Imagine Estate Stage 16C Strathfieldsaye

Earthworks Supervision Report for DPJ Civil

Report 24C 0814
March, 2025

GTS
GEOTECHNICAL TESTING SERVICES

Imagine Estate Stage 16C
Strathfieldsaye

Earthworks Supervision Report

for

DPJ Civil

Revision

Revision	Date	Authorised
24C 0814	18/03/2025	SEH

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1 INTRODUCTION

DPJ Civil commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (AS3798-2007) for the earthworks for the residential subdivision at Imagine Estate Stage 16C, Strathfieldsaye.

Level 1 Testing was generally performed in line with AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Development” and provides inspection of the construction of controlled fill and compaction testing in accordance with AS1289 “Methods of Testing Soils for Engineering Purposes”. The Level 1 testing was undertaken by Geotechnicians with supervision provided by a Geotechnical Engineer from GTS.

2 SCOPE OF WORKS

2.1 AREA OF WORK

Geotechnical Testing Services provided Level 1 inspection and testing of the engineered fill placed in Lots 1638/1639 and 1641 to 1644 to create level building pads or backfill of septic tank excavation.

The depth of fill across the site varied from none to around 400mm with the septic tank excavated over 1m deep with the approximate locations shown on the attached site plan. It is noted that sites with 300mm or less were not included in the controlled fill operations.

2.2 PLACEMENT SPECIFICATION

Whilst there was no earthworks specification compiled for this project, the placement of the fill and associated works generally followed the recommendations outlined in AS3798-2007 “Guidelines for Earthworks for Commercial and Residential Developments” and the construction specification.

In summary, the earthworks comply with the following:

- The layers for residential lots are to be compacted to at least 95% of the density ratio in accordance with AS1289 5.1.1 (or 5.7.1), based on Standard compaction.

Therefore, in accordance with Table 8.1 of AS3798-2007, the filling may be considered small scale (separate areas less than 1500m^2) and therefore a minimum of 1 test per residential lot per layer is required.

3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a Senior Geotechnical Engineer and it was observed that the unsuitable material (vegetation, topsoil/silt) had been removed with the base consisting of a Silty Clay material of suitable strength.

Level 1 inspection and testing was undertaken by a geotechnician from GTS who nominated the timing and location of the in-situ density tests. The approximate location of each test is recorded on the test reports and attached fill plan.

Laboratory compaction testing was undertaken on a one to one basis at our Bendigo laboratory. A summary of the results of the compaction control testing is presented in a table below with the full NATA endorsed test reports included in the Appendix.

The septic tank excavation along the boundary of Lots 1638 and 1639 at the rear was backfilled with cement stabilised sand and is considered satisfactory.

4 SUMMARY OF TEST RESULTS

A summary of the test results is included in the following table with full NATA accredited reports included in the Appendix.

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation %O.M.C	Density Ratio %
1	B24-16278A	24/09/2024	Lot 1644	FSL	2.0	107.0
2	B24-16278B	24/09/2024	Lot 1643	FSL	1.0	106.0
3	B24-16278C	24/09/2024	Lot 1642	FSL	1.5	103.0

5 STATEMENT OF COMPLIANCE

GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 1638/1639 and 1641 to 1644. The placement of fill and construction techniques adopted was observed throughout the project.

It is noted that Lot 1641 was filled as part of Stage 15 (report 22C 0046) and whilst no direct tests were conducted in this lot at the time, it was placed and compacted as per the remainder of Stage 15 and id therefore considered satisfactory.

Based on observations made by GTS personnel and the results of field and laboratory tests, we consider that the fill has been placed and compacted and is considered to be engineered or controlled fill. Therefore, subject to residential site classifications, the controlled fill material is deemed a suitable founding medium for future residential buildings. It is noted that topsoil material may be spread across the sites following completion of these earthworks and that this topsoil material is not considered controlled fill.

Shane Hampton BE (Hons), MIEAust
Principal Geotechnical Engineer

APPENDIX

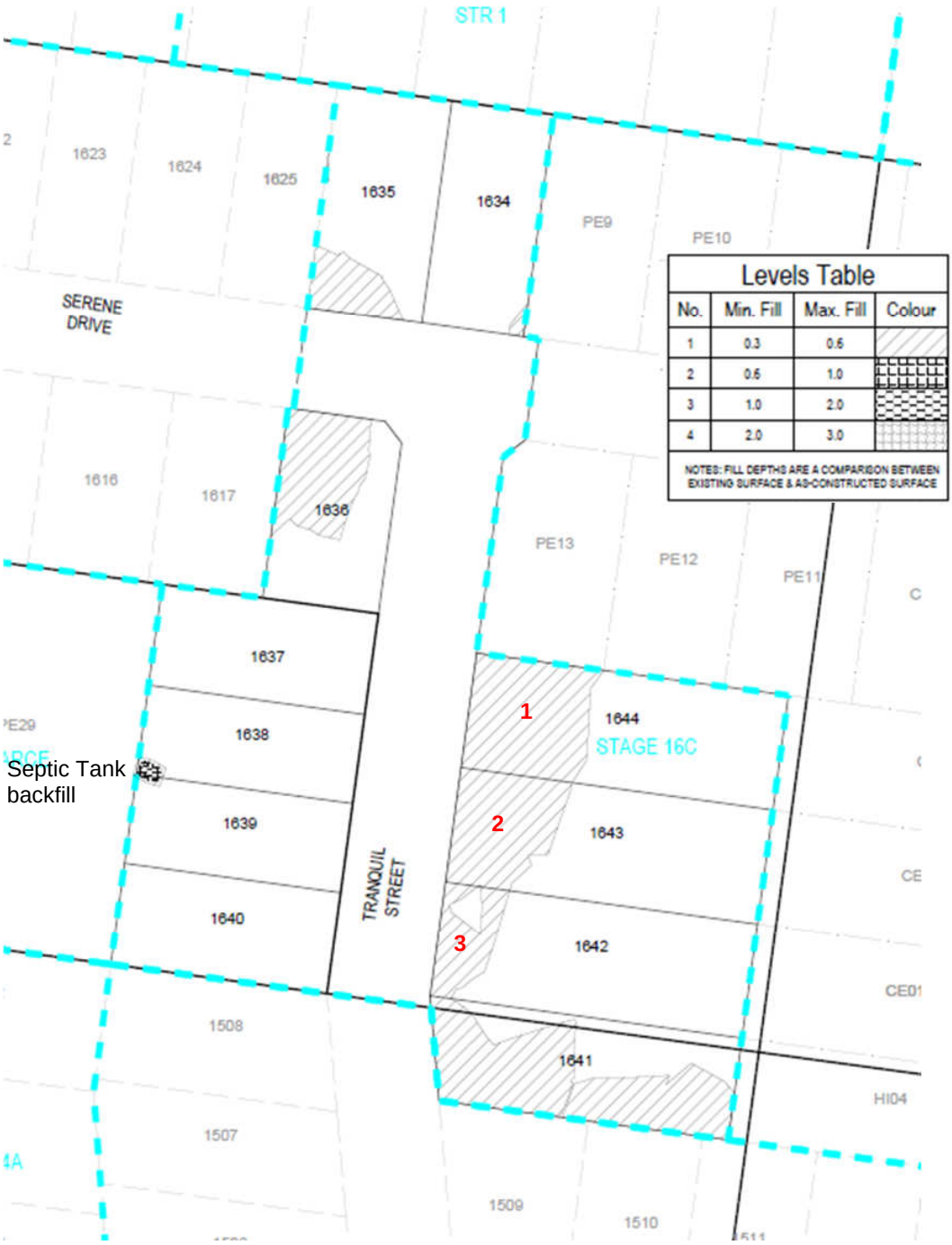

Fig 1: Site Plan

Material Test Report

Report Number: **P17236-126**
Issue Number: 1
Date Issued: 24/09/2024
Client: DPJ Civil Pty Ltd
24 Jewell Court , Bendigo VIC 3550
Project Number: P17236
Project Name: Imagine Estate
Project Location: Stage 16 C Strathfieldsaye
Work Request: 16278
Date Sampled: 24/09/2024
Dates Tested: 24/09/2024 - 24/09/2024
Sampling Method: AS 1289.1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Site Selection: Selected by Client
Material Source: Test Loacation

Geotechnical Testing Services (Southern)
Bendigo Soil and Concrete Testing Laboratory
13 Alstonvale Court East Bendigo VIC 3550
Phone:
Email: tylerw@gts.com.au

Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Tyler Webb
Laboratory Technician
NATA Accredited Laboratory Number: 19506

Compaction Control AS 1289 5.7.1 & 5.8.1			
Sample Number	B24-16278A	B24-16278B	B24-16278C
Date Tested	24/09/2024	24/09/2024	24/09/2024
Time Tested	11:10	11:16	11:20
Test Request #/Location	Stage 16C Lot 1644	Stage 16C Lot 1643	Stage 16C Lot 1643
Chainage (m)	Front	Front	Front
Location Offset (m)	Centre	Centre	Centre
Layer / Reduced Level	FSL	FSL	FSL
Thickness of Layer (mm)	300	300	300
Soil Description	Silty Gravelly Clay	Silty Gravelly Clay	Silty Gravelly Clay
Test Depth (mm)	275	275	275
Sieve used to determine oversize (mm)	19.0	19.0	19.0
Percentage of Wet Oversize (%)	**	**	**
Field Wet Density (FWD) t/m^3	2.24	2.22	2.18
Field Dry Density (FDD) t/m^3	**	**	**
Peak Converted Wet Density t/m^3	2.09	2.10	2.11
Adjusted Peak Converted Wet Density t/m^3	**	**	**
Moisture Variation (Wv) %	2.0	1.0	1.5
Adjusted Moisture Variation %	**	**	**
Hilf Density Ratio (%)	**107.0**	**106.0**	**103.0**
Compaction Method	**Standard**	**Standard**	**Standard**
Report Remarks	**	**	**

Moisture Variation Note:
Positive values = test is dry of OMC
Negative values = test is wet of OMC