Lucas Stage G4
Alfredton

Earthworks Supervision Report for Sovereign Civil

Report 20C 0522
July 2020

GTS
GEOTECHNICAL TESTING SERVICES

Lucas Stage G4
Alfredton

Earthworks Supervision Report
for
Sovereign Civil

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Site plan
Test Reports

1 INTRODUCTION

Sovereign Civil commissioned Geotechnical Testing Services (GTS) to undertake Level 1 Supervision and testing (*AS3798-2007*) for the earthworks at Lucas Stage G4, Alfredton.

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

GTS provided Level 1 inspection and testing of the engineered fill placed to raise the surface of Lots 1602, 1604, 1616 & 1617.

The depth of fill across the site varied from none to 0.4 metres in Lots 1602 & 1604, with approximate locations shown on the attached site plan. It is noted that sites with less than 0.3 metres were not included in the controlled fill.

2.2 Placement Specification

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.

In accordance with Table 8.1 of *AS3798-2007*, the site would be considered small scale (individual residential lots). Therefore, a minimum of 1 test per layer per 1000m^2 per layer or 1 test per 200m^3 or 1 test per residential lot per layer is required.

It is noted that the lots sizes are 369 to 448m^2 and 1 test per lot per layer was conducted which meets or exceeds the minimum requirements.

3 INSPECTION AND TESTING

Inspection of the excavated base was conducted by a 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 good 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 Ballarat 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.

4 SUMMARY OF TEST RESULTS

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

Project No.	Sample No.	Test Date	Location	Reduced Level (mm)	Moisture Variation % O.M.C.	Hilf Density Ratio %
1	D20-1835A	19/06/2020	Lot 1604	FSL	1.5 dry	102.5
2	D20-1835B	19/06/2020	Lot 1602	FSL	0.0	99.5
3	D20-1835C	19/06/2020	Lot 1616	FSL	0.0	101.5
4	D20-1835D	19/06/2020	Lot 1617	FSL	1.0 wet	100.0

5 STATEMENT OF COMPLIANCE

GTS personnel have provided Level 1 inspection and testing services during the placement of material for the filling of Lots 1602, 1604, 1616 & 1617. The placement of fill and construction techniques adopted was observed throughout the project.

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.

Benj Beatty BA/BSc (Hons), MPA, MAusIMM
Engineering Geologist

APPENDIX

STAGE G4

Elevations Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	-3.000	-1.500	
2	-1.500	-1.000	
3	-1.000	-0.500	
4	-0.500	-0.400	
5	-0.400	-0.300	
6	-0.300	-0.200	
7	-0.200	-0.100	
8	-0.100	-0.050	
9	0.050	0.100	
10	0.100	0.200	
11	0.200	0.300	
12	0.300	0.400	
13	0.400	0.500	
14	0.500	1.000	
15	1.000	1.500	
16	1.500	3.000	