PRELIMINARY ASSESSMENT: Acid Sulfate

For Proposed House at **63 Gondola Road, North Narrabeen**

Class of land as shown on Acid Sulfate Soils Planning Maps		***Type of Works***
☐	**1**	Any works
☐	**2**	Works below the natural ground surface. Works by which the water table is likely to be lowered.
☐	**3**	Works beyond 1m below the natural ground surface. Works by which the water table is likely to be lowered beyond 1m below the natural ground surface.
☐	**4**	Works beyond 2m below the natural ground surface. Works by which the water table is likely to be lowered beyond 2m below the natural ground surface.
■	**5**	Works on land below 5m AHD and within 500m of adjacent Class1, 2, 3 or 4 land which are likely to lower the watertable below 1m AHD on adjacent Class 1, 2, 3 or 4 land.
The class of the site is highlighted in red, it should be noted that the classification does not mean acid sulfate soils are present on site but that there is a risk they could be present.		

1. Proposed Development

1.1 Demolish the existing house and construct a new three-storey house by excavating to a maximum depth of ~1.1m.

1.2 Construct a new pool on the uphill side of the property by excavating to a maximum depth of ~1.6m.

1.3 Details of the proposed development are shown on 25 drawings prepared by Rapid Plans, Project number RP1018BEE, drawings numbered DA1002 to 1011, 2001 to 2005, 3001 to 3003, 4001, 4002, and 5001 to 5005, dated 14/5/19.

2. Site Description

The site was inspected on the 24th May, 2019.

The property is located on the gently graded, low lying area that is located to the W of the N reaches of Narrabeen Lagoon. The surface varies between RL4.08 and RL7.2. The Sydney

1:100 000 Geological sheet indicates the site is underlain by the Newport Formation of the Narrabeen Group. This is described as interbedded laminite, shale and quartz to lithic quartz sandstone.

The NSW Environment and Heritage mapping program (eSpade) maps the soil landscape of the property as 'Warriewood'. The ground tests indicate the upper ~0.5m of soil is a loose, speckled, dark grey loamy sand (wa1) that overlies a bleached massive sand (wa2) and brown soft iron pan (wa5). Their documentation indicates these soils range in pH from 4.5 to 7.0.

None of the ground tests encountered weathered rock. The sands that were encountered are likely Holocene in age (spanning in time from present to ~10,000 years ago) and the Narrabeen Group of rocks are Triassic in age (spanning in time from 199-251 million years ago).

No visible signs of acid sulfate soils such as bare low-lying areas, corrosion on man-made surfaces, or unusually clear, milky, or iron-stained surface water were observed on the property.

3. Earthworks

An excavation to a maximum depth of ~1.0m will be required to construct the new house. Another excavation to a maximum depth of ~1.6m will be required to install the new pool and to landscape the uphill side of the property. The excavations will cover a combined area of ~350m^2. The excavations are only a risk in regards to potential acid sulfate soils while they are open. On completion of the excavations, they will be sealed with concrete, preventing access of oxygen to the soil and therefore greatly reducing the potential for acid generation.

4. Watertable

The watertable was not encountered in the ground tests that reached a maximum depth of ~2.6m (~RL3.6) below the current surface.

The proposed excavation will not exceed a depth of ~1.6m (~RL4.6) and it is envisaged the watertable will not be intercepted or impacted.

5. Field Testing

Four hand auger holes were put down in the locations shown on the site plan attached. Field pH and peroxide testing was carried out on samples taken from the auger holes at regular intervals. The logs of the auger holes and the test results are as follows.

AUGER HOLE 1 (~RL6.2)

Depth (m)	Material Encountered
0.0 to 0.6	**SAND**, grey, dry, coarse grained with fine trace organic matter.
0.6 to 1.2	**SAND**, light grey, dry, coarse grained.
1.2 to 2.6	**SAND**, brown, damp, coarse grained.

End of hole @ 2.6m in sand. Watertable not encountered.

TEST: AH1	FIELD pH & PEROXIDE RESULTS				
Sample depth (m)	**pH_F**	**30% Peroxide reaction**	**pH_{FOX}**	**pH_F - pH_{FOX}**	**SS=Shell J=Jarosite R=Roots**
0.5	5.9	Very Weak Effervescence	6.1	-0.2	~5% Roots
1.0	5.9	No Reaction	6.3	-0.4	-
1.5	6.0	Very Weak Effervescence	6.7	-0.7	-
2.0	6.3	Very Weak Effervescence	6.5	-0.2	-
2.6	6.2	No Reaction	6.7	-0.5	-

AUGER HOLE 2 (~RL5.5)

Depth (m)	Material Encountered
0.0 to 0.5	**SANDY SOIL**, dark grey-brown, dry, coarse grained with fine trace organic matter.
0.5 to 1.4	**SAND**, light grey, dry, coarse grained.
1.4 to 2.2	**SAND**, dark brown, dry, coarse grained with fine trace organic matter.

End of hole @ 2.2m in sand. Watertable not encountered.

TEST: AH2	FIELD pH & PEROXIDE RESULTS				
Sample depth (m)	**pH_F**	**30% Peroxide reaction**	**pH_{FOX}**	**pH_F - pH_{FOX}**	**SS=Shell J=Jarosite R=Roots**
0.5	6.4	No Reaction	6.5	-0.1	~5% Roots
1.0	6.5	Very Weak Effervescence	6.6	-0.1	-
1.5	6.5	No Reaction	6.5	0.0	-
2.2	6.7	No Reaction	6.8	-0.1	-

AUGER HOLE 3 (~RL5.5)

Depth (m)	Material Encountered
0.0 to 0.5	**SANDY SOIL**, dark grey-brown, dry, coarse grained with fine trace organic matter.
0.5 to 1.5	**SAND**, light grey, dry, coarse grained.

End of hole @ 1.5m in sand. Watertable not encountered.

TEST: AH3	FIELD pH & PEROXIDE RESULTS				
Sample depth (m)	**pH_F**	**30% Peroxide reaction**	**pH_{FOX}**	**pH_F - pH_{FOX}**	**SS=Shell J=Jarosite R=Roots**
0.5	5.6	No Reaction	5.7	-0.1	~5% Roots
1.0	6.0	No Reaction	6.1	-0.1	-
1.5	6.1	Very Weak Effervescence	5.9	-0.2	-

AUGER HOLE 4 (~RL4.6)

Depth (m)	Material Encountered
0.0 to 0.5	**SANDY SOIL**, dark grey-brown, dry, coarse grained with fine trace organic matter.
0.5 to 1.2	**SAND**, light grey, dry, coarse grained.
1.2 to 1.5	**SAND**, dark brown, dry, coarse grained with fine trace organic matter.

End of hole @ 1.5m in sand. Watertable not encountered.

TEST: AH4	FIELD pH & PEROXIDE RESULTS				
Sample depth (m)	**pH_F**	**30% Peroxide reaction**	**pH_{FOX}**	**pH_F - pH_{FOX}**	**SS=Shell J=Jarosite R=Roots**
0.5	5.3	Very Weak Effervescence	5.4	-0.1	~5% Roots
1.0	5.5	Very Weak Effervescence	5.5	0.0	-
1.5	5.1	No Reaction	5.3	-0.2	-

6. Conclusions

This report was carried out in accordance with the Field pH and Peroxide Test guidelines (ASSMAC, 1998).

No Acid Sulfate Soils were identified in the test holes. The pH_F levels tested in all auger holes did not fall lower than 5.1. This is above a PH of 4 that is an indicator of acid sulfate soils. No Potential Acid Sulfate Soils were identified in the test holes. The measured pH_F Levels varied up to 0.7 from the measured pH_{FOX} levels. A movement of 1 unit or more is an indicator of potential acid sulfate soils. In addition, the measured pH_{FOX} did not fall lower than 5.3. A pH_{FOX} <3 is a strong indicator of potential acid sulfate soils. No observable colour change or sulphurous odours were identified during the peroxide testing.

This preliminary assessment indicates that an Acid Sulfate Soils management plan is not required for the proposed works.

White Geotechnical Group Pty Ltd.

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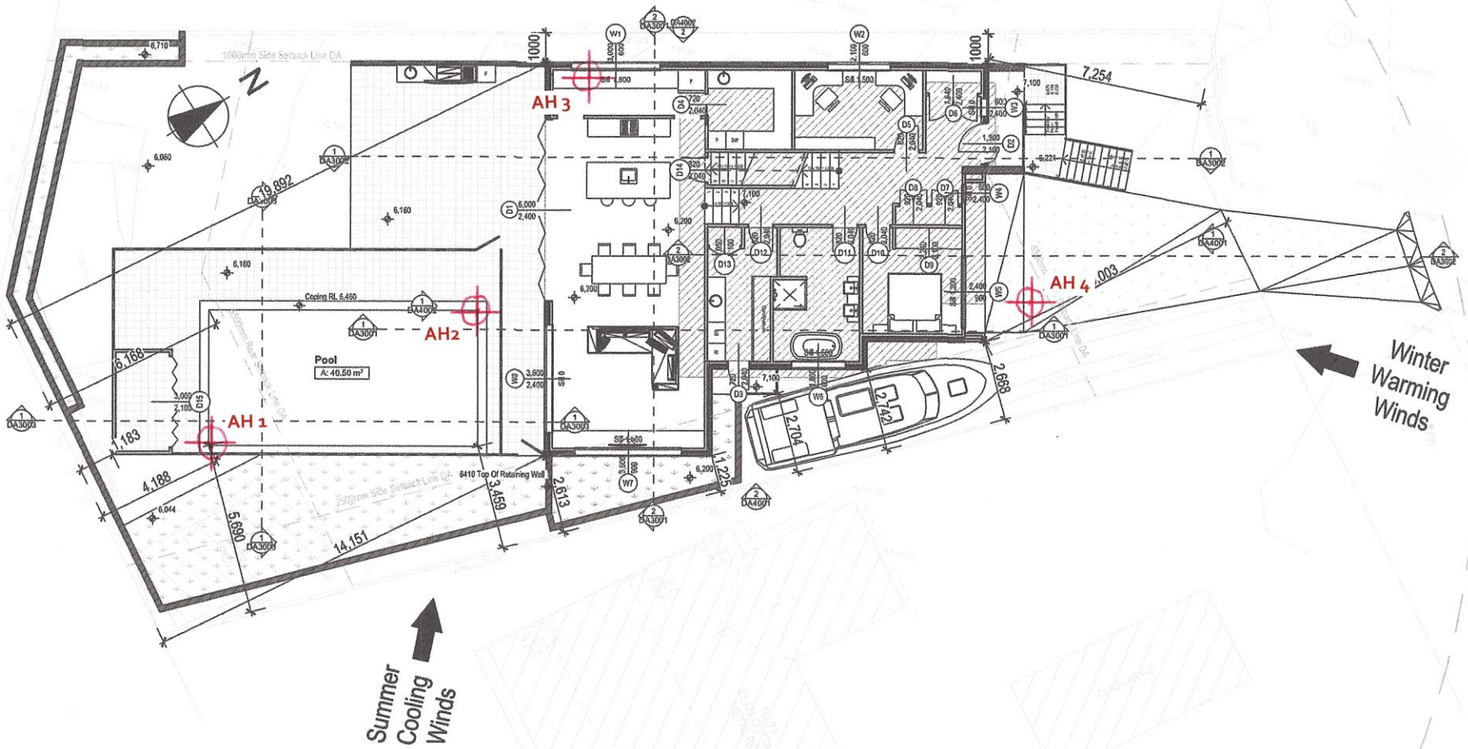
SITE PLAN – showing test locations



1 Site Plan 1:200

Denotes New Works

Denotes Existing House To Be Demolished

Wall Legend

Denotes New Timber Framed Wall

Denotes New Masonry Wall

Denotes New Concrete Block Wall

Builder to Check and Confirm all Measurements Prior to Commencement of any works. Immediately Report any Discrepancies to Rapid Plans

DA APPLICATION ONLY
NOT FOR CONSTRUCTION

NOTES
63 Gondola Road,North Narrabeen is zoned R2 - Low Desnity Res
All Plans to be read in conjunction with Basix Certificate
New Works to be constructed shown in Shaded/Blue
63 Gondola Road,North Narrabeen is not considered a heritage item

Certifying
The DA Application Only plans are for DA Application purposes only. These plans are not to be used for the construction certificate application by any Certifying Authority without the written permission of Rapid Plans or the supply of authorised Construction Certificate drawings by Rapid Plans

Construction
XXX, XXX Walls
Roof XXX to have R?? Insulation
Insulation to External XXX Walls R??
Refer to Engineers drawings for structural details
All work to Engineers Specification and BCA
Timber framing to BCA and AS 1684
Termite Management to BCA and AS 3660.1
Glazing to BCA and AS01288-2047
Waterproofing to BCA and AS 3740
New Lighting to have minimum of 40% compact fluorescent lamps

Basix
Basix Certificate Number XXX
All Plans to be read in conjunction with Basix Certificate
The applicant must construct the new or altered construction (floor(s), walls, and ceilings/roofs) in accordance with the specifications listed in the table below, except that:
a) additional insulation is not required where the area of new construction is less than 2m2,
b) insulation specified is not required for parts of altered construction where insulation already exists.
The applicant must install the windows, glazed doors and shading devices, in accordance with the specifications listed in the table below.
Relevant overshadowing specifications must be satisfied for each window and glazed door.
For projections described in millimetres, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500 mm above the head of the window or glazed door and no more than 2400 mm above the sill.
Overshadowing buildings or vegetation must be of the height and distance from the centre and the base of the window and glazed door,

Site Information	Proposed	Compliance
Site Area	622.7m2	Yes
Housing Density (dwelling/m2)	1	Yes
Max Ceiling Height Above Natural GL	N/A	Yes
Max Building Height Above Natural GL	8.5m	Yes
Front Setback (Min.)	6.5m	Yes
Rear Setback (Min.)	6.5m	Yes
Minimum side boundry setback (Min.)	1m + 2.5m	Variaton
Building envelope	3.5m@45Deg	Variaton
% of landscape open space (50% min)	50%	Yes
Impervious area (m2)	313.62m2	Yes
Maximum cut into ground (m)	1550mm	Yes
Maximum depth of fill (m)	865mm	Yes
Number of car spaces provided	2	Yes

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BUILDING DESIGNERS AUSTRALIA

Project North

The builder shall check and verify all dimensions and verify all errors and omissions to the Designer. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Designer for construction.

Client: Greg Beeman

Client: Greg Beeman
Project Name: **New Dwelling**
63 Gondola Road, North Narrabeen 2101

Lot 218 D.P. 16212

Drawing Title: Site Plans - Site Plan
Site Plan

Scale: A3 as noted
Status: DA
Project No. RP1018BEE

Date: 14/05/19
Checked By: GBJ
Drawing No. **DA1004**