERATOR MODULE CONTINUED								
Power Generation	Stuart Landfill	Noise from operations.	Hearing loss. Nuisance to sensitive receptors (including residents, fauna and public).	Moderate	Almost certain	High	Specific noise policy for occupational health and safety developed. Refer Safety Management System. Where possible noise limited by using engineering controls (e.g. generator located within an acoustic enclosure, muffler on exhaust stack). Engineering controls regularly inspected and maintained. Records of maintenance kept. Safety signs erected to highlight noisy areas and PPE requirements. PPE used, Inductions undertaken and Environmental Management Plan implemented which includes Noise Management. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Overflow of generator module oil tank.	Fire impacting the energy facility impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Injury as a result of slip/fall. Onsite or offsite land and/or water contamination.	Moderate	Possible	Medium	Bunded tank. Generator module self bunded and capable of storing 110% of oil and coolant inventory upon catastrophic failure. Oil tank has sight glass. Tank overflows into bunded area. Oil flow meter monitors top up volumes (greater than 15L in 24hour period leads to warning alarm, greater than 40L in 24hour period leads to generator shutdown). Spill kit located onsite. Spill procedure and environmental management plan implemented.	Low
FLARES								
Power Generation	Stuart Landfill	Operation of flare.	Facility fire which could escalate to bushfire or landfill or rail corridor fire threat.	Major	Possible	High	Flare located outside fenced compound with restricted access. Operation of the flare/s is typically limited to extended scheduled or unscheduled maintenance / repairs, however the flare/s may at times be utilised on conjunction with the generator/s to control biogas levels that exceed the combustion capabilities of the generators/s. The flare is an enclosed design with no flame visible. Facility finished in non combustible material (i.e. blue chip metal). Fire fighting and equipment safety equipment plan. Copy of hazardous area dossiers and hazardous area drawings kept on site. Emergency response plan in place to prevent escalation of Facility fire to bushfire / landfill fire threat. Vegetation to be cleared up to 15m from the flare. Refer Document: Emergency Response Plan - 40041-RG-030	Low
LOW VOLTAGE (415V) MAINS CABLE								
Power Generation	Stuart Landfill	Damage to LV cable due to hotspots.	Power station unable to operate.	Insignificant	Possible	Low	Routine thermal imaging undertaken. Preventative maintenance system in place. Maintenance and inspection records maintained.	Negligible

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
HIGH VOLTAGE (11KV) ASSETS - POLES AND WIRES								
Power Generation	Stuart Landfill	Damage to HV cable due to hotspots.	Power station unable to operate.	Minor	Possible	Low	Routine thermal imaging undertaken. Preventative maintenance system in place. Maintenance and inspection records maintained.	Negligible
Power Generation	Stuart Landfill	Conductor clearance to objects compromised	Where an asset failure has not occurred however the conductor has come into contact with another object that is at a different voltage and there is potential for a discharge of energy sufficient to cause a fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Some examples include: - Conductors clashing together due to insufficient clearance - Insufficient design clearances - Vehicle or plant coming into contact with conductors - Equipment or stores stored too close to conductors - Buildings or scaffolding too close to conductors	Moderate	Unlikely	Low	Conduct monthly inspections of LMS infrastructure using FM59. Ensure site design and construction takes into consideration the location of site buildings, neighbouring structures and plant. All future works must consider this risk.	Negligible
Power Generation	Stuart Landfill	Insufficient conductor clearance to vegetation	Clearances to vegetation not maintained and conductors and vegetation are likely to come into contact. Vegetative fuel under overhead lines provides a source of fire propagation after an asset failure.	Moderate	Possible	Medium	Vegetation Clearance Procedure that implements relevant requirements in ISSC3 Vegetation Clearance for Power Lines Conduct monthly inspections of LMS infrastructure using FM59, and organise the professional trimming or slashing of vegetation that encroaches into conductor exclusion zones.	Negligible

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
HIGH VOLTAGE (11KV) ASSETS - POLES AND WIRES CONTINUED								
Power Generation	Stuart Landfill	Mechanical or electrical failure	An asset fails mechanically resulting in a conductor coming into contact with the ground or other object and the energy discharged causes a fire. An electrical failure due to age, overloading, poor design, equipment damage that releases energy that causes a fire or causes mechanical damage which then leads to fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Possible	Medium	Ensure electrical equipment is included in LMS's Maintenance Manage System (MMS). All faults or defects identified during monthly site safety inspections (FM59) are added to the MMS or appropriate HV contractors are engaged to repair any issues.	Negligible
Power Generation	Stuart Landfill	Arcing during equipment operation	Some equipment types have potential to arc in normal operation such as air break switches, links, fuses. This arcing has potential to release hot material onto the ground and start a fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Unlikely	Low	Switching programs to be scheduled on days that do not present extra risks such as fire ban days or days of extreme wind. Vegetation to be monitored and controlled around transformers and poles where fuses, air breaks and switches are located, in accordance with FM59.	Negligible
Power Generation	Stuart Landfill	Hot work	Maintenance and construction activity associated with power supply assets, for example using a grinder, welding or driving a vehicle through long grass has potential to initiate a fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Unlikely	Low	All LMS vehicles are diesel. LMS to communicate with landfill owners regarding slashing roadways or tracks to LMS assets. Hot Work Procedure in place and SWMS for the tasks completed and on site highlighting the hot work and appropriate controls to be implemented.	Negligible
Power Generation	Stuart Landfill	Operation of LMS sites on High Fire Risk days or Fire Ban days, or on days of high wind.	LMS Network / plant causing a fire on High Fire Risk days or Fire Ban days through failure or sparking, or through coming into contact with vegetation in high winds impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Possible	Medium	Conduct monthly inspections of LMS infrastructure ie: flares, pad mount transformers, electrical poles and wires (HV/LV Overhead) to ensure vegetation, both on the ground and above the ground, is kept under control and where required organising the slashing or pruning of vegetation where it is deemed to be a hazard, Inspecting LMS Infrastructure in PRA area's to ensure it is maintained in a safe and ready for use condition, Coordinate vegetation control with neighbouring properties (council's, landfill's or forestry departments), Liaise with landfill operator and/or emergency services during a bushfire event to coordinate the safe operation, shut down and evacuation of LMS staff if and when required, Respond to a Bushfire Evacuation event in accordance with LMS Energy's Emergency Response Plan where one is available, or the landfill Emergency Response Plan. Refer Documents: Emergency Response Plan - 40041-RG-030	Negligible
Power Generation	Stuart Landfill	Damage to Overhead HV/LV wires and Infrastructure due to malicious or intentional damage	Unauthorised access in and around HV/LV network enabling a person of malicious intent the opportunity to cause damage to LMS plant and assets	Moderate	Unlikely	Low	Ensure design and construct includes security fencing around the perimeter of the site and HV/LV infrastructure, security cameras installed around LMS compounds as an extra level of deterrence.	Negligible

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
HIGH VOLTAGE (11KV) ASSETS - POLES AND WIRES CONTINUED								
Power Generation	Stuart Landfill	Overhead HV/LV equipment design and construction faults	Design or location of OH poles and wires contributing to the cause of fires or bushfires impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor.	Moderate	Possible	Medium	Design and construction of Overhead poles and wires network to consider the local environment and assess whether any impacts of plant or equipment failure has the risk of starting a fire.	Negligible
Power Generation	Stuart Landfill	Damage to Overhead HV/LV wires and Infrastructure due to Landfill Fire or Bushfire	Overhead HV/LV cables coming into contact with vegetation / Damage to HV/LV poles and wires causing a spark that ignites neighbouring vegetation / damage to LMS plant and equipment from a landfill fire or bushfire.	Moderate	Possible	Medium	Conduct monthly inspections of LMS infrastructure ie: flares, pad mount transformers, electrical poles and wires (HV/LV Overhead) to ensure vegetation, both on the ground and above the ground, is kept under control and where required organising the slashing or pruning of vegetation where it is deemed to be a hazard, Inspecting LMS Infrastructure in PRA area's to ensure it is maintained in a safe and ready for use condition, Coordinate vegetation control with neighbouring properties (council's, landfill's or forestry departments), Liaise with landfill operator and/or emergency services during a bushfire event to coordinate the safe operation, shut down and evacuation of LMS staff if and when required, Respond to a Bushfire Evacuation event in accordance with LMS Energy's Emergency Response Plan where one is available, or the landfill Emergency Response Plan. Refer Documents: Emergency Response Plan - 40041-RG-030	Negligible
STORAGE CONTAINER, STORAGE BUND AND WASTE MANAGEMENT								
Power Generation	Stuart Landfill	Leaking chemical / hazardous material storages (e.g. oil, battery acid and coolant) due to damaged packing, seals, fittings.	Fire, land and/or water contamination impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Slip hazard. Burns.	Moderate	Almost certain	High	All chemical / hazardous material stored in storage bund or cabinet provided in storage container as appropriate. Eye wash and safety shower located at Facility. Spill kits provided. Fire Extinguishers on site. Bunds regularly checked and cleaned out. Routine inspection of storage areas. PPE used. House Keeping. Refer Safety Management System. Refer Document: Fire Safety Drawing - 40041-DA-003	Low
Power Generation	Stuart Landfill	Potential reaction between incompatible substances in storage or handling.	Fire. Heat. Toxic gas emission. Explosion. Spill.	Major	Almost certain	Extreme	All chemical / hazardous material stored in storage bund or cabinet provided in storage container as appropriate. Separation distances maintained in accordance with relevant Australian standards/ legislative requirements. SDS available on site for all chemical / hazardous materials stored. Eye wash and safety shower located at Facility. Spill kits provided. Bunds regularly checked and cleaned out. Routine inspection of storage areas. PPE used. House Keeping. Refer Safety Management System. Refer Documents: Fire Safety Drawing - 40041-DA-003	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
FACILITY (BEF)								
Power Generation	Stuart Landfill	Fire at transformer (due to electrical fault, oil leak) affects operation of Facility.	Fire impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Burns. Power station unable to operate.	Major	Unlikely	Medium	Transformers have over temperature protection that will shut down the generator module in the event of a fault. Transformer overpressure protection will shut down the station in the event of a fault. Electrical protection relays will shutdown station and open High Voltage breaker in the event of a transformer electrical fault. Refer Cause and Effect Matrix. Transformers enclosed in a steel Kiosk. Storage of flammable products (i.e. pallets, plastic must not be stored against fences, buildings or next to transformers). House Keeping. Refer Safety Management System.	Low
Power Generation	Stuart Landfill	Pests or scavenging native species attracted to refuse.	Fire. Health hazard. Trip, slip and fall hazards. Pollution of creek.	Minor	Likely	Medium	Fire or explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Air, land and water contamination.	Low
Power Generation	Stuart Landfill	Deliberate attack on site facilities.	Fire or explosion impacting the energy facility and potentially surrounding areas including landfill facility or rail corridor. Air, land and water contamination.	Moderate	Rare	Low	Fenced facility. Operations remotely operated. Security Cameras. Facility located within Landfill boundary which is fenced. Refer to Emergency Response Plan and Safety Management System. Refer Documents: Emergency Response Plan - 40041-RG-030	Low
Power Generation	Stuart Landfill	Vehicle / mobile plant collision while travelling to and from facility (onsite risk addressed in Fuel Rail risks).	Fatality. Damage to vehicle. Fauna fatality. Oil or chemical spill potentiall impacting the energy facility and surrounding areas including landfill facility or rail corridor.	Moderate	Likely	High	Regular servicing undertaken and logbooks maintained. Employees must obey rules in Vehicle Policy Employees must obey rules in Electronic Resources & Communications Policy (Use of Mobile Device). Valid drivers licence must be held. First aid kits and fire extinguisher located in company vehicles. Refer Safety Management System. Refer Documents: Safety Management Plan - 40041-RG-031	Low
Power Generation	Stuart Landfill	Personnel undertaking operation / maintenance activities at height (e.g. Accessing radiator fans on top of generator module or undertaking emissions testing at exhaust stack monitoring ports).	Fatality. Damage to plant and equipment.	Major	Possible	High	Safety harness required where fall possible greater than 1.8m. Permit to work system. Task Specific Job Safety & Environment Analysis (JSEA) \ Safe Work Method Statement (SWMS) Worksheet. Suitably experienced and qualified employees and contractors to be utilised. PPE used. Training register. Inductions undertaken. Refer Safety Management System. Refer Documents: Safety Management Plan - 40041-RG-031	Low

BUSINESS UNIT	LOCATION (Optional)	RISK EVENT	CONSEQUENCE	CONSEQUENCE	FREQUENCY	RISK RATING	CONTROLS	ASSESSED RISK RATING
FACILITY (BEF) CONTINUED								
Power Generation	Stuart Landfill	Unauthorised access from public, landfill operations staff and visitors.	Damage to plant and equipment. Injury. Electrocution.	Major	Possible	High	Facility fenced with security gate. Security gate padlocked when no operator in attendance. Entrance signed directing visitors to report to control room. Inductions undertaken. Warning and hazard signs erected on Facility fence. Operator contact details provided on front fence.	Low
Power Generation	Stuart Landfill	Fire affecting operation of the Facility (i.e. Bushfire or landfill fire).	Damage to plant and equipment potentiall impacting the energy facility and surrounding areas including landfill facility or rail corridor. Injury.	Minor	Possible	Low	Emergency Response Plan. Regular communications with landfill operator. LMS, ERP enacted during a facility incident which does not pose a threat beyond fence line. Landfill operator ERP enacted during an incident exists outside of facility boundary. First Aid Training. Training register. Inductions undertaken. Refer Documents: Emergency Response Plan - 40041-RG-030	Negligible