MIDAL CABLES INTERNATIONAL PTY LTD • ABN: 55 141 481 012
21D School Dr, Tomago NSW 2322 • PO Box 322, Raymond Terrace NSW 2324
P: (02) 4028 0200 • F: (02) 4964 9970 • E: mciadmin@au.midalcable.com
www.midalcable.com

12 January 2016

Attention: Mr. S. Clair

Environment Protection Authority
P.O. Box 488G
Newcastle NSW 2300

RE: Midal Cables International PTY LTD
EPL Licence No 20254 – Licence Variation Application

Dear Steve,

Midal Cables International Pty Ltd (Midal) holds an EPL no. 20254, Condition L2.4. Air concentration Limits for Points 1, 2, 3 and 4 imposes and oxygen/concentration correction to be applied to all air parameters monitored of 17%. When initially issued the oxygen concentration correction was 3% however this was varied by the EPA on the 16 July 2015. Midal has determined during its period of operation that the imposition of an oxygen correction does not reflect the overall good performance of its facility. The oxygen level measured in the emissions monitoring does not result from good or poor combustion efficiency but reflects the volume of air, and hence the oxygen, drawn in to the chimney prior to the monitoring point to cool the stack. Midal cannot comply with its emission limits as the oxygen level measured is not within Midal's control. The higher the oxygen content (above the current 17% concentration correction) the greater the corrected level of emissions.

The Air Quality Impact Assessment supporting the Midal development (AECOM, 2014) estimated the mass of pollutants to be emitted and modelled ground level concentrations. Table 1 provides a summary of the mass emission of particulates measured over the five quarterly test programs undertaken to date and compares them with those used in the AQIA (AECOM, 2014).

Table 1 *1 Mass Emission of Particulates (mg/sec)

	Original AQIA *2 Estimate	Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015
Holding Furnace No1	39	10.3	15.4	8.2	1.8	6.5
Holding Furnace No2	39	7.1	7.4	6.3	15.6	6.8
Tilting Furnace No1	11	3.1	2.6	15.3	10.2	20.6
Tilting Furnace No2	11	4.9	21.4	8.6	9.7	17.6

*1 Calculated on (mass of particulate collected ÷ volume of emission sampled) x discharge volume all at 0°C, dry gas, 1 atmosphere. (mg ÷m3) x m3/sec = mg/second.
*2 Air Quality Impact Assessment – Midal Cables – Tomago Facility Modelling – AECOM, March 2014

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As you can see the measured particulate emission rates for Holding Furnaces 1 and 2 fall well below that estimated in the AQIA. For Tilting Furnaces 1 and 2, 4 of the measured particulate emission rates exceeded the AQIA estimates. It is considered that the AQIA/estimate particulate emission rates were not correct. Overall the total mass emissions for the facility are below that estimated and modelled in the AQIA.

Table 2 details the mass emissions rates for the NOx measured since start up and compares them with those used in the AQIA.

Table 2 *1 Mass Emission NOx as NO_2 Equivalent

	Original AQIA *2 Estimate	Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015
Holding Furnace No1	230	100	176	7.2	34	31
Holding Furnace No2	230	70	42	51	4.8	8.8
Tilting Furnace No1	70	27	20	27	22	32
Tilting Furnace No2	70	52	38	32	28	5.1

*1 Calculated from NOx as NO_2 equiv. calc X discharge volume 0°C, dry gas, 1 atmosphere
*2 Air Quality Impact Assessment – Midal Cables – Tomago Facility Modelling AECOM, March 2014.

All measured mass emission rates for all furnaces fall below those used in the original AQIA.

Whilst the particulate mass emissions rates (generally) and the NOx mass emission rates fall below those used in the AQIA (AECOM, 2014), the concentrations for both pollutants vary widely when the oxygen corrections required are applied to the uncorrected (or "raw") concentrations measured.

In Table 3, the oxygen corrected particulate concentrations are compared with the "Raw Results" i.e. the mass collected during the emission testing program divided by the volume of gas sampled to collect the particulate (at 0 °C, dry air, 1 atmosphere pressure).

Table 3 Emission Concentration Comparison – Particulates (mg/m3)

		Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015	Range
Holding Furnace No1	Oxygen Corrected	21@3%	17@3%	7.4 @3%	31@3%	20@ 17%	7.4-31
	Raw Result	6.0	8.6	4.5	1.3	7.2	1.3-8.6
Holding Furnace No2	Oxygen Corrected	16@ 3%	24@3%	19@3%	80@3%	18@17%	16-80
	Raw Result	4.2	4.6	3.7	9.7	8.5	3.7-9.7

Tilting Furnace No1	Oxygen Corrected	17@3%	44@3%	220@3%	81@3%	24@17%	17-220
	Raw Result	1.6	1.7	13	6.3	10.8	1.6-13
Tilting Furnace No2	Oxygen Corrected	16@3%	85@3%	179@3%	31@3%	38@17%	16-179
	Raw Result	2.7	11.9	21	7	10.4	2.7-21

As you can see, 17 of the 20 oxygen corrected particulate test results exceeded the limits imposed at the time. However only 3 of the 20 raw results exceeded the limit value imposed at the time.

In Table 4 the oxygen corrected NOx as NO_2 concentrations are compared with the raw NOx as NO_2 Result i.e. the concentration determined instrumentally and reported at 0°C, dry air and 1 atmosphere of pressure.

Table 4 Emission Concentration Comparison – NOx as NO2 Equivalent (mg/m3)

		Sept 2014	Nov 2014	March 2015	June 2015	Sept 2015	Range
Holding Furnace No1	Oxygen Corrected	276@3%	192@3%	54 @3%	321@3%	46@ 17%	46-321
	Raw Result	59	98	4	24	34	4-98
Holding Furnace No2	Oxygen Corrected	210@ 3%	135@3%	221@3%	20@3%	26@17%	20-221
	Raw Result	41	26	30	3	11	3-41
Tilting Furnace No1	Oxygen Corrected	240@3%	356@3%	122@3%	74@3%	43@17%	43-356
	Raw Result	14	13	15	14	17	13-17
Tilting Furnace No2	Oxygen Corrected	168@3%	179@3%	231@3%	89@3%	31@17%	31-231
	Raw Result	29	21	18	20	3	3-29

Twelve of the 20 oxygen corrected NOx test results exceeded the limits imposed at the time whilst only 1 of the 20 raw results exceeded the limit values imposed at the time.

The mass emission rates used in the AQIA (AECOM, 2014) for particulates and NOx were used to establish the acceptability of the Midal facility. Sixteen out of 20 measured particulate emission rates and all of the measured NOx emission rates were below those used in the AQIA (AECOM, 2014).

Correcting the measured concentrations for particulates and NOx creates and artificially high corrected result, **BUT** does not increase the mass emission rate for the various pollutants. The "oxygen corrected volumetric discharge" would be artificially reduced to maintain the actual mass emission rates.

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It is not appropriate to require Midal to oxygen correct its emission concentrations. Efficiency of combustion is assured by heating equipment design. Mass emission rates measured remain below those used to determine the acceptable ground level pollutant concentrations during project assessment and approval.

Midal therefore seeks to vary its EPL to entirely remove the requirement to correct emission results for oxygen level. The actual emission limits imposed in the EPL should also be modified to reflect achievable good performance.

Midal is also seeking to reduce its monitoring frequency from quarterly to annually.

A Licence Variation Application is enclosed.

As always Midal is open to discussion with the EPL.

Yours Sincerely,

Steve Laney
Operations Manager
Midal Cables International

David Latter
WHS&E Manager
Midal Cables International

Licence variation application – premises

This is an application to vary a premises-based activity licence issued under the *Protection of the Environment Operations Act 1997* ('POEO Act').

A variation includes the substitution, omission or amendment of an existing condition, or attaching a new condition to a licence. If a licence holder wishes to seek a variation to licence conditions, this is the application form to fill in.

The form provides for the following scenarios:

- undertaking a new scheduled activity or ceasing a scheduled activity
- deleting an activity covered by a water licence or adding a new activity to be covered by the licence
- changing the scale/capacity of an activity
- extending a scheduled development works licence to cover the next stage of the development works or converting it to a scheduled activity licence
- adding an environmental improvement program
- any other variations.

To complete this form you may need the *Guide to licensing* prepared by the Environment Protection Authority (EPA) and available at www.environment.nsw.gov.au/licensing/licenceguide.htm and/or *Waste Classification Guidelines* which are available at www.environment.nsw.gov.au/waste/envguidlns/index.htm.

If you need help filling out the form, please contact your nearest EPA office from the list at the end of this form.

Once completed and signed, the form should be sent to your nearest EPA office (as indicated at the end of this form).

1. Licence to be varied

1.1 Licence to be varied

Licence number	20254

1.2 Name of current licence holder(s)

Full name(s) of licence holder(s)	MIDAL CABLES INTERNATIONAL PTY LTD
ACN /ABN (if applicable)	ACN: ABN: 55 141 481 012

2. Changes to scheduled activities

If you have stopped undertaking a scheduled activity that is covered by your current licence, or propose to commence a new scheduled activity, you should advise the EPA. For more details on changing your activity type, please refer to Section 8.3 of the EPA's *Guide to licensing, part A*.

2.1 Adding a new scheduled activity

Write down the short descriptions of the categories of scheduled activity you would like added to the licence for your premises. These are listed in Schedule 1 of the POEO Act available at www.legislation.nsw.gov.au.

Description of scheduled activities	

Please attach extra page(s) if more space is needed.

2.2 Deleting a scheduled activity

Write down the short descriptions of the categories of scheduled activity no longer conducted at these premises and that you would like deleted from the licence. These are listed in Schedule 1 of the POEO Act available at www.legislation.nsw.gov.au.

Description of scheduled activities	

Please attach extra page(s) if more space is needed.

3. Changes to 'non-scheduled activity' licence

If you hold a 'non-scheduled activity' licence and you want to add or delete activities covered by that licence, you must advise the EPA.

If your activity fits the description of a category of activity listed in Schedule 1 of the POEO Act, it will need a Scheduled Activity Licence, and you will need to answer Question 2 instead of this question. Please refer to Schedule 1 of the POEO Act available at www.legislation.nsw.gov.au to check whether the activity is a scheduled activity.

3.1 Adding a new activity

Write down the short description of the any new non-scheduled activity(ies) proposed to be conducted at these premises and that you would like added to the licence.

Description of activities to be added	

Please attach extra page(s) if more space is needed.

3.2 Deleting an existing activity

Write down the short description of any non-scheduled activity(ies) no longer conducted at these premises, and that you would like deleted from the licence.

Description of activities to be deleted	

Please attach extra page(s) if more space is needed.

4. Fee-based activity

The licence administrative fee varies according to the classification and scale of your activity. Classification descriptions are found in Schedule 1 of the POEO Act while activity scales are found in Appendix 5 of the EPA's *Guide to licensing, part B* or Schedule 1 of the POEO (General) Regulation 2009 available at www.legislation.nsw.gov.au.

A change to the activity classification or activity scale may result in a change to your licence administrative fee. It may also result in a change in, or addition of, a load-based fee if the proposed activity has assessable pollutants as identified by the POEO (General) Regulation 2009.

4.1 Change to applicable fee-based activities

An addition or a deletion of a scheduled activity may result in a change to your fee-based activities.

The classifications used to determine licence fees can be found in Appendix 5 of the EPA's *Guide to licensing, part B* or Schedule 1 of the POEO (General) Regulation 2009.

Please provide details of the applicable fee-based activities and scales of activities that your licence will cover ***as a result of the change.***

	Fee-based activity classification after proposed variation	Activity scale after proposed variation
1		
2		
3		
4		

The EPA will notify you if there is an adjustment to your licence administrative fee.

4.2 Change to applicable fee-based activity scale/capacity

A change to the scale or capacity of your currently licensed activity may result in a change to your fee-based activity scale.

Please write down the fee-based classification of the proposed activity and the new activity scale in the space provided below, as shown in Appendix 5 of the EPA's *Guide to licensing, part B* or Schedule 1 of the POEO (General) Regulation 2009.

Please provide details of any ***changes to the scale*** of your ***currently*** licensed activities.

	Fee-based activity classification	**Current** activity scale	**Proposed** activity scale
1			
2			
3			
4			

The EPA will notify you if there is an adjustment to your licence administrative fee.

5. Scheduled development work

5.1 Scheduled development work – progression to next stage

If you hold a 'staged scheduled development work' licence and want to commence the next stage of work, please provide the information required below. You may need to provide extra documentation – refer to the conditions of your licence and Appendix 4 of the EPA's *Guide to licensing, part B*.

Please provide a brief description of the work to be conducted:

Description of activities	

How many stages to the development work are there?	

Which stage of the development work does this application relate to?	

When will the next stage commence?	day/month/year
When will the next stage be completed?	day/month/year

You will need to apply to vary the licence if you conduct any further stages.

Please attach to this application any documents about the scheduled development work that are specified in Appendix 4 of the EPA's *Guide to licensing, part B* and list them in the table in **Section 9**.

5.2 Scheduled development work – change to a 'scheduled activity' licence

If you hold a 'scheduled development work' licence and you want to commence the scheduled activity, you will need to vary your licence to a 'scheduled activity' licence. You cannot start the scheduled activity until a 'scheduled activity' licence authorises it.

You may need to provide extra documentation – refer to the conditions of your licence and Appendix 4 of the EPA's *Guide to licensing, part B*.

Please provide the following information:

When will the activity commence?	day/month/year

Please tick (✓) 'Yes' or 'No'.

		Yes		No
5.2.1	Will you still be completing some of the development work while carrying on the scheduled activity?			

Please provide a brief description of the work that still needs to be completed:

Description of activities	

When will the work be completed?	day/month/year

Please attach to this application any documents about the scheduled development work that are specified in Appendix 4 of the EPA's *Guide to licensing, part B* and list them in the table in **Section 9**.

6. Environmental improvement program

Environmental improvement programs (EIPs) are programs of actions that deliver demonstrated environmental improvement outside those required to comply with the Protection of the Environment Operations Act, 1997 (POEO Act), Regulations or existing conditions on a licence issued under the POEO Act.

If you are applying to add an EIP to your licence you will need to provide details of the program and the expected environmental improvements that will be delivered by the EIP.

It is important that you have discussed any program of actions with the EPA prior to applying for an EIP. EIPs are attached to the licence as a condition and the EPA may remove the EIP from the licence if the key milestones or any other conditions of the EIP are not met. If the EIP is removed from the licence the EPA will add an amount equivalent to the total score reduction received for the EIP, on to the environmental score for the following licence fee period.

Please provide a brief description of the program of actions including the proposed completion date, key reporting milestones and costs.

Description of the program of actions	

Please attach extra page(s) if more space is needed.

Please provide a description of the expected environment improvements delivered by the EIP. Note: you will need to demonstrate that the EIP is outside those required to achieve compliance with legislative requirements or any existing conditions on your licence.

Description of expected environmental improvements	

Please attach extra page(s) if more space is needed.

7. Details of other variations

Your licence can be varied by deleting or amending a condition, or substituting one condition for another.

Please provide details of any other proposed variations not covered previously in this application.

Licence condition number	Details of proposed change	Reason for proposed change
L2.4	Remove oxygen correction for points 1, 2, 3 and 4 and increase particulate limit to 20mg/m³ for all furnaces.	(See cover letter)
M2.2	Change freq. from 5 F.I to annual	(See cover letter)
M2.4	Remove	

Please attach extra page(s) if more space is needed

8. Development consent

Please tick (✓) 'Yes' or 'No'.

		Yes		No
8.1	Have the proposed variation(s) listed above been the subject of environmental assessment and public consultation under the *Environmental Planning and Assessment Act 1979*?			X

If you answered **'Yes'** to this question, please attach a copy of the development consent.

If you answered **'No'** to this question, please tick (✓) the statement below that is correct.

A development application has been made to obtain development consent	
No development consent is necessary for the new activities	✓

If development consent is ***not*** necessary, please provide details indicating why:

Details	The mass emission of pollutants discharged from the combustion of natural gas does not change by removing the oxygen correction. Midal's emissions are a very minor contributor to the Tomago air shed.

9. Supporting documentation

Appendix 4 of the EPA's *Guide to licensing, part B* provides details of the supporting documentation that is required when applying for a licence.

Please provide details of documentation included with this application.

Document title	1
	2
	3
	4
	5

Please attach extra page(s) if more space is needed.

10. Signature of licence holder

This application may only be signed by a person(s) with the legal authority to sign it. The various ways in which the application may be signed, and the people who may sign the application, are set out in the categories below.

Please tick (✓) the box next to the category that describes how this application is being signed.

If the proposed licence holder is:		The application must be signed and certified by one of the following:
an individual	☐	the individual.
a company	☐ ☐ ☑ ☐	the common seal being affixed in accordance with the *Corporations Act 2001*, or two directors, or a director and a company secretary, or if a proprietary company that has a sole director who is also the sole company secretary – by that director.
a public authority other than a council	☐ ☐	the chief executive officer of the public authority, or by a person delegated to sign on the public authority's behalf in accordance with its legislation (Please note: a copy of the relevant instrument of delegation must be attached to this application).
a local council	☐ ☐	the general manager in accordance with s.377 of the *Local Government Act 1993* ('LG Act'), or the seal of the council being affixed in a manner authorised under the LG Act.

I/We (the licence holder):

- ***apply for the variation of the licence listed in Section 1***
- ***declare that the information in this form (including any attachment) is not false or misleading in any material particular.***

Signature	[signature]	Signature	[signature]
Name (printed)	MARK RUKIN	Name (printed)	Steve Laney
Position	DIRECTOR	Position	Company Secretary
Date	15-1-2016	Date	15-1-2016

Seal (if signing under seal):

Additional information

1. It is an offence to supply any information in this form that is false or misleading in a material particular. There is a maximum penalty of $22,000 for a corporation or $11,000 for an individual.
2. Details of the licence application and licence will appear on the EPA's Public Register. The EPA can be asked by any person to provide reasons for refusing or granting a licence application.

Send this form to your nearest EPA office:

Metropolitan

Parramatta
Environment Protection Authority NSW
PO Box 668
PARRAMATTA NSW 2124

Phone: 9995 5000
Fax: 9995 6900

Wollongong
Environment Protection Authority NSW
PO Box 513
WOLLONGONG EAST NSW 2520

Phone: 4224 4100
Fax: 4224 4110

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PO Box 488G
NEWCASTLE NSW 2300

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ARMIDALE NSW 2350

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BATHURST NSW 2795

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Griffith
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PO Box 397
GRIFFITH NSW 2795

Phone: 6969 0700
Fax: 6969 0710

Queanbeyan
Environment Protection Authority NSW
PO Box 622
QUEANBEYAN NSW 2620

Phone: 6122 3100
Fax: 6299 3525

Waste Operations

Environment Protection Authority NSW
PO Box A290
SYDNEY SOUTH NSW 1232

Phone: 9995 5000
Fax: 9995 5930

EPA 2014/0785
October 2014

APPENDIX 4

Application of SEPP No 33

MIDAL CABLES INTERNATIONAL

PROPOSED PLANT PRODUCTION EXPANSION PROJECT

APPLICATION OF STATE ENVIRONMENTAL PLANNING POLICY NO.33

1. INTRODUCTION

Midal cables International (Midal) proposes to expand production at its Tomago facility from 50,000 tonnes to 60,000 tonnes. As part of the proposed expansion project, The Department of Planning and Environment (DPE) has recommended Midal prepare a State Environmental Planning Policy No.,33, Hazardous and Offensive developments, Assessment (SEPP33) as indicated in the DPE communication below:

> ***Hazard and Risk*** *– it is recommended that you [Midal] undertake a preliminary risk screening prepared in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development, and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity, package size, and location of all dangerous goods and hazardous materials on site. This assessment should Identify the hazards, arising out of the modification and the existing site as well as any external hazards (i.e. natural hazards) to determine the potential for off-site impacts and estimate the combined risks from the existing site and the modification (overall site).*

Midal has prepared a response, in this document, in accordance with the requirements listed above.

2. OBJECTIVES

The objectives of this study is to complete the required SEPP33 assessment of the proposed production increase at the Midal Tomago facility, NSW, to determine whether the policy applies to the site and whether additional studies are required for the facility.

An additional objective will be to review any changes to production equipment and to determine whether there are any changes in the risk profile to the site as a result of the increase in production output at the facility.

3. SCOPE OF THE ASSESSMENT

The scope of the assessment of for the proposed increase in production output only. As there is no change to the production equipment or operations, the study will not include the assessment of existing equipment, with the exception of throughput only.

4. METHODOLOGY

The methodology used for the SEPP33 assessment of the proposed production increase at Midal, is that recommended in the document 'Applying SEPP33 – Hazardous and Offensive Developments", published by the Department of Planning and Environment.

The study approach is as follows:

- Identify the materials proposed for storage at the site;
- Determine whether the materials are listed in the Australian Dangerous Goods Code (ADG, Ref.1) and are there for classified as Dangerous Goods (DGs);
- Where DGs are not listed in the ADG, SEPP33 does not apply;

- Where DGs are listed in the ADG; review the quantities stored and determine whether the quantities exceed the threshold levels listed in Applying SEPP33;
- Where quantities of DGs stored do not exceed SEPP33 thresholds, SEPP33 does not apply; and
- Where quantities of materials stored exceed the threshold levels, it is necessary to conduct a PHA study, which (if required) would be conducted in a separate assessment.

On completion of the assessment prepare a report for submission with the SSD Application.

In addition to the above SEPP33 assessment, a review of the previous hazard analysis conducted for the site was performed. Each of the hazards identified in this study was listed and reviewed in light of the proposed production increase. It is noted that the previous hazard assessment, conducted as part of the initial site development, was predominantly qualitative, hence, the updated assessment was also conducted qualitatively.

5. SEPP33 STUDY ASSESSMENT AND RESULTS

5.1. Site Location and Surrounding Land Uses

Figure 5-1 shows the existing site layout at Midal Cables, 21D School Road, Tomago, NSW. The property is bounded by The Tomago Aluminium Smelter to the northwest, open bushland to the north, vacant land to the east, a currently vacant factory and land to the south and Varley Group (engineering and manufacturing company) to the west.

5.2. Brief Description of Midal Manufacturing

Midal cables manufactures aluminium cable from molten metal supplied from the Tomago aluminium smelter, located to the west of the site. The plant has been designed to process 86,000 tonnes of aluminium per annum, however, a realistic maximum production rate would be in the order of 70,000 tonnes per annum. The plant was originally approved to operate at 50,000 tonnes per annum, a production rate which the plant is fast approaching. Hence, it is proposed to increase the production rate from 50,000 tonnes per annum to 60,000 tonnes per annum.

The molten aluminium is supplied in crucibles by a dedicated haul truck using a dedicated haul road between the smelter and Midal site. The molten aluminium is transferred to holding furnaces, located in Building 1 (see **Figure 5-1**) at the site, which maintain the aluminium in a molten state until ready for casting.

The holding furnaces are tilted to pour the metal into launders, which feed the metal into the casting mould to form the aluminium wire. The wire is then fed to the reeling line where it is loaded onto reels for storage and further cable development.

Cable manufacturing is performed in a second building (Building 2, see **Figure 5-1**), separate from the aluminium casting building. Wire is fed from the storage reel into the cable manufacturing process, which reduces the cable to the required size through extrusion dies and then twists the wire into a cable of varying sizes, depending on the cable order being manufactured. The cable is then wound on to drums and stored in the cable for sale to markets.

The proposed increase in production will see an increase in the number of molten metal crucible deliveries only. The plant has been designed to cater for the proposed throughput of 86,000 tonnes and there will be no requirement to provide any additional equipment or facilities to cater for the increased production capacity.

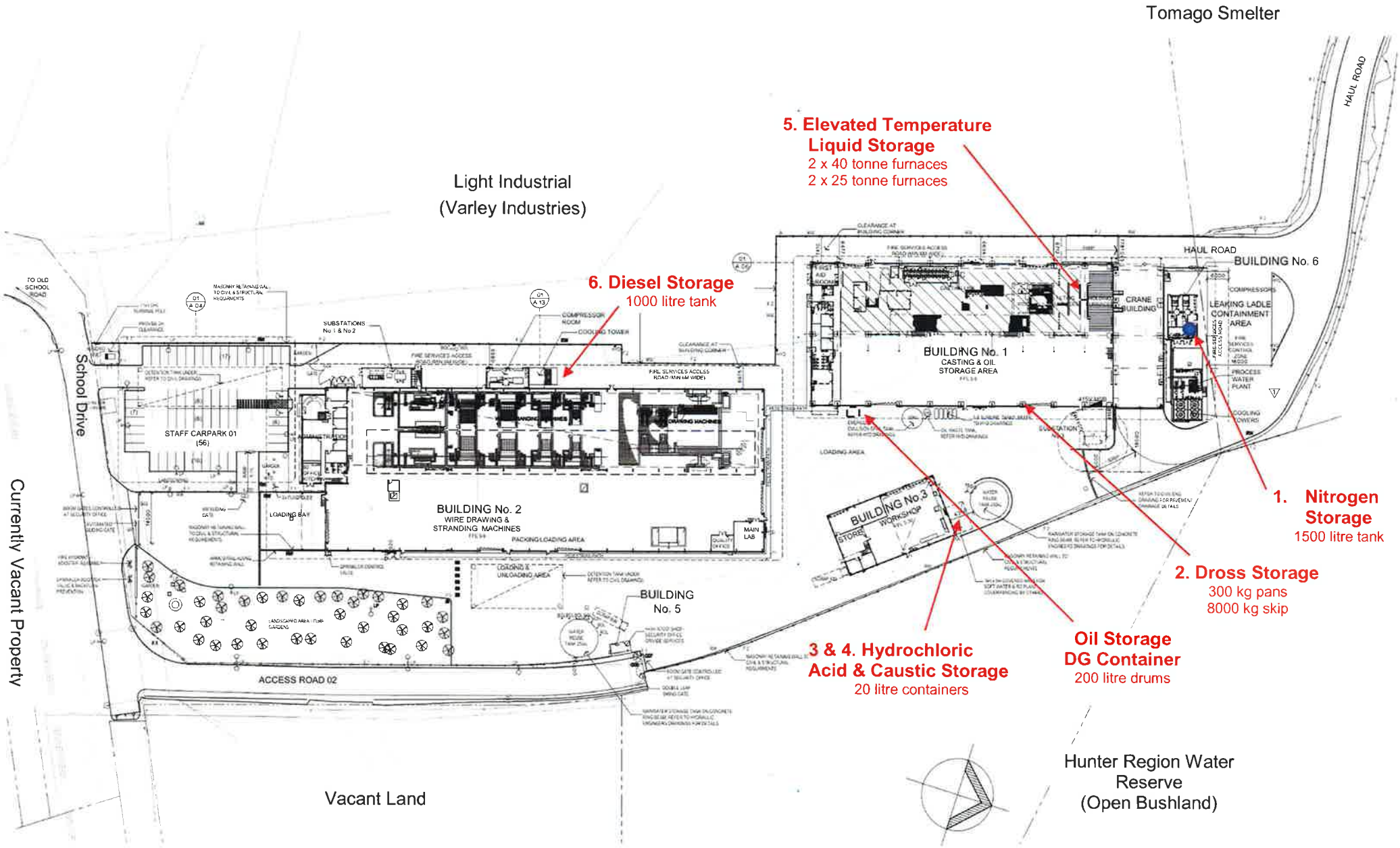


Figure 5-1: Midal Cables Site Layout Showing Adjacent Land Uses and Location of DGs on Site

5.3. Dangerous Goods and Hazardous Materials Storage Quantities and Locations

A list of DG storage quantities for the range of DGs that are currently stored at the site is provided in **Table 5-1**. These quantities will not change as a result of the increase in production rate at the facility. This table also includes the maximum permissible threshold quantity that may be stored before SEPP33 is applied (Ref.1).

Table 5-1: Maximum Quantity of DGs stored at the Tomago Site & SEPP33 Maximum Thresholds

No.	UN No.	Proper Chemical Name	Class	PG/ Cat.	Qty. Stored	SEPP33 Threshold
1	1066	Nitrogen, Compressed	2.2	-	1500 L*	Class 2.2 materials not subject to SEPP33
2	3170	Aluminium Smelting by Products	4.3	III / 3	8,000 kg	1 tonne
3	1789	Hydrochloric Acid	8	II / 2	100 L (160kg)	25 tonnes
4	1824	Sodium Hydroxide Solution	8	II / 2	100 L (150kg)	
5	3257	Elevated Temperature Liquid NOS	9	III / 3	130,000 kg	Class 9 materials not subject to SEPP33
6	00C1	Diesel	C1	- / 4	1000 L	C1/Cat4 materials not subject to SEPP33

In addition to the DGs stored and handled at the site, a number of oil (Class C2) products will be stored in drums (i.e. hydraulic oils, see Item 7 on **Figure 5-1**). Oils (Class C2) are not classified as Dangerous Goods and are not subject to SEPP33. Notwithstanding this, the oils are stored within a dedicated storage cabinet that complies with AS1940 (Ref.2).

5.4. SEPP33 Assessment

Based on the storage quantities listed in **Table 5-1** and the threshold levels also listed in this table, SEPP33 would apply to the site due to the storage of Class 4.3 material, which is a by-product of the molten aluminium process. Hence, a review of each of the hazards, assessed in the previous hazard assessment study was performed to determine whether the increased production rates result in a change in the risk profile at the site.

5.5. Hazard Review and Assessment

A review of the original hazard analysis study, conducted s part of the plant development studies was conducted to identify those incidents with the potential to impact offsite. The following hazards were identified to have potential offsite impacts:

- Dangerous Goods/Hazardous Materials storage and handling – release/spill and potential offsite environmental impact;
- Molten Aluminium & Water Contact – potential explosion;
- Aluminium dross & water contact – potential toxic/explosive gas development;
- Natural Gas (NG) - release, ignition and fire;
- Molten Metal crucible break out (liquid aluminium) – hot metal spill, contact with water & explosion;
- Fires – electrical, equipment, hot metal contact with combustibles;
- Air emissions – compliance with EPA licence conditions; and

- Discharge of contaminated water from site - compliance with EPA licence conditions.

Each identified hazard has been assessed to determine whether any changes have occurred as part of the proposed site production increase and whether the changes introduce a significant risk profile change such that offsite impacts exceeding acceptable criteria would occur.

5.5.1. Dangerous Goods – Hazardous Materials Storage

A review of the Dangerous Goods and Hazardous Materials storage areas listed in **Table 5-1** (including oil storages in the combustible liquids – C2 cabinet) indicates that there are no changes to these storages as a result of the proposed expansion project. The main impact would be the Dross storage, as an increase in production would result in an increase in dross by-product. It is proposed to maintain the maximum storage quantity of dross as 8,000kg on site, which means there would be a greater number of dross vehicles removing the material from site. There will be no change in deliveries or vehicle movements for other DGs or hazardous materials stored at the site.

A review of the original number of dross vehicles movements on which the original design was based indicates that a total of 7 dross vehicle movements per week were included in the original hazard assessment. The number of movements assessed in the original hazard assessment overstated the number of actual movements and only 2 movements per week actually occurred at site. The upgraded production operation will result in a total of 3 movements, which meets the original hazard assessment number.

Based on the fact that there are no changes to the DG storage arrangements and that the number of dross movements is as per the original hazard assessment movements, there is no change to the Dangerous Goods risk profile as a result of the proposed production increase.

5.5.2. Molten Aluminium & Water Contact – potential explosion

The molten metal operations include the transfer of molten aluminium in crucibles from the Tomago Smelter to the metal receival area at Midal, the transfer of molten aluminium to the Midal holding furnaces and the casting of metal for the production of wire. The increase in production from 50,000 tonnes per annum to 60,000 tonnes per annum does not involve any changes to existing molten metal handling equipment. The existing plant has been designed to cater for a maximum production rate of 86,000 tonnes per annum (although it is recognised that the realistic capacity would be in the order of 70,000 tonnes per annum), which is higher than the proposed increased production rate of 60,000 tonnes.

Based on the original plant design exceeding the proposed production rates and the fact that there are no changes to the existing plant as a result of the proposed production rate increase, there is no change to the molten metal handling risk profile.

5.5.3. Aluminium Dross Water Contact

The current aluminium dross storage area is located inside the main aluminium processing building (Building 1, see **Figure 5-1**). There will be no change to the dross storage area as a result of the proposed production rate increase, hence, there will be no risk profile increase in the dross storage area. However, it is noted that the number of vehicle movements removing dross offsite will increase as a result of the production rate increase. The assessment of increased dross vehicle movements has been assessed in **Section 5.5.1**.

In summary, there is no change to the dross storage risk profile as a result of the production rate increase.

5.5.4. Natural Gas (NG) – Furnace Heating

NG is supplied to the furnace from a metering/gas let-down station at the site entry gate. The gas pipework is installed underground, surfacing adjacent to the furnaces where it is fed to the furnace burners and controlled via a burner management system (BMS). There will be no change to the NG supply and control system as a result of the proposed production rate increase. Whilst the furnace gas supply may operate more frequently, as a result of the additional molten metal supply, this is well within the design rates of furnace operation and there will be no requirement to change control systems or gas supply equipment.

In summary, there will be no change to the NG supply and operation risk profile as a result of the proposed production rate increase.

5.5.5. Molten Metal Crucible Break Out (Liquid Aluminium)

Molten metal is transferred from the Tomago Smelter using refractory lined crucibles. These are transported on a dedicated haul road between the smelter and Midal Building 1. There will be no change to the design and crucible transport operation as a result of the proposed increased production rate, however, the number of crucible transfers will increase by 20%. The original (maximum) design capacity of the plant is 22 to 23 crucible movements per day. The proposed production rate increase will result in 15 to 16 crucible movements per day (up from 13 crucible movements per day), which is less than the maximum movement capacity.

The risks associated with the molten metal crucible operations relate to the condition of the refractory and the potential for refractory damage to result in molten aluminium metal contact with the steel shell of the crucible. In this case there is a potential; for the steel shell to heat resulting in shell weakening. However, it is noted that the temperature of molten aluminium is in the order of 750°C to 760°C which is considerably less than the failure temperature of steel (in the order of 1,300°C to 1350°C. Hence, release of aluminium as a result of refractory failure and molten aluminium contact with the steel shell of the crucible is very unlikely.

Hence, there is no change in the molten metal transfer operation risk profile as a result of the production rate increase (i.e. the crucible movement operation is within the maximum design parameters and molten aluminium temperatures are not increased).

5.5.6. Fires

The original hazard analysis identified that there is a potential for fires as a result of molten metal release and contact with combustible materials. There will be no change to the molten metal handling equipment at the site and no introduction of new combustible materials near the molten metal handling areas as a result of the production rate increase, hence, there will be no change to the fire risk profile from molten metal releases as a result of the production rate increase.

5.5.7. Air Emissions

Air emissions are predominantly from the furnaces. Furnace operations will not change as a result of the production rate increase, the only change will be a higher throughput of molten metal. This may increase the emissions from the furnace, hence, as part of the production rate increase project, a furnace monitoring programme will be established to review furnace discharge and monitor emissions to ensure these remain within the EPA requirements. This process is being closely monitored by the EPA and forms part of the updated EIS process.

5.5.8. Discharge of Contaminated Water from Site

The Midal facility as a number of waste water streams that discharge from the site, these are:

- Process Water Treatment Plant (PWTP);
- Waste Water Treatment Plant or WWTP (Sewage);
- Trade Waste.

The waste water treatment systems on site have employed a number of processes to remove contaminants and discharge "clean" water (i.e. within acceptable discharge limits) offsite. Problems have been encountered as part of the waste water stream processing and hence, as part of the upgrade process, waste streams at site will be collected by a waste truck and transferred to Raymond terrace WWTP for processing. This will eliminate the identified hazard of the potential for processing system failure and discharge of contaminated water offsite. Hence, there will be a reduction in waste water systems risk as a result of the upgrade of the production rates at the site.

Whilst it is recognised that there is a reduction in risk due to the removal of waste offsite, there is a potential for release during the transfer operation, this may have the potential to escape offsite, impact the areas immediately adjacent to the site. However, the area in which the transfer is conducted is adjacent to the WWTP and any releases will drain back to the WWTP collection pits, preventing offsite release and impact.

In summary, there will be an overall risk reduction as a result of the change in operations at waste treatment facilities due to the increased production rate at the plant.

6. CONCLUSIONS

The review of the proposed production rate increase at the Midal Cables Tomago facility, it was identified that there was no increase in Dangerous Goods (DG) storage quantities as a result of the production rate increase. Notwithstanding this, it is noted that the original storage of dross (Class 4.3) exceeded the SEPP33 threshold quantities and therefore it was concluded that SEPP33 still applies to the site.

As it was considered that SEPP33 still applied to the site, a review of each of the hazards identified in the original hazard assessment was conducted to determine whether the proposed increase in production rate would result in a change to the risk profile such that acceptable risk criteria would be exceeded. The assessment identified that the increased production rate did not result in significant changes to the site operations such that the existing risk profile would change causing acceptable risk criteria to be exceeded. Hence, it is concluded that the facility remains only potentially hazardous and not actually hazardous and would continue to be permissible within the current land zoning.

APPENDIX 5

WWTP Conversion - Preliminary Drawing

WASTE WATER CONVERSION
MIDAL CABLES, SCHOOL DRIVE, TOMAGO
HYDRAULIC SERVICES

McCALLUM PFCA
PLUMBING & FIRE CONSULTANTS AUSTRALIA

NOTES: SANITARY DRAINAGE
1) COORDINATE THE INSTALLATION OF SANITARY SERVICES WITH OTHER SERVICES.
2) LOCATE, EXCAVATE AND VERIFY THE SUITABILITY OF THE LEVEL OF THE EXISTING DRAINAGE PIPELINE FOR CONNECTION PRIOR TO THE COMMENCEMENT OF ANY DRAINAGE INSTALLATION WORKS.
3) CONTRACTORS ARE TO ALLOW FOR ALL BENDS, OFFSETS, RISERS AND DROPPERS TO ALL OF THE PIPEWORK NECESSARY TO ACHIEVE A FULLY FUNCTIONING, COORDINATED COMPLIANT INSTALLATION.
4) ALL INGROUND PIPEWORK IS TO BE ENCASED IN 7-10mm GRAVEL WITH DETECTABLE MARKER TAPE AND SAND LAID OVER.
5) ALL SANITARY DRAINAGE IS TO BE CONSTRUCTED IN THE MATERIAL NOMINATED ON THE DRAWINGS AND TO THE REQUIREMENTS OF THE RELEVANT CODES AND AUTHORITIES. MINIMUM GRADE SHALL BE OF 1 IN 60 (1.65%) OR AS OTHERWISE SPECIFIED.
6) PROVIDE INSPECTION OPENINGS IN THE SYSTEM AS REQUIRED BY AS3500.2.2 SEC 4.7 OR AS REQUIRED BY THE RELEVANT AUTHORITY.
7) ALL PIPEWORK TO BE TESTED TO AS 3500 REQUIREMENTS.
8) IN WATER CHARGED GROUND THE WATER LEVEL SHALL BE LOWERED BELOW THE PROPOSED TRENCH AND MAINTAINED AT THAT LEVEL DURING CONSTRUCTION AND BACKFILLING.

NOTES: COLD WATER
1) COORDINATE THE INSTALLATION OF COLD WATER SUPPLY WITH OTHER SERVICES.
2) PIPEWORK PASSING THROUGH CONCRETE SLABS OR PATHS SHALL BE INSTALLED WITH AN ANNULAR SPACE OF 6mm FOR THE FULL DEPTH OF SLAB PENETRATION.
3) INGROUND PIPEWORK IS TO BE ENCASED IN CLEAN FILL SAND WITH DETECTABLE MARKER TAPE LAID OVER.
4) CONTRACTORS ARE TO ALLOW FOR ALL BENDS, OFFSETS, RISERS AND DROPPERS TO ALL OF THE PIPEWORK NECESSARY TO ACHIEVE A FULLY FUNCTIONING, COORDINATED COMPLIANT INSTALLATION.
5) ALL PIPEWORK TO BE TYPE B COPPER TO AS1432.
6) ALL PIPELINES TO BE TESTED TO AS 3500 REQUIREMENTS.

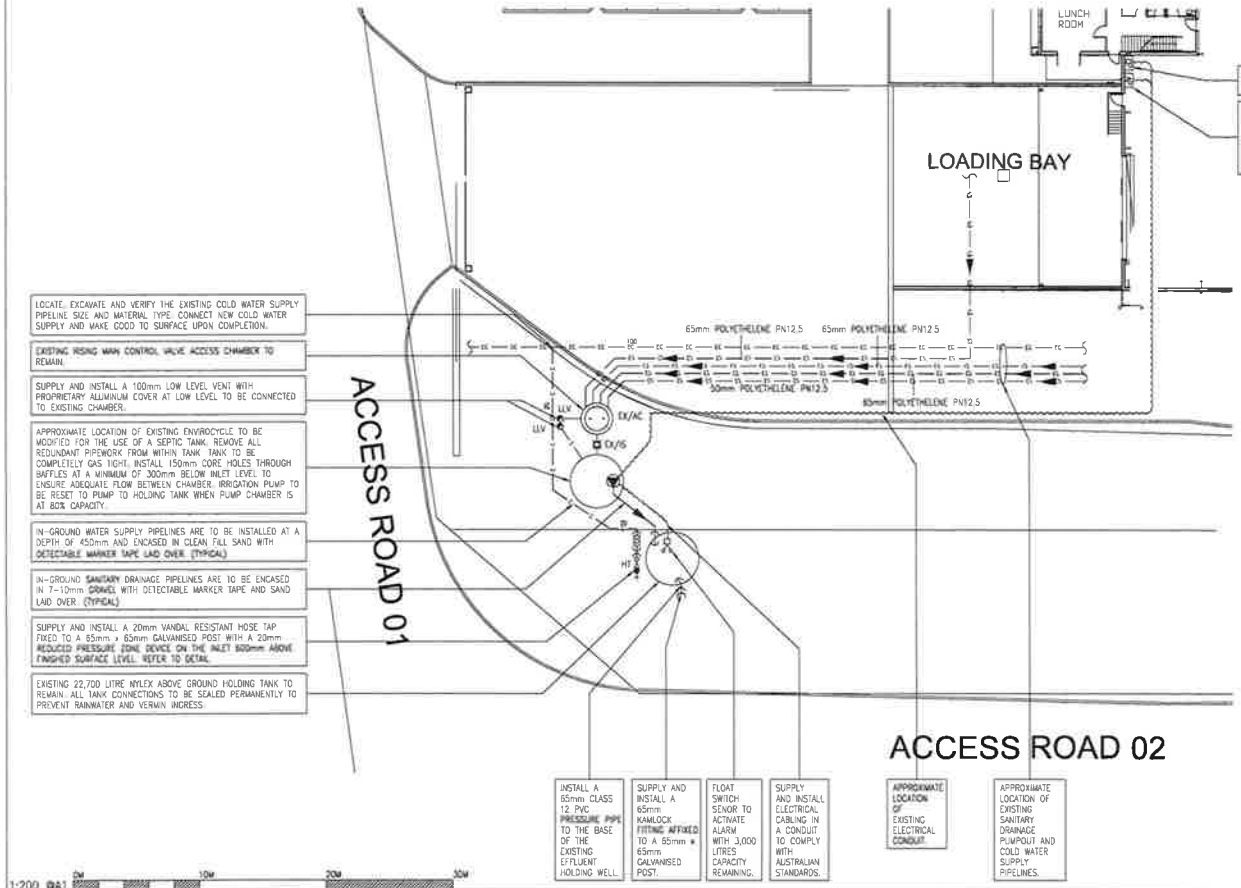
NOTE: THE ENTIRE PLUMBING INSTALLATION IS TO COMPLY WITH THE FULL REQUIREMENTS OF THE LOCAL REGULATORY AUTHORITY, A.S.3500 AND THE PLUMBING AND THE BUILDING CODES OF AUSTRALIA.

LOCATION DIAGRAM
NOT TO SCALE

NOTE: THE PLUMBING CONTRACTOR MUST VISIT THE SITE DURING THE TENDERING PERIOD IN ORDER TO FAMILIARISE THEMSELVES WITH EXISTING SITE CONDITIONS AND MAKE THE NECESSARY ALLOWANCE FOR SUCH IN THE TENDER.

NOTE: THE NOMINAL SIZES OF PIPELINES NOTED ON THE DRAWINGS ARE BASED ON STANDARD COPPER PIPELINE INTERNAL BORES. IN THE EVENT OF AN ALTERNATIVE PIPELINE MATERIAL BEING ACCEPTED BY THE SUPERINTENDENT, IT IS THE PLUMBING CONTRACTORS RESPONSIBILITY TO ENSURE THAT AN EQUIVALENT INTERNAL PIPELINE BORE IS INSTALLED IN ACCORDANCE WITH APPENDIX J OF AS 3500.1.

PRELIMINARY
NOT FOR APPROVAL OR CONSTRUCTION PURPOSES



APPROXIMATE LOCATION OF EXISTING ENVIROCYCLE PUMP FAIL AUDIBLE ALARM TO REMAIN IN OPERATION.

SUPPLY AND INSTALL A HUNTER PUMPS "ALM-240" WEATHERPROOF 316 STAINLESS STEEL CONTROL PANEL WITHIN THE SERVICE/ STORAGE ROOM WITH VISUAL AND AUDIBLE ALARMS IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS. INSTALL A "SPIDER SMC LC" DATA LOGGER AND SMS ALARM SYSTEM CONNECTED TO THE CONTROL PANEL. THE SYSTEM IS TO BE SET TO ACTIVATE THE SMS SERVICE AT HIGH LEVEL ALARM.

LOCATE, EXCAVATE AND VERIFY THE EXISTING COLD WATER SUPPLY PIPELINE SIZE AND MATERIAL TYPE. CONNECT NEW COLD WATER SUPPLY AND MAKE GOOD TO SURFACE UPON COMPLETION.

EXISTING RISING MAIN CONTROL VALVE ACCESS CHAMBER TO REMAIN.

SUPPLY AND INSTALL A 100mm LOW LEVEL VENT WITH PROPRIETARY ALUMINIUM COVER AT LOW LEVEL TO BE CONNECTED TO EXISTING CHAMBER.

APPROXIMATE LOCATION OF EXISTING ENVIROCYCLE TO BE MODIFIED FOR THE USE OF A SEPTIC TANK. REMOVE ALL REDUNDANT PIPEWORK FROM WITHIN TANK. TANK TO BE COMPLETELY GAS TIGHT. INSTALL 150mm CORE HOLES THROUGH BAFFLES AT A MINIMUM OF 300mm BELOW INLET LEVEL TO ENSURE ADEQUATE FLOW BETWEEN CHAMBER. IRRIGATION PUMP TO BE RESET TO PUMP TO HOLDING TANK WHEN PUMP CHAMBER IS AT 80% CAPACITY.

IN-GROUND WATER SUPPLY PIPELINES ARE TO BE INSTALLED AT A DEPTH OF 450mm AND ENCASED IN CLEAN FILL SAND WITH DETECTABLE MARKER TAPE LAID OVER. (TYPICAL)

IN-GROUND SANITARY DRAINAGE PIPELINES ARE TO BE ENCASED IN 7-10mm GRAVEL WITH DETECTABLE MARKER TAPE AND SAND LAID OVER. (TYPICAL)

SUPPLY AND INSTALL A 20mm VANDAL RESISTANT HOSE TAP FIXED TO A 65mm x 65mm GALVANISED POST WITH A 20mm REDUCED PRESSURE ZONE DEVICE ON THE INLET 600mm ABOVE FINISHED SURFACE LEVEL. REFER TO DETAIL.

EXISTING 22,700 LITRE NYLEX ABOVE GROUND HOLDING TANK TO REMAIN. ALL TANK CONNECTIONS TO BE SEALED PERMANENTLY TO PREVENT RAINWATER AND VERMIN INGRESS.

INSTALL A 65mm CLASS 12 PVC PRESSURE PIPE TO THE BASE OF THE EXISTING EFFLUENT HOLDING WELL.

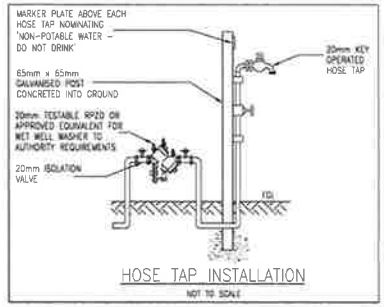
SUPPLY AND INSTALL A 65mm KAMLOCK FITTING AFFIXED TO A 65mm x 65mm GALVANISED POST.

FLOAT SWITCH SENOR TO ACTIVATE ALARM WITH 3,000 LITRES CAPACITY REMAINING.

SUPPLY AND INSTALL ELECTRICAL CABLING IN A CONDUIT TO COMPLY WITH AUSTRALIAN STANDARDS.

APPROXIMATE LOCATION OF EXISTING ELECTRICAL CONDUIT.

APPROXIMATE LOCATION OF EXISTING SANITARY DRAINAGE PUMPOUT AND COLD WATER SUPPLY PIPELINES.



HOSE TAP INSTALLATION
NOT TO SCALE

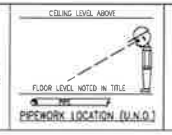
LEGEND

ABBREVIATIONS		PIPELINES		SYMBOLS	
EX/AC	EXISTING ACCESS CHAMBER	EC — EC	COLD WATER - EXISTING		PIPEWORK DROPPER
EX/S	EXISTING INSPECTION SHAFT	C — C	COLD WATER - NEW		KAMLOCK FITTING
HT	HOSE TAP	ES — ES	SANITARY DRAINAGE - EXISTING		ISOLATION VALVE
LLV	LOW LEVEL VENT	S — S	SANITARY DRAINAGE - NEW	RPZD	REDUCED PRESSURE ZONE DEVICE
			SANITARY DRAINAGE - NEW	CP	CONTROL PANEL
			ELECTRICAL WIRING	AP	ALARM PANEL
					PUMP
				HT	HOSE TAP AND ISOLATION VALVE
					SANITARY RISER
				EX/S	EXISTING INSPECTION SHAFT
				EX/AC	EXISTING ACCESS CHAMBER
					FLOAT SWITCH

1:200 @A1 0m 10m 20m 30m

GENERAL NOTES:
1. THE DRAWING ISSUED IS DIAGRAMATIC. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. REFER TO ARCHITECTURAL DRAWINGS WHERE APPROPRIATE FOR EXACT LOCATION OF FIXTURES, DUCTS AND THE LIKE. THE DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DOCUMENTS FORMING THE PROJECT DOCUMENTATION PACKAGE.
2. CONFIRM ALL LEVELS AND DIMENSIONS AS ACCURATE ON SITE PRIOR TO INSTALLATION. REPORT ALL DISCREPANCIES TO THE SUPERINTENDENT IMMEDIATELY.
3. THIS DRAWING HAS BEEN ISSUED IN CONFIDENCE AND REMAINS THE PROPERTY OF MCCALLUM PLUMBING & FIRE CONSULTANTS AUSTRALIA. DISTRIBUTION OR REPRODUCTION OF THE WHOLE OR PART OF THIS DRAWING WITHOUT THE EXPRESS PERMISSION OF MCCALLUM PLUMBING & FIRE CONSULTANTS AUSTRALIA IS A BREACH OF THE COMMONWEALTH COPYRIGHT ACT.

REV.	DATE	AMENDMENT
1	15/02/16	PRELIMINARY



PIPEWORK LOCATION (U.N.O.)

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ARCHITECT:		Drawn: L.NOLAN	FOR PRELIMINARY
CLIENT:	MIDAL CABLES INTERNATIONAL	Design: G.WILTON	Size: A1
PROJECT:	WASTE WATER CONVERSION MIDAL CABLES, SCHOOL DRIVE, TOMAGO PART SITE PLAN - HYDRAULIC SERVICES	Approved: R.McCALLUM	Scale: 1:200
			Job No.: 2824-111ST1
		DRG. No.: H-01	No. in Set: 1
			Revision: 1