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PRELIMINARY HAZARD ANALYSIS

50 Wyllie Road, Kembla Grange NSW

prepared for

Bicorp Pty Ltd

April 2015

DOCUMENT CONTROL REGISTER

Document Information	
Job Number	E49/4
Document Number	1
Report Title	Preliminary Hazard Assessment
Site Address	50 Wyllie Road, Kembla Grange NSW
Prepared for	Bicorp Pty Ltd

Document Review			
Revision Number	**Date Issued**	**Description**	**Issued By**
0	16/08/14	Initial Issue	Ben Buckley
1	4/10/14	Revision 1	Ben Buckley
2	10/09/14	Revision 2	Ben Buckley
3	19/01/15	Revision 3	Ben Buckley
4	18/04/15	Revision 4	Ben Buckley

Distribution Register		
Distribution Method	**Custodian**	**Issued to**
Electronic	B. Buckley	Benviron Group Office
Electronic	Bicorp Pty Ltd	50 Wylie Road, Kembla Grange NSW

Authorisation and Release			
	Signature	**Name**	**Date**
Author		Benjamin Buckley	19/01/15

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REFERENCES

- Department of Urban Affairs and Planning (1992a) Guidelines for Hazard Analysis: Hazardous Industry Planning Advisory Paper No. 6.
- Department of Urban Affairs and Planning (1992b) Risk Criteria for Land Use Safety Planning: Hazardous Industry Planning Advisory Paper No 4.
- Department of Urban Affairs and Planning (1997) Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines.
- Department of Urban Affairs and Planning (1999) Multi-Level Risk Assessment. Revised Edition.
- Safe Production Solutions (2009) Illawarra Coal Holdings Bulli Seam Operations Environmental Risk

1.0 INTRODUCTION

Benviron Group was appointed by Mr Adam Blackwell of Bicorp Pty Ltd to undertake a Preliminary Hazard Analysis (PHA) for the property situated at 50 Wyllie Road, Kembla Grange ("the site"). The PHA has been undertaken for the proposed increase of processing capacities of up to 230,000 tonnes of construction and demolition waste materials per annum with associated waste storage and stockpile areas and ancillary structures (i.e plant and equipment). This also includes the construction of a large warehouse.

This PHA addresses the requirements of State Environmental Planning Policy (SEPP) No. 33 (Hazardous and Offensive Development) and Applying SEPP 33 – Hazardous and Offensive Development Application Guidelines (DUAP, 1997), and has been documented in general accordance with Guidelines for Hazard Analysis: Hazardous Industry Planning Advisory Paper No. 6 (DUAP, 1992a)

Assessed risks are compared to the qualitative risk assessment criteria developed in criteria developed in accordance with Australian Standard/New Zealand Standard (AS/NZS) 4360:2004 Risk Management (AS/NZS 4360:2004). Further, this PHA considers the qualitative criteria provided in Risk Criteria for Land Use Safety Planning: Hazardous Industry Planning Advisory Paper No. 4 (DUAP, 1992b).

1.1 Scope

The objective of this PHA is to identify the risks posed by the Project to people, property and the environment and assess the identified risks using applicable qualitative criteria. This assessment considers off-site risks to people, property and the environment (in the presence of controls) arising from atypical and abnormal hazardous events and conditions (i.e. equipment failure, operator error and external events). The assessment does not consider risks to Bicorp Pty Ltd employees or property.

1.2 Study Methodology

The methodology employed during the preparation of this PHA was as follows:

1. Identify the hazards associated with the Project.
2. Examine the maximum reasonable consequence of identified events.
3. Qualitatively estimate the likelihood of events.
4. Propose risk treatment measures.
5. Qualitatively assess risks to the environment, members of the public and their property arising from atypical and abnormal events and compare these to applicable qualitative criteria.
6. Recommend further risk treatment measures if considered warranted.
7. Qualitatively determine the residual risk assuming the implementation of the risk treatment measures.

1.3 Risk Management Process

This PHA has been undertaken with regard to the risk management process described in AS/NZS 4360:2004 Risk Management. The risk management process includes the following components:

- Establish the context
- Identify risks
- Analyse risks
- Evaluate risks
- Treat risks

1.4 Risk Criteria

This PHA considered the following qualitative criteria (summarised from DUAP, 1992b):

- All 'avoidable' risks should be avoided. This necessitates investigation of alternative locations and technologies where applicable.
- The risks from a major hazard should be reduced wherever practicable, irrespective of the value of the cumulative risk level from the whole installation.
- The consequences (effects) of the more likely hazardous events should, wherever possible be contained within the boundaries of the installation.
- Where there is an existing high risk from a hazardous installation, additional hazardous developments should not be allowed if they add significantly to that existing risk.

1.5 Qualitative Measures of Consequence, Likelihood and Risk

To undertake a qualitative risk assessment it is useful to define (in a descriptive sense) the various levels of consequence of a particular event, and the likelihood (or probability) of such an event occurring. Risk assessment criteria were developed in accordance with AS/NZS 4360:2004 which allows the risk assessment team to develop risk criteria during the establishment of context phase.

In accordance with AS/NZS 4360:2004, Tables 1, 2 and 3 were reviewed as part of establishing the context. The tables were considered to be consistent with the specific objectives and context of the PHA.

Table 1: Qualitative Measures of Probability

Event	Likelihood	Description
A	Almost Certain	Happens often
B	Likely	Could easily happen
C	Possible	Could happen and has occurred elsewhere
D	Unlikely	Hasn't happened yet but could
E	Rare	Conceivable, but only in extreme circumstances

Source: Safe Production Solutions (2009)

Table 2: Qualitative Measures of Maximum Reasonable Consequence

	People	Environment	Asset/Production
1	Multiple fatalities	Extreme environmental harm (e.g. widespread catastrophic impact on environmental values of an area)	More than $1billion (B) loss or production delay
2	Permanent total disabilities, single fatality	Major environmental harm (e.g. widespread substantial impact on environmental values of an area)	$100 million (M) to $1B loss or production delay
3	Major injury or health effects (e.g. major lost workday case/permanent disability)	Serious environmental harm (e.g. widespread and considerable impact on environmental values of an area)	$5M to $100M loss or production delay
4	Minor injury or health effects (e.g. restricted work or minor lost workday case)	Material environmental harm (e.g. localised and considerable impact on environmental values of an area)	$250 thousand (k) to $5M loss or production delay
5	Slight injury or health effects (e.g. first aid/minor medical treatment level)	Minimal environmental harm (e.g. minor impact on environmental values of an area)	Less than $250k loss or production delay

Source: Safe Production Solutions (2009)

Combining the probability and consequence, Table 3 provides a qualitative risk analysis matrix to assess risk levels.

Table 3: Risk Ranking Table

Consequence	Probability				
	A	B	C	D	E
1	1 (H)	2 (H)	4 (H)	7 (M)	11 (M)
2	3 (H)	5 (H)	8 (M)	12 (M)	16 (L)
3	6 (H)	9 (M)	13 (M)	17 (L)	20 (L)
4	10 (M)	14 (M)	18 (L)	21 (L)	23 (L)
5	15 (M)	19 (L)	22 (L)	24 (L)	25 (L)

Notes: L – Low, M – Moderate, H – High
Rank numbering: 1 – highest risk; 25 – lowest risk

Legend – Risk levels:

	Tolerable
	ALARP – As low as reasonably practicable
	Intolerable

Source: Safe Production Solutions (2009)

Risk acceptance criteria for the Project have been formulated following consideration of the Risk Criteria for Land Use Safety Planning: Hazardous Industry Planning Advisory Paper No. 4 (DUAP, 1992b) and AS/NZS 4360:2004 Risk Management guidelines:

Qualitative Risk Acceptance Criteria:

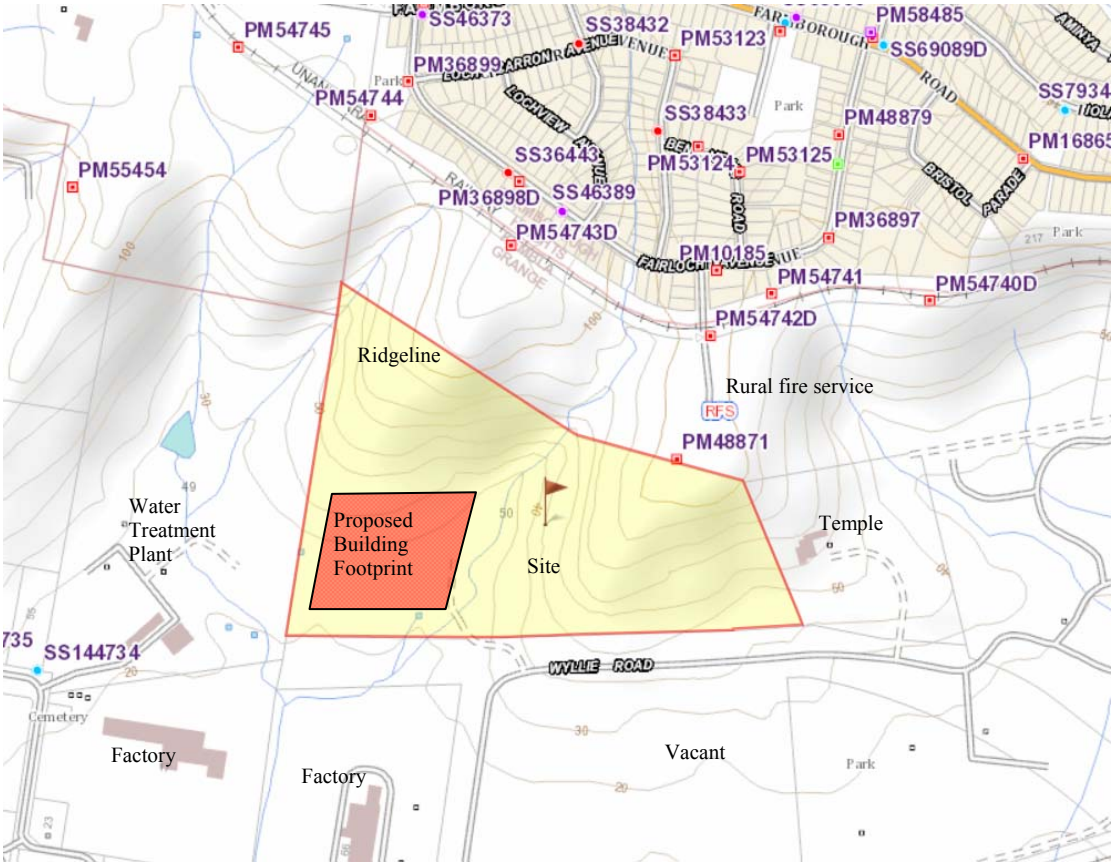
- *The risk posed by an event is at a level where the residual risk levels are considered tolerable, following consideration of the proposed risk mitigation and minimisation measures.*

The hazard identification summary table (Table 4) illustrates the systematic application of the above criteria for the Project

2.0 PROJECT OVERVIEW

2.1 Site Location

The following figure shows the site and the area which has been considered as part of this assessment.



2.2 Provisional Development Schedule

The Wyllie Road Resource Recovery Centre is proposed to contain the following components:

- A site entrance and site access road
- A visual amenity bund and vegetation screens
- Two retained woodland areas
- A site office and weighbridge
- A warehouse
- Waste storage areas
- Processing of waste areas
- Landscaping materials storage area

2.3 Site Identification

The site is located at 50 Wyllie Road, Kembla Grange NSW in the Local Government Area of Wollongong City Council municipality. The site is part within of Lot 10 in DP878167. A portion of the site is currently zoned industrial where the remainder of the site is zoned for private recreation. The site is approximately 21.98 ha in area, and the surrounding lands of the site are mainly used for industrial businesses.

2.4 Land Use Conflicts

Potential land use conflicts may arise from the proposed land use. The neighbouring properties which may come into conflict are located as follows:

Neighbouring Properties	Distance
Farmborough Height Residences	500m N
Orthodox Church	600m E

Ian Mclennan Park	650m E
Wollongong Waste and Resource Recovery Park	700m NW
Patrick Autocare	300m S
Water Treatment Facility	400m W
Rural Fire Service	450m NE
Kaliwest Car Storage	500m SW

The proposed site and nearby land uses are in accordance with the Wollongong LEP (West Dapto) 2009 and future areas indicate similar (light industrial) and more heavy landuses (heavy industrial) within a 2km to the south, east and west.

The proposed development is very consistent with the DCP and IN2 zoning as it will provide a significant amount of economic and employment growth and will provide an essential service (waste management) to the proposed land release area (future to the south) in addition to the Kembla Grange landfill facility located approximately 700m to the northwest of the site.

It will also play an important part of Wollongong council DCP 2009 Chapter E7 –

1. (c) To encourage development which facilitates waste minimisation and complements waste services offered by Council or private contractors;

e) To maximise reuse and recycling of building materials and household, industrial and commercial waste;

f) To provide appropriately located, sized and accessible waste storage facilities.

The other objective of the zone is to minimise impact on any adverse effect of industry on other land uses. The proposed expansion and the mitigation measures presented within the air quality assessment and PHA show the risks are low and are very unlikely to impact upon the surrounding sensitive receivers.

The land use conflict described by Cardno between KGGRF and PACs operations is not expected to occur based on investigations undertaken (Air Quality Assessment – GHD 2015) and assessed as part of this EIS. It is also seen that the site is located within a short distance of an approved landfill facility showing that the proposed development is consistent with the area.

The site is not located within areas as outlined in Table 1 in the EIS publication for landfilling (Dept. of Urban Planning) to affect ecologically sensitive areas. It is noted that surrounding industrial areas are not considered sensitive land uses within this guidance criteria and are therefore are to be considered based on current uses as part of this assessment.

Also after further investigation it is not clear on the permissible land use and operation area of PAC. It is also unclear about the current landuse of PAC and whether it is currently permissible and in accordance with Council development policies

3.0 HAZARD IDENTIFICATION

3.1 Diesel

Diesel is classified as a combustible liquid by Australian Standard (AS) 1940:2004. The Storage and Handling of Flammable and Combustible Liquids (AS 1940:2004) (Class C1) for the purposes of storage and handling but is not classified as a dangerous good by the criteria of the Australian Dangerous Goods (ADG) Code. In the event of a spill, diesel is damaging to soils and aquatic ecosystems and fires can occur if it is ignited (flash point 61 to 150 degrees Celsius).

The risks associated with the Project include diesel storage and usage. The use of diesel at the Project and the construction and operation of all fuel storage facilities would be undertaken in accordance with the requirements of AS 1940:2004.

The diesel will be stored in a bunded transtank GA (see attached plan) and approximately 20,000L will be stored on site. The site storage will be placed as per the attached site plan (approx. 400m from the boundary) and will be in accordance with the attached the management plan.

3.2 Petrol

Petrol is classified as a flammable liquid (Class 3) by AS 1940:2004 and as such is classified as a dangerous good by the criteria of the ADG Code. On-site petrol usage would be minor. All fuel storage facilities would be constructed and operated in accordance with AS 1940:2004

No storage of petrol is envisaged to be stored on site, however may be present in some vehicles entering the site.

3.3 Hydrocarbons

Oil is classified as a combustible liquid (Class C2) by AS 1940:2004. All hydrocarbon storage facilities would be constructed and operated in accordance with AS 1940:2004. Waste oil would be placed in drums or tanks with in a bunded area and would be collected by a licensed waste contractor for off-site disposal.

Small quantities of grease, degreaser and kerosene would also be required. Storage facilities for these hydrocarbons would be constructed and operated in accordance with the requirements of AS 1940:2004.

The oils and degreasers will be stored in a bunded transtank DGM (see attached tank plan) and approximately 100L will be stored on site. The site storage will be placed as per the attached site plan (approx. 100m from the boundary) and will be in accordance with the attached the management plan.

3.4 Bushfire Risks

Fire risks can lead to the generation of potentially explosive and/or flammable gas emissions. Potential environmental impacts may include breakout of fire into surrounding vegetation, release of significant quantities of air emissions and contaminated runoff from firewater. Other impacts include damage to property and injury, as well as possible plant shutdown.

Similarly, the project may be subjected to bushfire that originates from elsewhere in the area. Detailed project design will address specific plant and facility design criteria for fire prevention, detection, control and personnel safety requirements. Other measures to reduce this risk are described in the Fire Management Plan as part of this Environmental Assessment and address matters such as:

- Appropriate induction and training of personnel.
- Procurement of fire equipment adequate for the level of risk identified for the project and regularly maintained and tested to ensure good working order.
- Storage and handling of all substances, including waste, under conditions that minimise the risk of fire, explosion or toxic emissions, with specific measures that address the use of solvent-extraction reagents.
- Implementation of specific procedures for high-risk tasks such as 'hot work' (e.g., welding) and use of chainsaws.
- Liaison (e.g., NSW Rural Fire Service) and monitoring (e.g., fire danger ratings).

3.5 Vehicle Collision/Roll-over

The potential exists for vehicles bringing supplies and similar to the site to be involved in an accident. This could result in release of product, hydrocarbons or waste materials with consequent adverse impacts on the environment, and/or injury or fatality.

Contractors will be required to comply with Bicorp's procedures and the relevant codes and standards for transport, storage and handling of hazardous materials (including emergency response). Similarly, contractors will be required to adhere to New South Wales road rules.

Fuel trucks will carry equipment necessary to respond to an accident that may result in a spill. In the event that product is spilt during transport, the material will be excavated and recovered as quickly as possible. The General Manager will be notified immediately of spills that occur during transport and Bicorp will then notify the relevant authorities.

3.6 Dust and Odour

Dust and Odour risks can lead to the generation of potentially hazardous or offensive gas emissions. Potential environmental impacts may include release of significant quantities of air emissions and contaminated material. Other impacts include damage to property and injury.

Measures to reduce this risk are described in the dust and odour mitigation (section 7.2 &7.3) as part of the Air Quality Assessment prepared by GHD and as part of this Environmental Assessment and address matters such as:

- Water material prior to it being loaded for haulage, where appropriate.
- Aim to minimise the size of storage piles where possible.
- Limit cleared areas of land and clear only when necessary to reduce fugitive dust emissions.
- Control on-site traffic by designating specific routes for haulage and access and limiting vehicle speeds to below 25 km/hr.
- All trucks hauling material should be covered before exiting the site and should maintain a reasonable amount of vertical space between the top of the load and top of the trailer.
- Material spillage on sealed roads should be cleaned up as soon as practicable.
- A rumble-strip at the interface of the sealed road and the unsealed access road should be considered.
- Excavating operations conducted in areas of low moisture content material should be suspended during high wind speed events or water sprays should be used
- A site specific odour management plan to be developed for commissioning.
- Design and installation of an appropriate building ventilation system at negative pressure at all times during operation.

In addition to these measures the following should also be undertaken

- Appropriate induction and training of personnel.
- Procurement of spill and water cart equipment adequate for the level of risk identified for the project and regularly maintained and tested to ensure good working order.
- Correct Storage and handling of all substances, including waste, under conditions that minimise the risk of fire, explosion or release of toxic emissions, with specific measures that address the use of solvent-extraction reagents.

3.7 Importation of Hazardous Materials

The potential exists for vehicles bringing soil and other materials which may contain hazardous materials. This could result in release of product, hydrocarbons or waste materials with consequent adverse impacts on the environment, and/or injury.

Contractors will be required to comply with Bicorp's procedures and the relevant codes and standards for transport, storage and handling of hazardous materials (including emergency response). Similarly, contractors will be required to adhere to New South Wales road rules. In the event of the importation of hazardous material by contractors the contingencies are shown in Table 4 (importation of materials) and also in attachment 4 – Hazard Contingency Strategy.

4.0 HAZARD IDENTIFICATION PROCESS

The Project hazard (or risk) identification summary table (Table 4) was formulated as discussed above. It provides a summary of the potential off-site risks and hazards identified for the Project and a qualitative assessment of the risks posed.

4.1 Project Components

For the purposes of hazard identification and assessment, the Project was subdivided into the following areas:

- transport;
- on-site storage;
- construction/development
- operation of site

4.2 Incident Classes

The following generic classes of incident were identified:

- leaks/spills;
- fire;
- collision;
- explosion; and
- theft.

Other classes of incidents identified included:

- release of odours/dusts to atmosphere;
- equipment/ infrastructure malfunction.

These incident classes were applied to the Project component areas to identify scenarios for which treatment measures were developed.

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
Transport	Collision	Vehicle collision with other vehicle or pedestrian	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training	C	2	8 (M)
Transport	Leaks/Spills	Vehicle collision/damage causes spill/leak of hazardous material	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Handling in accordance with Australian Standards ▪ Emergency response (internal and external) ▪ Communications ▪ Vacuum and sweeping of paved roads	C	4	18 (L)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
Transport	Theft	Vehicle or material within truck stolen	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Contact emergency services (police) ▪ Site Security/Limited Access	D	5	24 (L)
Transport	Fire	Vehicle fire from equipment failure or poor maintenance.	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Fire fighting equipment ▪ Bushfire management plan ▪ Regular maintenance inspections ▪ Contact emergency services (fire brigade)	D	1	7 (M)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
Construction	Leaks/Spills	Spills/leaks from construction of development.	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Handling in accordance with Australian Standards ▪ Emergency response (internal and external) ▪ Communications ▪ Vacuum and sweeping of paved roads	D	4	21 (L)
Construction	Fire	Building materials catch fire from human error or poor maintenance.	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Fire fighting equipment ▪ Bushfire management plan ▪ Regular maintenance inspections	D	1	7(M)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
			▪ Contact emergency services (fire brigade)			
Construction	Theft	Materials stolen resulting in injury to member of public.	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Contact emergency services (police) ▪ Site Security/Limited Access	D	5	24 (L)
On Site Storage (Fuels and Hydrocarbons etc)	Fire	Chemicals/Fuels ignite by human error or malicious act.	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Fire fighting equipment ▪ Bushfire management plan ▪ Regular maintenance inspections ▪ Contact emergency services (fire brigade)	D	1	7 (M)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
On Site Storage (Fuels and Hydrocarbons etc)	Explosion	Explosion of volatile material stored on site by Human error or damage	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Lightening Protection to Australian Standards ▪ Emergency response (internal and external)	E	1	11 (M)
On Site Storage (Fuels and Hydrocarbons etc)	Spills/Leaks	Failed Tank or associated pipe works lead to spills	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Handling in accordance with Australian Standards ▪ Emergency response (internal and external) ▪ Communications	C	3	13 (M)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
			▪ Vacuum and sweeping of site			
On Site Storage (Fuels and Hydrocarbons etc)	Theft	Theft of dangerous good resulting in injury to member of public	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Contact emergency services (police) ▪ Site Security/Limited Access	D	4	21 (L)
Operation of Site (Dust)	Release of dusts	Dusts generated firm the processing of soils. which affects workers and nearby residents	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training	A	5	15 (M)
Operation of Site (Importation of Contaminated Materials)	Importation of material	Hazardous materials within soils. which affect workers and nearby residents	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Traffic Management Plan ▪ Work Health and Safety Plan	A	5	19 (L)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
			▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training			
Operation of Site (Bushfire)	Fire	Bushfire caused/affected by operation of site machinery/equipment that affects workers and nearby residents	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Fire fighting equipment ▪ Bushfire management plan ▪ Regular maintenance inspections ▪ Contact emergency services (fire brigade)	D	1	7 (M)
Operation of Site	Theft	Theft of operation equipment that affects the safety of workers and nearby residents	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Contact emergency services (police)	D	5	24 (L)

Table 4 - Hazard Identification table						
Project Component	**Incident Type**	**Scenario**	**Proposed Treatment Measures**	**Likelihood[1]**	**Consequence[2]**	**Risk[3]**
			▪ Site Security/Limited Access			
Operation of Site	Release of Harmful air pollutants	Accidental release of air pollutants via explosion/fire or storm that affects the safety of workers and nearby residents	▪ Emergency Management/Response Plan ▪ Environmental Management Plan ▪ Work Health and Safety Plan ▪ Hazardous Material Management Plan ▪ Operator Training ▪ Spill Response Equipment and Training ▪ Contact emergency services (Fire Brigade) ▪ Site Security/Limited Access	C	2	8 (M)

[1] - Refer to Table 1

[2] - Refer to Table 2

[3] - Refer to Table 3

5.0 RISK MANAGMENT AND EVALUATION

Table 4 presents a qualitative assessment of risks associated with the construction and operation of the Project. The assessment evaluates the risk of the Project impacting on the environment, members of the public and their property.

Hazard treatment measures have been proposed, where required, to produce a 'low' level of risk in accordance with the risk acceptance criteria and therefore the risks are within acceptable limits for the operation of the site.

This report addresses the SEPP 33 conditions and identifies that based on the above assessment there is no significant risk for offence. It is anticipated that many of the potential hazardous scenarios raised in this PHA are low and would be further analysed through consultation with site owners and relevant authorities.

We would be pleased to provide further information or discuss any aspect of our report. Please do not hesitate to contact the undersigned should you have any queries.

For and behalf of

Benviron Group

Ben Buckley

Ben Buckley

Director

Environmental Forensic Scientist

LIMITATIONS

Whilst to the best of our knowledge, information contained in this report is accurate at the date of issue, although site conditions, can change in a limited time. This should be borne in mind if the report is used after a protracted delay.

There is no investigation that is thorough enough to preclude the presence of material that presently or in the future, may be considered hazardous at the site. Since regulatory criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require remediation.

Opinions are judgements that are based on our understanding and interpretation of current regulatory standards, and should not be construed as legal opinions.

Although the information provided by a Preliminary Hazard Assessment can reduce exposure to risks, no assessment, however diligently carried out, can eliminate them. It must be noted that these findings are professional findings and have limitations. Even a rigorous professional assessment may fail to detect all contaminants on a site. Contaminants may be present in areas that were not surveyed or sampled.

Attachment 1 – Transtank Plans

DRAWING NO C-DGM-GA01

USED ON

DO NOT SCALE

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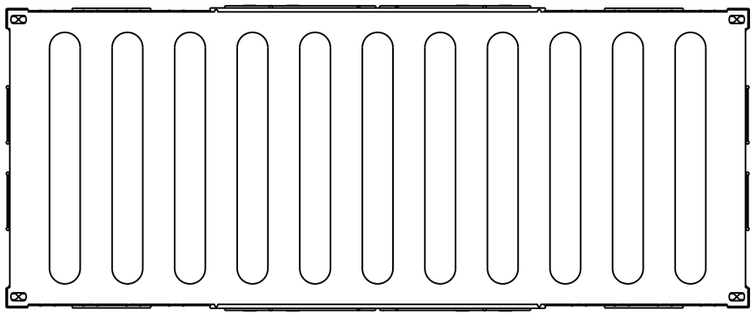

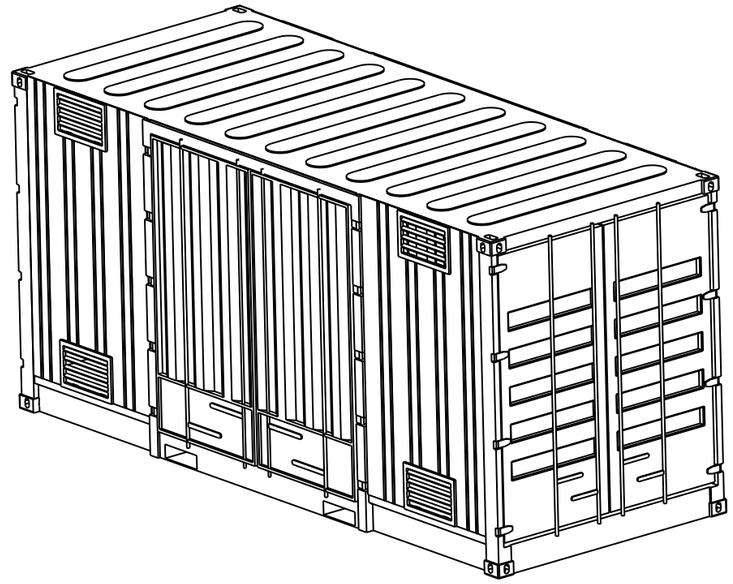

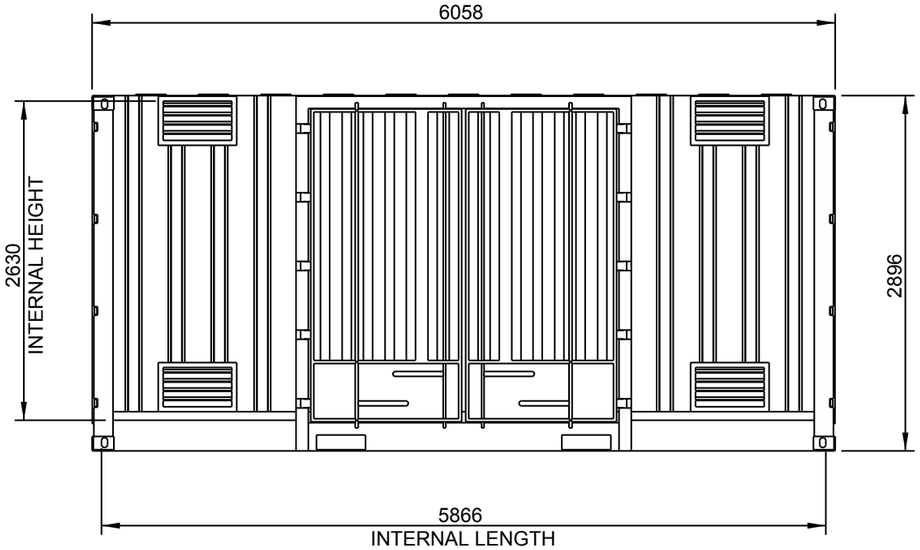

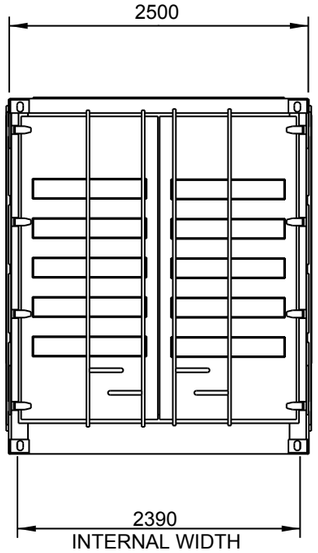

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MATERIAL: REFER COMPONENTS

FINISH: PAINT ON COMPLETION

TOLERANCES:
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UNLESS STATED OTHERWISE ALL TOLERANCES TO BE AS FOLLOWS:

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0.0 ± 0.5
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DRAWN TO AS1100

DRAWN	T. GALLA	DATE 26-Jun-07
DESIGN/CHECKED	N. HARRISON	DATE 26-Jun-07
APPROVED	N. HARRISON	DATE 26-Jun-07
CONFIGURED	N. HARRISON	DATE 26-Jun-07

TRANSTANK

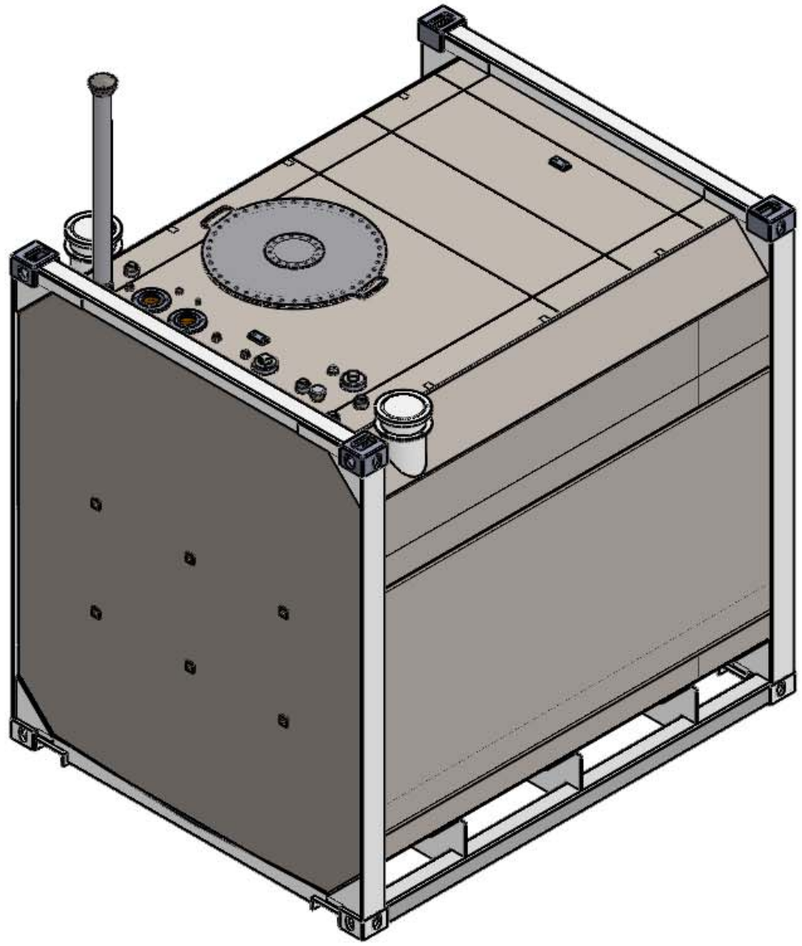
TITLE
DANGEROUS GOODS STORE MULTIPLE DOOR GENERAL ARRANGEMENT

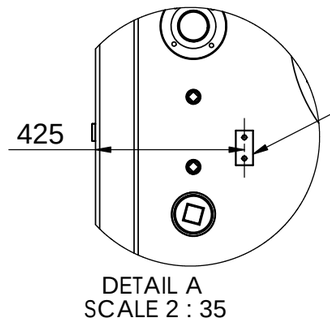
DRAWING NO C-DGM-GA01

SHEET SIZE A3

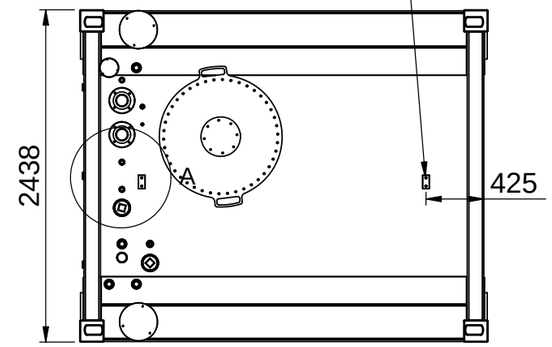
SCALE 1:50 | APPR MASS: | SHT 1 OF 1 | ISS: 01

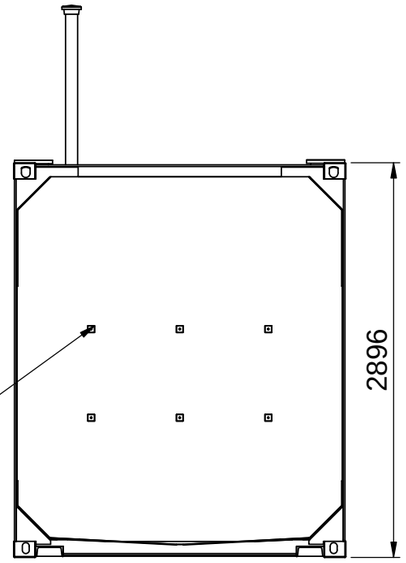
TANK	CAPACITY INLITRES	SAFE FILL LEVEL IN LITRES	LENGTH IN MM	WIDTH IN MM	HEIGHT IN MM
P18-NPB	18,000	17,460	2996	2438	2896



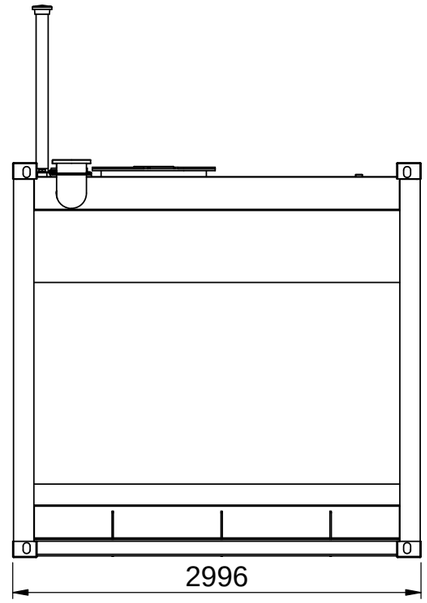


DETAIL A
SCALE 2 : 35





TAPPED BLOCKS FOR PIPE
SUPPORT AND ATTACHMENT



REV	REVISION DESCRIPTION	DATE	BY
7			
6			
5			
4			
3			
2			
1	INITIAL RELEASE	6/02/2013	V.D

LINEAR TOLERANCES UNLESS OTHERWISE SPECIFIED

0 dec place ±	1.0
1 dec place ±	0.5
2 dec place ±	0.1
3 dec place ±	0.05

ANGULAR TOLERANCES UNLESS OTHERWISE SPECIFIED

0 dec place ±	0.25°

MATERIAL TYPE

MILD STEEL

FINISH

PAINT, HEMANTHATNE - OFF WHITE

TRANSTANK®

3 Billy Mac Place, Parkes,NSW 2870 Australia.
p + 61 2 6863 6700 f + 61 2 68622 1233

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS.

SO #	V.D		06-02-20136/02/2013
Model:	ASM-000854-GENERAL ASSEMBLY P10FT		

SURFACE FINISH: 3.2 UNLESS SPECIFIED

REMOVE ALL UNNECESSARY BURRS AND SHARP EDGES

SCALE: 1:50 A3

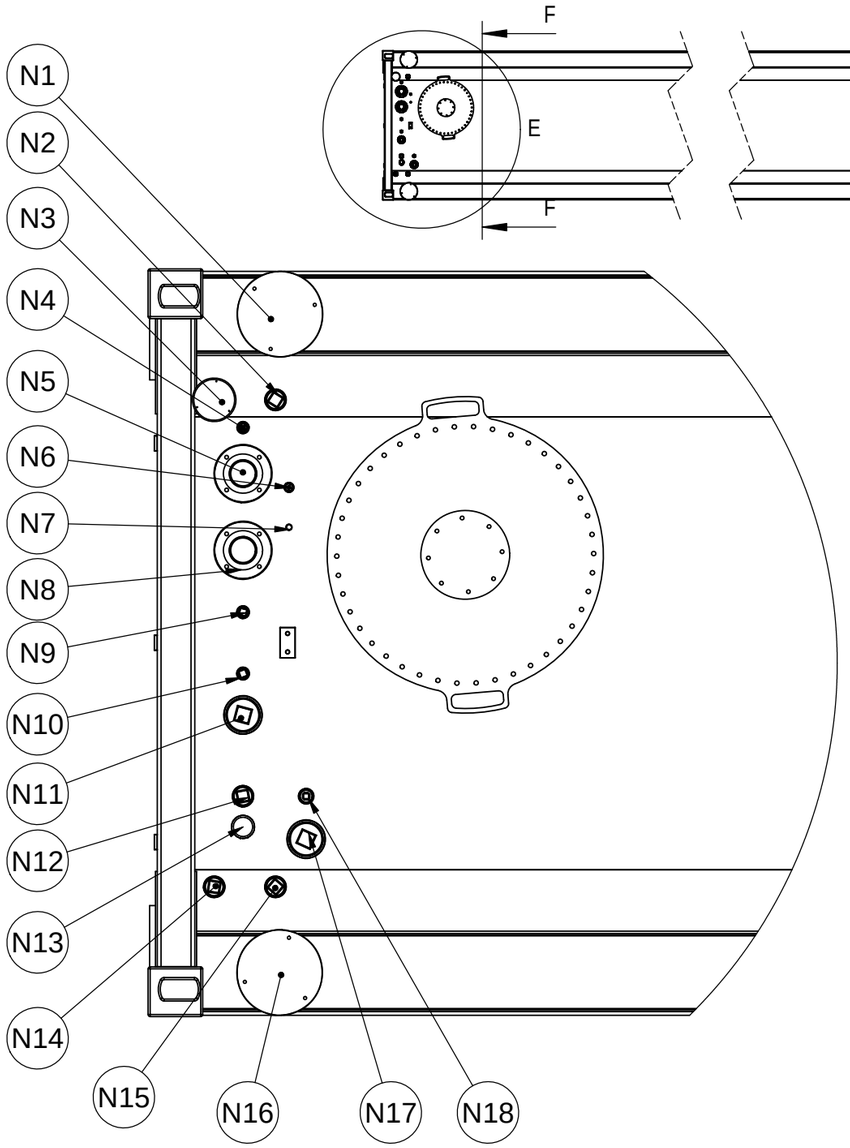
TITLE

GA OF 10 FT P SERIES TANK- NO PUMP BAY

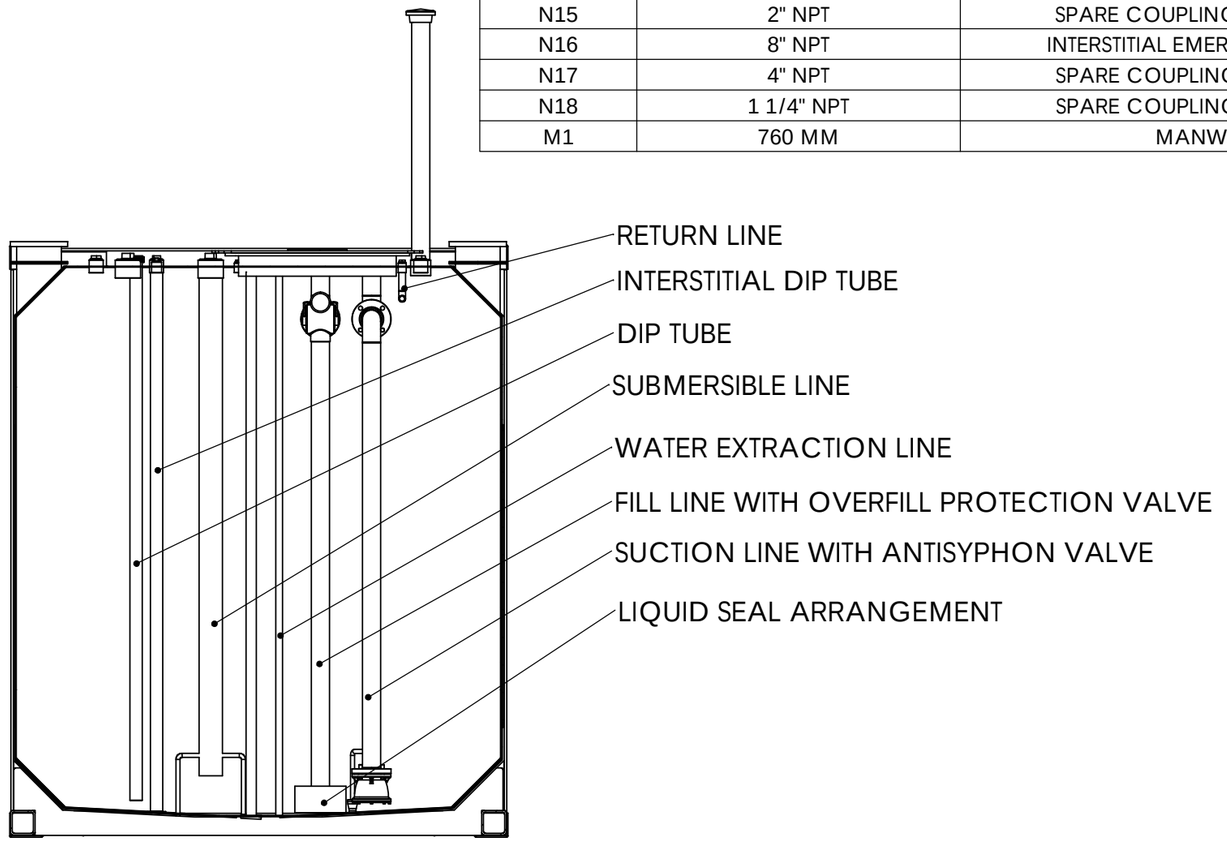
SHEET No. 1/2

DRAWING No. **A - 001348 - 1**

NOZZLE	SIZE	DESCRIPTION
N1	8" NPT	INTERSTITIAL EMERGENCY VENT
N2	2" NPT	SPARE COUPLING WITH PLUG
N3	2" NPT	FREE TO AIR VENT
N4	1" NPT	RETURN LINE
N5	3" ANSI RF 150 FLANGE	SUCTION LINE
N6	3/4" NPT	SPARE COUPLING AND SOCKET
N7	1/4" NPT	SPARE SOCKET AND PLUG
N8	3" ANSI RF 150 FLANGE	FILL LINE
N9	1" NPT	WATER EXTRACTION LINE
N10	1" NPT	SPARE COUPLING WITH PLUG
N11	4" NPT	SPARE SUBMERSIBLE LINE WITH COUPLING AND PLUG
N12	2" NPT	INTERSTITIAL DIP TUBE
N13	2" NPT	PRIMARY TANK DIP TUBE
N14	2" NPT	SPARE COUPLING WITH PLUG
N15	2" NPT	SPARE COUPLING WITH PLUG
N16	8" NPT	INTERSTITIAL EMERGENCY VENT
N17	4" NPT	SPARE COUPLING AND PLUG
N18	1 1/4" NPT	SPARE COUPLING AND PLUG
M1	760 MM	MANWAY



DETAIL E
SCALE 1 : 20



SECTION F-F
SCALE 1 : 30

REV	REVISION DESCRIPTION	DATE	BY
7			
6			
5			
4			
3			
2			
1	INITIAL RELEASE	6/02/2013	V.D

LINEAR TOLERANCES UNLESS OTHERWISE SPECIFIED

0 dec place ±	1.0
1 dec place ±	0.5
2 dec place ±	0.1
3 dec place ±	0.05

ANGULAR TOLERANCES UNLESS OTHERWISE SPECIFIED

0 dec place ±	0.25°

MATERIAL TYPE: MILD STEEL

FINISH: PAINT, HEMANTHATNE - OFF WHITE

TRANSTANK®
3 Billy Mac Place, Parkes,NSW 2870 Australia.
p + 61 2 6863 6700 f + 61 2 68622 1233

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS.

SO #	V.D		06-02-20136/02/2013
Model:	ASM-000852-GENERAL ASSEMBLY P30FT		

SURFACE FINISH: 3.2 UNLESS SPECIFIED

REMOVE ALL UNNECESSARY BURRS AND SHARP EDGES

SCALE: 1:100 A3

TITLE: GA OF 10 FT P SERIES TANK- NO PUMP BAY

SHEET No. 2/2

DRAWING No. A - 001348 - 1

Attachment 2 – Site Plan with Tank Locations

CARPARK PLANTING

CODE	BOTANIC NAME	No	POT SIZE
	TREES		
MQ	Melaleuca quinquenervia	12	200mm
	UNDERSTOREY GRASSES		
DC	Dianella caerulea	71	75mm tubestock
LL	Lomandra longifolia	71	75mm tubestock

BOUNDARY PLANTING

CODE	BOTANIC NAME	No	POT SIZE
	TREES		
EP	Eucalyptus paniculata	15	75mm tubestock
ET	Eucalyptus tereticornis	13	75mm tubestock
ES	Eucalyptus saligna	10	75mm tubestock
CT	Allocasuarina torulosa	10	75mm tubestock
MQ	Melaleuca quinquenervia	10	75mm tubestock
	SHRUBS		
AB	Acacia binervata	23	75mm tubestock
CA	Cassine australis	23	75mm tubestock
RV	Rapanea variabilis	31	75mm tubestock
SB	Streblus brunnianianus	31	75mm tubestock
TT	Trema tomentosum	23	75mm tubestock
MLS	Melaleuca linariifolia 'Snowstorm'	23	75mm tubestock
MA	Melaleuca armillaris	31	75mm tubestock

ZONE 2 SPECIES (Hydromulch)

Pioneering Grass Seed		Application Rate/ha
Japanes Millet (September to March)	Japanes Millet (September to March)	60kg/ha
Rye Corn (April to August)	Rye Corn (April to August)	60kg/ha
Trees, Shrubs and Ground Covers		
Acacia binervata	Two-veined Hickory	2kg/ ha
Acacia longifolia	Golden Wattle	2kg/ ha
Allocasuarina littoralis	Black She-oak	0.25kg/ ha
Baekea virgata	Twiggy Myrtle	0.1kg/ ha
Banksia spinulosa	Hairpin Banksia	0.1kg/ ha
Bursaria spinosa	Christmas Bush	0.1kg/ ha
Eucalyptus pilularis	Blackbutt	0.1kg/ ha
Eucalyptus amplifolia	Cabbage Gum	0.1kg/ ha
Hardenbergia violacea	Native Sarsaparilla	1.5kg/ ha
Indigofera australis	Australian Indigo	0.5kg/ ha
Lomandra longifolia	Spiny Headed Mat Rush	1kg/ ha
Kunzea ambigua	White Kunzea	0.2kg/ ha
Oxylobium lidleyanum	Native Holly	0.1kg/ ha
Pittosporum revolutum	Yellow Pittosporum	0.1kg/ ha
Pultenaea villosa	Hairy Bush Pea	0.1kg/ ha
Pimelia linifolia	Slender Riceflower	0.1kg/ ha
Syncarpia glomulifera	Turpentine	0.1kg/ ha
Themeda australis	Kangaroo Grass	2kg/ ha
Zieria smithii	Sandfly bush	0.1kg/ ha
Wood Fibre mulch		2 tonne/ ha
Dynamic Lifter Fertilizer		250kg/ ha
Envirotack Binder		60kg/ ha

CORE RIPARIAN ZONE EXTENDING 10M EITHER SIDE OF THE CREEK.
PLANT SYMBOLS ARE INDICATIVE ONLY - REFER TO THE VEGETATION MANAGEMENT PLAN PREPARED BY SOUTHERN HABITAT FOR MORE DETAILED INFORMATION

PROVIDE 100,000 LITRE RAINWATER TANK TO HARVEST RAINWATER

CONSTRUCT CATCH DRAIN AT TOP OF BATTER

ZONE LINE

TURNING/BACKING AREA

SKIP BIN STORAGE AREA

EQUIPMENT AREA

FUEL STORAGE TRANS TANK

ADDITIONAL RIPARIAN ZONE TO OFFSET THE AREA DELETED EAST OF BUILDING 1 AND WEST OF BUILDING 2

FILL / LANDSCAPE MOUND

BOLLARDS AT 4,5m SPACING TO DELINEATE GAS EASEMENT

EASEMENT FOR GAS PIPELINE 20 WIDE & VARIABLE

CONTAINER

OUTDOOR PROCESSING AND STOCKPILING AREA

INDOOR PROCESSING AND STORAGE SHED
F.L.21.50
(50x30m)

Diesel Storage Tank

SHADE TREES TO CARPARK

LOW UNDERSTOREY PLANTING TO MAINTAIN OPEN VISIBILITY FOR SECURITY

WEIGHBRIDGE OFFICE

WEIGHBRIDGE

building one

NOTE
ACCESS ROAD WILL BE SEALED OR ASPHALT FROM THE ENTRANCE TO THE WEIGHBRIDGE. REFER TO ENGINEERS PLANS

RESTRICTED STOCKPILE AREA

SHREDDING RUNOFF POND

WATER QUALITY /RECYCLING POND

DETENTION BASIN 'A'

6.0m WIDE WEIR AND OVERFLOW WITH SCOUR PROTECTION TO BANK

ROCK WALL 2M OFF BOUNDARY

BUFFER PLANTING TO BOUNDARY

DHS TRAINING ROOM building two

PROPOSED WORKSHOP
F.L. 25.50
building three

Oil And Diesel Storage Area

CONSTRUCT CONCRETE RETAINING WALL ON ... MAX. HEIGHT 3.5m

T5 Acacia implexa

Retain Whitebone tree

3 Ficus macrophylla

T5 Acacia implexa

Retain small fig tree

OFFICE building four

TREE PROTECTION ZONE TO LARGE FIG TREE AS PER ARBORIST REPORT

TRUCK PARKING

EXISTING CONTAINERS TO BE REMOVED

Overnight Truck parking

DETENTION BASIN PLANTED WITH WATER TOLERANT TREE SPECIES

MANAGERS AND TRAFFIC CONTROL OFFICE, VIEW OF YARD FOR SAFETY

EASEMENT FOR TRANSMISSION LINE 45.72 WIDE

ZONE LINE

Tree Group 1 Acacia mearnsii Regrowth

Tree Group 2 Acacia mearnsii Regrowth

Tree Group 3 Palms (4 of)

Group of Wattle trees

Group of Wattle trees

Wattle

Paperbark

NOTE
REFER TO ARBORISTS REPORT FOR DETAILED INFORMATION ON THE EXISTING FIG TREE AND ASSOCATED TREES

TREES	SHRUBS
7EP	11AB
5ET	11CA
5ES	11RV
5CT	11SB
5MQ	11TT
	11MLS
	11MA

TREES	SHRUBS
3EP	5RVS
3ET	5SB
	5MA

TREES	SHRUBS
5EP	12AB
5ET	12CA
5ES	15RV
5CT	12SB
5MQ	12TT
	12MLS
	12MA

LEGEND

- T1 Existing trees to be retained
- T1 Existing trees to be removed
- Edge of Vegetation
- Strip grass and place under proposed fill material for mounds. Strip topsoil and stockpile.
- Spread topsoil over prepared ground and embankments from stockpile and hyromulch. Refer to Zone 2 Species List
- Proposed tree and shrub planting within riparian zone. As per 1157-LC01 (approved)
- Proposed tree and shrub buffer planting to boundaries Refer to plant schedule
- Asset protection zone limits planting to scattered trees and ground cover planting only to suppress weed growth
- Proposed additional riparian planting to offset that deleted due to asset protection zones : 506m2

TREE PROTECTION

1 FENCING: Where existing trees are to be retained, Install tree protection fencing as detailed prior to any construction works commencing on site, Protection fencing shall remain until all works have been completed and shall be maintained throughout the construction works to prevent any access within the tree protection area. The area within the protective fencing shall be kept clear of all building materials and machinery. No washing of equipment or the disposal of cement slurry shall occur within the drip line of trees to be retained on the site or adjacent properties. Site offices shall be located outside the canopy of any existing trees to be retained

2 MULCHING: Tree protection zones shall be mulched with a minimum 75mm thick, 100% recycled hardwood chip or leaf litter mulch

3 IRRIGATION: Tree protection Zones shall be regularly watered

NOTE
REFERENCE SHOULD BE MADE TO THE VMP PREPARED BY SOUTHERN HABITAT FOR DETAILED INFORMATION ON THE INSTALLATION OF THE RIPARIAN CORRIDOR
NOTE
REFER TO DRAWING 1157-LC02 FOR DETAILS ON PLANTING, FENCING, SPECIFICATION AND MAINTENANCE OF GENERAL PLANTING AREAS (OTHER THAN THE RIPARIAN ZONE)
NOTE
REFER TO DRAWING 1157-LC01 FOR DETAILED INFORMATION ON THE PLANTING OF THE RIPARIAN CORRIDOR

ISSUE: Amended Development Application 11.09.14
ISSUE: Amended Development Application 07.07.14
ISSUE: Amended Development Application 10.04.14
ISSUE: Amended Development Application 19.04.13
ISSUE: Development Application 14.12.12

REV E: Add carpark planting 11.09.14
REV D: Addition of access road note, amend notes 07.07.14
REV C: Amend plant species, bank, OSD 28.03.14
REV B: Amend southern boundary, northern bank, eastern area, add detention basin 8.8.13
REV A: Amend riparian zone due to APZ requirements 19.04.13

ochre landscape architects

PO Box 395 Wollongong NSW 2520
Level 1, 126 Crown Street
Wollongong NSW 2500
Tel. 02 4227 6427 Fax. 02 4227 6876
Email: design@ochre.net.au

PROJECT
Proposed Recycling Cushing Area
Part Lot 10 D.P. 878167 Wylie Road
KEMBLA GRANGE

DRAWING TITLE
Landscape Plan

CLIENT
Bicorp Pty Ltd

DRAWING NO.
1442-LC01E SHEET 1 OF 2

SCALE: 1:500 @ A1, 1:1000 @ A3

CHECKED: TW

DATE. 10.12.12

Attachment 3 – Risk Matrix for Hydrocarbons Storage

Environmental Aspects
The risk to the environment from operational activities on the Site is generally low.

The assessed risks and proposed safeguards are presented below.

Serial	Description of Activity / Event	Environmental Consequence	Risk	Environmental Safeguards	Residual Risk	Remarks
1	Fuel or Oil Spillage	Moderate	Moderate	a. Site Operator to ensure that refuelling and servicing of construction plant to be undertaken the nominated area above 1% AEP flood level by trained mechanic or operators. b. Site Operator to ensure that refuelling is NOT undertaken on future allotments. c. Site Operator to ensure all POL are stored in TransTank as nominated on the site plans. d. Site Operator to ensure POL is secure at all times particularly after hours e. Site Staff are to immediately report all POL spills to the Site Operator. Site Operator and confirm with site diary entry. f. Site Operator to undertake decontamination of any fuel spillages.	Low	Any spill to be remediated within 48 hours

Implementation

Onsite Structure, Responsibility and Communications

Appointment	Name	Contact Details	Responsibilities
Site Operator			1. Coordinate activities of all personnel and organisations involved on the site to ensure compliance with the Development Consent. 2. Administer POEO Act, EP&A Act, Local Govt Act
Site Supervisor			1. Ensure all site workers, plant operators, service vehicle operators, sub contractors, visitors and material suppliers are inducted to the provisions of the EMP. 2. Direct site activities according to the Development Consent Conditions, Construction Certificate and EMP to ensure nil occurrence of pollution incidents. 3. Monitor all operations to ensure compliance with the EMP and recommend any necessary changes to the Site Operator. 4. Ensure all work crew are aware of any changes to the EMP and revised procedures. 5. Maintain daily contact with Site Operator. 6. Immediately inform Site Operator of any pollution incident and any incident which threatens to cause pollution. 7. Ensure a safe working environment in accordance with OH&S regulations. 8. Make sure all subcontractors and suppliers have all necessary and current insurances and certificates of competency. 9. Maintain a site diary and other records as required

Training Awareness & Competence

Responsible Person	Course / Competencies	Remarks
Site Operator	WH&S	Attained
Site Supervisor	WH&S POL Storage Maintenance Re-fuelling Process POL Security	To be attained prior to employment on site
Site Workers	Site Induction Re-fuelling Process POL Security	Prior to employment on site
Subcontractors	Site Induction Re-fuelling Process POL Security	Prior to employment on site

Emergency Communications

An environmental emergency is any event that causes or has the potential to cause environmental damage.

Occurrence	Site Supervisor to Notify	Time Frame / Remarks
Actual Pollution Incident	1. Site Operator 2. Wollongong City Council 3. NSW EPA	Contact to be initiated immediately. If first contact is unavailable contact subsequent person without delay
Potential Pollution Incident	1. Site Operator	Contact to be initiated immediately. If first contact is unavailable contact subsequent person without delay
Exposure of existing gas services	1. Jemena 2. Site Operator	Contact to be initiated immediately. If first contact is unavailable contact subsequent person without delay
Damage to existing gas services	1. Jemena 2. Site Operator 3. NSW Police	Contact to be initiated immediately. If first contact is unavailable contact subsequent person without delay

3.1 Emergency Incident and Contact Details

An environmental emergency is any event that causes or has the potential to cause environmental damage.

Emergency Contact	Phone Number
Ambulance	000
Fire Brigade	000
Police	000
Wollongong City Council	42 277 111
EPA (south coast)	42 244 100
EPA (pollution line)	131 555
Work Cover	131 050
Poisons Information Centre	131 126
Sydney Water 24 hr (water / sewer)	132 090
Integral Energy 24 hr (electricity)	131 003
Jemena (Gas Pipeline Emergency)	1800 620 492
Site Operator	
Site Supervisor	

4. Auditing and Monitoring

4.1 Daily Frequency

Monitoring Task	Responsible Person	Tasks / Remarks
Fuel Storage	Site Supervisor	1. Undertake maintenance or adjustments as required before commencing work shift. 2. Notify Site Operator prior to making any adjustments
Inspect all soil & water management measures prior to close of work	Site Supervisor	1. Undertake maintenance or adjustments as required before commencing work shift. 2. Notify Site Operator prior to making any adjustments which are not in accordance with the Soil & Water Management Plan.
Read rain gauge at 9:00 am and record entry in site diary.	Site Supervisor	1 Copy of daily rain gauge record for each week is to be submitted by fax / email to Site Site Operator by 5pm each Friday. Where Friday is a public holiday, submit by 5 pm Thursday. 2 When work occurs on site on a Saturday or authorised public holiday the rain gauge is to be read at 9:00 am on that work day.
Inspect public access road approaches to site entry points at least three times during each work shift.	Site Supervisor	1. Sweep public roads as required in order to remove any deposited soil, gravel or other material and secure in safe stockpile. 2. Public roads to be in a clean condition prior to cessation of each work shift.
Inspect exclusion fences prior to commencement of work	Site Supervisor	1. Undertake maintenance or adjustments as required before commencing work shift each day. 2. Exclusion fences to be in a serviceable condition prior to cessation of each work shift.
Visual inspection on all plant & equipment exhaust emissions while under load.	Site Supervisor	1. Undertake engine maintenance or adjustments as required. 2. Replace defective plant or equipment if emissions are unsatisfactory.
Inspect site perimeter fence / barriers	Site Supervisor	1. Undertake maintenance or adjustments as required before commencing work shift & at end of work shift.
Report all incidents that cause or threatens to cause material harm.	Site Supervisor	1. Contractor to ensure that all activities do not pollute waters or cause waters to be polluted 2. Contractor to ensure all activities do not pollute air or cause air pollution
Ensure all plant operators and site workers are complying	Site Supervisor	1. Contractor to spot check all plant operators and site workers' for consistency with EMP. 2. Supplementary induction for non compliers. 3. Dismissal from site for repeat non compliance.

4.2 Weekly Frequency

Monitoring Task	Responsible Person	Remarks
Inspect capacity of water management measures	Contractor's Site Supervisor	1. Undertake maintenance or adjustments as required before commencing work. 2. Clean out silt trapped by sediment fences and secure in safe stockpile. 3. Ensure diversion drains have design capacity. 4. Notify Site Operator of any adjustments which are needed that are not in accordance with the Soil & Water Management Plan. 5. Flocculate sediment pond on direction of Site Site Operator
Inspect areas which have been re-seeded / turfed	Contractor's Site Supervisor	1. Undertake supplementary re-seeding as required to ensure all areas have thick vigorous grass cover. 2. Undertake supplementary turfing as required to ensure all areas have thick vigorous turf cover. 3. Notify Site Operator of any adjustments which are needed that are not in accordance with the Soil & Water Management Plan.

4.3 Monthly Frequency

Monitoring Task	Responsible Person	Remarks
Review EMP and Site EMP Processes	Site Site Operator Head Contractor Contractor's Site Supervisor Subcontractors Supervisor	1. Site meeting to: a. Inspect & review site diary entries, b. Inspect & review EMP monitoring sheets, c. Review EMP and make agreed modifications thereto, 2. Inspect all soil & water management measures. 3. Visual inspection of plant and equipment vehicle emissions under load.

Recording of Monitoring

The Site Operator shall maintain a site diary in which he shall record the date, time and result of all environmental monitoring activities.

The Site Operator shall present the site diary to the EPA/Council for inspection upon demand

The Site Operator shall complete a Non Conformance Action Report for all pollution incidents and potential pollution incidents.

5. Review

The Site Operator is to convene a monthly meeting to evaluate the effectiveness of site work practices and their impact on environmental protection. The following personnel are to attend the meeting:

a. Site Operator,
b. Head Site Operator, and
c. Site Operator Site Supervisor

The Site Operator is authorised to modify and re-issue the EMP. The Site Supervisor is to be informed of any changes made by the Site Operator.

Attachment 4 – Contingency for Import of Hazardous Material

PO Box 4405
East Gosford, NSW 2250
M 0466 385 221
ben@benvirongroup.com.au
www.benvirongroup.com.au
ABN 52 119 978 063

HAZARDOUS MATERIAL MANAGEMENT STRATEGY

PROTOCOL

The Site is currently a working resource recycling yard and office.

Due to the nature of the site it is not possible to know everything that may be imported to the site, therefore, it is appropriate this Hazard Management Strategy is introduced on the Site.

This protocol is to be posted on-site in an accessible location for all operators to read with its contents included in the on-site induction package.

1. Cease disturbance and evacuate the immediate area.
2. Contact the Site Foreman or appropriate Manager.
3. If the material provides an immediate high risk threat (i.e. bomb, radioactive material) to the safety of the site and its workers then all work should cease and the relevant authorities should be notified (fire brigade/police) immediately.
4. Foreman to conduct an assessment of the location of the suspected Hazardous material taking into account potential damage, location and quantity.
5. Risk areas to be isolated and secured against unintended access and a ten (10) metre exclusion zone should be set up.
6. Warning signs should be placed in the vicinity.
7. An experienced consultant should be engaged to assess the material and provide remediation and soil classification advice.

8. Hazardous material located on-site they should be removed in accordance with NSW WorkCover requirements Guidelines for Practices Involving Asbestos Cement in Buildings" and other NSW EPA Guidelines.

9. The process is generally undertaken as follows:
   - Visual Assessment and inspection of affected area by an experienced environmental/asbestos consultant.
   - Provide remediation options which may include the following -

Excavation

This method involves the excavation of contaminated materials and disposal of the materials off-site to a landfill licensed by the NSW EPA.

Excavated soils must be classified before disposal to an appropriate landfill. Depending on the levels of contamination, soil may require pre-treatment (to reduce contaminant levels or immobilise contaminants) prior to off-site disposal to the licensed landfill.

On-Site Capping

On-site capping is used to isolate areas in the subsurface from the surrounding uncontaminated environment. A physical barrier such as a layer of clean soil, synthetic material liners, asphalt and concrete layers may be installed to cap the contaminated material. A cap is typically used where it is required to remove exposure to the contaminated soils and where the contaminated soils are not mobile or there is no contact with groundwater and / or groundwater is not contaminated.

A site management plan is required with any cap and contain strategy. The site management plan identifies the party responsible for adhering to the plan, and includes commitments for ongoing monitoring and maintenance of the cap as well as control of future excavations, which must be minimised or if required, the

appropriate occupational health and safety procedures are adopted and permits acquired before work is carried out.

10. Once the hazardous area is removed/encapsulated, visual assessments and samples collected by a suitably qualified Environmental/Asbestos Consultant should be undertaken. Samples sent to a NATA registered laboratory for analysis.
11. Provision of a Validation Report in order to confirm that the area is suitable for works to continue are provided.

Confirm Presence of Hazardous Material by Visual or Analysis?

YES – Conduct Material Removal utilising accepted practices in accordance with the Safe Work Australia Code of Practice.

Conduct inspections and environmental monitoring.

If both inspections and monitoring are acceptable the barricades can be removed and resume work notification instructed.

Complete the Incident Report form and forward to designated management.

NO - Remove the barricades and resume work.

HAZMAT Incident Report

Report Number_____

Time of Incident_____

Date of Incident_____

Details of
Incident_____
_____
_____
_____
_____
_____

Classification of Incident (Circle)

Minor Incident
Major Incident
Breach of Regulations
Regulatory Involvement

Immediate Action Taken:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Signed:_____ **Date:_____**