Water Quality Monitoring Report
October 19

Newcastle Cruising Yacht Club

File No 0-950 Water Quality Monitoring

Prepared for Newcastle Cruising Yacht Club Limited
Suite 9
NCYC Commercial Centre
91 Hannell Street
Wickham 2293

By **PPI Services Pty. Limited**
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Report Certification:

PPI Services Pty Ltd has prepared the accompanying report as at 24 October 2019 (the Report) for Newcastle Cruising Yacht Club (the Client) at the request of and exclusively for the use and benefit of the Client and/or its Directors.

Under the terms of its engagement, PPI Services Pty Ltd has examined the various environmental practices of project and has relied on information provided by the Client and the on-site observations of its personnel. The qualifications of personnel involved in the preparation of this Report have previously been supplied to the Client.

This Report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. PPI Services Pty Ltd is not responsible for the accuracy of information provided by other individuals or entities that is used in this Report. This Report presents our professional judgment based upon information provided and findings identified in this Report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

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This Report is issued with the understanding that it is the responsibility of the client, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law.

Neither PPI Services Pty Ltd nor any member, associate or employee of PPI Services Pty Ltd undertakes any responsibility for any injury, loss or damage claimed by the client arising out of a claim by any third party against the Client in connection with the Report.

The Assessment has been conducted in accordance with the best practices available at the time and considers the identified hazards determined. Should any further hazards be identified at a later date, it is suggested that the processes be re-examined, and this report updated.

I hereby certify that this report includes to findings and recommendations of the assessment process.

Andrew Arnott
PPI Services Pty Ltd

Date: 24 October 2019

Introduction

PPI Services were commissioned by Newcastle Cruising Yacht Club Limited to implement a Water Quality Monitoring Programme during construction and operational phases of the Newcastle Cruising Yacht Club Marina - Lot 103, Hannell Street, Wickham. The water quality-monitoring programme was designed to monitor and assess potential impacts of Marina construction and operation activities upon the quality of receiving harbour waters.

The assessment/ Site Licence (EPL 11396) was varied in accordance with the 'Draft Notice of Licence Variation Newcastle Cruising Yacht Club (NCYC) EPL 11396', dated 20th October 2014. The revised conditions involve a visual interface probe test for the presence of hydrocarbons at two existing groundwater wells (GW1 and GW4) every six months. Should positive results for the presence of hydrocarbons be obtained further laboratory analysis and testing will be required within 30 days of the initial discovery.

During 2013 the site replaced its aging multi-chamber petrol/diesel underground fuel storage tank with a single-chamber double skinned dedicated diesel underground fuel storage tank. As of the October 2014 period report, the depth to the fill level of the interstitial space of this underground fuel storage tank is reported.

Methodology

Groundwater sampling of GW1 and GW4 was carried out with an interface probe test of each well and confirmed with a visual and olfactory assessment of a water sample drawn from each well by means of a 1 litre disposable bailer.

Testing of the depth to fluid filling the underground fuel storage tank was measured from the top of the observation well. This is performed as a check to ensure the double walled tank has not developed a leak.

Sample Date 14 October 2019

Sample Locations as Per **Figure 1**

Results

Results for this sampling event are presented below:

GW1: Water at 1.940 metres and well bottom at 3.37 metres
pH 7.1
Temperature 19.6˚C
No hydrocarbon detected by interface probe
No visible hydrocarbon observed
No olfactory evidence of hydrocarbon

GW4: Water at 2.40 metres and well bottom at 3.38 metres
pH 7.0
Temperature 19.4˚C
No hydrocarbon detected by interface probe
No visible hydrocarbon observed
No olfactory evidence of hydrocarbon

Depth to filler fluid in interstitial space: 0.91 metres

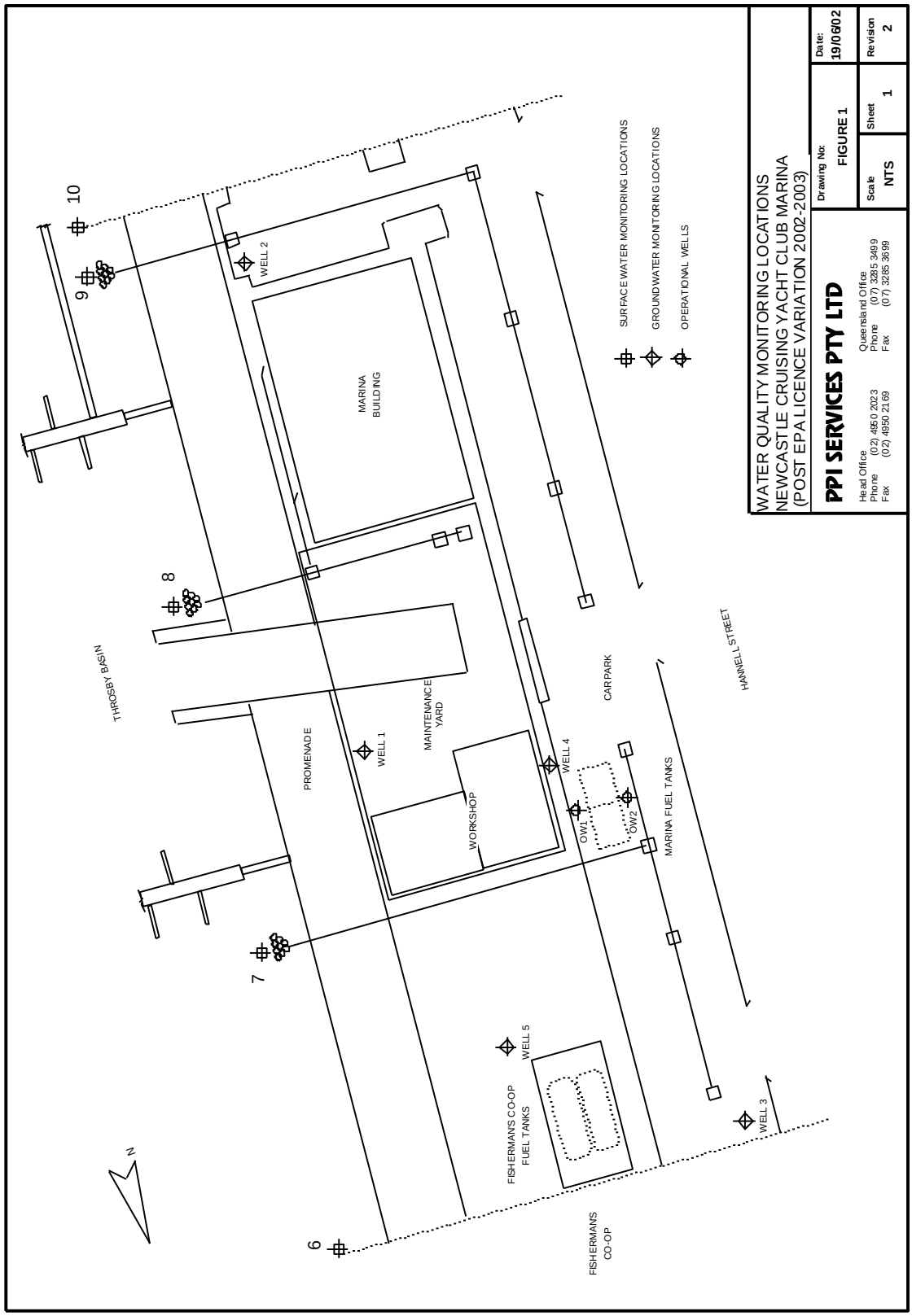
Discussion

No hydrocarbons were detected in the wells sampled or in the underground storage tanks interstitial space.

The levels in GW1 were comparable to previous recordings. The well bottom in GW4 has remained stable and is comparable to previous recordings. The previous reduction in well depth would be most likely attributed with the disturbance of the surrounding soil when the old UPSS tank was removed. The changes in depth in GW4 will continue to be documented in future reports but it is expected that it will remain stable.

The measurement of the reference water level in the underground fuel storage tanks interstitial space dropped by 20mm over the 6 Month period since the last monitoring event. It is advised that on the next tank and line testing event that the integrity of the outer layer of the tank forming the interstitial space on the fuel tank be tested in addition to the tank and line testing.

The next monitoring event is scheduled for April 2020.


WATER QUALITY MONITORING LOCATIONS
NEWCASTLE CRUISING YACHT CLUB MARINA
(POST EPA LICENCE VARIATION 2002-2003)
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Drawing No: FIGURE 1
Scale NTS
Sheet 1
Date: 19/06/02
Revision 2
SURFACE WATER MONITORING LOCATIONS
GROUNDWATER MONITORING LOCATIONS
OPERATIONAL WELLS
MARINA BUILDING
WELL 2
WELL 1
WELL 4
WELL 5
WELL 3
OW1
OW2
MAINTENANCE YARD
WORKSHOP
PROMENADE
CAR PARK
MARINA FUEL TANKS
FISHERMAN'S CO-OP FUEL TANKS
FISHERMAN'S CO-OP
THROSBY BASIN
HANNELL STREET
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