

*Brisbane Office*  
*Job Number: DL18/334*  
*Ref No: 15203*  
*Author: R. Mitchell*

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 658**  
**LEVEL ONE COMPLIANCE REPORT FOR**  
**EARTHWORKS FILL CONSTRUCTION**  
**EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 658 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 658 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 658 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

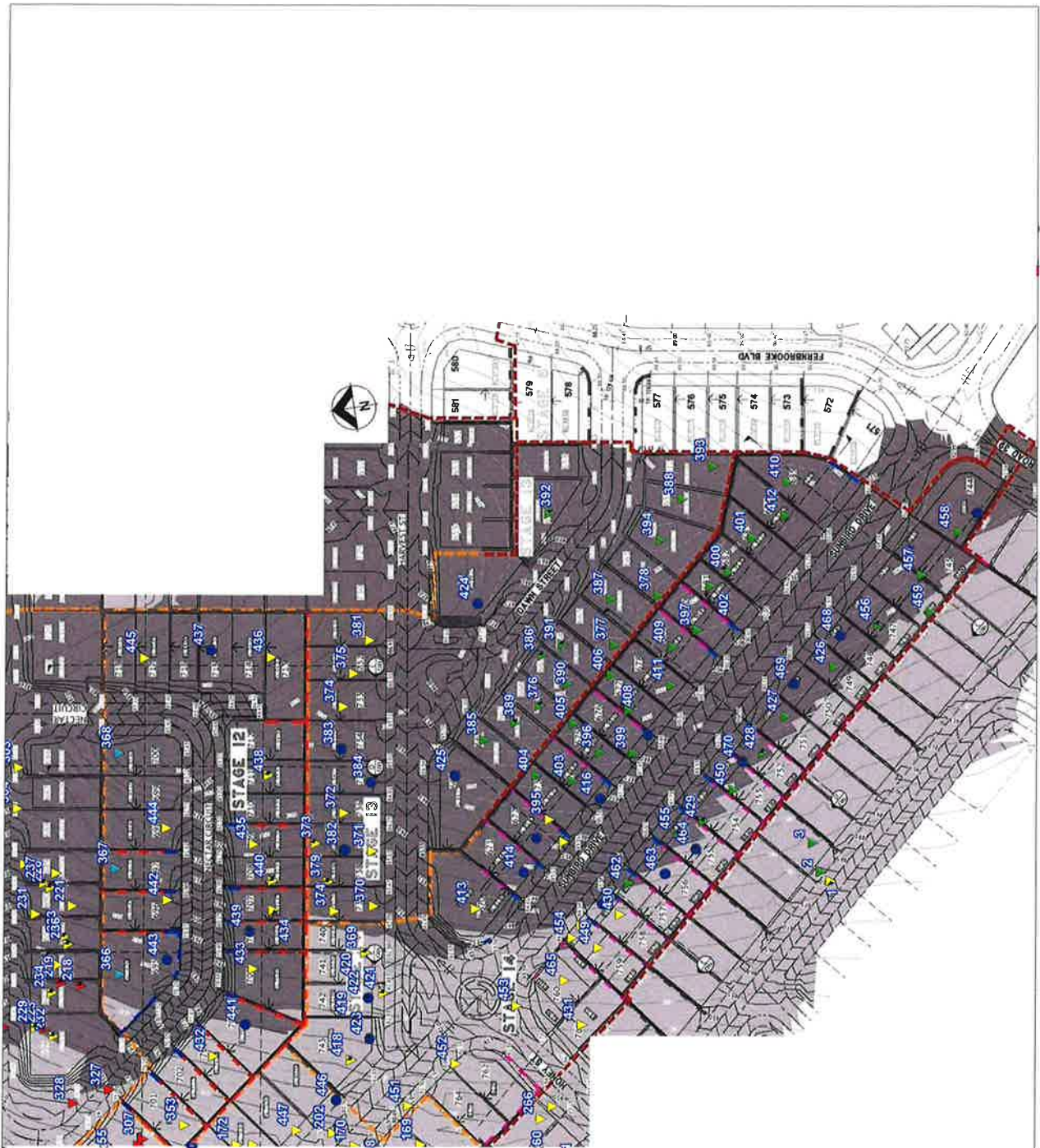
If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



**R. MITCHELL**  
For and on Behalf of  
**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▲ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▲ RL 95.00 - 104.99
- ▲ 0.00 - 0.99m Below Final Level
- Final Level

Map Description	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client	<b>SHADFORTH</b>
Project	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No	<b>DL18/334</b>
Drawing No	<b>DL18/334-01</b>
Scale	<b>Not to Scale</b>

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: [binsbanetab@morrisongeo.com.au](mailto:binsbanetab@morrisongeo.com.au)

Engineers: J. Daly,  
 D. Dragun, & J. Greenlee  
 Geologists: L. Bailey & R. Howcrin  
 Laboratory: M. Morrison, L. McDowall



Brisbane Office  
Job Number: DL18/334  
Ref No: 15206  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 661  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 661 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

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A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 661 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 661 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

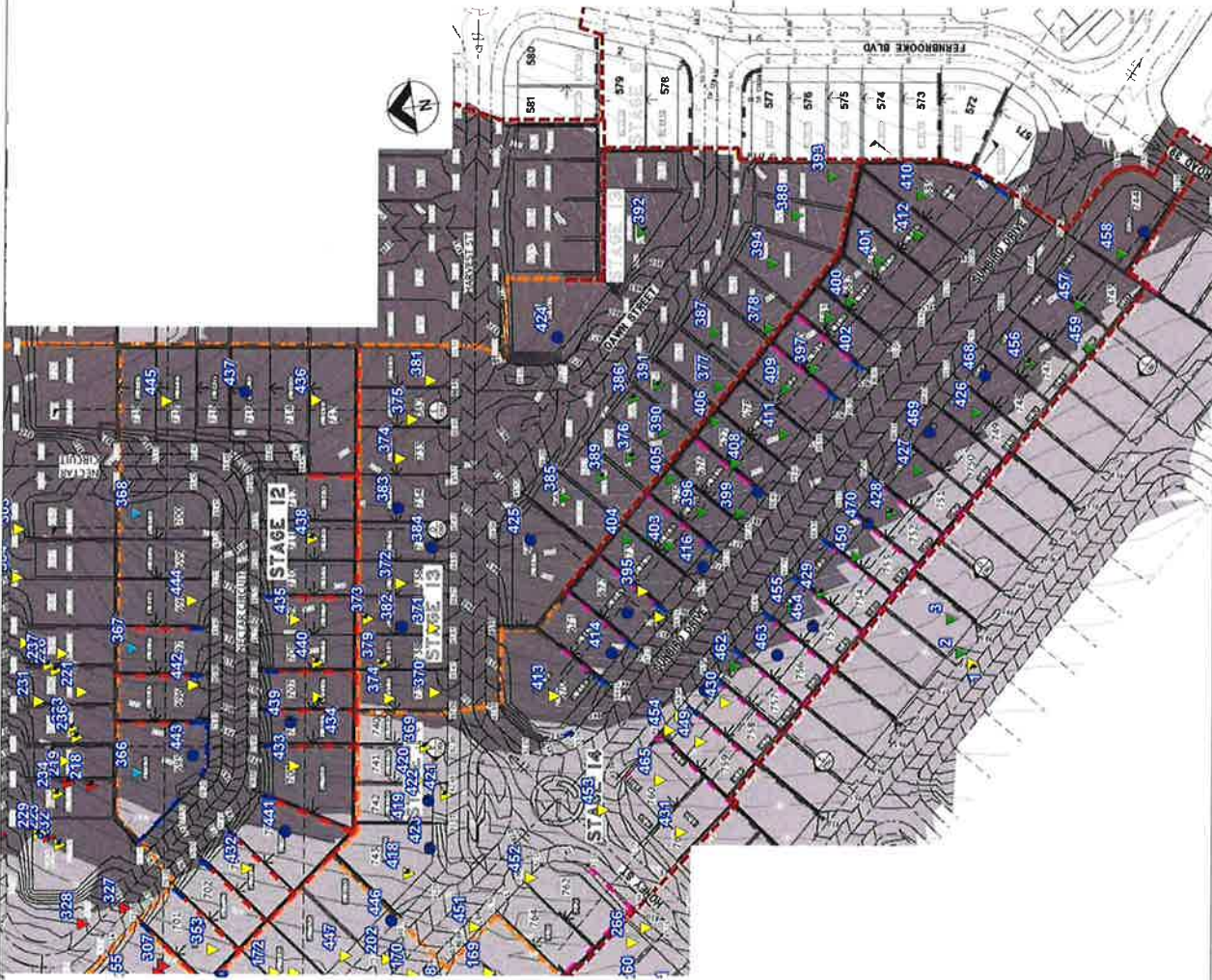


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection
Client	SHADFORTH'S
Project	EDENS CROSSING STAGES 12 - 14
Project No	DL18/334
Drawing No	DL18/334-01
Scale	Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
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**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: [brisbanelab@morrisongeo.com.au](mailto:brisbanelab@morrisongeo.com.au) Fax: 3279 0955

Engineers: J. Daly, D. Maguire, & J. Greenhirst  
 Geologists: L. Brown, R. L. Morrison, L. McDowall  
 Laboratory: M. Morrison, L. McDowall



Brisbane Office  
Job Number: DL18/334  
Ref No: 15207  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 662  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 662 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 662 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 662 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



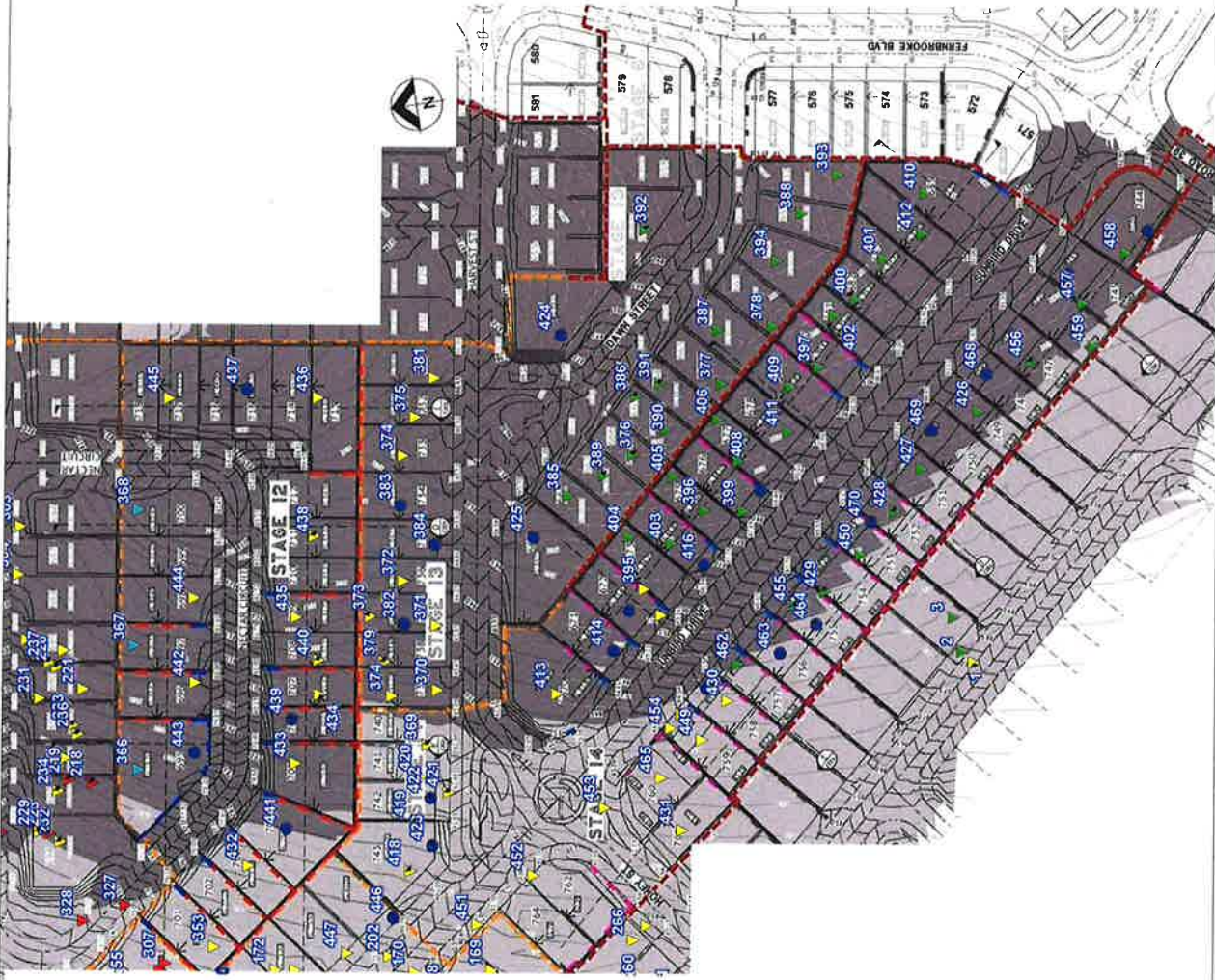
**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan





Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection
Client	SHADFORTH'S
Project	EDENS CROSSING STAGES 12 - 14
Project No	DL18/334
Drawing No	DL18/334-01
Scale	Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
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- 0.00 - 0.99m Below Final Level
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**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Engineers: J. Daly,  
 P. Duggins & J. Greenstreet  
 Geologists: L. Brown & S. McNeill  
 Laboratory: M. Morrison, L. McDowell

Unit 1/35 Limestone St, Darra 4076 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au Fax: 3279 0955



Brisbane Office  
Job Number: DL18/334  
Ref No: 15208  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 663  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 663 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

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- Notes on ETS Civil Drawings.

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Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 663 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 663 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

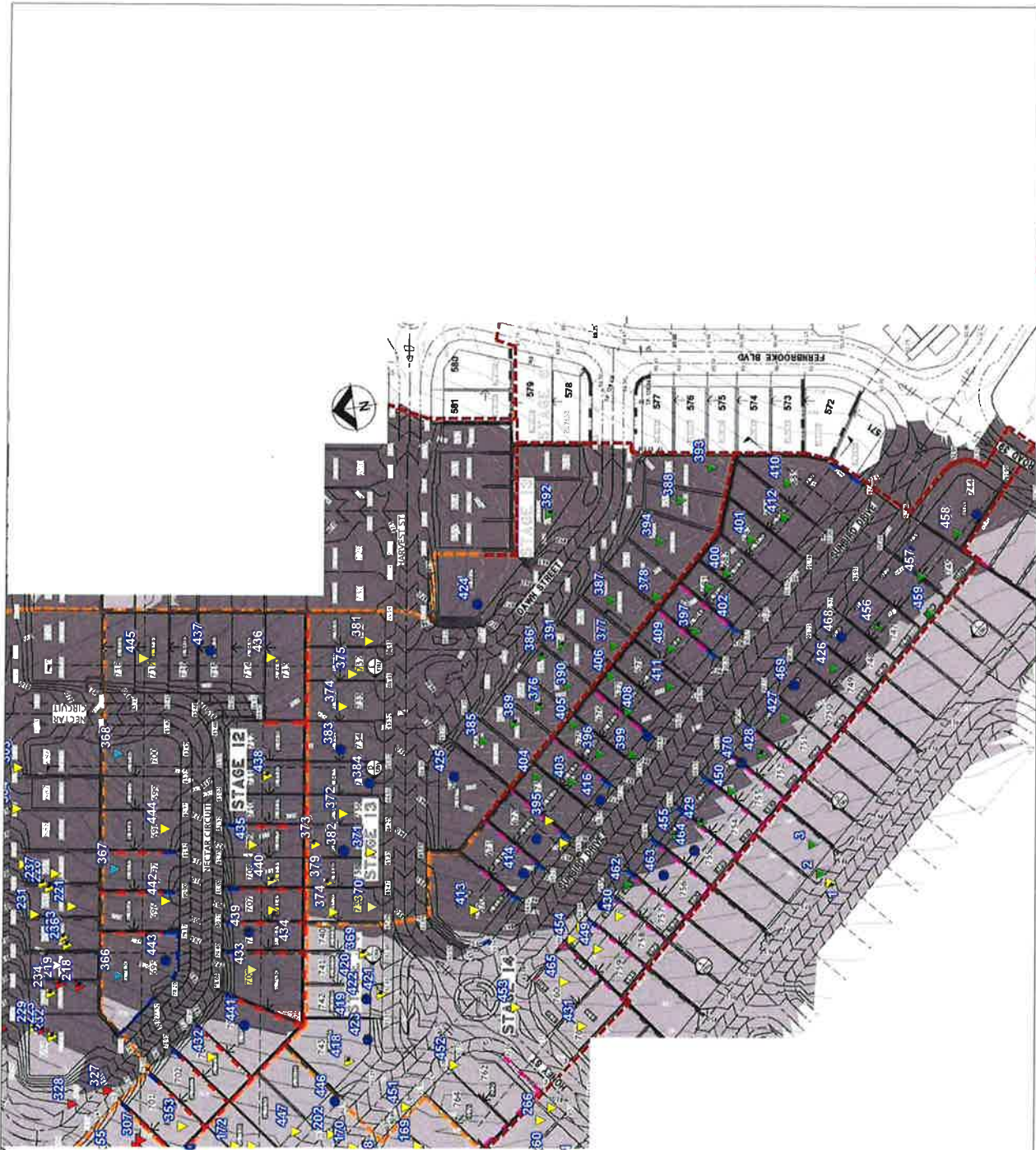


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client	<b>SHADFORTH</b>
Project	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No	<b>DL18/334</b>
Drawing No	<b>DL18/334-01</b>
Scale	<b>Not to Scale</b>

**LEGEND**

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**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au Fax: 3279 0955

Engineers: J. Daly,  
 D. Dragun, & J. Greentree  
 Geologists: M. Kelly & R. Hutchin  
 Laboratory: M. Morrison, L. McDowell

**MORRISON GEOTECHNIC**  
 LABORATORY

*Brisbane Office*  
*Job Number: DL18/334*  
*Ref No: 15209*  
*Author: R.Mitchell*

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 664  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 664 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

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A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 664 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 664 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

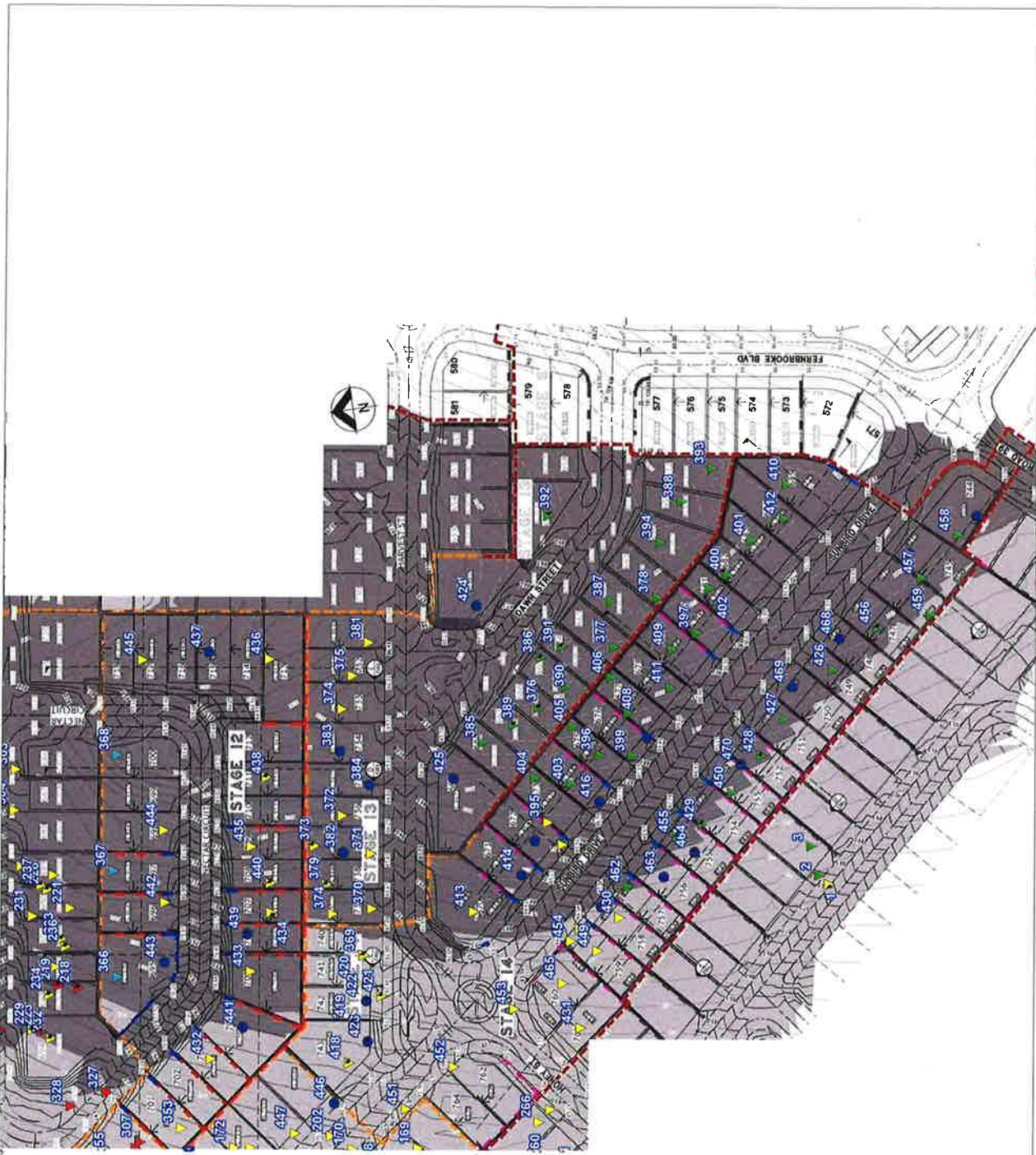


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection
Client	SHADFORTH'S
Project	EDENS CROSSING STAGES 12 - 14
Project No	DL18/334
Drawing No	DL18/334-01
Scale	Not to Scale

**LEGEND**

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- Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Engineers: J. Dalk,  
 D. Dwyer, & J. Christensen  
 Geologists: L. Bradley & G. Henschel  
 Laboratory: M. Morrison, L. McDowall

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3278 0900  
 Email: brisbanelab@morrisongeo.com.au Fax: 3278 0955



Brisbane Office  
Job Number: DL18/334  
Ref No: 15210  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 665  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 665 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

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A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 665 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 665 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

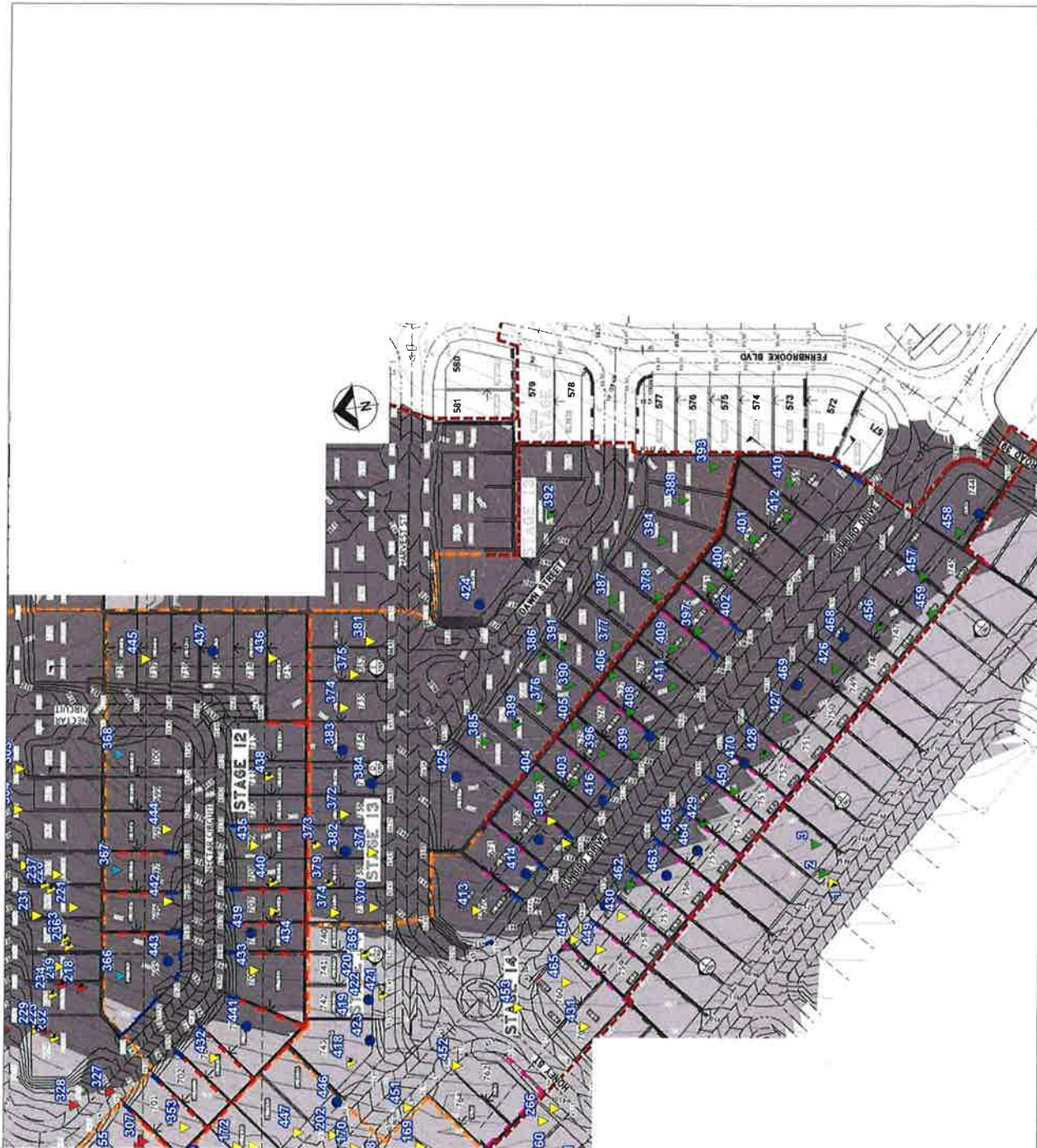
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Yours faithfully,



**R. MITCHELL**  
For and on Behalf of  
**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



- LEGEND**
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**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: mtsbanelab@morrisongeo.com.au

Engineers: J Daly,  
 D Dragun, & J Greenhree  
 Geologists: L Bailey & R Howchin  
 Laboratory: M Morrison, L McDowall

Map Description: **EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection**  
 Client: **SHADFORTH'S**  
 Project: **EDENS CROSSING STAGES 12 - 14**  
 Project No: **DL18/334** Drawing No: **DL18/334-01** Scale: **Not to Scale**



Brisbane Office  
Job Number: DL18/334  
Ref No: 15211  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 666  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 666 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

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A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 666 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 666 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

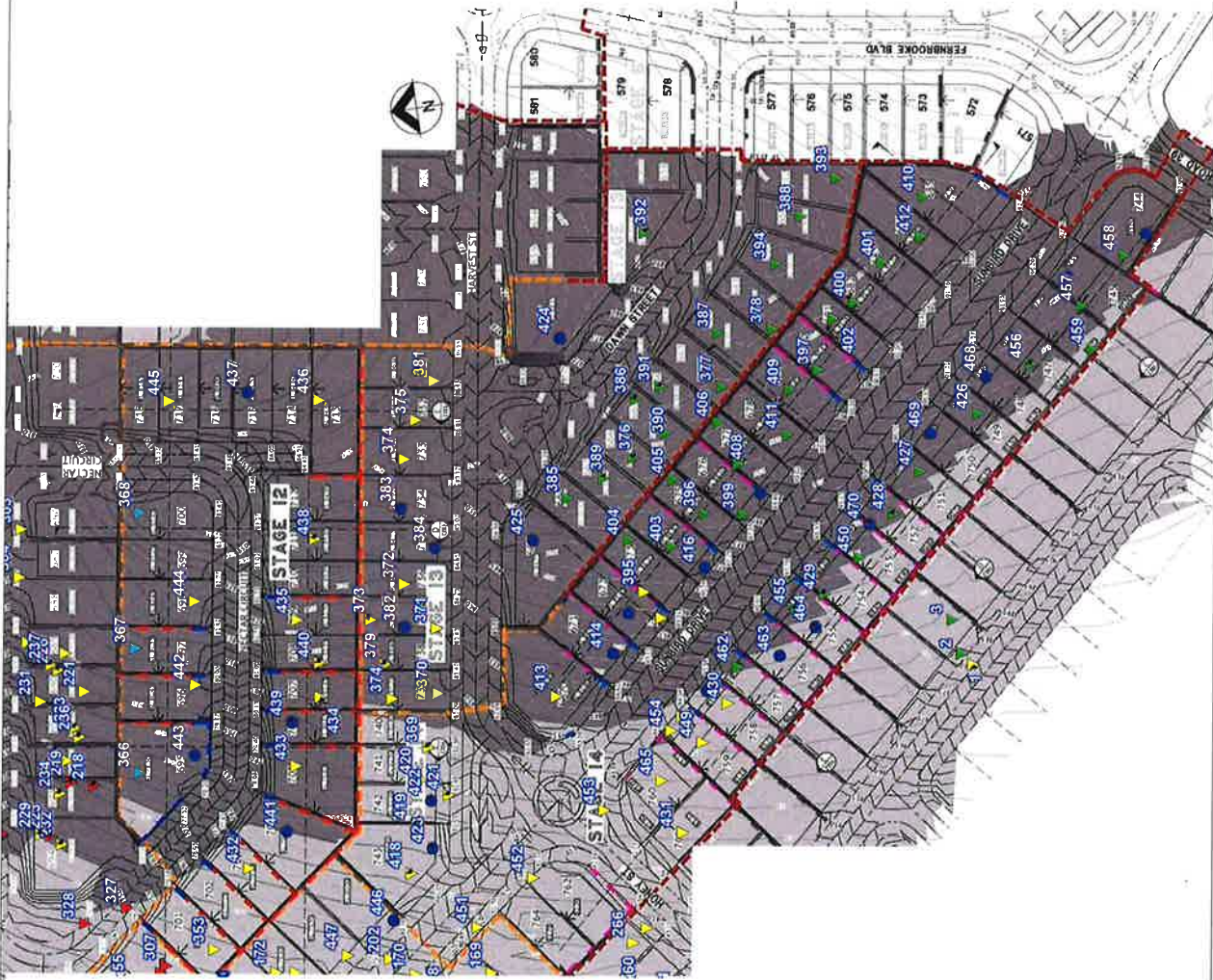


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



**LEGEND**

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Map Description	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client	<b>SHADFORTH'S</b>
Project	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No	<b>DL18/334</b>
Drawing No	<b>DL18/334-01</b>
Scale	<b>Not to Scale</b>

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 17/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au

Engineers: J Daily, O Dragun, & J Greentree  
 Geologists: Moxey & R Howarth  
 Laboratory: M Morrison, L McDowell



Brisbane Office  
Job Number: DL18/334  
Ref No: 15212  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 667  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 667 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 667 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 667 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

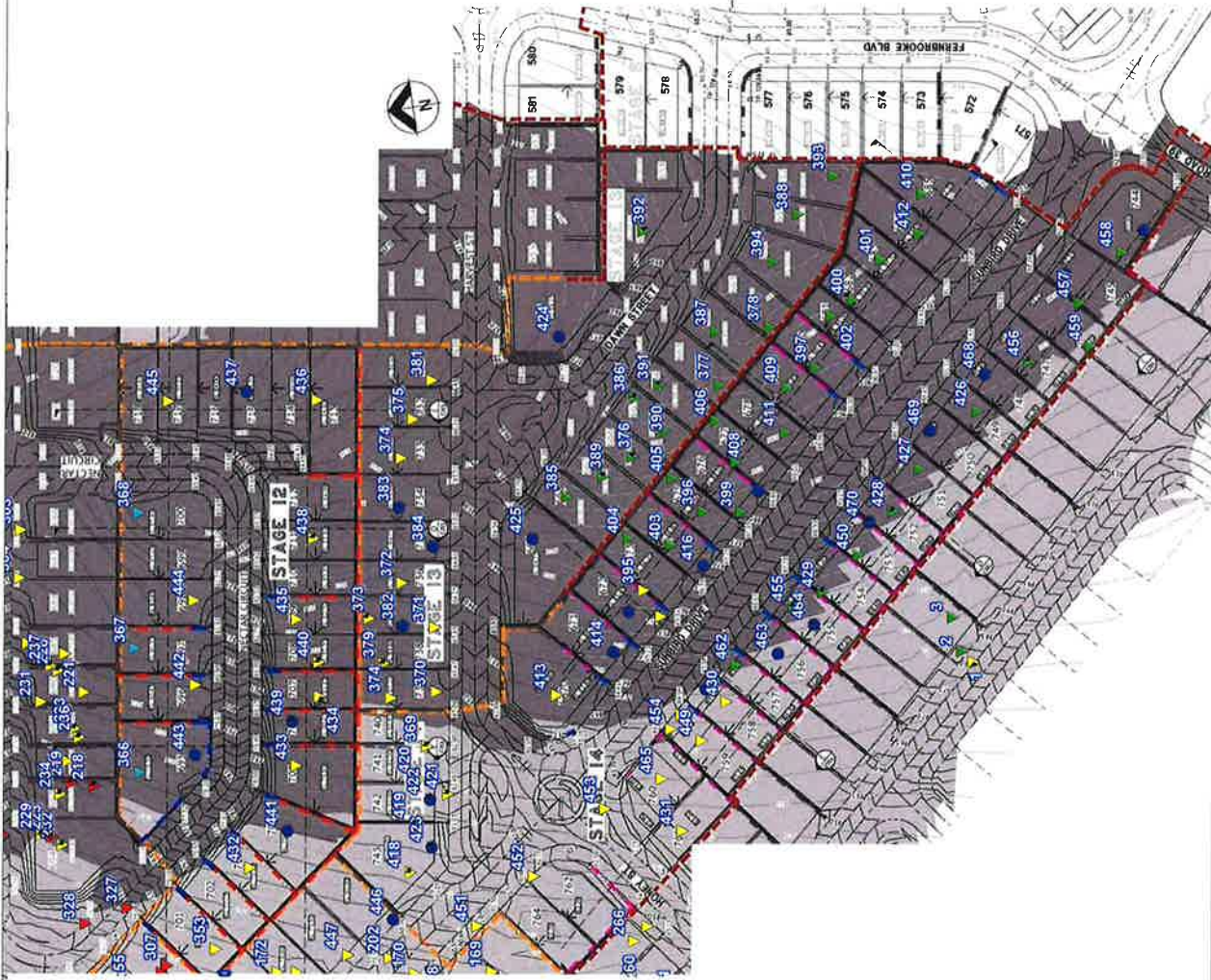


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection		
Client	SHADFORTH'S		
Project	EDENS CROSSING STAGES 12 - 14		
Project No	DL18/334	Drawing No.	DL18/334-01
		Scale	Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL 95.00 - 104.99
- 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Engineers: J. Daly,  
 D. Dragun, & J. Greentree  
 Geologists: M. Baxby & R. Novicim  
 Laboratory: M. Morrison, L. McDowall

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au  
 Fax: 3279 0955





*Brisbane Office*  
*Job Number: DL18/334*  
*Ref No: 15214*  
*Author: R.Mitchell*

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 668  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 669 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 669 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 669 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

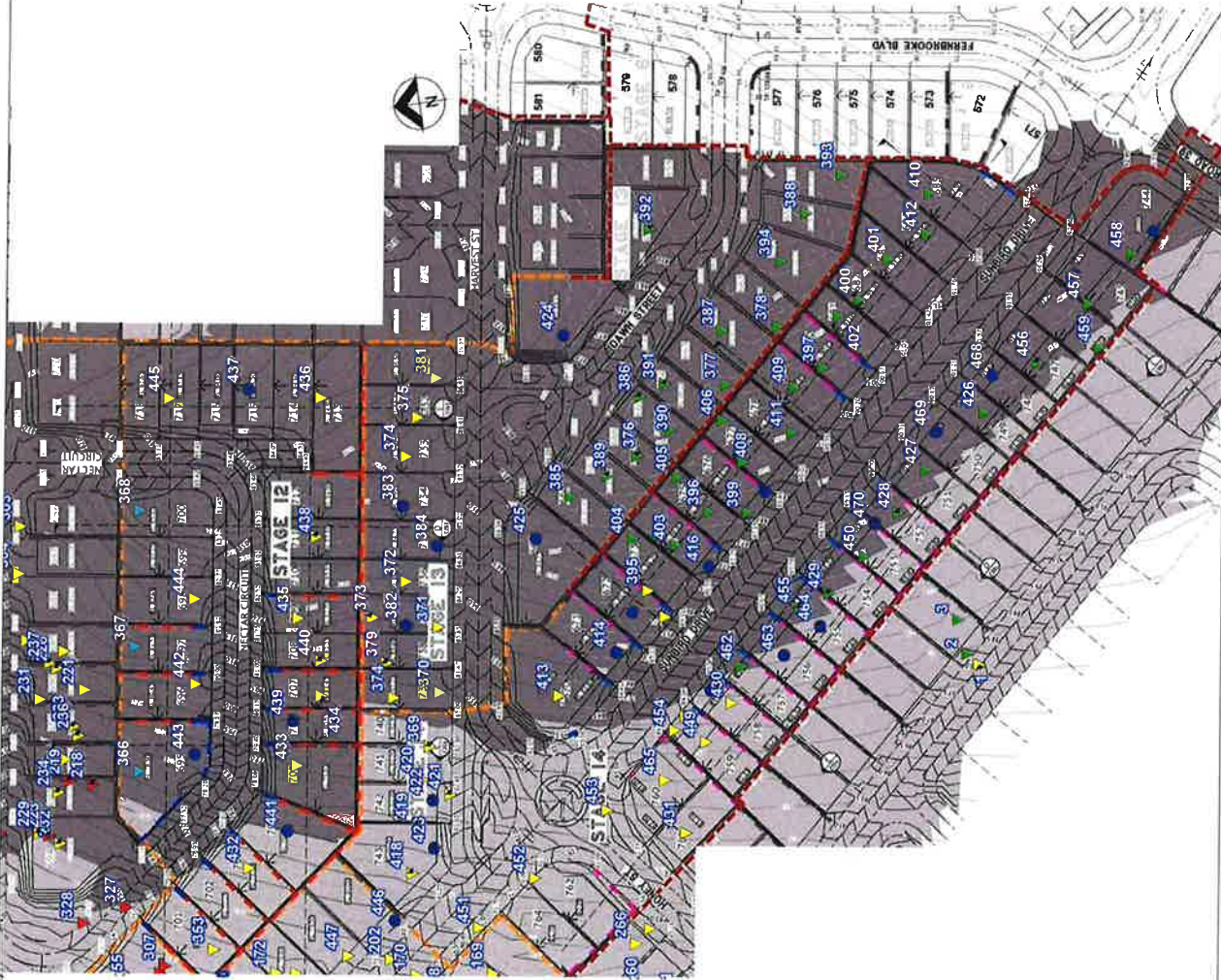


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL - 95.00 - 104.99
- 0.00 - 0.99m Below Final Level
- Final Level

Map Description:	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client:	<b>SHADFORTH'S</b>
Project:	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No:	<b>DL18/334</b>
Drawing No:	<b>DL18/334-01</b>
Scale:	<b>Not to Scale</b>

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 57 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Email: [brisbane@morrisongeotech.com.au](mailto:brisbane@morrisongeotech.com.au)

Ph: 3279 0900  
 Fax: 3279 0955

Engineers: J Daily, D Dragan, & J Greentree  
 Geologists: G R. Worthington  
 Laboratory: M. Morrison, L. McDowall



Brisbane Office  
Job Number: DL18/334  
Ref No: 15214  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT ~~668~~ 669  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 669 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

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The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
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- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 669 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 669 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

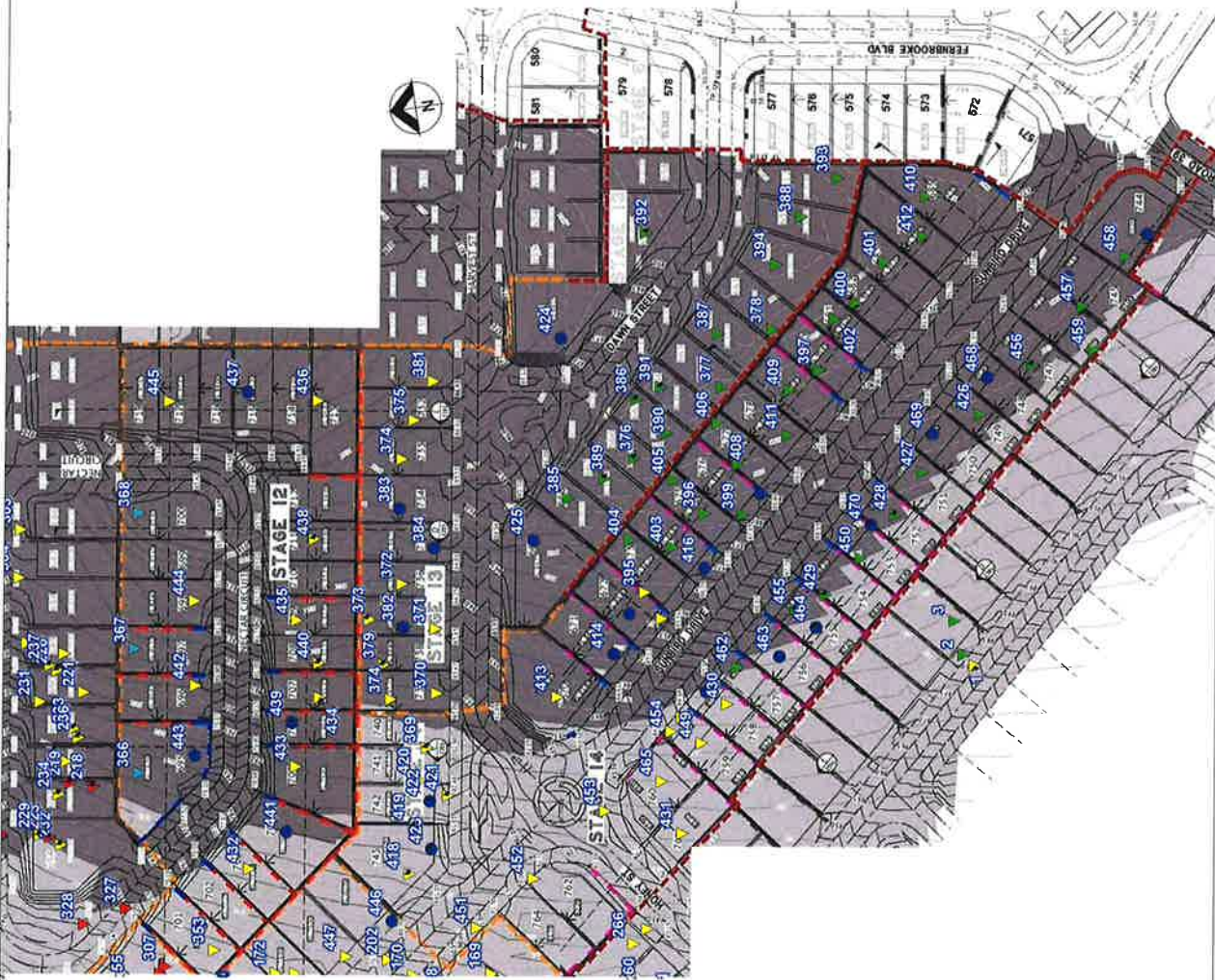


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client	<b>SHADFORTH'S</b>
Project	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No	DL18/334
Drawing No	DL18/334-01
Scale	Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL 95.00 - 104.99
- 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**

ABN: 51 009 878 899

Engineers: J Daly,  
D Dwyer, & J Greenacre  
Geologists: L Baxley & R Howchin  
Laboratory: M Morrison, L McDowell

Ph: 3279 0900  
Fax: 3279 0955

Unit 1, 25 Limestone St, Darra 4076  
Email: brisbane@morrisongeotech.com.au



*Brisbane Office*  
*Job Number: DL18/334*  
*Ref No: 15215*  
*Author: R. Mitchell*

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 731  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 731 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 731 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 731 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



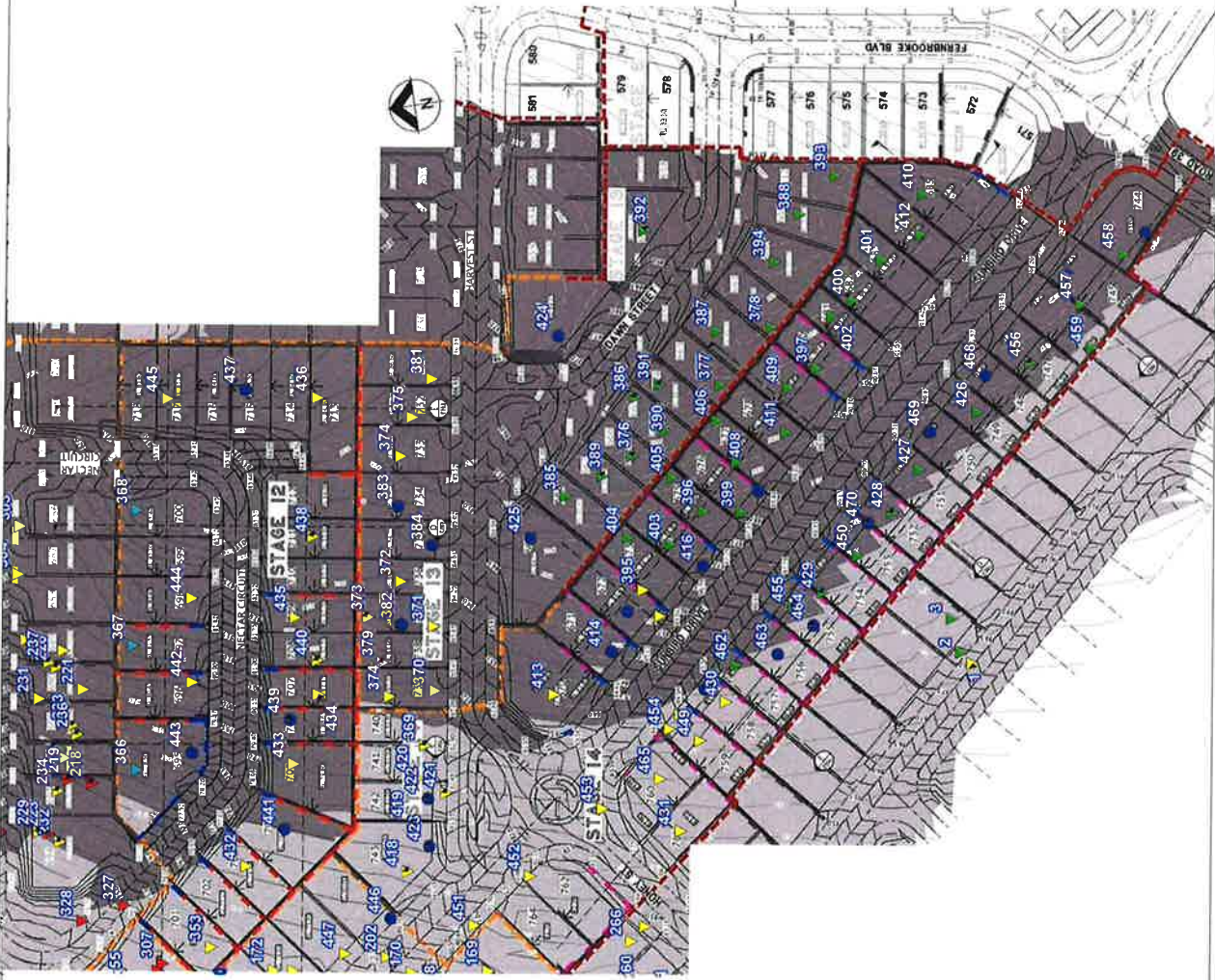
**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan





Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection
Client	SHADFORTH'S
Project	EDENS CROSSING STAGES 12 - 14
Project No	DL18/334
Drawing No	DL18/334-01
Scale	Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL 95.00 - 104.99
- ▲ 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 876 899

Unit 1/35 Limestone St, Darra 4076  
 Email: brisbane@morrisongeo.com.au

Ph: 3279 0900  
 Fax: 3279 0955

Engineers: J. Daly, D. Dragan & J. Greenlee  
 Geologists: L. Baxley & R. Hovchin  
 Laboratory: M. Morrison, L. McDowell

Brisbane Office  
Job Number: DL18/334  
Ref No: 15216  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 732  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 732 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
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- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 732 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 732 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description	EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection		
Client	SHADFORTH'S		
Project	EDENS CROSSING STAGES 12 - 14		
Project No	DL18/334	Drawing No	DL18/334-01
			Scale : Not to Scale

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▲ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▲ RL 95.00 - 104.99
- ▲ 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 889

Engineers: J. Daly,  
 D. Moran & J. Greenacre  
 Geologists: L. Bradley & R. McInchey  
 Laboratory: M. Morrison, L. McDowell

Unit 1/35 Limestone St, Darra 4076 Ph: 3279 0900  
 Email: brisbane@morrisongeotech.com.au Fax: 3279 0955



Brisbane Office  
Job Number: DL18/334  
Ref No: 15217  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 733  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 733 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 733 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 733 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

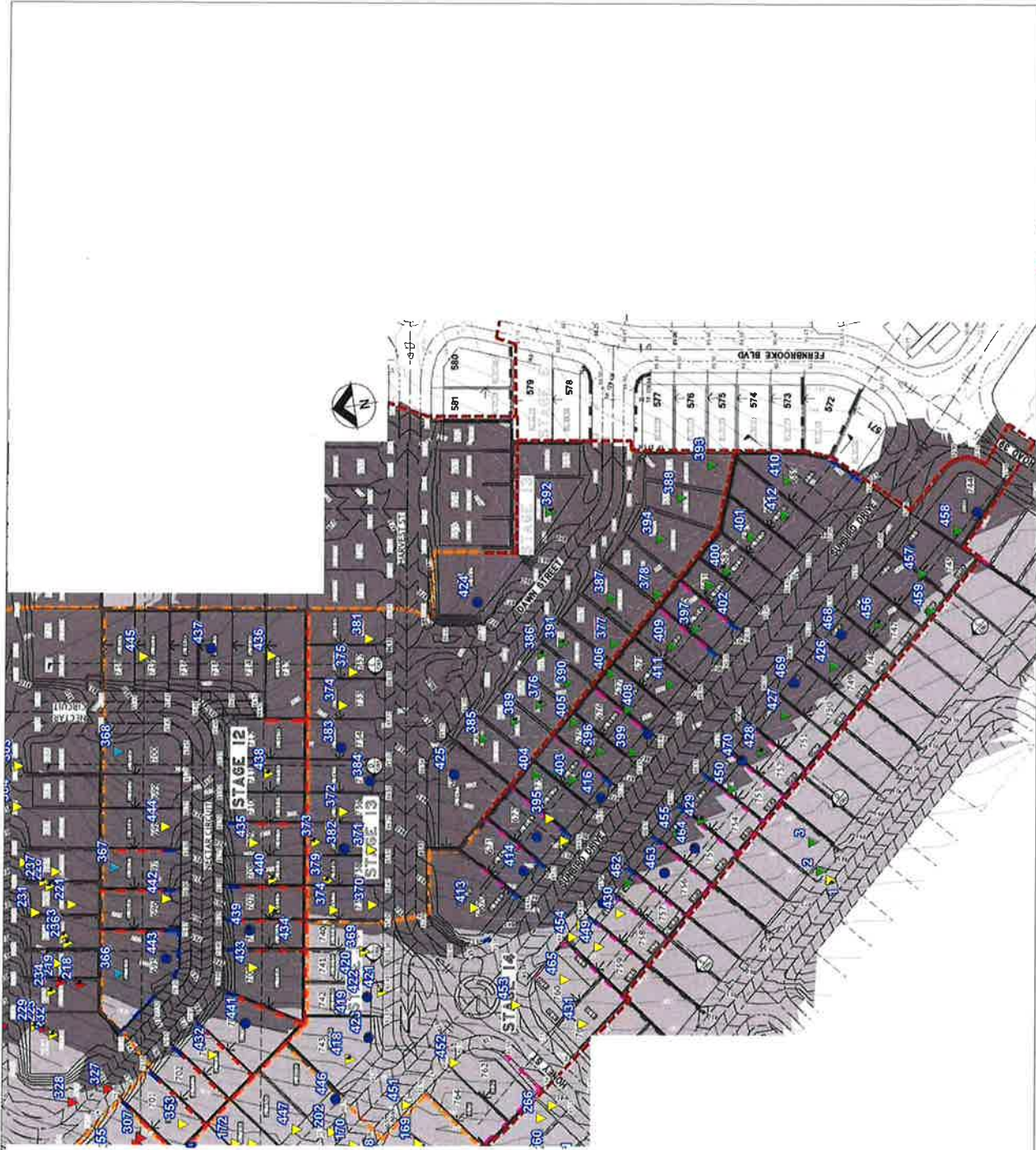


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description:	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client:	<b>SHADFORTH'S</b>
Project:	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No:	<b>DL18/334</b>
Drawing No:	<b>DL18/334-01</b>
Scale:	<b>Not to Scale</b>

**LEGEND**

▲	RL - 65.00 - 74.99
▼	RL - 75.00 - 84.99
▲	RL - 85.00 - 94.99
▼	RL 95.00 - 104.99
▲	0.00 - 0.99m Below Final Level
●	Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: brisbane@morrisongeotech.com.au

Engineers: J. Daly, O. Dragun, & J. Greentree  
 Geologists: D. Drisley & R. Frowdman  
 Laboratory: M. Morrison, L. McDowall



Brisbane Office  
Job Number: DL18/334  
Ref No: 15218  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 734  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 734 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
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Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.



Fill constructed on Lot 734 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 734 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

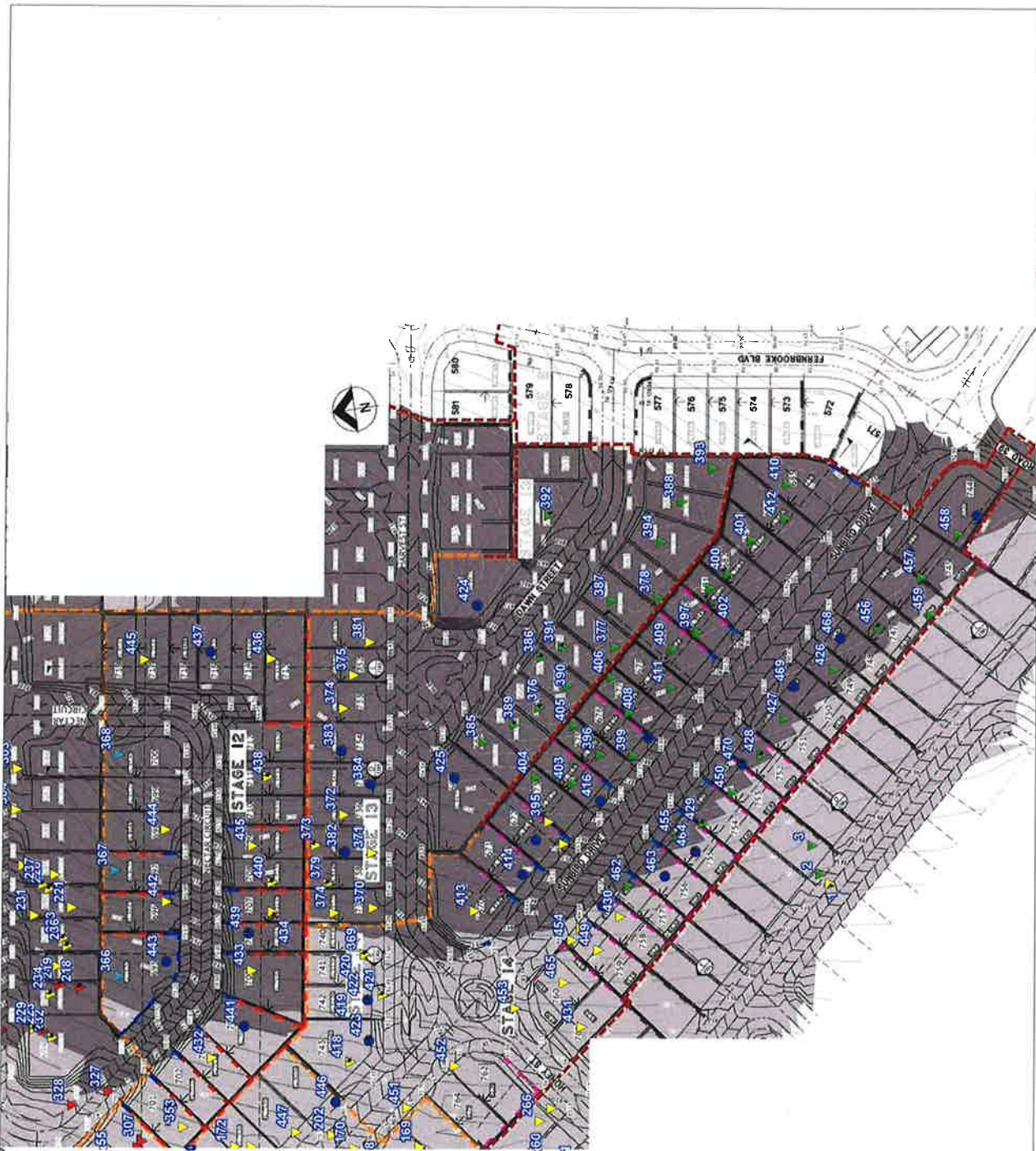


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



- LEGEND**
- ▲ RL - 65.00 - 74.99
  - ▼ RL - 75.00 - 84.99
  - ▲ RL - 85.00 - 94.99
  - ▼ RL 95.00 - 104.99
  - ▲ 0.00 - 0.99m Below Final Level
  - Final Level

Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>		
Client :	SHADFORTH'S		
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>		
Project No :	DL18/334	Drawing No :	DL 18/334-01
		Scale :	Not to Scale

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Email: [brisbane@lab@morrisongeo.com.au](mailto:brisbane@lab@morrisongeo.com.au)

Engineers: J. Daly, D. Duggan, & J. Greenfree  
 Geologists: D. Duggan & R. H. ...  
 Laboratory: M. Morrison, L. McDowell

Ph: 3279 0900  
 Fax: 3279 0955



Brisbane Office  
Job Number: DL18/334  
Ref No: 15219  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 735  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 735 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
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- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 735 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 735 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

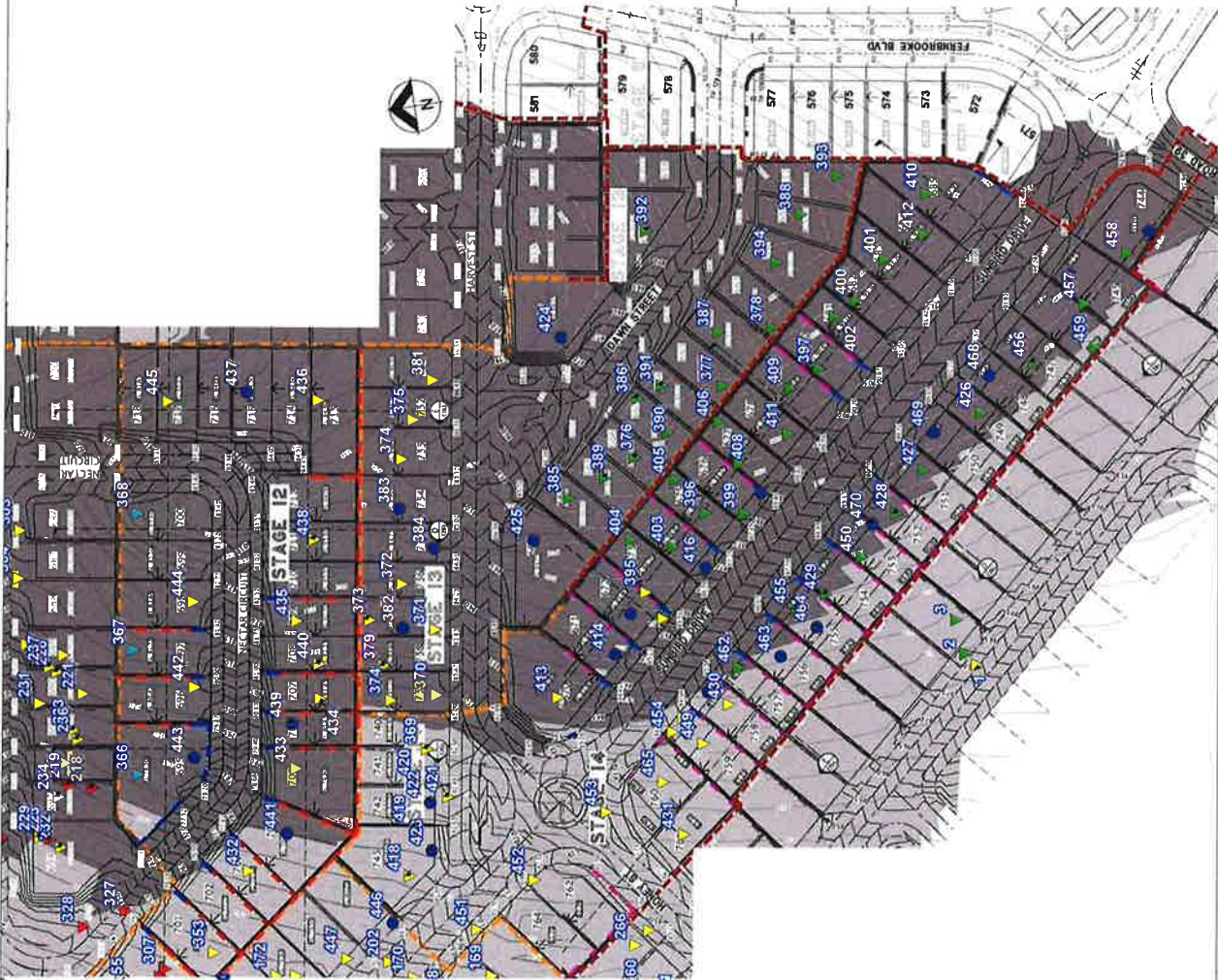


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: [brisbane@morrisongeotech.com.au](mailto:brisbane@morrisongeotech.com.au)

Engineers: J. Daly, D. Davis, & J. Greenstreet  
 Geologists: L. Bailey & R. Howchin  
 Laboratory: M. Morrison, L. McDowall

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL - 95.00 - 104.99
- ▲ 0.00 - 0.99m Below Final Level
- Final Level

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**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: [brisbane@morrisongeotech.com.au](mailto:brisbane@morrisongeotech.com.au)

**Map Description:** EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection

**Client:** SHADFORTH'S

**Project:** EDENS CROSSING STAGES 12 - 14

**Project No:** DL18/334     **Drawing No:** DL18/334-01     **Scale:** Not to Scale

Brisbane Office  
Job Number: DL18/334  
Ref No: 15220  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 736  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 736 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 736 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 736 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

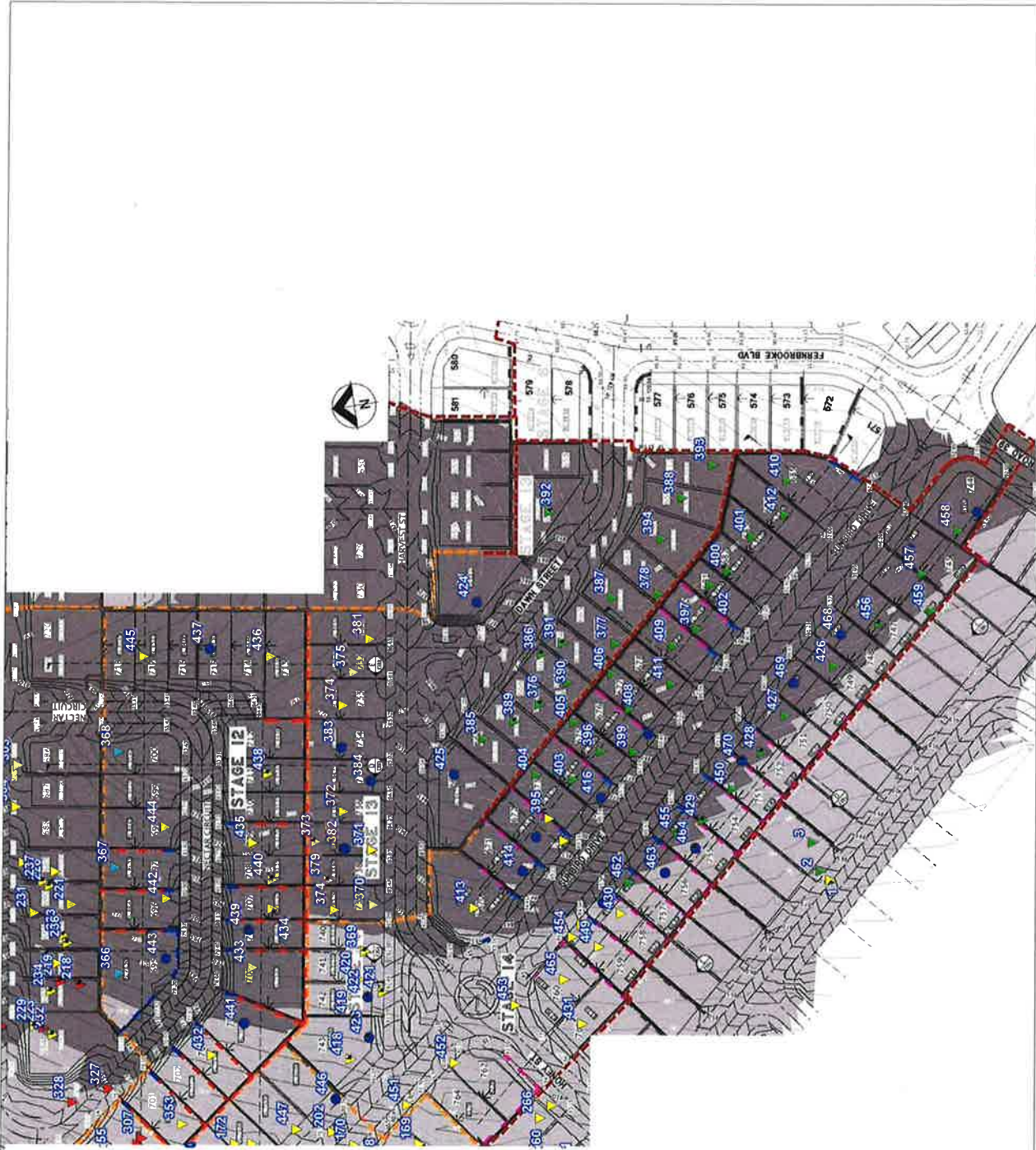


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description:	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client:	<b>SHADFORTH'S</b>
Project:	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No:	<b>DL18/334</b>
Drawing No:	<b>DL18/334-01</b>
Scale:	<b>Not to Scale</b>

**LEGEND**

▲	RL - 65.00 - 74.99
▼	RL - 75.00 - 84.99
▲	RL - 85.00 - 94.99
▼	RL 95.00 - 104.99
●	0.00 - 0.99m Below Final Level
●	Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Ph: 3279 0900  
 Email: brisbanelab@morrisongeo.com.au

Engineers: J. Daly,  
 D. Dragun, & J. Greentree  
 Geologists: D. Drayley & R. Lynch  
 Laboratory: M. Morrison, L. McDowell





Brisbane Office  
Job Number: DL18/334  
Ref No: 15221  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 737  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 737 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 737 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 737 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

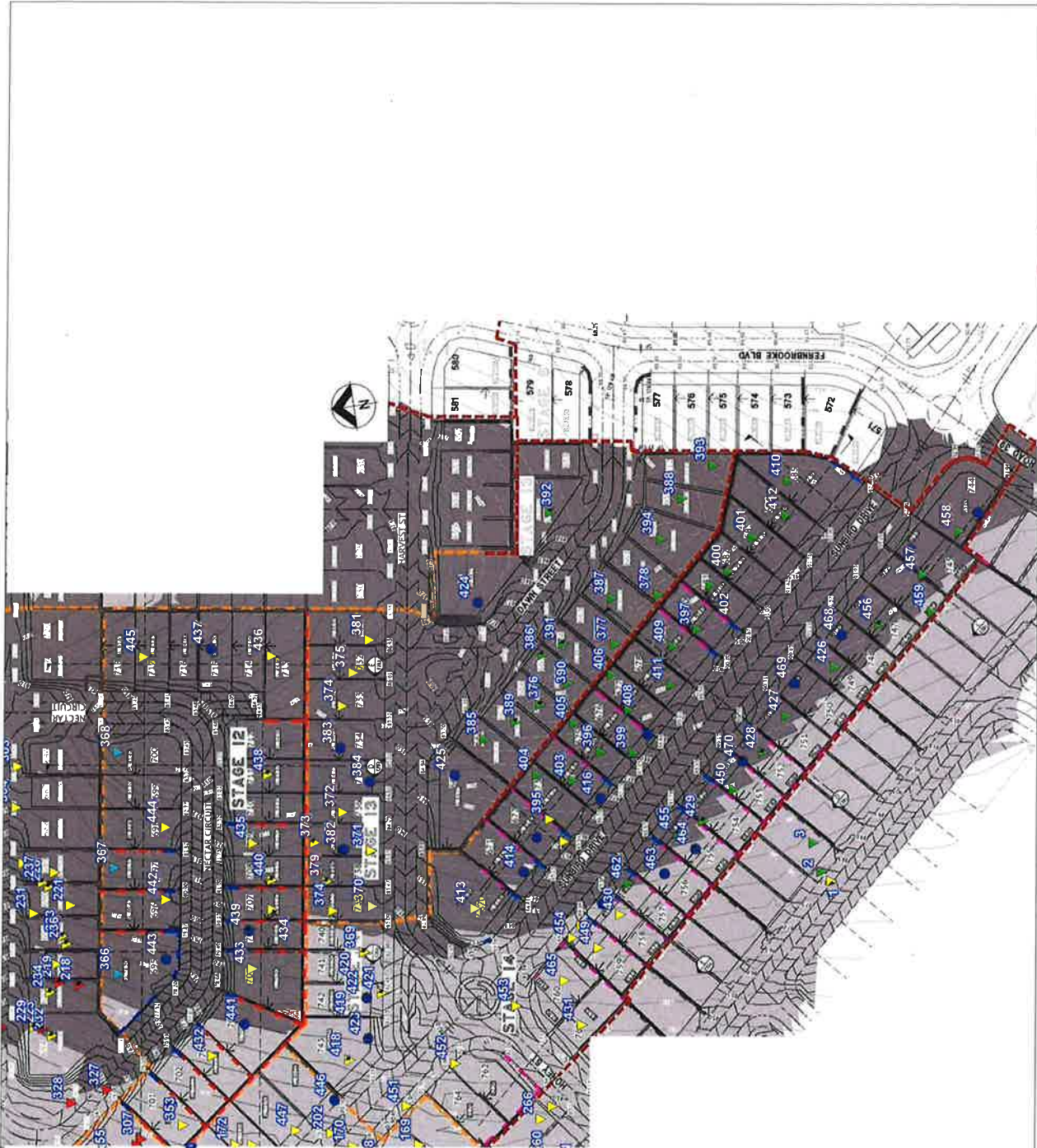


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client :	<b>SHADFORTH'S</b>
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No :	<b>DL18/334</b>
Drawing No :	<b>DL18/334-01</b>
Scale :	<b>Not to Scale</b>

**LEGEND**

▲	RL - 65.00 - 74.99
▼	RL - 75.00 - 84.99
▲	RL - 85.00 - 94.99
▼	RL 95.00 - 104.99
●	0.00 - 0.99m Below Final Level
●	Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Derra 4076  
 Email: brisbanelae@morrisongeo.com.au

Ph: 3279 0900  
 Fax: 3279 0955

Engineers: J Daly,  
 O Dragan, & J Greentree  
 Geologists: Bradley & R Powchin  
 Laboratory: M Morrison, L McDowell



Brisbane Office  
Job Number: DL18/334  
Ref No: 15222  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 738  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 738 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

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- Ipswich City Council Specifications.
- Notes on ETS Civil Drawings.

Level One Inspections and Testing was carried out on the stripped ground surfaces and during the placement and compaction of fill materials. Field and laboratory testing included proof roll testing of the stripped surface, field density testing using the nuclear soil moisture density gauge and standard Compactions.

Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 738 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 738 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

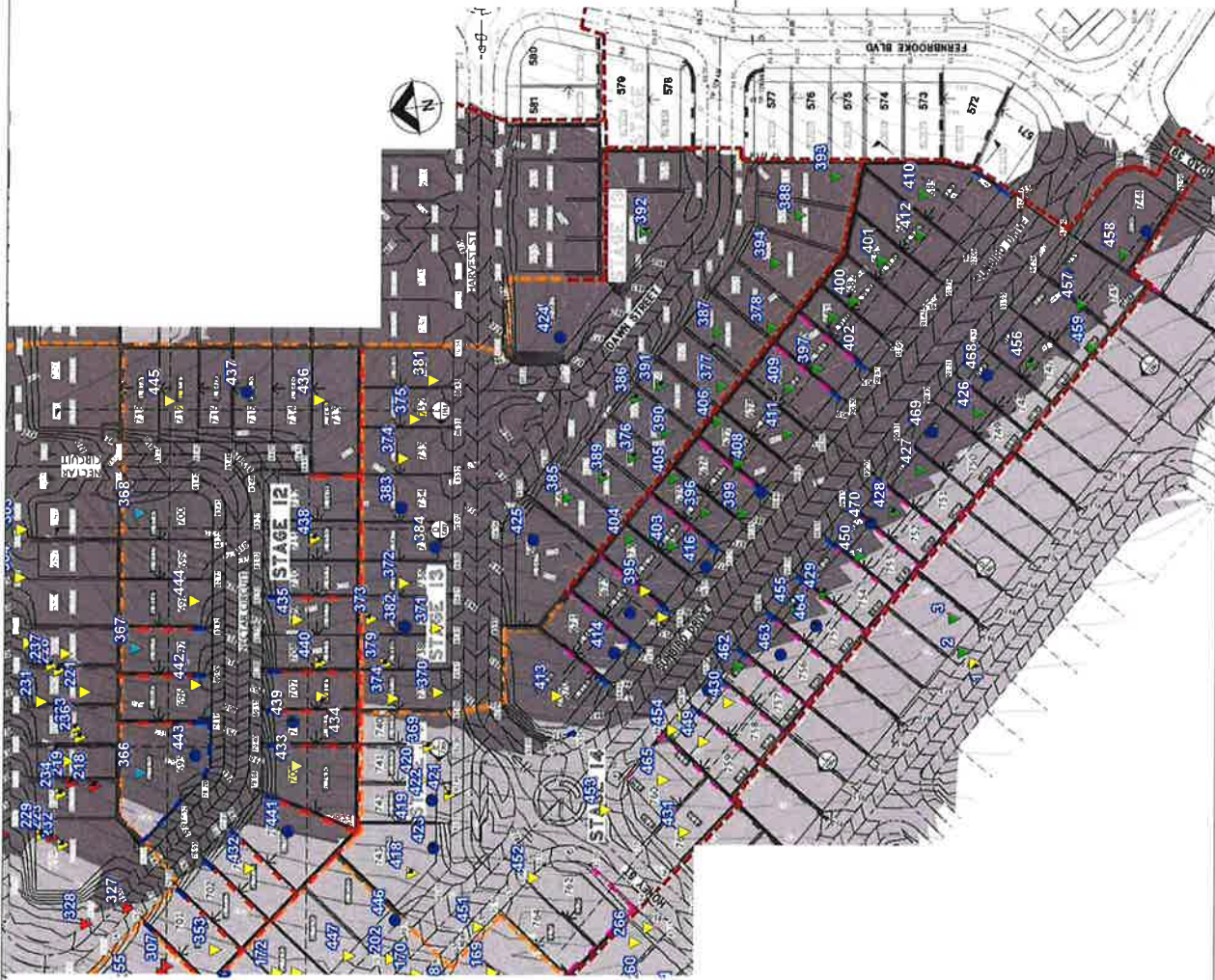


**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



Map Description:	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client:	<b>SHADFORTH'S</b>
Project:	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No:	<b>DL18/334</b>
Drawing No:	<b>DL18/334-01</b>
Scale:	<b>Not to Scale</b>

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL 95.00 - 104.99
- ▲ 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**

ABN: 51 009 879 899

Engineers: J Daly,  
D Rippon & J Greenlee  
Geologists: L Baxton & R Howarth  
Laboratory: M Morrison, L McDowall

Unit 1/35 Limestone St, Derra 4076 Ph: 3279 0900  
Email: brisbane@morrisongeoco.com.au Fax: 3279 0955



Brisbane Office  
Job Number: DL18/334  
Ref No: 15223  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 739  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 739 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
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A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 739 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 739 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



**R. MITCHELL**  
For and on Behalf of  
**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan





Map Description:	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client:	<b>SHADFORTH'S</b>
Project:	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No:	<b>DL18/334</b>
Drawing No:	<b>DL18/334-01</b>
Scale:	<b>Not to Scale</b>

**LEGEND**

▲	RL - 65.00 - 74.99
▲	RL - 75.00 - 84.99
▲	RL - 85.00 - 94.99
▲	RL 95.00 - 104.99
▲	0.00 - 0.99m Below Final Level
●	Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/ 35 Limestone St, Deira 4076  
 Ph: 3279 0900  
 Email: [msbanelab@morrisongeo.com.au](mailto:msbanelab@morrisongeo.com.au)

Engineers: J Daly,  
 D Dragun, & J Greentree  
 Geologists: L Baxley & R Howchin  
 Laboratory: M Morrison, L McDowall



Brisbane Office  
Job Number: DL18/334  
Ref No: 15224  
Author: R. Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 1112  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 1112 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
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- Notes on ETS Civil Drawings.

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Compaction testing at the Eden's Crossing Stage 13 Development was carried out at a frequency of 1 test per 500m<sup>3</sup> of placed and compacted fill as defined in AS3798 Table 8.1. Test locations were selected using Random Stratified methods. Compaction testing was carried out at frequencies representative of the fill volume as a mass. On this basis, compaction testing was not required on each individual Lot.

A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 1112 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 1112 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

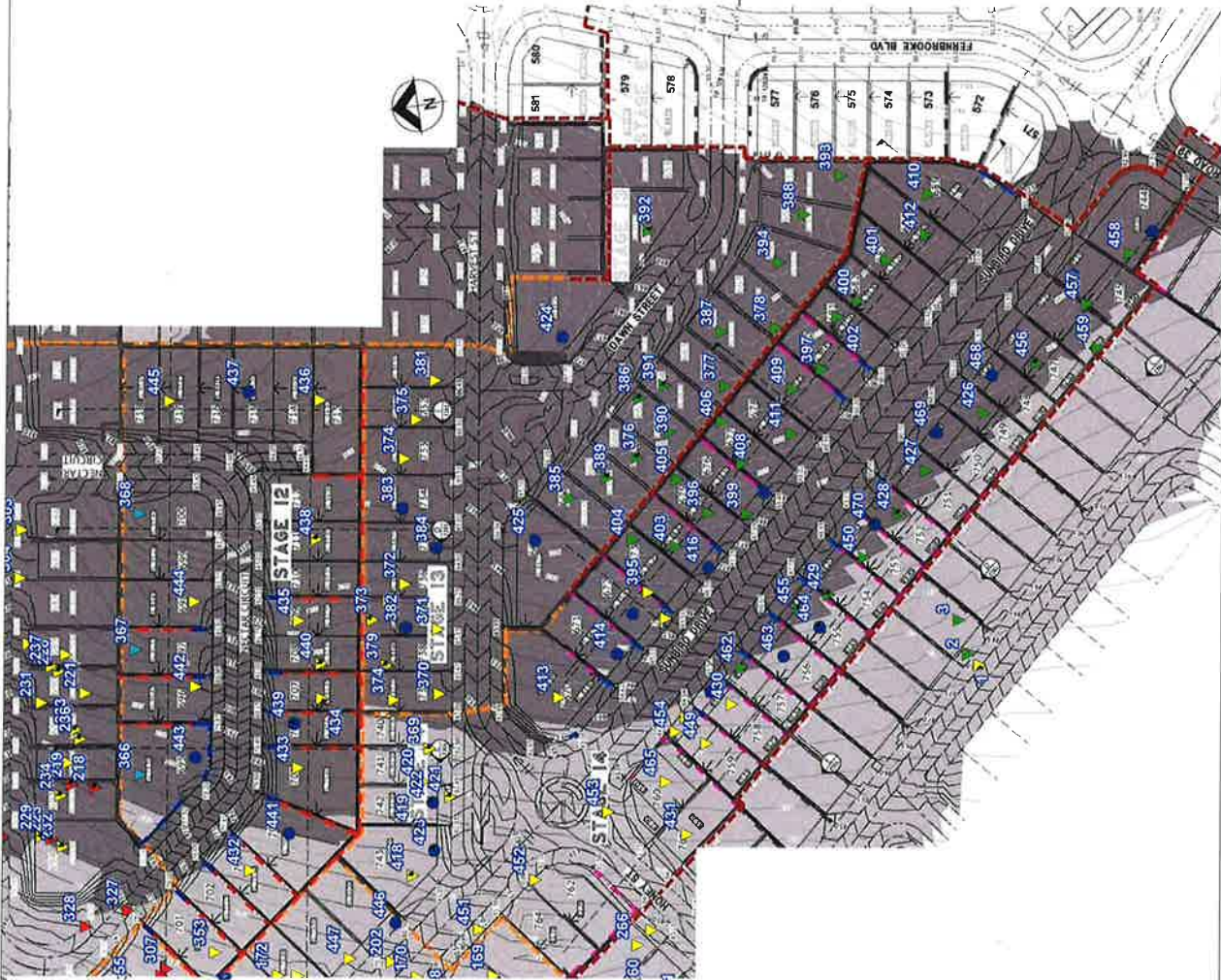
If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,



**R. MITCHELL**  
For and on Behalf of  
**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▼ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▼ RL - 95.00 - 104.99
- 0.00 - 0.99m Below Final Level
- Final Level

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

Unit 1/35 Limestone St, Darra 4076  
 Email: brisbane@morrisongeotech.com.au

Ph: 3279 0900  
 Fax: 3279 0955

Engineers J Daly,  
 D Dragan, & J Greentree  
 Geologists  
 Laboratory: M Morrison, L McDonnell

Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client :	<b>SHADFORTH'S</b>
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No :	<b>DL18/334</b>
Drawing No :	<b>DL18/334-01</b>
Scale :	<b>Not to Scale</b>

Brisbane Office  
Job Number: DL18/334  
Ref No: 15204  
Author: R.Mitchell

30<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
99 Sandalwood Lane  
Forest Glen 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)

Dear Sir,

**RE: LOT 659  
LEVEL ONE COMPLIANCE REPORT FOR  
EARTHWORKS FILL CONSTRUCTION  
EDENS CROSSING STAGE 13**

Earthworks filling operations were carried out on Lot 659 at the above Development to form a working platform to support a future residential building.

Earthworks were constructed by Shadforths Civil (The Client) between November 2018 and July 2019.

This report should be read in conjunction with Morrison Geotechnic Report "15292 – DL18/334 Shadforths – Level One Compliance Report – Eden's Crossing Stage 13" Dated 28<sup>th</sup> August 2019.

The Brief from the Client for was limited to:

- Level One Inspection of the placement and compaction of fill materials in accordance with AS3798 2007 – "Guidelines on Earthworks for Commercial and Residential Developments";
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.
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A marked-up site plan shown the location of compaction testing is attached.

Fill constructed on Lot 659 has been observed to be placed and compacted in accordance with the Brief. The fill on Lot 659 can be termed as "Controlled Fill" in accordance with AS 2870-2011 "Residential Slabs and Footings".

This statement does not include any top soil, which may have been placed for use as Lot dressing or any other subsequent earthworks after July 2019.

If there are any queries concerning the above please do not hesitate to contact this office, or alternatively send to my email at [rmitchell@morrisongeo.com.au](mailto:rmitchell@morrisongeo.com.au).

Yours faithfully,

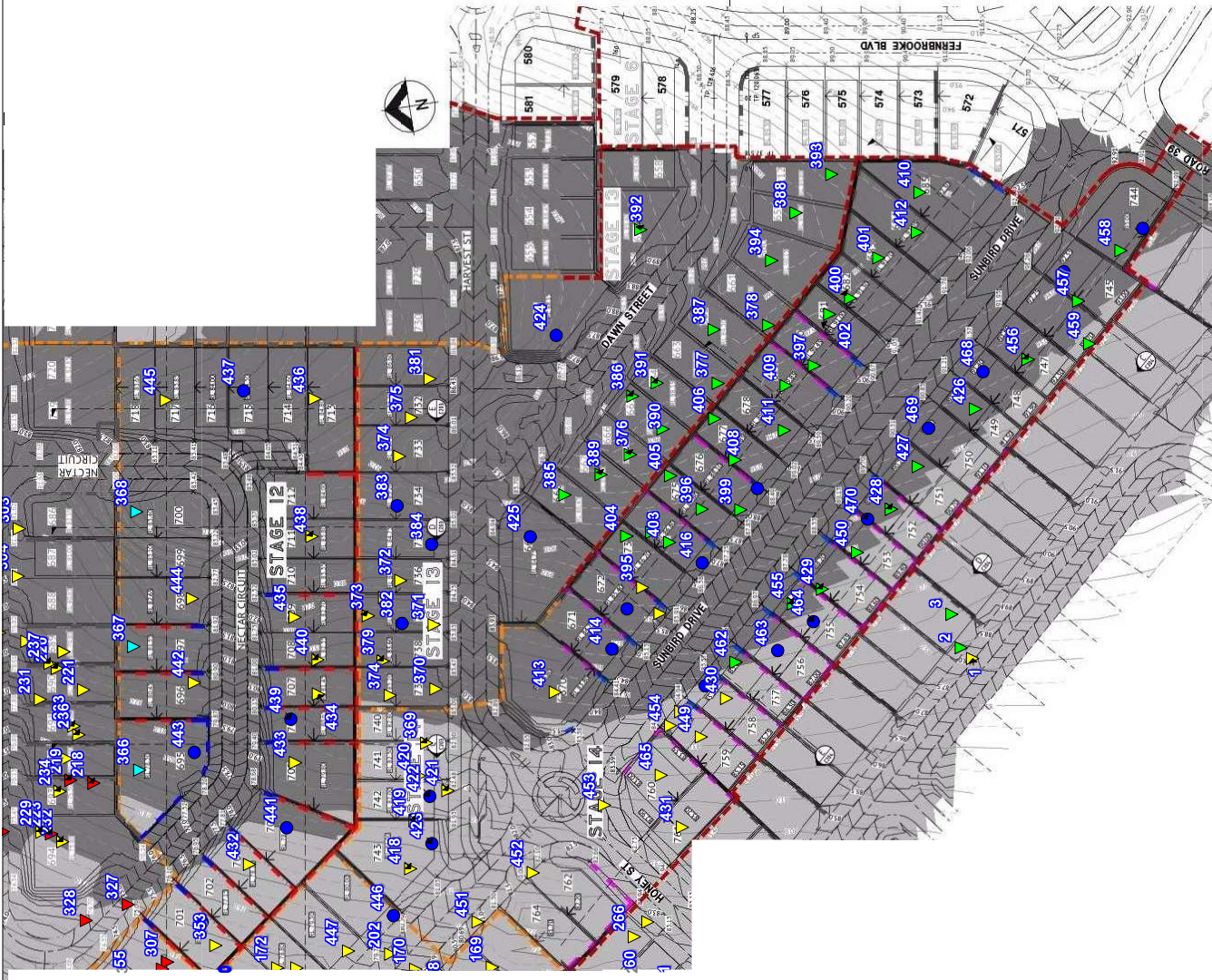
A handwritten signature in grey ink, appearing to read 'R. Mitchell', with a horizontal line extending to the right.

**R. MITCHELL**

For and on Behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

Encl: Marked Up Site Plan



- LEGEND**
- ▲ RL - 65.00 - 74.99
  - ▼ RL - 75.00 - 84.99
  - ▲ RL - 85.00 - 94.99
  - ▼ RL 95.00 - 104.99
  - ▲ 0.00 - 0.99m Below Final Level
  - Final Level

Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client :	<b>SHADFORTHS</b>
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No :	DL18/334
Drawing No :	DL18/334-01
Scale :	Not to Scale

**MORRISON GEOTECHNIC PTY LTD**  
 ABN: 51 009 878 899

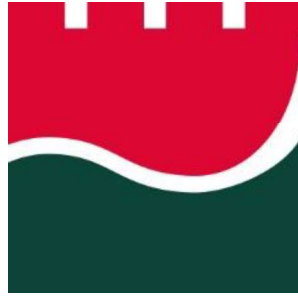
Unit: 1/35 Limestone St, Darra 4076  
 Email: brisbanelab@morrisongeo.com.au

Engineers: J. Day,  
 D. Dragun, & J. Greentree  
 Geologists: L. Baxley & R. Howchin  
 Laboratory: M. Morrison, L. McDowell

Ph: 3279 0900  
 Fax: 3279 0955



# MORRISON GEOTECHNIC PTY LTD



*SOLID THINKING // GROUNDED RESULTS*

## LEVEL ONE COMPLIANCE REPORT

*Prepared for:*

**Shadforths Civil Pty Ltd**

*DL18/334 – Bulk Earthworks Filling Operations*

*Eden's Crossing Estate – Stage 13*

*Mt Juillerat Drive, Redbank Plains*

*Morrison Geotechnic Pty Ltd  
ABN: 51 009 878 899  
[www.morrisongeotech.com.au](http://www.morrisongeotech.com.au)  
a: Unit 1, 35 Limestone Street  
Darra, Qld, 4076  
Ph: (07) 3279 0900*

*29<sup>th</sup> August 2019*



*Brisbane Office*  
 Job No: DL18/334  
 Ref No: 15292  
 Author: M. Morrison

29<sup>th</sup> August 2019

Shadforths Civil Pty Ltd  
 99 Sandalwood Lane  
 Forest Glen Qld 4556

**ATTENTION: MR CAMPBELL THOMPSON**  
 Email: [Campbell.Thompson@shadcivil.com.au](mailto:Campbell.Thompson@shadcivil.com.au)  
 Cc: [Michael.Pritchard@shadcivil.com.au](mailto:Michael.Pritchard@shadcivil.com.au)

Dear Sir,

**RE: LEVEL ONE COMPLIANCE REPORT FOR  
 BULK EARTHWORKS FILLING OPERATIONS  
 EDEN'S CROSSING ESTATE, STAGE 13  
 MT JULLERAT DRIVE, REDBANK PLAINS**

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**1.0 INTRODUCTION**

**1.1 General**

This report presents results of Level One Earthworks Inspections and associated Compaction Compliance testing carried out on Earthworks Fill constructed to form Residential Lots and embankments below subgrade at Eden's Crossing Estate Stages 13, Mount Juillerat Drive, Redbank Plains (The Site).

The work was commissioned by Mr. Billy Vlahos representing Shadforth Civil Pty Ltd (The Client), using Purchase Order 373507.

Earthworks operations were constructed by The Client.

Earthworks filling operations were carried out intermittently between 1<sup>st</sup> November 2018 and 27<sup>th</sup> July 2019.

**Picture 1: Aerial View of the Site** (Image Source: Nearmap.com 30<sup>th</sup> July 2019)



## **1.2 Previous Earthworks**

As far as could be assessed onsite, no previous Earthworks had been carried out at The Site.

## **1.3 The Project**

The purpose for filling at The Site is to construct a Residential Subdivision which includes new pavements, residential building platforms and associated underground services.

Premise Engineering Pty Ltd, Bulk Earthworks Layout Plan, Job Code PET-0013, Sheet No. C200 Revision B, dated 26<sup>th</sup> July 2018, indicates the extents and thickness of fill to be constructed at The Site.

The plan is considered a reasonable representation of the fill covered by this report with the following exception: -

- At locations where potential reactive soils were exposed at the design earthworks levels, excavation below the design earthworks levels to approximately 1.7m below were carried out and replaced with fill of low reactivity.

The actual thickness of fill on an individual Lot can be obtained from the Developer as a Lot Disclosure Plan.

The Site is located with-in the Eden's Crossing Development and is bounded by future residential stages to the South and West, and existing residential developments to the North and East.

## **2.0 THE BRIEF**

The Brief from the Client was limited to:

- Level One Inspection and Testing of the placement and compaction of fill materials in accordance with AS3798 2007 – “Guidelines on Earthworks for Commercial and Residential Developments”,
- Relative Density Control Testing in accordance with AS1289 – Testing of Soils for Engineering Purposes and at frequencies required in AS3798 Table 8.1.
- Ipswich City Council Project Specifications
- Notes on Premise Engineering Pty Ltd Earthworks Drawings.

Low reactive fill materials the was used as capping over potentially reactive soils was to generally conform to the following criteria: -

- Shrink Swell Index (Iss) – 1% Max.
- Particle Size Distribution:
  - Max Particle Size – 75mm
  - % passing 19mm – 80% Min.
  - % Passing 0.075mm - 10% Min.
- Plasticity:
  - Liquid Limit – 45% Max.
  - Plasticity Index – > 7% <20%
- Permeability -  $5 \times 10^{-7}$  m/s Max.

### **3.0 METHODOLOGY**

Earthworks Inspection and Testing was carried out on the stripped and exposed ground surfaces and during the placement and compaction of fill materials.

Field and laboratory testing included a walk over assessments of the existing ground conditions, observation of filling and compaction activities and field density testing using a nuclear soil moisture density gauge and Hilf compactions.

All work was carried out in accordance with AS 3798 (Guidelines on Earthworks for Commercial and Residential Developments) and AS1289 (Testing of Soils for Engineering Purposes).

Samples of the fill materials were collected and tested for conformance with the criteria presented in Section 2.

#### **3.1 Stripped Surface Assessment**

The fill areas at The Site were observed to be stripped and cleared of visible organic matter, deleterious, loose and unsuitable materials to depths exposing suitable natural ground.

Materials exposed after stripping and clearing the site which formed the natural foundation can be broadly summarised as:

- Natural - Silty Clay (CI - CH) – At least very stiff, medium to high and high plasticity, dark brown, traces of fine to medium grained sands, moist.
- Natural – Sandy Clay (CI) – at least very stiff, medium plasticity, pale brown mottled orange-red, fine to medium grained sand, traces of fine to medium gravel and moist.
- Natural – Basalt Rock (XW) – Extremely weathered, very low strength or better, red – brown – grey.
- Natural Siltstone – (XW) – Extremely weathered, very low strength, orange grey

Following the stripped surface assessment of the fill areas, the natural foundation was approved for filling using the following process:

- Walk over assessments confirming that the competent ground was exposed.
- Proof roll testing using large sized truck carrying out multiple passes confirming no movement of the foundation.

#### **3.2 Filling Operations**

Fill materials were sourced from onsite cuts, road box excavations and trench excavations. Materials used as fill can be broadly summarized as: -

- Lower Fill Materials – Below 1.7m from the finished earthworks levels
  - Silty Clay, (CI), medium to high plasticity, dark brown, traces of fine to medium sand and moist.
  - Sandy Clay (CI), medium plasticity fines, red – brown, fine to coarse sand, traces of fine to medium gravel and moist.
- Capping Materials – Upper 1.7m of the fill profile imported from Select Sources Onsite and WMI.
  - Clayey Sand (SC), fine to coarse sand, yellow – orange – brown, medium plasticity fines, traces of fine to medium gravel, and moist.

- Sandy Clay (Cl), medium plasticity fines, yellow – brown – red, fine to coarse sand, and moist.

Samples of the capping materials were collected and testing generally conformed with the criteria presented in Section 2 and are summarised below in Table 1. Test reports are attached.

**Table 1 – Summary of Capping Materials Test Results.**

Test Number	Particle Size % Passing			Plasticity Index %			Shrink Swell (%)
	75mm	19mm	0.075mm	LL	PI	LS	
D18-301A	100	81	6	39	10	6.0	0.4
D18-301B	100	63	7	40	10	7.5	0.2

The tested is outside the specification with respect to particle size distribution. However, samples were collected prior to compaction. Breakdown of the material following compaction to create a higher proportion of fines was observed. It is considered likely that the specification for permeability will be met based on the achieved test results.

Placement and compaction of the fill materials was carried out using the following plant:

- Dozer
- Excavators
- Pad foot Roller
- Scrapers
- Water Truck
- Body Trucks
- Skid Steer Loader
- Grader
- Articulated Dump Trucks
- 825 Compactor

The fill materials were moisture conditioned at the fill source and during placement to moisture contents suitable for compaction. Deleterious materials such as organics, sticks, roots and over size particles were sorted and removed during placement or were rejected for use.

Placement of the fill materials was carried out in layers appropriate for the above plant and compacted using the above plant carrying out multiple passes.

Our representative observed the filling process as described above and was assessed to be consistent for the entire thickness of fill.

Field density tests and laboratory compactions were carried out on the fill materials in accordance with Table 5.1 and 8.1 of AS3798 2007 (Guidelines on Earthworks for Commercial and Residential Developments) and tested to AS1289 test methods (Testing of Soils for Engineering Purposes). Testing achieved the required specification of 95% of the Hilt Density

Fill placed and compacted at measured density ratios less than 95% were tyned, moisture conditioned and re-compacted until the required specification was achieved. Retesting was carried out using Random Stratified Location methods.

The Location of the field density tests are shown on the Site Plan contained in Appendix A. These test locations and levels were not obtained by survey and therefore should only be considered as approximate.

Picture 3: View of the Site During Construction



Picture 4: View of the Site During Construction



#### 4.0 STATEMENT OF COMPLIANCE

Our representatives observed the relevant earthworks operations including the stripped surface, fill placement and compaction operations and carried out field density tests and laboratory compaction tests in accordance with the required standard (AS3798, AS1289) and Specification. Testing achieved the required specification of 95% Standard at the test locations.

It is confirmed that Level One Inspection and Testing has been carried out on the earthworks fill to form the residential Lots and embankments below subgrade. Based on the observations made by our Geotechnicians and the results of the field and laboratory tests, the placed and compacted fill at the above project has, as far as we have been able to assess, been constructed in general accordance with the intent of AS3798 and the Specifications.

The fill can be deemed to be “controlled” in accordance with AS2870.

#### 5.0 EXCLUSIONS

This statement does not include any topsoil, which may be placed for use as dressing, trench backfill or any other subsequent earthworks after 27<sup>th</sup> July 2019.

Assessments of material quality such as soaked CBR and site classifications are excluded from this commission.

Our on-site attendance specifically excludes assessments of fill material quality and engineering properties that are outside the requirements of AS3798 – 2007.

Footings and ground slabs for any structures constructed over natural soils or controlled fill should be designed to accommodate the characteristic ground surface movements and settlement potential.

Assessments of these design parameters are beyond the scope of this Report.

#### 6.0 LIMITATIONS

This Report has been prepared by Morrison Geotechnic Pty Ltd (**Morrison Geotechnic**), and may include contributions from Morrison Geotechnic’s officers and employees, sub-contractors, sub-consultants or agents (**Contributors**).

This Report is for the sole benefit and use of Shadforth Civil Pty Ltd (**Client**), its designers, clients and relevant statutory authorities for the sole purpose of providing geotechnical advice and recommendations in respect of the Eden’s Crossing Estate, Stage 13, Mount Juillerat Drive, Redbank Plains (**Project**). The Report is only intended to address those issues expressly described in the Brief/ Work Instructions in this Report.

This Report should not be used or relied upon for any other purpose without Morrison Geotechnic’s prior written consent. Morrison Geotechnic and the Contributors do not accept any responsibility or liability in any way whatsoever for the use or reliance of this Report by anyone other than Shadforth Civil (**Client**), its designers, its clients and relevant statutory authorities or by anyone else for any purpose other than that for which it has been prepared.

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- (b) have not verified the accuracy or reliability of this information (other than as expressly stated in this Report);
- (c) have not made any independent investigations or enquiries in respect of those matters of which it has no actual knowledge at the time of giving this Report to the Client; and
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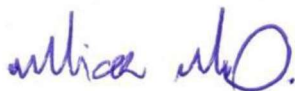
- (a) is not an environmental, contamination or hazardous materials assessment; may be invalid, incomplete or inaccurate (including errors in the scope of work, investigation methodology, observations, opinions and advice) where the information provided to Morrison Geotechnic was invalid, incomplete or inaccurate;
- (b) is limited to observations of those parts of the site described in Section 1.0.

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If further information becomes available, or additional assumptions need to be made, Morrison Geotechnic reserves its right to amend this Report.

If you have any queries regarding the above, please contact our Brisbane office.

Yours faithfully



**MICHAEL MORRISON**

For and on behalf of

**MORRISON GEOTECHNIC PTY LIMITED**

**ATTACHMENTS:**

Appendix A – Site Plan Showing Test Locations

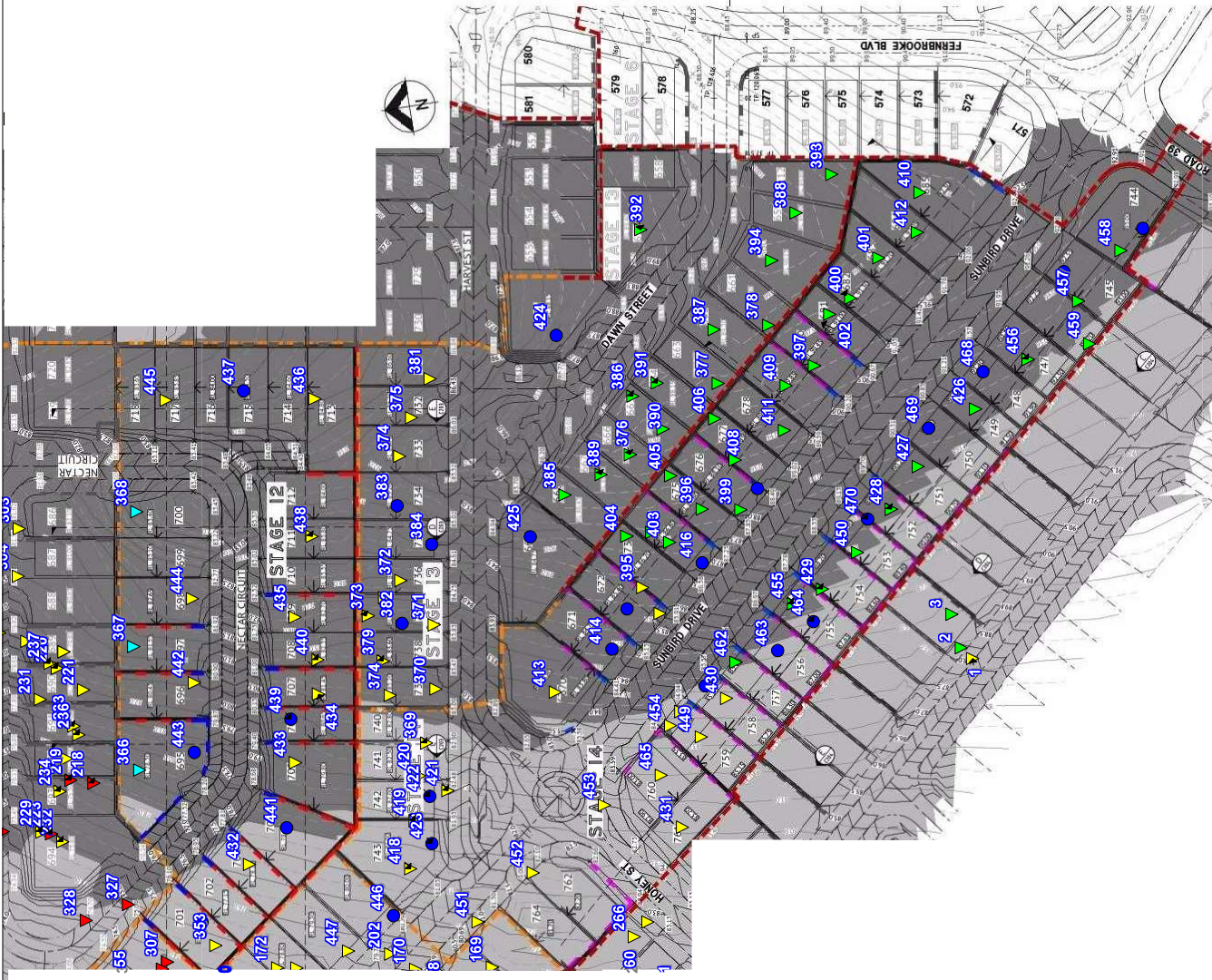
Appendix B – Laboratory Test Reports



# APPENDIX A

SITE PLAN

TEST LOCATIONS



Map Description :	<b>EARTHWORKS FIELD DENSITY TESTING - Level 1 Inspection</b>
Client :	<b>SHADFORTHS</b>
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No :	<b>DL18/334</b>
Drawing No :	<b>DL18/334-01</b>
Scale :	<b>Not to Scale</b>

**LEGEND**

- ▲ RL - 65.00 - 74.99
- ▲ RL - 75.00 - 84.99
- ▲ RL - 85.00 - 94.99
- ▲ RL 95.00 - 104.99
- 0.00 - 0.99m Below Final Level
- Final Level

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 Geologists: L. Baxley & R. Howchin  
 Laboratory: M. Morrison, L. McDowell

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**LEGEND**  
 ■ Capping Layer Quality Testing

Map Description :	<b>EARTHWORKS CAPPING LAYER - Quality Testing</b>
Client :	<b>SHADFORTHS</b>
Project :	<b>EDENS CROSSING STAGES 12 - 14</b>
Project No :	<b>DL18/334</b>
Drawing No :	<b>DL18/334-02</b>
Scale :	<b>Not to Scale</b>

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 Geologists: L. Baxley & R. Howchin  
 Laboratory: M. Morrison, L. McDowell



# APPENDIX B

## Laboratory Test Results Reports


# Material Test Report

**Report Number:** DL18/334-18D  
**Issue Number:** 1  
**Date Issued:** 27/11/2018  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 301  
**Sample Number:** D18-301B  
**Date Sampled:** 09/11/2018  
**Sampling Method:** AS1289 1.2.1 6.5.4 - Machine excavated pit or trench  
**Sample Location:** E: 484314.962, N: 6939789.808, Depth: RL- 98.762  
**Material:** Proposed 1.7m Capping Layer  
**Material Source:** Onsite Cut - Stg 10


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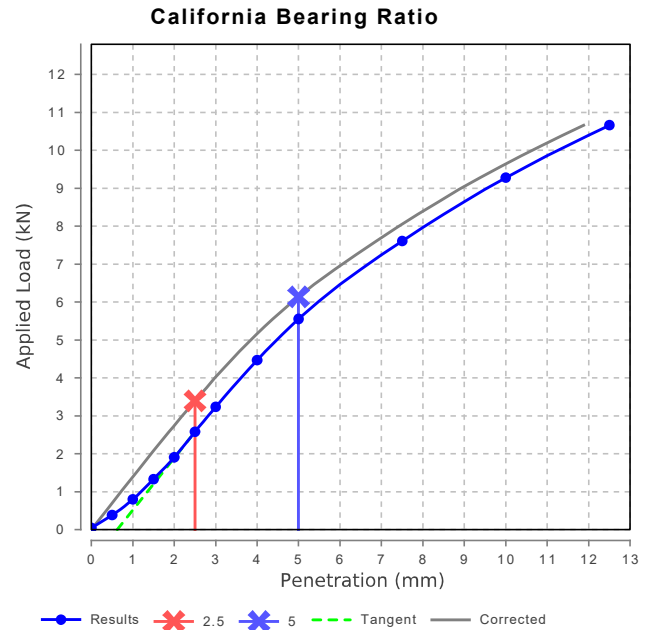


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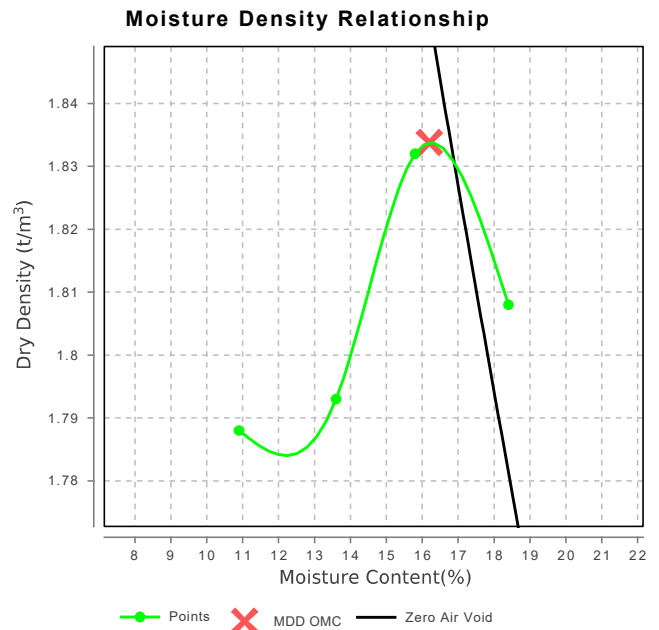
  
 Approved Signatory: Liam McDowall  
 Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	30		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density ( $t/m^3$ )	1.83		
Optimum Moisture Content (%)	16.0		
Laboratory Density Ratio (%)	99.5		
Laboratory Moisture Ratio (%)	105.5		
Dry Density after Soaking ( $t/m^3$ )	1.82		
Field Moisture Content (%)	8.0		
Moisture Content at Placement (%)	17.1		
Moisture Content Top 30mm (%)	19.8		
Moisture Content Rest of Sample (%)	18.3		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	25		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	34.6		



Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)	
Mould Type	1 LITRE MOULD A
Compaction	Standard
No. Layers	3
No. Blows / Layer	25
Maximum Dry Density ( $t/m^3$ )	1.83
Optimum Moisture Content (%)	16.0
Oversize Sieve (mm)	19
Oversize Material (%)	34.6
Method used to Determine Plasticity	VISUAL
Curing Hours	25



# Material Test Report

**Report Number:** DL18/334-18A  
**Issue Number:** 1  
**Date Issued:** 27/11/2018  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 301


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*Liam A McDowall*

Approved Signatory: Liam McDowall  
Branch Manager

NATA Accredited Laboratory Number: 1169

Shrink Swell Index AS 1289 7.1.1 & 2.1.1		
	D18-301C	D18-301D
Sample Number	D18-301C	D18-301D
Sampling Method	AS1289 1.2.1 6.5.4	AS1289 1.2.1 6.5.4
Date Sampled	09/11/2018	09/11/2018
Date Tested	23/11/2018	23/11/2018
Material Source	Capping Layer	Capping Layer
Sample Location	E: 484266.847, N: 6939875.993 (RL- 94.281)	E: 484314.962, N: 6939789.808 (RL- 98.762)
Inert Material Estimate (%)	**	**
Pocket Penetrometer before (kPa)	**	**
Pocket Penetrometer after (kPa)	>600	370
Shrinkage Moisture Content (%)	17.1	17.2
Shrinkage (%)	<b>0.7</b>	<b>0.3</b>
Swell Moisture Content Before (%)	17.3	17.8
Swell Moisture Content After (%)	**	**
Swell (%)	<b>-0.1</b>	<b>-0.0</b>
Shrink Swell Index Iss (%)	<b>0.4</b>	<b>0.2</b>
Visual Description	Clayey Sand	Clayey Sand
Cracking	Slightly Cracked	Slightly Cracked
Crumbling	Yes	Yes
Remarks	**	**

Shrink Swell Index (Iss) reported as the percentage vertical strain per pF change in suction.

NATA Accreditation does not cover the performance of pocket penetrometer readings.

# Material Test Report



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**Report Number:** DL18/334-72  
**Issue Number:** 1  
**Date Issued:** 18/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 3069  
**Date Sampled:** 10/06/2019  
**Dates Tested:** 10/06/2019 - 17/06/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import



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Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1				
Sample Number	D19-3069A	D19-3069B	D19-3069C	D19-3069D
Test Number	422	423	424	425
Date Tested	10/06/2019	10/06/2019	10/06/2019	10/06/2019
Time Tested	13:12	13:22	13:29	13:38
Test Request #/Location	Stage 12-14	Stage 12-14	Stage 12-14 (Footpath)	Stage 12-14 (Footpath)
Easting	484158.169	484143.024	484279.350	484246.317
Northing	6939909.29	6939911.29	6939834.742	6939860.027
Elevation (m)	F/L	F/L	F/L	F/L
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill
Soil Description	Sandy Clay / Clayey Sand Pinky Brown	Sandy Clay / Clayey Sand Pinky Brown	Sandy Clay / Clayey Sand Pinky Brown	Sandy Clay / Clayey Sand Pinky Brown
Test Depth (mm)	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.12	2.16	2.14	2.15
Field Moisture Content %	10.5	10.7	11.2	11.0
Field Dry Density (FDD) t/m <sup>3</sup>	1.92	1.95	1.92	1.94
Peak Converted Wet Density t/m <sup>3</sup>	2.12	2.12	2.15	2.16
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**
Moisture Variation (Wv) %	1.5	1.5	0.5	0.5
Adjusted Moisture Variation %	**	**	**	**
Hilf Density Ratio (%)	<b>100.0</b>	<b>101.5</b>	<b>99.5</b>	<b>99.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

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

# Material Test Report

**Report Number:** DL18/334-18B  
**Issue Number:** 1  
**Date Issued:** 27/11/2018  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 301  
**Sample Number:** D18-301A  
**Date Sampled:** 09/11/2018  
**Sampling Method:** AS1289 1.2.1 6.5.4 - Machine excavated pit or trench  
**Sample Location:** E: 484266.847, N: 6939875.993, Depth: RL- 94.281  
**Material:** Proposed 1.7m Capping Layer  
**Material Source:** Onsite Cut - Stg 10


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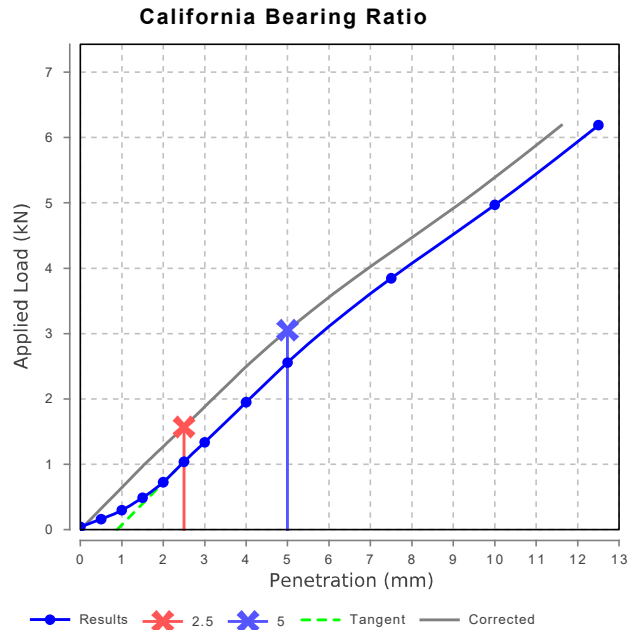
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*Liam A McDowall*

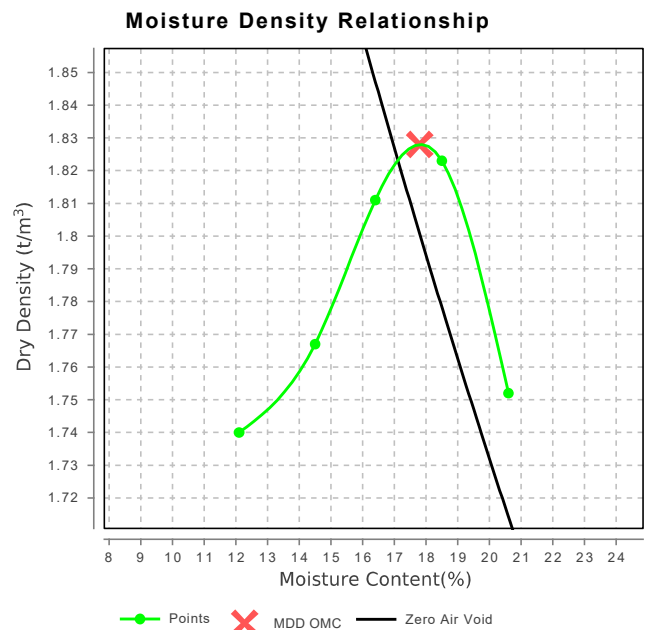
Approved Signatory: Liam McDowall  
Branch Manager

NATA Accredited Laboratory Number: 1169

California Bearing Ratio (AS 1289 6.1.1 & 2.1.1)		Min	Max
CBR taken at	5 mm		
CBR %	15		
Method of Compactive Effort	Standard		
Method used to Determine MDD	AS 1289 5.1.1 & 2.1.1		
Method used to Determine Plasticity	VISUAL		
Maximum Dry Density ( $t/m^3$ )	1.83		
Optimum Moisture Content (%)	18.0		
Laboratory Density Ratio (%)	99.5		
Laboratory Moisture Ratio (%)	100.5		
Dry Density after Soaking ( $t/m^3$ )	1.83		
Field Moisture Content (%)	9.1		
Moisture Content at Placement (%)	17.9		
Moisture Content Top 30mm (%)	17.6		
Moisture Content Rest of Sample (%)	18.5		
Mass Surcharge (kg)	4.5		
Soaking Period (days)	4		
Curing Hours	6		
Swell (%)	0.0		
Oversize Material (mm)	19		
Oversize Material Included	Excluded		
Oversize Material (%)	18.4		



Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)	
Mould Type	1 LITRE MOULD A
Compaction	Standard
No. Layers	3
No. Blows / Layer	25
Maximum Dry Density ( $t/m^3$ )	1.83
Optimum Moisture Content (%)	18.0
Oversize Sieve (mm)	19
Oversize Material (%)	18.4
Method used to Determine Plasticity	
Curing Hours	24:45





# Material Test Report



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**Report Number:** DL18/334-65  
**Issue Number:** 1  
**Date Issued:** 13/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2897  
**Date Sampled:** 31/05/2019  
**Dates Tested:** 31/05/2019 - 06/06/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import / Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Jordan Wenting

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-2897A	D19-2897B	D19-2897C	D19-2897D	D19-2897E	D19-2897F
Test Number	389	390	391	392	393	394
Date Tested	31/05/2019	31/05/2019	31/05/2019	31/05/2019	31/05/2019	31/05/2019
Time Tested	14:10	14:34	14:44	14:55	15:08	15:15
Test Request #/Location	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14
Easting	484256.202	484268.582	484278.305	484286.376	484293.916	484304.615
Northing	6939825.82	6939821.588	6939815.676	6939807.28	6939796.86	6939786.46
Elevation (m)	87.259	87.644	88.198	88.824	89.208	89.445
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	14.2	15.9	12.6	18.2	16.0	20.8
Field Wet Density (FWD) t/m <sup>3</sup>	2.24	2.22	2.22	2.24	2.24	2.24
Field Moisture Content %	14.2	11.4	11.9	13.0	12.3	13.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.96	1.99	1.99	1.98	1.99	1.96
Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	2.16	2.31	2.11	2.16	2.14	2.21
Moisture Variation (Wv) %	**	**	**	**	**	**
Adjusted Moisture Variation %	0.5	2.5	2.5	1.0	2.0	0.0
Hilf Density Ratio (%)	<b>103.5</b>	<b>96.0</b>	<b>105.5</b>	<b>103.5</b>	<b>105.0</b>	<b>101.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**Moisture Variation Note:**

Positive values = test is dry of OMC

Negative values = test is wet of OMC

# Material Test Report

**Report Number:** DL18/334-18C  
**Issue Number:** 1  
**Date Issued:** 27/11/2018  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 301  
**Sample Number:** D18-301A  
**Date Sampled:** 09/11/2018  
**Sampling Method:** AS1289 1.2.1 6.5.4 - Machine excavated pit or trench  
**Sample Location:** E: 484266.847, N: 6939875.993, Depth: RL- 94.281  
**Material:** Proposed 1.7m Capping Layer  
**Material Source:** Onsite Cut - Stg 10



**MORRISON  
GEOTECHNIC**

Brisbane | Gold Coast | Maroochydore  
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 Brisbane Laboratory  
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 Email: darralab@morrisongeo.com.au



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*Liam A McDowall*  
 Approved Signatory: Liam McDowall  
 Branch Manager

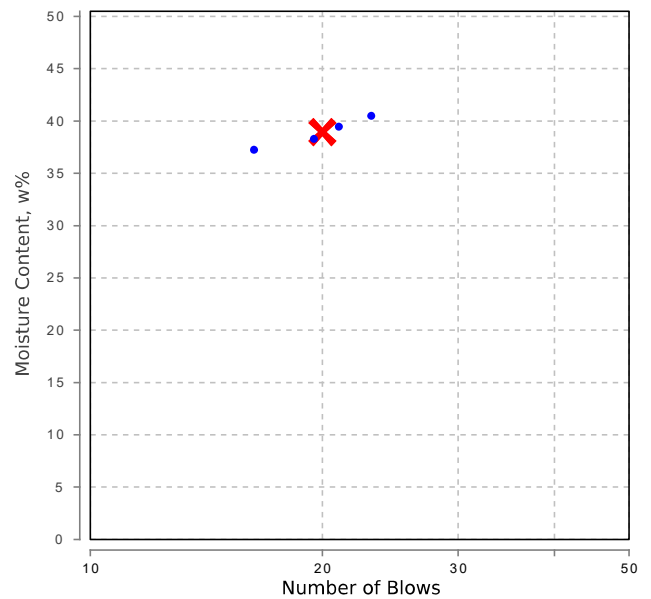
NATA Accredited Laboratory Number: 1169

Atterberg Limit (AS1289 3.9.1 & 3.2.1 & 3.3.2)		Min	Max
Sample History	Oven Dried		
Preparation Method	Dry Sieve		
Liquid Limit (%)	39	0	45
Plastic Limit (%)	29		
Plasticity Index (%)	10	7	20

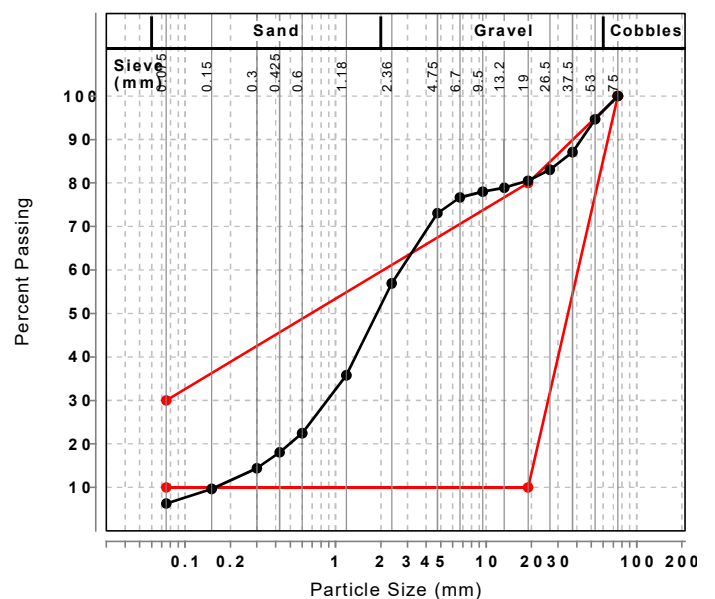
Linear Shrinkage (AS1289 3.4.1)		Min	Max
Linear Shrinkage (%)	6.0		
Cracking Crumbling Curling	Cracking & Curling		

Particle Distribution (AS1289 3.6.1)					
Sieve	Passed %	Passing Limits		Retained %	Retained Limits
75 mm	100	100	100	0	
53 mm	95			5	
37.5 mm	87			8	
26.5 mm	83			4	
19 mm	81	10	80	3	
13.2 mm	79			2	
9.5 mm	78			1	
6.7 mm	77			1	
4.75 mm	73			4	
2.36 mm	57			16	
1.18 mm	36			21	
0.6 mm	22			13	
0.425 mm	18			4	
0.3 mm	14			4	
0.15 mm	10			5	
0.075 mm	6	10	30	3	

Liquid Limit



Particle Size Distribution



# Material Test Report



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**Report Number:** DL18/334-62  
**Issue Number:** 1  
**Date Issued:** 08/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2859  
**Date Sampled:** 30/05/2019  
**Dates Tested:** 30/05/2019 - 06/06/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import / Onsite



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Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-2859A	D19-2859B	D19-2859C	D19-2859D	D19-2859E	D19-2859F
Test Number	382	383	384	385	386	387
Date Tested	30/05/2019	30/05/2019	30/05/2019	30/05/2019	30/05/2019	30/05/2019
Time Tested	10:30	10:36	10:48	13:12	13:19	13:30
Test Request #/Location	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15
Easting	484214.42	484228.30	484238.87	484265.176	484278.501	484298.181
Northing	6939908.71	6939904.91	6939900.28	6939840.35	6939827.43	6939807.186
Elevation (m)	83.91 F/L	84.32 F/L	84.63 F/L	86.383	87.239	88.279
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Soil Description	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Gravelly Sandy Clay. Brown	Sandy Clay Light Pink	Sandy Clay Light Pink	Sandy Clay Light Pink
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.21	2.22	2.21	2.06	2.08	2.07
Field Moisture Content %	14.6	15.8	16.7	12.7	13.2	13.4
Field Dry Density (FDD) t/m <sup>3</sup>	1.93	1.92	1.89	1.82	1.84	1.83
Peak Converted Wet Density t/m <sup>3</sup>	2.14	2.18	2.20	2.08	2.11	2.12
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	1.0	0.5	0.0	1.0	1.0	0.0
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	<b>103.0</b>	<b>102.0</b>	<b>100.5</b>	<b>98.5</b>	<b>98.5</b>	<b>97.5</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

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

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
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**Report Number:** DL18/334-62  
**Issue Number:** 1  
**Date Issued:** 08/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2859  
**Date Sampled:** 30/05/2019  
**Dates Tested:** 30/05/2019 - 06/06/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import / Onsite



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1	
Sample Number	D19-2859G
Test Number	388
Date Tested	30/05/2019
Time Tested	13:37
Test Request #/Location	Stage 12-15
Easting	484316.354
Northing	6939791.457
Elevation (m)	88.965
Layer / Reduced Level	Select Fill
Soil Description	Sandy Clay Light Pink
Test Depth (mm)	150
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.08
Field Moisture Content %	12.9
Field Dry Density (FDD) t/m <sup>3</sup>	1.84
Peak Converted Wet Density t/m <sup>3</sup>	2.12
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	0.5
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	<b>98.0</b>
Compaction Method	<b>Standard</b>

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

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 Brisbane Laboratory  
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 Phone: (07) 3279 0900  
 Email: darralab@morrisongeo.com.au

**Report Number:** DL18/334-60  
**Issue Number:** 1  
**Date Issued:** 01/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2788  
**Date Sampled:** 28/05/2019  
**Dates Tested:** 28/05/2019 - 31/05/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-2788A	D19-2788B	D19-2788C	D19-2788D	D19-2788E	D19-2788F
Test Number	369	370	371	372	373	374
Date Tested	28/05/2019	28/05/2019	28/05/2019	28/05/2019	28/05/2019	28/05/2019
Time Tested	08:34	08:39	08:45	08:51	13:12	13:19
Test Request #/Location	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14	Stage 12-14
Easting	484175.231	484185.042	484212.055	484227.996	484203.257	484224.860
Northing	6939907.754	6939904.03	6939898.29	6939896.62	6939922.47	6939919.041
Elevation (m)	80.9	81.392	82.403	82.891	82.328	82.987
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Soil Description	Clayey Sand. Yellow Brown	Clayey Sand. Yellow Brown	Clayey Sand. Yellow Brown	Clayey Sand. Yellow Brown	Clayey Sand. Yellow Brown	Clayey Sand. Yellow Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	0.0	0.0	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	1.96	1.99	1.97	1.99	2.06	2.07
Field Moisture Content %	9.0	8.8	7.1	9.5	10.7	12.2
Field Dry Density (FDD) t/m <sup>3</sup>	1.79	1.82	1.84	1.82	1.86	1.85
Peak Converted Wet Density t/m <sup>3</sup>	2.03	2.03	2.02	1.99	2.06	2.14
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	**	**	**	**	**
Moisture Variation (Wv) %	3.0	3.5	2.5	0.0	0.5	-0.5
Adjusted Moisture Variation %	**	**	**	**	**	**
Hilf Density Ratio (%)	<b>96.0</b>	<b>98.0</b>	<b>97.5</b>	<b>100.0</b>	<b>100.0</b>	<b>97.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

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

# Material Test Report



**Brisbane** | Gold Coast | Maroochydore  
 Morrison Geotechnic Pty Ltd  
 ABN: 51 009 878 899  
 Brisbane Laboratory  
 Unit 1, 35 Limestone Darra QLD 4076  
 Phone: (07) 3279 0900  
 Email: darralab@morrisongeo.com.au

**Report Number:** DL18/334-60  
**Issue Number:** 1  
**Date Issued:** 01/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2788  
**Date Sampled:** 28/05/2019  
**Dates Tested:** 28/05/2019 - 31/05/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Rhys Mitchell  
 Senior Technician  
 NATA Accredited Laboratory Number: 1169

## Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1

Sample Number	D19-2788G
Test Number	375
Date Tested	28/05/2019
Time Tested	13:28
Test Request #/Location	Stage 12-14
Easting	484244.979
Northing	6939915.810
Elevation (m)	83.393
Layer / Reduced Level	Select Fill
Soil Description	Clayey Sand. Yellow Brown
Test Depth (mm)	150
Sieve used to determine oversize (mm)	19.0
Percentage of Wet Oversize (%)	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.07
Field Moisture Content %	8.5
Field Dry Density (FDD) t/m <sup>3</sup>	1.90
Peak Converted Wet Density t/m <sup>3</sup>	2.06
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**
Moisture Variation (Wv) %	2.0
Adjusted Moisture Variation %	**
Hilf Density Ratio (%)	<b>100.5</b>
Compaction Method	<b>Standard</b>

### Moisture Variation Note:

Positive values = test is dry of OMC  
 Negative values = test is wet of OMC

# Material Test Report



Brisbane | Gold Coast | Maroochydore

Morrison Geotechnic Pty Ltd

ABN: 51 009 878 899

Brisbane Laboratory

Unit 1, 35 Limestone Darra QLD 4076

Phone: (07) 3279 0900

Email: darralab@morrisongeo.com.au

**Report Number:** DL18/334-63  
**Issue Number:** 1  
**Date Issued:** 08/06/2019  
**Client:** SHADFORTH'S CIVIL PTY LTD  
 99 SANDALWOOD LANE, FOREST GLEN QLD 4556  
**Contact:** -  
**Project Number:** DL18/334  
**Project Name:** EARTHWORKS SUPERVISION  
**Project Location:** EDEN'S CROSSING, STAGE 10-15  
**Work Request:** 2832  
**Date Sampled:** 29/05/2019  
**Dates Tested:** 29/05/2019 - 05/06/2019  
**Sampling Method:** AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted  
**Specification:** 95% STD  
**Site Selection:** Selected by GTA  
**Material:** Select Fill - Capping Layer Material  
**Material Source:** Onsite / Import



Accredited for compliance with ISO/IEC 17025 - Testing

Approved Signatory: Liam Davidson

Senior Technician

NATA Accredited Laboratory Number: 1169

Compaction Control AS 1289 5.7.1 & 5.8.1 & 2.1.1						
Sample Number	D19-2832A	D19-2832B	D19-2832C	D19-2832D	D19-2832E	D19-2832F
Test Number	376	377	378	379	380	381
Date Tested	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019
Time Tested	13:02	13:08	13:14	13:25	13:34	13:40
Test Request #/Location	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15	Stage 12-15
Easting	484261.805	484275.258	484291.406	484203.291	484223.220	484249.740
Northing	6939824.063	6939796.172	6939777.66	6939916.391	6939912.231	6939906.017
Elevation (m)	86.123	87.390	88.164	83.135	83.703	84.214
Layer / Reduced Level	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill	Select Fill
Soil Description	Clayey Sand / Sandy Clay Brown	Clayey Sand / Sandy Clay Brown	Clayey Sand / Sandy Clay Brown	Clayey Sand / Sandy Clay Yellow Brown	Clayey Sand / Sandy Clay Yellow Brown	Clayey Sand / Sandy Clay Yellow Brown
Test Depth (mm)	150	150	150	150	150	150
Sieve used to determine oversize (mm)	19.0	19.0	19.0	19.0	19.0	19.0
Percentage of Wet Oversize (%)	0.0	14.6	16.5	0.0	0.0	0.0
Field Wet Density (FWD) t/m <sup>3</sup>	2.14	2.24	2.24	2.02	2.06	2.04
Field Moisture Content %	14.6	15.7	15.8	11.8	11.8	12.1
Field Dry Density (FDD) t/m <sup>3</sup>	1.87	1.94	1.94	1.81	1.84	1.82
Peak Converted Wet Density t/m <sup>3</sup>	2.20	**	**	2.09	2.07	2.09
Adjusted Peak Converted Wet Density t/m <sup>3</sup>	**	2.21	2.18	**	**	**
Moisture Variation (Wv) %	1.5	**	**	0.5	2.0	1.5
Adjusted Moisture Variation %	**	0.0	1.0	**	**	**
Hilf Density Ratio (%)	<b>97.5</b>	<b>101.5</b>	<b>103.0</b>	<b>96.5</b>	<b>99.5</b>	<b>98.0</b>
Compaction Method	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>

**Moisture Variation Note:**

Positive values = test is dry of OMC

Negative values = test is wet of OMC